Food and Agriculture Organization of the United Nations

Indian Ocean Tuna Commission
Commission des Thons de l'Ocean Indien
iotc ctoi

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PROCEDURES ON A FISH AGGREGATING DEVICES (FADS) MANAGEMENT PLAN, INCLUDING A LIMITATION ON THE NUMBER OF FADS, 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: European Union

Explanatory memorandum

At the 22nd Session of IOTC in 2018, the Commission revised Resolution 17/08 and adopted Resolution 18/08 Procedures on a Fish Aggregating Devices (FADs) Management Plan, Including a Limitation on the Number of FADs, More Detailed Specifications of Catch Reporting from FAD sets, and the Development of Improved FAD Design to Reduce the Incidence of Entanglement of Non-Target Species.

The European Union (EU) is proposing to revise Resolution 18/08 to clarify and streamline definition and update some of its provisions with the most up-to-date best practices.

In line with the latest standards adopted in other RFMOs, new provisions regarding the mandatory use of non-entangling designs to reduce the impacts on by-catch and the development of a marking scheme are added to this proposal.

The EU is also proposing to move toward more biodegradable FADs used in the Indian Ocean and to task the Scientific Committee to identify biodegradable materials that could be used for the construction of drifting FADs.

Moreover, the EU is proposing to further decrease the maximum number of instrumented buoys active at any one time and to increase the reporting obligations for CPCs.

The proposed revisions also reflect the outcomes of the second Joint t-RFMOs FAD Working Group that took place in San Diego on 8-10 May 2019.

Keywords: FAD, active instrumented buoy.

RESOLUTION XX/XX
PROCEDURES ON A FISH AGGREGATING DEVICES (FADS) MANAGEMENT PLAN, INCLUDING A LIMITATION ON THE NUMBER OF FADS, 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: FAD, active instrumented buoy.

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~~Fish Aggregating Devices ~~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);

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 [superseded by Resolution 15/08, by Resolution 17/08, then by Resolution 18/08] 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 bycatch;

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 fishing on Drifting Fish Aggregating Devices (DFADs), equipped with instrumented buoys 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 and equipped with a satellite tracking system to monitor its position. Other buoys, such as radio buoys used on DFADs, not meeting this definition, shall be gradually phased out by the 1st January 2017.~~

1. For the purpose of this Resolution:

a) Fish Aggregating Device (FAD) means a permanent, semi-permanent or temporary object, structure or device of any material, man-made or natural, which is deployed, and/or tracked, and used to aggregate fish for subsequent capture. FADs can be either anchored (AFADs) or drifting (DFADs)

b) Drifting Fish Aggregating Devices (DFADs) means a FAD not tethered to the bottom of the ocean. A DFAD typically has a floating structure (such as a bamboo or metal raft with buoyancy provided by buoys, corks, etc.) and a submerged structure (made of old netting, canvass, ropes, etc.).

c) Anchored Fish Aggregating Devices (AFADs) means a FAD tethered to the bottom of the ocean. It usually consists of a very large buoy and~~,~~ anchored to the bottom of the ocean with a chain.

d) Instrumented buoy means a buoy with a clearly marked reference number allowing ~~its~~ identification of its owner and equipped with a satellite tracking system to monitor its position.

e) Activation of a buoy means the act of initializing satellite communication service. It is done by the buoy supplier company at the request of the vessel owner or manager. From then on, the vessel owner pays for the communication service. The buoy can be transmitting or not, depending if it has been switched on.

f) Active buoy means any activated buoy that has been switched on, is deployed at sea and is transmitting data to facilitate determination of its location.

g) Deactivation of a buoy means the act of cancelling satellite communications service. It is done by the buoy supplier company at the request of the vessel owner or manager. From then on, the communication service is no longer paid for.

