



**MEMORANDUM OF UNDERSTANDING
ON THE CONSERVATION AND
MANAGEMENT OF MARINE TURTLES
AND THEIR HABITATS OF THE INDIAN
OCEAN AND SOUTH-EAST ASIA**

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**OVERVIEW OF CURRENT IOTC ACTIONS OF INTEREST
FOR THE CONSERVATION OF MARINE TURTLES**

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INFORMATION DOCUMENT related to THE WORK PROGRAMME 2020-2024 measure #6 “Compile information on the status of on-board observer programmes and the status of marine turtle bycatch recording within those observer programmes and share with the Advisory Committee”

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Background

The Indian Ocean Tuna Commission (IOTC) “is an intergovernmental organisation responsible for the management of tuna and tuna-like species in the Indian Ocean. It works to achieve this by promoting cooperation among its Contracting Parties (Members) and Cooperating Non-Contracting Parties in order to ensure the conservation and appropriate utilisation of fish stocks and encouraging the sustainable development of fisheries”¹. There are currently 31 Contracting Parties (Countries), 2 Cooperating Non-Contracting Parties² and IOTC has entered into a number of arrangements with other institutions that take the form of either a formalised Memorandum of Understanding, or informal arrangements to share information.

Regarding the official relations between IOTC and IOSEA MoU, The IOTC cooperates informally with IOSEA (Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding). A number of Indian Ocean Tuna Commission (IOTC) IOTC members are also IOSEA Signatory States. The cooperation is at the level of the subsidiary body of the IOTC in particular the Working Party on Ecosystems and Bycatch and the Scientific Committee.

Several IOTC Conservation and Management Measures (CMMs) and activities are related to Marine Turtles issues.

IOTC Conservation and Management Measures of interest for the conservation of Marine Turtles

IOTC Conservation and Management Measures of interest for the conservation of Marine Turtles currently include Resolutions 12/04; 16/07; 17/07; 18/04 and 19/02.

[Res. 12/04: On the conservation of marine turtles](#)³

Applicable to all fishing vessels on the IOTC Record of Fishing Vessels, the Resolution entails the implementation, as appropriate, of the 2005 FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations⁴ by IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs).

This Resolution stipulates CPCs obligations in ensuring that fisherman bring aboard, if practicable, any captured marine turtle that is comatose or inactive as soon as possible and foster its recovery, including aiding in its resuscitation, before safely returning it to the water

¹ <https://www.iotc.org/>

² <https://www.iotc.org/about-iotc/structure-commission>

³ <https://www.iotc.org/cmm/resolution-1204-conservation-marine-turtles>

⁴ <http://www.fao.org/3/i0725e/i0725e03.pdf>

assuming that (1) that they are aware of and use proper mitigation, identification, handling and de-hooking techniques and (2) that they keep on board all necessary equipment for the release of marine turtles, in accordance with handling guidelines in the IOTC Marine Turtle Identification Cards⁵. The Resolution also lists fleet specific requirements to be met by CPCs with gillnet, longline and purse-seine vessels that fish for species covered by the IOTC Agreement. Including the obligation for operators of such vessels to record and report all incidents involving marine turtles during fishing operations in their logbooks to CPC appropriate authorities.

For operators of longline vessels to carry line cutters and de-hookers in order to facilitate the appropriate handling and prompt release of marine turtles caught or entangled in accordance with the IOTC handling guidelines.

For operators of purse-seine vessels to: a) carry and employ dip nets, when appropriate, to handle marine turtles; b) to avoid encirclement of marine turtles; c) to take practicable measures to safely release turtles encircled or entangled in fish aggregating devices (FADs) or other fishing gear; d) to stop net roll and disentangle turtles entangled in the net without injuring them as soon as the turtle comes out of the water; and d) to assist the recovery of the turtle before returning it to the water in accordance with the IOTC handling guidelines.

Additionally, it requires CPCs to encourages operators of longline vessels to use whole finfish bait and operators of purse-seine vessels to adopt FAD designs that reduce the incidence of entanglement of marine turtles according to international standards.

The Resolution requires CPCs to undertake research trials of circle hooks, use of whole finfish for bait, alternative FAD designs, alternative handling techniques, gillnet design and fishing practices and other mitigation methods which may improve the mitigation of adverse effects on marine turtles. It also requires CPCs to collect (including through logbooks and observer programs) and report on a timely manner all data on their vessels' interactions with marine turtles, including the level of logbook or observer coverage and an estimation of total mortality of marine turtles incidentally caught in their fisheries.

Furthermore, Res. 12/04 requires CPCs to report to the IOTC Scientific Committee information on successful mitigation measures and other impacts on marine turtles in the IOTC area and provides advise on actions to be taken by the IOTC Working Party on Ecosystems and Bycatch for the development of recommendations on appropriate mitigation measures, of improved FAD designs and regional standards covering data collection, data exchange and training.

[Res. 16/07 On the use of artificial lights to attract fish](#)⁶

The Commission adopted Res. 16/07 with the primary objective of to reduce juvenile Bigeye tuna and Yellowfin tuna mortalities from fishing effort on Aggregating Devices and to mitigate possible negative effects on the ecosystem, including on juveniles and the incidental bycatch of non-target species, particularly sharks and marine turtles.

