



**MEMORANDUM OF UNDERSTANDING  
ON THE CONSERVATION OF  
MIGRATORY SHARKS**

CMS/Sharks/MOS3/Inf.13  
13 September 2018

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3<sup>rd</sup> Meeting of the Signatories to the Sharks MOU (MOS3)  
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Information Document 13

**SURVEY ON SPECIFIC CAPACITY BUILDING NEEDS OF SIGNATORIES TO THE CMS  
SHARKS MOU RELATED TO THE IMPLEMENTATION OF THE CONSERVATION PLAN  
AND PROGRAMME OF WORK**

*(Prepared by the Secretariat)*

**PART 1:**

**Questionnaire - Survey on specific capacity building needs of Signatories to the CMS  
Sharks MOU related to the implementation of the Conservation Plan and Programme of  
Work**

The Questionnaire below was used for the survey on specific capacity building needs of Signatories to the CMS Sharks MOU relating to the implementation of the Conservation Plan and Programme of Work. It was developed by the Secretariat in consultation with the Advisory Committee. The survey among Focal Points took place between 4/5 August and 15 September 2017.

1. Personal Information:

- a. Surname:
- b. Given names:
- c. Institution (name and address):
- d. Country:
- e. Email:
- f. Telephone:

2. Technical Capacity: Does your country require technical support related to:

**a. Biological research and scientific monitoring of populations**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**b. Collection and reporting of data from artisanal fisheries**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**c. Collection and reporting of data from high seas fisheries**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**d. Stock assessments**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**e. Species identification**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**f. Safe handling and release procedures**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

**g. Bycatch mitigation**

Yes     No

Please provide details on the activity concerned and your specific requirements below:

3. Policy development: Does your country require support with the review and/or development of policies (which may include domestic legislation, action plans, spatial management plans, etc.) to ensure the implementation of the CMS Sharks MOU, relating to:

**a. Sustainable fisheries**

Yes     No

Please provide details on the activity concerned and specific requirements below:

**b. Conservation**

Yes     No

Please provide details on the activity concerned and specific requirements below:

**c. Tourism**

Yes  No

Please provide details on the activity concerned and specific requirements below:

4. Compliance and Enforcement: Does your country require support for compliance and enforcement of policy and legislation, e.g. through strategic advice/guidance or trainings or patrols? (*Funding requirements are subject to question no. 10*)

Yes  No

Please provide details on your specific requirements below:

5. Habitat Conservation and rehabilitation: Does your country require support for habitat conservation and rehabilitation, which may include spatial planning, management of habitats, and designation of essential habitats as Protected Areas, which may include estuarine and brackish waters?

Yes  No

Please provide details on the activity concerned and your specific requirements below:

6. Development and management of Conservation Projects: Does your country require technical support to develop proposal for conservation projects in order to obtain funding. Such projects may concern research, habitat conservation, development of policies or other aspects.

Yes  No

Please provide details on the type of project concerned and your specific requirements below:

7. Awareness Raising and Communication: Does your country require support to raise awareness on the conservation needs of sharks and rays?

Yes  No

Please provide details on the activity concerned and your specific requirements below:

8. Community Participation: Does your country require support to facilitate and encourage cooperative activities with local communities?

Yes  No

Please provide details on the activity concerned and your specific requirements below:

9. Cooperation with other Range States: Does your country require support to liaise and cooperate with non-Signatory and Signatory Range States?

Click for [Map of Signatories and Range States](#)

Yes  No

Please provide details on the activity concerned and your specific requirements below:

10. Funding: Does your country require funding for the implementation of the Conservation Plan and Programme of Work?

Yes  No

Please provide details on the activity concerned and your specific requirements below:

11. Existing expertise: Does your country already have existing expertise, such as research institutes, specialized researchers etc., to support or already supporting any of the activities listed above?

**PART 2:****CAPACITY-BUILDING NEEDS THAT WERE EXPRESSED BY FOCAL POINTS OF SHARKS MOU SIGNATORIES**

The table below summarizes the capacity needs of Sharks MOU Signatories, which national Focal Points of the respective countries have communicated to the Secretariat in the context of the “Survey on specific capacity building needs of Signatories to the CMS Sharks MOU related to the implementation of the Conservation Plan and Programme of Work.”

Original replies were shortened by the Secretariat for a better overview.

[1. Personal Information]

2. Technical Capacity:

a. Biological research and scientific monitoring of populations

<i>Belgium:</i>	<p>Biological research:</p> <ul style="list-style-type: none"> <li>– Fish scales have not been studied in these species very much as potential sources of age information;</li> <li>– Some fragmented studies have been conducted to establish whether vertebrae could be useful in this context;</li> <li>– need for a more encompassing project, including more species, more individuals per species, a bigger age range per species, and a validation phase.</li> </ul> <p>Scientific monitoring of populations:</p> <ul style="list-style-type: none"> <li>– No meaningful index series for demersal sharks for which the highest commercial catches are recorded in areas or at times that are not well covered by these surveys;</li> <li>– Need for an extended observer program directed at demersal sharks (esp. lesser spotted dogfish, greater spotted dogfish, and especially starry smooth-hound);</li> <li>– An observer scheme on Belgian fishing vessel could gather information on demersal sharks in all these areas.</li> </ul>
<i>Chile:</i>	<ul style="list-style-type: none"> <li>– Information gap in identifying species bycatch for having low frequency of occurrence in catches of the longline fleet, drift net and purse seiners, and mainly in trawling fleets of Chile;</li> <li>– Support is needed in the identification of population units of oceanic pelagic sharks (<i>Isurus oxyrinchus</i>, <i>Prionace glauca</i>, <i>Lamna nasus</i>).</li> </ul>
<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Bibliographic study (Literature review);</li> <li>– Identification of experts;</li> <li>– Anthropological studies;</li> <li>– Training and awareness-raising to different conservation methods;</li> <li>– Report writing;</li> <li>– Dissemination of research results.</li> </ul>