~~3.~~2. This Resolution sets the maximum number of instrumented buoys active and followed by any purse seine vessels at ~~350~~ 325 instrumented buoys at any one time, the active number being calculated as the number of active buoys operated by a purse seine vessel. The number of instrumented buoys that shall be acquired annually for each purse seine vessel is set at no more than ~~700~~650. ~~An instrumented buoy is considered active when it has been switched on and then deployed. Activation of an instrumented buoy~~ shall ~~results in an~~ be recorded ~~entry in the logbook or the FAD logbook, which specifies the buoy number and the geographical coordinates of its activation~~deployment. ~~An~~ An instrumented buoy ~~may~~ shall be activated only when physically present on board the purse-seine vessel to which it belongs or its supply or support vessel. An active buoy deployed at sea shall be recorded in the appropriate logbook, specifying the buoy number and the geographical coordinates of its deployment.

4.3. A CPC may adopt a lower limit than the one set out in paragraph 3 2 for vessels flying its flag. Further, any CPC may adopt a lower limit for DFADs deployed in its EEZ than that stated in paragraph 32. The CPC shall review the adopted limit to ensure that such limit is not more than the limit fixed by the Commission.

5. CPCs shall ensure that as from the effective date of this Resolution, each of its purse seiners already in operation does not exceed the maximum number of instrumented buoys to be followed at any one time set in paragraph 32.

6.4. Notwithstanding the completion of any study undertaken at the request of the Commission including the study to be undertaken by the Working Group adopted at Resolution 15/09 in relation to FADs, the Commission may review the maximum number of instrumented buoys set out in paragraph 3.

7.5. The flag State shall ensure that no more than:

a) 350 325 instrumented buoys are active at sea at any one time in relation to each of its vessels through such measures as for example the verification of telecommunication bills; and

b) 700 650 instrumented buoys may be acquired annually by each of its fishing vessel.

8.6. Non-instrumented buoys, such as radio buoys, used on DFADs shall be prohibited

9.7. CPCs shall require vessels flying their flag and fishing on DFADs to submit to the IOTC Secretariat by 1 January 2016of each year, the provisional purchase order for 2016 the year of instrumented buoys for their purse seine vessels under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution). CPCs shall also provide every 1 March of the year, invoices of annual purchases of instrumented buoys for the previous year.

8. CPCs shall require vessels flying their flag and fishing on DFADs to submit, by the end of 2016 the number of instrumented buoys activated, deactivated and active on each quarter during 2016 its purse seine vessel under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).

8. CPCs shall require vessels flying their flag and fishing on DFADs to annually submit average numbers of active buoys followed by vessel by 1° grid area and month strata.

10.9. CPCs shall require vessels flying their flag and fishing on DFADs to submit annually the number of DFADs actually deployed (first deployment event of a DFAD), lost and transferred (total number of DFADs tagged at sea, by deploying a buoy on a log or DFAD) by 1° grid area and month strata and FAD type under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).

11. ll CPCs shall ensure that all fishing vessels flying their flag and fishing on FADs 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 I** (AFAD) in the section of the "FAD logbook".

CPCs having vessels flying their flag and fishing on FADs shall submit, to the Commission, on an annual basis, Management Plans for the use of FADs by each of their purse seine vessels covered at paragraph 1. 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 Suggestedfollow the 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.

12.10. The Management Plans shall be analysed by the IOTC Compliance Committee.

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.

~~13.~~ In addition to the Management Plans, all CPCs shall ensure that all fishing vessels flying their flag and fishing on FADs, including supply vessels, shall record fishing activities in association with FADs using the specific data elements found in **Annex III** (DFAD) and **Annex IV** (AFAD).

12. To reduce the entanglement of sharks, marine turtles or any other species, the design and~~,~~ construction ~~and deployment~~ of DFADs to be deployed shall be based on the ~~principles~~ specifications set out in **Annex V~~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**~~.

~~14.~~13. When constructing DFADs the use of non-plastic and biodegradable materials should be prioritised. The SC shall work towards identifying biodegradable materials for the construction of DFADs by 2020. CPCs should support research activities on the development of biodegradable FADs.