This Resolution prohibits CPCs fishing vessels and other vessels including support, supply and auxiliary vessels from using, installing or operating surface or submerged artificial lights for the purpose of aggregating tuna and tuna-like species beyond territorial waters. The use of lights on DFADs is also already prohibited.

⁵ <https://www.iotc.org/science/species-identification-cards>

⁶ <https://www.iotc.org/cmm/resolution-1607-use-artificial-lights-attract-fish>

[Res. 17/07 On the prohibition to use large-scale driftnets in the IOTC area \(Objection received from Pakistan: does not apply on Pakistan. Resolution 12/12 remains binding on Pakistan\)](#)⁷

Following recommendations by the Scientific Committee that the Commission should consider whether a ban on large scale driftnets should also apply within the EEZs given the negative ecological impacts of large-scale driftnets in areas frequented by marine mammals and turtles. The Commission adopted this Resolution in 2017.

The Resolution applies to vessels that use driftnets for the purpose of targeting tuna and tuna-like species in the IOTC Area of competence and prohibits the use of large-scale driftnets on the high seas within the IOTC area of competence. The Resolution also informs that the use of large-scale driftnets in the entire IOTC area of competence shall be prohibited by 1 January 2022.

[Res. 18/04 On BIOFAD Experimental Project](#)⁸

Recalling that Resolution 12/04 established that the Commission at its annual session in 2013 should consider the recommendations of the IOTC Scientific Committee as regards the development of improved FAD designs (non-entangling drifting and anchored FADs) to reduce the incidence of entanglement of marine turtles, including the use of biodegradable materials, with a view to adopting further measures to mitigate interactions with marine turtles in fisheries covered by the IOTC Agreement the IOTC Commission adopted this Resolution on 2018.

This Resolution acknowledge and support the Biodegradable FAD (BIOFAD) project with the objective of reducing the impact and the amount of synthetic marine debris of the use of non-biodegradable FAD in the ecosystem as requested in Resolution 17/08 [superseded by Resolution 18/08 then by Resolution 19/02].

The Resolution provides a description of the project (see Res. 18/04 Annex 1), requires Project Consortium to make available to the IOTC Scientific Committee the results of the project at the latest two months in advance of its 2020 meeting and informs that the Scientific Committee will analyse the outcomes of the project and provide scientific advice on possible additional FAD management options for consideration by the Commission in 2021.

[Res. 19/02 Procedures on a Fish Aggregating Devices \(FADs\) Management Plan](#)⁹

Recalling that Resolution 12/04 established that the Commission at its annual session in 2013 should consider the recommendations of the IOTC Scientific Committee as regards the development of improved FAD designs (non-entangling drifting and anchored FADs) to reduce the incidence of entanglement of marine turtles, including the use of biodegradable materials, with a view to adopting further measures to mitigate interactions with marine turtles in fisheries covered by the IOTC Agreement the IOTC Commission adopted this Resolution on 2019.

This Resolution applies to CPCs having purse seine vessels and fishing on Drifting Fish Aggregating Devices (DFADs), equipped with instrumented buoys and it stipulates that CPCs are to use non-entangling FADs, in accordance with the IOTC guidelines, to reduce the entanglement of sharks, marine turtles or any other species.

Res. 19/02 encourages CPCs to conduct trials using biodegradable materials to encourage and facilitate the transition to the use of only biodegradable material for DFADS construction by their flagged vessels from 1 January 2022.

⁷ <https://www.iotc.org/cmm/resolution-1707%E2%80%A8-prohibition-use-large-scale-driftnets-iotc-area>

⁸ <https://www.iotc.org/cmm/resolution-1804-biofad-experimental-project>

⁹ <https://www.iotc.org/cmm/resolution-1902-procedures-fish-aggregating-devices-fads-management-plan>

[Res 15/01 On the recording of catch and effort data by fishing vessels in the IOTC area of competence](#)¹⁰

This Resolution requires CPCs to ensure that all fishing vessels flying its flag and authorised to fish species managed by IOTC, be subject to a data recording system. The measure applies to all fishing vessels over 24 metres length overall and those under 24 metres if they fish outside the EEZs of their flag States within the IOTC area of competence. Minimum data collection requirements are set forth in Annex I, II and III of the Resolution.

[Res 15/02 Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties \(CPCs\)](#)¹¹

The Resolution requires CPCs to provide mandatory statistical reporting requirements to the IOTC Secretariat according to specific timelines, including, *inter alia*, information concerning marine turtles as stated in Resolution 12/04 on the conservation of marine turtles (or any subsequent superseding resolutions).

[Res. 11/04 On a Regional Observer Scheme](#)¹²

This Resolution provides the foundations of the development of the IOTC Regional Observer Scheme (ROS) and covers the requirements which are binding on all CPCs. The aim of the IOTC ROS is to “collect verified catch data and other scientific data related to the fisheries for tuna and tuna-like species in the IOTC area of competence”. This will provide independent, reliable, verified and accurate information on catch, effort, fishing practices and the fate of non-target species, including marine turtles, for a sample of all types of vessel operating within the IOTC area of competence.

