



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

SUBMITTED BY: KENYA

Explanatory Memorandum

This proposal rewrites and updates the previous Resolution 19/02 bringing coherence to a text that was amended multiple times. While keeping the main features of the current resolution, the paragraphs have been rewritten and reordered to be more coherent, taking into account the suggested changes made by the legal scrubbing, deleting obsolete and superfluous items and adding new elements to address the emerging challenges of FADs management.

The first change in the proposal is the scope. Resolution 19/02 included provisions for the management of AFADs that de facto did not apply because the previous article 2 limited the scope to purse seine DFAD fisheries only. The objective of this new text is to have a comprehensive measure for the management of all FADs; hence, that includes AFADs. Throughout the text, precisions have been added to make the distinctions between the AFAD and DFAD requirements.

In order to minimize the impact of fishing on FADs, this proposal sets new limits for the number of buoys (deployed at sea, in stock and acquired). The overall management approach remains the same as resolution 19/02 by managing the number of DFADs through the number of buoys.

One of the main goals of this proposal is to reduce the FAD impact on the environment. This objective is achieved by two sets of provisions. The first one introduces the mandatory implementation of some degree of biodegradability in DFADs with the aim to move on to fully biodegradable FADs in the future. The second set of provisions eliminates the possibility of deliberately leaving a DFAD at sea, by increasing the accountability of vessels in this respect. A general principle of mandatory retrieval of all DFADs will be thus accompanied by new specific requirements, such as a reporting obligation on the fate of all DFADs put at sea (making the distinction between lost, abandoned and discarded DFADs), and a mandatory marking of the DFAD shall be introduced to increase traceability.

Lastly, the proposal opens the door to further improve the management of all FADs following a science based approach and acting from the recommendation of the Scientific Committee.

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

Keywords: FAD, FAD Management, FAD monitoring, operational 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;

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~~~~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;

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;

RECALLING that the measures taken in accordance with Article 194 UNCLOS 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 Fish Aggregating Devices 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 sharks and marine turtles and to use of biodegradable materials to reduce the contribution of FADs to marine litter, 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;

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;

CONCERNED of the impact of abandoned, lost or discarded FADs in the ocean greatly affecting marine life and the need to facilitate the identification and recovery of such gear;

~~NOTING that the absence of data on anchored FADs (AFADs) is a limit to their correct management and to the assessment of their impact on tuna species and marine environment;~~

~~FURTHER NOTING that the high loss rate of AFADs without attempt of retrieval is also a factor of marine pollution;~~

~~COGNIZANT that the operational aspects of AFADs and DFADs are very different and therefore that the requirements of DFAD management, such as those relating to the materials used in FAD construction, monitoring frequency and reporting, would be incompatible with the normal operation of AFADs;~~

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 minimize the risk of long-term or irreversible effects of fishing operations;

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;

NOTING that releasing fishing devices into the water, such as FADs, does not contravene to the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex V or 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 (London Protocol) as long as such device is deployed with the intention of later retrieval;

RECOGNISING that, in accordance with MARPOL Annex V and the London Convention and 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 discharged or abandoned at sea except in situations of *force majeure*;

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

CONSIDERING the information presented to the 2nd IOTC Ad Hoc Working Group on FADs, held online from 4 to 6 October 2021, and the discussions that followed;

NOTING the work and conclusions of the BioFAD experimental project (IOTC-2017-SC20-INF07) presented to the 20th meeting of the IOTC Scientific Committee;

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

Definitions and application

1) For the purposes of this Resolution:

- a) “Floating Object (FOB)” means a permanent, semi-permanent or temporary object, structure or device of any material, of natural or anthropic origin, which is deployed and/or tracked, for the purpose of aggregating and/or locating target tuna species for subsequent capture.
- b) “Fish Aggregating Device (FAD)” means a FOB, which is deployed and/or tracked, for the purpose of aggregating target tuna species for consequent capture.~~a man-made FOB built and deployed with the purpose of aggregating and/or locating target tuna species for subsequent capture.~~
- ~~e)~~ “Log” means ~~a FOB of natural source or accidentally lost from anthropic activities and that was not built and deployed for the purpose of aggregating and/or locating target tuna species for subsequent capture.~~
- ~~d)c)~~ “Drifting Fish Aggregating Device (DFAD)” means a FAD not tethered to the bottom of the ocean. A DFAD typically has a surface or subsurface structure (such as a bamboo or metal raft with buoyancy provided by buoys, corks, etc.) and a submerged structure (made of canvass, ropes, etc.).
- ~~e)d)~~ “Anchored Fish Aggregating Device (AFAD)” 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 mooring.
- ~~f)e)~~ “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 at least its position.
- ~~g)f)~~ “operational buoy” means any instrumented buoy, previously activated, switched on and deployed at sea on a drifting FAD or log, which transmits position and any other available information such as eco-sounder data.
- ~~h)g)~~ “switch on of a buoy” means the act of manually starting the electronic functioning of the buoy. The buoy can be transmitting or not, depending if it has been activated.
- ~~i)h)~~ “activation of a buoy” means the act of initializing satellite communication service, which is done by the buoy supplier company at the request of the vessel owner or manager. The buoy can be transmitting or not, depending if it has been manually switched on.
- ~~j)i)~~ “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 manager.
- ~~k)j)~~ “abandoned DFAD” means a DFAD which the owner/master/operator of the fishing vessel has deliberately left at sea due to *force majeure* or other reasons and over which the buoy supplier can transmit localisation information for the purpose of retrieving the DFAD.
- ~~l)k)~~ “lost DFAD” means a DFAD previously tracked with an instrumented buoy by the owner/master/operator of a fishing vessel and over which control has been lost due to several reasons (robbery, beaching, sinking, ...) and that cannot be located by neither the owner/master/operator of the fishing vessel, nor the buoy supplier.
- ~~m)l)~~ “discarded DFAD” means a DFAD that is released at sea without any attempt for further control or recovery by the owner/master/operator of a fishing vessel.
- ~~n)m)~~ “responsible buoy operator” means the owner/master/operator of a fishing vessel who is in charge of tracking an instrumented buoy and is authorized to request its activation and/or deactivation.
- ~~o)n)~~ “buoy user” means a purse seine, supply vessel who receive information from the satellite buoy.
- ~~p)o)~~ “reactivation” means the act of re-enabling satellite communications services by the buoy supplier company at the request of the buoy owner or manager.
- ~~q)p)~~ “buoy in stock” means an instrumented buoy stored ~~on-board-or~~ at shore which has not been made operational.
- ~~r)q)~~ “biodegradable material” means a renewable lignocellulosic material (i.e., plant dry matter - here described as natural material) and/or bio-based biodegradable plastic compound. Those materials shall degrade in normal conditions of use of DFADs and be biodegradable in marine environments or compostable in land. In addition, the substances resulting from the degradation of these materials shall

not be toxic for the marine and coastal ecosystems or include heavy metals in their composition. Those materials shall comply with international standards once advised by the IOTC Scientific Committee.

- 2) This Resolution shall apply to Contracting Parties or Cooperating Non-Contracting Parties (CPCs) having vessels fishing on FADs aggregating tuna species in the IOTC area of competence.

DFAD Register

2bis) The Commission shall maintain a register for all DFADs deployed in the IOTC area of competence (DFAD Register).

2ter) 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:

- 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.
- a)g) Model name of the instrumented buoy.

2quater) Flag CPCs shall submit the information under [paragraph 2ter] to the IOTC Secretariat at least 2 weeks before an instrumented buoy is activated, switched on and deployed at sea on a DFAD.

2quinquies) The Secretariat shall attribute a specific IOTC DFAD unique identifier to each registered instrumented DFAD.

2sexies) 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.

2septies) The Secretariat shall maintain the DFAD Register and make it publicly available on the IOTC website.

DFAD closure period

X) 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 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).

Xbis) CPCs shall ensure that, in the event that their flag purse seine vessels and associated supply 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.

Xter) 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.

Xquater) CPCs shall ensure that during the DFAD closure period, their flag purse seine vessels or associated supply 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.

Xquinquies) CPCs shall ensure that their flag purse seine vessels or associated supply vessels are not used to aggregate fish, or move aggregated fish, including through the use of underwater lights and chumming.

Xsexies) The Commission shall review the measures provided in [paragraphs X and Xbis] 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.

DFADs limits and management

- 3) Only purse seiners and associated supply¹ vessels are allowed to deploy DFADs ~~and FOB instrumented buoys~~ in the IOTC ~~Area-area~~ of ~~Competencecompetence~~.
- 4) CPCs shall ensure that their flag vessels operating in the IOTC area of competence only use DFADs that are registered on the DFAD Register and that shall ensure in respect of those vessels that:~~CPCs shall require, in respect of its flag vessels operating in the IOTC area of competence that:~~
 - a) ~~the maximum number of operational buoys followed at any one time by any purse seine vessel:~~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.
 - ~~i. from the 1 January 2023, to be 280; and~~
 - ~~ii. from the 1 January 2025, to be 260.~~
 - b) ~~the~~The maximum number of instrumented buoys that may be acquired annually for each purse seine vessel shall not be more than the double of the maximum number of ~~operational instrumented~~ buoys ~~that any purse seine vessel is authorised to follow according to~~ registered under paragraph 4a.
 - c) ~~no~~No responsible buoy operator shall have more than ~~400~~300 instrumented buoys ~~(buoy in stock and operational buoy)~~in stock at any time per purse seine vessel.
 - e)d) Instrumented buoys reactivated in accordance with paragraph 9e shall not count as new instrumented buoys under the DFAD limits under this paragraph but shall be counted as part of the original limit of instrumented buoys that is allowed for each purse seine vessel.
- 5) No additional instrumented buoy shall be attributed to supply vessels.
- 6) A CPC may adopt lower limits than the one provided in paragraph 4 for its flag vessels and ~~may adopt lower limits for DFADs deployed~~ in its exclusive economic zone (EEZ).
- 7) 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.~~In order to reduce~~

¹ The term sSupply vessel shall includes both the notion of supply and support vessels.

