Food and Agriculture Organization of the United Nations

Indian Ocean Tuna Commission
Commission des Thons de l'Ocean Indien
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IOTC-2025-CoC22-08a [E]

SUMMARY OF COMPLIANCE WITH AND COLLECTION OF THE DRIFTING FISH AGGREGATING DEVICES MANAGEMENT PLANS

Prepared by: IOTC Secretariat, 05 March 2025

PURPOSE

This document summarises the information received from IOTC CPCs in accordance with IOTC Resolution 24/02[1] *on management of drifting fish aggregating devices (FADs) in the iotc area of competence* , including a limitation on the number of FADs, more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species.

The paragraph 2 describes the application of Resolution 24/02 and of Resolution 19/02:

> 19/02 - Paragraph 2. This Resolution shall apply to CPCs having purse seine vessels and fishing on Drifting Fish Aggregating Devices (DFADs), equipped with instrumented buoys for the purpose of aggregating target tuna species, in the IOTC area of competence. Only purse seiners and associated supply or support vessels are allowed to deploy DFADs in the IOTC Area of Competence.
>
> 24/02 – Paragraph 2. This Resolution shall apply to CPC flag purse seine vessels fishing on DFADs in the IOTC area of competence as well as associated supply vessels

BACKGROUND

At its 23rd Session, the Commission adopted Resolution 19/02 *Procedures on a fish aggregating devices (FADs) management plan*. This Resolution was superseded, at the 28th Session, with the adoption of Resolution 24/02 *on management of drifting fish aggregating devices (FADs) in the IOTC area of competence.*

The reporting requirements under Resolution 24/02 are provided in paragraph 21, Paragraph 22 of the Resolution tasks the Compliance Committee and the IOTC Scientific Committee to analyse the information submitted under the reporting requirement; and under Resolution 19/02 are provided in paragraphs 12 and 16 of this Resolution. Paragraph 13 of the Resolution tasks the Compliance Committee to analyse the information submitted under the reporting requirement.

> **Resolution 24/02**
>
> Paragraph 21. CPCs with flag vessels fishing on DFADs shall submit to the IOTC Executive Secretary, once in 2025 for the currently operating fleet and once in the first year of operation for future fleets in their annual Implementation Report, a DFAD Management Plan for the use of DFADs and associated technologies in accordance with the Guidelines for Preparation of FAD Management Plans as provided for DFADs in Annex II. If there is a change in the information provided in Annex II, CPCs shall submit an amendment of their DFAD Management Plan in their annual Implementation Report.
>
> Paragraph 21. The IOTC Compliance Committee and the IOTC Scientific Committee shall analyse the DFAD Management Plans and report the results of this analysis to the Commission.
>
> **Resolution 19/02**
>
> Paragraph 12. CPCs having vessels flying their flag and fishing on FADs shall submit, to the Commission, on an annual basis, Management Plans for the use of FADs. Due to their specificity in terms of users, type of boat/vessel involved, fishing method and gear used and materials used in their construction, the Management Plans and Reporting Requirements for Drifting FADs

[1] Previously Resolution 19/02, 18/08, Resolution 17/08, Resolution 15/08, Resolution 13/08 and Resolution 12/08. Objection received from Oman on 24/02: does not apply to Oman. Resolution 19/02 remains binding Oman.

(DFAD) […]. The Plans shall at a minimum follow the Guidelines for Preparation for FAD Management Plans by each CPC as provided for DFADs in Annex I […].

Paragraph 13. The Management Plans shall be analysed by the IOTC Compliance Committee.

Paragraph 16. CPCs shall submit to the Commission, 60 days before the Annual Meeting, a report on the progress of the management plans of FADs, including, if necessary, reviews of the initially submitted Management Plans, and including reviews of the application of the principles set out in Annex III.

DISCUSSION

This document:

- Incorporates the submissions of the 2025 DFAD management plans received, during the intersessional period 2024/2025, from the European Union (France/Italy & Spain; 11.02.2025), the Republic of Korea (07.02.2025), Mauritius (12.02.2025), Oman (11.02.2025), Seychelles (12.02.2025) and Tanzania (09.01.2025), as presented in Table 1. Australia, Indonesia, Iran and Japan have indicated that their vessels are not fishing on DFADs in 2024/2025.
  Annex 2 provide the collection of drifting fish aggregating device management plans.
- Presents an update of the summary of compliance with the 2025 DFAD management plans (Table 3), and Annex 1 provide the detailed assessments for the 2025 DFAD management plans.

The following CPCs have a combined 397 purse seine vessels registered in the IOTC Record of Authorised Vessels (e-RAV): Australia (8), European Union – France (8), Italy (1) and Spain (14), Indonesia (319), Islamic Rep. of Iran (8), Japan (10), Kenya (1), Rep. of Korea (5), Mauritius (3), Oman (6), Seychelles (13) and Tanzania (1).

As of 08 February 2025:

- 13 flag States[2] have registered a total of 397 purse seine vessels of length overall (LOA) 24 meters or over to operate in the IOTC area.
- There is no purse seine vessel of less than 24 meters LOA to operate in the IOTC area.

SUBMISSION HISTORY OF DFAD MANAGEMENT PLANS

The submissions history of DFAD management plans are presented in Table 1.

Table 1: DFAD management plans submitted over the period 2013 to 2025.

Year	EU			IDN	IRN	JPN	KEN	KOR	MUS	OMN	SYC	TZA
	FRA	ITA	ESP									
2013	N/S		N/S	N/S	N/S	25/12	N/A	31/12	N/S	N/A	N/S	N/A
2014	N/S		15/01	N/S	26/01	26/12	N/A	N/S	14/03	N/A	N/S	N/A
2015	N/S		N/S	12/01	N/S	N/S	N/A	N/S	N/S	N/A	27/04	N/A
2016	11/03		11/03	N/S	N/S	N/S	N/A	16/03	N/S	N/A	N/S	N/A
2017	13/04		19/04	N/S	N/S	10/04	N/A	21/03	N/S	N/A	N/S	N/A
2018	19/01		14/03	N/S	N/S	05/07	N/A	16/03	14/11	N/A	N/S	N/A
2019	20/05		20/05	N/A	14/04	2018	N/A	09/04	2018	N/A	N/S	N/A
2020	01/04		01/04	N/A	N/S	03/04	31/07	01/04	01/04	N/A	21/08	N/A
2021	08/04		08/04	N/A	13/04/21	07/04	N/S[A]	08/04	08/04	N/A	N/S	N/A
2022	17/03	N/S	17/03	N/A		16/03	N/A	17/03	N/A	N/S	17/03[B]	N/S
2023	09/03		09/03	N/A	N/A	13/02	N/A	09/03	09/03	N/S	N/S[B]	N/S

[2] Corresponding to 10 CPCs, European Union PS fleets flagged to France, Italy and Spain.

Year	EU			IDN	IRN	JPN	KEN	KOR	MUS	OMN	SYC	TZA
	FRA	ITA	ESP									
2013	N/S		N/S	N/S	N/S	25/12	N/A	31/12	N/S	N/A	N/S	N/A
2014	N/S		15/01	N/S	26/01	26/12	N/A	N/S	14/03	N/A	N/S	N/A
2015	N/S		N/S	12/01	N/S	N/S	N/A	N/S	N/S	N/A	27/04	N/A
2016	11/03		11/03	N/S	N/S	N/S	N/A	16/03	N/S	N/A	N/S	N/A
2024	14/03		14/03	N/A	N/A	14/03	N/A	11/03	14/03	N/S	14/03[B]	21/03
2025	11.02		11.02	N/A	N/A	N/A	N/S	07/02	12.02	11.02	12.02	09/01

N/S[B]	Submitted in 2022 and 2024, plan overlapping 2022/2023/2024/2025

Note:

Submitted

European Union: Has declared in e-MARIS: "*EU-ITA vessel is managed under the EU-FRA management plan*".

Tanzania:

Tanzania has submitted a 2025 DFAD management plan in e-MARIS. The plan has not been prepared according to the Annex I Guidelines for preparation of drifting fish aggregating device (DFAD) management plans.

Oman: No DFAD management plan submitted for the years 2022, 2023 and2024.

N/A	Not applicable

Japan: Has declared in e-MARIS: "*For 2025 no purse seine vessels / supply or support vessels fishing on Drifting Fish Aggregating Devices*".

Indonesia: Has declared in e-MARIS "*No DFADs fishery, fishing for tuna and tuna like species under the IOTC mandate*".

Iran (Islamic Rep. of): Has declared in e-MARIS: "*For 2025 no purse seine vessels / supply or support vessels fishing on Drifting Fish Aggregating Devices*".

N/S	Not submitted

Kenya: Had 6 purse seine vessels on the IOTC Record of Authorised Vessels in 2021 (deleted on 11.09.2021). Has one purse seine vessel on the IOTC Record of Authorised Vessels in 2025.

- Information required: 2025 DFAD management plans

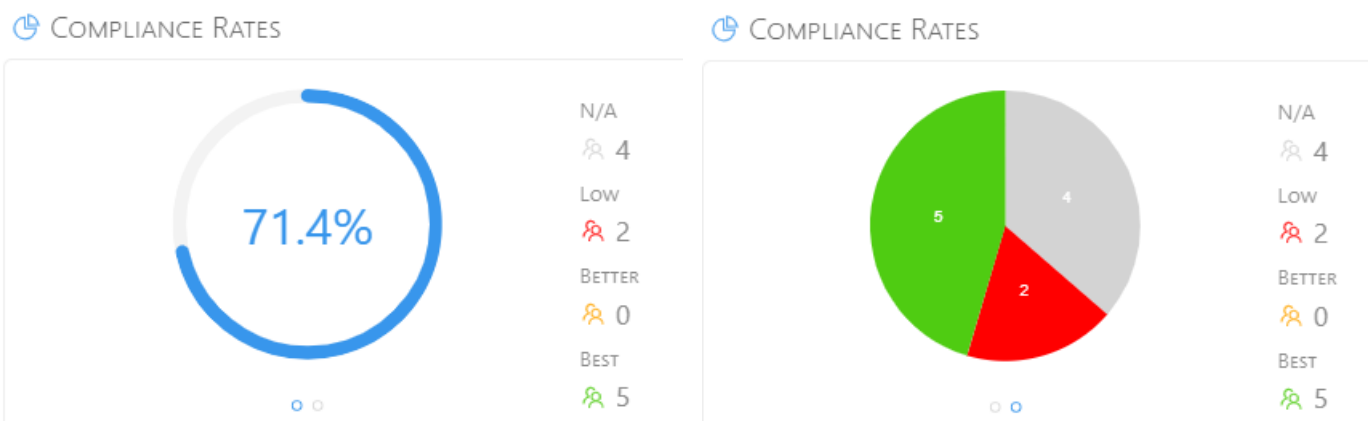


Figure 1. Commission compliance rate (CoC22, 2025) - 2025 DFAD management plans.

Compliant	**5**	EUR, KOR, MUS, OMN, SYC
Partially Compliant	**1**	TZA
Not Compliant 1	**1**	KEN
Not Applicable	**23**	AUS, BDG, CHN, COM, FRA(OT), IND, IDN, IRN, JPN, LBR, MDG, MYS, MDV, MOZ, PAK, PHL, SOM, ZAF, LKA, SDN, THA, GBR, YEM

CPC with repeated compliance issues

Repeated compliance issues	**1**	TZA

- Obligation: DFADs to be marked

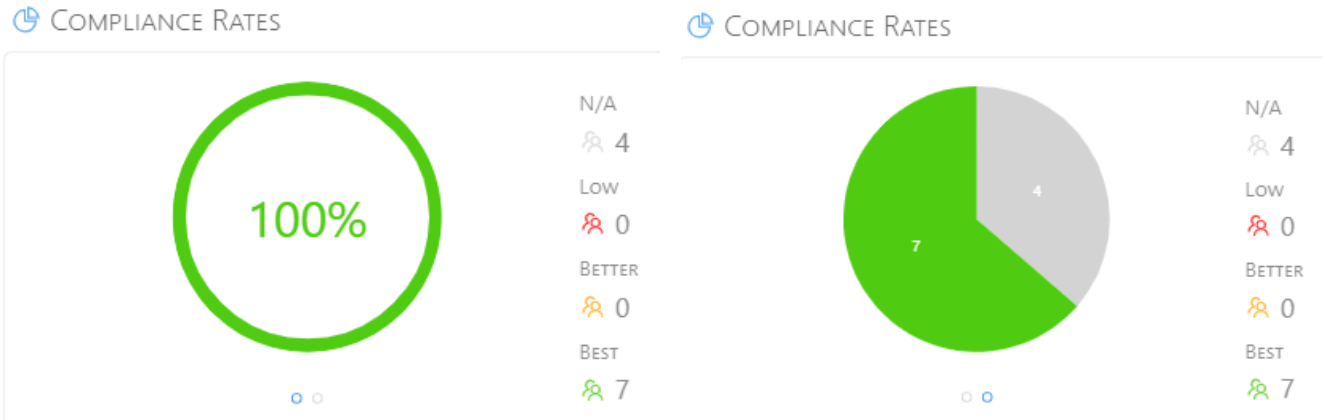


Figure 2. Commission compliance rate (CoC22, 2025) - DFADs to be marked.

Compliant	**7**	EUR, KEN, JPN, KOR, MUS, OMN, SYC, TZA
Not Applicable	**4**	AUS, IDN, IRN, JPN
Not Applicable by exclusion	**19**	CHN, BDG, COM, FRAOT, IND, LBR, MDG, MYS, MDV, MOZ, PAK, PHL, SOM, ZAF, LKA, SDN, THA, GBR, YEM

CPC with repeated compliance issues

Repeated compliance issues	None

From the CPCs that are fishing on DFAD in 2024/2025, all (7) are compliant with the requirement on marking of DFADs.

PROGRESS REPORT ON THE IMPLEMENTATION OF 2024 DFAD MANAGEMENT PLANS

The resolution 24/02 does not require CPCs to provide a report on the progress of implementation of the DFAD management. Whereas, IOTC Resolution 19/02, paragraph 16, require CPCs to provide a report on the progress of implementation of the management plan. This requirement applies to Oman only. Oman had not provided a DFAD management plan in 2024.

Report on the progress of implementation of the DFAD management plan are summarised in the Table 2.

Table 2: Submission history of progress report of implementation of the DFAD management plans (2017 to 2025).

Reception progress report DFAD MGT PLANS	EU		IDN	IRN	JPN	KEN	KOR	MUS	OMN	SYC	TZA
	(FRA, ITA)	(ESP)									
2017	22/03	22/03	17 /03	N/S	15/03	N/A	21/03	17 /03	N/A	N/S	N/A
2018	15/03	15/03	16/03	15/03	16/03	N/A	16/03	16/03	N/A	12/04	N/A
2019	N/S	N/S	N/A	14/04	01/04	N/A	09//04	10/04	N/A	09/04	N/A
2020	N/S	01/04	N/A	N/S	01/04	N/A	01/04	21 August	N/A	N/S	N/A
2021	30 /04	08 /04	N/A	28 /04	07/04	28/04	08/04	09 /04	N/A	01/04	N/A
2022	17/03	17/03	N/A	N/S	16/03	N/S	17/03	17/03	N/S	N/S	N/A
2023	09/03	04/04	N/A	N/S	09/03	N/A	09/03	09/03	N/S	09/03	N/S
2024	14/03	02/04	N/A	N/A	14/03	N/A	11/03	14/03	N/S	14/03	N/S
2025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/S	N/A	N/A

Note:

N/S	Not submitted

Oman: Had not submitted a 2024 DFAD management plan; and progress report not submitted.

COMPLIANCE DFAD MANAGEMENT PLANS

The number of purse seine vessels for CPCs that currently have purse seiners in the record of authorised vessels and that are fishing on DFADs are presented in Table 3.

At its 12th Session, the Compliance Committee recommended that the IOTC Secretariat provide a summary of compliance with the DFAD management plans in a tabular format to the next CoC [*Para 123, IOTC–2015–CoC12–R*].

The guideline for producing a DFAD management plan consists of 24 sections/elements, and these are assessed by applying the following methodology: Yes (Y) indicates the topic is covered in the DFAD management plan; No (N) indicates the topic is not covered in the DFAD management plan.

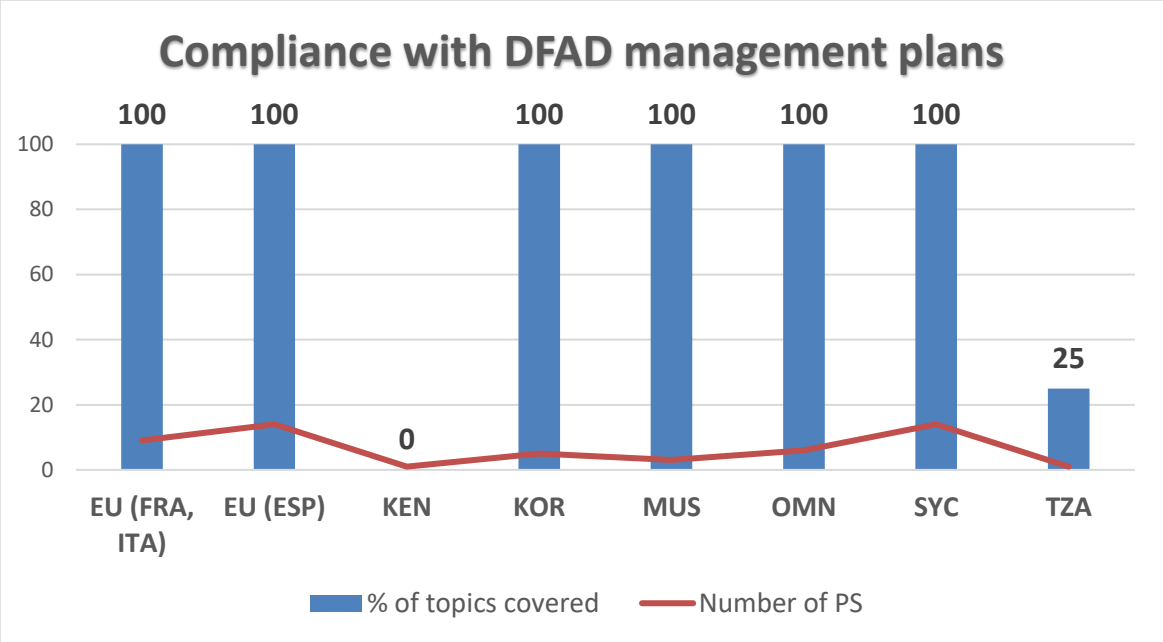
Table 3: Summary of the assessments for each DFAD management plan submitted.

DFAD MANAGEMENT PLANS (2025)	EU FRA	EU ITA	EU ESP	KEN	KOR	MUS	OMN	SYC	TZA
Year of submission	2025	2025	2025	2025	2025	2025	2025	2025	2025
PS vessels > 24 m [xx]	**8**	**1**	**14**	**1**	**5**	**3**	**6**	**14**	**1**
PS vessels < 24 m [xx]	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Topics covered (Y)	24	24	24	0	24	24	24	24	6
Topics not covered (N)	0	0	0	24	0	0	0	0	18
% of topics covered	100%	100%	100%	0	100%	100%	100%	100%	25%

[x]: 2024 DFAD plan not submitted by OMN.

[xx]: Number of purse seine vessels subject to DFAD Management Plans (as of February 2025).

Figure 1: Levels of compliance of DFAD management plans with the guideline, expressed in percentage of topics covered (Annex I – Resolution 24/02 and 19/02).



CONCLUSION

The available 2025 DFAD management plans fall into the following three distinct categories:

1. DFADs management plans not submitted; 0 % topics covered: Kenya,
2. DFADs management plans submitted; 100 % topics covered: European Union (FRA, ITA & ESP), Republic of Korea, Mauritius, Oman and Seychelles).
3. DFADs management plans submitted; some topics not covered: Tanzania.

Annex 1: Details of compliance assessments of the 2025 DFAD management plans.

Note: Yes (Y): Indicates the topic is covered in the DFAD management plan; No (N): Indicates the topic is not covered in the DFAD management plan.
*: Vessels registered on the IOTC Record of Authorised Vessels.
2025 DFAD plan not submitted by Kenya. Some elements missing in Tanzania 2025 DFAD plan.

DRIFTING FISH AGGREGATING DEVICE (DFAD) MANAGEMENT PLANS (2025)	EU (FRA)	EU (ITA)	EU (ESP)	OMN	KEN	KOR	MUS	SYC	TZA
Date of submission	11.02.25		11.02.25	11.02.25	N/S	07.02.25	12.02.25	12.02.25	09.01.25
Purse seine vessels above 24 m*	**13**	**1**	**15**	**1**	**1**	**5**	**3**	**14**	**1**
1. An objective	Y	Y	Y	Y	N	Y	Y	Y	Y
2. Scope									
– 2.1. Vessel-types and support and tender vessels	Y	Y	Y	Y	N	Y	Y	Y	N
– 2.2. DFAD numbers and/or DFADs beacon numbers to be deployed	Y	Y	Y	Y	N	Y	Y	Y	Y
– 2.3 reporting procedures for DFAD deployment	Y	Y	Y	Y	N	Y	Y	Y	N
– 2.4 incidental bycatch reduction and utilization policy	Y	Y	Y	Y	N	Y	Y	Y	N
– 2.5 consideration of interaction with other gear types	Y	Y	Y	Y	N	Y	Y	Y	N
– 2.6 plans for monitoring and retrieval of lost DFADs	Y	Y	Y	Y	N	Y	Y	Y	Y
– 2.7 statement or policy on “DFAD ownership”	Y	Y	Y	Y	N	Y	Y	Y	N

DRIFTING FISH AGGREGATING DEVICE (DFAD) MANAGEMENT PLANS (2025)	EU (FRA)	EU (ITA)	EU (ESP)	OMN	KEN	KOR	MUS	SYC	TZA
3. Institutional arrangements									
– 3.1 Institutional responsibilities	Y	Y	Y	Y	N	Y	Y	Y	N
– 3.2 application processes for DFAD and /or DFAD beacons deployment approval	Y	Y	Y	Y	N	Y	Y	Y	N
– 3.3 Obligations of vessel owners and masters in respect of DFAD and /or DFAD beacons deployment and use	Y	Y	Y	Y	N	Y	Y	Y	N
– 3.4 DFAD and/or DFADs beacons replacement policy	Y	Y	Y	Y	N	Y	Y	Y	N
– 3.5 reporting obligations	Y	Y	Y	Y	N	Y	Y	Y	Y
4. DFAD Construction specifications and requirements									
– 4.1 DFAD design characteristics (a description)	Y	Y	Y	Y	N	Y	Y	Y	Y
– 4.2 DFAD markings and identifiers, including DFADs beacons	Y	Y	Y	Y	N	Y	Y	Y	N
– 4.3 Lighting requirements	Y	Y	Y	Y	N	Y	Y	Y	N
– 4.4 radar reflectors	Y	Y	Y	Y	Y	Y	Y	Y	N
– 4.5 visible distance	Y	Y	Y	Y	Y	Y	Y	Y	N

DRIFTING FISH AGGREGATING DEVICE (DFAD) MANAGEMENT PLANS (2025)	EU (FRA)	EU (ITA)	EU (ESP)	OMN	KEN	KOR	MUS	SYC	TZA
– 4.6 radio buoys (requirement for serial numbers)	Y	Y	Y	Y	Y	Y	Y	Y	N
– 4.7 satellite transceivers (requirement for serial numbers)	Y	Y	Y	Y	Y	Y	Y	Y	N
5. Applicable areas – 5.1 Details of any closed areas or periods e.g. territorial waters, shipping lanes, proximity to artisanal fisheries, etc	Y	Y	Y	Y	Y	Y	Y	Y	N
6. **Applicable period for the DFAD–MP**	Y	Y	Y	Y	Y	Y	Y	Y	Y
7. **Means for monitoring and reviewing implementation of the DFAD–MP**	Y	Y	Y	Y	Y	Y	Y	Y	N
8. DFAD logbook template	Y	Y	Y	Y	Y	Y	Y	Y	N
Number of topics covered vs not covered	24 Y	24Y	24 Y	24 Y	24 N	24 Y	24 Y	24 Y	18 N
General comments by Secretariat	All elements exist in the FADs management plan	All elements exist in the FADs management plan	All elements exist in the FADs management plan	All elements exist in the FADs management plan	No FADs management plan submitted	All elements exist in the FADs management plan	All elements exist in the FADs management plan	All elements exist in the FADs management plan	Some elements missing in the FADs management plan

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Annex 2

Collection of 2025 DFADs management plans

CPC	Date received
European Union (FRA)	11.02.2025
European Union (ITA)	11.02.2025
European Union (ESP)	11.02.2025
Korea	07.02.2025
Mauritius	12.02.2025
Oman	11.02.2025
Seychelles	12.02.2025
Tanzania	09.01.2025

The 2025 DFAD management plans are provided below as submitted in the original language

European Union (France) 2025 DFADs Management Plan

PLAN DE GESTION NATIONAL DES DCPD EN OCEAN INDIEN POUR L'ANNEE 2025 – France (UE)

Chapitre I – Cadre des mesures de gestion

Article 1 – Textes de référence

- **Résolution 21/01 de la CTOI** sur un plan provisoire pour reconstituer le stock d'albacore de l'Océan Indien dans la zone de compétence de la CTOI ;

- **Résolution 24/02 de la CTOI** concernant la gestion des dispositifs de concentration de poissons dérivants dans la zone de compétence de la CTOI;

- **Résolution 24/06 de la CTOI** sur une interdiction des rejets de patudo, de listao, d'albacore et des espèces non-cibles capturés par des navires inscrits au Registre des navires autorisés de la CTOI qui opèrent dans la zone de compétence de la CTOI ;

- **Résolution 17/05 de la CTOI** sur la conservation des requins capturés en association avec des pêcheries gérées par la CTOI ;

- **Résolution 16/08 de la CTOI** sur l'interdiction de l'utilisation des aéronefs et des véhicules aériens sans pilote comme auxiliaires de pêche ;

- **Recommandations du programme CECOFAD** sur la collecte des données relatives aux objets flottants ;

- **Recommandations ISSF** sur les typologies de DCP à risque de maillage.

Article 2 – Champ d'application

2.1 Navires concernés par le plan de gestion français des DCPD dans l'Océan Indien

Ce plan de gestion des DCPD est applicable aux thoniers senneurs immatriculés dans un port français et opérant dans les eaux de l'Océan Indien en 2025.

Ce plan de gestion s'applique également aux navires de soutien battant pavillon français et utilisés dans le cadre de la pêche à la senne des thons tropicaux.

Le tableau 1 présente la liste de ces navires.

Tableau 1 : Navires concernés par le plan de gestion français des DCPD dans l'Océan Indien pour 2025

Nom du navire	Type de navire	Senneurs assistés par le baliseur
AVEL VAD	Senneur	
CAP SAINTE MARIE	Senneur	
BERNICA	Senneur	
CAP SAINT VINCENT	Senneur	
DOLOMIEU	Senneur	
FRANCHE-TERRE	Senneur	
GEVRED	Senneur	
PENDRUC	Senneur	
KERSAINT	Navire de soutien	AVEL VAD, CAP SAINT VINCENT, CAP SAINTE MARIE, DRENNEC, GEVRED, PENDRUC + TORRE ITALIA (pavillon italien)
JANVIER-LOUIS RAPHAËL	Navire de soutien	DOLOMIEU, FRANCHE-TERRE, BERNICA

2.2 Dispositifs concernés par le plan de gestion français des DCPD dans l'Océan Indien

Le plan de gestion porte sur les DCP dérivants et sur leurs balises instrumentées déployés et utilisés par les thoniers senneurs français et leurs baliseurs. Il comporte également des recommandations sur les DCPD et épaves dérivantes rencontrées en mer par les thoniers senneurs français et leurs baliseurs.