<i>Costa Rica (Advisory Committee member):</i>	– Technical capacity is available to carry out research, monitoring and action about shark populations, but often resources are insufficient, especially in the areas of fisheries, acoustic-satellite marking (spatial ecology of migratory species), etc.
<i>Guinea (Focal Point):</i>	<u>Ongoing activities:</u> <i>Sex determination; control of reproduction during the year; sexual maturity stage determination; counts of eggs formed and the number of juveniles per placenta and per species.</i>  <u>Specific needs:</u> – Support for training; technical support and equipment (dissection kits, data sheets, weight scale, fish measuring boards, boots, waterproof jackets, stationary, covers, smoked glass, GPS, phones); food; pharmaceutical kits.
<i>Guinea (Advisory Committee member):</i>	<u>Ongoing activities:</u> <i>Species identification; determination of sex and sexual maturity stage; determination of the period of reproduction; fecundity studies; measurements and weights of landings; fishing surveys for population monitoring.</i>  <u>Specific needs:</u> – Support for training; equipment for fishing and for the collection of biological data; pharmaceutical kits.
<i>Jordan:</i>	– Capacity-building programs on identification of sharks from a taxonomical point of view. – Technical and financial capacities to enhance the skills on sharks monitoring using satellite telemetry techniques.
<i>Mauritania:</i>	– Capacity building in identification and ecological monitoring of species; – Development of guides for shark species; – Coast Guard training on the need for shark protection; – development of a national communication and awareness strategy on the importance of sharks.
<i>Senegal:</i>	– Systematics and species identification; – Collection of essential biological parameters (size, weight, sex and sex-ratio, fertility, timing and location of breeding); – Population monitoring with experimental fishing surveys and stock assessments.
<i>Syria:</i>	– No monitoring of shark populations, nor for catch quantity is taking place.
<i>Togo:</i>	– Very few skills, human qualifications and adequate infrastructure to host research on this issue exist at the national level.

## b. Collection and reporting of data from artisanal fisheries

<i>Chile:</i>	– Improve official statistics on landings of highly migratory shark species, particularly in those fisheries that are part of the companion fauna; – Reinforce capacities in the identification of deep-water chondrichthyans, greater than 200 meters deep, either by courses of traditional taxonomy and genetic taxonomy.
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<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Training/awareness-raising on different data collection methods on artisanal fisheries;</li> <li>– Report writing;</li> <li>– Dissemination of research results.</li> </ul>
<i>Costa Rica (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Different research in progress collecting information associated with artisanal fishing in different parts of the country.</li> <li>– Not much coordination between groups, nor between the fisheries regulatory institutions in the country to make use of this information, nor to make effective management measures proposed.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><u>Ongoing activities:</u> <i>Fishing effort estimations; sampling; fisheries abundance index; monitoring of landings; population counts, species identification, individual frequencies, size, weight and sexual maturity.</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Sample containers, measuring equipment, data sheets, torchlights, gloves, umbrellas, boots, food, pharmaceutical kits.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<p><u>Ongoing activities:</u> <i>Fishing effort estimations; monitoring of landings; deliverance of outcomes of fisheries monitoring.</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– funding for data collection (transport and technical materials) and analysis;</li> <li>– workshop organization for the return or survey results;</li> <li>– workshop organization for awareness-raising for stakeholders on the importance of shark and ray conservation.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Establish a well-designed database, which enable users from friendly access to the information, and support decision making process;</li> <li>– Capacity building on database use and maintenance.</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Strengthen capacities of data collection officers (investigators, fisheries officers, national parks, water and forestry, etc.), sampling and data collecting equipment for landings, data collection and data transfer;</li> <li>– Development of interview guides with the direct stakeholders/officers, means of transportation, operational databases;</li> <li>– Disseminate these data through appropriate means of communication through workshops for the outcomes of results, and actions to raise awareness of the stakeholders in the field.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Software system on data collection of artisanal fisheries production.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>– Only catch and effort data and price data are collected but never analyzed. Biological data are not collected and analyzed.</li> </ul>