~~the amount of DFAD used, data of operational buoy can be shared among multiple purse seine vessels only provided that:~~

- ~~a) shared buoys are reported for each single buoy user, and not only for the responsible buoy operator, when reporting information as defined in paragraph 4a;~~
- ~~b) a) shared buoys are accounted for as a fraction of the number of purse seiners sharing the same instrumented buoy shall be attributed to supply vessels and each operational buoy should be accounted for in the monitoring of the number of operational buoys of at least one purse seiner.~~

7bis) Notwithstanding the completion of any study undertaken at the request of the Commission, the Commission may review the maximum number of registered instrumented buoys under paragraph 4.

DFAD Monitoring System

7ter) In order to support the monitoring of compliance with the DFAD limits provided in paragraph 4, 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.

7quater) 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 the authorised, independent third party that administers the DFAD-MS.

7quinquies) The ad hoc FAD Working Group shall develop minimum standards for instrumented buoys used in the DFAD-MS.

7sexies) 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 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.

7septies) 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.

Reporting and Compliance Obligations

8) CPCs shall:

- a) ~~require-ensure~~ that their flag vessels report any activity in association with a FOB and/or an instrumented buoy in the logbook;
- b) ensure that purse seine and supply vessels using DFADs ~~and instrumented FOB buoys~~ record any fishing ~~or fishing-related~~ activity in association with a FOB ~~and/or an instrumented buoy~~ by providing the data and information listed Annex ~~I~~ and following a template provided by the Secretariat;
- c) submit these data and information to the Commission, following the IOTC standards for the provision of catch and effort data; these shall be made available for analysis to the IOTC Scientific Committee at the aggregated level set by IOTC Resolution 15/02, and under the confidentiality rules set by IOTC Resolution 12/02.
- e)d) 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.

9) In order to support the monitoring of compliance with the limitations established in this Resolution CPCs shall:

- a) ensure their flag vessels use instrumented buoys on all DFADs and prohibit the use of any other buoys that are not DFADs, such as radio buoys, that do not meet the definition in paragraph 1;
- b) ensure that their flag purse seine vessels do not carry instrumented buoys onboard that have not been registered on the DFAD Register;
- a)c) ensure their flag vessels only deploy DFADs with an instrumented buoy that has been previously activated on and switched on;
- b)d) ~~ensure~~~~require~~ that their flag vessels only make their instrumented buoys active when physically present on board the purse seine vessel to which it belongs or its associated supply vessel, and that the event shall be recorded in the appropriate logbook, specifying the instrumented buoy unique identification number, the DFAD biodegradability category and the date, time and geographical coordinates of its deployment;
- e)e) ~~require-ensure~~ that reactivation of an instrumented buoy ~~shall-is~~ ~~be~~ possible after it has been brought back to port, either by the flag vessel tracking the buoy, by an associated supply vessel or by another flag vessel and has been authorised by the CPC;
- f) ~~ensure~~~~require~~ that the instrumented buoy attached to the DFAD ~~to-be~~ ~~is~~ permanently marked with a physical tag in a non-degradable material on which the unique reference number marking (ID provided by the manufacturer of the instrumented buoy) and the IOTC unique vessel identifier number ~~shall-is~~ ~~be~~ permanently and clearly visible;
- g) 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;
- h) conduct inspections of fishing gear with respect to DFADs, 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 conditions relating to the marking of fishing gear;
- i) report to the IOTC Executive Secretary any 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;
- e)j) ensure that their flag purse seine vessels and associated supply vessels do not attach their own instrumented buoys to DFADs that are already equipped with the instrumented buoy of another vessel;

- ~~e)k) require ensure that~~ each flag purse seine vessel or supply vessel ~~to~~ declares monthly to its respective CPC, the number of instrumented buoys in stock and on board, including each unique identifier of the instrumented buoy before and after each fishing trip;
- ~~l) require ensure~~ that its flag vessels report any deactivation of an operational buoy at sea ~~shall be reported~~ in the logbook, including the unique reference number, the date, time, last geographical coordinates and the reasons for deactivation; and
- ~~f) ,~~