Article 3 – Définitions

Les définitions de la Résolution CTOI, paragraphe 1, s'appliquent au présent plan de gestion. Quelques précisions sont apportées dans cet article, lorsqu'elles sont nécessaires à l'application du plan de gestion.

Balise active : au sens de la Recommandation 24/02, balise dont le service de communication a été initié, qui a été allumée, déployée sur un DCP ou un débris en mer, et qui transmet sa position. Une balise active est donc (i) activée, (ii) allumée, (iii) déployée sur un objet flottant et (iv) en transmission. Pour les besoins du présent plan de gestion, seront comptabilisées comme actives ou *opérationnelles* les balises en transmission (au minimum une position émise au cours des 24 h considérées) et en dérive (vitesse supérieure à 0 nds et inférieure à 6 nds).

Dispositif de concentration de poissons (DCP) : au sens de la résolution 24/02, un DCP est un objet, une structure ou un dispositif permanent, semi-permanent ou temporaire de tout matériau, artificiel ou naturel, qui est déployé et/ou suivi dans le but de regrouper les espèces-cibles de thons en vue de leur capture ultérieure. Cette définition est cependant problématique car elle ne permet pas de suivre séparément les effets de l'ajout de DCP aux objets déjà présents en mer (impacts sur les écosystèmes) et les effets de l'utilisation des balises instrumentées pour faciliter la détection du poisson (effort de pêche). Dans le présent plan de gestion, un DCP est donc défini comme un objet construit et déployé par les pêcheurs pour agréger du poisson. L'ajout d'une balise sur un autre objet flottant ne transforme pas cet objet en DCP. Les DCP peuvent être ancrés (DCPa) ou dérivants (DCPd). L'article 5 du plan de gestion complète et précise cette définition.

DCP dérivant (DCPD) : un DCP qui n'est pas ancré.

Débris dérivant : tout objet flottant dérivant qui n'est pas un DCPD (objet naturel d'origine animale ou végétale ou débris d'activités anthropiques issus ou non de la pêche).

Fournisseur de balises : toute entreprise fournissant des balises permettant de suivre les DCPD et les débris dérivants.

Navire de pêche : tout navire équipé en vue de l'exploitation commerciale des ressources aquatiques vivantes.

Navire de soutien / baliseur : tout navire assistant le navire de pêche dans ses activités de pêche. Le navire de soutien n'est pas équipé d'engins de pêche. Dans le cas des thoniers senneurs tropicaux, les baliseurs ont pour fonction de déployer des DCPD et des balises, de transférer les balises d'autres navires sur des DCPD et des débris dérivants trouvés en mer ou encore de signaler la présence de poisson aux senneurs qu'ils assistent.

Nombre de balises opérationnelles par senneur à un moment donné : le nombre de balises opérationnelles dont le senneur est le propriétaire sur les serveurs des fournisseurs de balises instrumentées.

Propriétaire de la balise : Au sens de la Résolution 24/02, le capitaine/propriétaire d'un navire de pêche et qui est autorisé à demander son activation et/ou sa désactivation. Pour les besoins du présent plan de gestion, on considèrera que le propriétaire de la balise est le senneur déclaré comme propriétaire sur les serveurs des fournisseurs de balises. Un navire de soutien ne peut pas être propriétaire de balises.

Objet flottant : dans le présent plan de gestion, l'ensemble des DCPD et des débris dérivants constituent des objets flottants.

Réactivation d'une balise : le fait de réactiver les services de communications par satellite par l'entreprise fournissant les bouées à la demande du propriétaire ou du gestionnaire de la bouée. Comme toute activation de balise, cette procédure ne peut avoir lieu qu'à bord d'un senneur ou d'un baliseur.

Abandon d'un DCP : au sens de la Résolution 24/02, un DCPD qui a initialement été déployé avec l'intention d'une récupération ultérieurement, mais qui est délibérément laissé en mer pour cause de *force majeure* ou pour d'autres raisons. Pour les besoins du présent plan de gestion, on considèrera que la désactivation à distance de la balise d'un DCPD en cours de dérive constitue un abandon de DCPD.

Perte de DCP : au sens de la Résolution 24/02, un DCPD dont le propriétaire de la bouée a perdu le contrôle et qu'il ne peut plus localiser. Pour les besoins du présent plan de gestion, on considèrera qu'un DCPD est perdu lorsque le propriétaire de la balise constate à distance qu'elle ne transmet plus.

Rejet de DCP : au sens de la Résolution 24/02, un DCPD qui est remis à la mer sans que le propriétaire de la bouée ne tente de le contrôler ou de le récupérer. Pour les besoins du présent plan de gestion, on considèrera que la récupération de la bouée sans récupération du DCPD ou le fait de laisser un DCPD en mer avec une bouée cassée constituent des rejets de DCPD. On utilisera préférentiellement la terminologie « DCPD laissé en mer » pour plus de clarté.

Article 4 – Objectifs du plan de gestion français des DCPD

Le plan de gestion français des DCPD vise trois objectifs :

4.1 Suivre l'utilisation et les impacts des DCPD

Une connaissance plus approfondie de l'utilisation des DCPD et de leurs balises instrumentées permet de mieux en évaluer les impacts potentiels et de définir les mesures de gestion les plus appropriées, basées sur les meilleures connaissances scientifiques disponibles.

Le chapitre II du plan de gestion définit les moyens utilisés pour suivre l'utilisation des DCPD et de leurs balises instrumentées.

4.2 Contrôler l'utilisation des DCPD et de leurs balises instrumentées

Une des mesures de gestion permettant de réduire les impacts négatifs de l'utilisation des DCPD est d'en limiter l'utilisation.

Le chapitre III du plan de gestion définit les conditions de limitation de cette utilisation ainsi que les moyens de suivi des nombres de balises opérationnelles.

4.3 Réduire les impacts des DCPD sur les écosystèmes

Le chapitre IV du plan de gestion présente les solutions mises en œuvre pour réduire les impacts des DCPD sur les écosystèmes en termes de : (1) prises de juvéniles d'albacore et de patudo, prises accessoires et prises accidentelles d'espèces sensibles, (2) prises fantômes d'espèces sensibles telles que les tortues et les requins et (3) pollution et échouages liés aux DCP perdus.

En 2025, la priorité du plan de gestion des DCP français sera d'assurer la transition vers les DCP biodégradables, selon le calendrier fixé par la Résolution 24/02 de la CTOI.

Chapitre II – Mesures pour suivre l'utilisation des DCPD et les impacts potentiels

Article 5 – Suivi des opérations sur les objets flottants et leurs balises instrumentées

5.1 Types d'opérations sur les objets flottants et sur leurs balises instrumentées

Le suivi des opérations sur les DCPD et les débris dérivants et sur leurs balises instrumentées a un double objectif :

(i) évaluer la contribution de ces dispositifs à l'effort de pêche des thoniers senneurs afin d'estimer l'impact de cette méthode de pêche sur les stocks de thons tropicaux

(ii) évaluer la contribution des DCPD à la modification et/ou à la perturbation des écosystèmes dans lesquels sont présents ces dispositifs.

Des définitions en accord avec ces objectifs scientifiques ont été élaborées dans le cadre du projet européen CECOFAD. Ces définitions sont reprises dans le tableau 2 et sont conformes à celles utilisées dans le formulaire 3-DA de la CTOI.

Ces définitions séparent les *DCP au sens strict* (objets/structures/dispositifs spécifiquement mis à l'eau par les senneurs et leurs baliseurs pour agréger des thons tropicaux) des *débris* (autres types d'objets/structures pouvant agréger du poisson - d'origine naturelle comme une bille de bois ou d'origine anthropique comme un débris plastique).

Tableau 2 : typologie des objets flottants

Type	Matériau	Nom	Exemple(s)
DCP	Naturel et/ou artificiel	DCP dérivant	Radeau en bambou dérivant
	Naturel et/ou artificiel	DCP ancré	Plateforme flottante ancrée
DEBRIS	Artificiel	Débris artificiel issu d'activités de pêche	Morceau de filet Morceau de palangre
	Naturel et/ou artificiel	Débris artificiel issu d'autres activités humaines	Planche de bois Débris plastique
	Naturel	Débris naturel d'origine animale	Débris d'un animal marin (requin, cétacé, tortue, …)
	Naturel	Débris naturel d'origine végétale	Tronc d'arbre Algues

Ces définitions séparent également explicitement les opérations sur les objets flottants des opérations sur leurs balises instrumentées afin de faciliter les déclarations effectuées par les navires et la gestion des données. Elles sont alignées sur l'Annexe I de la Résolution 24/02 de la CTOI. Ces définitions sont reprises dans les tableaux 3 et 4. Plusieurs opérations successives peuvent être réalisées sur le même objet flottant et chacune de ces opérations doit être répertoriée dans le livre de bord.

Tableau 3. Typologie des opérations sur les objets flottants et leurs balises. Les opérations présentées bleu foncé sont interdites. Les opérations présentées en vert sont encouragées pour réduire les risques de pollution et d'échouage.

Il n'y a pas d'objet en mer et le navire déploie un DCP		
DEPLOIEMENT		
↓		
Le DCP ou un débris est visité ou trouvé en mer par le navire		
↓		
Le navire pêche	Le navire rajoute un DCP	Aucune de ces deux opérations
PECHE (1)	RENFORCEMENT (1)	VISITE (1)
↓		
Le navire cesse d'utiliser l'objet car		
↓		

Pendant la visite de l'objet, le navire le			A distance, le navire observe que		
			la balise transmet mais l'objet		la balise ne transmet plus
récupère	laisse en mer sans balise	coule	ne dérive plus	est hors d'atteinte et le navire désactive la balise	
RECUPERATION (1)	LAISSE SANS BALISE (2)	COULE ()	ECHOUAGE	ABANDON	PERTE

(1) La récupération d'un DCP ou d'un débris présentant un risque de maillage est encouragée
(2) L'abandon d'un DCP en mer sans balise est interdit, sauf pour les DCP de catégorie de biodégradabilité I
(3) Couler volontairement un DCP ou un débris comportant des matériaux plastique ou du métal est interdit

Tableau 4: typologie des opérations sur les balises instrumentées. Les opérations présentées en bleu foncé sont interdites. Les opérations présentées en vert sont encouragées pour réduire les risques de pollution et d'échouage.

Il n'y a pas d'objet en mer et le navire déploie un DCP. Il déploie obligatoirement une balise.			
DEPLOIEMENT			
↓			
Le DCP, un débris ou une balise est visité ou trouvé en mer par le navire			
↓			

L'objet n'a pas de balise		L'objet est déjà équipé d'une balise	
le navire n'en n'ajoute pas	le navire ajoute une balise	le navire ne change pas la balise	le navire change la balise
AUCUNE ACTIVITE	DEPLOIEMENT	VISITE	TRANSFERT

↓
Le navire cesse d'utiliser la balise car
↓

Pendant la visite de la balise, le navire la			A distance, le navire observe que		
			la balise transmet mais l'objet		la balise ne transmet plus
récupère	laisse en mer cassée ou sans objet flottant	coule	ne dérive plus	est hors d'atteinte et le navire désactive la balise	
RECUPERATION (1)	LAISSEE EN MER (2)	COULE ()	ECHOUAGE	ABANDON	PERTE

(1) La récupération d'une balise, sans changement par une autre balise ou sans récupération du DCP qu'elle équipe est interdit.
(2) L'abandon en mer d'une balise ne fonctionnant plus est interdit
(3) Couler volontairement une balise est interdit

5.2 Déclaration des opérations sur les objets flottants et sur leurs balises instrumentées

Le capitaine d'un navire de pêche ou d'un navire de soutien enregistre sur le livre de bord les opérations réalisées sur les DCPD, les débris dérivants et sur leurs balises instrumentées conformément aux catégories décrites par les tableaux 2 à 4.

Pour chacune de ces opérations, les informations collectées sont détaillées dans le tableau 5.

Tableau 5 : informations à collecter dans le livre de bord à chaque opération sur un objet flottant et/ou une balise instrumentée

Catégorie	Information à collecter	Article ou MCS
Informations générales	Navire (nom et numéro d'immatriculation)	
	Date et heure	
	Position (latitude et longitude)	
Objet flottant	Type d'objet flottant	5.1, Tableau 2
	Type d'opération ou séquence d'activités sur l'objet flottant	5.1, Tableau 3
	Catégorie de biodégradabilité	
Objet flottant – partie émergée	Présence de plastique, de métal, de mailles, tailles des mailles	
	Hauteur, longueur, largeur	
Objet flottant – partie immergée	Présence de plastique, de métal, de mailles, tailles des mailles	
	Hauteur, longueur, largeur. Profondeur sous la surface pour les DCP uniquement composés d'une partie immergée.	
Balise instrumentée	Type de balise (marque et modèle)	
	Identifiant	
	Position connue pour se rendre sur l'objet flottant (oui / non)	
	Type d'opération ou séquence d'activités sur la balise	5.1, Tableau 4
Captures (en cas de calée)	Quantités capturées par espèce et devenir (conservé / rejeté)	Rejets : Rec 17-01

NB : les informations sur la structure et les matériaux sont à collecter pour tout DCP déployé. Pour les DCP et débris rencontrés en mer, la collecte des informations est encouragée si elle est possible, la partie immergée étant rarement observable. En cas de transfert de balise, les informations sont à collecter pour la balise récupérée et pour la balise déployée.

L'annexe II détaille la structure du livre de bord utilisés par les senneurs français et leurs baliseurs au 1er Janvier 2025 pour fournir ces informations. Ces informations seront déclarées au Secrétariat au format prévu par le formulaire 3-DA.

L'intégralité des données du livre de bord continueront d'être communiquées à l'Institut de Recherche pour le Développement (IRD). Ces données seront disponibles pour les besoins de recherche ainsi que pour les besoins du Comité Scientifique de la CTOI.

Article 6 – Fourniture des données des balises instrumentées à des fins scientifiques

L'intégralité des données de position et des données échosondeur des balises instrumentées utilisées par les senneurs français et leurs baliseurs continueront d'être communiquées à l'Institut de Recherche pour le Développement (IRD). Ces données seront disponibles pour les besoins de recherche ainsi que pour les besoins du Comité scientifique de la CTOI.

Chapitre III – Mesures pour le contrôle de l'utilisation des DCPD et de leurs balises instrumentées

Article 7 – Identification et marquage des DCPD

Tout DCPD mis à l'eau par un thonier senneur ou un baliseur français est identifié au moyen du numéro de série de la balise qui lui est associée. Il doit être conçu pour résister au séjour de la balise dans l'eau de mer et rester lisible durant toute la durée de vie de la balise.

Une refonte du livre de bord permettra/a pour objectif d'améliorer le suivi des balises et de mener une réflexion sur un livre de bord renforcé ou un « Registre DCP et bouées ».

Article 8 – DCPD sans balise

Le déploiement ou l'abandon d'un DCPD en mer sans balise est interdit.

Article 9 – Interdiction des balises HF

Les balises HF sont interdites.

Article 10 – Propriété des DCPD

Le propriétaire ou le gestionnaire du navire dont la balise équipe l'objet flottant en est le propriétaire, et ce, même si le navire n'a pas lui-même mis à l'eau le DCP.

Article 11 – Utilisation de lumières sur les DCPD

L'utilisation de lumières artificielles (aériennes ou sous-marines) sur les DCPD ou leurs balises instrumentées est interdite.

Article 12 – Limitation du nombre de balises opérationnelles

Conformément aux Résolutions 19/02 et 24/02 de la CTOI ;

Le plan de gestion français fixe une limite de 300 balises opérationnelles par senneur. La limite du nombre d'achat de balises par senneur et par an est fixée à 500.

Les senneurs français et leurs baliseurs organiseront les déploiements de DCP et de balises instrumentées de manière à ne jamais dépasser ces limites. Afin de prévenir tout dépassement, un seuil d'alerte fixé à 280 bouées opérationnelles sera mis en place. Une fois ce seuil atteint, les navires et l'armement concernés limiteront le déploiement des bouées opérationnelles et feront preuve d'une vigilance accrue pour ne jamais dépasser les 300 bouées opérationnelles autorisées.

Article 13 – Suivi des nombres de balises opérationnelles

Chaque mois, les fournisseurs de balises transmettront au plus tard une semaine après la fin du mois un bilan exhaustif des bouées opérationnelles utilisées par chaque senneur et chaque jour selon le format définit par le tableau 6. Ils fourniront ces mêmes informations quotidiennement aux navires et aux armements afin d'éviter tout dépassement de la limite de 300 bouées opérationnelles.

Tableau 6 : format des déclarations mensuelles de balises opérationnelles

Date	Balises opérationnelles	Activations	Désactivations
2025/01/01			
2025/01/02			
2025/01/03			
…			
2025/01/30			
2025/01/31			

Ce bilan sera extrait du système opérationnel de chaque fournisseur de balises qui certifiera que les données reportées ici sont conformes aux relevés d'activation/désactivation fournis par le système serveur central.

Les balises seront comptabilisées pour le senneur qui en est le propriétaire sur les serveurs des fournisseurs de balises.

Les dispositions de la résolution CTOI 24/02 prévoyant un suivi des balises opérationnelles pour les senneurs. Les navires de soutien ne peuvent pas être propriétaire de bouées. La propriété de toute bouée déployée par un navire de soutien devra être attribués à un senneur destinataire de la bouée et comptabilisées dans les déclarations mensuelles de ce senneur du début à la fin de son cycle d'utilisation en mer.

La même méthodologie sera utilisée pour la déclaration des bouées opérationnelles dans le formulaire 3-BU. Ces formulaires seront transmis au Secrétariat de la CTOI au plus tard 2 mois après la fin du mois concerné. L'Organisation de Producteurs opèrera une vérification des données. En cas de dépassement constaté, l'Organisation de Producteurs notifiera le navire, l'armement et la DGAMPA.

Article 14 – Interdiction d'activation à distance des balises

Afin d'éviter que certaines balises ne soient momentanément désactivées puis réactivées afin de n'être pas compatibilisées comme opérationnelles, l'activation ou réactivation à distance par un navire, par le propriétaire ou par le gestionnaire du navire est interdite. Une balise ne peut être activée ou réactivée qu'à bord d'un senneur ou de son baliseur.

La figure 1 définit le seul cycle d'utilisation des balises autorisé dans ce cadre.

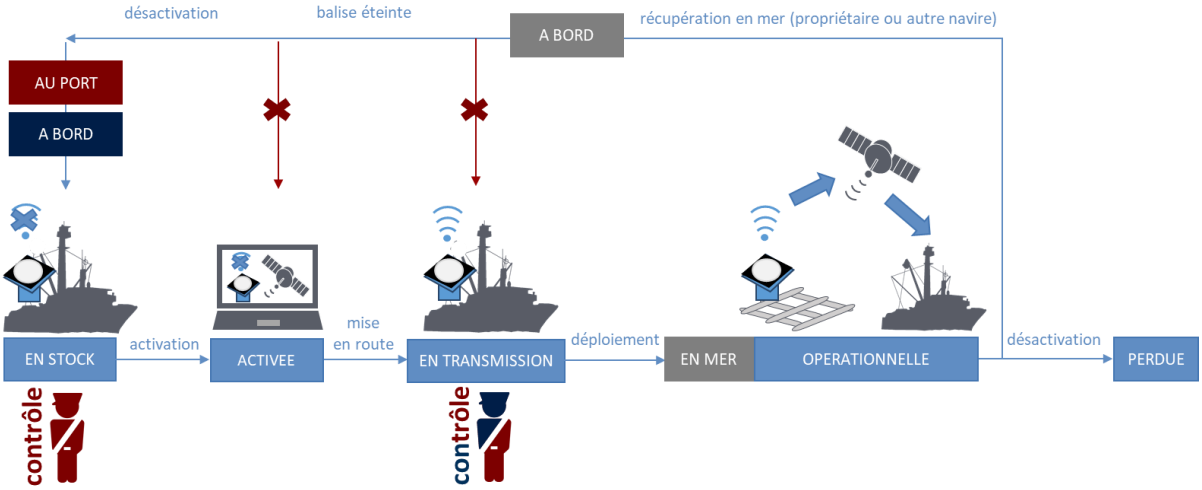

Figure 1 : cycle d'utilisation des balises autorisé dans le cadre du plan de gestion français des DCP

Article 15 – Encadrement des baliseurs et autres dispositifs d'aide à la gestion du nombre de DCP

La gestion des DCPD peut être assurée par les baliseurs sous réserve :

- de leur inscription aux registres spécifiques de la CTOI ;
- de la non utilisation par ces navires de lumières (aériennes ou sous-marines) ayant comme objectif de favoriser la concentration de poissons.
- qu'un baliseur serve au minimum deux senneurs désignés et non associés à un autre navire de soutien.

Par ailleurs, l'utilisation par les navires de pêche ou par les baliseurs, d'hélicoptères et/ou de drones depuis leur bord est interdite.

Enfin, le présent plan de gestion ne prévoit pas de zones ou de périodes de fermeture spécifiques au déploiement ou la pêche sur objet flottant. Les dispositions prévues dans la Résolution CTOI 24/02, dans le cadre des accords de pêche ou dans le cadre d'Aires Marines Protégées existantes s'appliquent à la fois à la pêche sur objet flottant et sur banc libre.

Article 16 - Observateurs à bord et électroniques

En conformité avec l'article 33 de la Résolution 24/02, lorsqu'un observateur est présent à bord ou réalise un suivi électronique de la marée, il collecte les informations nécessaires à l'identification de la catégorie de biodégradabilité de chaque DCPD déployé, en adéquation avec les catégories prévues à l'Annexe III de la Résolution 24/02.

Chapitre IV – Mesures pour une réduction des impacts des DCPD sur les écosystèmes

Article 17 – DCP non maillants

Conformément la résolution 24/02, aucun DCP déployé par un senneur ou un baliseur français ne doit comporter de matériaux avec des mailles.

La vérification de l'absence de mailles dans toutes les parties du DCP doit être systématiquement reportée dans le livre de bord lors du déploiement du DCP.

Lors de toute autre opération avec un objet flottant, la présence et la taille des mailles est évaluée dans le livre de bord, en surface, et, si possible, dans les éléments constituant la partie submergée de l'objet flottant. Le remplacement des éléments à risque de maillage par des éléments à risque de maillage nul (absence de mailles) est encouragé.

Les senneurs et les baliseurs français sont encouragés, dans la mesure du possible, à récupérer les objets flottants représentant un risque de maillage. Ils sont également encouragés à ne pas déployer de balise ou de DCP sur les objets flottants trouvés en mer, dès lors que la présence de mailles est détectée.

Article 18 – Matériaux et dimensions des DCPD déployés

Un DCPD peut-être constitué d'un assemblage d'un radeau, d'une ou plusieurs traines et d'une cage (Figure 3).

Les matériaux de ces différentes parties du DCPD doivent être systématiquement décrites dans le livre de bord au déploiement du DCPD. En conformité avec l'Annexe I de la Résolution 24/02 de la CTOI, les senneurs et les baliseurs déclareront la présence/absence de plastique, la présence/absence de métal et la hauteur/largeur/longueur de chaque constituant du DCPD déployé.

Les dimensions (hauteur, longueur, largeur ; Figure 4) et leur localisation en surface ou sous la surface (profondeur sous la surface) doivent également être systématiquement décrites dans le livre de bord au déploiement du DCPd.

La description des DCPD et débris dérivants rencontrés en mer est encouragée lorsqu'elle est possible.

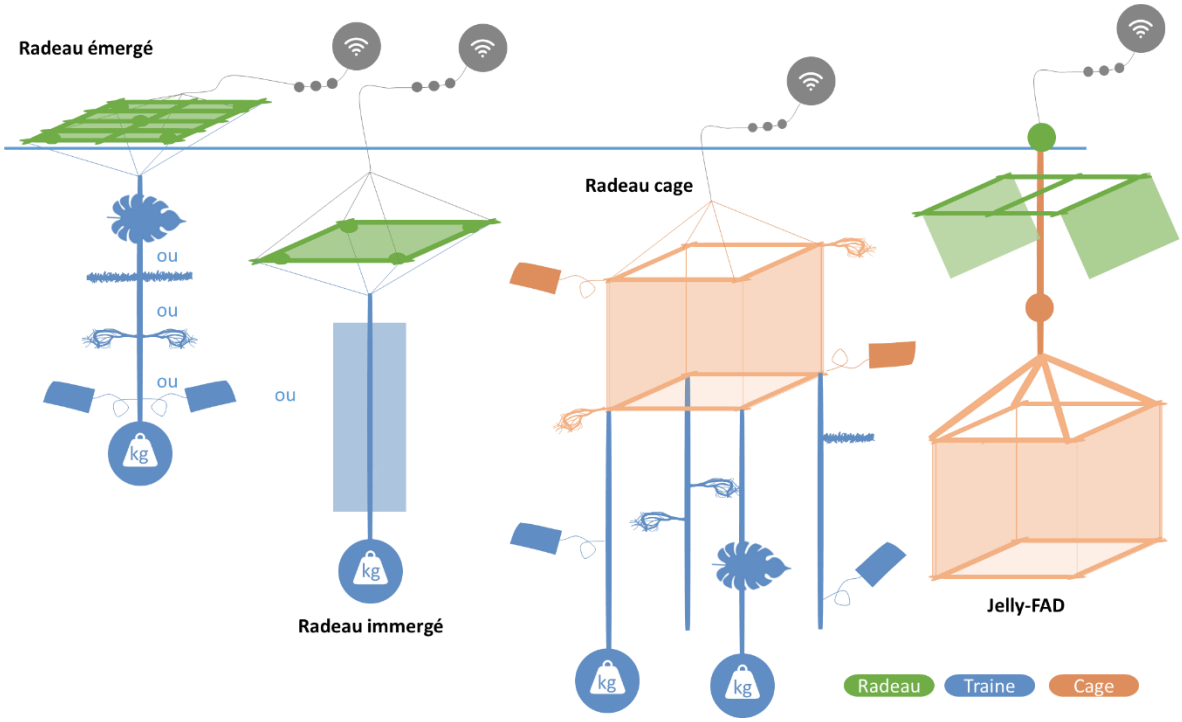

Figure 3 : exemples de DCPD français.