c. Collection and reporting of data from high seas fisheries

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– Chile has a longline fleet targeting swordfish catching highly migratory shark species such as <i>Isurus oxyrinchus</i>, <i>Prionace glauca</i> and <i>Lamna nasus</i>. The coverage of fishing trips with scientific observer is close to 100% and sampling is census;</li> <li>– More than 50% of the trips from Arica to Valdivia are collected at landing ports;</li> <li>– Scientific observers in 3-5% of the trips;</li> <li>– Strengthen and expand the sampling coverage of the artisanal fleets.</li> </ul>
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<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Training/awareness-raising on different data collection methods;</li> <li>– Report writing;</li> <li>– Dissemination of research.</li> </ul>
<i>Costa Rica (Advisory Committee member):</i>	– No resources to generate more reliable information on open water fishing activity, fishing effort data and fishing sites, etc. This information should be crucial for the development of measures to ensure the sustainability of our fishery resources.
<i>Guinea (Focal Point):</i>	<p><u>Current activities:</u> <i>onboard observing on boats and trawlers operating in fishing areas; sampling; size frequencies, capture counts, individual frequencies, monitoring of reproduction (dissection, stage of sexual maturity).</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Dissection kits, pharmaceutical kits.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<p><u>Current activities:</u> <i>training of scientific observers; onboard observing on tuna boats and other industrial fishing boats; species identification; determination of sex and sexual maturity; determination of reproductive stage; studies on fecundity; size and weight measurements;</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Identification guides for species of sharks and rays; biological sampling kits; pharmaceutical kits; technological material for data collection and analysis; workshop organization for the return or survey results; workshop organization for awareness-raising for stakeholders on the importance of shark and ray conservation.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Strengthen the collaboration with adjacent countries in means of enhance research attempts, data collection and analysis;</li> <li>– Review of the current legislation, laws and international convention</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Establish a system of data collection with on-board of scientific observers on tuna vessels and other industrial fishing vessels;</li> <li>– Access to data collection equipment, sampling and storage gear, and data transfers;</li> <li>– Disseminate these data by means of adequate means of communication. This implies workshops for the outcomes of results, and actions to raise awareness of the stakeholders in the field.</li> </ul>
<i>Somalia:</i>	– High seas patrolling boats, and communication materials.
<i>Syria:</i>	– Many shark species are caught as occasional catch and thrown back due to lack of economic value.
<i>Togo:</i>	– Very few things are done or known at the national level.

## d. Stock assessments

<i>Belgium:</i>	– See 2a for info on data-poor shark stocks and need for reliable index series.
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<i>Chile:</i>	<ul style="list-style-type: none"> <li>– No population assessments for highly migratory species available, but biological and fishery data are available in the country that in the short term to carry out stock assessments or local estimates;</li> <li>– Human resources with scientific capacity to carry out stock assessments are available, but there are gaps in scientific information;</li> <li>– studies of ecological risk analysis, demographic models and stock assessments of varying degrees of complexity based on available information;</li> <li>– There is a worldwide deficiency in determining population units in the Pacific Ocean, migration circuits and the connection between population units in the southern hemisphere (east - west) and migrations in the northern hemisphere - southern hemisphere.</li> </ul>
<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Bibliographic study (Literature review);</li> <li>– Identification of experts;</li> <li>– Identify non-exploited niches; basic studies;</li> <li>– Training and awareness-raising;</li> <li>– Campaign for species sampling;</li> <li>– Integrated aquaculture;</li> <li>– Analysis and assessment of collected data;</li> <li>– Report-writing and publication/dissemination.</li> </ul>
<i>Costa Rica (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Technical judgment of qualified people who can perform population assessments</li> <li>– No data available that are necessary to perform population assessments.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><i><u>Current activities:</u> work on taxonomy issues; improve data on catches, fishing effort and landings; funding for research and fisheries stock management; coordination for data collection on stocks.</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Human capacity, technical support and equipment.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Technical and financial support for direct stock assessment and statistical analysis</li> <li>– Biological data for indirect assessments.</li> <li>– Organization of stock assessment workshops.</li> <li>– Human capacity</li> <li>– Technical support and equipment.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Capacity building programs for reproduction period of fishes, migration, sex ratio and habitat status and requirements</li> <li>– Support existing entities working on data collection on fisheries</li> <li>– Financial support, technical capacities and alternatives for fishermen.</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Technical and financial support for conducting direct stock assessments and statistical analysis;</li> <li>– Biological data for indirect assessments;</li> <li>– Organization of stock assessment workshops at a national or sub-regional level.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Research Boats;</li> <li>– Technical and financial support.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>– There is no data about stock assessments of shark species in Syrian coast.</li> </ul>

<i>Togo:</i>	<ul style="list-style-type: none"> <li>– Assessments of regional stocks done directly (scientific surveys with oceanographic research vessels) and indirectly (mainly from “COPACE” (CECAF) working groups),</li> <li>– No assessments are done by the national structures (University, Research Institute, etc.)</li> </ul>
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e. Species identification

