UNEP/CMS/MS3/Doc.5/Annex
ANNEX: CONSERVATION AND MANAGEMENT PLAN

The objectives and actions described in this Annex are non-binding and are included for the consideration of the Signatories in developing, promoting or adopting measures or programs aimed at achieving the objectives of the MoU. These actions may be undertaken by the Signatories individually, collectively, or both, as appropriate, including through the Secretariat established in [Section 8] of the MoU, participation in and cooperation with the FAO and, as appropriate, regional fisheries management organizations, regional seas conventions, and other relevant fora, and establishment of regional, sub-regional and any other cooperative arrangements considered by the Signatories to be necessary. The Signatories should, periodically review the effectiveness of efforts and strategies to implement this plan, with the technical and scientific support of the secretariat and the MoU's advisory Committee, as well as consider revisions or amendments to strengthen its effectiveness or applicability, consistent with [Section 6] of the MoU.

Objective 1: Improve understanding of migratory shark populations[1] through research, monitoring and information exchange

1.1   [Conduct [conservation and management] studies on shark populations, habitats, and migratory patterns [targeted to their conservation and management][, including by compiling and analyzing information from fishery dependent and independent sources, and conduct new studies where necessary]:

a)   Conduct baseline studies [and] collect relevant data on:
  i.   shark populations
  ii.   shark habitats,[2] and
  iii.   shark migratory patterns/routes(including through the use of tagging, genetic studies and/or satellite tracking)
b)   [In carrying out the studies described in 1.1a above, give special attention to identifying vulnerable or threatened shark populations, including those that are subject to high levels of direct and incidental catch [and finning], and the resulting population dynamics affected by fishing pressure]
c)   Identify seasonal and spatial migratory patterns, corridors, critical habitat, or critical habitat networks, including potential feeding, reproduction, and nursery areas
d)   (moved to 1.3(d))
e)   Initiate and/or continue long-term monitoring of priority shark populations in order to assess their conservation status
f)   [Establish indicators to assess progress towards national and/or regional targets, and develop species specific reference points as basis for the establishment of enhanced conservation measures]
g)   Characterize shark populations, their genetic structure and population trends
h)   Carry out studies on shark population dynamics and survival rates as a result of fishing or other pressures/threats
i)   [Promote the use of traditional ecological knowledge in research studies
j)   Review periodically and evaluate research and monitoring activities

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[1]   For purpose of this Conservation and Management Plan (CMP), any reference to sharks is considered a reference to the migratory sharks covered by the MoU to which the CMP is an Annex.
[2]   Habitat includes feeding, reproduction and nursery areas)].

1.2   Conduct collaborative research and monitoring:

a)   Identify and include priority research and monitoring needs in [any] regional and sub-regional action plans [developed under this MoU or pursuant to other relevant instruments such as the FAO IPOA-Sharks]
b)   Conduct collaborative studies and monitoring in pursuing activities described in 1.1 above
c)   Improve and develop frameworks for establishing and coordinating effective consultations involving stakeholders in research, management, and educational initiatives between States

1.3   Identify and assess threats:

a)   Compile and analyze information from fishery dependent and independent sources concerning existing catch, catch rate, gear, and effort information to establish baseline data on incidental and directed capture of sharks including waste and discards
b)   Implement data collection and catch monitoring programs to gather information on the catch and effort; species size and sex of sharks caught, released, or discarded; location of catch ; gears used for both directed and incidental fisheries; migratory patterns of sharks, and the nature and magnitude of non-fisheries threats to shark populations
c)   Assess [harvesting][fishing] strategies consistent with the principles of biological sustainability and rational long-term [economic]use
d)   Assess the impact of IUU fishing activities on shark populations] [and identify the species most vulnerable to IUU fishing]

1.4   Exchange information:

a)   Standardize methods and levels of data collection and adopt or develop an agreed set of protocols for research, monitoring, and information exchange, including, *inter alia,* such activities as stock assessment, genetic sampling, collection of mortality and indirect and direct catch data, and studies of life-cycles, critical habitat, and migratory routes
b)   Determine the most appropriate methods for information dissemination
c)   Exchange at regular intervals scientific and technical information and expertise among nations, scientific institutions, non-governmental and international organizations, in order to develop and implement best practice approaches to conservation of sharks and their habitats
d)   Disseminate [traditional] knowledge on sharks and their habitats for conservation and management
e)   Compile on a regular basis data on shark populations of regional interest
f)   Develop and utilize existing multimedia tools and protocols to facilitate information sharing and networking for the conservation of sharks. (moved from 5.3(b))