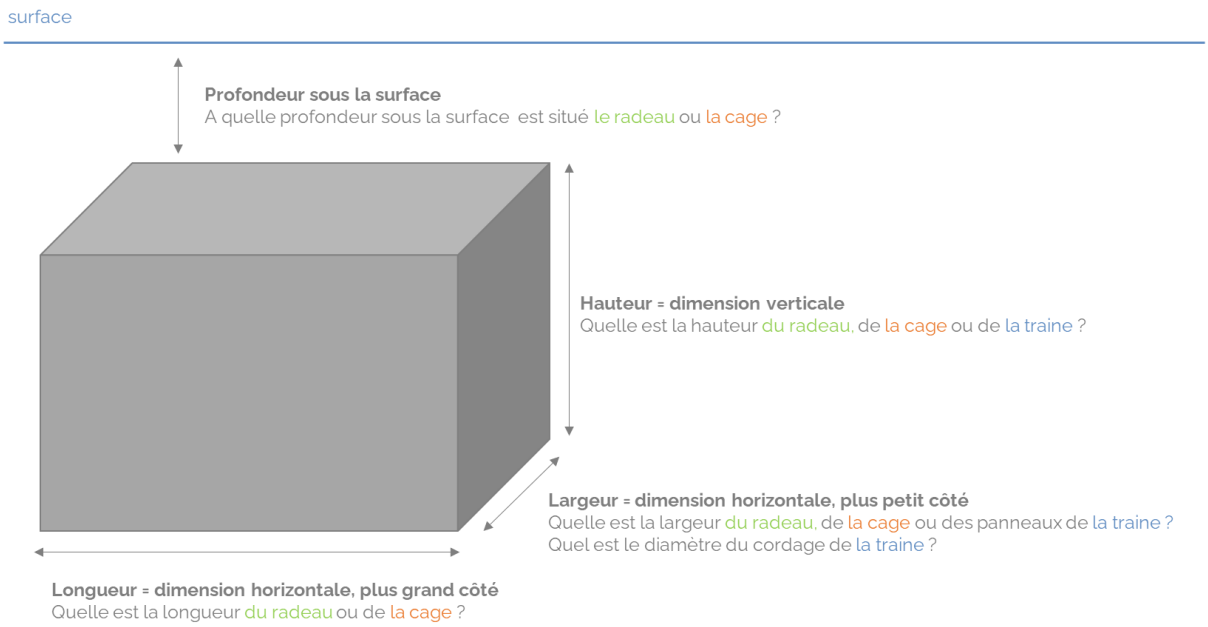

Figure 4 : dimensions des DCPD français

Article 19 – DCP biodégradables

L'intégralité des matériaux non biodégradables constituant les DCP devra être remplacée par des matériaux biodégradables, en conformité avec le calendrier défini par la Résolution CTOI 24/02. Sont définis comme biodégradables les matériaux naturels ou biosourcés :

- bioassimilables, c'est-à-dire utilisables comme nutriments par la (micro)faune et/ou la (micro)flore présentes dans le milieu (bactéries, algues, champignons)
- dégradés en milieu marin dans les conditions d'utilisation normales du DCP (température, salinité, etc)
- dont les produits de dégradation sont sans toxicité pour le milieu marin (pas de micro particules ou de produits toxiques issus de la dégradation)
- permettant une durée d'utilisation de 8 à 10 mois du DCP

En 2024, une feuille de route pour la transition vers les DCP biodégradables a été définie. Elle continuera d'être mise en œuvre en 2025, avec plusieurs actions :

- la recherche de nouveaux matériaux biodégradables, grâce à des échanges réguliers avec les fournisseurs de matériaux et avec les autres flottes utilisant des DCPD dans tous les océans

- la poursuite des tests de nouveaux matériaux, dont des solutions de flotteurs biodégradables en matériaux naturels ou biosourcés, débutés avec Kairos dans le cadre du *Contrat d'Avenir Thonier (CAT) DCP bio,* se poursuivra. Cela concernera en priorité les flotteurs en plastique pour lesquels un travail de recherche et développement est toujours nécessaire.

Article 20 – Récupération des DCP et de leurs balises

Les senneurs français et leurs baliseurs participeront au programme « FAD Watch » dans le cadre du programme d'amélioration de la pêche (FIP) SIOTI. Ce programme vise à réduire les risques d'échouage des DCP dans la Zone Economique Exclusive des Seychelles, ainsi qu'à organiser des campagnes de récupération des DCPD déjà échoués aux Seychelles

Les positions de l'ensemble des balises instrumentées utilisées par les senneurs français et leurs baliseurs communiquées à l'IRD pourront contribuer entre autres à des travaux de recherche sur les risques d'échouage des DCP selon leur zone de déploiement ou à l'organisation de campagnes de récupération des DCP en mer.

Article 21 – Politique de réduction et d'utilisation des prises accessoires

Les dispositions pour une limitation du nombre de DCP (articles de la section III) contribueront à une réduction des prises accessoires.

En conformité avec la Résolution CTOI 19/05, les principales espèces accessoires sont conservées à bord et commercialisées dans la mesure du possible.

Annexe I : conformité du plan de gestion français des DCP avec l'annexe II de la résolution CTOI 19/02

Information à fournir	**Article du plan de gestion**
Objectif	4
Types de navires, navires auxiliaires et annexes	2.1
Nombre de DCPD et nombre de balises DCPD à déployer	13
Procédure de déclaration pour le déploiement des DCPD	5
Politique de réduction et d'utilisation des captures accessoires	23
Prise en compte des interactions avec d'autres types d'engins	2
Plans pour le suivi et la récupération des DCPD perdus	5, 7, 8, 22
Déclaration ou politique concernant la « propriété des DCPD »	8
Responsabilités institutionnelles	
Processus de demande d'autorisation de déploiement de DCPD et/ou de balises DCPD	13
Obligations des propriétaires et capitaines des navires concernant le déploiement et l'utilisation des DCPD et/ou balises DCPD	5
Politique de remplacement des DCPD et/ou balises DCPD	5
Obligations de déclaration	5.1, 17, 19, 20
Caractéristiques de conception des DCPD (description)	20
Marquages et identifiants des DCPD, y compris les balises DCPD	7, 8
Illumination	11
Réflecteurs radar	12
Distance de visibilité	12
Radiobalises (numéros de série)	9
Transmetteurs satellite (numéros de série)	5
Informations sur toute zone ou période fermée, par exemple les eaux territoriales, les voies maritimes, la proximité avec des pêcheries artisanales etc.	18
Période d'application du PG-DCPD	2.1
Moyens de suivi et d'examen de la mise en œuvre des PG-DCPD	5.1, 14, 15, 16, 17, 19, 20, 21
Modèle de « Registre DCPD »	5, Annexe III

Annexe II : structure du livre de bord utilisé par les senneurs français et leurs baliseurs pour les marées débutant au 1er janvier 2024

TYPE DE DECLARATION port, zone, calée ou objet	DATE	HEURE	LATITUDE chaque activité ou à midi	LONGITUDE chaque activité ou à midi	PORT	ZEE	T°C mer	VENT VIENTO WIND		TYPE DE BANC en cas de calée	ESPECE code FAO	CATEGORIE DE POIDS en kg	QUANTITE CONSERVEE en tonnes	QUANTITE CONSERVEE en nombre	QUANTITE REJETEE en tonnes	QUANTITE REJETEE en nombre
TYPO DE ACTIVIDAD lance, puerto, zona o objeto	**FECHA**	**HORA**	**LATITUD** cada actividad o mediada	**LONGITUD** cada actividad o mediada	**PUERTO**	**ZEE**	**T°C** mar	Direction / Direccion /Direction Degrés / Grados / Degrees	Vitesse / Velocidad / Speed Nœuds / Nudos / Knots	**LANCE TYPO** en caso de lance	**ESPECIES** en tonneladas	**CATEGORIA DE PESO** en kg	**CAPTURA RETENIDA** en tonneladas	**CAPTURA RETENIDA** en nombre	**DESCARTES** en tonneladas	**DESCARTES** en nombre
ACTIVITY TYPE fishing, zone, port or floating object	**DATE**	**TIME**	**LATITUDE** each activity or at midday	**LONGITUDE** each activity or at midday	**PORT**	**EEZ**	**T°C** sea			**FISHING SET TYPE** in case of a fishing set	**SPECIES** FAO code	**WEIGHT CATEGORY** in kg	**RETAINED CATCHES** in tons	**RETAINED CATCHES** in numbers	**DISCARDS** in tons	**DISCARDS** in numbers

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OBJET FLOTTANT OBJETO FLOATING OBJECT												BOUEE INSTRUMENTEE BOYA INSTRUMENTADA INSTRUMENTED BUOY					COMMENTAIRES
ACTIVITE SUR L'OBJET	TYPE D'OBJET FLOTTANT	TYPE DE DCP DERIVANT DCP déployés	TYPE DE COMPOSANT DCP visités	NOMBRE	HAUTEUR	LONGUEUR	LARGEUR	PROFONDEUR sous la surface	MAILLES	PLASTIQUE	METAL	BIO	ACTIVITE SUR LA BOUEE	POSITION CONNUE ? en cas de visite	PROPRIETAIRE en cas de visite	MODELE	ID	**COMMENTARIOS**
ACTIVIDAD SOBRE EL OBJETO	**TIPO DE OBJETO**	**TIPO DE DCP** DCP plantados	**COMPONENTS** DCP visitados	**NOMBRE**	**ALTURA**	**LONGITUD**	**ANCHURA**	**PROFUNDIDAD** bajo la surperficie	**MALLAS**	**PLASTICO**	**METAL**	**BIO**	**ACTIVIDAD SOBRE LA BOYA**	**POSICION CONOCIDA** boyas visitados	**PROPRIETARIO** boyas visitados	**MODELO**	**ID**	
FOB ACTIVITY	**FOB TYPE**	**DFAD TYPE** deployed DFADs	**COMPONENTS** visited DFADs	**NUMBER**	**HEIGHT**	**LENGTH**	**WIDTH**	**DEPTH** under the surface	**MESH**	**PLASTIC**	**METAL**	**BIO**	**BUOY ACTIVITY**	**POSITION KNOWN ?** in case of a visit	**OWNER VESSEL** in case of a visit	**MODEL**	**ID**	**COMMENTS**

European Union (Italy) 2025 DFADs Management Plan

DFADs plan of France

European Union (Spain) 2025 DFADs Management Plan

(COURTESY TRANSLATION)

MANAGEMENT PLAN FOR FISH AGGREGATING DEVICES (FAD) - 2025

1. Basis and background of this plan

The current legislation in force covers the following provisions that justify the elaboration of this management Plan for fishing aggregating devices utilized by the Spanish purse seiner fleet targeting tropical tunas:

- The 1995 United Nations Stock Agreement has as the main goal the assuring of long term conservation and sustainable exploitation of the stocks of highly migratory species.
- FAO code of good practices, with regard to fishing investigation, sets the obligation of the reliable data collection which enables the due stock assessment just like the implementation of studios on fishing gear selectivity and its environmental impact and to promote the results of the investigation as the basis to establish the management objectives.
  FAO code of conduct points out that “fishing gear should be marked according to national legislation to identify the owner of the gear. The requirements of this marking should have into account uniform marking systems and internationally acknowledged.”
  Lastly, and following the FAO Code, “the States should cooperate in the perfection and implementing of operative fishing technologies, materials and methods to minimize the loss of fishing gear and its effect as ghost fishing”.
- EU Regulation 1380/2013, 20th Dec 2002, on the Common Fisheries Policy, points out as the main target is the sustainable exploitation of living aquatic and aquaculture resources in the context of sustainable development, having into account environmental, economic and social aspects in a balanced fashion. This regulation modifies EC Regulations 1954/2003 and 1224/2009, and repeals Regulations 2371/2002 and 639/2004, as well as Council Decision 2004/585.
- Law 3/2001, of Maritime Fisheries, sets amongst its goals in article 3, the safeguard of the responsible fisheries resources exploitation, encouraging its development and adopting all necessary measures to protect, preserve and regenerate the said resources and their ecosystems and promote the fisheries and oceanographic research.
- Law 5/2023, on sustainable fisheries and fisheries research, sets among its principles in article 4, the biological sustainability of marine resources in order to ensure a sustainable environmentally sustainable exploitation of marine biological resources and viability in the long term of the fishing sector.

The experience from the first FAD plan in Spain of 2010, as well as the new international provisions, has led to the current revision of the Plan.

2. Scope of application of the present plan

The present plan is aimed at Spanish-flagged freezer tuna purse seiners operating in the Indian Ocean, targeting tropical tuna as well as Spanish Flagged supply vessels supporting the mentioned purse seiner vessels.

The Secretary General for Fisheries is the authority that ensures the implementation of this plan.

3. Objectives

The objectives of this plan are the followings:

- Improving information collection for scientific advice purposes.
- Contributing to enhanced knowledge of catch composition in FAD sets.
- Increasing knowledge of these devices with regard to their technical features and their possible impact on ecosystems.
- Establishing information-sharing mechanisms among operators, scientists and administrations, in order to achieve better knowledge of progress made in this field and the implications thereof.

4. Definitions

IOTC:
Fish Aggregating Device (FAD)" means a permanent, semi-permanent or temporary object, structure or device of any material, man-made or natural, which is deployed and/or tracked, and may aggregate fish." (24/02).

5. Obligations under the RFMOS regarding FAD.

The IOTC has adopted the following provisions:

- Resolution 24/02, on management of drifting fish aggregating devices (FADs).
- Resolution 19/02, on procedures on a Fish Aggregating Devices (FADs) management plan
- Resolution 21/01, on a yellowfin stock recovery plan in the Indian Ocean.
- Resolution 18/04, on BIOFAD experimental project.
- Resolution 15/02, on the recording of statistical data. Sets the obligation of reporting number of FADs by quarter, including position, type and other information.

- Resolution 15/09 that sets a Working Group on FADs
- Resolution 23/06, on the conservation of cetaceans.
- Resolution 13/05, on the conservation of whale sharks.

6. Identification of FADs

Each buoy shall have a sequence of characters serving as an identifier for each device to be used. This sequence shall not vary during the device's lifespan.

Operators may choose the identification system, with the only prerequisite to be individual and unique for each FAD.

Any FAD deployed at sea by Spanish tuna seiners has an ID code which includes the model of the buoy and a serial number. So all Spanish FADs are clearly identified. The buoy serial number is clearly visible without the removal of the buoy. This marking is resistant to long stays at sea and it remains legible throughout its useful life. The buoy serial number is provided by the buoy supplier and it is unique.

7. Register and information-sharing regarding FADs: Inventory and Specific Activity Register (FAD logbook). Records in fishing logbooks.

Operators will send to the General Secretariat of Fisheries information on the operational FADs and buoys associated with their corresponding identification through a template called (Annex I).

The information contained in the said template for each FAD is grouped by fishing vessel, respecting the format and instructions for completing them.

On the other hand, the operation on FADS is recorded in the corresponding section of the vessel's electronic fishing logbook.

8. Monitoring of FADs

As far as possible, vessels must record monitoring information for each FAD, which has a satellite beacon, based on its assigned number. Moreover, efforts should be made to record information obtained from other beacons (e.g. visual, radio).

There shall be no obligation to communicate the recorded information. However, such information may be requested for the designated scientific personnel to conduct specific studies or in order to carry out monitoring activities. This information may be requested, prior approval by the operators for its use.

9. Measures to prevent loss of FADs

Vessel operators shall prevent, as far as possible, loss of FADs at sea.

In the event of a loss or of the impossibility of hauling in a FAD (areas or seasons closed to fishing), operators must record, in the Specific Activity Register, its last known date and position.

10. Measures to mitigate the catch of juvenile tuna and non-target species

From June, 30, 2015 on all activity on entangling FADs is forbidden.

The use of methods that reduce juvenile catches and associated species is encouraged in order to get cleaner catches.

The parties involved in this plan may propose pilot actions in order to advance in some of the aspects described.

11.- FAD fishing regulation.

FADs will be activated exclusively on board of the vessels.

11. Specific closures on fishing with FADs

- Limitation of the number of buoys:

  Non instrumental bouys are prohibited. Only instrumental bouys have to be used for drifting FADS.

  300 active instrumental buoys cannot be exceed per vessel at any time. In addition, the number of instrumental buoys acquired by each vessel is fixed at a maximum of 500.

  From 1 January 2022, Spain encourages its flag vessels to use FADs made of natural or biodegradable materials, in accordance with the guidelines at Annex V of the Resolution 19/02, as to remove from the water, retain onboard and only dispose of in port, all traditional FADs encountered (e.g. those made of entangling materials or designs).

  In order to comply with the FAD limit, each vessels must submit a certificate issued by the company that supplies the beacons or by a scientific institute that certifies the following data:

  - Number of instrumental buoys per vessel at any time by quarter.
  - Number of instrumental buoys contracted by year.

Regarding the obligations required in the Resolution 19/02 Annex I, the Spanish fleet operating in the Indian Ocean hasn't interacted with other fleets as it is a long distance fleet and only longliners and purse seiners with their supply vessels are involved.

In reference to the buoy design, the DFADs can be seen from a distance of up to 2 or more NM, depending on weather conditions and whether tools other than eyesight are used for detection (e.g. binoculars), the buoys are all identified with a unique ID, assigned by the manufacturer. Buoy ID are used to identify each individual FAD, recorded in FAD logbooks and all electronic records available. There is no lighting, radar nor radio devices installed in the beacons, the identification of the buoys is done through their ID.

12. Control of the regulatory measures of the RFMOs.

12.1. Control of the limitation of the number of buoys:

The industry controls the number of FADs since 2014, thanks to AZTI that carries out the control tasks.

In 2019, the General Secretariat for Fisheries established the obligation of the control of FADs in the annexes of the Temporary Fishing License. The guarantee of compliance are the certificates of a Scientific Institute which include the information of the number of instrumental buoys active and acquired by vessels.

Each FAD is associated with a buoy, so the control is done through the number of active instrumented buoys per day and per vessel.

The main information is provided aggregated by the suppliers of instrumented buoys to the Scientific Institute who receives this information per month in .csv files containing the daily information.

The main tasks include control mechanisms as analysis of buoys deactivated in port, data crossing of the first moment of activation of a buoy and VMS location of the vessel, as well as with FAD notebooks and observer information.

In Annex II. AZTI Methodology, the methodology carried out to control the FAD number is explained in detail.

12.2. Control of FAD's spatial and temporal closures:

The General Secretary of Fisheries carries out the control of the FAD closures in the Fisheries Monitoring Center thanks to VMS systems.

13. Measures to monitor and follow up the present plan

The relevant authorities may perform documentary monitoring of the provisions envisaged in the present plan, and they may require, if necessary, the data described in section 6.

The Spanish Institute of Oceanography (IEO), as the Spanish scientific authority in this regard, shall be responsible for processing and monitoring the information provided by the operators, and shall be authorized to draft the follow-up reports for this plan and to propose the measures it deems appropriate in order to improve the functioning thereof.

Moreover, the General Secretariat for Fisheries may determine, in coordination with the IEO, the participation of other scientific bodies in order to fulfill the objectives set forth in the present plan.

14. Confidentiality measures for the information provided by operators

The information provided by the operators shall be treated as confidential at all times, and its use shall be restricted solely to scientific or monitoring purposes, if necessary. The General Secretariat for the Sea undertakes not to disclose this sensitive information, other than for the aforementioned purposes, without the express consent of the ship-owners.

15. Amendments to the present plan

This plan shall be amended in line with future measures adopted within the IOTC and with the conclusions of the reports envisaged in section 12.

16. Implementation

All provisions in this Plan will be in force until further modifications are adopted or new international provisions are set.

Original: English

MONITORING THE NUMBER OF ACTIVE FADS USED BY THE SPANISH AND ASSOCIATED PURSE SEINE FLEET IN THE IOTC AND ICCAT CONVENTION AREAS

J. Santiago [1], H. Murua[2], J. López[2] and I. Krug[3]

The purse seine vessels of the Spanish ANABAC and OPAGAC fleet owners organizations agreed in late 2014 to freeze the number of DFADs by 1st of January 2016. According to that agreement, each purse seine vessel could use simultaneously a maximum of 550 Drifting Fishing Aggregating Devices (dFDAs) at any time of the year. This limit to be evaluated through the number of active instrumented buoys, which implicitly established the prohibition of the use of DFADs without buoys. This voluntary agreement also established that the verification of the volume of the daily active beacons used by each purse seiner would be carried out by the independent scientific body AZTI and sanctions were also included in the agreement.

Furthermore, in 2015 IOTC adopted *the Resolution 15-08 Procedures on a Fish Aggregating Devices (FADs) Management Plan* that sets the maximum number of instrumented buoys active and followed by any purse seine vessels at 550 at any one time (and 1100 acquired purchased annually). In 2016, *Resolution 16-01 on interim plan for rebuilding the Indian Ocean Yellowfin tuna stock in the IOTC area of competence* decreased the limit to no more than 425 daily active instrumented buoys per purse seine vessel (and 850 purchased annually).

Likewise, in November 2015 ICCAT adopted the *Recommendation by ICCAT on a Multi-annual Conservation and Management Programme for Tropical Tunas* [Rec. 15-01], establishing a provisional limit of no more than 500 instrumental buoys active at any one time for each fishing vessel.

Since September 2015 AZTI is carrying out the verification of the compliance with the different FAD limit measures adopted; initially as a voluntary agreement and later as agreed IOTC Resolutions 15/08 and 16/01 and ICCAT Recommendation 15-01. The procedure and mechanisms developed to verify the compliance are briefly outlined in the present document.

Method used for the verification

The basic information utilized to monitor the number of active buoys and, hence, verify the compliance with the limits, is provided by the instrumented buoys manufacturers. Currently, three are the companies that supply instrumented buoys to the Spanish and associated fleet (i.e. vessels belonging to the Spanish fishing companies but operating under other flags). By means of a sworn statement issued by these three companies, manufacturers provide daily information on the position and speed of each individual active buoy. Buoys are given unique identifier codes provided by the manufacturer that are associated to a single purse seine vessel, irrespectively of whether they are deployed by the purse seine vessel itself or by a supply vessel.

AZTI receives the buoy data directly from the manufacturers in a monthly basis with a two-month delay. This means that the first day of the information received in month *m* is the information of month *m-2*. Data is received in csv files, independently for each vessel, and contains daily records of all the active buoys managed by each individual vessel in month *m-2*. The information gathered in the csv files is: date [dd-mm-yy], time [hh.mm], individual unique buoy identified code [the format varies with the manufacturer, although it is always alphanumeric], latitude and longitude [expressed in degrees and minutes in decimal values] and speed [knots].

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[2] AZTI. Herrera Kaia Portualdea z/g, 20100 Pasaia, Basque Country, Spain
[3] AZTI. Fishing Port, Victoria, Mahe, Seychelles

The agreement considers the following definitions for instrumented buoys, depending on their situation and condition:

- Operational active buoy: a beacon that, after leaving the factory and passing through transit, has been registered and has the ability to transmit.
- Active buoy at sea: operational beacon transmitting position reports deployed at sea.
- Deactivation: action of de-registering an active buoy at sea by the buoy supplier company after the request by the ship owner due to loss, theft or any other possible cause.
- Reactivation: action of re-registering a beacon previously deactivated by the buoy supplier company after the request by the vessel owner (note that a buoy that has been deactivated at sea needs to pass at least one time by the fishing port before it is reactivated).

In order to identify records that do not correspond to active beacons at sea different filters are applied to the data:

- Records outside the Convention Areas [Atlantic Ocean: -100 > longitude > 20; Indian Ocean: 20 > longitude > 120]
- Records on land: two conditions are required, 1) the position of the record overlays a land mask (shapefile http://www.naturalearthdata.com/downloads/10m-physical-vectors/10m-land/) and 2) speed = 0 knots.
- Records of operational active buoys that are onboard the vessel before deployment: speed > 4 knots.
- Records of deactivated buoys: The buoys manufacturers fill with NAs those that have been deactivated during the month of reference. Therefore, those records with NA values are excluded.

AZTI has put in place additional control mechanisms, if necessary, that include: random examination onboard purse seiners and supply vessels at port to check buoys that have previously been deactivated and retrieved on deck (and are, thus, able to be reactivated and used again), crosschecking the first activation of the buoy with VMS vessel position, comparisons with the information recorded in the FAD logbook and with the information collected by the observers onboard, among others.

Preliminary results

Some examples of the results of the verification are shown in **Figures 1** and **2**. **Figure 1** shows the daily evolution of the number of active buoys at sea of one vessel of the Spanish and associated fleet between September 2016 and January 2017 in the Indian Ocean. This trend illustrates the effect of the transition from Res. 15-08 to Res. 16-01 in the IOTC convention area. **Figure 2** shows the average daily density of FADs used by one of the vessels in the Indian Ocean in January 2017, by 1x1º statistical square. According to ICCAT Recommendation 16-01 CPCs shall ensure that this type of information is submitted for the bulk of the fleet every year to ICCAT.

Figure 1. Example of the evolution of the number of active buoys used by one vessel of the Spanish and associated fleet between September 2016 and January 2017 in the Indian Ocean. Limits adopted in Resolutions 15-08 and 16-01 are also shown.

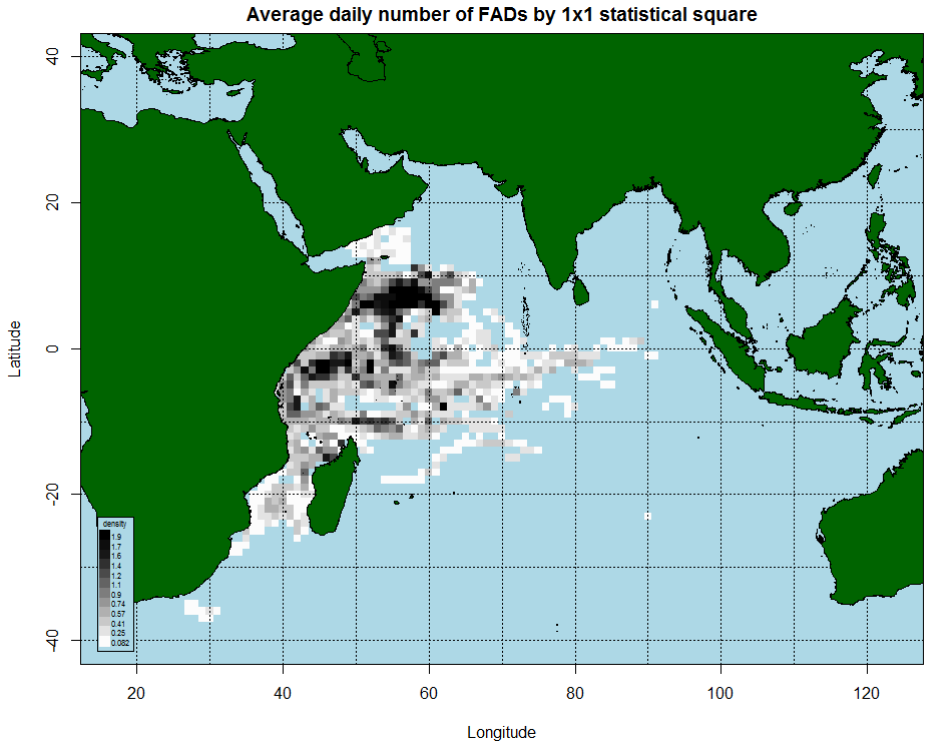


Figure 2. Average daily density of FADs used by one vessel of the Spanish and associated fleet in the Indian Ocean in January 2017, by 1x1º statistical square.

Korea 2025 DFADs Management Plan

DFAD Management Plan

1. Objective

This DFADs Management Plan is devised to minimize and reduce fishing mortalities of juvenile bigeye and yellowfin tunas and non-target species associated with fishing on FADs, and to collect data concerning the fishing activities. This Management Plan covers the use of drifting fish aggregating devices (DFADs) by Korean-flagged purse seiners for the year of 2025 in accordance with paragraph 25 of the IOTC Resolution 24/02. The Ministry of Oceans and Fisheries (MOF) is responsible for the implementation of this Management Plan.

2. Scope:

Description of its application with respect to:

- vessel-types and support and tender vessels

  This Management Plan applies to Korean purse seiners and supply vessel.

- Number of instrumented buoys

  The number of instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 500. No purse seine vessel shall have more than 500 instrumented buoys (buoy in stock and operational buoy) at any time. No more than 300 operational buoys will be followed by any purse seine vessel at any one time.

