



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Terms of Reference for Consultant X / PSA □

Minimum number of years of relevant experience required: 12+yrs

Name:	
Job Title:	INTERNATIONAL CONSULTANT (Stock assessment) (Category A)
Division/Department:	FIPI
Programme/Project Number:	
Location:	
Expected Start Date of Assignment:	Duration: 30 DAYS
Reports to: Name: Alejandro Anganuzzi	Title: Executive Secretary (Interim)

GENERAL DESCRIPTION OF TASK(S) AND OBJECTIVES TO BE ACHIEVED

**TERMS OF REFERENCE FOR THE PROVISION OF SCIENTIFIC SERVICES TO THE IOTC:
DATA MINING FOR CITES-LISTED SPECIES AND STOCK STATUS AND REVIEW OF MITIGATION
MEASURES FOR OCEANIC WHITETIP SHARK (*CARCHARHINUS LONGIMANUS*)**

Background

At the 16th meeting of the Conference of the Parties (CoP16, Bangkok Thailand, March 2013), the Parties decided to include a number of sharks and rays in CITES Appendix II. The listings entered into force on 14 September 2014. The species are as follows:

- *Sphyrna lewini* (Scalloped hammerhead shark)
- *Sphyrna mokarran* (Great hammerhead shark)
- *Sphyrna zygaena* (Smooth hammerhead shark)
- *Carcharhinus longimanus* (Oceanic whitetip shark)
- *Lamna nasus* (Porbeagle shark)
- *Manta* spp. (*Manta birostris*, Giant manta and *Manta alfredi*, Reef manta)

These recent listings are expected to affect a number of fishery nations that are catching and/or exporting sharks and shark products. For several priority regions and countries identified by an FAO study, a needs assessment conducted on behalf of the CITES Secretariat, identified that available information (fisheries and biological) to support the making of Non-Detriment Findings (NDFs) is in general very poor across all regions. The improvement of the availability of such information is therefore a priority in CITES capacity building work.

The purpose of the IOTC's Working Party on Ecosystems and Bycatch (WPEB) is to review and analyse matters relevant to bycatch, byproduct and non-target species which are affected by IOTC fisheries for tuna and tuna-like species (i.e. sharks, marine turtles, seabirds, marine mammals and other fishes), as well as the ecosystems in which they operate; and to develop mechanisms which can be used to better integrate ecosystem considerations into the scientific advice provided by the Scientific Committee to the Commission. Its focus species include the CITES-listed species Oceanic Whitetip Shark (*Carcharhinus longimanus*) and Scalloped Hammerhead Shark (*Sphyrna lewini*).

With the support of this project the WPEB can implement various activities on Oceanic Whitetip Shark and Hammerhead sharks in its workplan for 2016 to Improve and expand regional data on stock structures of these species and Increase capacity of CITES Parties in the Indian Ocean region for the making of non-detriment findings for the above species, based upon better knowledge of the status of shared stocks;

Objectives

- (1) Improve and expand regional data on stock structures for oceanic whitetip shark (*Carcharhinus longimanus*) and CITES-listed hammerhead sharks, namely *Sphyrna lewini*, *S. mokarran* and *S. zygaena*;
- (2) Support parties in the Indian Ocean region in the implementation of CITES shark listings;
- (3) Increase capacity of CITES parties in the Indian Ocean region for the making of non-detriment findings for the above species, based upon better knowledge of the status of shared stocks;
- (4) Encourage regional cooperation in the sharing of biological, and fisheries data for coherent fisheries management of shared stocks of CITES -listed sharks; and
- (5) Support parties that have been identified as priority countries for capacity development for the implementation of CITES listings.

Scientific Services to be provided:

Activities

Desk Study

The incumbent will conduct a desk study and conduct data mining to compile historical catch data and other data necessary for the development of indicators or a stock assessment of populations of oceanic whitetip shark (*Carcharhinus longimanus*) and CITES-listed hammerhead sharks, namely *Sphyrna lewini*, *S. mokarran* and *S. zygaena* in the IOTC area. This might include nominal catches, catch rates, spatial distribution of these species and fleets catching them, fleet effort, size frequency data, life history stage information, sex ratios, or other information in accordance with the Programme of Work for the IOTC Scientific Committee¹.

This will involve working closely with the IOTC Secretariat and CPCs to review existing information and compile new data which will be provided to the IOTC Secretariat for inclusion in the regional databases for these species.

Progress reporting

A preliminary progress report presenting work conducted so far and plans for the workshop will be presented to:

- the 12th Working Party on Ecosystems and Bycatch of the IOTC (12-15 September, Seychelles) where the incumbent will assist the WPEB in developing management advice for oceanic whitetip sharks and in updating the species Executive Summaries for the consideration of the Scientific Committee.
- the 17th meeting of the Conference of Parties to CITES (CoP17, Johannesburg, 24 September – 5 October 2016) through a joint publication (brochure or leaflet) with the CITES Secretariat.

Data preparatory workshop

The incumbent will organise a workshop with the aim of reviewing new fisheries and biological information on oceanic whitetip sharks and CITES-listed hammerhead sharks in the IOTC area, producing descriptive indicators which CITES Parties in the Indian Ocean region can use to support the making of non-detriment findings in compliance with CITES and reviewing bycatch mitigation measures.

All 32 IOTC Contracting Parties which may have relevant data will be encouraged to submit this for consideration in advance of the workshop. Those IOTC Contracting Parties with the most important catches of these species and selected CITES Parties that have been identified as priority countries for capacity development for the implementation of CITES shark listings, e.g. Yemen, will be invited to participate directly in the workshop in order to provide support and training to national scientists.