Objective 2: [Reduce][Limit to sustainable levels] direct and incidental fisheries-related causes of shark mortality

2.1   [Reduce] [or] [limit] to sustainable levels the incidental capture and mortality of sharks in the course of fishing activities

a)   Prioritize shark populations for conservation actions, offering highest priority to threatened or particularly vulnerable species with the [fewest][safeguards in the face of high fishing pressure
b)   Develop and use gear, devices, and operational strategies or techniques[, to the extent practicable,] to minimize incidental capture of sharks in fisheries, such as devices that effectively deter catches, or [allow][facilitate] the escape or live release of sharks

c)   [Promote] measures to minimize waste and discards from shark catches in accordance with the Code of Conduct for Responsible Fisheries, such as requiring or encouraging the retention and/or full utilization of sharks and, where appropriate for non-retained sharks, release of live sharks.

d)   Estimate and record magnitude of shark bycatch mortality including estimates of waste and discards and numbers of sharks caught incidentally that could be released alive but are instead wholly or partially retained

e)   [Determine whether spatial, seasonal or permanent closures are effective in reducing incidental capture of sharks within critical habitats or migration corridors][Develop and implement spatial and/or seasonal closures that are effective in reducing incidental capture of sharks, particularly to protect nursery grounds as well as adults aggregated for mating or pupping]

f)   Minimize mortality of sharks during critical life stages[3]

g)   Liaise and coordinate with fishing industries[, conservation groups] and fisheries management organizations to develop and implement incidental capture mitigation mechanisms in national waters and on the high seas

2.2   Determine and apply best practice approaches for direct harvests to minimize [] threats to shark populations and their habitats

a)   [Protect or preserve threatened or endangered shark species through the development of appropriate conservation and management measures, including through legislation]

b)   [Implement and enforce conservation and management measures through effective monitoring, control and surveillance]

c)   Facilitate reporting of species-specific biological, catch, landings, trade, and monitoring data

d)   Develop [on-board observer] programs to monitor [[directed]shark]fisheries [and fisheries taking high quantities of sharks] that includ[e][ing] procedures and training [programs] [to promote implementation of these measures, such as vessel monitoring systems[, and] inspections (at sea, in port, and at landing sites) [and [national] on-board observer programs [(including surveillance by video cameras)], and consider same for fisheries with high rates of incidental take of sharks

e)   Identify and document best practice protocols for conserving and managing shark populations within the region that protect biodiversity and ecosystem structure and function

f)   Develop and adopt region- and fishery-specific best conservation and management practices for shark populations in cooperation with relevant bodies, including existing regulatory frameworks and instruments, such as the UN Convention on the Law of the Sea, the rules or guidelines adopted in the framework of the FAO and, as appropriate, RFMOs and other relevant organizations.

g)   [Impose science-based and[/or] precautionary fishing limits to e][Ensure shark catches from directed and indirect fisheries are sustainable]

h)   [Promote] concrete measures to reduce excess fishing capacity, minimize waste and discards, and implement a precautionary and ecosystem based approach.

i)   Improve implementation of and compliance with national measures and conservation and management measures adopted by existing regional fisheries management organizations and arrangements that regulate shark fisheries or shark fishing practices

j)   [Support and respond to the calls][Take into account the recommendations formulated] in UN General Assembly resolutions 59/25, 61/105 and 62/177 concerning [unregulated sub-regional and regional fisheries and] the implementation of the International Plan of Action for sharks, and bans on finning

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[3]   Depending on species, critical life stages can include eggs, neonates, juveniles or adult females based on based available science.

k)   [Reduce, minimize or limit the mortality of sharks in critical life stages in order to maximize recruitment and]reproduction]]

l)   [Establish time/area closures management programs to minimize take in critical life periods and habitats]

m)   Identify resources and sources of funding for the development and implementation of National Plans of Action to manage sharks within a State's jurisdictional waters, including highly-migratory and straddling populations[, and for the regulation of the activities of States' fleets fishing on the High Seas]

n)   Ensure no increase in and minimize the use of plastics and non-degradable materials in fishing operations