- reporting procedures for DFAD deployment

  All DFAD-related activities such as deployment, retrieval and loss, etc. are recorded in the DFAD logbook which will be submitted to National Institute of Fisheries Science (NIFS) for compilation and analysis.

- incidental bycatch reduction and utilization policy

  In accordance with paragraph 3 of Resolution 24/06, Korea requires all purse seine vessels to retain on board and then land, to the extent practicable, the following non-targeted species or species group; other tunas, rainbow runner, dolphin fish, triggerfish, billfish, wahoo, and barracuda, except fish considered unfit for human consumption, and/or species which are prohibited from retention, consumption, or trade through domestic legislations and international obligations.

- consideration of interaction with other gear types

  N/A

- plans for monitoring and retrieval of lost DFADs

  All DFAD-related activities such as deployment, retrieval and loss, etc. are recorded in the DFAD logbook which will be submitted to National Institute of Fisheries Science (NIFS) for compilation and analysis.

- statement or policy on “DFAD ownership”

Korea requires its purse seine vessel operators to ensure that instrumented buoy attached to the DFAD contain a physical, unique reference number marking (ID provided by the manufacturer of the instrumented buoy) and the vessel unique IOTC registration number clearly visible. This way, we can identify which vessel or company owns a particular DFAD.

3. Institutional arrangements for management of the DFAD Management Plans:

- Institutional responsibilities

  The Ministry of Oceans and Fisheries (MOF) is responsible for the management and implementation of this Management Plan.

- application processes for DFAD and /or DFAD beacons deployment approval

  Every activity on DFAD is recorded by the master of fishing vessels on a DFAD logbook which is reported to NIFS, and the relevant information is collected by scientific observer programs as well. There's no requirement in place regarding DFAD deployment approval, other than DFAD logbook.

- Obligations of vessel owners and masters in respect of DFAD and /or DFAD beacons deployment and use

  Vessel owners and masters must comply with the requirements in Resolution 24/02 and this Management Plan including the number of maximum instrumented buoy, maintenance of DFAD logbook and marking, etc.

- DFAD and/or DFADs beacons replacement policy

  If deployed DFAD is worn out or needs to be replaced, the master of the fishing vessel will replace it and record the case on the DFAD logbook. In general, the mater of each fishing vessel shall record information concerning DFADs activities on the DFAD logbook and report them to NIFS.

- reporting obligations

  Every activity on DFAD is recorded by the master of fishing vessels on DFAD logbook which is reported to NIFS.

4. DFAD construction specifications and requirements

- DFAD design characteristics (a description)

  Fully non-entangling FAD

- DFAD markings and identifiers, including DFADs beacons

  Vessel name, call sign and unique ID are marked on DFAD and instrument buoy attached to the DFAD contains ID provided by the manufacturer of the instrumented buoy and the vessel unique IOTC registration number.

- Lighting requirements

  The use of lights is not allowed.

- radar reflectors

  DFADs of Korean fleet do not and will not have radar reflectors

- visible distance

  Approximately 3 nautical miles from a vessel with telescope

- radio buoys (requirement for serial numbers)

  The use of radio buoys is not allowed.

- satellite transceivers (requirement for serial numbers)

  All the buoys must have their own unique identification number.

5. Applicable areas

   - Details of any closed areas or periods e.g. territorial waters, shipping lanes, proximity to artisanal fisheries, etc.

     This Management Plan applies to Korean purse seine and supply vessels across the whole IOTC area of Competence.

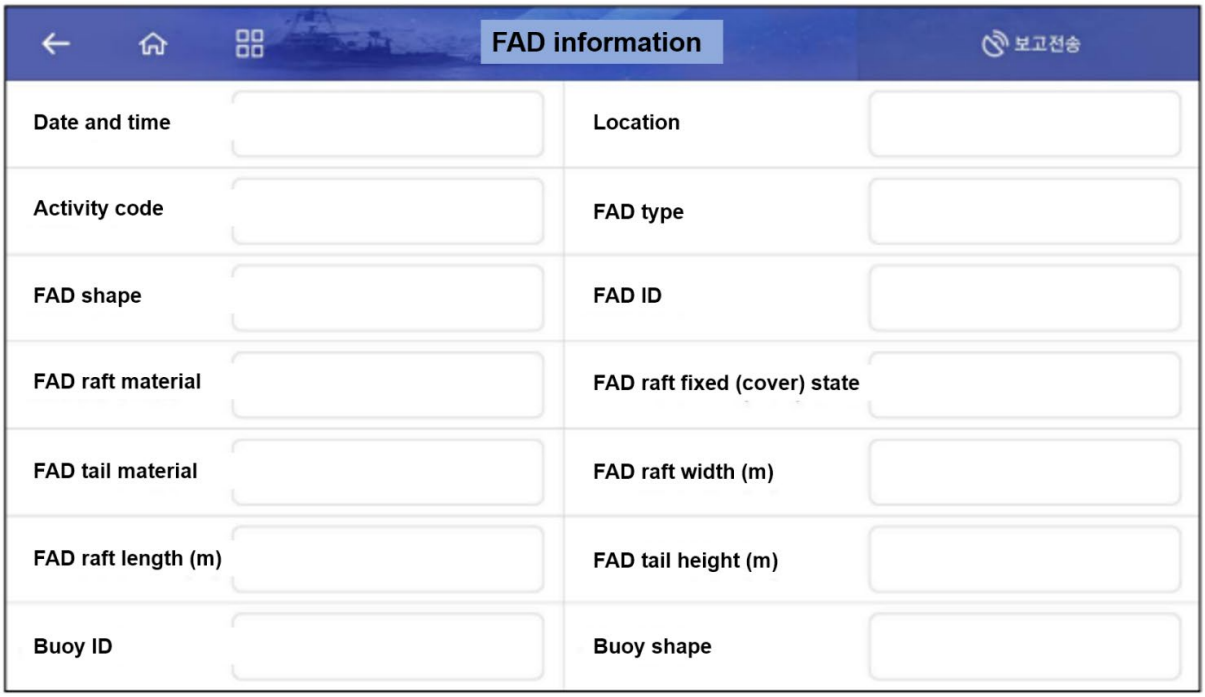
6. Applicable period for the DFAD–MP

   This Management Plan applies to Korean purse seine and supply vessels in 2025.

7. Means for monitoring and reviewing implementation of the DFAD–MP

   Every activity on DFAD is recorded by the master of fishing vessels on DFAD logbook which is reported to NIFS, and the relevant information is collected by scientific observer programs as well.

8. DFAD logbook template (data to be collected specified in Annex III).



Mauritius 2025 DFADs Management Plan

Drifting Fish Aggregating Device (DFAD) Management Plan

Submitted by: **Mauritius**

Operator: Alba Fishing

Purse Seiners: Albacan, Galerna Lau and Cape Coral

Supply vessel: Haizea Hiru

1. **Objective:** Appropriate deployment and management of DFADs to maintain tuna stocks at sustainable levels.
2. **Scope:**
    a. **Vessel type** : purse seiner and supply vessel.
    b. **DFAD numbers or number of beacons to be deployed**: A maximum of 300 instrumented buoys are active at sea at any one time in relation to each of its vessels through such measures as for example the monthly review sent by the provider and a maximum of 500 instrumented buoys which may be acquired annually by each of its fishing vessel.
    c. **Reporting procedures**: Through fishing and DFAD logbooks (Appendix 1) and daily information on active FADs as per Res 24/02
    d. **Incidental by catch reduction and utilization policy**: The deployment of Non-entangling FADs to reduce incidental by-catch forms part of the policy of the vessel owners and operators since 2012 (Appendix 2). Details on the non-entangling FADs are given at Appendix 3. Biofads are also being deployed and the use of biodegradable FADS is under trial. The vessel owners and operators are committed to the use of best practices for FAD Management through a FAD Management policy which is based on the International Seafood Sustainability Foundation (ISSF) Conservation measure 3.7 (Appendix 4).
    e. **Consideration of interaction with other gears type**: Since January 2024, purse seiners and support vessels are only using and deploying FADs constructed with non-mesh material. of DFADs. This is to ensure that other gear types do not become entangled with DFADs. The DFAD MP shall be reviewed in case of any adverse impacts reported as a result of DFADs or part of DFADs having interfered with other gears including longline operation.
    f. **Monitoring and retrieval of lost DFADs**: All DFADs are marked and are equipped with satellite buoys that allow movement monitoring. Vessel masters are encouraged to prevent, as far as possible, loss of FADs set at sea. In the event of a loss or of the impossibility of hauling in a FAD, operators must record its last known date and position in the logbook (Appendix 1).
    g. **Statement or policy on DFAD ownership:** Presently, DFADs beacons are clearly marked with a serial number until a new marking scheme is adopted by the IOTC.

3. **Institutional arrangement for management of the DFAD Management Plan:**

- **Institutional responsibilities**: The Ministry of Agro-Industry, Food Security, Blue Economy and Fisheries (Blue Economy and Fisheries Division) monitors the activities of the DFADs deployed by its flagged vessels through DFADs logbooks. The purchase order of the vessel owners and operators is also verified to ensure that their annual purchase of beacons is within the limit of 500 instrumental buoys that can be acquired annually by each vessel.

- **Application processes for DFAD and/or DFAD beacons deployment approval**: Presently, no application process and approval is required for the deployment of DFAD and DFAD beacons. However, the Ministry ensures that the deployment of DFAD is being properly done by the vessel's owners and operators according to the DFAD-MP. Moreover, all information pertaining to the deployment of DFAD and or DFAD beacons is recorded in logbooks that are verified for compliance by the Ministry of Agro-Industry, Food Security, Blue Economy and Fisheries (Blue Economy and Fisheries Division).

  DFAD and/or DFADs beacons replacement policy:

- **Obligations of vessel owners and masters in respect of DFAD and/or DFAD beacons deployment and use**:

(i) The maximum number of instrumental buoys active at any one time at sea should not exceed 300 for each purse seiner.

(ii) Only non-entangling DFAD or bio fads should be deployed by the purse seiners or the supply vessel. Only non-entangling bio fads would be used in the future.

(iii) Recording of each activity with respect to DFAD and DFAD beacon deployment and use in the both the fishing and DFAD logbooks.

(iv) All DFADs deployed must be marked with a detailed marking scheme defined by the beacon ID.

(v) Reporting of daily information on all active DFADs per assigned vessel including date, instrumented buoy ID and daily positions.

- **Reporting obligations** – All information pertaining to DFAD/DFAD beacons deployment must be recorded in fishing and DFAD logbooks (refer to Appendix 1). This includes:
  (i) The date of deployment
  (ii) The position (latitude and longitude) of DFAD/DFAD beacon deployment.
  (iii) Identification number of the beacon
  (iv) The total number of DFAD/DFAD beacons deployed per trip.
  (v) DFAD type (drifting natural, drifting artificial)
  (vi) Type of visit (deployment, hauling, retrieving, loss, intervention on electronic equipment)

4. **DFAD construction specifications and requirements**
    a. DFAD design characteristics (a description): As per annexed plan (refer to Appendix 3)
    b. DFAD markings and identifiers, including DFAD beacons: DFAD identified by serial number
    c. Lighting requirements: flash command
    d. Radar reflectors: visible without radar reflectors
    e. Visible distance: 1 NM
    f. Satellite buoys (requirement for serial numbers): Satlink and Zunibal
    g. Satellite transceivers (requirement for serial numbers): All DFADs are equipped with satellite transceivers to allow the monitoring of FAD trajectory.

5. **Applicable areas**: on high seas and EEZ of the Indian Ocean Coastal State through licenses, shipping lanes, away from fishing grounds of the artisanal fishery.

6. **Applicable period for the DFAD-MP**: The current Management Plan is valid for a period of one year.

7. **Means for monitoring and reviewing implementation of the DFAD-MP**: The implementation of the DFAD-MP will be monitored and reviewed by the Ministry of Agro-Industry, Food Security, Blue Economy and Fisheries (Blue Economy and Fisheries Division) at regular intervals. The monitoring will be done jointly with the ship owners and operators and the tuna export industry. The DFAD-MP will be reviewed on a yearly basis to accommodate new management measures adopted at the last Commission meeting with regard to FADs. Since the coming into force of Resolution 19/02 in January 2020, operators were required to report daily information on active DFADs per vessel which was submitted to the IOTC within a delay of at least 60 days. However, with the coming into force of the Resolution 24/02, provisions are made for the daily data to reach the IOTC not later than 60 days. All the information with regard to DFAD will be recorded as usual in the Ministry's database that will allow easy access for verification and monitoring. For instance, the number of DFADs deployed at sea is recorded based on the logbooks and verified if they are within the set limits of the Resolution 24/02. This information is processed and submitted to the IOTC on a yearly basis. A progress report on the implementation of the DFAD-MP will be prepared and submitted to the IOTC annually.

8. **DFAD Logbook**:

    For purse seiners: all activities are reported in the appropriate logbook designed to accommodate all information concerning activities related to DFAD.

    For supply vessel: a specific DFAD logbook is used to report all information concerning activities related to DFAD.

Activities include:

- Deployment/launch of FADs
- Removal of FADs
- Visiting of FADs with or without handling (maintenance/exchange)

For each of the above activities, the following information is also recorded in the logbook as well as the ones specified at Annex 1 of Resolution 24/02.

- Date and time;
- Position (latitude & longitude);
- Type of FAD (natural, artificial, "classic" or "non-entangling" draft) along with a short description (tree trunk, pile of straw, container, rope, …)
- Number of associated beacon in case of a TFAD;
- Number of removed beacon in case of a TFAD if the beacon belonged to the vessel, if not write "beacon of a third vessel";
- Any observation with regard to entangled sharks or turtles if ever the FAD has net counterparts;
- Tons caught per species;
- Any discard quantities

APPENDIX 1

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APPENDIX 2

Document is upload separately as Appendix 2

APPENDIX 3

Document is upload separately as Appendix 3

APPENDIX 4

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Good Practices for

Responsible Tuna Purse-Seining

The good practices below are aimed at improving the tuna purse-seining fleet's practices in every ocean across the world, the Atlantic, Indian and Pacific Oceans.

They reflect the practices implemented by the OPAGAC/AGAC and ANABAC fleet to make tuna purse-seining more selective and sustainable, for a responsible approach to fishing that minimises the impact of tuna purse-seining on the marine ecosystem and makes the management of sustainable tuna purse-seining possible.

This code was signed in 2012 and is reviewed annually with the aim of incorporating best practices based on the most recent advances in scientific studies. The agreement is mainly based on the following points:

1. The design and use of FADs (Fish Aggregating Devices) that do not entangle sensitive associated species (primarily turtles and sharks).
2. The development and application of releasing techniques that pose less risk to associated species and optimise those species' survival. This includes the use of materials and equipment provided expressly for releasing associated species.
3. The application of a FAD management system through the implementation of a FAD logbook.
4. 100% observer coverage, including support vessels.
5. Training for fishing skippers, crew, and scientific observers.
6. Scientific verification of activities related with good practices and continuous tracking by a steering committee.
7. Continous revision of the Code.

If in any of the points that are described below, the Regional Fisheries Management Organizations (RFMOs) have more demanding requirements than those described here, then RFMO criteria will be adopted in the area of competence to which they belong.

Likewise, the points reflected here conform to the agreed basic characteristics, understanding that these characteristics will represent a minimum standard to be used, without prejudice to the fact

that each company can develop and apply measures that further minimize the impact of tuna purse seine fishing on non-target species and/or any other impact on the marine environment.

1. Non-entangling FAD Design

Work has been conducted since 2012 to arrive to a consensus on an alternative design of FADs that minimise impact on non-target species, especially turtles and sharks.

The results set the foundations for gradually replacing the FADs used by the OPAGAC/AGAC and ANABAC fleet with new, non-entangling models that are in accordance with the following minimum standards:

NON-ENTANGLIGN MATERIALS

All the elements that make up the raft or floating part and the submerged part of the FAD must help prevent the entanglement of turtles and sharks. Materials used to construct the FADs are:

- Non-meshed (for example, canvas),

- ropes,

- netting with a maximum mesh size of 7 cm (2.5 inches),

- netting with a mesh size of over 7 cm but bound into “sausages”.

By January 1, 2024, purse seiners and support vessels will only use and deploy FADs constructed with non-mesh material. Thus, from that date it is totally prohibited to use netting material for the construction of FADs.

BIODEGRADABLE AND NON-ENTANGLING MATERIALS.

FADs will be deployed with biodegradable and non-entangling materials to evaluate the functionality of these materials and enable a gradual substitution of plastic materials by biodegradable alternatives for the floating and submerged part of the FADs.

GENERAL NOTES

- If the Regional Fisheries Management Organizations (RFMOs) implement more demanding requirements than those described here for the construction of FADs, these criteria will be adopted in the area of competence of those RFMOs.

- If netting is used in the construction of the raft or the submerged part, tests will be carried out with non-meshed materials for a gradual replacement. Thus, by 2024, non-netting FADs will be deployed in all oceans.

- In visits to FADs that are followed by a change of the instrumented buoy by a buoy owned by the vessel, entangling materials will be replaced by non-entangling materials following the criteria defined in the Code, whenever appropriate.

- If there are any FAD modifications by the crew, the deteriorated synthetic materials will be kept on board for their disposal in port.

2. Associated Species Release Manoeuvres

Sharks

While the number of sharks incidentally caught by purse seiners is not significant when compared to the number of individuals caught by other gears, it can be reduced by applying suitable handling and release protocols.

The intentional retention of any shark is forbidden, being strict and inflexible regarding the practice of shark finning. All shark fins must be naturally attached to any unintentionally retained shark.

If any sharks are discovered when the catch is being hauled on board, and following RFMOs recommendations[1], they must be released from the deck or lower deck (provided that they can be handled with security), as quickly and carefully as possible, to avoid harming the animals. The necessary precautions must always be taken to maintain crew safety during the release process of dangerous animals. Crew must particularly avoid grabbing sharks only from the tail (unless it is with a suitable device) or the gills, to avoid injuring the animal and to protect the crew from dangerous reactions. Nooses or gaffs may not be used to release sharks. If sharks are found inside the purse seine net, crew must attempt to get them out of the net using the brailer employed to bring the catch on board, even if a certain amount of target fish (2-3 tonnes) is lost, or else must use some other cradle-like device, to avoid the possibility of injury. Likewise, if sharks cannot be released immediately from deck, it is recommended to keep the animals wet, in the shade and if possible, breathing freely, by introducing a water hose into the mouth for example.

Vessels are obligated to have a net carrier, a stretcher or a tarp on board and/or similar equipment alongside the brailer, so sharks found on deck can be handled more easily. The use of selective devices on deck that facilitate releases and reduce direct contact with the crew, such as shark ramps or hoppers, are recommended. Likewise, the installation of a waste chute in the lower deck is recommended, to facilitate and expedite the best release of the animals that could not be released from the upper deck and accidentally fell into the lower deck.

[1] ICCAT: Rec 03-10, Rec 04-10, Rec 09-07, Rec 10-06, Rec 10-07, Rec 10-08, Rec 11-08; Rec 14-06, Rec 15-06, Rec 16-12, Rec 16-13, Rec 17-08, Rec 18-06
IOTC: Res 05/05; Res 12/09; Res 13/06; Res 17/05; Res 18/02
IATTC: Res C-04-05; Res C05-03, Res C11-10, Res C15-04, Res C16-01, Res C16-04, Res C16-05, Res C16-06; C-19-05; Res 19-06
WCPFC: CMM 2010-07; CMM 2011-04; CMM 2013-08; CMM 2014-05; CMM 2019-04

Sea Turtles

Following the recommendations[2] of the RFMOs on sea turtles, despite the fact that turtle entanglements are unusual, crew must attempt by all means to release every turtle entangled in floating objects or encircled by the purse seine net.

If an entangled turtle is found in the net, the net hauling operation must be stopped immediately so that the animal does not accidentally go through the power-block. Whenever possible, the crew must release all turtles they find inside the net, trying to prevent any injury. If an animal is accidentally injured in any way during the operation, it must be kept on board in a wet, cool place, and it must completely recover before it is released. If the turtle is carrying any plastic items or bits of net on it, or if it has any longline hooks embedded, the foreign items must be removed and/or disentangled, even if these materials do not originate from that vessel. Likewise, if crew find an entangled turtle when visiting a FAD, they must disentangle the turtle and release it using the same procedures. To handle a turtle, crew must hold the animal by the shell but avoiding just the head area, to protect from catching their hands if the turtle should retract its head in. It is extremely important not to hold the animal by its flippers, because turtles' flippers are sensitive and could become dislocated. If a turtle appears not to respond to stimuli or is inactive, it is recommended, if necessary, to place it in the resuscitation position to help it recover more easily. To place a turtle in the resuscitation position, crew must lift the animal by its rear legs about 15 cm, with its head pointing downwards, and place something beneath it to maintain the turtle in this position (e.g., tyre, coiled rope). The crew must wet the turtle from time to time and keep it out of direct sunlight.

Thanks to these practices, the mortality rate of sea turtles in the OPAGAC/AGAC and ANABAC purse seine fleet is practically null.

[2] ICCAT: Rec 03-11; Rec 05-08; Rec 10-09; Rec 13-11
IOTC: Res 12/04; Res. 15/01
IATTC: Res C-04-05; Res C-04-07; Res-C-O7-03; Res C-16-01; C-19-04
WCPFC: CMM-2008-03; CMM 2018-04

Skates and Rays

Although very few skates and rays are involved in purse seine sets, very simple and safe protocols are in place for their release, in line with RFMO recommendations[3]. This procedure is based on trying to get the animal out of the purse seine either using the brailer employed to bring the catch on board, even if a certain amount of fish (2-3 tonnes) is lost, or using some cradle-like device or specific equipment, to minimise any possible injury.

If the animal is not detected or cannot be released before it is brought on board, it must be released from the deck. The recommendation is to have a carrier, tarps and/or similar equipment alongside the brailer for handling large individuals more easily when they are found on deck, and to release them with the aid of the crane. There are also methods such as the cargo net or sorting grids with wide spaces, which are placed over the unloading hatch so the fish can be unloaded while the ray stays on top, which is then lifted for release with the crane. If on the other hand skates or rays are released by hand, it is recommended that crew avoid handling the animal by its tail, gills, or the cephalic lobes, to prevent injury and dangerous reactions. It is particularly recommended that crew avoid handling the rear part of stingrays, as many have a poisonous spike at the end of their tail. It is therefore preferable to handle these animals from the front, grabbing them from the pectoral fins.

[3] IOTC: Res 19/03
IATTC: Res C-15-04; Best handling Practices for the safe release on Mantas & Mobulids
WCPFC: CMM 2019-05

Whale Sharks and large Cetaceans

Most RFMOs (IOTC, IATTC, WCPFC)[4] have implemented measures prohibiting fishing practices that intentionally target setting on whale sharks. However, these animals may end up in the net unintentionally because they often swim well below the surface, making it difficult for fishers to detect them before setting the net. Although the whale shark release manoeuvre is somewhat complex, crew must take all precautions to avoid injuring the animal. In the same way, cetacean bycatches are regulated by the EU[5], some RFMOs[6] and private agreements for intentional sets on these species' groups. The interaction with cetaceans, principally baleen whales, is rare and non-intentional. Mainly, these rare interactions occur with large cetaceans (e.g., humpback whale; *Megaptera novaeangliae)* which generally escape the net before its closure or by breaking the net.

Following recommendations established, with the objective of minimizing impacts on accidentally trapped individuals, and despite the inherent difficulty of the release manoeuvre, if a whale shark or a whale is found in the purse seine, the crew must take all actions to prevent damage to the animal. The crew should haul the net carefully to isolate the animal in a small area of the bunt. After this, crew may take the following measures, depending on the sea conditions and the animal's behaviour. At all times crew safety must be guaranteed.

[4] IOTC: Res. 13-04
IATTC: C-19-06
WCPFC: CMM-2012-04
[5] EU: EC - No 520/2007 (Art. 29)
[6] IOTC: Res. 13-04
WCPFC: CMM-2011-03

A) When the animal is floating on the surface

A.1. The fishermen must gradually haul the net to bring the animal towards the closest cork line. The net must always be pulled in a direction from the animal's tail toward its head, along its belly, attempting to make the fish move towards the cork line.

A.2. If the animal is small (2 metres long or less), it may be released carefully using the brailer.

A.3. Partially sink the cork line to enable the animal to escape over the net.

A.4. Wait for the animal to freely swim out of the net.

A.5. The catch may be brought on board only after the animal has been released from the net.

B) When the animal does not appear on the surface

Crew may begin bringing the catch on board until the animal appears on the surface. At this point crew must cease brailing the tuna and follow the procedure in point A.

C) When the animal pushes the net with its head before the corks go down

Sometimes the animal will nudge or push the net before the crew can submerge the cork line, and it is difficult to get the animal to move backwards. In this case, the crew must work from the boat to submerge the cork line by maneuvering the net or with the aid of weights or poles to lower the cork line and enable the animal to get its head free above it.

D) When the animal is trapped in the bunt with its head facing sternward

In this case, the release manoeuvre to get the animal out over the cork line becomes very difficult, and the most effective manoeuvre known is the following: Once the animal is in the bunt, the crew must locate the purse line closest to the animal's head and cut a couple of fathoms of net from where the purse line is attached to make a window through which the animal can escape, lowering the net a little to place the window underwater.

GENERAL NOTES

- Regardless of the circumstances occurred and the measures adopted for the release of the animal, the crew will verify that its behaviour is normal and will record the operation in the logbook. In the event that strange behaviour is observed, it will also be recorded in the logbook.
- Tests will be carried out with new release devices designed to facilitate safe handling and increase the survival of sharks, manta rays and rays.
- It is recommended to collaborate in fauna tagging initiatives to assess survival after release.

3. FAD Management System

OPAGAC-AGAC and ANABAC agree to comply with the FAD management system and plan developed and implemented by the pertinent authorities. This includes the collection of certain information about the activities associated with FAD fishing.

4. 100% Observer coverage, including support vessels

The agreement considers it necessary and mandatory to have 100% coverage of fishing activities as of 1 January 2015 and extends the 100% coverage to supply vessels as of 1 January 2017. This coverage rate complies with the requirements of the WCPFC, IATTC and ICCAT and goes well beyond the current requirements set by the IOTC (5%). The information gathered during fishing trips to verify good practices compliance is recorded by specifically trained scientific observers, and more recently, also by electronic monitoring systems (EMS) validated and approved by scientific bodies. Either way, the purse seiner fleet must still maintain the minimum required human observer coverage required by each RMFO. The coverage for auxiliary vessels may be provided entirely by electronic observers due to the reduced space in these vessels.

5. Training for fishing masters, crew, and scientific observers

The professional fishing crew (both officers and deck crew) and the scientific observers on board are all trained specifically on the items covered in this Code of Good Practices. They are especially taught on the manoeuvres for handling and releasing marine species and the correct construction and use of FADs. Similarly, the Code encourages the training of scientific observers to collect high-quality data, and thus it works to develop appropriate local and third-country observer training. Training periods are also used as follow-ups to evaluate each programme and learn about any difficulties that may arise.

6. Scientific verification of activities related with the Code of Good Practices and continuous follow-up by a steering committee

All activities mentioned in this document are verified by an independent and trusted scientific organisation that tries to guarantee the program's correct functioning. The scientific organisation works to gather and compile the data collected by all the different observer organisations involved and process that information so it can be analysed on a per-vessel and per-trip basis. The results are used to make biannual compliance reports and provide specific advice when necessary. The results are utilized to continuously improve the Code of Good Practices, by specific advice and decisions agreed by a Steering Committee. This Committee meets every semester to examine how the cCde is applied, find practical solutions for both punctual or structural problems and keep the programme updated, always following the recommendations and suggestions of the scientific advisors.