~~require, while protecting business confidential data, its flag vessels or the instrumented buoy supplier company to report, daily information on all active FADs. CPCs shall compile these information at monthly intervals and submit with a time delay of at least 60 days, but no longer than 90 days to the Secretariat, including the date, instrumented buoy ID, and assigned vessel and daily position (latitude, longitude).~~

FADs Designs, marking and mitigation of FAD loss, discards and abandonment

10) To reduce the entanglement of sharks, marine turtles or any other species, CPCs shall ensure that the design and construction of any DFADs and AFADs to be deployed in the IOTC Area-area of competence shall comply with the following specifications as outlined as an example in Annex II:

- a) the use of mesh materials shall be prohibited for any part of a FAD; and
- b) only non-entangling material and designs shall be used.
- c) the sub-surface structure shall be limited to a length of 50 meters.

~~b)~~

11) To reduce the amount of synthetic marine debris, CPCs shall ensure that their flag vessels:

- a) use only DFADs of biodegradability categories I, II or III, as defined in Annex III;
- b) no longer deploy any DFADs of category IV; and
- c) as of 1st of January 2025, use only category I ~~or H~~ DFADs, as defined in Annex III.

~~e)~~

12) Until 31 of December 2024, ~~v~~vessels deploying exclusively Category I DFADs shall be allowed to deploy a number of DFADs equivalent to 10% more than the limit established in paragraph 4.

~~12)~~ 12bis) 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.

13) In addition to the marking requirements for instrumented buoys under paragraph 9f and 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 ensure that their flag purse seine vessels and associated supply vessels only use DFADs whose raft and the sub-surface structure underneath the raft have the following permanent markings:

- a) A mark showing the unique vessel IOTC registration number attached to it. Each mark must be:
 - i) at least 75mm x 65mm in size.
 - ii) made of durable material.
 - iii) securely fixed to the sub-surface structure and not removable.

~~13)b)~~ As of 1st of January 2025, and with the specific objective to collect information on how to mitigate FAD loss, discards and abandonment, in addition to the marking of the instrumented buoy in

~~accordance with paragraph 9f-9.e.~~, CPCs shall ensure that each DFAD is permanently marked with ~~a~~ the specific IOTC DFAD unique identifier ~~to be~~ attributed by the Secretariat in accordance with [paragraph 2quinquies]. ~~The marking should be separate from the instrumented buoy.~~ The standards for the individual marking of DFADs shall be developed by the IOTC Scientific Committee, in close collaboration with the Secretariat, at the latest at its 2023 session.

14) CPCs shall ensure that no DFADs are discarded ~~or abandoned~~ by the responsible buoy operator except in situations of force majeure.

~~14)~~ 14bis) CPCs shall ensure that their flag vessels, before reporting the loss or abandonment of a DFAD, or part of a DFAD, in accordance with paragraph 15, attempt to locate and retrieve such a DFAD as soon as possible and carry equipment on board for these purposes.

15) CPCs shall ~~require~~ ensure that, if a DFAD or part of a DFAD is ~~lost or abandoned~~ in a situation of *force majeure*, the responsible buoy operator notifies, and immediately after the deactivation of the instrumented buoy within 24 hours, the responsible buoy operator notify the flag CPC and the Secretariat ~~Secretariat~~ the date, time, last location of the buoy and the reasons for the loss or abandoning abandonment of the DFAD. If the loss or abandonment 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 the notification received by the responsible buoy operator. 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 or abandoned;
- e) geographical position (degrees, minutes and seconds) where the DFAD or part thereof was lost or abandoned.
- 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.

15bis) 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 15 to the relevant coastal CPC within 24 hours after the DFAD has entered its EEZ.

DFADs Management Plans

~~15)~~16) CPCs with flag vessels fishing on DFADs shall submit to the Secretariat, each year in their Implementation Report, 60 days before the IOTC ~~Annual Meeting~~Session, Management Plans for the use of DFADs and associated technologies (instrumented FOB buoys and supply vessels).

~~16)~~17) The objectives of the ~~Management Plans~~DFAD and associated technologies ~~Management Plans~~ shall be, to the extent possible, to monitor and keep at sustainable levels the impact on small bigeye tuna and yellowfin tuna and non-target species associated with fishing on DFADs and to prevent the loss, discarding or abandonment of DFADs.

17bis) 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.

~~17)~~18) The Management Plans shall at a minimum follow the Guidelines for Preparation for DFAD Management Plans by each CPC provided for DFADs in Annex IV and include the assessment of the implementation of ~~this~~present IOTC ~~r~~Resolution and measures taken to achieve the objectives presented in paragraph 17.

18bis) CPCs shall submit to the Commission, 60 days before the IOTC 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 I.

~~18)~~19) The Management Plans shall be analysed by the IOTC Compliance Committee and by the IOTC Scientific Committee each in their respective role.