2.3   Implement programs to address adverse economic incentives that threaten shark populations

a)   Conduct socio-economic studies among communities that utilize, trade, and purchase sharks and shark products

b)   Identify [appropriate][desired] modifications to economic incentives in order to reduce threats to and mortality of shark populations, and develop programs to implement the modifications

c)   Review subsidies and take action to address any subsidies that may contribute to illegal, unreported, and unregulated shark fishing and to related overfishing and overcapacity

d)   Explore the use of economic instruments for the conservation of sharks and their habitats

e)   Develop alternative livelihood opportunities for local communities to encourage their active participation in conservation efforts[, such as by identifying and facilitating environmentally sound and sustainable alternative livelihoods [including income generating activities such as] [that are not detrimental to shark populations and their habitats including non-consumptive alternatives such as] ecotourism, in consultation with local communities and other stakeholders, and promote consumer-oriented market campaigns on shark conservation and management]

2.4   Regulate or manage the harvest of sharks in order to address shark finning

Where not already in place, enact legislation or regulations to prohibit shark finning, including by considering taking measures, as appropriate, to require that sharks be landed with each fin naturally attached in line with UN General Assembly Resolution 62/177 and with IUCN Recommendation 4.114.

2.5   Develop time area closures management programs to minimize take in breeding, wintering, and nursery habitats

a)   Identify areas of critical habitat and consider implementation of fishery time and area closures based on [this][these] data]

b)   Reduce the mortality of [large] juvenile sharks in order to maximize recruitment and [population growth][survival]

c)   Minimize the mortality of fecund females during reproduction

Objective 3: Improve effectiveness of science-based management for ecological factors

3.1   Establish necessary measures to protect sharks and shark habitats

a)   Develop and implement regulations to protect critical habitat

b)   Designate and manage protected/conservation areas, sanctuaries or temporary exclusion zones along migration corridors and in areas of critical habitat, including those on the high seas, or take other measures (e.g. modification of fishing gear, restrictions on vessel traffic) to remove threats to such areas

c)   Develop incentives for adequate protection of areas of critical habitat outside protected areas

d)   [Undertake assessments of the environmental impact of marine and coastal development and other human activities that may affect shark populations and their habitats [(from draft 1)and agree with such plans or projects only after having ascertained that they will not adversely affect shark populations and their habitats (except in exceptional circumstances, such as relating to public safety, human health or imperative reasons of overriding public interest, provided that adequate compensatory measures are taken.]][Integrate shark and shark habitat protection in environmental impact or risk assessments for marine and coastal development projects]

e)   Monitor and promote the protection of [environmental][quality from land-based and maritime pollution, including marine debris such as plastics, that may adversely affect shark populations

f)   Strengthen the implementation of ~~of~~ existing [~~and future~~] regulations on shark fisheries, including existing bans on the use of poisonous chemicals and explosives in the exploitation of marine resources

g)   ] (incorporated into 3.1(f) above

h)   Adopt science-based management measures][strategies] that [reflect][use] an ecosystem and precautionary approach[, taking into account that sharks are particularly susceptible to changes in environmental conditions such as changes in water temperature, oceanic chemistry, stratification and circulation patterns]

Objective 4: Increase public awareness of the threats to sharks and their habitats, and enhance public participation in conservation activities

4.1   Raise public awareness on the MoU and its objectives through formal and informal means including but not limited to collecting, developing and disseminating education and information materials, including elements such as status of sharks, their conservation needs, and associated and relevant information, with special emphasis on programs for key target groups (e.g. harvesters and fishing communities, consumers, policy makers, educators and schools, and the media).

4.2   Promote public participation

a)   Involve stakeholders, and local communities in particular, in planning and implementation of shark conservation and management measures

b)   Encourage the participation of [government]institutions, non-governmental organizations, the private sector, scientists and the general community (e.g. students, volunteers, fishing communities, and local communities) in research,[and] conservation [and public awareness] efforts, including through activities such as incentive schemes, where appropriate, to encourage public participation (e.g. T-shirts for tag returns, public acknowledgement, and similar activities)

c)   (incorporated into (b) above)

Objective 5: Enhance national, regional and international cooperation

5.1   Collaborate with and assist Signatories and non-Signatories to regulate and share information on trade, to combat illegal trade, and to cooperate in enforcement activities relating to shark products

a)   Encourage Signatories that have not already done so to become Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

b)   Review at a national level compliance with obligations under CITES relating to trade in shark species and shark products

c)   Facilitate compliance with CITES through training of relevant authorities in cooperation with other Signatories, the CITES Secretariat and other relevant organisations

d)   Develop strategies that seek to ensure that shark products entering international trade are caught in accordance with existing conservation and management measures

e)   Identify routes of international illegal trade through monitoring, and seek cooperation to take action to prevent, deter and, where possible, eliminate illegal trade

f)   Ensure that illegal trade in shark products can be investigated and proper sanctions are imposed

g)   Exchange and discuss information on compliance and trade issues at regular intervals, such as through annual reporting to the MoU Secretariat and at meetings of the Signatories

h)   Identify, prevent, deter and, where possible, eliminate domestic illegal trade through monitoring, investigations, development and implementation of legislation, identification of gaps in enforcement capabilities in each country, and training of enforcement officers