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– It is important to have genetic identification kits for sharks in the country. To be applied by scientific observers at landing sites and in Customs systems. <i>To encourage the control of these species.</i></li> </ul>
<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Identification of niches and biotopes;</li> <li>– Basic studies;</li> <li>– Training and awareness raising.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><u><i>Current activities:</i></u> <i>counting by basket; counts of landed baskets; species counts; species characterization (juveniles/mature); measuring and weighting of species.</i></p> <p><u><i>Specific needs:</i></u></p> <ul style="list-style-type: none"> <li>– Gloves, boots, waders (waterproof overalls), weight scales, fish measuring scales, species identification sheets.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– identification guides for all species exist but need to be improved.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Capacity building programs on taxonomy and species identification;</li> <li>– define all species which exists in the Gulf of Aqaba of Jordan</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Update species knowledge to have identification guides for all the species present. Guides exist but need to be improved, updated and disseminated.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Training on shark and ray identification, and tools.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>– Continue monitoring species that are recorded for the first time in the Syrian coast, especially deep water species.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>– The fisheries structures benefit from the identification keys of species developed at the regional level (FAO factsheet on the identification of marine fishes in the Gulf of Guinea, Schneider, 1992; etc.);</li> <li>– At national level, there is no competence.</li> </ul>

f. Safe handling and release procedures

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– In the longline fleet, a release treatment of juvenile sharks is carried out, in which the line is cut off to release live specimens, the release rates are of the order of 5%. Most of the dead fish are caught in the fishing fleet;</li> <li>– Improve capacities in handling and release techniques</li> </ul>
<i>Comoros:</i>	<ul style="list-style-type: none"> <li>– Training of technicians</li> </ul>
<i>Guinea (Focal Point):</i>	<p><u><i>Current activities:</i></u> <i>ensuring safety of crew, releasing of juveniles back to sea.</i></p> <p><u><i>Specific needs:</i></u></p>

	– Gloves, boots, waders.
<i>Guinea (Advisory Committee member):</i>	– Training on handling and release techniques.
<i>Jordan:</i>	– Train local communities on best practices in fishing, and develop tool for reporting on illegal fishing; – Identify endangered species, and create a regional Red List of fishes of the Red Sea.
<i>Senegal:</i>	– Training on techniques for handling and releasing.
<i>Somalia:</i>	– Safe handling and release procedure workshop.
<i>Togo:</i>	– Recapture work was carried out in the 1970s on the Togolese continental shelf. Since then, no Togolese have repeated these studies; – Lack of skills and other cities mentioned above; – Sharks captured mainly by artisanal fisheries are scarcely rejected because procedures do not exist.

## g. Bycatch mitigation

<i>Comoros:</i>	– Follow-up and evaluation procedures.
<i>Costa Rica (Advisory Committee member):</i>	– Resources needed to investigate different technologies that allow us to reduce bycatch (understand the spatial ecology patterns of bycatch species that are frequently caught in our fisheries, to make gear changes or implement time-area closures that reduce bycatch).
<i>Guinea (Focal Point):</i>	<i>Current activities: identification of trawlers in shark fishing areas; ban the use of shark fishing gear.</i>  <u>Specific needs:</u> – improve awareness-raising of bycatch to shark fisheries stakeholders.
<i>Guinea (Advisory Committee member):</i>	– equip industrial demersal fishing vessels with avoidance devices for endangered species, such as sharks and rays.
<i>Jordan:</i>	– improve the knowledge of people and fishermen about sharks, and their conservation status.
<i>Senegal:</i>	– equip demersal industrial fishing vessels with avoidance devices for endangered species, such as skates and sharks; – Senegal has such an experience with the use of Nord More grids on deep-sea shrimp fishery trawlers. Good results have been obtained. This experiment can therefore <i>be replicated even in the sub-region.</i>
<i>Somalia:</i>	– Seasonal species trends and immigration period of species.

3. Policy development:

a. Sustainable fisheries

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– Spatial management plans do not explicitly exist, but there are large geographical oceanic islands and in the continental part of the world, fisheries management a indirectly protect the habitat of condrichthyans on the coast of Chile.</li> </ul> <p>No impact assessments have been carried out on these areas for the conservation of important area to develop for Chile.</p>
<i>Costa Rica (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Improving policies that allow sustainable fisheries</li> </ul> <p>Strengthening links with the fishing sector to implement existing policies and adopt new</p>
<i>Guinea (Focal Point):</i>	<p><u>Current activities:</u> Estimation of total fishing effort; characterizing shark fisheries; dev framework for shark fishery activities; biological studies on threatened species; reinfo and fisheries technicians, and of observers on species identification and data collect stakeholders for the respect of biological recovery of stocks and sustainable catches</p> <p><u>Specific needs:</u> Reinforcing capacities of stakeholders through trainings, workshops and meetings; pus sharks in marine protected areas.</p>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Improve the shark fisheries legislation by updating the National Plan of Action for</li> </ul> <p>Technical and fiscal measures should be proposed on the basis of available informatio channels. The CSRFP has supported Guinea in carrying out studies whose results must management measures.</p>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Develop a strategy for fishing at Aqaba, which require experts and resources;</li> </ul> <p>Training of trainers for local communities concerning the sustainable fisheries.</p>
<i>Mauritania:</i>	<ul style="list-style-type: none"> <li>– Development of a national strategy and an action plan, and of legislation allowin of shark stocks in Mauritania;</li> </ul> <p>development of a marine spatial plan for the sustainable management of sharks.</p>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Improve the shark fisheries legislation by updating and implementing the Nati (NPOA-Sharks);</li> </ul> <p>Technical and fiscal measures should be proposed on the basis of available informatio sectors. The SRFC (Sub-Regional Fisheries Commission) has supported Senegal to c must be promoted to propose management measures.</p>
<i>Somalia:</i>	Fisheries management and co-management training.
<i>Syria:</i>	Update the marine biodiversity conservation law to mitigate with new MOUs and agree biodiversity and with guidance of sustainable dealing with sea and fisheries.
<i>Togo:</i>	In-depth scientific and technical knowledge of fishery resources and fisheries, and plan