Supply Vessels

Y) Flag CPCs shall gradually reduce supply vessels by 31 December 2022. Flag CPCs shall submit information on the status of reducing the use of supply vessels in their annual Implementation Report.

Ybis) Flag CPCs shall ensure that, after 31 December 2022, no supply vessels support purse seine vessels in the IOTC area of competence.

AFADs Management

20) CPCs shall ensure that all vessels fishing on AFADs shall record fishing activities in association with AFADs using the specific data elements found in Annex V in the relevant section of the logbook.

~~19)~~

21) CPCs with flag vessels fishing on AFADs or with AFADs located in their EEZ shall submit to the Secretariat, each year in their Implementation Report, 60 days before the IOTC Annual Meeting, Management Plans for the use of AFADs (AFAD Management Plans). The AFAD Management Plans shall:

~~-include the implementation of measures to monitor and keep at sustainable levels the impact on small bigeye tuna and yellowfin tuna and non-target species and shall also include the recommendations made~~

~~by the IOTC Scientific Committee, when available, to prevent the loss or abandonment of AFADs. The Plans should include initiatives or surveys to investigate the impact of fishing on AFAD.~~

- a) ~~The Plans~~ shall at a minimum follow the Guidelines for Preparation for FAD Management Plans by each CPC provided for AFADs in Annex VI.
- b) ~~The AFAD Management Plans~~ shall be analysed by the IOTC Compliance Committee and by the IOTC Scientific Committee each in their respective role.

~~20)~~

22) CPCs with vessels fishing on AFADs or with AFADs located in their EEZ should encourage the collection and reporting of additional relevant scientific data to help understand the impact of the AFAD fisheries.

~~22bis) 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 ensure that their vessels only use AFADs whose buoys are marked with a unique reference number that identify the CPC and that are clearly visible.~~

~~22ter) CPCs with flag vessels fishing on AFADs or with AFADs located in their EEZ shall conduct inspections at sea to ensure that the buoys of AFADs are clearly marked in accordance with [paragraph 22bis].~~

~~22quater) CPCs shall maintain a register of lost, abandoned, and discarded AFADs and report this data to the IOTC Executive Secretary in their annual Implementation Report.~~

Site selection and construction of AFADs

~~Z) CPCs deploying new AFADs or replacing existing ones, shall take into account the nature and profile of the sea bottom when choosing a site and, where possible, avoid sites with steep slopes to minimise the risk of AFAD loss.~~

~~Zbis) CPCs should aim to undertake AFAD deployments during calm weather and low current conditions.~~

~~Zter) CPCs shall ensure that the upper floatation of AFADs is suitable for offshore, high current deployments by using designs which are streamlined to reduce drag and resistance to currents and waves.~~

~~Zquater) CPCs shall consider using a buoy with appropriate radar reflector and/or strobe light on AFADs to assist in locating its low-profile upper floatation system and to reduce its navigational hazard.~~

~~Zquinquies) CPCs shall consider using a combination of nylon (sinking) and polypropylene (floating) ropes to create a catenary curve in the mooring system, acting as a shock-absorber to counter elements of the sea (storms, waves, currents).~~

~~Zsexies) CPCs should ensure that AFADs are provided with supplementary buoyancy when deployed at depths less than 1,500 m to lift the mooring line off the ocean floor.~~

~~Zsepties) CPCs shall consider using AFAD designs where the weight of the anchor is at least three times the buoyancy of the floatation system to counter the constant upward pull on the main line and anchor system.~~

Zoeties) CPCs shall ensure that only non-entangling materials (with no netting) are used in the sub-surface aggregates of AFADs. It is recommended that, where sub-surface aggregators are attached to the mooring line, these are constructed from biodegradable materials such as biodegradable aggregator rope or coconut fronds.

21) Znonies) It is recommended that AFADs are constructed from materials that will ensure increased longevity so that they continue to retain their integrity for the longest lifespan possible.

Scientific work and final provisions

23) The information ~~provided in paragraph 9h~~ obtained through the DFAD-MS shall be stratified by fleet, year, month and 1x1 degrees grid, and expressed as the average daily number of operational buoys in each stratum and made available by the Secretariat to support scientific analysis in line with the confidentiality rules set by Resolution 12/02. Upon justified request by the IOTC Scientific Committee for specific analysis, data on DFAD trajectories shall be made available.

~~22)~~

24) The IOTC Scientific Committee shall analyse further information, when available, and provide scientific advice on existing, additional or alternative FAD management options for ~~FOB-FAD~~ sustainable fisheries to be submitted for consideration by the Commission.

~~23)~~

25) The IOTC Scientific Committee shall, by its annual session of 2024, provide a set of relevant indicators that would allow monitoring the effects of ~~FOB-FAD~~ fisheries and assessing the efficiency of existing/additional/alternative DFAD and AFAD management options.