5.2   Encourage Signatories and non-Signatories, and assist upon request, to develop and implement national, sub-regional and regional action plans for the conservation and management of shark populations and their habitats

a)   Encourage Signatories that have not already done so to consider [adhering to][becoming Parties to] Regional Fisheries Management Organizations (RFMOs) relevant to their shark catches

b)   Develop, implement, and enforce national plans of action through consultation with concerned Government authorities, research institutions, NGOs, local communities and other stakeholders][Develop and implement national plans of action in consideration of other existing National Plans of Action, the FAO International Plan of Action, and other relevant guidelines.]

c)   [Identify existing action plans, including the FAO IPOA Sharks and related national plans of action, that could be used as models and establish guideline for development of such actions plans](incorporated in (b) above)

d)   Identify specific local management issues where cooperation among States is required for successful conservation and management][Identify specific local management issues where cooperation among Regional States is required for successful conservation and management and develop and implant plans, including data sharing to ensure local and regional sustainable management.]

e)   Review action plans at regular intervals to take into account recent advances in skills and knowledge regarding shark conservation and management, as well as changes in conservation status of shark populations

f)   [Where RFMOs competence for shark management does not exist, or where [they][a competent RFMO] fail[s] to adopt regional shark conservation measures, d] [D]evelop and implement regional cooperation on shark conservation management including data sharing to assess sustainable levels of take in directed and incidental fisheries based on ecosystem requirements (combined into 5.2(d) above)

5.3   (proposal to delete entirety of 5.3, with exception of 5.3(b)) [[Consistent with points 1.2 and 1.4 above, e][E]nhance mechanisms for cooperation and promote information exchange

a)   Identify and strengthen, as appropriate, existing mechanisms for cooperation among coastal and fishing states, as well as relevant IGOs and RFMOs and regional seas conventions, at the sub-regional level
b)   ~~Develop a[n MoU] website and/or newsletter to facilitate networking and exchange of information on the conservation of sharks~~ (move to Objective 1.4(f)
c)   Develop a web-based information resource for shark conservation (including data on populations, rearing, migration, on-going projects)
d)   Create a directory of experts and organizations concerned with shark conservation
e)   Develop networks for cooperative management of shared populations, within or across sub-regions, and, where appropriate, formalise cooperative management arrangements
f)   Cooperate, where possible, in the establishment of transboundary marine protected areas using ecological rather than political boundaries
g)   Develop a streamlined format for reporting and exchanging information (through the MoU Secretariat and among Signatories) on the [state][status] of shark conservation at the national level
h)   Encourage MoU Signatories that have not already done so to become Parties to the Convention on Migratory Species (CMS)
i)   Encourage Signatories to consider becoming Parties to global fisheries agreements such as the UN Fish Stocks Agreement (1995), the FAO Compliance Agreement (1993) and other relevant international instruments, and implement the FAO Code of Conduct for Responsible Fisheries (1995)

5.4   Build capacity to strengthen conservation measures, with special attention to the needs of developing States:

a)   [Assess individual, institutional and/or systemic capacities for shark conservation and management as a basis for development of training and capacity-building programs.][Identify needs for capacity-building in terms of human resources, knowledge and facilities]
b)   Build and strengthen institutional and systemic capacities and competencies to generate technical and/or programmatic support for the implementaiton of th eMoU, including by providing training, through workshops and the use of species-specific guides for shark identification and data collection.][Provide training (e.g. through workshops) in shark identification and conservation and management techniques to relevant agencies, individuals and local communities]
c)   Coordinate training programs and workshops on best practices in data collection and science based management
d)   [~~Develop partnerships with universities, research institutions, training bodies and other relevant organizations~~] (proposal to delete as redundant)

5.5   Strengthen and improve enforcement of conservation and management measures and legislation:

a)   Review domestic policies and laws to address gaps or impediments to shark conservation
b)   Cooperate in law enforcement to ensure compatible application of laws across and between jurisdictions (including through bilateral/multilateral agreements and intelligence and information sharing through [existing]such channels such as the International Monitoring, Control and Surveillance Network [and the Interpol Wildlife Crime group)