ON BIOFAD EXPERIMENTAL PROJECT

SUBMITTED BY: EUROPEAN UNION

Explanatory Memorandum

Currently there are ongoing studies on biodegradable FADs (BIOFADs) that will lead to a project on the use of this kind of FADs. The limit on the number of active FADs per purse seine vessel in the Indian Ocean may hinder the deployment of BIOFADs following experimental sampling designs, and engagement with the fleet is necessary in order to incentivise them to deploy BIOFADs that may not be successful for fishing.

In this framework, the Scientific Committee (SC20) recommended to consider special allocations for experimental FADs deployed for the collection of scientific data for vessels willing to participate in biodegradable FAD testing under protocols reviewed and endorsed by the Scientific Committee.

This draft resolution has the as main objective to enable and facilitate the implementation of the biodegradable FAD testing without penalising fleets involved in this project

RESOLUTION 18/XX

ON BIOFAD EXPERIMENTAL PROJECT

Keywords: BIOFAD, Research project, biodegradability

The Indian Ocean Tuna Commission (IOTC),

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;

RECALLING that the objective of the IOTC Agreement is to ensure, through appropriate management, the conservation and optimum utilisation of stocks under its competence and to encourage the sustainable development of fisheries based on such stocks while minimising the level of bycatch;

HAVING REGARD to Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL);

RECOGNISING that promoting the use of natural origin biodegradable materials in the construction of FADs could contribute to the reduction of marine litter;

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;

RECALLING that Resolution 12/04 established that the Commission at its annual session in 2013 should consider the recommendations of the IOTC Scientific Committee as regards the development of improved FAD designs to reduce the incidence of entanglement of marine turtles, including the use of biodegradable materials, together with socio-economic considerations, with a view to adopting further measures to mitigate interactions with marine turtles in fisheries covered by the IOTC Agreement;

RECALLING that Resolution 17/08 established procedures on a fish aggregating device (FAD) management plan, including more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs and use of biodegradable materials to reduce the incidence of entanglement of non-target species as specified in Annex III of Resolution 17/08; calling to reduce the amount of synthetic marine debris and promote the use or biodegradable materials (such as hessian canvas, hemp ropes, etc.).

Furhter RECALLING that the SC noted the challenges in conducting studies on biodegradable FADs (BIOFADs), such as the limit on the number of active FADs per purse seine vessel in the Indian Ocean that may hinder the deployment of biodegradable FADs following experimental sampling designs, and also engagement with the fleet is necessary in order to incentivise them to deploy biodegradable FADs that may not be successful for fishing.

Furthermore, NOTING that IOTC, along with other tuna RFMOs, recommended and adoped resolutions to promote reduction of the amount of synthetic marine debris by the use of natural or biodegradable materials for drifting FADs,

RECALLING that SC20 ENDORSED (IOTC SC20 paras 157 to 165) a scientific research project (“the BIOFAD Research Project”, IOTC-2017-SC20-INF07) by a consortium ('the Project Consortium') led by the

Technological Center for Food and Marine Innovation (AZTI), the Spanish Oceanografic Institute (IEO) and the Institut de recherche pour le développement (IRD) to test the use of biodegradable materials and designs for the construction of drifting FADs in natural environmental conditions and REQUESTED the project to present the outcomes of the at sea trials to the next WPEB, WPTT and SC meetings.

NOTING that, the SC ENDORSED that the Project Consortium carries out a large-scale experiment with the deployment of 1000 biodegradable FADs with experimental sampling designs (BIOFADs) in 2018-2019 in order to obtain sufficient data by the BIOFAD Research Project to conduct reliable scientific research and to avoid the limitations identified in earlier small scale trials (250 in each quarter to analyse temporal effects). The SC equally noted that the project counts on the active collaboration of Seychelles, Mauritius and European Union purse seiners with a participation of 42 purse seine vessels operating in the Indian Ocean. The SC noted that in total, each vessel will deploy around 24 BIOFADs, 6 BIOFADs by trimester (2 BIOFADS per vessel/month for the duration of the project from April 2018 to April 2019).