[Res. 16/04 On the implementation of a Pilot project in view of promoting the Regional observer scheme of IOTC](#)¹³

Resolution 16/04 creates a pilot project aiming to enhance the implementation of the Resolution 11/04 on a Regional Observer Scheme and to raise the level of compliance to the implementation of Resolutions 15/01 and 15/02, respectively on the recording of catch and effort data by fishing vessels in the IOTC area of competence and on mandatory statistical reporting requirements for IOTC CPCs.

In 2018, a set of minimum data collection and reporting fields for observer programmes to adhere have been developed in the context of this project by an independent consultant (Athayde T. co-author of this Working Document). IOTC ROS minimum data collection and reporting fields for observer programmes were review by an IOTC Expert Review Workshop, the IOTC Working Party on Data collection and Statistics and the IOTC Scientific Committee, in 2018, and adopted by the Commission, in 2019.

IOTC activities of interest for the conservation of Marine Turtles

Data collection and reporting

The following data and information on marine turtles are to be sent to the Secretariat in accordance with the specified Resolution.

¹⁰ <https://www.iotc.org/cmm/resolution-1501-recording-catch-and-effort-data-fishing-vessels-iotc-area-competence>

¹¹ <https://www.iotc.org/cmm/resolution-1502-mandatory-statistical-reporting-requirements-iotc-contracting-parties-and>

¹² <https://www.iotc.org/cmm/resolution-1104-regional-observer-scheme>

¹³ <https://www.iotc.org/fr/documents/resolution-1604-implementation-pilot-project-view-promoting-regional-observer-scheme-iotc>

Res. 12/04: On the conservation of marine turtles

1. Data on interactions with marine turtles (paragraph 3) to be reported on a yearly basis using [IOTC report template 1DI- Discards](#)¹⁴. Data to be reported includes the level of logbook or observer coverage and an estimation of total mortality of marine turtles incidentally caught per fisheries. Data fields requested include the quarter of the year, the fishery, the area, the target species, the data processing, the data sources (logbook, observer), the coverage (logbook, observer), the discarded species, the species condition at discard (alive, dead and unknow), sample type (raised to total catch or not), the reason for discard and the units of catch used (round weight in metric tons, number or round weight in kilograms).
2. Progress of implementation of the FAO Guideline to Reduce Sea Turtle Mortality in Fishing Operation (Paragraph 5) and resolution 12/04 on marine turtles to be reported on a yearly basis using the report template provided by the IOTC and summarized in the tables below.

Progress of implementation of the measures of the resolution 12/04
<ul style="list-style-type: none"> • Collect (through logbooks and observer programs) and provide to the Scientific Committee all data on their vessels interactions with marine turtles, • Furnish information to the Scientific Committee on successful mitigation measures and other impacts on marine turtles (such as the deterioration of nesting sites & swallowing of marine debris).
<ul style="list-style-type: none"> • Require fishermen to bring aboard, if practicable, any captured hard-shelled turtle that is comatose or inactive as soon as possible and foster its recovery, including aiding in its resuscitation, before safely returning it to the water. • Ensure that fishermen are aware of and use proper mitigation and handling techniques and keep on board all necessary equipment for the release of turtles
<ul style="list-style-type: none"> • For gillnet vessels Require vessel to record all incidents involving marine turtles in the logbooks and report incidents to authorities of the CPC
<ul style="list-style-type: none"> • For longline vessels (a) Ensure that longline vessels carry line cutters & de-hookers to facilitate the handling and release of marine turtles caught or entangled Ensure that operators of such vessels are required to carry & use dip-nets (b) Encourage use of whole finfish bait; (c) Require vessel to record all incidents involving marine turtles in the logbooks and report incidents to authorities of the CPC.
<ul style="list-style-type: none"> • For purse seine vessels: (a) Ensure that vessels: (i) Avoid encirclement of marine turtles, if a marine turtle is encircled/ entangled, take measures to safely release the turtle. (ii) Release all marine turtles observed entangled in fish aggregating devices (FADs) or fishing gear. (iii) If a marine turtle is entangled in the net, stop net roll as soon as the turtle comes out of the water; disentangle the turtle without injuring it before resuming the net roll; and assist the recovery of the turtle before returning it to the water. (iv) Carry and employ dip nets to handle turtles. (b) Encourage vessel to adopt FAD designs which reduce the incidence of entanglement of turtles; (c) Require vessel to record incidents involving marine turtles in the logbooks and report incidents to authorities of the CPC

¹⁴ <https://www.iotc.org/compliance/reporting-templates>

- CPCs to undertake research trials of circle hooks, use of whole finfish for bait, alternative FAD designs, alternative handling techniques, gillnet design and fishing practices and other mitigation methods which may improve the mitigation of adverse effects on turtles
- CPCs continue to undertake research and development to improve the mitigation of adverse effects on marine turtles & provide research outcomes to the Scientific Committee.
- Collaborate with the IOSEA and take into account the IOSEA MoU

Progress of implementation of the Guidelines to Reduce Sea Turtle Mortality in Fishing Operations

Legal framework

1. Fishing operations / A. Appropriate handling and release.

In order to reduce injury and improve chances of survival:

- (i) Requirements for appropriate handling, including resuscitation or prompt release of all bycaught or incidentally caught (hooked or entangled) sea turtles.
- (ii) Retention and use of necessary equipment for appropriate release of bycaught or incidentally caught sea turtles.