## c. Conservation

<i>Guinea (Focal Point):</i>	<p><u>Current activities:</u> increased trainings of conservation of marine protected areas; establishing technical and logistical means and materials for ecological monitoring; establishing a framework for consultation and communication between conservationists, resource users and communities; reinforce participatory management; promote the reconversion of stakeholders.</p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Reinforcing capacities of stakeholders through trainings, workshops and meetings; pushing research projects on sharks in marine protected areas; obtaining surveillance boats.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Train CITES agents (Fisheries Research, Waters and Forests, Customs, etc.) to recognize endangered species that are listed in the CITES Appendices;</li> <li>– Raise awareness among stakeholders at the root of the issue of conservation and to support the reconversion of direct stakeholders in the Shark sector (fishermen, processors, fishmongers).</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Develop the ecosystem services concept, and improve technical and financial capacities</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Train officers of Fisheries, National Parks, Water and Forests, etc. to be able to recognize threatened species and that are listed in the CMS and CITES Appendices;</li> <li>– Raise awareness among stakeholders at the root of the issue of conservation and to support the reconversion of direct stakeholders in the Shark sector (fishermen, processors, fishmongers);</li> <li>– Review the legislation to bring it into line with new shark listings in both the CMS and CITES Appendices.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Conservation action plans and principal conservation guidelines workshop.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>– Put in place a national action plan to conserve the sharks at sea, which must be accompanied with awareness campaigns for all social levels about the Shark.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>– Same as the point in paragraph 3 above.</li> </ul>

## d. Tourism

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– No shark tourism activities in Chile.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><u>Current activities:</u> management of marine protected areas and fisheries; development of ecotourism.</p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Human capacity; technical capacity and equipment.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Mainstreaming of shark conservation in tourism activities</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Help with the development of ecotourism activities centered around sharks, particularly around Marine Protected Areas, Reserves and Marine Parks etc.;</li> </ul>

	<ul style="list-style-type: none"> <li>– Develop observation tourism (a live shark is worth more than a dead shark).</li> <li>– Move towards the valuing of resources through ecotourism, based on a communication strategy aimed at discouraging the targeting of sharks by foreign fleets operating under fisheries agreements.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>– Support in the process of announcing the national system of ecotourism.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>– Tourism is working well in Togo.</li> <li>– Support in organizational and structural matters for maritime tourism.</li> </ul>

#### 4. Compliance and Enforcement:

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– Assistance for the incorporation of technologies that allows to optimize public expenditure to carry out these tasks.</li> </ul>
<i>Costa Rica (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– One of the main problems is a combination of lack of resources to support research, lack of resources to support control and surveillance of illegal fishing activity and/or activities (use of illegal gear or illegal fishing sites). The issue of buoys remains an important issue for monitoring fishing vessels, which only a percentage of the fleet has;</li> <li>– Need for criminal proceedings that impose severe fines for non-compliance with national legislation.</li> </ul>
<i>Guinea (Focal Point):</i>	<ul style="list-style-type: none"> <li>– Reinforcing the training of conservation managers; reinforce awareness-raising for shark fisheries stakeholders; reinforce legislation as well as patrols.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>– Strengthen its Monitoring/Control/Surveillance system through the financing of participatory monitoring of artisanal fisheries;</li> <li>– Train surveillance officers in identification of endangered species and that are listed in the Appendices of CITES;</li> <li>– Reinforcing the training of conservation managers;</li> <li>– Reinforce awareness-raising for shark fisheries stakeholders;</li> <li>– Reinforce legislation as well as patrols.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Strengthen the role and skills of the enforcement bodies on shark's conservation</li> </ul>
<i>Mauritania:</i>	<ul style="list-style-type: none"> <li>– Need of national legislation;</li> <li>– Establishment of a mobile brigade for inspections and surveillance;</li> <li>– Capacity building of customs, coast guards and nature protection officers from the ministry.</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Strengthen the Monitoring/Control/Surveillance system through the financing of participatory monitoring of artisanal fisheries;</li> <li>– Train surveillance officers (national parks, Waters and Forests, Fisheries, etc.) in identification of endangered species and that are listed in the Appendices of CMS and CITES.</li> <li>– A weighted increase in fees to discourage large volumes of shark by-catches.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Compliance and enforcement and strategic advice guidance training.</li> </ul>

<i>Syria:</i>	<ul style="list-style-type: none"> <li>– Updating of marine biodiversity conservation law;</li> <li>– Implementing the law needs more capacity building and technical help for staffs;</li> <li>– Putting in place a national strategy for capacity building in this regard.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>– Compliance and enforcement are ensured by the relevant national structures, in particular the National Navy;</li> <li>– Technical and even financial support in the field of surveillance of marine fisheries.</li> </ul>

