



PROCEDURES ON A FISH AGGREGATING DEVICES (FADs) MANAGEMENT PLAN, INCLUDING MORE DETAILED SPECIFICATIONS OF CATCH REPORTING FROM FAD SETS, AND THE DEVELOPMENT OF IMPROVED FAD DESIGNS TO REDUCE THE INCIDENCE OF ENTANGLEMENT OF NON-TARGET SPECIES

SUBMITTED BY: MAURITIUS, 27 MARCH 2015

Explanatory Memorandum

The proposed Resolution enhancing Resolution 13/08 on Management Plan Procedures on a Fish Aggregating Devices (FADs), including a limitation on the number of FADs deployed by each purse seiner, provisions for marking and monitoring of the FADs, more detailed specifications for reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species shall be developed and considered for adoption by the Commission at its regular Annual session in 2015.

This new resolution aims to improve conservation measures and management of Drifting Fish Aggregating Devices (DFADs) in IOTC, notably by reducing the mortality of non-target, associated and dependent species (NTADs) which form a higher proportion of the catch on small sets on floating objects.

Pending analysis by an ad hoc IOTC DFAD multidisciplinary working group, current estimates place the increase in the number of DFADs at over 70% since the early 2000s.



RESOLUTION 15/XX13/08

PROCEDURES ON A FISH AGGREGATING DEVICES (FADS) MANAGEMENT PLAN, INCLUDING MORE DETAILED SPECIFICATIONS OF CATCH REPORTING FROM FAD SETS, AND THE DEVELOPMENT OF IMPROVED FAD DESIGNS TO REDUCE THE INCIDENCE OF ENTANGLEMENT OF NON-TARGET SPECIES

Keywords: Fish aggregating device (FAD); Non-target species;

The Indian Ocean Tuna Commission (IOTC),

BEARING IN MIND that the Agreement for the implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) encourages coastal States and fishing States on the high seas to collect and share, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort;

MINDFUL of the call upon States, either individually, collectively or through regional fisheries management organisations and arrangements in the United Nations General Assembly Resolution 67/79 on Sustainable fisheries to collect the necessary data in order to evaluate and closely monitor the use of large-scale fish aggregating devices and others, as appropriate, and their effects on tuna resources and tuna behaviour and associated and dependent species, to improve management procedures to monitor the number, type and use of such 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;

NOTING that the United Nations Food and Agricultural Organization (FAO) Code of Conduct for Responsible Fishing provides that States should compile fishery-related and other supporting scientific data relating to fish stocks covered by sub-regional or regional fisheries management organisations and provide them in a timely manner to the organisation;

RECOGNISING that all gears deployed to target resources under the competence of IOTC should be managed to ensure the sustainability of fishing operations;

GIVEN that the activities of supply vessels and the use of Fish Aggregating Devices (FAD) are an integral part of the fishing effort exerted by the purse seine fleet;

AWARE that the Commission is committed to adopt Conservation and Management Measures to reduce juvenile bigeye tuna and yellowfin tuna mortalities from fishing effort on Fish Aggregating Devices (FADs);

~~AWARE that the availability of adequate information is fundamental to carrying out the objectives of the IOTC Agreement laid down in its Article V;~~

~~NOTING that the IOTC Scientific Committee advised the Commission to conduct an investigation of the feasibility and impacts of a temporary FAD closure as well as other measures in the context of Indian Ocean fisheries and stocks;~~

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 to reduce the incidence of entanglement of marine turtles, including the use of biodegradable materials, together with socio-economic considerations, with a view to adopting further measures to mitigate interactions with marine turtles in fisheries covered by the IOTC Agreement;



RECALLING that Resolution 13/08 established procedures on a fish aggregating device (FAD) management plan, including more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species;

NOTING that the IOTC Scientific Committee advised the Commission that only non-entangling FADs, both drifting and anchored, should be designed and deployed to prevent the entanglement of sharks, marine turtles and other species;

NOTING that the IOTC Scientific Committee advised the Commission to conduct an investigation of the feasibility and impacts of a temporary FAD closure as well as other measures in the context of Indian Ocean fisheries and stocks;