1. Fishing operations / B. Coastal trawl

- (i) In coastal shrimp trawl fisheries, promote the use of turtle excluder devices (TEDs) or other measures that are comparable in effectiveness in reducing sea turtle bycatch or incidental catch and mortality.
- (ii) In other coastal trawl fisheries, collect data to identify sea turtle interactions and conduct where needed research on possible measures to reduce sea turtle bycatch or incidental catch and mortality.
- (iii) Implementation of successful methodologies developed as a result of B(ii).

1. Fishing operations / C. Purse seine

- (i) Avoid encirclement of sea turtles to the extent practical.
- (ii) If encircled or entangled, take all possible measures to safely release sea turtles.
- (iii) For fish aggregating devices (FADs) that may entangle sea turtles, take necessary measures to monitor FADs and release entangled sea turtles, and recover these FADs when not in use.
- (iv) Conduct research and development of modified FADs to reduce and eliminate entanglement.
- (v) Implementation of successful methodologies developed as a result of C(iv).

1. Fishing operations / D. Longline

- (i) Development and implementation of appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices in order to minimize bycatch or incidental catch and mortality of sea turtles.
- (ii) Research should include consideration of the impact of various mitigation measures on sea turtles, target species and other bycaught or incidentally caught species, such as sharks and seabirds.
- (iii) Retention and use of necessary equipment for appropriate release of bycaught and incidentally caught sea turtles, including de-hooking, line cutting tools and scoop nets.

1. Fishing operations / E. Other fisheries

- (i) Assessment and monitoring of sea turtle bycatch or incidental catch and mortality in relevant fishing operations.
- (ii) Research and development of necessary measures for reducing bycatch or incidental catch or to control mortality in other fisheries with a priority on reducing bycatch or incidental catch in gillnet fisheries.
- (iii) In other setnet fisheries, collect data to identify sea turtle interactions and conduct when needed research on possible measures to reduce sea turtle bycatch or incidental catch and mortality.
- (iv) Implementation of successful methodologies developed as a result of E (ii) and (iii).

1. Fishing operations / F. Other measures as appropriate for all fishing practices

(i) Spatial and temporal control of fishing, especially in locations and during periods of high concentration of sea turtles.

(ii) Effort management control especially if this is required for the conservation and management of target species or group of target species.

(iii) Development and implementation, to the extent possible, of net retention and recycling schemes to minimize the disposal of fishing gear and marine debris at sea, and to facilitate its retrieval where possible.

2. Research, monitoring and sharing of information / A. Collection of information and data, and research

(i) Collection of data and information on sea turtle interactions in all fisheries, directly or through relevant RFBs, regional sea turtle arrangements or other mechanisms.

(ii) Development of observer programmes in the fisheries that may have impacts on sea turtles where such programs are economically and practically feasible. In some cases financial and technical support might be required.

(iii) Joint research with other states and/or the FAO and relevant RFBs.

(iv) Research on survival possibilities of released sea turtles and on areas and periods with high incidental catches.

(v) Research on socio-economic impacts of sea turtle conservation and management measures on fishers and fisheries industries and ways to improve communication.

(vi) Use of traditional knowledge of fishing communities about sea turtle conservation and management.

2. Research, monitoring and sharing of information / B. Information exchange

(i) Sharing and dissemination of data and research results, directly or through relevant RFBs, regional sea turtle arrangements or other mechanisms.

(ii) Cooperation to standardize data collection and research methodology, such as fishing gear and effort terminology, database development, estimation of sea turtle interaction rates, and time and area classification.

2. Research, monitoring and sharing of information / C. Review of the effectiveness of measures

(i) Continuous assessment of the effectiveness of measures taken in accordance with these guidelines.

(ii) Review of the implementation and improvement of measures stipulated above.

3. Ensuring policy consistency

A. Maintaining consistency in management and conservation policy at national level, among relevant government agencies, including through inter-agency consultations, as well as at regional level.

B. Maintaining consistency and seeking harmonization of sea turtle management and conservation-related legislation at national, sub-regional and regional level.

4. Education and training

A. Preparation and distribution of information materials such as brochures, manuals, pamphlets and laminated instruction cards.

B. Organization of seminars for fishers and fisheries industries on:

– Nature of the sea turtle-fishery interaction problem

– Need to take mitigation measures

– Sea turtles species identification

– Appropriate handling and treatment of bycaught or incidentally caught sea turtles

– Equipment to facilitate rapid and safe release

– Impacts of their operations on sea turtles

– Degree to which the measures that are requested or required to adopt will contribute to the conservation, management and recovery of sea turtle population.