~~24)~~

~~25)~~26) The IOTC Scientific Committee shall provide scientific advice to the Commission by:

- a) assessing the impact that fishing gears or fishing using ~~FOBs-FADs~~ have on juvenile mortality and provide adequate advice to the Commission. This assessment shall include, but not be limited to:
 - i. an analysis of the contribution of all fishing gears to the juvenile mortality of targeted tunas; and
 - ii. an estimate of reference points for fishing mortality of juveniles of yellowfin and bigeye tunas with the view of recovering or maintaining stock size above levels which can produce the MSY and keep the risk of violating/exceeding limit reference points to a low probability;
- b) providing an analysis of the efficiency of current ~~operational-registered instrumented~~ buoy limits, and examining the potential efficiency of alternative/complementary options to limit the number of DFADs at sea. This will include, among other options, defining a sustainable level of ~~FOB-DFAD~~ fishing sets;
- c) continuing reviewing research results on the use of biodegradable material on FADs and other fishing gears, including on relevant international standards, with a view to provide specific recommendations to the Commission as appropriate. At its annual meeting 2026 the IOTC Scientific Committee, based on the input provided by a previous meeting of the ad hoc working group on FADs established by Resolution 15/09 On a fish aggregating devices (FADs) working group, shall specifically advise on the technical feasibility to move to a full implementation of category I DFADs or if there might be currently unforeseeable counterproductive effects for the environment or fishing operations; and
- d) researching and developing mitigating measures to avoid the loss and other impacts of AFADs. These recommendations may include guidelines on the design of AFADs or on the use of biodegradable material.
- e) In providing scientific advice under this paragraph, the IOTC Scientific Committee will apply the precautionary approach in accordance with Resolution 12/01 On the Implementation of the Precautionary Approach.

e)

27) The Secretariat shall submit a report, on an annual basis, to the IOTC Compliance Committee on the level of compliance by each CPC with ~~limits for operational buoys~~ this Resolution.

27bis) 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.

28) This Resolution shall enter into force on 1 January 2023 and shall be reviewed by the Commission no later than at ~~its the IOTC annual~~ Annual Session Meeting in 2027.

26)

27)29) Resolution 19/02 Procedures on a fish aggregating devices (FADs) management plan is superseded by this Resolution.

ANNEX I
DATA COLLECTION FOR DRIFTING FOBs AND THEIR INSTRUMENTED BUOYS

- 1) For each activity on a DFAD FOB and/or instrumented buoy, whether followed by a set or not, each fishing, supply vessel shall report the following information:
 - a) Vessel (name and registration number of the fishing, supply vessel)
 - b) Position of the FOB or the buoy at the time of the operation (as the geographic location of the event (Latitude and Longitude) in degrees and minutes)
 - c) Date (as DD/MM/YYYY, day/month/year)
 - d) Type of FOB (as defined in Table 1)
 - e) Type of activity with the FOB
 - f) In the case of FOBs that are DFADs, information on the design characteristics, including the presence of meshing elements, the biodegradability category, the materials and the dimensions. These information are mandatory at the time of DFAD deployment. They should be provided to the extent possible during DFAD visits (i.e. without having to lift the DFAD out of the water)
 - g) the instrumented buoy unique identifier
 - h) the type of buoy activity and, in the case of buoy deactivation, the cause (DFAD is either retrieved from the sea, abandoned or lost)
- 2) 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 shall report these data aggregated per vessel at 1*1 degree (where applicable) and monthly to the Secretariat.
- 3) Classification of Floating Objects (FOBs)

Code	Description	Example	Type of impact
DFAD	Drifting FAD	Bamboo or metal raft	Fishing effort, habitat modification, pollution
AFAD	Anchored FAD	Anchored floating platform	Fishing effort, habitat modification, pollution
FALOG	Artificial log resulting from fishing activities	Nets, wreck, ropes	Fishing effort, pollution
HALOG	Artificial log resulting from other human activities	Wooden board, oil tank	Fishing effort, pollution
ANLOG	Natural log of animal origin	Dead whale	Fishing effort
VNLOG	Natural log of plant origin	Branches, palm leaf	Fishing effort

4) Classification of activities with FOB and buoys

Code	Name	Description
FOB	Deployment	Deployment of a FAD at sea
	Encounter	Random encounter (without fishing) of a FOB belonging to another vessel or not equipped with a buoy
	Visit	Visit (without fishing) of a FOB (known position, owned by the vessel)
	Consolidation	Deployment of a FAD on a FOB (e.g. to enhance floatability)
	Fishing	Fishing set on the FOB
	Retrieval	Retrieval of the FOB
	Loss	Unvoluntary end of use of the FOB (end of transmission of the buoy)
	Abandonment	Deliberate end of use of the FOB due to a case of force majeure or the FOB is unreachable (buoy still present and able to transmit)