#### 5. Habitat Conservation and rehabilitation:

<i>Chile:</i>	<ul style="list-style-type: none"> <li>– The establishment of large-scale marine protected areas is a challenge for Chile, in the sense of generating a system of control and monitoring and establishment of ecosystem monitoring systems that allow the availability of indicators that allow the monitoring of their conservation, the communities, populations and species and habitats and also the socioecological system that benefits from its ecosystem goods and services;</li> <li>– In this regard, initiatives of this complexity are important to face as challenges of the country. It is also relevant to the restoration of coastal ecosystems in which fish communities have been diminished in their diversity and abundance due to anthropic interventions of the coastal zone throughout the national territory, particularly by reduction of algae forests.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><i><u>Ongoing activities:</u> Setting up a marine spatial plan; reinforcing participatory management of habitats and fishing zones.</i></p> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>– Human capacities; technical capacities and equipment.</li> </ul>
<i>Jordan:</i>	<ul style="list-style-type: none"> <li>– Designation of the Aqaba Marine Park as a protected area within Jordan's network for protected areas;</li> <li>– Restore degraded habitats through reef transplantation.</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>– Senegal is in the process of establishing marine protected areas (MPAs);</li> <li>– Support for zoning, mapping and monitoring of critical areas for Shark species and their habitats;</li> <li>– Support for the implementation of the Marine Protected Areas (MPA) national strategy for Senegal;</li> <li>– Development, updating and implementation of MPA Management Plans and for Marine Reserves and Parks;</li> <li>– Support for the updating of the NPOA-Sharks and its implementation and the establishment of shark sanctuaries.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>– Conservation and marine habitat restoration workshop.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>– Conservation and restoration of coastal marine areas, especially after the oil pollution of Sea Syria and Lebanon in 2006, and after the impacts of terrorism war from 2001-2017;</li> <li>– Syria has announced one coastal–marine site as a Natural Protected Area, at same time there are more than 15 sites on the waiting list to be announced;</li> </ul>

	<ul style="list-style-type: none"> <li>- Help to announce more sites and conserve them and restoration the others.</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>- Support for a project on the establishment of provisions for fish aggregations in Togolese waters and the creation of Marine Protected Areas (MPAa) is under preparation.</li> </ul>

6. Development and management of Conservation Projects:

<i>Chile:</i>	<ul style="list-style-type: none"> <li>- Project on marine protected areas of oceanic islands and their impact on conservation in highly migratory shark communities;</li> <li>- Surveillance and control systems are required for areas located in distant coastal waters, oceanic areas around remote islands.</li> </ul>
<i>Comoros:</i>	<ul style="list-style-type: none"> <li>- Research project development;</li> <li>- Habitat preservation;</li> <li>- Development of policies;</li> <li>- Population monitoring;</li> <li>- Development of new techniques for species and spatial management.</li> </ul>
<i>Guinea (Focal Point):</i>	<p><u>Current project:</u> <i>Evaluation of artisanal fishing pressure on ray and shark populations in marine protected areas and fishing zones.</i></p> <p>This requires:</p> <ul style="list-style-type: none"> <li>- Development of a concept;</li> <li>- Development of general and specific objectives;</li> <li>- Identify the stakeholders and relevant actors;</li> <li>- Species identification, taking into account size, sex etc.</li> </ul> <p><u>Specific needs:</u></p> <ul style="list-style-type: none"> <li>- Reinforce training on sharks in a specialized institute.</li> </ul>
<i>Guinea (Advisory Committee member):</i>	<ul style="list-style-type: none"> <li>- Support for zoning, mapping and monitoring of critical areas for Shark species and their habitats;</li> <li>- Support should be given to the Network of Marine Protected Areas in West Africa, which works to protect sensitive areas with management plans.</li> </ul>
<i>Mauritania:</i>	<ul style="list-style-type: none"> <li>- Implementation of projects for sustainable financing meant for conservation (trust fund).</li> </ul>
<i>Senegal:</i>	<ul style="list-style-type: none"> <li>- Support to develop projects in areas such as research and monitoring;</li> <li>- Habitat preservation, improved legislation on shark fisheries;</li> <li>- Prohibition of finning;</li> <li>- Enhancing the knowledge of stakeholders, communication and community awareness, etc.</li> </ul>
<i>Somalia:</i>	<ul style="list-style-type: none"> <li>- Support for proposal writing on sharks and rays conservation projects.</li> </ul>
<i>Syria:</i>	<ul style="list-style-type: none"> <li>- Develop proposals and need technical support to get the funding for integrated management of the coastal-marine ecosystem, and the marine biodiversity, which contains some project addresses, researches, and capacity building needs. These requirements are for the period 2018-2025,</li> </ul>
<i>Togo:</i>	<ul style="list-style-type: none"> <li>- Expertise in research to develop habitat preservation projects, policy development, etc.</li> </ul>



7. Awareness Raising and Communication:

<i>Comoros:</i>	– Awareness-raising at the heart of the local communities is necessary to guarantee that activities are monitored and properly executed.
<i>Guinea (Focal Point):</i>	<u>Current activities:</u> <i>awareness raising themes and programs; identification of stakeholders that require more awareness raising.</i>  <u>Specific needs:</u> – Organizing meetings to raise awareness in communities and with stakeholders; wider distribution with the media.
<i>Guinea (Advisory Committee member):</i>	– Support to develop projects in different areas such as research, habitat preservation, improved legislation on shark fisheries, prohibition of finning, etc.
<i>Senegal:</i>	– Raising awareness is required to explain to the public the importance of shark conservation, given their vulnerability and the role they play in the balance of marine ecosystems.
<i>Somalia:</i>	– Awareness raising and communications, through posters, brochures, banners, T-shirts, caps etc.
<i>Syria:</i>	– Awareness campaigns are non-existent, which causes limited funds.
<i>Togo:</i>	– <i>In terms of awareness and communication, the country is already involved in this field;</i> – Some external support could strengthen its operational capacities.

