
ON MANAGEMENT OF DRIFTING FISH AGGREGATING DEVICES (DFADS) IN THE IOTC AREA OF COMPETENCE

SUBMITTED BY: KENYA, BANGLADESH, INDIA, PAKISTAN, MADAGASCAR, MALAYSIA, MALDIVES, MOZAMBIQUE, SOMALIA, SOUTH AFRICA AND SRI LANKA

Note: With reference to [IOTC-2011-S15-R](#) (para 109), this proposal was received by the Secretariat after the deadline of midnight 16 April, Seychelles time.

Explanatory Memorandum

The management of drifting fish aggregating devices (DFADs) is an issue of common interest to tuna fisheries and is becoming increasingly important for tropical tuna fisheries in general. After discussions at the last meeting of the Kobe process Steering Committee, the tuna-RFMO Secretariats held discussions in 2016 about the possibility of holding a joint tuna RFMO meeting on FAD fishing issues, sometime in 2017. The First Joint Tuna-RFMO FAD Working Group meeting was held in Madrid, Spain, in April 2017 and IOTC participated in this process.

The Chair of the FAD WG made the following statement at the start of the meeting: *“fish aggregating devices (FADs) have been used as a fishing technique for centuries and are now extensively used in purse seine fisheries for tropical tuna. However recent exponential increases in their numbers and technological developments, and the possible adverse impact these trends might have on the fish stock dynamics and also on the oceanic ecosystem, have put FADs in the spotlight. While the use of FADs does not automatically lead to overfishing of tropical tunas, there is a risk that the continued growth of their use in tuna fisheries at the current pace could increase overall fishing pressure on tuna stocks (and in particular juveniles) unless framed by adequate management measures. In addition, FAD associated fishing has impacts on by-catch species and when lost and dismantled by currents and tide effects, man-made FADs may also have consequent impact on the environment, due to the non-biodegradable material they are made of or due to damages they may cause to vulnerable coastal habitats, such as coral reefs”.*

Following this initial meeting, the Second Joint Tuna-RFMO FAD Working Group meeting was held in San Diego, USA, in May 2019. Some of the priorities identified at this meeting was that tuna-RFMOs develop, as a matter of priority, systematic monitoring and reporting procedures on the number of active FADs/buoys in the IOTC area of competence. Another priority that was identified was that FAD management objectives should be defined, both within each tuna-RFMO and jointly, to guide research, data collection, and the development of effective conservation measures. It was also recommended that a system for marking both buoys and FADs should be explored and high-resolution buoy position data should be made available for research purposes. RFMOs were also urged to accelerate progress to reduce contributions of FADs to marine litter and mitigate negative impacts on coastal habitats and marine ecosystems and endangered, threatened and protected species, such as use of FADs without netting and those made with biodegradable materials, as well as mechanisms and incentives for recovering FADs.

The 2nd IOTC *ad hoc* FAD Working Group (WGFAD), held in October 2021 further noted that there is a need to quantify the contribution of DFADs to marine pollution and ecosystem damage in the Indian Ocean, while also noting that fleets should be in compliance with MARPOL Annex V and the London Convention. The WGFAD further noted that while some progress was being made in terms of fleets adopting biodegradable FAD materials and designs, with some variability between companies, there is still work required to roll these out across the wider Indian Ocean region.

It is clear that amendments are required, aligned with these recommendations, to further strengthen Resolution 19/02 to mitigate the ecological impacts associated with DFADs, especially their stranding, damage to coral reefs, and inshore habitats and their contribution to marine debris and pollution. The proposal also aims to reduce the catch of juveniles of tropical tuna and to facilitate the rebuilding of Indian Ocean yellowfin tuna as envisaged under Resolution 21/01.

The 20th Scientific Committee requested that FAD ownership should form part of the mandatory information to be collected by IOTC as this was considered necessary to model and report the tracking status of all FADs. This aspect is strengthened and revised in this proposal.

Noting that IOTC, along with other tuna RFMOs, recommended and adopted resolutions to promote reduction of the amount of synthetic marine debris by using natural or biodegradable materials for DFADs, the proposal also addresses this issue by strengthening the existing rules.

Cf. Resolution 19/02.