14. The electronic buoy attached to the DFAD should contain a physical unique identification mark clearly visible. The mark will correspond to the ID provided by the manufacturer of the buoy. From January 2020, CPCs shall require all artificial dFADs/buoys deployed or modified by their flagged fishing vessels in the IOTC area of competence to be marked in accordance with this marking scheme.

15. ~~Starting in 2016,~~ CPCs shall submit the data elements prescribed in **Annex III to IV** ~~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 15/02 (or any subsequent superseding Resolution), and under the confidentiality rules set by Resolution 12/02 (or any subsequent superseding Resolution).

16. 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).

~~16. From January 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 beacon ID. The marking scheme shall be developed and considered for adoption by the Commission at its regular annual session in 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.~~

17. Resolution ~~17~~18/08 *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 DFADs beacon numbers to be deployed
- reporting procedures for DFAD deployment
- incidental bycatch reduction and utilisation 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 template (data to be collected specified in Annex IV)

~~Catch and activities reporting from DFAD shall be sets (consistent with the Standards for the provision of Catch and Effort Data) set out in Resolution 15/02), which shall include the following information: including:~~
~~Any activity visit on a DFAD or buoys*~~

~~For each activity visit on a DFAD, whether followed or not by a set~~
~~position,~~

~~date,~~

~~DFAD identifier (i.e., DFAD Marking or beacon ID or any information allowing to identify the owner),~~

~~DFAD type (drifting natural FAD, drifting artificial FAD),~~

~~DFAD design characteristics (dimension and material of the floating part and of the underwater hanging structure),~~

~~type of the activity visit (deployment, hauling, retrieving, loss, intervention on electronic equipment).~~

~~If the visit is followed by a set, the results of the set in terms of catch and bycatch, whether retained or discarded dead or alive.~~

~~* Other FADs encountered at sea should shall 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 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.

~~5.~~6. Means for monitoring and reviewing implementation of the AFAD–MP

~~6.~~7. AFAD logbook template (data to be collected specified in Annex IV)

~~a) Catch reporting from AFAD sets (consistent with the Standards for the provision of Catch and Effort Data) set out in Resolution 15/02), including:~~

~~b) Any visit in a AFAD.~~

~~c) For each visit on a AFADwhether 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).~~

~~d) 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
DATA COLLECTION FOR DFADS

a) For each activity on a DFAD, whether followed or not by a set

i. position

ii. date,

iii. DFAD identifier (DFAD or beacon ID), including the ownership of the DFAD

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 activity visit (deployment, hauling, retrieving, loss, intervention on electronic equipment).

b) If the visit is followed by a set, the results of the set in terms of catch and bycatch, whether retained or discarded dead or alive.

ANNEX IV
DATA COLLECTION FOR AFADS

a) Any activity around a AFAD.

b) For each activity on a AFAD (repair, intervention consolidation, etc.), whether followed or not by a set or other fishing activities, the,

i. position;

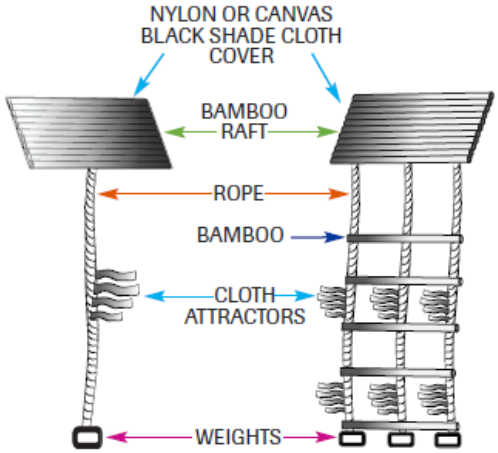
ii. date;

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, whether retained or discarded dead or alive .

ANNEX V

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.~~