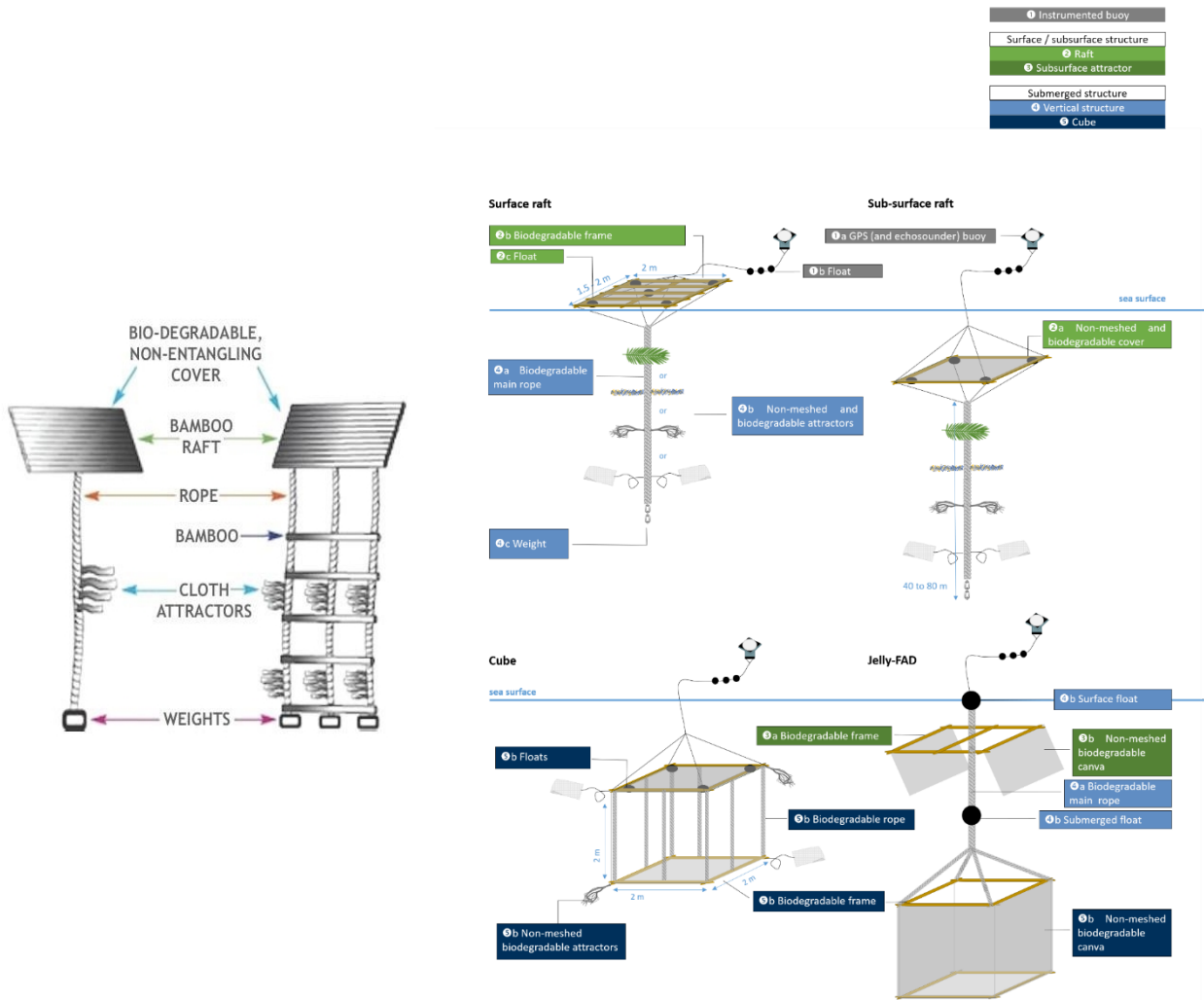
BUOY	Deployment	Deployment (tagging) of a buoy on a FOB already drifting at sea without buoy or deployment of a FAD equipped with a buoy
	Transfer	Replacement of the buoy owned by another vessel by a buoy of the vessel
	Retrieval	Retrieval of the buoy on a FOB drifting at sea
	Loss	Unvoluntary end of use of the buoy (end of transmission of the buoy)
	Abandonment	Voluntary-Deliberate end of use of the buoy due to a case of force majeure end of use of the buoy (buoy still able to transmit)