RECALLING that the objective of the IOTC Agreement is to ensure, through appropriate management, the conservation and optimum utilisation of stocks covered by the mentioned Agreement and encouraging sustainable development of fisheries based on such stocks and minimising the level of bycatches;

ADOPTS, in accordance with the provisions of Article IX, paragraph 1 of the IOTC Agreement, the following:

1. This Resolution shall apply to CPCs having purse seine vessels and ~~bait-supply vessels/boats~~ fishing on Fish Aggregating Devices (FADs), for the purpose of aggregating tuna target species, in the IOTC area of competence.
2. This Resolution defines an instrumented buoy as a buoy with a clearly marked reference number allowing its identification equipped with a GPS and a satellite communication system to monitor its position. Other buoys such as radio buoys not meeting this definition are to be banned as from the 1st January 2016.
3. This Resolution sets the maximum number of instrumented buoys active and followed by a purse seine vessels including associated or independent supply vessel(s) at 400 instrumented buoys at any one time, the active number being calculated as the number of active buoys operated by a purse seine vessels including associated or independent supply vessel(s). The number of instrumented buoys that shall be acquired annually by each purse seine vessel is set at no more than 800.
4. CPCs having vessels fishing on FADs shall submit, to their flag state and to the Commission, by the end of 2015, provisional 2016 command of instrumented buoys for their purse seine vessels including associated or independent supply vessel(s) under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).
5. CPCs having vessels fishing on FADs shall submit, to their flag state and to the Commission, by the end of 2016 the number of buoys activated, deactivated and active on each quarter during 2016 by their purse seine vessel including associated or independent supply vessel(s) under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).
6. CPCs having vessels fishing on FADs shall submit, to their flag state and to the Commission, by the end of 2016 the telecommunication bills for buoys for each month during 2016 for their purse seine vessels under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution) to ensure that there are a maximum of 400 instrumented buoys active at sea at any time and 800 acquired annually.
- ~~7.~~ All CPCs shall ensure that all fishing vessels as referred to in paragraph 1 shall record fishing activities in association with FADs using the specific data elements found in **Annex I** (DFAD) and **Annex II** (AFAD) in the section of the “FAD-logbook”.
- ~~8.~~ CPCs having vessels fishing on FADs shall submit, to the Commission, by the end of 2013, Management Plans for the use of FADs by their purse seiners ~~and bait boat/~~ vessels. Due to their specificity in terms of users, number



deployed, type of boat/vessel involved, fishing method and gear used and materials used in their construction, the Management Plans and Reporting Requirements for Drifting FADs (DFAD) and Anchored FADs (AFAD) shall be addressed separately for the purposes of this Resolution. The Plans shall at a minimum meet the Suggested Guidelines for Preparation for FAD Management Plans by each CPC as provided for DFADs in **Annex I** and AFADs in **Annex II**. For the purpose of this Resolution, the term Fish Aggregating Device means drifting (DFAD) or anchored floating or submerged objects (AFAD) deployed for the purpose of aggregating target tuna species.

3.9. The Management Plans shall be analysed by the IOTC Compliance Committee at its ~~2014~~2016 session.

~~4. Starting in 2015, CPCs shall submit the data elements prescribed in Annex I and II to the Commission, consistent with the IOTC standards for the provision of catch and effort data, and these data shall be made available for analysis to the IOTC Scientific Committee on the aggregation level set by Resolution 10/02 (or any subsequent superseding Resolution), and under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).~~

5.10. All CPCs shall ensure that all fishing vessels as referred to in paragraph 1 shall record fishing activities in association with FADs using the specific data elements found in **Annex I** (DFAD) and **Annex II** (AFAD) in the section of the "FAD-logbook".

6.11. The Management Plans shall include initiatives or surveys to investigate, and to the extent possible minimise the capture of small bigeye tuna and yellowfin tuna and non-target species associated with fishing on FADs. Management Plans shall also include guidelines to prevent, to the extent possible, the loss or abandonment of FADs. To reduce the entanglement of sharks, marine turtles or any other species, the design and deployment of FADs shall be based on the principles set out in **Annex III**, which will be applied gradually from 2014. From 2015 on, CPCs shall submit to the Commission, 60 days before the Annual Meeting, a report on the progress of the management plans of FADs, including reviews of the initially submitted Management Plans, and including reviews of the application of the principles set out in **Annex III**.