RESOLUTION 22/XX
ON MANAGEMENT OF DRIFTING FISH AGGREGATING DEVICES (DFADS) IN THE IOTC AREA OF
COMPETENCE

Keywords: *FAD, FAD management, FAD limits, FAD monitoring, 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) was adopted in conscience of the need to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimise the risk of long-term or irreversible effects of fishing operations;

RECALLING that Articles 5 and 6 of the UNFSA require States to apply the precautionary approach widely to conservation, management and exploitation of highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment;

RECALLING that, in applying the precautionary approach, Article 6 of the UNFSA requires States to be more cautious when information is uncertain, unreliable or inadequate and prohibits the use of an absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures, and that this is reiterated in the United Nations Food and Agricultural Organization (FAO) Code of Conduct for Responsible Fisheries;

RECALLING that, in applying the precautionary approach, Article 6 of the UNFSA requires States to take into account, *inter alia*, uncertainties relating to the size and productivity of the stocks, levels and distribution of fishing mortality and the impact of fishing activities on non-target and associated or dependent species, as well as existing and predicted oceanic, environmental and socio-economic conditions;

RECALLING that Article 5 of the UNFSA requires States to assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks and to adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened;

BEARING IN MIND that Article 5 of the UNFSA requires 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, as well as information from national and international research programmes, and that the FAO Code of Conduct for Responsible Fisheries 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;

MINDFUL of the call upon States, either individually, collectively or through regional fisheries management organisations and arrangements in United Nations General Assembly Resolution 76/71 on Sustainable fisheries of 2021 to collect the necessary data in order to evaluate and closely monitor the use of large-scale fish aggregating devices (FADs) and other devices, 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;

RECALLING that Articles 192 and 194 of the United Nations Convention on the Law of the Sea (UNCLOS) require States to protect and preserve the marine environment and to take, individually or jointly as appropriate, all measures consistent with UNCLOS that are necessary to prevent, reduce and control pollution of the marine environment from any source, and that these measures shall include those necessary to protect and preserve rare or fragile ecosystems

as well as the habitat of depleted, threatened or endangered species and other forms of marine life;

RECOGNISING that, in accordance with the UNFSA, FADs under the competence of IOTC must be managed to ensure the sustainability of fishing operations and to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimise the risk of long-term or irreversible effects of fishing operations;

CONCERNED of the impact of Abandoned, Lost or Discarded Fishing Gear (ALDFG) and plastic residues in the ocean greatly affecting marine life and the need to facilitate the identification and recovery of such gear;

RECOGNISING that, in accordance with Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and the Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol), FADs under the competence of the IOTC must be managed to ensure that they are exclusively deployed with the intention of later retrieval and that they are not abandoned at sea except in situations of *force majeure*;

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;

GIVEN that the activities of supply and support vessels and the use of Drifting Fish Aggregating Devices (DFADs) form part of the fishing effort exerted by the purse seine fleet;

CONSIDERING the concern of the 20th Session of the Working Party on Tropical Tuna held in Seychelles, 29 October – 3 November 2018, on the change in strategy of increased usage of DFADs by purse seine vessels to maintain catch level targets, which has led to a substantial increase of juvenile yellowfin tuna and bigeye tuna being caught;

CONSIDERING the concerns of the 2nd IOTC Ad-hoc Working Group on FADs, on the need for clarity around data submitted to IOTC on FADs;

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 DFADs;

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 DFAD 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, by Resolution 18/08 and then by Resolution 19/02] established procedures on a FAD management plan, including more detailed specifications of catch reporting from DFAD sets, and the development of improved DFAD designs to reduce the incidence of entanglement of non-target species;

NOTING that the IOTC Scientific Committee advised the Commission that only non-entangling DFADs 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 DFAD closure as well as other measures restricting the use of DFADs in the context of Indian Ocean fisheries and stocks;

NOTING that the 2nd Ad-hoc Working Group on FADs highlighted the gaps, inconsistencies in data collection,

reporting and analysis of the DFAD data.