8. Community Participation:

<i>Comoros:</i>	– Local communities remain the key stakeholders and actors in all activities, so we need to encourage community participation.
<i>Guinea:</i>	<u>Current activities:</u> <i>establishing a permanent consultation framework with fishing communities; supporting consultation meetings.</i>  <u>Specific needs:</u> – Organizing meetings with communities; empowering communities to achieve rational and participative management.
<i>Mauritania:</i>	– Establishment of a management committee that includes the local populations, as part of the implementation of the Nagoya protocol on the fair and equitable sharing of benefits arising from phylogenetic resources.
<i>Senegal:</i>	– Support to carry out cooperative activities such as participatory monitoring, co-management, data collection on fisheries and the sharing of results.
<i>Somalia:</i>	– National consultation workshop on communities and fisheries cooperatives, umbrella network on the participation on the decision process.
<i>Syria:</i>	– Participation of local communities (capacity building training and holding of funded workshops to achieve aims).

9. Cooperation with other Range States:

<i>Chile:</i>	– The conservation of oceanic sharks requires the cooperation of coastal states and states with high altitude fleets operating off the coast of South America, whether they are signatories or not.
<i>Comoros:</i>	– Regardless of whether the country is a Signatory or not, we require their support.
<i>Costa Rica (Advisory Committee member):</i>	– Improving communication and coordination with other Signatorie in the region to develop research projects and joint lines of action.
<i>Guinea (Focal Point):</i>	<u>Current activities:</u> <i>reinforcing cooperation with states for information sharing; organizing training workshops with managers and stakeholders.</i>  <u>Specific needs:</u> – Human and technical capacities; equipment.
<i>Guinea (Advisory Committee member):</i>	– Support for sub-regional cooperation and cooperation with other countries concerned at the international level.
<i>Senegal:</i>	– Good cooperation between Signatory and non-Signatory Range States to ensure the sustainability of management measures.
<i>Somalia:</i>	– Support for information sharing and exchanging idea of national, regional and community conservation and lesson learnt from members.
<i>Syria:</i>	– Participate in some activities with Lebanon
<i>Togo:</i>	– Support in terms of cooperation.

10. Funding:

<i>Belgium:</i>	– See 2a & d.
<i>Comoros:</i>	– Funding to implement the Conservation Plan and the Programme of Work.
<i>Costa Rica (Advisory Committee member):</i>	– This is the most critical issue, and research projects are needed led by universities and NGOs capable of generating specific data and carrying out more extensive monitoring, in coordination with the country's fisheries institution
<i>Guinea:</i>	<u>Current activities:</u> <i>obtaining materials and equipment; reinforcing capacity of conservationists; supporting research programs.</i>  <u>Specific needs:</u> – Human and technical capacities; equipment.
<i>Jordan:</i>	– Support the active NGOs working in marine conservation field to obtain funding to implement their work on the ground.
<i>Senegal:</i>	– Funding for the implementation of the Conservation Plan and the Work Programme
<i>Somalia:</i>	– Training on data collection workshop; – Training on identification workshop; – Training on community mobilization workshop.

<i>Syria:</i>	– Financial help and support to implement the conservation plan and programme of work.
<i>Togo:</i>	– Funding for the monitoring, inspections and surveillance of marine fisheries, as well as research actions for the evaluation and revision of the conservation plan and the work program.

11. Existing expertise:

<i>Belgium:</i>	<p><b>Royal Belgian Institute of Natural Sciences (RBINS)</b> Operational Directorate Natural Environment Gulledelle 100, 1200 Brussels, BELGIUM Contact : <b>Kelle Moreau</b> – <a href="mailto:kmoreau@naturalsciences.be">kmoreau@naturalsciences.be</a> - + 32 733 20 35 / +32 486 12 58 77 This group evaluates human impact (including chemical pollution, sand extraction, windmill construction, ..., and also fisheries) on marine environments and their inhabitants, and gives input on these topics to different national and international bodies (e.g. responsible for formulating the Belgian point-of-view on marine fish for CITES).</p> <p><b>Research Institute for Agriculture, Fisheries and Food (ILVO)</b> ILVO-Fisheries Research group on Fisheries Biology Ankerstraat 1, 8400 Oostende, BELGIUM Contact : <b>Els Torreelle</b> – <a href="mailto:els.torreelle@ilvo.vlaanderen.be">els.torreelle@ilvo.vlaanderen.be</a> - +32 59 56 98 33 This group delegates a member to the ICES Working Group on Elasmobranch Fishes (WGEF), and is funded under the EU Common Fisheries Policy.</p>
<i>Chile:</i>	The country has the required specialized resources, such as research institutes (Fisheries Development Institute, fishing institutes of the fishing industry, universities), which are supporting the activities mentioned above. However, the number of scientists is low and their work is aimed at fish resources of greater economic value. In the case of sharks, there is a defined community of national researchers who are still learning, however, it is limited and should be enhanced.
<i>Comoros:</i>	The research institutes are: Université des Comores (UDC), Centre National de Documentation et de Recherche Scientifique (CNDRS) (National Centre for Scientific Research and Documentation), Institut Nationale de Recherche pour l'Agriculture, la Pêche et l'environnement (INRAPE) (National Institute of Research for Agriculture, Fisheries and Environment), Institut National de la Statistique et des Etudes Economique et Démographique (INSEED) (National Institute for Statistics and Economic and Demographic Studies), Association d'Intervention pour le Développement et l'environnement (AIDE) (Intervention Association for Développement and environnement), and Ecole National de Pêche (ENP) (National School of Fisheries).
<i>Costa Rica (Advisory Committee member):</i>	I believe that there are highly qualified people in this country capable of supporting different lines of research and action in the area of sharks and migratory species. This is true for biological, economic, social, and fishing studies, in addition to policies and the implementation of management and conservation measures.