– Impacts of mitigation measures on profitability and success of fishing operations

– Appropriate disposal of used fishing gear

C. Promotion of awareness of the general public of sea turtle conservation and management issues, by government as well as other organizations

5. Capacity building

- A. Financial and technical support for implementation of these guidelines in developing countries.
- B. Cooperation in research activities such as on status of sea turtle incidental catch in coastal and high seas fisheries and research at foraging, mating and nesting areas.
- C. Establishment of a voluntary support fund.
- D. Facilitation of technology transfer.

6. Socio-economic and cultural considerations

- A. Taking into account:
 - (i) socio-economic aspects in implementing sea turtle conservation and management measures.
 - (ii) cultural aspects of sea turtles interactions in fisheries as well as integration of cultural norms in sea turtle conservation and management efforts.
 - (iii) sea turtle conservation and management benefits to fishing and coastal communities, with particular reference to small-scale and artisanal fisheries.
- B. Promotion of the active participation and, where possible, cooperation and engagement of fishing industries, fishing communities and other affected stakeholders.

8. Consideration of other aspects of sea turtle conservation and management

Fishers, research institutions, management authorities and other interested parties dealing with fisheries conservation and management should collaborate with relevant conservation and management bodies, at national, sub-regional and regional level, in the following subject matters:

- A. Collection and sharing of information on sea turtles relative to:
 - (i) Biology and ecology (population dynamics, stock identification, behaviour, diet selection, habitats, breeding, nesting, foraging, migration patterns/areas, nursery grounds, etc).
 - (ii) Sources of mortality other than fisheries.
 - (iii) Status of sea turtle populations, including human-related threats.
- B. Improvement and development of conservation and management measures applied throughout the sea turtle life cycle (habitat/ nesting beach protection, enhancement of sea turtle populations).
- C. Promotion, as appropriate, of participation in regional sea turtle conservation and management arrangements with a view to cooperate on sea turtle conservation and management.

3. The respect of the obligation for Longline vessels to carry on board line cutters and de-hookers (paragraph 8) to be reported.
4. The respect of the obligation for Purse-seine vessels to on board dip nets (paragraph 9) to be reported.

[Res 15/01 On the recording of catch and effort data by fishing vessels in the IOTC area of competence](#)

1. Resolution minimum data collection requirements include the collection of information on the number of marine turtles caught. So far, reporting of sea turtle interactions are not required at the species level under this resolution.

[Res 15/02 Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties \(CPCs\)](#)

1. Mandatory statistical reporting information concerning marine turtles - as stated in Resolution 12/04 - to be reported to the IOTC Secretariat according to specific timelines

provided in the [Guide to IOTC data and information reporting requirements for Members and Cooperating Non-contracting Parties](#)¹⁵

Res. 11/04 On a Regional Observer Scheme

1. Report of the number of vessels monitored and the coverage achieved by gear type (paragraph 9) to be provided by CPCs to the Executive Secretary and the Scientific Committee annually.
2. Observer reports (paragraph 11) to be sent by the CPCs to the Executive Secretary within 150 days at the latest, as far as continuous flow of report from observer placed on the longline fleet is ensured, which is recommended to be provided with 1°x1° format.
3. Observer reports to be provided to the Executive Secretary using IOTC Observer Trip Report Template and IOTC Observer Forms¹⁶.
4. [Revised IOTC ROS minimum data collection and reporting fields for observer programmes](#)¹⁷ comprise the collection of information on:
 - a. general vessel and trip information for all vessels;
 - b. gear specifications including the use of mitigation devices;
 - c. fishing event information including
 - i. mitigation measures used to reduce the capture of marine turtles (low light night setting, branchline weighted, sinker average weight, % branchlines weighted, hook-sinker distance, underwater setting, and other mitigation measures used);
 - ii. detailed information on the gear
 1. longline gear (hook type, % hooks set by type, variations in hook type, hook material and presence/absence of hook ring, bait type, bait species, bait ratio (%), and bait dye colour);
 2. gillnet gear (staking of panels, net length, depth, material and colour; mesh size, etc.);
 3. purse-seine gear (artificial FAD design, etc.);
 4. pole and line gear;
 - iii. detailed information on bait fishing in the context of pole and line operations (time, depth, distance from coast, etc.);
 - d. Information on marine turtles captures (species, number, fate, condition at capture and at release, gear interaction, hook type, bait type, leader material, leader thickness, de-hooker/line cutter used, if brought on board, how the specimen was brought on-board, information if the release took place with resuscitation or not and photo), specimens biometrics (length and/or weight, sex and maturity), samples and tags.

Follow up on CPCs individual compliance with IOTC conservation and management measures in the IOTC Area and data collection and reporting obligations

Under the IOTC Agreement, Article X, and through Appendix V of the IOTC Rules of Procedure, CPCs are required to report on their progress of implementation and compliance issues with respect to implementation of IOTC Conservation and Management Measures.

¹⁵ <https://www.iotc.org/documents/guide-iotc-data-reporting-requirements-contracting-parties-and-cooperating-non-0>

¹⁶ <https://www.iotc.org/science/regional-observer-scheme-science>

¹⁷ IOTC. 2018. Report of the 21st Session of the IOTC Scientific Committee. Appendix 6A IOTC ROS Minimum Reporting Standards. Ref: IOTC–2018–SC21–R[E].
https://iotc.org/documents/SC/21/Report_E

Monitoring of compliance is conducted through the assessment of reports, data and information provided by CPCs, as per reporting requirements set in the various resolutions. The IOTC Secretariat compiles data provided and reviews individual CPC compliance status reports. This information is provided to IOTC Working Parties and to the Compliance and Scientific Committee for analysis and the drafting of management advice to the Commission.