7.12. ~~Starting in 2016, CPCs shall submit the data elements prescribed in Annex I and Annex II to the Commission, consistent with the IOTC standards for the provision of catch and effort data, and these data shall be made available for analysis to the IOTC Scientific Committee on the aggregation level set by Resolution 10/02 (or any subsequent superseding Resolution), and under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).~~ The IOTC Scientific Committee will analyse the information, when available, and provide scientific advice on additional FAD management options for consideration by the Commission in 2016, including recommendations on the ~~number of FADs to be operated, the~~ use of biodegradable materials in new and improved FADs and the phasing out of FAD designs that do not prevent the entanglement of sharks, marine turtles and other species. When assessing the impact of FADs on the dynamic and distribution of targeted fish stocks and associated species and on the ecosystem, the IOTC Scientific Committee will, where relevant, use all available data on abandoned FADs (i.e. FADs without a beacon or which have drifted outside the fishing zone).

8.13. From January ~~2015~~2016, CPCs shall require all artificial FADs deployed or modified by their flagged fishing vessels in the IOTC area of competence to be marked in accordance with a detailed marking scheme, e.g. including FAD marking ~~or and~~ beacon ID. The marking scheme shall be developed and considered for adoption by the Commission at its regular annual session in ~~2014~~2016, based on recommendations from the IOTC Scientific Committee as requested by the Commission. The marking scheme should take into account, as a minimum, the following:

- a) All artificial FADs shall be marked with a unique identification number, based on a specific numbering system and format to be adopted by the Commission;
- b) The marking should be easy to read before the vessel operator engages in any artificial FAD related



activity (e.g. setting on the artificial FAD, retrieving the artificial FAD, servicing the artificial FAD, fishing on the artificial FAD), but if not visible for any reason, (time of day, weather, etc.), the vessel operator shall ensure to obtain the unique artificial FAD identifier as soon as feasible;

- c) The marking should be easy to apply to the artificial FAD, but should be applied in such a manner that it will not become unreadable or disassociated with the artificial FAD.

9.14. Resolution ~~1312~~/08 *Procedures on a fish aggregating devices (FADs) management plan, including more detailed specification of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species* is superseded by this Resolution.



ANNEX I

GUIDELINES FOR PREPARATION OF DRIFTING FISH AGGREGATING DEVICE (DFAD) MANAGEMENT PLANS

To support obligations in respect of the DFAD Management Plan (DFAD–MP) to be submitted to the IOTC Secretariat by CPCs with fleets fishing in the IOTC area of competence, associated to DFADs, DFAD–MP should include:

1. An objective
2. Scope:
Description of its application with respect to:
 - vessel-types and support and tender vessels
 - DFAD numbers and ~~for~~ DFADs beacon numbers to be deployed
 - reporting procedures for DFAD deployment
 - incidental bycatch reduction and utilization policy
 - consideration of interaction with other gear types
 - plans for monitoring and retrieval of lost DFADs
 - statement or policy on “DFAD ownership”
3. Institutional arrangements for management of the DFAD Management Plans:
 - Institutional responsibilities
 - application processes for DFAD and /or DFAD beacons deployment approval
 - Obligations of vessel owners and masters in respect of DFAD and /or DFAD beacons deployment and use
 - DFAD and/or DFADs beacons replacement policy
 - reporting obligations
4. DFAD construction specifications and requirements
 - DFAD design characteristics (a description)
 - DFAD markings and identifiers, including DFADs beacons
 - Lighting requirements
 - radar reflectors
 - visible distance
 - radio buoys (requirement for serial numbers)
 - satellite transceivers (requirement for serial numbers)
5. Applicable areas
 - Details of any closed areas or periods e.g. territorial waters, shipping lanes, proximity to artisanal fisheries, etc
6. Applicable period for the DFAD–MP
7. Means for monitoring and reviewing implementation of the DFAD–MP