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

Definitions

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, for the purpose of aggregating target tuna species for consequent capture.
- b) “Drifting Fish Aggregating Devices (DFADs)” means a FAD not tethered to the bottom of the ocean.
- c) “Instrumented buoy” means a buoy clearly marked with a unique reference number allowing identification of its owner and equipped with a satellite tracking system to monitor its position.
- d) “Activation of a buoy” means the act of initialising satellite communication service, which is done by the buoy supplier company at the request of the buoy owner.
- e) “Deactivation of a buoy” means the act of cancelling satellite communications service, which is done by the buoy supplier company at the request of the vessel owner or buoy owner.
- f) “Buoy owner” means any legal or natural person, entity or branch, who is paying for the communication service for the buoy associated with a DFAD that is registered on the DFAD Register, and/or who is authorised to receive information from the satellite buoy, as well as to request its activation and/or deactivation.
- g) “Reactivation” means the act of re-enabling satellite communications services by the buoy supplier company at the request of the buoy owner.
- h) “Abandoned DFAD” means a DFAD over which the buoy owner has control and that could be retrieved by the buoy owner, but that is deliberately left at sea due to *force majeure* or other reasons.
- i) “Lost DFAD” means a DFAD over which the buoy owner has no control and that cannot be located and/or retrieved by the buoy owner.
- j) “Discarded DFAD” means a DFAD that is released at sea without any attempt for further control or recovery by the buoy owner.
- k) “Biodegradable materials” means any materials capable of being naturally decomposed within a short amount of time by bacteria or other living organisms that naturally occur in the marine environment and thereby avoiding pollution.

Application

2. This Resolution shall apply to Contracting Party and Cooperating Non-Contracting Party (CPC) flag purse seine vessels fishing on DFADs and associated supply or support vessels, where the DFADs are equipped with instrumented buoys for the purpose of aggregating target tuna species, in the IOTC area of competence.

DFAD Register

3. The Commission shall maintain a register for all DFADs deployed in the IOTC area of competence (DFAD Register).
4. CPCs shall submit electronically to the IOTC Executive Secretary, for each of their flag purse seine vessels that is authorised to operate in the IOTC area of competence, the following information for inclusion in the DFAD Register:

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- a) Unique instrumented buoy reference number that will allow the identification of its owner.
 - b) Name of the purse seiner to which the instrumented buoy is assigned.
 - c) Name of the buoy owner.
 - d) Unique IOTC Vessel Register number of the purse seiner that is assigned to the instrumented buoy.
 - e) Flag State of the purse seiner that is assigned to the instrumented buoy.
 - f) Manufacturer of the instrumented buoy.
 - g) Model name of the instrumented buoy.
5. Flag CPCs shall submit the information under paragraph 4 to the IOTC Secretariat at least 2 weeks before an instrumented buoy is activated, switched on and deployed at sea on a DFAD or any floating object.
 6. CPCs shall promptly notify, after the establishment of their initial DFAD Register record, the IOTC Executive Secretary of any addition to, any deletion from and/or any modification of the DFAD Register at any time such changes occur.
 7. The IOTC Secretariat shall maintain DFAD Register and make it publicly available on the IOTC website.

DFAD limits and management

8. CPCs shall ensure that only purse seine vessels and associated supply or support vessels use DFADs in the IOTC area of competence.
9. CPCs shall ensure that their flag vessels exclusively use instrumented buoys on all DFADs and shall prohibit the use of any other buoys, such as radio buoys.
10. CPCs shall ensure that their flag purse seine vessels do not carry instrumented buoys onboard that have not been registered on the DFAD Register.
11. CPCs shall ensure that their flag purse seine vessels fishing for tuna and tuna-like species in the IOTC area of competence exclusively fish on DFADs with instrumented buoys that are registered to them.
12. CPCs shall report to the IOTC Executive Secretary any factual information showing that there are reasonable grounds for suspecting their flag purse seine vessels to be fishing for tuna and tuna-like species in the IOTC area of competence on DFADs with instrumented buoys that are not assigned to the purse seine vessel in the DFAD Register.
13. CPCs shall ensure that their flag vessels only use DFADs that are registered on the DFAD Register. The maximum number of instrumented buoys that may be registered on the DFAD Register to any purse seine vessel, at any one time, shall not exceed 150 (DFAD limits).
14. CPCs shall ensure that their flag vessels activate instrumented buoys only when physically present on board the purse seine vessel to which they are registered or its associated supply or support vessel. CPCs shall ensure that their flag vessels record the activation of each DFAD in the appropriate logbook, specifying the instrumented buoy unique reference number and the date, time and geographical coordinates of its deployment.
15. CPCs may adopt more stringent measures for their flag vessels or within their EEZ, including lower DFAD limits than those provided in paragraph 13.
16. CPCs shall ensure that their flag vessels declare to their flag CPC the number of instrumented buoys onboard, including each unique identifier of the instrumented buoy before and after each fishing trip.
17. CPCs shall ensure that their flag vessels reactivate instrumented buoys only once this has been authorised by the flag CPC and once the instrumented buoys have been brought back to port. Such reactivated instrumented buoys

shall not count as new instrumented buoys under the DFAD limits specified in paragraph 13 but shall be counted as part of the original limit of instrumented buoys that is allowed for each purse seine vessel.