NOTING the SC RECOMMENDADTION that the Commission shall consider special allocations for experimental FADs deployed for the collection of scientific data for vessels willing to participate in biodegradable FAD testing under protocols reviewed and endorsed by the Scientific Committee.

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

1. This Resolution shall apply to purse seine vessels deploying biodegradable FADs with experimental sampling designs (BIOFADs), participating in the BIOFAD Research Project from April 2018 to April 2019. The description of the project is contained in Annex 1.

2. BIOFADs used for the collection of scientific data on biodegradable FADs tested under the supervision of the BIOFAD Project Consortium and the Scientific Committee, and deployed by the Project Consortium, shall exempted from the application of FADs limit number established by Resolution 17/08.

3. Each purse seine vessel participating in the Research Project shall deploy a maximum of two BIOFADs per month from April 2018 to April 2019. The number of exempted BIOFADs deployed cannot be transferred to any other vessel.

4. Each BIOFAD deployed shall be marked in a clear manner by the Project Consortium to distinguish it from other FADs and to avoid that it becomes unreadable or disassociated with the BIOFAD Research project.

5. Vessels not participating in the Research Project visiting or fishing on FADs clearly identified as a BIOFAD shall specifically report to their national scientists the BIOFAD (and devices) status and activities on this BIOFAD (including catch data if applicable).

6. The Project Consortium shall notify the list of the purse seine vessels participating in the BIOFAD Research project to the IOTC Secretariat by 1 June 2018.

7. The Project Consortium will make available to the IOTC Scientific Committee the results of the project at the latest two months in advance of its 2020 meeting. The Scientific Committee will analyse the outcomes of the project and provide scientific advice on possible additional FAD management options for consideration by the Commission in 2021.

ANNEX I

BIOFAD PROJECT INFORMATION AND GUIDELINES TO DEPLOY AND USE OF BIOFADS

The consortium formed by AZTI, IRD and IEO aims through the project "Testing designs and identify options to mitigate impacts of drifting FADs on the Ecosystem" to address current impediments and to provide solutions that shall support the implementation of non-entangling and biodegradable FADs in the IOTC Convention Area. This project will have the collaboration of the EU, Seychelles and Mauritius purse seine fishery and the International Seafood Sustainability Foundation active. The purpose of this specific contract is to:

i) to test the use of specific biodegradable materials and designs for the construction of drifting FADs in natural environmental conditions;

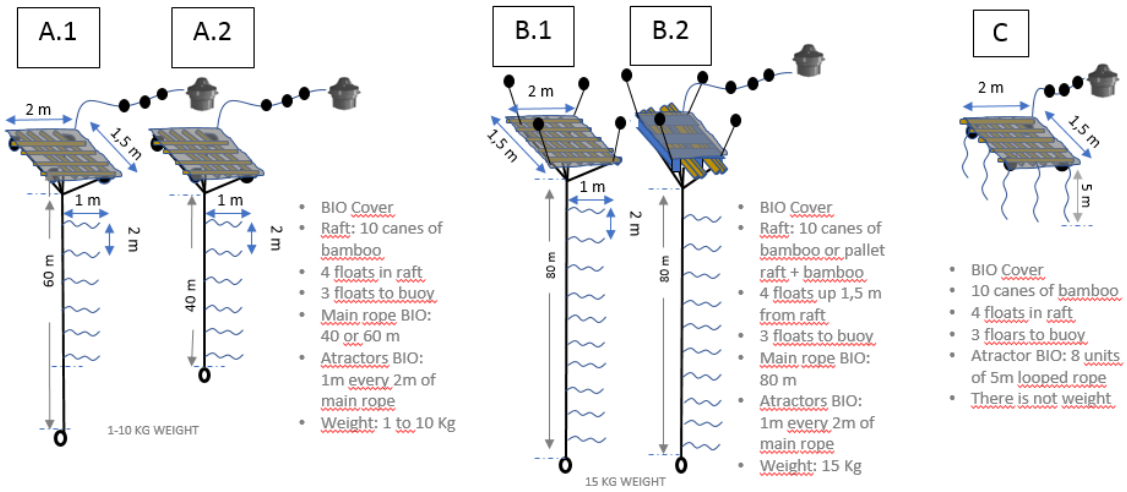
ii) to identify options to mitigate drifting FADs impacts on the ecosystem, and

iii) to assess the socio-economic viability of the use of BIO FADs (i.e. non-entangling and biodegradable) in the purse seine tropical tuna fishery.