¹ (http://iotc.org/sites/default/files/documents/science/workplans/SC_and_WP_Program_of_WorkE.pdf)

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These will be dependent on data availability but might include indicators such as nominal and standardised CPUE indices, size, sex, maturity, distribution, species composition and targeting. Examples of suitable indicators are given here:

<https://www.wcpfc.int/system/files/EB-WP-04%20shark%20indicators%20Rev%201.pdf>

Specific tasks to be developed (in relation to oceanic whitetip sharks and CITES-listed hammerhead sharks):

- 1) To conduct data mining to compile historical data related to stock status (i.e. catch, effort, catch rates).
- 2) To develop and improve methods to produce descriptive indicators of stock status in the IOTC region.
- 3) To calculate species specific indicators, including catch rate, size, sex, maturity, distribution, species composition and targeting.
- 4) To develop descriptive indicators that CITES Parties in the Indian Ocean region can use to support the making of non-detriment findings in compliance with CITES.
- 5) To provide support to national scientists in their analyses of catch and effort data, as required.
- 6) To review new information on stock structure, bycatch mitigation measures, fisheries and associated environmental data.
- 7) To review mitigation measures contained in Resolution 13/06 for oceanic whitetip shark.
- 8) To review/estimate nominal and standardised CPUE indices as required.
- 9) To identify information needs and data gaps for the provision of science-based advice for the management of sharks.
- 10) To assist the WPEB to develop management advice on the status of those shark stocks and in updating the Executive Summaries for the consideration of the Scientific Committee.
- 11) To advise the consideration of options for alternative management measures for those sharks in the IOTC area of competence.
- 12) Shark indicators. Organise a data preparatory workshop and, in advance, encourage the 32 IOTC Contracting Parties to submit relevant data for consideration at the workshop, with the aim to produce descriptive indicators for each key shark species and fishery in the Indian Ocean. Specific objectives are:
 - Historical data mining, including the collection of information about catch, effort and spatial distribution of those species and fleets catching them.
 - Calculate species specific indicators including catch rate, size, sex, maturity, distribution, species composition and targeting.
 - Summarize the results from the workshop in a report, including an assessment of the feasibility to conduct a full stock assessment for the above species in the IOTC area, data gaps, lessons learned and next steps, and make that report available to WPEB meeting.
 - Enhance the participation of selected CPCS that have been identified as priority countries for capacity development.
 - To encourage the CPC's to submit relevant data for consideration at the workshop.
 - To provide advice on if the available information can support a stock assessment.
 - To advise on the selection of Stock Status indicators for those sharks.

Final summary report

In accordance with IOTC–2015–SC18–R[E] the incumbent will develop a stock status report based on indicators of stock health for oceanic whitetip sharks and CITES-listed hammerhead sharks based on a summary of results from the data mining activities and the workshop, including:

- a review of new information on those sharks in the Indian Ocean
- developed and improved methods for producing descriptive indicators of stock status in the IOTC region.
- The calculation of descriptive indicators for oceanic whitetip sharks including catch rate, size, sex, maturity, distribution, species composition and targeting.
- a review of mitigation measures contained in IOTC Resolution 13/06² for oceanic whitetip shark
- an assessment of the feasibility to conduct a full stock assessment for the above species in the IOTC area,
- information needs and data gaps for the provision of science-based advice for the management of oceanic whitetip shark
- capacity needs,

² www.iotc.org/cmm/resolution-1306-scientific-and-management-framework-conservation-sharks-species-caught

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- lessons learned,
- suggested next steps.

The report will be made available to the CITES Secretariat and to the IOTC.

All analyses will be presented with a full methodology and model code used.

Deliverables

- 1) Compiled data sets for the selected CITES shark species in the Indian Ocean
- 2) Descriptive indicators for oceanic whitetip shark (*Carcharhinus longimanus*) and CITES-listed hammerhead sharks
- 3) Project report, including an assessment of
 - mitigation measures contained in IOTC Resolution 13/06³ for oceanic whitetip shark
 - the feasibility to conduct a full stock assessment for the above species in the IOTC area,
 - data gaps,
 - capacity needs,
 - lessons learned,
 - suggested next steps.
- 4) Working document for presentation at the IOTC-WPEB (progress update).
- 5) Material for presentation CITES CoP17 prepared in collaboration with the CITES Secretariat (progress update).

Conditions and payment

In total this Service will require 30 days of work and will include a mission to the designated host country to conduct the data mining workshop and to Seychelles to attend the 12th Session of the Working Party on Ecosystem and Bycatch (WPEB12).

Honorarium is determined by FAO based on previous earnings and pre-approved consultant daily rates in Category A. The IOTC Secretariat will pay the cost of a return airfare (based on FAO travel regulations) from the contractor's home to the WPEB12. A Daily Subsistence Allowance will also be paid in accordance with FAO procedures for attendance at the Working Party meeting.

KEY PERFORMANCE INDICATORS

Expected Outputs:	Required Completion Date:
To provide a draft progress report no later than 15 days prior to the meeting of the WPEB12 (12–16 September 2016, i.e. 28 August 2016).	28 August 2016
Travel to WPEB12, Seychelles, and present an update.	12–16 September 2016
Production of material for presentation at CoP17	24 September 2016
Final analysis and report provided to IOTC Secretariat.	31 December 2016

³ www.iotc.org/cmm/resolution-1306-scientific-and-management-framework-conservation-sharks-species-caught