18. Notwithstanding the completion of any study undertaken at the request of the Commission, the Commission may review the maximum number of instrumented buoys under paragraph 13.
19. CPCs shall ensure that their flag vessels fishing on DFADs annually submit the number of instrumented buoys assigned to them. This shall include instrumented buoys which have been lost, abandoned and/or discarded by 1° by 1° grid area and month strata and DFAD type.
20. CPCs shall ensure that their flag vessels record fishing and fishing-related activities in association with DFADs using the specific data elements found in Annex I (DFAD) in the section of the “FAD-logbook”.
21. CPCs having flag vessels fishing on DFADs shall submit, to the Commission, on an annual basis, Fish Aggregating Device (FAD) Management Plans in accordance with the Guidelines for Preparation of FAD Management Plans as provided for DFADs in Annex II.
22. The Management Plans shall include initiatives or surveys to investigate and shall, to the extent possible, minimise the capture of juvenile bigeye tuna and yellowfin tuna and non-target species associated with fishing on DFADs. Management Plans shall also include guidelines to prevent, to the extent possible, the abandonment, discarding and loss of DFADs.
23. The IOTC Compliance Committee shall analyse the Management Plans and report the results of this analysis to the Commission.
24. CPCs shall ensure that their flag vessels record fishing activities in association with DFADs using the specific data elements found in Annex I (DFAD).
25. CPCs shall submit to the Commission, 60 days before the Annual Meeting, a report on the progress of their Management Plans, including, if necessary, reviews of the initially submitted Management Plans, and including reviews of the application of the principles provided in Annex II.

DFAD closure period

26. With the objective of reducing the fishing mortality of juvenile yellowfin tuna, CPCs shall ensure that their flag purse seine vessels fishing for bigeye, yellowfin and skipjack tunas, as well as associated supply or support vessels, do not fish on DFADs or deploy or maintain DFADs in the IOTC area of competence between 0000hrs of 1 July and 0000hrs 30th September each year (DFAD closure period).
27. CPCs shall ensure that, in the event that their flag purse seine vessels and associated supply and support vessels retrieve the electronic equipment on their DFADs during the DFAD closure period, they retrieve the entire DFAD and keep it on board the vessel until landed in port or until end of the of the DFAD closure period.
28. CPCs shall ensure that their flag vessels do not deploy or maintain DFADs during a period of 15 days prior to the beginning of the DFAD closure period.
29. CPCs shall ensure that during the DFAD closure period, their flag purse seine vessels or associated supply or support vessels do not conduct any part of a set within five nautical miles of a DFAD, meaning that at no time may the vessel or its fishing gear or tenders be located within five nautical miles of a DFAD while a set is being conducted.
30. CPCs shall ensure that their flag purse seine vessels or associated supply or support vessels are not used to aggregate fish, or move aggregated fish, including through the use of underwater lights and chumming.

31. The Commission shall review the measures provided in paragraphs 26 and 27 and, if necessary, revise them based on advice by the IOTC Scientific Committee, taking into account monthly trends in free school and DFAD-associated catches.

DFAD Monitoring System

32. In order to support the monitoring of compliance with the DFAD limits provided in paragraph 13, and to ensure the effective management of DFADs, the Commission shall establish a DFAD Monitoring System (DFAD-MS), to be activated by 1 January 2023. The DFAD-MS shall be developed and administered by an authorised, independent third party, appointed by the Commission.
33. The ad hoc FAD Working Group shall develop rules and procedures to be adopted by the Commission for the operation of the DFAD-MS by 30 December 2022, including, *inter alia*:
- a) instrumented buoy reporting, including the specifications of the data required and its format;
 - b) rules on polling of instrumented buoys;
 - c) cost recovery;
 - d) cost sharing;
 - e) measures to prevent tampering, and
 - f) obligations and roles of fishing vessels, CPCs, the IOTC Secretariat and, if the DFAD-MS is established under paragraph 32, the authorised, independent third party.
34. The ad hoc FAD Working Group shall develop minimum standards for instrumented buoys used in the DFAD-MS.
35. To ensure the effective functioning of the DFAD-MS, CPCs shall ensure that their flag vessels report the following real-time information about each instrumented buoy on the DFAD Register to the DFAD-MS established under paragraph 32 when DFADs on the DFAD Register are first activated and until they are deactivated:
- a) the geographical location (in degrees, minutes and seconds).
 - b) the date.
 - c) the time.
 - d) the instrumented buoy unique reference number of each instrumented buoy.
 - e) the name and IOTC registration number of the vessels assigned to the instrumented buoy.
36. CPCs shall ensure that their flag vessels report real-time information on the geographical location (in degrees, minutes and seconds) of each instrumented buoy in 6-hourly intervals to the DFAD-MS established under paragraph 32.