5) Classification of outcome of FADs deployed

DFAD is deployed + buoy activated							
↓							
Buoy is operational							
Signal is active and buoy can be located				Signal is lost and buoy cannot be located			
DFAD can be retrieved		DFAD cannot be retrieved			DFAD cannot be located, so not retrievable		
Reason to deactivate buoy	DFAD and buoy are taken from the sea	Owner decides not to recover <u>or to discard</u> the DFAD	Force majeure	Not reachable (i.e. in the EEZ of another country)	Buoy is robbed but signal is active	DFAD is robbed	Buoy is broken/technical issue
Final status of the FAD	Retrieved FAD	Abandoned/ Discarded DFAD	Abandoned DFAD		Lost DFAD		
Final action	Logbook (Annex I - 1.h.)	Forbidden	Logbook (Annex I - 1.h.) + notification to the Secretariat		Logbook (Annex I – 1h.)		

ANNEX II

NON PRESCRIPTIVE EXAMPLES FOR THE DESIGN AND DEPLOYMENT OF FADS



- 1) The surface structure of the FAD shall not be covered, or only covered with non-meshed material.
- 2) If a sub-surface component is used, it shall not be made from netting but from non-meshed materials such as ropes or canvas sheets.

ANNEX III
CATEGORIES OF BIODEGRADABILITY

Category I: FAD is fully biodegradable. All parts (i.e., raft and tail and floating components) of the FAD, with the exception of materials used for the instrumented buoys, are built with biodegradable materials.

Category II: All elements (i.e., raft and tail) of the FAD are fully biodegradable materials except for the floating components and the instrumented buoy.

Category III: The tail and other underwater hanging parts of the FAD are fully biodegradable materials, whilst the raft may use non-biodegradable material.

Category IV: All parts of the FAD (i.e. raft and tail) are built partly or fully with non-biodegradable materials.

Those categories do not apply to instrumented buoys attached to DFADs to track them.

ANNEX IV
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:

- a) vessel-types and supply and tender vessels
 - b) DFAD numbers and DFADs beacon numbers to be deployed
 - c) reporting procedures for DFAD ~~and FOB~~ buoy use
 - d) incidental bycatch reduction and utilisation policy
 - e) consideration of interaction with other gear types
 - f) plans for monitoring and retrieval of DFADs at their end of use
 - g) statement or policy on “DFAD ownership”
- 3) Institutional arrangements for management of the DFAD Management Plans:
 - a) institutional responsibilities
 - b) application processes for DFAD ~~and/or FOB~~-instrumented buoy deployment approval
 - c) obligations of vessel owners and masters in respect of DFAD and /or DFAD beacons deployment and use
 - d) DFAD ~~and/or FOB~~-instrumented buoy replacement policy
 - e) reporting obligations
 - 4) DFAD construction specifications and requirements:
 - a) DFAD design characteristics (including information on the biodegradable category and presence of meshing elements)
 - b) DFAD markings and identifiers, including FOB instrumented buoys (requirement for serial numbers in the case of the buoy)
 - c) lighting requirements
 - d) radar reflectors
 - e) visible distance
 - 5) Applicable areas:
 - a) 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~~~~FOB~~ logbook template (data to be collected specified in Annex I).

ANNEX V
DATA COLLECTION FOR AFADS

- 1) Any activity around an AFAD.
- 2) For each activity on an AFAD (repair, intervention consolidation, etc.), whether followed or not by a set or other fishing activities, the:
 - a) Position (as the geographic location of the event (Latitude and Longitude) in degrees and minutes);
 - b) Date (as DD/MM/YYYY, day/month/year); and
 - c) AFAD identifier (i.e. AFAD Marking or beacon ID or any information allowing to identify the owner).
- 3) 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 VI
GUIDELINES FOR PREPARATION OF ANCHORED FISH AGGREGATING DEVICE (AFAD)
MANAGEMENT PLANS

AFAD Management Plans shall include:

1. An objective
2. Scope:
Description of its application with respect to:
 - a) Vessel types
 - b) AFAD numbers and/or AFAD beacon numbers to be deployed (per AFAD type)
 - c) reporting procedures for AFAD deployments
 - d) incidental bycatch reduction and utilisation policy
 - e) consideration of interaction with other gear types
 - f) plans for monitoring and retrieval of lost AFADs
 - g) 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) At-sea 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)
 - b) AFAD markings and identifiers, including AFAD beacons if any
 - c) lighting requirements if any
 - d) radar reflectors
 - e) visible distance
 - f) radio buoys if any (requirement for serial numbers)
 - g) satellite transceivers (requirement for serial numbers)
 - h) echo sounder
5. Applicable areas:
 - a) 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.
7. AFAD logbook template (data to be collected specified in Annex II). 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 beacon 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.~~
- ~~6) Means for monitoring and reviewing implementation of the AFAD MP.~~
- ~~7) AFAD logbook template (data to be collected specified in Annex V).~~