Compliance status concerning CMMs of interest for the conservation of Marine Turtles

Summary on individual CPC compliance status with IOTC CMMs of interest for the conservation of Marine Turtles presented below has been compiled based on the review of the [Report of the 23rd Session of the IOTC Scientific Committee \(2020\)](#)¹⁸

IOTC CPCs STATUS OF DEVELOPMENT AND IMPLEMENTATION OF THE FAO GUIDELINES TO REDUCE MARINE TURTLE MORTALITY IN FISHING OPERATIONS (2019)¹⁹

CPC	Marine turtles	Date of implementation	Comments
Members			
Australia		2003	Australia's current marine turtle bycatch management and mitigation measures fulfil Australia's obligations under the FAO-Sea turtles Guidelines
Bangladesh			Bangladesh currently have no information on their implementation of FAO guidelines on sea turtles. The Wildlife Conservation and Security Act introduced in 2012 lays out general rules on requirements for hunting wild animals but no specific mention of turtles.
China			No information received by the Secretariat.
-Taiwan, China			Wildlife Protection Act introduced in 2013, Protected Wildlife shall not be disturbed, abused, hunted, killed, traded, exhibited, displayed, owned, imported, exported, raised or bred, unless under special circumstances recognized in this or related legislation. <i>Cheloniidae spp.</i> , <i>Caretta Caretta</i> , <i>Chelonia mydas</i> , <i>Eretmochelys imbricata</i> , <i>Lepidochelys olivacea</i> and <i>Dermochelys coriacea</i> are listed into List of Protected Species. Domestic Fisheries Management Regulation on Far Sea Fisheries request all fishing vessels must carry line cutters, de-hookers and hauling nets in order to facilitate the appropriate handling and prompt release of marine turtles caught or entangled.
Comoros			According to the Comoros Fisheries Code Article 78, fishing, capture, possession and marketing of turtle and marine mammals or of protected aquatic organisms is strictly forbidden in accordance with national legislation in force and International Conventions applicable to the Comoros.
Eritrea			No information received by the Secretariat.
European Union		2007	European Union Council Regulation (EC) No 520/2007 of 7 May 2007 lay down technical measures for the conservation of marine turtles including articles and provisions to reduce marine

¹⁸ <https://www.iotc.org/documents/SC/23/RE>

¹⁹ <https://iotc.org/science/table-progress-implementing-npoa-sharks-npoa-seabirds-and-fao-guidelines-reduce-sea-turtle-mortality>

			turtle bycatch. The regulation urges Member States to do their utmost to reduce the impact of fishing on sea turtles, in particular by applying the measures provided for in paragraphs 2, 3 and 4 of the resolution.
France (territories)		2015	The NPOA turtles has been implemented from 2015-20 and is now under review for its renewal. The NPOA covers the five species of marine turtles that are present in the southwest Indian Ocean.
India			No information received by the Secretariat.
Indonesia			Indonesia has established an NPOA for Marine Turtles but this does not fully conform with FAO guidelines. Indonesia has also been implementing Ministerial Regulation 12/2012 regarding captured fishing business on high seas to reduce turtle bycatch.
Iran, Islamic Republic of			The National Action Plan for the Protection of Iranian Sea Turtles has been developed with the guidance and participation and approval of the Iranian Department of the Environment. The details of this plan will be communicated with the secretariat.
Japan			All Japanese fleets fully implement Resolution 12/04.
Kenya			The Kenyan fisheries law prohibits retention and landing of turtles caught incidentally in fishing operations. Public awareness efforts are conducted for artisanal gillnet and artisanal longline fishing fleets on the mitigations measures that enhance marine turtle conservation. Kenya plans to develop a NPOA for turtles after the NPOA Sharks has been finalised.
Korea, Republic of			All Rep. of Korea vessels fully implement Res 12/04.
Madagascar			There is zero capture of marine turtle recorded in logbooks. All longliners use circle hooks. This has been confirmed by onboard observers and port samplers.
Malaysia		2008	A NPOA For Conservation and Management of Sea Turtles had been published in 2008. A revision will be published in 2017.
Maldives, Republic of			Longline regulation has provisions to reduce marine turtle bycatch. The regulation urges longline vessels to have dehookers for removal of hook and a line cutter on board, to release the caught marine turtles as prescribed in Resolution 12/04. Maldives considers that sea turtle entanglement and bycatch is not an issue in Maldives fisheries especially with the recent cessation of the Maldives Long line fishery.
Mauritius			Marine turtles are protected by the national law. Fishing companies have been requested to carry line cutters and de-hookers in order to facilitate the appropriate handling and prompt release of marine turtles caught or entangled.
Mozambique			Mozambique is regularly briefing the Masters of their fishing vessels on the mandatory requirement to report any turtle interaction with longliner fleet.
Oman, Sultanate of			The law does not allow the catch of sea turtles, and the fishermen are requested to release any hooked