DFAD reporting procedures

37. CPCs shall ensure that their flag vessels report, within 24 hours, any loss of a DFAD, or parts of a DFAD, owned by them to the flag CPC and the IOTC Executive Secretary. If the loss of a DFAD occurs in the EEZ of a coastal CPC, the flag CPC shall additionally report this information to the relevant coastal CPC within 24 hours of that loss. The report shall contain the following information:
- a) unique reference number of the instrumented buoy.
 - b) unique IOTC Vessel registration number and name of the vessel.
 - c) construction materials and dimension of the DFAD components, including the raft and subsurface structure.
 - d) time when the DFAD or part thereof was lost.
 - e) geographical position (degrees, minutes and seconds) where the DFAD or part thereof was lost.
 - f) measures taken to retrieve the DFAD or part thereof.
 - g) any perceived threats of the imminent beaching of the DFAD.
 - h) geographical position (degrees, minutes and seconds) of potential location of beaching.

i) plans to recover beached DFADs and how the recovery costs will be collected and shared.

38. CPCs shall ensure that their flag vessels, before reporting the loss of a DFAD, or part of a DFAD, in accordance with paragraph 37, attempt to locate and retrieve such a DFAD as soon as possible and carry equipment on board for these purposes.
39. CPCs shall ensure that if their flag vessels cannot retrieve an active DFAD before it enters the EEZs of a coastal CPC that they report the information provided in paragraph 37 to the relevant coastal CPC within 24 hours after the DFAD has entered its EEZ.
40. CPCs shall ensure that their flag vessels record additional information for all Lost, Discarded and Abandoned DFADs in accordance with Annex II.

Non-entangling and biodegradable DFADs

41. CPCs shall require their flag vessels to use non-entangling designs and non-mesh materials in the construction of DFADs in accordance with Annex III.
42. CPCs shall ensure that their flag vessels use only biodegradable materials, except for materials used for the instrumented buoys, in the construction of all parts of their DFADs in accordance with Annex III.
43. CPCs shall ensure that the sub-surface structure of DFADs used by their flag vessels is limited to a length of 50 meters.
44. CPCs shall ensure that any observers deployed on their flag purse seine vessels collect detailed information on the DFAD design, dimensions and materials used prior to deployment.

DFAD marking

45. Until a scheme to operationalise the FAO Voluntary Guidelines on the Marking of Fishing Gear (VGMFG) is developed in accordance with the *Proposal of Terms of Reference for developing a scheme to operationalise the FAO Voluntary Guidelines on the Marking of Fishing Gear (VGMFG)*; IOTC-2020-CoC17-14, CPCs shall implement the measures provided for in the following paragraphs.
46. CPCs shall ensure that the instrumented buoy attached to the DFAD contains a physical, unique reference number marking (ID provided by the manufacturer of the instrumented buoy) and that the vessel's unique IOTC registration number is clearly visible on the instrumented buoy.
47. CPCs shall ensure that their flag purse seine vessels and associated supply and support vessels only use DFADs whose raft and the sub-surface structure underneath the raft have a permanent mark showing the unique vessel IOTC registration number attached to it. Each mark must be:
 - a) at least 75mm x 65mm in size.
 - b) made of durable material.
 - c) securely fixed to the sub-surface structure and not removable.
48. CPCs shall ensure that their flag purse seine vessels and associated supply and support vessels do not attach their own instrumented buoys to DFADs that are already equipped with the instrumented buoy of another vessel.
49. CPCs shall conduct inspections, both at sea and at port, to ensure that their flag vessels comply with gear marking and other requirements. CPCs shall report deployed DFADs found without required markings to the relevant flag CPC. CPCs shall conduct port state inspections of fishing gear in accordance with the procedures set out in Annex B, paragraph e) of the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported

and Unregulated Fishing (PSMA), including with respect to includes conditions relating to marking of the fishing gear.