The consortium will oversee both the construction of experimental BIOFADs and the monitoring of deployed BIOFADs, and their paired conventional non-entangling FADs (hereafter named CONFAD), at sea, as well as the data collection and reporting. Purse seine vessels participating in the BIOFAD project in the Indian Ocean will follow the summarized protocol regarding i) material and prototypes selection, ii) deployment strategy and identification of experimental FADs, and iii) data collection and reporting.

i) MATERIAL AND PROTOTYPES

Three are the prototypes selected for the BIOFAD project. These designs include all the details in terms of dimension and materials as guide for their construction by the tuna purse seine industry. These prototypes were designed in consensus and aim to cover the different drifting performance that fisherman currently seek with the conventional non-entangling FADs: superficial FADs (prototype C), semi-superficial FADs (prototypes A1 and A2), and deep FADs (B1 and B2). Syntethic material like plastic gallons, plastic bottles, fishing nets, syntethic canvas, and metallic frame used for the construction of the raft are all prohibited for the construction of BIOFAD. To replace these syntethic material different configuration cotton ropes and high-resistance cotton canvas have been selected.



Summary of the dimensions and materials of the prototypes selected for the BIOFAD project.

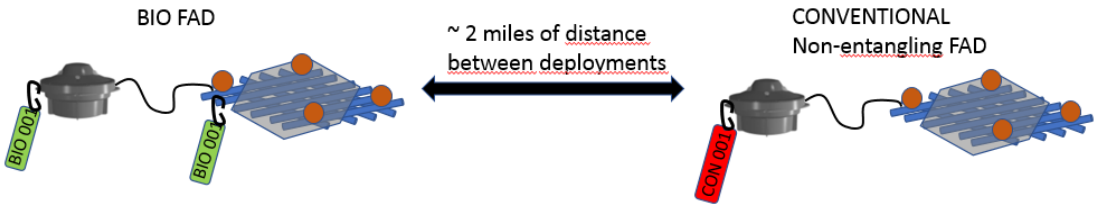
ii) DEPLOYMENT STRATEGY AND IDENTIFICATION

An effective FAD deployment strategy will be adopted considering the PS fleet FAD fishing strategy and its dynamics in the Indian Ocean. A total of 1000 BIOFADs (24 FADs per vessel) are planned to be deployed from April 2018 to April 2019, 2 BIOFADs per month and vessel (6 BIOFADs per vessel and quarter-season, preferably). Deployment effort will be shared among the 42 purse seiners from Mauritius, Seychelles and EU operating in the Indian Ocean. This will make it approximately 250 FADs being deployed each quarter.

To assess the efficiency of BIOFADs in terms of tuna and non-tuna species aggregation, structure durability and degradation rate, and FAD performance (e.g., drift), comparison between BIOFADs and currently using conventional non-entangling FADs (hereafter named CONFAD) will be conducted.

The following deployment procedure is defined:

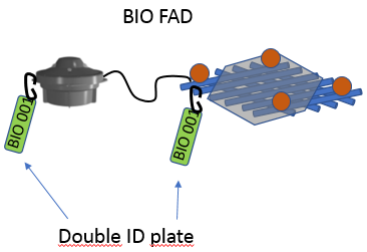
- Every BIOFAD deployment will be accompanied by a "pair" CONFAD deployment.
- The CONFAD construction will be of similar dimension of its pair BIOFAD but made by currently used syntethic material.
- The BIOFAD and its pair CONFAD will use same model/brand of echo-sounder buoy at first deployment.
- The distance between the deployment of BIOFAD and its pair CONFAD will be approximately 2 miles.



Drawing of the deployment strategy for the BIOFAD and its pair CONFAD.