			or entangled turtle. The longline fleet are required to carry out the line cutters and de-hookers.
Pakistan			Pakistan has already framed Regulations regarding the prohibition of catching and retaining marine turtles. As regards to the reduction of marine turtle bycatch by gillnetters; presently Marine Fisheries Department (MFD) in collaboration with International Union for Conservation of Nature (IUCN) Pakistan, is undertaking an assessment. Stakeholder Coordination Committee Meeting was conducted on 10th September 2014. The "Turtle Assessment Report (TAR)" will be finalized by February 2015 and necessary guidelines / action plan will be finalized by June 2015. As per clause -5 (c) of Pakistan Fish Inspection & Quality Control Act, 1997, "Aquatic turtles, tortoises, snakes, mammals including dugongs, dolphins, porpoises and whales etc" are totally forbidden for export and domestic consumption.
Philippines			No information received by the Secretariat.
Seychelles, Republic of			IOTC mandatory requirements for marine turtles are being addressed through the ATF (Certificate of Authorisation to Fish). Data reporting requirements are addressed via logbook and observer programmes.
Sierra Leone			No information received by the Secretariat.
Somalia			The Somali national fisheries law and legislation was reviewed and approved in 2014. This includes Articles on the protection of marine turtles. Further review of the National Law is underway to harmonize this with IOTC Resolutions and is expected to be presented to the new parliament for endorsement in 2017. A consultation process has begun in order to implement FAO guidelines on reducing sea turtle mortality.
South Africa, Republic of			The South African permit conditions for the large pelagic longline fishery prohibits landing of turtles. All interactions with turtles are recorded, by species, within logbooks and in observer reports, including data on release condition. Vessels are required to carry a de-hooker on board and instructions on turtle handling and release in line with the FAO guidelines are included in the South African Large Pelagic permit conditions. All turtle interactions in respective areas of competence are reported to the respective RFMOs. Recent South African led studies on impact of marine debris on turtles have been published in the scientific literature (Ryan et al. 2016). Marine turtle nesting sites in South Africa are protected by coastal MPAs since 1963.
Sri Lanka			Implementation of the FAO Guideline to Reduce Sea Turtle Mortality in Fishing Operation in 2015 was submitted to IOTC in January 2016. Marine turtles are legally protected in Sri Lanka. Longliner vessels are required to have dehookers for removal of hooks and a line cutter on board, to release the caught marine turtles. Gillnets longer than 2.5 km are now prohibited in domestic

			legislation. Reporting of bycatch has made legally mandatory and facilitated via logbooks.
Sudan			No information received by the Secretariat.
Tanzania, United Republic of			Sea turtles are protected by law. However as there is a national turtle and Dugong conservation committee that oversee all issues related to sea turtles and dugongs. There is no information so far with regards to interaction between sea turtles and long line fishery.
Thailand			Thailand reports on progress of the implementation of FAO guidelines on turtles in their National Report to IOTC. Laws relating to conservation of marine turtles include: a prohibition on catching marine turtles; discarding of any marine turtles caught and recording details on catches; and a requirement to take care of injured marine turtles that have been caught.
United Kingdom			British Indian Ocean Territory (Chagos Archipelago) waters are a Marine Protected Area closed to fishing except recreational fishing in the 3nm territorial waters around Diego Garcia. Separate NPOAs have not been developed within this context. No marine turtles are captured in the recreational fishery. A monitoring programme is taking place to assess the marine turtle population in UK (OT).
Yemen			No information received by the Secretariat.
Cooperating Non-Contracting Parties			
Liberia			No information received by the Secretariat.
Senegal			No information received by the Secretariat.

Colour key	
Completed	
Drafting being finalised	
Drafting commenced	
Not begun	

Management Advice – Marine Turtles Indian Ocean stock

The Executive Summary ([Annex 1](#)) of the 23rd IOTC Scientific Committee notes that “no assessment has been undertaken by the IOTC WPEB for marine turtles due to the lack of data being submitted by CPCs”. Management advice to the Commission highlights, *inter alia*, the need for the IOTC Compliance Committee to develop appropriate mechanisms to ensure CPCs comply with data collection and reporting requirements for marine turtles and recommends that CPCs start to declare interactions indicating the sea turtle species. As so far, reporting of sea turtle interactions are not required at the species level by the IOTC Res 15/01.

Annex 1 - EXECUTIVE SUMMARY: MARINE TURTLES²⁰

IOTC–2020–SC23–R[E]

APPENDIX 30
EXECUTIVE SUMMARY: MARINE TURTLES



Table 17. Marine turtles: IUCN threat status for all marine turtle species reported as caught in fisheries within the IOTC area of competence.