7. Continuous Revision of the Code.

This text is the version revised and agreed by the signatories of the Agreement of February 20, 2012 of the Code of Good Practices and replaces the text and its subsequent revisions.

Date	Version	Description
February - 2012	Rev.0	Creation of the Code
February - 2015	Rev.1	Review of the document for the introduction of detailed release strategies, characteristics of non-entangling FADs
February - 2017	Rev.2	Introduction of the auxiliary vessels
February - 2020	Rev.3	Introduction of release practices for large cetaceans and determined practices in the use of FADs throughout their life cycle.
May - 2022	Rev.4 Valid	Review of the use of materials for the construction of FADs

Non-Entangling & Biodegradable FADs GUIDE

BEST PRACTICES for fishers, RFMOs, governments & vessel owners

Photo by Fernando Rivero © 2018

August 2019

ISSF INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION

This is the third version of the Non-Entangling & Biodegradable FADs guide, which ISSF first published in 2012 and updated in 2015.

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INTRODUCTION

The purpose of this version of the guide is to update the content in relation to (i) recent research related to the impact of FAD[1] structures on the ecosystem, and (ii) new regional fisheries management organization (RFMO) measures requiring the use of specific designs for FAD structures. This revised version of the 2015 guide (ISSF 2015) is designed to update the content and clarify frequently-asked questions by stakeholders.

The first version of the guide (ISSF 2012) was intended to urge action given the startling results of scientific research on the use of FADs that uncovered significant previously unobserved shark mortality through entanglement in FADs, and the quantification of ghost fishing:

- A field study in the Indian Ocean showed high mortality of sharks due to their entanglement in FADs built with netting of large mesh size (Filmalter et al., 2013).
- In other oceans, large mesh size nets were also used in FADs and the same species of sharks were associated with them (Murua et al., 2017).
- Qualitative and quantitative information from ISSF skippers workshops worldwide showed that entanglement was occurring in traditional FADs (using typically large mesh size) (Murua et al., 2017).
- Quantification of entanglements is difficult at FADs (Filmalter et al., 2013) and there are large knowledge gaps related to ghost fishing impacts in marine megafauna (Stelfox et al., 2016).

In addition:

- The numbers of FADs at sea have been increasing in recent decades (Scott and Lopez, 2014).
- Shark populations continue to decline worldwide due to cumulative human impacts (Lewison et al., 2014).

Since the first guide, several tuna fishing fleets adopted the use of Lower Entanglement Risk (LERFAD) or Non-entangling FAD (NEFAD) designs in an effort to reduce shark and/or turtle entanglement. Today, all tuna regional fisheries management organizations (tRFMOs) have passed measures requiring the use of LERFADs or NEFADs, and some have strengthened their first technical criteria of how a LERFAD or NEFAD should be constructed.

Increasing awareness of the impact that lost or abandoned FADs can have on the marine ecosystem underscored the need to update the ISSF Guide on Non-entangling and Biodegradable FADs.

Considering new research and based on the findings of recent workshops held by ISSF, ISSF is publishing this updated Guide for Non-entangling and Biodegradable FADs.

1 Fish Aggregating Device: they are constructed to aggregate fish and can be anchored or drifting. The industrial tuna purse seine fishery around the world primarily fish on Drifting FADs (DFADs). Most of them are equipped with satellite transmitting buoys for their relocation.

Main Impacts

of FAD structure on marine ecosystems

There are two major impacts caused by FAD structures:
Shark and turtle entanglements, and marine pollution.

Photo by Fabien Forget © 2014

1. Shark & Turtle Entanglement

One of the issues with shark and turtle entanglement is that it is very difficult to observe these events because FADs remain at sea for months but are only visited once or twice in their lifetime. And, even when they are visited, the submerged structure is not always observed. In addition, sharks that get entangled do not remain entangled for more than a couple of days before their bodies fall off and sink. As a result, most entanglements go unobserved. This source of mortality is called "ghost-fishing."

Sharks and turtles are among the numerous species of marine life that are often found associated with Drifting FADs (DFADs).

In some instances, turtles become entangled in the netting on the DFAD rafts, and turtles and sharks become entangled in the netting suspended beneath the rafts.

The main shark species that often associate with floating objects are the silky shark (*Carcharhinus falciformis*) and, to a lesser extent, the oceanic white tip shark (*C. longimanus*). Sharks can become accidentally entangled in the submerged netting of the DFAD, even when the netting is tied up in bundles ("sausages") if these begin to unravel or

untie. Small-mesh net will reduce the chances of shark entanglement, but after long periods of time at sea the net will start to break down and larger holes will appear, thus increasing the potential to entangle sharks.

Several turtle species can be found around floating objects depending on area, the most common being the olive ridley sea turtle (*Lepidochelys olivacea*). While turtles can get trapped in the submerged netting, they can also entangle when they climb on the floating structure. The turtle's claws can easily become ensnared in the mesh panels covering the raft. Covering the raft with netting and putting cloth or tarpaulin on top is not a lasting solution, because when those fabrics degrade the underlying netting becomes exposed. The proportions of turtles that become entangled with DFADs but escape, and those that become permanently entangled, are currently unknown.

2. Marine Pollution

FADs are deployed in specific areas so that they drift towards productive fishing zones. However, oceanic currents are difficult to predict and therefore the resulting FAD trajectories are not always well controlled. As a result, FADs can drift away from the fishing zone and end up being abandoned by the vessel. In many cases, FADs sink or end up beaching in sensitive areas such as coral reefs. A recent study estimated that 10% of the deployed FADs end up stranded (Maufroy et al. 2015).

The impacts associated with lost and abandoned FAD structures are ghost fishing, damages to coastal areas, and marine pollution due to plastic components used to build FAD structures. Globally, FAD structures have evolved towards more sophisticated and deeper structures 60-80 meters deep. Naturally, the impacts of these deep FADs are greater compared to those 5-20 meters deep used in the past.

While DFADs have traditionally been constructed with natural bamboos, many DFADs are made today using petroleum-derived products such as plastic, PVC, and nylon nets, as well as metals. Eventually, petroleum-derived materials break up and contribute to ocean pollution as macro- and micro-plastics.

ISSF is working on several projects to find new FAD structures made of materials of natural origin to reduce the impact caused by beaching and sinking of FADs.

Best Practice Recommendations

Taking into account new research and lessons learned at ISSF workshops (Moreno et al. 2016; 2018), guidelines for construction of non-entangling and biodegradable FADs are presented below.

ISSF recognizes the important role of industry in the design and development of functional non-entangling and biodegradable FADs, and encourages this innovation and testing to continue so that NE and biodegradable FAD designs continue to evolve.

Non-Entangling Biodegradable FADs

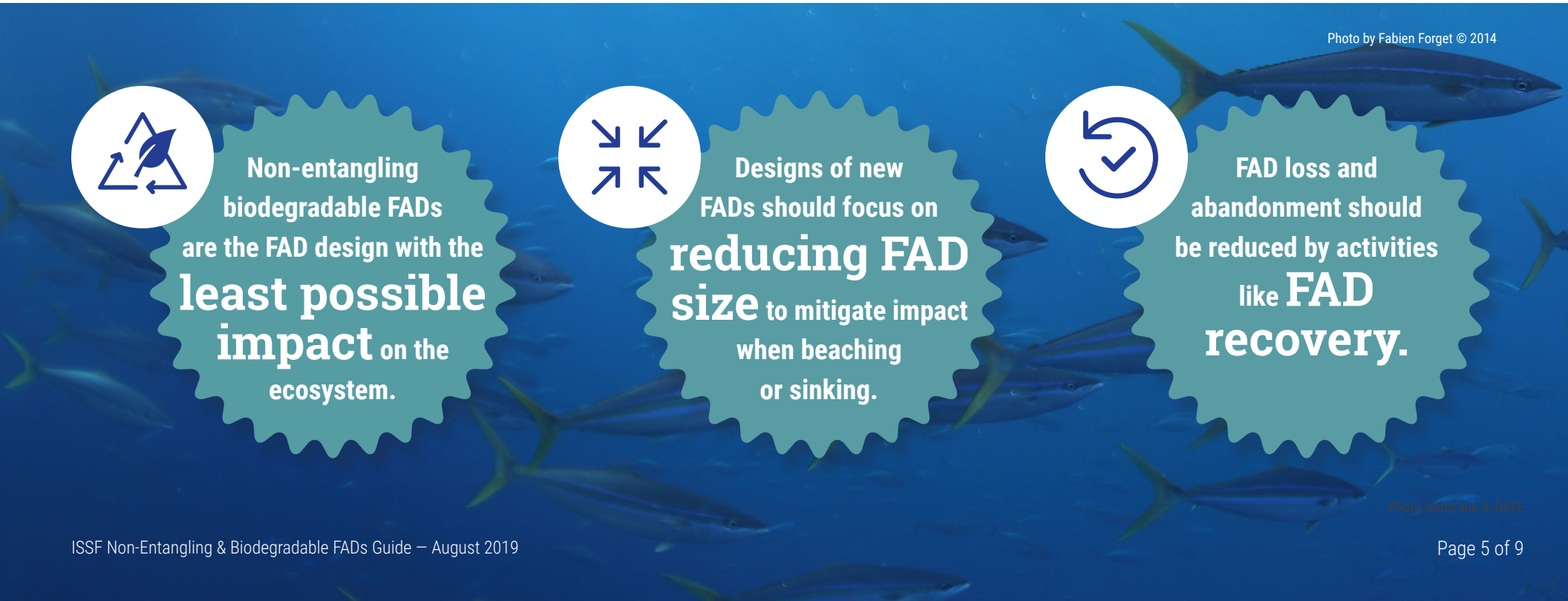


Photo by Fabien Forget © 2014

Non-entangling biodegradable FADs are the FAD design with the **least possible impact** on the ecosystem.

Designs of new FADs should focus on **reducing FAD size** to mitigate impact when beaching or sinking.

FAD loss and abandonment should be reduced by activities like **FAD recovery.**

Photo credit line © IATTC

Non-Entangling Biodegradable FADs

ISSF INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION

Raft

The surface structure should not be covered with netting or meshed materials (to reduce entanglement of turtles).

Bio-degradable

Construct with bamboo, balsa wood or other natural materials that degrade without causing impact on the ecosystem.

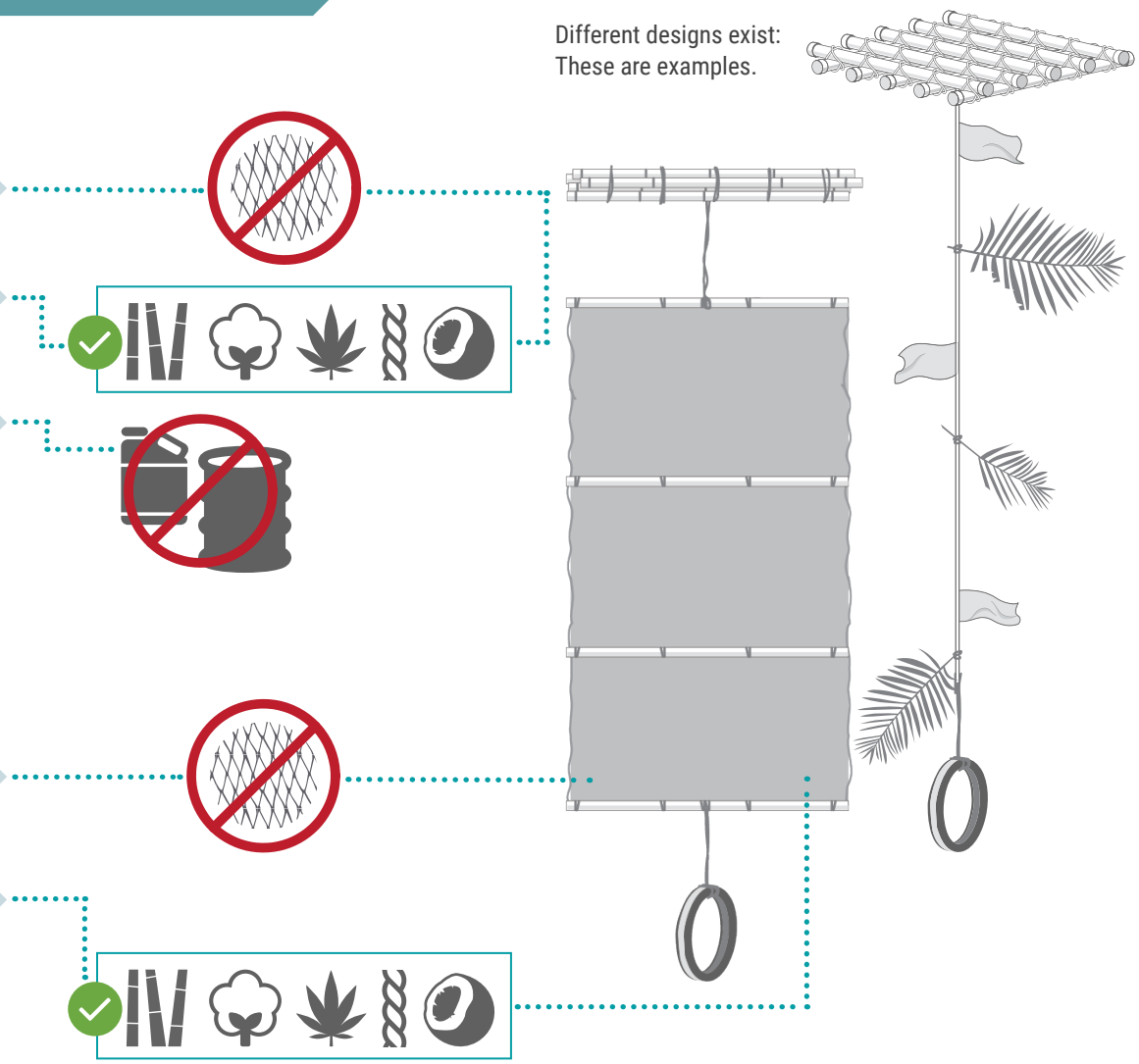
Use of plastic buoys and containers for flotation should be reduced as much as possible; for instance, reduce the weight and volume of the FAD structure.

Tail

Only FADs constructed without netting can completely eliminate the entanglement of turtles, sharks and finfish species.

Bio-degradable

Use only natural and/or biodegradable materials—cotton ropes and canvas, manila hemp, sisal, coconut fiber—so that they degrade without causing ecosystem impact.



Three Categories of FADs — low to high entanglement risk

Considering the variety of designs and materials used worldwide to construct FADs, the ISSF Bycatch Steering Committee ranks FADs according to the risk of entanglement related to how the nets are used.

From lowest to highest to risk, three categories are described. These designs are examples; the important elements are the net type and its configuration.

NON-Entangling FADs

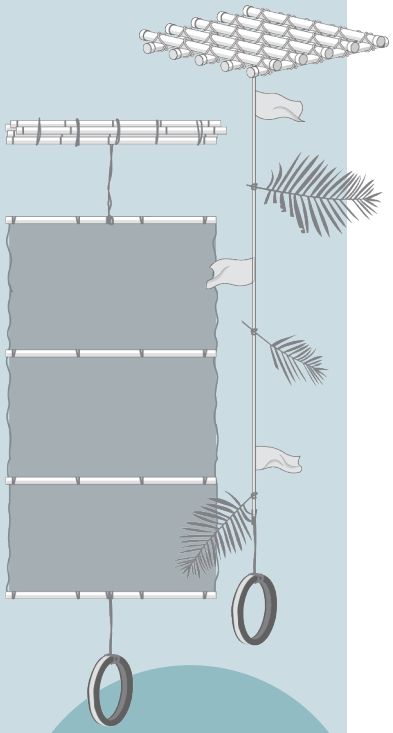
RAFT

- Do not cover with netting.
- If covered, cover with canvas, tarpaulin, shade cloth, or non-entangling materials.

TAIL

- Subsurface structure is made with ropes, canvas or nylon sheets, or other non-entangling materials.

More detail on the previous page.



No netting is used in any components (raft and tail)

These FADs are expected to have no risk of causing entanglement.

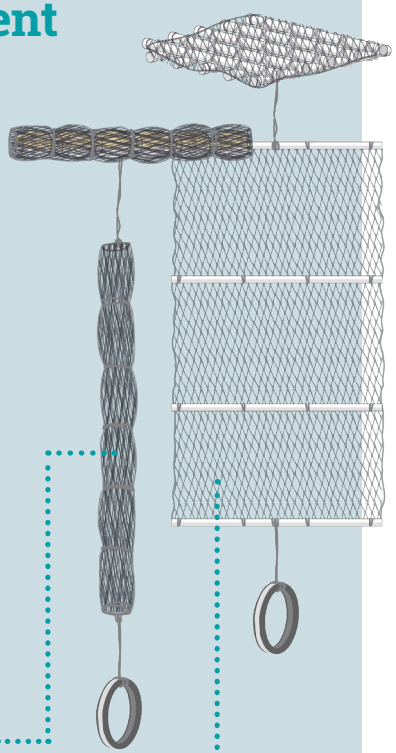
LOWER Entanglement Risk FADs

RAFT

- Use only small mesh netting (< 2.5 inch / 7 cm stretched mesh) if covering with net (both upper and submerged parts).
- If small mesh netting is used as cover, it is tightly wrapped, with no loose netting hanging from the raft.

TAIL

- If net is used as submerged tail, could be of any mesh size if tightly tied into sausage-like bundles.
- If open panel netting is used, only small mesh size (< 2.5 inch [7 cm] stretched mesh) can be used, but weight the panel to keep it taut.



Despite using netting, these design elements reduce the risk of entanglement events.

HIGH Entanglement Risk FADs

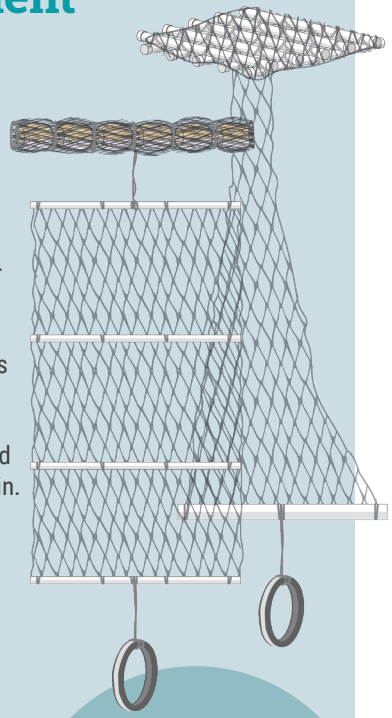
RAFT

- Covered with large mesh netting (e.g. > 2.5-inch mesh).*
- If mesh size is larger than 2.5 inches (both in the upper or submerged part), it is high entanglement, whether the net is tightly tied or covered by canvas or tarpaulin.

TAIL

- Submerged part of the FAD constructed with open panels of large mesh netting (> 2.5-inch mesh).

*Accounting for mesh sizes available in the market, 2.5 inch (7 cm) mesh size offers the lowest likelihood of entanglements across species and body parts.



These FADs are known to cause entanglements with turtles and sharks.

RFMO REGULATIONS

The four tuna RFMOs responsible for the conservation and management of tropical tunas have adopted measures requiring the use of non-entangling FADs by purse seine fleets. These regulations differ in terms of the degree to which the technical criteria of FAD designs are specified.

In some cases, the measures also encourage the use of biodegradable materials in the construction of FADs or require their use some time in the future.

In addition, observers working under RFMOs now record the types and configuration of FADs used by fishers (e.g. FAD size, construction materials, design, entanglement incidents) in specific log sheets. This information is important for scientists and managers to assess the efficacy of different designs in reducing FAD entanglements and in maintaining fishing efficiency. The collection and recycling of old FADs by fishers can also help reduce the environmental impact of this gear.

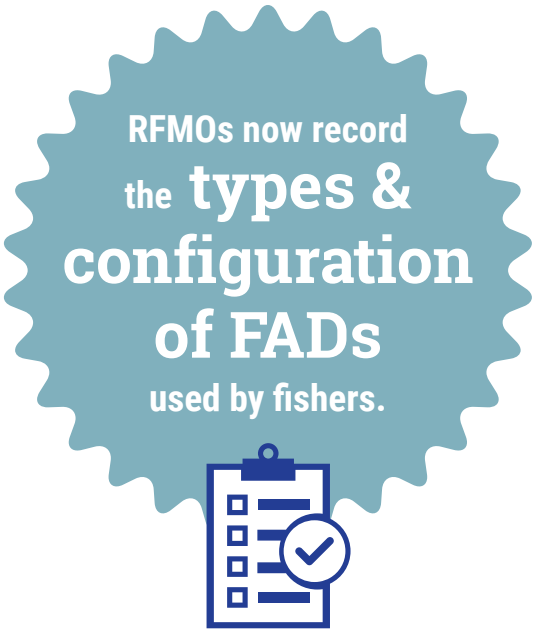


Photo by Fernando Rivero © 2018

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This guide is written and designed with input from the ISSF Scientific Advisory Committee and the ISSF Bycatch Steering Committee.

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ALBA FISHING, LTD.

FAD MANAGEMENT POLICY

(ISSF Conservation Measure 3.7)

ALBA FISHING, an environmentally responsible company, hereby publicly states that starting on January 1, 2023 **([1])**, the following best practices for FAD management, identified in ISSF Technical Report 2019-11, "*Recommended Best Practices for FAD management in Tropical Tuna Purse Seine Fisheries*", shall be implemented:

a) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type.

We commit to:

- Filling out completely and accurately the logbooks, including FAD logbook information, by set type required by the flag state and submitting them by electronic reporting to the required authority and/or tRFMO.

- Maintaining, as has been the case since 2015, 100% observer coverage, even if not required by the tRFMO, on all fishing trips through the use of a combination of human observers and voluntary Electronic Monitoring (EM). For EM, best-practice minimum standards developed by ISSF, or those developed by the tRFMO, will be followed.

b) Voluntarily report additional FAD buoy data for use by RFMO science bodies.

We commit to:

- Report FAD buoy daily position data to the scientific institution AZTI with a maximum time lag of 90 days, and request that these data be made available to the relevant RFMO for scientific purposes.

- Provide FAD buoy echo-sounder acoustic biomass data to the scientific institution AZTI with a maximum time lag of 90 days, and request that these data be made available to the relevant RFMO for scientific purposes.

c) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made.

We commit to:

[1] Original 3.7 Policy entered into force June 30, 2021.

- Abiding by the limit of active number of FADs adopted by tRFMOs.
- Deploying only FADs with satellite tracking buoys.
- Managing the activation and deactivation of buoys taking into account the corresponding tRFMO´s measures.
- Abiding by the time area closure (including FAD area closures) established by the corresponding RFMO.

d) Use only non-entangling FADs to reduce ghost fishing.

We commit to:

- Deploying only FADs that are completely less-entangling and starting **January 1, 2024** deploying only non-entangling FADs (i.e., without any netting), even when is not a requirement of the tRFMO, according to the ISSF Guide for Non-Entangling FADs.
- Not deploying any "high entanglement risk" FAD according to the ISSF Guide for Non-Entangling FADs (i.e., those using large open netting either in the raft or in the underneath part of the FADs: >2.5 inches or 7 cm mesh).
- Removing from the water and modifying the design of “high entanglement risk“ FADs according to the ISSF Guide for Non-Entangling FADs that are reused by the fleet, to make them less or non-entangling as per the ISSF classification.

e) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies

We commit to:

- Studying the feasibility of using FADs with only biodegradable material in their construction except the floatation structure of the raft.
- Participating in tests of locally-sourced biodegradable materials in collaboration with AZTI, ISSF or any other scientific institution.
- Studying the feasibility of deploying simpler and smaller FADs.
- Participating in trials of biodegradable FAD designs and tests with the participation of RFMO science bodies and/or CPCs or ISSF scientist.
- Endorsing risk and feasibility research programs aimed to determine deployment areas that are highly likely to result in stranding, in countries where FAD recovery policies could be put in place.
- Participating in cooperative efforts, such as the FAD-Watch in the Seychelles, to remove stranded FADs, in the case the fleet operates in the determined area(s).
- Gradually replacing FAD components with biodegradable materials as soon as such are proven efficient.
- Not disposing of any FAD component at sea, unless it is proven biodegradable: should a FAD be mended and/or any component replaced, the remainder material must be reused or disposed at port

- Whenever possible, use supply vessels to recover FADs that might be in risk of sinking or stranding.
- Promoting the use of bio-based material to make FADs.
- Promoting a definition of BIODEGRABLE materials applicable to marine environment.

f) For silky sharks (the main bycatch issue in FAD sets) implement further mitigation efforts.

We commit to:

- Applying Best Practices for safe handling and release of sharks and rays brought onboard.
- Participating/supporting studies to evaluate the contribution of purse seine fisheries to catches of silky sharks, and the impact of implementation of the Good Practices on post-release survival.
- Participating in projects aiming to develop and test new tools to release sharks and mobulids in tuna purse seiners, that maximize their survival and are practical to use onboard.

This policy was adopted on 1 December, 2022.

وزارة الثروة الزراعية والسمكية وموارد المياه

Drifting Fish Aggregating Device (DFAD) Management Plan 2025

Submitted by: Sultanate of Oman

1. Objective:

This document outlines the Drifting Fish Aggregating Devices (DFAD) Management Plan, intended for Omani tuna purse seine fishing vessels, pursuant to paragraph 12 of IOTC Resolution 19/02. The aim of this plan is to ensure that the use of DFAD by Omani tuna purse seine fishing vessels aligns with the conservation and management measures, as well as the data collection requirements, established by the IOTC.

2. Scope:

a. **Vessel type** : purse seiner.

b. **DFAD numbers or number of beacons to be deployed**: A maximum of 300 instrumented buoys are active at sea at any one time in relation to each of the vessel through such measures as for example the monthly review sent by the independent consultant and a maximum of 500 instrumented buoys which may be acquired annually by each of its fishing vessel.

c. **Reporting procedures**: Through fishing and DFAD logbooks (Appendix 1) and daily information on active FADs as per Res 19/02.

d. **Incidental by catch reduction and utilization policy**: The deployment of Non-entangling FADs to reduce incidental by-catch forms part of the policy of the vessel owner and operator since 2012/2022 respectively . Details on the non-entangling FADs are given at Appendix 2. Biofads are also being deployed and the use of biodegradable FADS is under progress. The vessel owner and operator are committed to the use of best practices for FAD Management through a FAD Management policy which is based on the International Seafood Sustainability Foundation (ISSF) Conservation measure 3.7 .

e. **Consideration of interaction with other gears type**: For the time being, no interaction between the DFADs used by purse seiners and the vessels involved in other fishery. The DFAD MP shall be reviewed in case of any adverse impacts reported as a result of DFADs or part of DFADs having interfered with other fisher.

f. **Monitoring of DFADs**: All DFADs are marked and are equipped with satellite buoys that allow movement monitoring. Vessel master are encouraged to prevent, as far as possible, loss of FADs set at sea. In the event of a loss or of the impossibility of hauling in a FAD, operator keeps the record its last known date and position in the logbook (Appendix 1).

g. **Statement or policy on DFAD ownership:** Presently, DFADs beacons are clearly marked with a serial number until a new marking scheme is adopted by the IOTC.