8. DFAD logbook
 - a)
 - catch reporting from DFAD sets (consistent with the Standards for the provision of Catch and Effort Data) set out in [Resolution 13/03](#)), including:
 - b)
 - a) Any visit on a DFAD*.
 - b) For each visit on a DFAD, whether followed or not by a set,
 - i. position,
 - ii. date,
 - iii. DFAD identifier (i.e., DFAD Marking or beacon ID or any information allowing to identify the owner),
 - iv. DFAD type (drifting natural FAD, drifting artificial FAD),
 - v. DFAD design characteristics (dimension and material of the floating part and of the underwater hanging structure),
 - vi. type of the visit (deployment, hauling, retrieving, loss, intervention on electronic equipment).
 - c) If the visit is followed by a set, the results of the set in terms of catch and bycatch.

* Other FADs encountered at–sea should be monitored in accordance with each CPCs' domestic regulations.

ANNEX II

GUIDELINES FOR PREPARATION OF ANCHORED FISH AGGREGATING DEVICE (AFAD) MANAGEMENT PLANS

To support obligations in respect of the AFAD Management Plan (AFAD–MP) to be submitted to the IOTC Secretariat by CPCs with fleets fishing in the IOTC area of competence, associated to AFADs, AFAD– MP should include:

1. An objective
2. Scope:

Description of its application with respect to:

 - a) Vessel types
 - b) AFAD numbers and/or AFADs beacons numbers to be deployed (per AFAD type)
 - c) reporting procedures for AFAD deployment
 - d) distances between AFADs
 - e) incidental bycatch reduction and utilisation policy
 - f) consideration of interaction with other gear types
 - g) the establishment of inventories of the AFADs deployed, detailing AFAD identifiers, characteristics and equipment of each AFAD as laid down in point 4 of the present Annex, coordinates of the AFAD's



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- mooring sites, date of set, lost and reset
 - h) plans for monitoring and retrieval of lost AFADs
 - i) statement or policy on “AFAD ownership”
3. Institutional arrangements for management of the AFAD Management Plans:
- a) Institutional responsibilities
 - b) Regulations applicable to the setting and use of AFADs
 - c) AFAD repairs, maintenance rules and replacement policy
 - d) Data collection system
 - e) reporting obligations
4. AFAD construction specifications and requirements:
- a) AFAD design characteristics (a description of both the floating structure and the underwater structure, with special emphasis on any netting materials used)
 - b) Anchorage used for mooring
 - c) AFAD markings and identifiers, including AFAD beacons if any
 - d) Lighting requirements if any
 - e) radar reflectors
 - f) visible distance
 - g) radio buoys if any (requirement for serial numbers)
 - h) satellite transceivers (requirement for serial numbers)
 - i) echo sounder
5. Applicable areas
- a) Coordinates of mooring sites, if applicable
 - b) Details of any closed areas e.g., shipping lanes, Marine Protected Areas, reserves etc.
6. Means for monitoring and reviewing implementation of the AFAD–MP
- AFAD logbook
- Catch reporting from AFAD sets (consistent with the Standards for the provision of Catch and Effort Data) set out in [Resolution 13/03](#)), including:
 - a) Any visit in a AFAD.
 - b) For each visit on a AFAD, whether followed or not by a set or other fishing activities, the,
 - i. position;



- ii. date;
 - iii. AFAD identifier (i.e., FAD Marking or beacon ID or any information allowing to identify the owner).
- c) If the visit is followed by a set or other fishing activities, the results of the set in terms of catch and bycatch.

ANNEX III

PRINCIPLES FOR DESIGN AND DEPLOYMENT OF FADS

1. The surface structure of the FAD should not be covered, or only covered with non-meshed material.
2. If a sub-surface component is used, it should not be made from netting but from non-meshed materials such as ropes or canvas sheets.
3. To reduce the amount of synthetic marine debris, the use of natural or biodegradable materials (such as hessian canvas, hemp ropes, etc.) for drifting FADs should be promoted.