Common name	Scientific name	IUCN threat status ⁷
Flatback turtle	<i>Natator depressus</i>	Data deficient
Green turtle	<i>Chelonia mydas</i>	Endangered
Hawksbill turtle	<i>Eretmochelys imbricata</i>	Critically Endangered
Leatherback turtle	<i>Dermochelys coriacea</i>	
	(N. East Indian Ocean subpopulation)	Data deficient
	(S. West Indian Ocean subpopulation)	Critically Endangered
Loggerhead turtle	<i>Caretta caretta</i>	
	(N. West Indian Ocean subpopulation)	Critically Endangered
	(S. East Indian Ocean subpopulation)	Near Threatened
Olive Ridley turtle	<i>Lepidochelys olivacea</i>	Vulnerable

Sources: Marine Turtle Specialist Group 1996, Red List Standards & Petitions Subcommittee 1996, Sarti Martinez (Marine Turtle Specialist Group) 2000, Seminoff 2004, Abreu-Grobois & Plotkin 2008, Mortimer et al. 2008, IUCN 2020, The IUCN Red List of Threatened species. <www.iucnredlist.org>. Downloaded on 16 September 2020

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. No assessment has been undertaken by the IOTC WPEB for marine turtles due to the lack of data being submitted by CPCs. However, the current International Union for Conservation of Nature (IUCN) threat status for each of the marine turtle species reported as caught in IOTC fisheries to date is provided in Table 17. It is important to note that a number of international global environmental accords (e.g. Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD), as well as numerous fisheries agreements obligate States to provide protection for these species. In particular, there are now 35 Signatories to the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA MoU). Of the 35 Signatories to the IOSEA MoU, 23 are also members of the IOTC. While the status of marine turtles is affected by a range of factors such as degradation of marine turtle natural habitats and targeted harvesting of eggs and turtles, the level of mortality of marine turtles due to capture by gillnets is likely to be substantial as shown by the Ecological Risk Assessment (ERA) presented in 2018 (Williams et al., 2018). Stock assessments of all species of marine turtles in the Indian Ocean are limited due to data insufficiencies as well as limited data quality (Wallace et al., 2011). Bycatch and mortality from gillnet fisheries have greater population-level impacts on marine turtles relative to other gear types, such as longline, purse seine and trawl fisheries in the Indian Ocean (Wallace et al., 2013). Population levels of impacts of leatherback turtles caught in longline gear in the Southwest Indian Ocean were also identified as a conservation priority.

Outlook. Resolution 12/04 *On the conservation of marine turtles* includes an annual evaluation requirement (para. 17) by the Scientific Committee (SC). However, given the lack of reporting of marine turtle interactions by CPCs to date, such an evaluation cannot be undertaken. Unless IOTC CPCs become compliant with the data collection and reporting requirements for marine turtles, the WPEB and the SC will continue to be unable to address this issue. So

⁷ IUCN, 2020. The process of the threat assessment from IUCN is independent from the IOTC and is presented for information purpose only

²⁰ IOTC. 2020. *Report of the 23rd Session of the IOTC Scientific Committee. Appendix 30. Page 162 to 164.* Ref. IOTC–2020–SC23–R[E].

far, reporting of sea turtle interactions are not described at the species level. It is recommended that CPCs now declare interactions indicating the sea turtle species. Guides for species identification are available at <http://iotc.org/science/species-identification-cards>. Notwithstanding this, it is acknowledged that the impact on marine turtle populations from fishing for tuna and tuna-like species will increase as fishing pressure increases, and that the status of the marine turtle populations will continue to worsen due to other factors such as an increase in fishing pressure from other fisheries or anthropological or climatic impacts.

The following should also be noted:

1. The available evidence indicates considerable risk to marine turtles in the Indian Ocean.
2. Given the high mortality rates associated with marine turtle interactions with gillnet fisheries and the increasing use of gillnets in the Indian Ocean (Aranda, 2017) there is a need to both assess and mitigate impacts on threatened and endangered marine turtle populations.
3. The primary sources of data that drive the ability of the WPEB to determine a status for the Indian Ocean, total interactions by fishing vessels or in net fisheries, are highly uncertain and should be addressed as a matter of priority.
4. Current reported interactions are known to be a severe underestimate.
5. The Ecological Risk Assessment (Nel et al., 2013) estimated that ~3,500 and ~250 marine turtles are caught by longline and purse seine vessels, respectively, per annum, with an estimated 75% of turtles released alive⁷. The ERA set out two separate approaches to estimate gillnet impacts on marine turtles, based on very limited data. The first calculated that 52,425 marine turtles p.a. and the second that 11,400–47,500 turtles p.a. are caught in gillnets (with a mean of the two methods being 29,488 marine turtles p.a.). Anecdotal/published studies reported values of >5000–16,000 marine turtles p.a. for each of India, Sri Lanka and Madagascar. Of these reports, green turtles are under the greatest pressure from gillnet fishing, constituting 50–88% of catches for Madagascar. Loggerhead, hawksbill, leatherback and olive Ridley turtles are caught in varying proportions depending on the region, season and type of fishing gear.
6. Maintaining or increasing fishing effort in the Indian Ocean without appropriate mitigation measures in place, will likely result in further declines in marine turtle populations.
7. Efforts should be undertaken to encourage CPCs to investigate means to reduce marine turtle bycatch and mortality in IOTC fisheries.
8. That appropriate mechanisms are developed by the Compliance Committee to ensure CPCs comply with their data collection and reporting requirements for marine turtles.

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