<i>Germany:</i>	<p>A German research project analyzed between July 2013 and February 2016 the presence of shark and ray species in German waters of the North Sea and the Baltic Sea (including the EEC) and the treats to these species including appropriate recommendations for their protection:  ZIDOWITZ, H. et al. (2017): "Gefährdung und Schutz der Haie und Rochen in den deutschen Meeresgebieten der Nord- und Ostsee", BfN-Skripten 450, BfN Bonn.</p> <p>This study is available on the following BfN-webpage (cf. Meeres- und Küstennaturschutz): <a href="http://www.bfn.de/0502_skripten.html">http://www.bfn.de/0502_skripten.html</a></p> <p>The research team worked under the under the supervision of Prof. Dr. Ralf Thiel and under the auspices of the University of HAMBURG. The researchers of this team or the study quoted might be helpful for other projects as asked for.</p>
<i>Guinea:</i>	<p>Guinea has specialized researchers in research centers, notably: Centre National des Sciences Halieutiques de Boussoura (CNSHB) (National Centre of Halieutic Sciences of Boussoura), Centre de Recherche Océanographique de Guinée (CERESCOR) (Oceanographic Research Centre of Guinea), Centre d'Etudes et de Recherches en Environnement (CERE) (Centre of Studies and Environmental Resarch). These research centers have undertaken studies on rays and sharks.</p>
<i>Jordan:</i>	<p>Yes, it does. The entities include governmental, and active NGO</p>
<i>Italy:</i>	<p>Several Italian research institutes and universities are working in the field of research on sharks, among others:  IAMC CNR Mazara del Vallo, ISMAR CNR Genova, ISMAR-CNR Ancona, ISPRA (Italian National Institute for Environmental Protection and Research), Stazione Zoologica Anton Dohrn, and the University of Padova, University of Genova, University of Calabria, University of Bologna and University of Bari</p>
<i>New Zealand:</i>	<p>New Zealand's shark conservation and management is led by the Ministry for Primary Industries (MPI) and the Department of Conservation (for protected species). MPI is responsible for fisheries data collection and reporting (both domestically and on the high seas). There are a number of researchers who are active in stock assessment and conservation.</p>
<i>Senegal:</i>	<p>Existence of the Centre de Recherches Océanographiques de Dakar-Thiaroye (CRODT) (Dakar-Thiaroye Oceanographic Research Center), training and research institutes at the Cheikh Anta Diop University such as the l'Institut Universitaire de Pêche et d'Aquaculture (IUPA) (University Institute of Fisheries and Aquaculture), with researchers able to collect and process information on Sharks.</p> <p>Thus, although there are state institutions responsible for monitoring fish populations, there is a significant lack of information on the biological and ecological aspects of shark populations in Senegal. This is due in part to the lack of local expertise on these species.</p> <p>However, it should be noted that there is a Sub-Regional Fisheries Commission based in Dakar with a specialist in Sharks involved in the activities listed above.</p> <p>Senegal has a Research Center with researchers who can collect information on Sharks but they are not specialized in research on Sharks. However, the CSRP also has a Shark Specialist who is involved in the activities listed above. Other SRCP states have specialists in Sharks (Mauritania, Guinea, Guinea-Bissau, Sierra Leone) that can be mobilized to intervene in these</p>

	activities.
<i>Syria:</i>	Yes. There are one or two specialist researchers of sharks, and there are more research faculties and institutes (Higher institution for marine researches).
<i>Togo:</i>	As mentioned above, expertise and competences are largely lacking, and research is needed to find solutions to this gap.
<i>USA:</i>	<p>NOAA Fisheries, also known as the National Marine Fisheries Service, is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce. We have five regional offices, six science centers, and more than 20 laboratories around the United States and U.S. territories, and we work with partners across the nation. NOAA Fisheries is responsible for the stewardship of the nation's ocean resources and their habitat.</p> <p>Using the Magnuson-Stevens Act as the guide, NOAA Fisheries works in partnership with Regional Fishery Management Councils to assess and predict the status of fish stocks, set catch limits, ensure compliance with fisheries regulations, and reduce bycatch.</p> <p>More information on each Science Center can be found here: <a href="http://www.st.nmfs.noaa.gov/sciencecenters/">http://www.st.nmfs.noaa.gov/sciencecenters/</a></p>