3. Institutional arrangement for management of the DFAD Management Plan:

- **Institutional responsibilities**: The Ministry of Agriculture, Fisheries and water Resources monitors the activities of the DFADs deployed by its flagged vessels through DFADs logbooks. The purchase order of the vessel operator is also verified to ensure that their annual purchase of beacons is within the limit of 500 instrumental buoys that can be acquired annually by each vessel.

- **Application processes for DFAD and/or DFAD beacons deployment approval**: Presently, no application process and approval is required for the deployment of DFAD and DFAD beacons. However, the Ministry ensures that the deployment of DFAD is being properly done by the vessel's owner and operator according to the DFAD-MP. Moreover, all information pertaining to the deployment of DFAD and or DFAD beacons is recorded in logbooks that are verified for compliance by the Ministry of Agriculture, Fisheries and water Resources.

- **DFAD and/or DFADs beacons replacement policy:**

  All replacement will be recorded on the FADs logbook. Old DFAD should be retrieved as practically as possible.

- **Obligations of vessel operator and masters in respect of DFAD and/or DFAD beacons deployment and use**:

(i) The maximum number of instrumental buoys active at any one time at sea should not exceed 300 for each purse seiner.

(ii) Only non-entangling DFAD or bio fads should be deployed by the purse seiners or the supply vessel. Only non-entangling bio fads would be used in the future.

(iii) Recording of each activity with respect to DFAD and DFAD beacon deployment and use in the both the fishing and DFAD logbooks.

(iv) All DFADs deployed must be marked with a detailed marking scheme defined by the beacon ID.

- **Reporting obligations** – All information pertaining to DFAD/DFAD beacons deployment must be recorded in fishing and DFAD logbooks (refer to Appendix 1). This include:
  (i) The date of deployment
  (ii) The position (latitude and longitude) of DFAD/DFAD beacon deployment.
  (iii) Identification number of the beacon

  (iv) The total number of DFAD/DFAD beacons deployed per trip.
  (v) DFAD type (drifting natural, drifting artificial)
  (vi) Type of visit (deployment, hauling, retrieving, loss, intervention on electronic equipment)

4. **DFAD construction specifications and requirements**
   a. DFAD design characteristics (a description): As per annexed plan (refer to Appendix 2)
   b. DFAD markings and identifiers, including DFAD beacons: DFAD identified by serial number
   c. Visible distance: 1 NM
   d. Satellite buoys (requirement for serial numbers): N a u t i c a l , Satlink and Zunibal
   e. Satellite transceivers to allow the monitoring of FADS trajectory

5. **Applicable areas**: on high seas and EEZ of the Indian Ocean Coastal State through licenses.

6. **Applicable period for the DFAD-MP**: The current Management Plan is valid for a period of one year.

7. **Means for monitoring and reviewing implementation of the DFAD-MP**: The implementation of the DFAD-MP will be monitored and reviewed by Ministry of Agriculture, Fisheries and water Resources at regular intervals. The monitoring will be done jointly with the ship operator and the tuna export industry. The DFAD-MP will be reviewed on a yearly basis to accommodate new management measures adopted at the Commission meeting with regard to FADs. Since the coming into force of Resolution 19/02 on 1 January 2020, operators are required to report daily information on active DFADs per vessel. These information are sent regularly to the IOTC within a delay of at least 60 days. Submission of a DFAD logbook with complete information on DFAD related activities has been made compulsory.

8. All the information with regard to DFAD will be recorded as usual in the Ministry's database that will allow easy access for verification and monitoring. For instance, thenumber of DFADs deployed at sea is recorded based on the logbooks and verified if they are within the set limits of the Resolution 19/02. This information is processed and submitted to the IOTC on a yearly basis. A progress report on the implementation of the DFAD-MP will be prepared and submitted to the IOTC annually.

9. **DFAD Logbook:**

   For purse seiners: all activities are reported in the appropriate logbook designed to accommodate all information concerning activities related to DFAD + 3-BU form.

   For supply vessel: no supply vessel registered yet

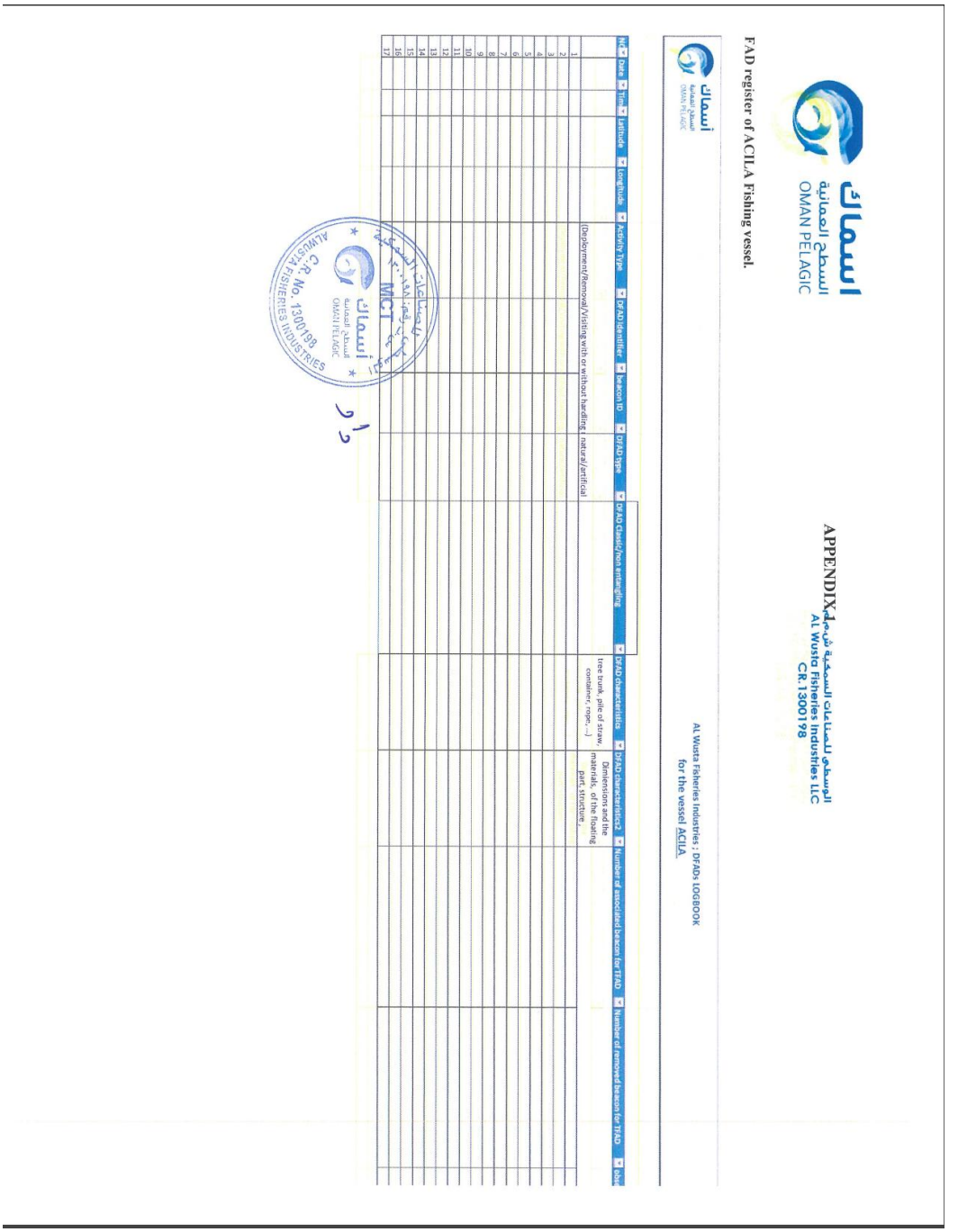
Activities include:

- Deployment/launch of FADs
- Removal of FADs
- Visiting of FADs with or without handling (maintenance/exchange)

For each of the above activities, the following information is also recorded in the logbook:

- Date and time;
- Position (latitude & longitude);
- Type of FAD (natural, artificial, "classic" or "non-entangling" draft) along with a short description (tree trunk, pile of straw, container, rope, …)
- Number of associated beacon in case of a TFAD;
- Number of removed beacon in case of a TFAD if the beacon belonged to the vessel, if not write "beacon of a third vessel";
- Any observation with regard to entangled sharks or turtles if ever the FAD has net counterparts;
- Tons caught per species;
- Any discard quantities

APPENDIX 1



APPENDIX 1

الوسطى للصناعات السمكية ش.م.م
Al Wusta Fisheries Industries LLC
CR.1300198

FAD register of ACILA Fishing vessel.

Al Wusta Fisheries Industries ; DFADs LOGBOOK
for the vessel ACILA

N°	Date	Time	Latitude	Longitude	Activity Type	DFAD identifier	Beacon ID	DFAD type	DFAD Classic/non entangling	DFAD characteristics	DFAD characteristics2	Number of associated beacon for TFAD	Number of removed beacon for TFAD	Observations
1					(Deployment/Removal/Visiting with or without handling,	natural/artificial				tree trunk, pile of straw, container, rope, ...)	Dimensions and the materials, of the floating part, structure,			
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														

C.R. No. 1300198 AL WUSTA FISHERIES INDUSTRIES

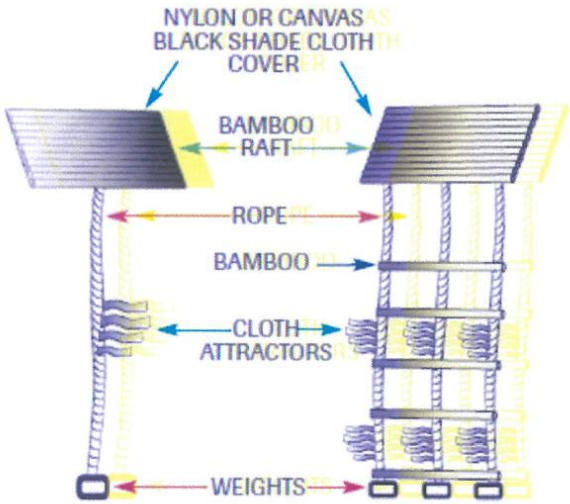
FAD Register of supply vessel

NON-APPLICABLE

APPENDIX 2

PRINCIPLES FOR DESIGN AND DEPLOYMENT OF FADS

EXAMPLE OF NON-ENTANGLING FAD



1. The surface structure of the FAD is not covered, or only covered with non-meshed material

FAD MANAGEMENT POLICY

What the management policy adopted by the company or operator

a) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type.

- Filling out completely and accurately the logbooks, including FAD logbookinformation, by set type required by the flag state and submitting them by

b) Voluntarily rep ort additional FAD buoy data for use by RFMO science bodies.

- Report FAD buoy daily position data to the scientific institution in charge with a needed time lag, and request that these data be made available to the relevant RFMO for scientific purposes.
- Provide FAD buoy echo-sounder acoustic biomass data to the scientific institution with a needed time lag, and request that these data be made available to the relevant RFMO for scientific purposes.

c) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made.

All vessels committed to comply

- Abiding by the limit of active number of FADs adopted by tRFMOs.
- Deploying only FADs with satellite tracking buoys.
- Managing the activation and deactivation of buoys taking into account the corresponding tRFMO´s measures.

d) Use only non-entangling FADs to reduce ghost fishing.

We commit to:

- Deploying only FADs that are completely less-entangling and started on **January 1, 2024** deploying only non-entangling FADs (i.e., without any netting), even when is not a requirement of the tRFMO, according to the ISSF Guide for Non-Entangling FADs.
- Not deploying any "high entanglement risk" FAD according to the ISSF Guide for Non-Entangling FADs (i.e., those using large open netting either in the raft or in the underneath part of the FADs: >2.5 inches or 7 cm mesh).

- Removing from the water and modifying the design of “high entanglement risk“ FADs according to the ISSF Guide for Non-Entangling FADs that are reused by the fleet, to make them less or non-entangling as per the ISSF classification.

e) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies

We commit to:

- Studying the feasibility of using FADs with only biodegradable material in their construction except the floatation structure of the raft.
- Participating in tests of locally-sourced biodegradable materials in collaboration with AZTI, ISSF or any other scientific institution.
- Studying the feasibility of deploying simpler and smaller FADs.
- Participating in trials of biodegradable FAD designs and tests with the participation of RFMO science bodies and/or CPCs or ISSF scientist.
- Endorsing risk and feasibility research programs aimed to determine deployment areas that are highly likely to result in stranding, in countries where FAD recovery policies could be put in place.
- Participating in cooperative efforts to remove stranded FADs, in the case the fleet operates in the determined area(s).
- Gradually replacing FAD components with biodegradable materials as soon as such are proven efficient.
- Not disposing of any FAD component at sea, unless it is proven biodegradable: should a FAD be mended and/or any component replaced, the remainder material must be reused or disposed at port
- Promoting the use of bio-based material to make FADs.
- Promoting a definition of BIODEGRABLE materials applicable to marine environment.

f) For silky sharks (the main bycatch issue in FAD sets) implement further mitigation efforts.

We commit to:

- Applying Best Practices for safe handling and release of sharks and rays brought onboard.

- Participating/supporting studies to evaluate the contribution of purse seine fisheries to catches of silky sharks, and the impact of implementation of the Good Practices on post-release survival.
- Participating in projects aiming to develop and test new tools to release sharks and mobulids in tuna purse seiners, that maximize their survival and are practical to use onboard.

NATIONAL MANAGEMENT PLAN FOR dFAD IN THE INDIAN OCEAN FOR THE YEAR 2025
RAWANQ AL SALAM INTERNATIONAL LLC

Chapter I – Framework for Management Measures

Article 1 – Reference texts

- **IOTC Resolution 21/01** on an interim plan for the recovery of the Indian Ocean yellowfin tuna stock in the IOTC Area of Competence ;
- **IOTC Resolution 24/02** on the Management of Drifting Fish Aggregating Devices in the IOTC Area of Competence;
- **IOTC Resolution 24/06** on a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna and non-target species caught by vessels included in the IOTC Register of Authorised Vessels operating in the IOTC Area of Competence ;
- **IOTC Resolution 17/05** on the Conservation of Sharks Caught in Association with IOTC Managed Fisheries ;
- **IOTC Resolution 16/08** on the Prohibition of the Use of Aircraft and Unmanned Aerial Vehicles as Fishing Aids ;
- **CECOFAD Programme Recommendations** on Data Collection on Floating Objects;
- **ISSF recommendations on typologies of FADs at risk of meshing.**

Article 2 – field of application

2.1 Vessels concerned by this management plan for FADs in the Indian Ocean

This FAD management plan is applicable to tuna seiners registered in Oman and operating in the waters of the Indian Ocean in 2025.

This management plan also applies to support vessels flying Oman flag and used in the context of the tropical tuna seine fishery.

Table 1 lists these vessels.

Table 1: Vessels concerned by this management plan for FADs in the Indian Ocean for 2025

Ship Name	Type of vessel	Purse seiners assisted by the buoy tender
LAYA	Tuna purse seiner	
HAWWA	Tuna purse seiner	
NOUR	Tuna purse seiner	

2.2 Mechanisms concerned by this management plan for FADs in the Indian Ocean

The management plan covers drifting FADs and their instrumented buoys deployed and used by RAWANQ AL SALAM INTERNATIONAL tuna seiners and their support vessels. It also includes recommendations on dFADs and drifting objects encountered at sea.

Article 3 – Definitions

The definitions in IOTC Resolution, paragraph 1, shall apply to this Management Plan. Some clarifications are provided in this article, when they are necessary for the application of the management plan.

Active buoys: as defined in Recommendation 24/02, a buoy whose communication service has been initiated, which has been switched on, deployed on FAD or debris at sea, and which transmits its position. An active buoy is therefore (i) activated, (ii) lit, (iii) deployed on a floating object and (iv) in transmission. For the purposes of this management plan, *buoys in transmission (at least one position emitted during the 24 hours considered) and drift* (speed greater than 0 knots and less than 6 knots) will be counted as active or operational.

Fish aggregating device (FAD): within the meaning of Resolution 24/02, a FAD is a permanent, semi-permanent or temporary object, structure or device of any material, artificial or natural, that is deployed and/or monitored for the purpose of grouping tuna target species for their subsequent catch. However, this definition is problematic because it does not allow for the separate monitoring of the effects of adding FADs to objects already present at sea (impacts on ecosystems) and the effects of the use of instrumented buoys to facilitate the detection of fish (fishing effort). In this management plan, a FAD is therefore defined as an object constructed and deployed by fishermen to aggregate fish. Adding a buoy to another floating object does not turn that object into a FAD. FADs can be anchored (aFAD) or drifting (dFAD). Article 5 of the management plan completes and clarifies this definition.

Drifting FAD (dFAD): A FAD that is not anchored.

Drifting debris: any drifting floating object that is not a FAD (natural object of animal or plant origin or debris from anthropogenic activities, whether or not from fishing).

Buoy supplier: any company providing buoys to track FADs and drifting debris.

Fishing vessel: any vessel equipped for the commercial exploitation of living aquatic resources.

Support Vessel / Buoy Tender: any vessel assisting the fishing vessel in its fishing activities. The support vessel is not equipped with fishing gear. In the case of tropical tuna seiners, buoy tenders are responsible for deploying FADs and buoys, transferring buoys from other vessels to FADs and drifting debris found at sea, or signalling the presence of fish to purse seiners they assist.

Number of operational buoys per purse seine vessel at any given time: the number of operational buoys owned by the purse seine vessel on the servers of the instrumented buoy providers.

Owner of the buoy : Within the meaning of Resolution 24/02, the master/owner of a fishing vessel and who is authorized to request its activation and/or deactivation. For the purposes of this management plan, the owner of the buoy will be considered to be the purse seiner declared as the owner on the buoys providers' servers. A support vessel cannot own buoys.

Floating object : In this management plan, all of the FADs and drifting debris are considered floating objects.

Reactivation of a buoy: the act of reactivating satellite communications services by the company providing the buoys at the request of the owner or manager of the buoy. Like any buoy activation, this procedure can only take place on board a purse seiner or buoy tender.

Abandonment of a FAD: as defined in Resolution 24/02, a dFAD that was initially deployed with the intention of later recovery, but is deliberately left at sea due to *force majeure* or other reasons. For the purposes of this management plan, the remote deactivation of the buoy of a drifting dFAD will be considered to constitute abandonment of the dFAD.

Loss of FADs: within the meaning of Resolution 24/02, a dFAD of which the owner of the buoy has lost the dFAD is lost when the buoy owner remotely notices that it is no longer transmitting.

FAD discharge: as defined in Resolution 24/02, a dFAD that is returned to the sea without the buoy owner attempting to control or retrieve it. For the purposes of this management plan, the recovery of the buoy without recovery of the dFAD or the leaving of a dFAD at sea with a broken buoy will be considered to be a discharge of dFAD. The terminology "dFAD left at sea" is preferentially used for clarity.

Article 4 – Objectives

This management plan for FADs has three objectives:

4.1 Tracking the use and impacts of FADs n

A more in-depth knowledge of the use of FADs and their instrumented buoys makes it possible to better assess their potential impacts and to define the most appropriate management measures, based on the best available scientific knowledge.

Chapter II of the management plan defines the means used to monitor the use of FADs and their instrumented buoys.

4.2 Control the use of dFADs and their instrumented buoys

One of the management measures to reduce the negative impacts of the use of dFAD is to limit their use.

Chapter III of the management plan defines the conditions for limiting this use as well as the means of monitoring the number of operational buoys.

4.3 Reducing the impacts of dFADs on ecosystems

Chapter IV of the management plan presents the solutions implemented to reduce the impacts of FADs on ecosystems in terms of: (1) juvenile catches of yellowfin and bigeye tuna, bycatch and bycatch of sensitive species, (2) ghost catches of sensitive species such as turtles and sharks and (3) pollution and strandings related to lost FADs.

In 2025, the priority this FAD Management Plan will be to ensure the transition to biodegradable FADs, according to the timeframe set by IOTC Resolution 24/02.

Chapter II – Measures to monitor the use of dFAD and potential impacts

Article 5 – Monitoring of operations on floating objects and their instrumented buoys

5.1 Types of operations on floating objects and their instrumented buoys

The monitoring of operations on FADs and drifting debris and their instrumented buoys has a dual objective:

(i) assess the contribution of these devices to the fishing effort of tuna seiners in order to estimate the impact of this fishing method on tropical tuna stocks

(ii) assess the contribution of FADs to the modification and/or disruption of the ecosystems in which these devices are present.

Definitions in line with these scientific objectives have been developed within the framework of the European CECOFAD project. These definitions are set out in Table 2 and are in line with those used in IOTC Form requested.

These definitions separate FADs in the *strict sense* (objects/structures/devices specifically launched by purse seiners and their support vessel to aggregate tropical tuna) from *debris* (other types of objects/structures that can aggregate fish - naturally occurring such as a log or of anthropogenic origin such as plastic debris).

Table 2: Typology of floating objects

Type	Material	Name	Exemple(s)
FAD	Natural and/or artificial	Drifting FAD	Drifting bamboo raft
	Natural and/or artificial	Anchored FAD	Anchored floating platform
DEBRIS	Artificial	Artificial debris from fishing activities	Piece of net Longline Piece
	Natural and/or artificial	Artificial debris from other human activities	Wooden plank Plastic debris
	Natural	Natural animal debris	Marine animal debris (shark, cetacean, turtle, ...)
	Natural	Natural debris of plant origin	Tree trunk Algae

These definitions also explicitly separate operations on floating objects from operations on their instrumented buoys to facilitate vessel reporting and data management. They are aligned with Annex I of IOTC Resolution 24/02. These definitions are given in Tables 3 and 4. Several successive operations can be performed on the same floating object and each of these operations must be listed in the logbook.

Table 3. Typology of operations on floating objects and their buoys. blue transactions are prohibited. Operations shown in green are encouraged to reduce the risk of pollution and stranding.

There are no objects at sea and the ship deploys a FAD					
DEPLOYMENT					
↓					
The FAD or debris is visited or found at sea by the vessel					
↓					
The vessel catches		The ship adds a FAD		Neither of these two operations	
FISHING (1)		REINFORCEMENT (1)		VISIT (1)	
↓					
The ship stops using the object because					
↓					
During the visit of the object, the ship			From a distance, the ship observes that		
Recovers	Leash at sea without buoys	Sinks	The beacon transmits but the object		The beacon no longer transmits
			no longer drift	is out of reach and the Ship deactivates the beacon	
RECUPERATION (1)	LEASH WITHOUT BEACON (2)	SINKS 0	BEACHING	ABANDON	LOSS

1. The recovery of FADs or debris with a mesh size hazard is encouraged
2. The abandonment of a FAD at sea without a beacon is prohibited, except for FADs of biodegradability category I
3. Intentionally sinking a FAD or debris containing plastic or heavy metal materials is prohibited

Table 4: typology of operations on instrumented buoys. Operations in blue are prohibited. Operations in green are encouraged to reduce the risk of pollution and stranding.

There are no objects at sea and the ship deploys a FAD. It must deploy a beacon.					
DEPLOYMENT					
↓					
The FAD, a piece of debris or a beacon is visited or found at sea by the ship					
↓					
The object has no tag			The object is already equipped with a beacon		
the ship does not add any		the ship adds a beacon	the ship does not change the beacon		The ship changes the beacon
NO ACTIVITY		DEPLOYMENT	VISIT		TRANSFER
↓					
The vessel stops using the beacon because					
↓					
During the visit of the beacon, the vessel			From a distance, the ship observes that		
Recovers	Broken or unfloated leash at sea	Sinks	the tag transmits but the object		The beacon no longer transmits
			no longer drift	is out of reach and the Ship deactivates the beacon	
RECUPERATION (1)	LEFT AT SEA (2)	SINKS 0	BEACHING	ABANDON	LOSS

1. The recovery of a beacon, without changing by another beacon or without retrieving the DCP it equips is prohibited.
2. The abandonment at sea of a beacon that is no longer working is prohibited
3. Deliberately casting a beacon is forbidden

5.2 Reporting operations on floating objects and their instrumented buoys

The master of a fishing vessel or a support vessel shall record in the logbook the operations carried out on dFADs, drifting debris and their instrumented buoys in accordance with the categories described in Tables 2 to 4.

For each of these operations, the information collected are detailed in Table 5.

Table 5: information to be collected in the logbook for each operation on a floating object and/or an instrumented beacon

Category	Information to be collected	Article or MCS
General information	Vessel (name and registration number)	
	Date and time	
	Position (latitude and longitude)	
Floating object	Floating object type	5.1, Tableau 2
	The type of operation or sequence of activities on the floating object	5.1, Tableau 3
	Biodegradability Category	
Floating object – emerged part	Presence of plastic, metal, mesh, mesh sizes	
	Height, length, width	
Floating object – submerged part	Presence of plastic, metal, mesh, mesh sizes	
	Height, length, width. Subsurface Depth for FADs consisting only of a submerged part.	
Instrumented beacon	Beacon Type (Make and Model))	
	Identifier	
	Known position to go to the floating object (yes/no)	
	Type of operation or sequence of activities on the tag	5.1, Table 4
Catches (in case of stall)	Quantity Caught by species (retained / discarded)	Discharges : Rec 17-01

NB: information on the structure and materials must be collected for any FAD deployed. For FADs and debris encountered at sea, the collection of information is encouraged if possible, as the submerged part is rarely observable. In the event of a beacon transfer, information must be collected for the retrieved tag and for the deployed tag.

Annex II details the structure of the logbook used on 1 January 2025 to provide this information. This information will be reported to the Secretariat in the format provided for in form requested.

All the data in the logbook will will be available for research purposes as well as for the needs of the IOTC Scientific Committee.

Article 6 – Provision of instrumented beacon data for scientific purposes

All position data and echosounder data from the instrumented buoys will be available for research purposes as well as for the needs of the IOTC Scientific Committee.

Chapter III – Measures for the control of the use of FADs and their instrumented buoys

Article 7 – Identification and marking of aFAD

Any aFAD launched by a h tuna seiner or support vessel shall be identified by the serial number of the beacon associated with it. It must be designed to withstand the stay of the beacon in seawater and remain legible throughout the life of the beacon.

Section 8 – aFAD without beacon

The deployment or abandonment of a aFAD at sea without a beacon is prohibited.

Article 9 – Prohibition of HF buoys

HF buoys are prohibited.

Section 10 – Ownership of aFADs

The owner or manager of the vessel whose beacon is fitted to the floating object is the owner of the vessel, even if the vessel has not itself launched the FAD.

Section 11 – Use of lights on aFADs

The use of artificial lights (aerial or underwater) on the aFADs or their instrumented buoys is prohibited.

Article 12 – Limitation of the number of operational buoys

In accordance with IOTC Resolutions 19/02 and 24/02;

This management plan sets a limit of 300 operational buoys per seiner. The limit on the number of buoys purchased per purse seiner per year is set at 500.

RAWANQ AL SALAM INTERNATIONAL purse seiners and their support vessels will organise the deployment of FADs and instrumented buoys in such a way as to never exceed these limits. In order to prevent any exceedance, an alert threshold set at 280 operational buoys will be put in place. Once this threshold has been reached, the vessels and shipowner concerned will limit the deployment of operational buoys and will exercise increased vigilance to never exceed the 300 operational buoys authorised.

Section 13 – Tracking the number of operational buoys

Each month, the buoys suppliers shall transmit no later than one week after the end of the month a comprehensive report of the operational buoys used by each purse seiner and each day according to the format defined in Table 6. They will provide this same information to ships and shipowners on a daily basis to avoid exceeding the limit of 300 operational buoys.