BIOFAD and CONFAD identification procedure are described in the following points:

- All the BIOFADs and CONFADs will be identified in every moment by an identification number to ensure their traceability (e.g. from BIO-0001 to BIO-1000 and from CON-0001 to CON-0001).
- This ID number will always belong to the same BIOFAD or CONFAD through all its lifetime.
- All BIOFADs will be identified by two metallic plates showing the ID number. One of them will be attached to the raft and the other to the echo-sounder buoy associated with the BIOFAD.
- CONFADs as its pair BIOFADs will share same serial number (e.g. CON-0001 and BIO-0001).
- All CONFAD will be identified by a unique metallic plate showing the ID number and attached to the associated echo-sounder buoy.
- The metallic plate attached to the raft of the BIOFAD will never be removed from it. Only if the part of the structure where the plate is attached is replaced, the ID plate will be removed and attached again to the newly replaced part.
- It is very important that when a BIOFAD or CONFAD change hands (i.e. every time there is an echo-sounder buoy replacement), the ID number plate will be transferred from old buoy to newly associated buoy.



Drawing of the procedure to attach the BIOFAD ID number shown in the metallic plate to the raft and associated echo-sounder buoy.

iii) DATA COLLECTION AND REPORTING

The following fishing operations have been considered for the data collection procedure related to BIOFAD and CONFAD:

- In every new deployment of BIOFAD or CONFAD: type of prototype (e.g. A1), ID number of the metallic plate (e.g. BIO-0001), and associated echo-sounder buoy codification number will be collected.
- In every set, visit with buoy replacement, or retrieval of a BIOFAD or CONFAD: ID number of the metallic plate, codification number of the echo-sounder buoy, the prototype type, and FAD's component state control will be recorded. If there is buoy replacement codification number of new buoy and old buoy must be recorded.
- In every simple visit (no buoy replacement) to a BIOFAD or CONFAD: It will encourage to record above described information.

To provide information on BIOFAD components status control the following procedure is defined:

- Every time there is a set on BIOFAD or CONFAD, if possible, the experimental FAD will be lifted up for the assessment of the state control of FAD's components.
- Observers onboard and crew (Skipper/Captain) will be responsible to collect this information.
- All parts of the structure described in the table below will be checked. A scale from 1 to 4 will be applied to value the status of the FADs (1 = Very good, not damaged; 2 = Good, a bit damaged; 3 = Bad, quite damaged; 4 = Very bad, close to sinking). More detailed description of each of the values for each component is also provided.
- Pictures of the components of BIOFAD and CONFAD will be taken whenever possible.
- Every time there is a replacement of any component of the BIOFAD and CONFAD, will be reported in the table below.
- In the case of the BIOFADs, any damaged parts susceptible of replacement will be replaced by biodegradable material, similar to the material used when it was first constructed and keeping design of the original prototype.
- The operator is encouraged to provide any observation to further describe the status of the structure (e.g. degradation % of each component).

Participating vessels are also requested to report data from echo-sounder buoys associated to BIOFADs and CONFADs deployed during the project.

All collected information described above will be reported following a specific form created for the BIOFAD project. An email template has been created for the crew (Skipper/Captain) to provide required information to the Consortium by the following email address biofad@azti.es.

Statu control of BIOFAD and CONFAD						REPLACEMENT	
Floating parts	1	2	3	4	5	YES	NO
Raft							
Floats							
Cover/canvas							
Hanging parts	1	2	3	4	5		
Main rope							
Attractor (looped rope)							
Weight							

1 Very good, not damaged
2 Good, a bit damaged
3 Bad, quite damaged
4 Very bad, close to sinking
5 Unknown

Vessel name
Date / Hour:
Activity (add a X in the correct cell)

New deployment	Visit	Set	Retrieval	Redeployment	Removal

Number of BIO or CONFAD:
Prototype (add a X in the correct cell)

A1	A2	B1	B2	C

BIO or CONFAD ownership (Yes/No):
Code echo-sounder buoy old or foreign:
Code new echo-souder buoy:
Lift up (Yes/No):

Image of the email template developed for participating vessels to report required information