Data reporting and analysis

50. CPCs shall submit the data elements provided in 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).
51. Recognising the business confidentiality of current DFAD data, historical data on DFAD trajectories, which is 3 months or older and occurs within the EEZ of a CPC, shall be provided by the Secretariat and the DFAD-MS to that CPC. Such data shall also include details on DFAD ownership.
52. The IOTC Scientific Committee will analyse the information and data gathered under the Resolution, when available, and provide scientific advice on additional DFAD management options for consideration by the Commission, including recommendations on the number of DFADs to be operated and new and improved DFADs design. When assessing the impact of DFADs on the dynamics 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, Lost and Discarded DFADs.

Supply and Support Vessels

53. Flag CPCs shall gradually reduce supply and support vessels by 31 December 2022. Flag CPCs shall submit information on the status of reducing the use of supply and support vessels in their annual Implementation Report.
54. Flag CPCs shall ensure that, after 31 December 2022, no supply or support vessels support purse seine vessels in the IOTC area of competence.

Entry into force

55. This Resolution shall be reviewed by the Commission, at the latest, at its Session in 2027 based on recommendations from the IOTC Scientific Committee.
56. This Resolution shall enter into force on 1 January 2023.
57. CPCs not yet involved in purse seine fisheries using DFADs are exempt from the application of this Resolution for a period of 6 months from when their vessels deploy DFADs for the first time.
58. The Secretariat shall submit a report, on an annual basis, to the IOTC Compliance Committee on the level of compliance of each CPC with all the obligations under this Resolution.
59. Resolution 19/02, 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 Executive Secretary 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 II).

ANNEX II
DATA COLLECTION FOR DFADS

- a) For each activity on a DFAD, whether followed by a set or not, each fishing, support and supply vessel to report the following information:
- i. Vessel (name and registration number of the fishing, support or supply vessel)
 - ii. Position (as the geographic location of the event (Latitude and Longitude) in degrees and minutes)
 - iii. Date (as DD/MM/YYYY, day/month/year)
 - iv. DFAD identifier (DFAD or beacon ID)
 - v. DFAD type (drifting natural FAD, drifting artificial FAD),
 - vi. DFAD design characteristics
 - vii. Dimension and material of the floating part and of the underwater hanging structure
 - viii. Type of the activity, (visit deployment, hauling, retrieving, loss, intervention to service 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. CPCs to report this data aggregated per vessel at 1*1 degree (where applicable) and monthly to the Executive Secretary.

ANNEX III

PRINCIPLES FOR DESIGN AND DEPLOYMENT OF FADS

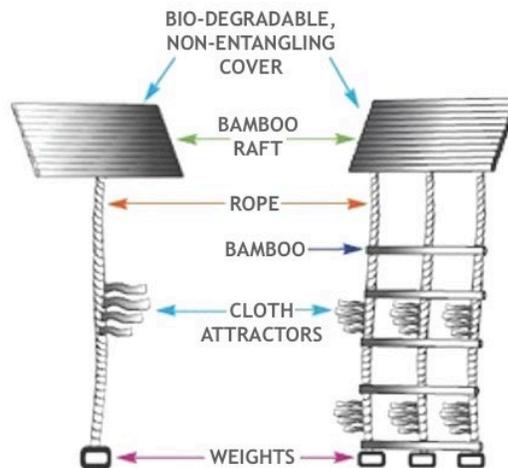


Figure: Example of a non-entangling, biodegradable FAD

1. A biodegradable FAD shall be composed of renewable lignocellulosic materials (plant dry matter) and/pr bio-based biodegradable plastic compounds, prioritising those materials that comply with international relevant standards or certification labels for plastic compostability in marine, soil or industrial compost environments. In addition, the substances resulting from the degradation of these materials should not be toxic for the marine and coastal ecosystems or include heavy metals in their composition.
2. No shade cloth or netting should be used in any part of the DFAD.
3. The surface structure of the DFAD shall not be covered, or only covered with non-meshed material. No shade cloth or other entangling materials shall be used in the construction of the raft.
4. Only biodegradable materials, with the exception of materials used for the instrumented buoys, shall be used in the construction of all parts of DFADs.
5. If a sub-surface component is used, it shall not be made from netting, but only from non-meshed materials such as biodegradable ropes or canvas sheets.
6. The maximum length of the sub-surface structure (tail) of a DFAD shall be 50m.