Table 6: Form of Monthly Operational Buoys Declarations

Date	Operational Buoys	Activations	Deactivations
2025/01/01			
2025/01/02			
2025/01/03			
...			
2025/01/30			
2025/01/31			

This report will be extracted from the operational system of each buoys provider, which will certify that the data reported here is in accordance with the activation/deactivation records provided by the central server system.

The buoys will be counted for the purse seiner that owns them on the buoys providers' servers.

As the provisions of IOTC Resolution 24/02 provide for the monitoring of operational buoys for purse seiners, support vessels cannot own buoys. Ownership of any buoy deployed by a support vessel shall be assigned to a purse seiner receiving the buoy and accounted for in the purse seiner's monthly declarations from the beginning to the end of its sea service cycle.

The same methodology will be used for the declaration of operational buoys in requested Form. These forms will be transmitted to the IOTC Secretariat no later than 2 months after the end of the month concerned.

Article 14 – Prohibition of remote activation of buoys

In order to prevent certain buoys from being momentarily deactivated and then reactivated so as not to be accounted as operational, remote activation or reactivation by a vessel, by the owner or by the vessel manager is prohibited. A buoy can only be activated or reactivated on board a purse seiner or its support vessel.

Figure 1 defines the only buoy usage cycle allowed under this framework.

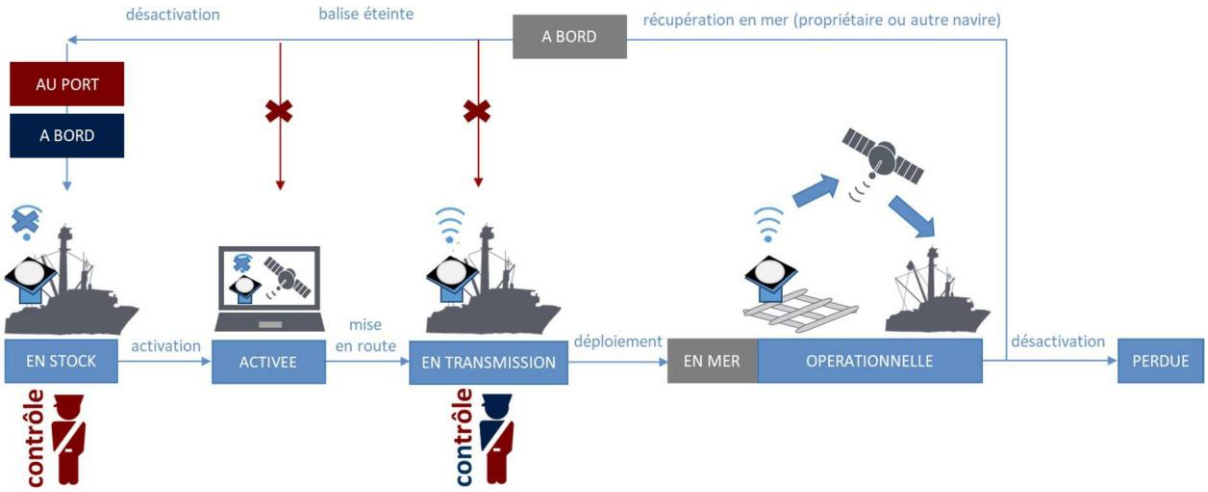


Figure 1 : beacons cycle authorized

Article 15 – Management of support vessels and other devices to help manage the number of FADs

The management of FADs can be carried out by support vessels subject to:

- their registration in the IOTC Specific Registers;
- the non-use by these vessels of lights (aerial or underwater) with the objective of promoting the concentration of fish.
- a support vessel serves a minimum of two purse seiners that are designated and not associated with another support vessel .

In addition, the use of helicopters and/or drones by fishing vessels or by support vessels from their board is prohibited.

Article 16 - On-board and/or electronic observers

In accordance with Article 33 of Resolution 24/02, when an observer is present on board or conducts electronic trip monitoring, he shall collect the information necessary to identify the biodegradability category of each DFAD deployed, in line with the categories provided for in Annex III of Resolution 24/02.

Chapter IV – Measures to reduce the impacts of FADs on ecosystems

Article 17 – Non-entangling FADs

In accordance with Resolution 24/02, no FAD RAWANQ AL SALAM INTERNATIONAL seiner or its support vessels shall contain material with meshes.

The verification of the absence of mesh cells in all parts of the FAD must be systematically reported in the logbook when the FAD is deployed.

During any other operation with a floating object, the presence and size of the meshes shall be assessed in the logbook, on the surface, and, if possible, in the elements constituting the submerged part of the floating object. The replacement of elements at risk of mesh by elements at risk of zero mesh size (absence of meshes) is encouraged.

Purse seiners and support vessels are encouraged, as far as possible, to recover floating objects representing a mesh size risk. They are also encouraged not to deploy beacons or FADs on floating objects found at sea, as soon as the presence of mesh is detected.

Section 18 – Materials and dimensions of deployed DFADs

A DFAD may consist of an assembly of a raft, one or more tails, and a cage (Figure 3).

The materials of these different parts of the DFAD must be systematically described in the DFAD deployment logbook. In accordance with Annex I of IOTC Resolution 24/02, purse seiners and support vessels shall report the presence/absence of plastic, the presence/absence of heavy metal and the height/width/length of each component of the deployed DFAD.

The dimensions (height, length, width; Figure 4) and their location on the surface or below the surface (depth below the surface) must also be systematically described in the logbook when the DFAD is deployed.

The description of FADs and drifting debris encountered at sea is encouraged where possible.

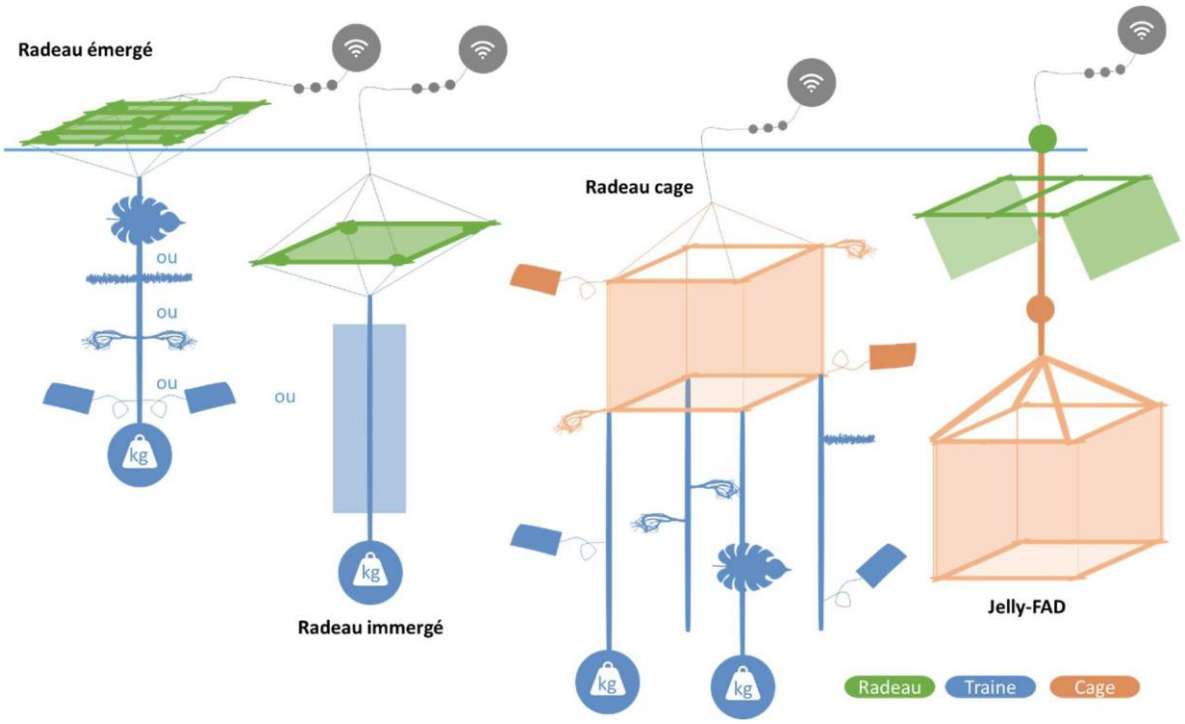


Figure 3: Examples dFAD deployed by our fleet.

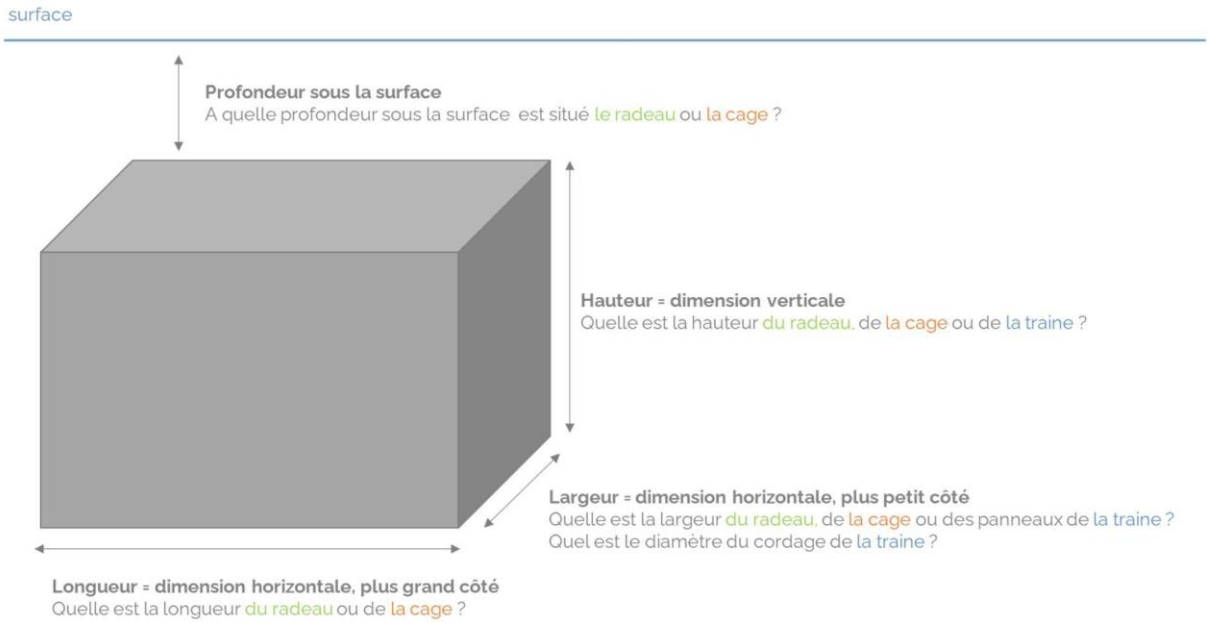


Figure 4 : dimensions of DFAD

Article 19 – Biodegradable FADs

All non-biodegradable materials constituting FADs shall be replaced by biodegradable materials, in accordance with the timetable set out in IOTC Resolution 24/02. Biodegradable materials are defined as natural or bio-based materials :

- bio assimilable, i.e. usable as nutrients by the (micro)fauna and/or (micro)flora present in the environment (bacteria, algae, fungi)

- degraded in the marine environment under the normal conditions of use of the FAD (temperature, salinity, etc.)

- whose degradation products are non-toxic to the marine environment (no microparticles or toxic products resulting from degradation)

- allowing a duration of use of the FAD of 8 to 10 months

In 2024, a roadmap for the transition to biodegradable FADs has been defined. It will continue to be implemented in 2025, with several actions:

- the search for new biodegradable materials, through regular exchanges with material suppliers and with other fleets using DFADs in all oceans

- The continuation of the tests of new materials, including biodegradable float solutions made of natural or bio-based materials will continue. This will primarily concern plastic floats, for which research and development work is still necessary.

Article 20 – By-catch reduction and use policy

Provisions for a limitation of the number of FAD (articles of section III) will contribute to a reduction of by-catches.

In accordance with IOTC Resolution 19/05, the main by-catch species are retained on board and marketed to the extent possible.

Annex I: Compliance of the FAD Management Plan with Annex II of IOTC Resolution 19/02

Information to be provided	Management Plan Article
Objective	4
Types of Ships, Auxiliary Ships and support vessels	2.1
Number of dFADs and number of dFAD beacons to be deployed	13
Reporting Procedure for the Deployment of dFAD	5
Bycatch Reduction and Use Policy	23
interactions with other types of gear	2
Plans for tracking and recovering lost dFAD	5, 7, 8, 22
Statement or Policy Regarding "Ownership of ASDs"	8
Institutional responsibilities	
dFAD Deployment Authorization Request Process and/or dFAD beacons	13
Obligations of shipowners and masters with respect to the deployment and use of dFAD and/or dFAD beacons	5
Replacement Policy for dFAD s and/or dFAD Beacons	5
Reporting obligations	5.1, 17, 19, 20
dFAD Design Features (description)	20
FAD markings and identifiers, including FAD beacons	7, 8
Illumination	11
Radar reflectors	12
Sight Distance	12
Radio beacons (serial numbers)	9
Satellite transmitters (serial numbers)	5
Information on any closed areas or periods, e.g. territorial waters, sea lanes, proximity to artisanal fisheries, etc.	18
Period of application of the MP- dFAD	2.1
Means of monitoring and reviewing the implementation of MG- dFAD	5.1, 14, 15, 16, 17, 19, 20, 21
dFAD Registry Template	5, Annexe III

Annex II: Structure of the logbook used RAWANQ AL SALAM INTERNATIONAL purse seiners and their support vessels for trips starting on 1 January 2025

TYPE OF DECLARATION port, zone, stall or object	DATE	HOUR	LATITUDE each activity or at noon	LONGITUDE each activity or at noon	PORT	EEZ	T°C mer	VENT VIENTO WIND		TYPE OF BENCH in the event of a stall	SPECIES FAO code	WEIGHT CATEGORY and kg	CANNED QUANTITIES in tonnes	CANNED QUANTITIES on behalf of	QUANTITY REJECTED in tonnes	QUANTITY REJECTED In number
TYPO DE ACTIVIDAD lance, puerto, zona o objeto	**FECHA**	**HORA**	**LATITUD** cada actividad o mediada	**LONGITUD** cada actividad o mediada	**PUERTO**	**ZEE**	**T°C** mar	Direction / Direccion /Direction Degrés/ Grados / Degrees	Vitesse / Velocidad/ Speed Nœuds / Nudos / Knots	**LANCE TYPO** en caso de lance	**ESPECIES** en tonneladas	**CATEGORIA DE PESO** en kg	**CAPTURA RETENIDA** en tonneladas	**CAPTURA RETENIDA** en nombre	**DESCARTES** en tonneladas	**DESCARTES** en nombre
ACTIVITY TYPE fishing, zone, port or floating object	**DATE**	**TIME**	**LATITUDE** each activity or at midday	**LONGITUDE** each activity or at midday	**PORT**	**EEZ**	**T°C** sea			**FISHING SET TYPE** in case of a fishing set	**SPECIES** FAO code	**WEIGHT CATEGORY** in kg	**RETAINED CATCHES** in tons	**RETAINED CATCHES** in numbers	**DISCARDS** in tons	**DISCARDS** in numbers

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OBJET FLOTTANT OBJETO FLOATING OBJECT												BOUEE INSTRUMENTEE BOYA INSTRUMENTADA INSTRUMENTED BUOY					COMMENTAIRES
ACTIVITE SUR L'OBJET	TYPE D'OBJET FLOTTANT	TYPE DE FAD DERIVANT FAD déployés	TYPE DE COMPOSANT FAD visités	NOMBRE	HAUTEUR	LONGUEUR	LARGEUR	PROFONDEUR sous la surface	MAILLES	PLASTIQUE	METAL	BIO	ACTIVITE SUR LA BOUEE	POSITION CONNUE ? en cas de visite	PROPRIETAIRE en cas de visite	MODELE	ID	**COMMENTARIOS**
ACTIVIDAD SOBRE EL OBJETO	**TIPO DE OBJETO**	**TIPO DE FAD** FAD plantados	**COMPONENTS** FAD visitados	**NOMBRE**	**ALTURA**	**LONGITUD**	**ANCHURA**	**PROFUNDIDAD** bajo la surperficie	**MALLAS**	**PLASTICO**	**METAL**	**BIO**	**ACTIVIDAD SOBRE LA BOYA**	**POSICION CONOCIDA** boyas visitados	**PROPRIETARIO** boyas visitados	**MODELO**	**ID**	
FOB ACTIVITY	**FOB TYPE**	**DFAD TYPE** deployed DFADs	**COMPONENTS** visited DFADs	**NUMBER**	**HEIGHT**	**LENGTH**	**WIDTH**	**DEPTH** under the surface	**MESH**	**PLASTIC**	**METAL**	**BIO**	**BUOY ACTIVITY**	**POSITION KNOWN ?** in case of a visit	**OWNER VESSEL** in case of a visit	**MODEL**	**ID**	**COMMENTS**

Drifting Fish Aggregating Device (DFAD) Management Plan

Submitted by: Sultanate of Oman

Operator: Tuna Development LLC. year 2.025

Purse Seiners: Txori Berri

1. **Objective:** Appropriate deployment and management of DFADs to maintain tuna stocks at sustainable levels.
2. **Scope:**
    a. **Vessel type** : purse seiner.
    b. **DFAD numbers or number of beacons to be deployed**: A maximum of 300 instrumented buoys are active at sea at any one time in relation to each of the vessel through such measures as for example the monthly review sent by the independent consultant and a maximum of 500 instrumented buoys which may be acquired annually by each of its fishing vessel.
    c. **Reporting procedures**: Through fishing and DFAD logbooks (Appendix 1) and daily information on active FADs as per Res 19/02.
    d. **Incidental by catch reduction and utilization policy**: The deployment of Non-entangling FADs to reduce incidental by-catch forms part of the policy of the vessel owner and operator since 2012/2022 respectively (Appendix 3). Details on the non- entangling FADs are given at Appendix 2. Biofads are also being deployed and the use of biodegradable FADS is under progress. The vessel owner and operator are committed to the use of best practices for FAD Management through a FAD Management policy which is based on the International Seafood Sustainability Foundation (ISSF) Conservation measure 3.7 (Appendix 3).
    e. **Consideration of interaction with other gears type**: For the time being, no interaction between the DFADs used by purse seiners and the vessels involved in other fishery. The DFAD MP shall be reviewed in case of any adverse impacts reported as a result of DFADs or part of DFADs having interfered with other fisher.
    f. **Monitoring of DFADs**: All DFADs are marked and are equipped with satellite buoys that allow movement monitoring. Vessel master are encouraged to prevent, as far as possible, loss of FADs set at sea. In the event of a loss or of the impossibility of hauling in a FAD, operator keeps the record its last known date and position in the logbook (Appendix 1).
    g. **Statement or policy on DFAD ownership:** Presently, DFADs beacons are clearly marked with a serial number until a new marking scheme is adopted by the IOTC.

3. **Institutional arrangement for management of the DFAD Management Plan:**

- **Institutional responsibilities**: The Ministry of Blue Economy, Marine Resources, Fisheries and Shipping monitors the activities of the DFADs deployed by its flagged vessels through DFADs logbooks. The purchase order of the vessel operator is also verified to ensure that their annual purchase of beacons is within the limit of 500 instrumental buoys that can be acquired annually by each vessel.

- **Application processes for DFAD and/or DFAD beacons deployment approval**: Presently, no application process and approval is required for the deployment of DFAD and DFAD beacons. However, the Ministry ensures that the deployment of DFAD is being properly done by the vessel's owner and operator according to the DFAD-MP. Moreover, all information pertaining to the deployment of DFAD and or DFAD beacons is recorded in logbooks that are verified for compliance by the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping.

  DFAD and/or DFADs beacons replacement policy:

- **Obligations of vessel operator and masters in respect of DFAD and/or DFAD beacons deployment and use**:

(i) The maximum number of instrumental buoys active at any one time at sea should not exceed 300 for each purse seiner.

(ii) Only non-entangling DFAD or bio fads should be deployed by the purse seiners or the supply vessel. Only non-entangling bio fads would be used in the future.

(iii) Recording of each activity with respect to DFAD and DFAD beacon deployment and use in the both the fishing and DFAD logbooks.

(iv) All DFADs deployed must be marked with a detailed marking scheme defined by the beacon ID.

(v) Reporting of daily information on all active DFADs per assigned vessel including date, instrumented buoy ID and daily positions.

- **Reporting obligations –** All information pertaining to DFAD/DFAD beacons deployment must be recorded in fishing and DFAD logbooks (refer to Appendix 1). This include:
  (i) The date of deployment
  (ii) The position (latitude and longitude) of DFAD/DFAD beacon deployment.
  (iii) Identification number of the beacon
  (iv) The total number of DFAD/DFAD beacons deployed per trip.
  (v) DFAD type (drifting natural, drifting artificial)
  (vi) Type of visit (deployment, hauling, retrieving, loss, intervention on electronic equipment)

4. **DFAD construction specifications and requirements**
    a. DFAD design characteristics (a description): As per annexed plan (refer to Appendix 2)
    b. DFAD markings and identifiers, including DFAD beacons: DFAD identified by serial number
    c. Visible distance: 1 NM
    d. Satellite buoys (requirement for serial numbers): N a u t i c a l , Satlink and Zunibal

5. **Applicable areas**: on high seas and EEZ of the Indian Ocean Coastal State through licenses.

6. **Applicable period for the DFAD-MP**: The current Management Plan is valid for a period of one year.

7. **Means for monitoring and reviewing implementation of the DFAD-MP**: The implementation of the DFAD-MP will be monitored and reviewed by the Ministry of Blue Economy, Marine Resources, Fisheries, and Shipping at regular intervals. The monitoring will be done jointly with the ship operator and the tuna export industry. The DFAD-MP will be reviewed on a yearly basis to accommodate new management measures adopted at the Commission meeting with regard to FADs. Since the coming into force of Resolution 19/02 on 1 January 2020, operators are required to report daily information on active DFADs per vessel. These information are sent regularly to the IOTC within a delay of at least 60 days. Submission of a DFAD logbook with complete information on DFAD related activities has been made compulsory. All the information with regard to DFAD will be recorded as usual in the Ministry's database that will allow easy access for verification and monitoring. For instance, the number of DFADs deployed at sea is recorded based on the logbooks and verified if they are within the set limits of the Resolution 19/02. This information is processed and submitted to the IOTC on a yearly basis. A progress report on the implementation of the DFAD-MP will be prepared and submitted to the IOTC annually.

8. **DFAD Logbook**:

    For purse seiners: all activities are reported in the appropriate logbook designed to accommodate all information concerning activities related to DFAD.

    For supply vessel: a specific DFAD logbook is used to report all information concerning activities related to DFAD.

Activities include:

- Deployment/launch of FADs
- Removal of FADs
- Visiting of FADs with or without handling (maintenance/exchange)

For each of the above activities, the following information is also recorded in the logbook:

- Date and time;
- Position (latitude & longitude);
- Type of FAD (natural, artificial, "classic" or "non-entangling" draft) along with a short description (tree trunk, pile of straw, container, rope, …)
- Number of associated beacon in case of a TFAD;
- Number of removed beacon in case of a TFAD if the beacon belonged to the vessel, if not write "beacon of a third vessel";
- Any observation with regard to entangled sharks or turtles if ever the FAD has net counterparts;
- Tons caught per species;
- Any discard quantities

APPENDIX 1

Please put FAD register of Fishing vessel

FAD Register of supply vessel

NON-APPLICABLE

FAD MANAGEMENT POLICY

What the management policy adopted by the company or operator

a) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type.

We commit to:

b) Voluntarily report additional FAD buoy data for use by RFMO science bodies.

We commit to:

c) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made.

We commit to:

- Abiding by the limit of active number of FADs adopted by tRFMOs.
- Deploying only FADs with satellite tracking buoys.
- Managing the activation and deactivation of buoys taking into account the corresponding tRFMO´s measures.

d) Use only non-entangling FADs to reduce ghost fishing.

We commit to:

- Deploying only FADs that are completely less-entangling and starting **January 1, 2024** deploying only non-entangling FADs (i.e., without any netting), even when is not a requirement of the tRFMO, according to the ISSF Guide for Non-Entangling FADs.
- Not deploying any "high entanglement risk" FAD according to the ISSF Guide for Non-Entangling FADs (i.e., those using large open netting either in the raft or in the underneath part of the FADs: >2.5 inches or 7 cm mesh).
- Removing from the water and modifying the design of “high entanglement risk“ FADs according to the ISSF Guide for Non-Entangling FADs that are reused by the fleet, to make them less or non-entangling as per the ISSF classification.

e) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies

We commit to:

- Studying the feasibility of using FADs with only biodegradable material in their construction except the floatation structure of the raft.
- Participating in tests of locally-sourced biodegradable materials in collaboration with AZTI, ISSF or any other scientific institution.
- Studying the feasibility of deploying simpler and smaller FADs.
- Participating in trials of biodegradable FAD designs and tests with the participation of RFMO science bodies and/or CPCs or ISSF scientist.
- Endorsing risk and feasibility research programs aimed to determine deployment areas that are highly likely to result in stranding, in countries where FAD recovery policies could be put in place.
- Participating in cooperative efforts, such as the FAD-Watch in the Seychelles, to remove stranded FADs, in the case the fleet operates in the determined area(s).
- Gradually replacing FAD components with biodegradable materials as soon as such are proven efficient.
- Not disposing of any FAD component at sea, unless it is proven biodegradable: should a FAD be mended and/or any component replaced, the remainder material must be reused or disposed at port

- Promoting the use of bio-based material to make FADs.
- Promoting a definition of BIODEGRABLE materials applicable to marine environment.

f) For silky sharks (the main bycatch issue in FAD sets) implement further mitigation efforts.

We commit to:

- Applying Best Practices for safe handling and release of sharks and rays brought onboard.
- Participating/supporting studies to evaluate the contribution of purse seine fisheries to catches of silky sharks, and the impact of implementation of the Good Practices on post-release survival.
- Participating in projects aiming to develop and test new tools to release sharks and mobulids in tuna purse seiners, that maximize their survival and are practical to use onboard.

اسماك
السطح العمانية
OMAN PELAGIC

الوسطى للصناعات السمكية ش.م.م
AL Wusta Fisheries Industries LLC
CR.1300198

Drifting Fish Aggregating Device (DFAD) Management Plan

MAY 2024

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Drifting Fish Aggregating Device (DFAD) Management Plan

Submitted by: Al Wusta Fisheries Industries LLC (AWF)

Operator: Al Wusta Fisheries Industries LLC

Purse Seiners: Acila (IMO number 9957778 – IOTC 018830)

Supply vessel: NA

1. **Objective:** Appropriate deployment and management of DFADs to maintain tuna stocks at sustainable levels.
2. **Scope:**
   a. **Vessel type** : purse seiner
   b. **DFAD numbers or number of beacons to be deployed**: A maximum of 300 instrumented buoys are active at sea at any one time in relation to each of its vessels through such measures as for example the monthly review sent by the provider and a maximum of 500 instrumented buoys which may be acquired annually by each of its fishing vessel.
   c. **Reporting procedures**: Through fishing and DFAD logbooks (Appendix 1) and daily information on active FADs as per Res 19/02.
   d. **Incidental by catch reduction and utilization policy**: The deployment of Non-entangling FADs to reduce incidental by-catch forms part of the policy of the vessel owners and operators since 2012 (Appendix 3). Details on the non-entangling FADs are given at Appendix 2. Biofads are also being deployed and the use of biodegradable FADS is under trial. The vessel owners and operators are committed to the use of best practices for FAD Management through a FAD Management policy which is based on the International Seafood Sustainability Foundation (ISSF) Conservation measure 3.7 (Appendix 3).
   e. **Consideration of interaction with other gears type**: For the time being, no interaction between the DFADs used by purse seiners and the vessels involved in other fishery. The DFAD MP shall be reviewed in case of any adverse impacts reported as a result of DFADs or part of DFADs having interfered with other fishery such as the longline operation.
   f. **Monitoring and retrieval of lost DFADs**: All DFADs are marked and are equipped with satellite buoys that allow movement monitoring. Vessel masters are encouraged to prevent, as far as possible, loss of FADs set at sea. In the event of a loss or of the impossibility of hauling in a FAD, operators must record its last known date and position in the logbook (Appendix 1).
   g. **Statement or policy on DFAD ownership:** Presently, DFADs beacons are clearly marked with a serial number until a new marking scheme is adopted by the IOTC.

3. **Institutional arrangement for management of the DFAD Management Plan:**

- **Institutional responsibilities**: monitors the activities of the DFADs deployed by its flagged vessels through DFADs logbooks. The purchase order of the vessel owners and operators is also verified to ensure that their annual purchase of beacons is within the limit of 500 instrumental buoys that can be acquired annually by each vessel.

- **Application processes for DFAD and/or DFAD beacons deployment approval**: Presently, no application process and approval is required for the deployment of DFAD and DFAD beacons. However, the Ministry ensures that the deployment of DFAD is being properly done by the vessel's owners and operators according to the DFAD-MP. Moreover, all information pertaining to the deployment of DFAD and or DFAD beacons is recorded in logbooks that are verified for compliance by the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

DFAD and/or DFADs beacons replacement policy:

- **Obligations of vessel owners and masters in respect of DFAD and/or DFAD beacons deployment and use**:

(i) The maximum number of instrumental buoys active at any one time at sea should not exceed 300 for each purse seiner.

(ii) Only non-entangling DFAD or bio fads should be deployed by the purse seiners or the supply vessel. Only non-entangling bio fads would be used in the future.

(iii) Recording of each activity with respect to DFAD and DFAD beacon deployment and use in the both the fishing and DFAD logbooks.

(iv) All DFADs deployed must be marked with a detailed marking scheme defined by the beacon ID.

(v) Reporting of daily information on all active DFADs per assigned vessel including date, instrumented buoy ID and daily positions.

- **Reporting obligations** – All information pertaining to DFAD/DFAD beacons deployment must be recorded in fishing and DFAD logbooks (refer to Appendix 1). This include:
  (i) The date of deployment
  (ii) The position (latitude and longitude) of DFAD/DFAD beacon deployment.
  (iii) Identification number of the beacon
  (iv) The total number of DFAD/DFAD beacons deployed per trip.
  (v) DFAD type (drifting natural, drifting artificial)
  (vi) Type of visit (deployment, hauling, retrieving, loss, intervention on electronic equipment)

4. **DFAD construction specifications and requirements**
    a. DFAD design characteristics (a description): As per annexed plan (refer to Appendix 2)
    b. DFAD markings and identifiers, including DFAD beacons: DFAD identified by serial number
    c. Lighting requirements: flash command
    d. Radar reflectors: visible without radar reflectors
    e. Visible distance: 1 NM
    f. Satellite buoys (requirement for serial numbers): Satlink and Zunibal
    g. Satellite transceivers (requirement for serial numbers): All DFADs are equipped with satellite transceivers to allow the monitoring of FAD trajectory.

5. **Applicable areas**: on high seas and EEZ of the Indian Ocean Coastal State through licenses, shipping lanes, away from fishing grounds of the artisanal fishery.

6. **Applicable period for the DFAD-MP**: The current Management Plan is valid for a period of one year.

7. **Means for monitoring and reviewing implementation of the DFAD-MP**: The implementation of the DFAD-MP will be monitored and reviewed by the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources at regular intervals. The monitoring will be done jointly with the ship owners and operators and the tuna export industry. The DFAD-MP will be reviewed on a yearly basis to accommodate new management measures adopted at the Commission meeting with regard to FADs. Since the coming into force of Resolution 19/02 on 1 January 2020, operators are required to report daily information on active DFADs per vessel. These information are sent regularly to the IOTC within a delay of at least 60 days. Submission of a DFAD logbook with complete information on DFAD related activities has been made compulsory. All the information with regard to DFAD will be recorded as usual in the Ministry's database that will allow easy access for verification and monitoring. For instance, the number of DFADs deployed at sea is recorded based on the logbooks and verified if they are within the set limits of the Resolution 19/02. This information is processed and submitted to the IOTC on a yearly basis. A progress report on the implementation of the DFAD-MP will be prepared and submitted to the IOTC annually.

8. **DFAD Logbook**:

    For purse seiners: all activities are reported in the appropriate logbook designed to accommodate all information concerning activities related to DFAD.

    For supply vessel: a specific DFAD logbook is used to report all information concerning activities related to DFAD.

Activities include:

- Deployment/launch of FADs
- Removal of FADs
- Visiting of FADs with or without handling (maintenance/exchange)

For each of the above activities, the following information is also recorded in the logbook:

- Date and time;
- Position (latitude & longitude);
- Type of FAD (natural, artificial, "classic" or "non-entangling" draft) along with a short description (tree trunk, pile of straw, container, rope, …)
- Number of associated beacon in case of a TFAD;
- Number of removed beacon in case of a TFAD if the beacon belonged to the vessel, if not write "beacon of a third vessel";
- Any observation with regard to entangled sharks or turtles if ever the FAD has net counterparts.
- Tons caught per species;
- Any discard quantities

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FAD register of ACILA Fishing vessel.

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AL Wusta Fisheries Industries ; DFADs LOGBOOK
for the vessel ACILA

NC	Date	Time	Latitude	Longitude	Activity Type	DFAD Identifier	beacon ID	DFAD type	DFAD Classic/non entangling	DFAD characteristics	DFAD characteristics2	Number of associated beacon for TFAD	Number of removed beacon for TFAD	obse
					(Deployment/Removal/Visiting with or without handling			natural/artificial		tree trunk, pile of straw, container, rope, ...)	Dimiensions and the materials, of the floating part, structure ,			
1														
2														
3														
4														
5														
6														
7														
8														
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FAD Register of supply vessel

NON-APPLICABLE

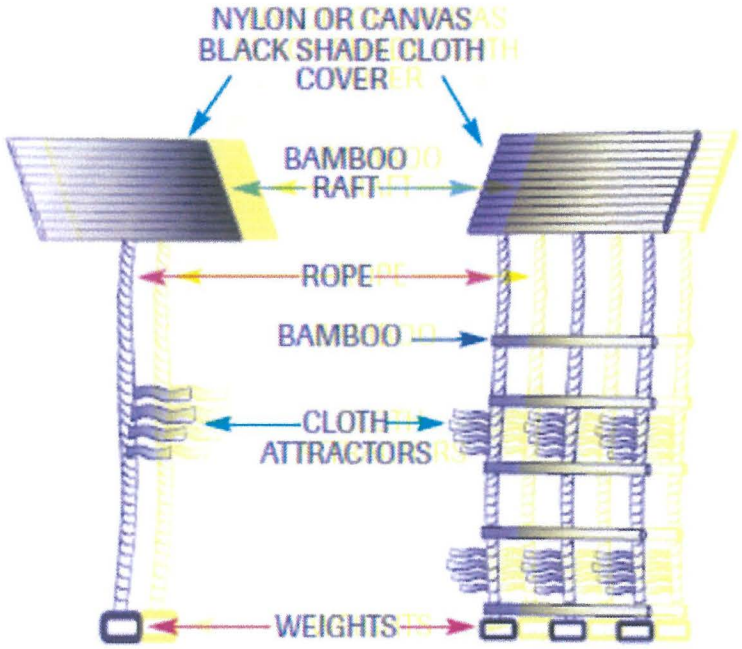
APPENDIX 2

Non-entangling DFADS

Al Wusta Fisheries Industries is following the non- entangling and biodegradable FADs guide of the International Seafood Sustainability Foundation (April 2019) and as described in IOTC resolution 19/02.

PRINCIPLES FOR DESIGN AND DEPLOYMENT OF FADS

EXAMPLE OF NON-ENTANGLING FAD



1. The surface structure of the FAD is not covered, or only covered with non-meshed material

2. If a sub-surface component is used, it will not be made from netting but from non-meshed materials such as ropes or canvas sheets.

APPENDIX 3

Document is uploaded separately as Appendix 3

Al Wusta Fisheries Industries is committed to the use of best practices for FAD Management through a FAD Management policy which is based on the International Seafood Sustainability Foundation (ISSF) Conservation measure 3.7.

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- Abiding by the limit of active number of FADs adopted by tRFMOs.
- Deploying only FADs with satellite tracking buoys.
- Managing the activation and deactivation of buoys taking into account the corresponding tRFMO´s measures.
- Abiding by the time area closure (including FAD area closures) established by the corresponding RFMO.

d) Use only non-entangling FADs to reduce ghost fishing.

We commit to: the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

- Deploying only FADs that are completely less-entangling and starting **January 1, 2024** deploying only non-entangling FADs (i.e., without any netting), even when is not a requirement of the tRFMO, according to the ISSF Guide for Non-Entangling FADs.
- Not deploying any "high entanglement risk" FAD according to the ISSF Guide for Non-Entangling FADs (i.e., those using large open netting either in the raft or in the underneath part of the FADs: >2.5 inches or 7 cm mesh).
- Removing from the water and modifying the design of "high entanglement risk" FADs according to the ISSF Guide for Non-Entangling FADs that are reused by the fleet, to make them less or non-entangling as per the ISSF classification.

e) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies

We commit to: the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

- Studying the feasibility of using FADs with only biodegradable material in their construction except the floatation structure of the raft.
- Participating in tests of locally-sourced biodegradable materials in collaboration with AZTI, ISSF or any other scientific institution.
- Studying the feasibility of deploying simpler and smaller FADs.
- Participating in trials of biodegradable FAD designs and tests with the participation of RFMO science bodies and/or CPCs or ISSF scientist.
- Endorsing risk and feasibility research programs aimed to determine deployment areas that are highly likely to result in stranding, in countries where FAD recovery policies could be put in place.
- Participating in cooperative efforts, such as the FAD-Watch in the Seychelles, to remove stranded FADs, in the case the fleet operates in the determined area(s).
- Gradually replacing FAD components with biodegradable materials as soon as such are proven efficient.
- Not disposing of any FAD component at sea, unless it is proven biodegradable: should a FAD be mended and/or any component replaced, the remainder material must be reused or disposed at port

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FAD MANAGEMENT POLICY

What the management policy adopted by the company or operator

Al Wusta Fisheries Industries adopted the IOTC policy for the FADs management.

a) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type.

We commit to the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

b) Voluntarily report additional FAD buoy data for use by RFMO science bodies.

We commit to: the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

c) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made.

We commit to: the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

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- Whenever possible, use supply vessels to recover FADs that might be in risk of sinking or stranding.
- Promoting the use of bio-based material to make FADs.
- Promoting a definition of BIODEGRABLE materials applicable to marine environment.

f) For silky sharks (the main bycatch issue in FAD sets) implement further mitigation efforts.

We commit to: the national competent authority: the Ministry Agriculture, Fisheries, and Water Resources.

- Applying Best Practices for safe handling and release of sharks and rays brought onboard.
- Participating/supporting studies to evaluate the contribution of purse seine fisheries to catches of silky sharks, and the impact of implementation of the Good Practices on post-release survival.
- Participating in projects aiming to develop and test new tools to release sharks and mobulids in tuna purse seiners, that maximize their survival and are practical to use onboard.

Seychelles 2025 DFADs Management Plan

SEYCHELLES DRIFTING FISH AGGREGATING DEVICE MANAGEMENT PLAN 2024-2025

Seychelles Fisheries Authority

PO BOX 449, Victoria, Mahé Seychelles

December
2024

SEYCHELLES FISHERIES AUTHORITY

Glossary

ANABAC: Asociación Nacional de Armadores de Buques Atuneros Congeladores

APR: Atún de Pesca Responsable

CMM: Conservation and Management Measures

COA: Certificate of Authorisation

CPC: Contracting Parties and Cooperating Non-Contracting Parties

DFAD: Drifting Fish Aggregating Device

EM: Electronic Monitoring

IOTC: Indian Ocean Tuna Commission

MoFA: Seychelles Ministry of Fisheries and Agriculture

MP: Management Plan

MSC: Marine Stewardship Council

MSP: Marine Spatial Planning

OCUP: Observateur Commun Unique et Permanent

OPAGAC: Organización de Productores de Atún Congelado

ORTHONGEL: Organisation française des producteurs de thon congelé et surgelé

SFA: Seychelles Fisheries Authority

SIOTI: South-West Indian Ocean Tuna Initiative

WPEB: IOTC Working Party on Ecosystems and Bycatch

Definitions

Abandoned DFAD. DFAD left at sea without a buoy or with a buoy not capable of transmitting the position signal because of malfunction or deliberate deactivation.

Instrumented buoy. Buoy marked with a unique reference number allowing identification of its owner and equipped with a satellite tracking system to monitor its position

Acquired DFAD. A DFAD originally deployed by a vessel whose buoy has been exchanged for one belonging to the new (acquiring) vessel.

Active buoy. Instrumented buoy having been activated, i.e. capable of transmitting data (e.g. GPS position) through satellite communication. The start of data transmission requires a switch-on procedure.

Activation. Action of registering an instrumented buoy to start the satellite communication service. The activation is made onboard with the buoy manufacturer software or upon request by email or telephone to a 24/7 support service.

Buoy. A buoy is an electronic tracking device attached to the floating object (FOB) that includes a GPS unit to track the device's movements and determine its location as well as other electronic components such as temperature sensor, conductivity sensor, voltmeter, echo sounder unit and data recording unit.

Buoy in stock: Buoy purchased by a fishing company, stored onboard but not yet activated.

Buoy owner. Any legal or natural person, entity or branch, who is paying for the communication service for the buoy and/or who is authorized to receive information from the satellite buoy, as well as to request activation/deactivation.

Deactivation. Action of de-registering an instrumented buoy to stop the satellite communication service and stop the buoy transmission. The deactivation is made onboard with the buoy manufacturer software or upon request by email or telephone to a 24/7 support service.

DFAD. Human-made device which is deployed at sea to passively drift in near-surface ocean currents for the purpose of aggregating target tuna species for consequent capture. A DFAD is typically composed of a floating structure (e.g. bamboo or metal raft with buoyancy provided by buoys, corks, etc.) and of a submerged structure (made of old netting, canvass, ropes, etc.).

Lost DFAD. DFAD that can no longer be tracked because the information from the buoy attached is no longer transmitted for different potential reasons, e.g. beaching, sinking, etc.

Operational buoy. Active instrumented buoy transmitting data through satellite communication while drifting at sea.

Purchased buoy. Buoy purchased by a fishing company from a buoy manufacturer.

Reactivation. Action of registering a deactivated buoy that was previously activated to start a new satellite communication service and enable the buoy transmission. The reactivation is made onboard with the buoy manufacturer software or upon request by email or telephone to a 24/7 support service after the buoy has been brought back to port.

Shared buoy. Buoy whose data are provided to more than one purse seiner vessel.

Switch on/off. Action of applying a magnet on the buoy to start/stop data transmission after activation.

Transmitting buoy. Active instrumented buoy that is transmitting data through satellite communication while at sea, onboard a vessel or on land.

Table 1: CECOFAD 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

Table 2. CECOFAD classification of activities with FOBs and buoys

Code	Name	Description
FOB	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)
	Deployment	Deployment of a FAD at sea
	Consolidation	Deployment of a FAD on a FOB (e.g. to enhance floatability)
	Retrieval	Retrieval of the FOB
	Fishing	Fishing set on the FOB
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	Loss of the buoy/end of transmission

Background

In 2012, the Indian Ocean Tuna Commission (IOTC) adopted the Resolution 12/08 which called upon all Contracting Parties and Cooperating Non-Contracting Parties (CPCs) having vessels fishing on Drifting Fish Aggregating Devices (DFADs) to develop management plans (MPs) for the use of DFADs by their purse seine fleets by the end of 2013. The overarching objective of the IOTC Resolution 12/08 and subsequent Resolution 13/08, was to improve the collection and reporting of data on DFAD-related activities as from January 2015.

Following the Resolution 13/08, the Seychelles implemented in 2015 a DFAD-MP that included four main components:

(1) Collecting data on buoy identifier, buoy ownership, DFAD design and components, and operations involving both the floating object and the buoy,

(2) Reporting the data to the IOTC,

(3) Managing purse seine effort through a limit of the number of floating objects tracked by a purse seiner at anytime, and

(4) Implementing technical measures for the design and components of the materials to limit the incidental catch of marine species through entanglement and reduce the amount of synthetic marine debris. In addition, the plan recommended to limit bycatch and discards, with particular attention to sensitive species such as sharks and marine turtles. attention to sensitive species such as sharks and marine turtles.

The IOTC Resolutions 15/08, 17/08, 18/08 and 19/02 strengthened the Resolution 13/08 by increasing the data collection and reporting requirements and sequentially reducing the number of instrumented buoys available to each purse seiner at any time. Furthermore, the rebuilding plan for the Indian Ocean stock of yellowfin tuna (Resolution 16/01 superseded by 17/01, 18/01 and 19/01) called for a progressive reduction in the number of auxiliary (support) vessels supporting the purse seiners' activities through the maintenance of the DFAD network. In 2019, the IOTC Compliance Committee reviewed the DFAD-MPs available from eight CPCs and showed that the Seychelles plan was not fully compliant with the IOTC guideline, and it covered only 75% of the requirements (IOTC2019a).

Since 2015, the use of DFADs in the Indian Ocean purse seine fishery has been greatly modified in relation with technological innovations, market demand and management measures such as the catch limit on the yellowfin tuna stock. During 2015-2019, the Seychelles purse seine fishery has substantially increased the part of the catch taken on tuna schools associated with DFADs, i.e. from 75% in 2015 to about 95% in 2019. During 2017-2019, the fleet, comprising of 13 purse seiners caught on average more than 110,000 metric tonnes of tropical tuna each year, of which more than 90% was taken on DFADs.

In this context, the report presents a one-year plan for the DFAD-MP-2024-2025 that follows the guidelines of the IOTC (Annex I of Resolution 19/02) and builds on the different certifications already obtained by some fishing companies (i.e. MSC, APR, and Friends of the Sea), the ongoing Fisheries Improvement Projects involving Seychelles purse seiners (SIOTI, OPAGAC), and some company-led initiatives dealing with FAD data collection (e.g. Code of Good Practices, French industry-funded observer program OCUP, Seychelles National Observer Program, Electronic

Monitoring, and ECHEBASTAR FAD Management Plan) and adverse impact mitigation (e.g. FAD WATCH).

It was anticipated that the DFAD-MP-2022-2023 will incorporate a third-party model where vessel owners will be responsible for engaging authorized service providers to administer DFAD activities. As a condition of the issuance of a fishing license, this model would require third-party service providers to establish government approved DFADs, receive and review DFAD data, submit required reports and infractions of fishing activity to SFA, and store data to be accessed by governmental auditors or enforcement personnel. The responsibility for auditing and enforcement, whether civil or criminal, would remain the domain of SFA. In this model, the SFA would also qualify third-party service providers and set the performance standards that must be met by industry.

This third-party model will increase program efficiency and accountability, while reducing overall costs. It will also shift much of the burden of DFAD program execution and capacity constraints from SFA to industry, allowing SFA to access propriety information in real-time and further cultivating industry collaboration. As of March 2020, the third-party model was piloted with electronic monitoring systems within three (3) longline and (2) purse seine vessels operating in Seychelles EEZ. Refer to Appendix I for more information on this potential model. Lessons learned from the pilot model will be used to inform implementation of a third-party model for DFADs within Seychelles.

Information provided in the Seychelles Drifting Fish Aggregating Device Management Plan serves as one year plan (December 2024 – December 2025). This plan primarily caters for IOTC obligations in regards to IOTC ***RESOLUTION 19/02 PROCEDURES ON A FISH AGGREGATING DEVICES (FADS) MANAGEMENT PLAN.*** The process to review and update the DFAD management plan to align with new IOTC requirement (IOTC RESOLUTION 24/02) as well as with national policies, particularly the Seychelles' Marine Spatial Plan Initiative processes was initiated in early 2025. The process which involves stakeholder's consultations is expected to be completed by August 2025.

1- Objectives

The overarching objective of the Seychelles DFAD-MP-2024-2025 is to provide a fair and transparent framework that determines the roles and responsibilities of each stakeholder involved in the Seychelles purse seine fishery operating within the IOTC area of competence in a first step as well as the foreign purse seine fleet licensed to operate within the Seychelles' waters in a second step. The DFAD-MP-2024-2025 aims to propose a set of operationalizable actions, recommendations and regulatory measures that address the data collection and reporting requirements related to DFADs and their use by purse seiners and support vessels, with the aim of reducing their impact on marine and coastal ecosystems without affecting the economic viability of industrial fishing in and around Seychelles' Exclusive Economic Zone.

The Seychelles DFAD-MP aims to comply with national fisheries policies and regulations (Seychelles Fisheries Act (2014), Seychelles Fisheries Comprehensive Plan (2019)) and international Conventions and Agreements signed by the Seychelles, including but not limited to the IOTC Conservation and Management Measures (IOTC2019b), the FAO Code of Conduct for Responsible Fisheries (FAO 1995), and the Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL 1983).

The Seychelles Fisheries Authority(SFA) is the agency responsible for the implementation and follow-up of the DFAD-MP on behalf of the Ministry of Fisheries and Agriculture (MoFA) (Section Institutional arrangements).

2- Scope

The core of the Seychelles DFAD-MP-2024-2025 covers the large-scale purse seiners and support vessels flying the Seychelles flag. Vessels flagged from other states are expected to adopt and employ equivalent conservation measures. The DFAD-MP- 2023-2024 component related to DFAD construction, design, and components includes some measures defined within the Seychelles Fisheries Comprehensive Plan (2019). This current DFAD-MP-2024-2025 does not include a spatial component related to the specific conditions applying within the Medium Biodiversity Protection and Sustainable Uses areas delineated through the Seychelles Marine Spatial Plan, which will enter into force in 2025. However, we aim to incorporate buy-in to address Seychelles Marine Spatial Plan processes, including concerns about all foreign purse seiners and support vessels authorized to operate within the Seychelles' waters in future plans.

2.1- DFADs & buoys numbers

In 2022, the number of DFADs that can be deployed by each Seychelles purse seiner and associated support vessel must comply with the maximum limits of 500 instrumented buoys acquired annually for each purse seiner and a maximum of 300 operational buoys by any purse seiner at any one time, in conformity with the IOTC Resolution 19/02.

The monitoring of the number of DFADs tracked by each Seychelles purse seiner at any time is based on the information (e.g. GPS position) transmitted through satellite communication by the instrumented buoys attached to the DFADs. SFA or a qualified third-party service provider will track each Seychelles purse seiner and provide data reports (including but not limited to infractions) on all legally deployed DFADs and vessel positions via VMS. Whereby a third-party

service provider, designated by the SFA is used, SFA shall maintain audit rights over the data. SFA's specified requirements include:

- Vessels are strictly prohibited from deploying a DFAD at sea without any instrumented buoys with satellite tracking ability or to use alternative positioning systems (e.g. radio), in accordance with IOTC resolution 19/02.

- Each buoy deployed at sea must be in active transmission mode and included in the individual quota of each Seychelles purse seiner. Operational buoys cannot be remotely activated or re-activated at sea after deactivation (See Definitions), i.e. they must be brought back to port where they can be recovered for reuse.

- The marking of the electronic buoy consists of two components: (1) a unique and permanent identifier linked to the satellite transmission communication and (2) the full name or approved acronym of the purse seiner to which the buoy is permanently assigned in compliance with IOTC Resolution 19/02. The unique identifier includes the buoy model followed by a number of digits that varies with the third-party service provider [i.e., Thalos model + 4 digits (Iridium satellite transceiver); Satlink model + 4-6 digits (Insmarsat satellite transceiver); Marine Instruments Model + 5-6 digits (Iridium satellite transceiver)].

- To ensure full control and compliance of the status (active, de-activated, lost, stolen, etc.) and total number of DFADs tracked by the Seychelles purse seine fishery and address the IOTC reporting requirements (Appendix III), each company operating Seychelles purse seiners must provide the SFA or the designated third-party service provider with specified data requirement. If a third-party service provider is used, the provider will relay data to SFA in consolidated and coordinated reports. This data includes:

    1. Invoices and receipts of the buoy orders made during the current year from the different buoy manufacturing companies, including the number of buoys assigned to each purse seiner;

    2. Monthly reports of numbers of buoys with activations/deactivations for each purse seiner, including first day of the month, last day of the month, minimum, mean, and maximum daily numbers of operational buoys in the month;

    3. The data set of GPS buoy positions within a maximum delay of three (3) months, including the unique buoy identifier, timestamp (yyyy-mm-dd H:M:S UTC), longitude, latitude, and IOTC vessel registration number as per the requirement under clause 21 of Resolution 19/02.

2.2- DFAD deployments and monitoring

Information on the extent and location of the DFADs deployed by the Seychelles purse seiners and associated support vessels must be collected and reported to the IOTC Secretariat as per the requirement of IOTC Resolutions 19/01 and 19/02. Whereby a designated third-party service provider is used, it shall provide the specified data to the SFA and the latter shall transmit the mandatory data or reports to the IOTC. To address the IOTC reporting requirements (Appendix II), industry will work with SFA and/or a third-party service provider to collect the following data from DFADs within the Seychelles purse seine fishery:

1. Logbooks for all purse seiners and support vessels that include the buoy identifier, the DFAD type (See Definitions), the date, UTC time and geographical coordinates of their deployment in

addition to other activity types in compliance with the Annex III of Resolution 19/02 (Section DFAD logbooks & Appendix I);

2. The data set of GPS buoy positions to derive the position of deployment from the starting point of each DFAD trajectory at sea (Section DFADs buoys numbers);

3. Observations at sea collected from onboard observers and review of videos and images collected with Electronic Monitoring (EM) programs conducted within the Seychelles purse seine fishery.

2.3- DFAD design and construction

All DFADs deployed by Seychelles purse seiners and support vessels in the IOTC area must be designed and built following the guidelines and best practices on non-entangling DFADs defined by the International Seafood Sustainable Foundation (ISSF)[1] to reduce the entanglement of marine species as much as possible in agreement with IOTC Resolution 19/02:

- The surface structure of the raft must not be covered with netting or non-meshed materials (e.g. canvas, tarpaulin or shade clothes) to reduce entanglement of marine turtles;
- The subsurface structure must be made with non-meshed materials, i.e. ropes, canvas, nylon sheets, or other non-entangling material, to reduce the entanglement of sharks and marine turtles

As per the IOTC Resolution 19/02, information on DFAD design characteristics, i.e. dimension and material of the floating part and of the subsurface structure of the raft, must be recorded by the vessel operator at deployment and entered in the DFAD logbook for all Seychelles purse seiners and support vessels following the logbook template designed by the SFA (Section DFAD logbook & Appendix I). Furthermore, information on DFAD design and materials must be collected by the observers onboard Seychelles purse seiners and support vessels as well as by the dry observers analyzing data collected with Electronic Monitoring (EM) onboard Seychelles vessels following the protocols used in the Seychelles national scientific observer program that relies on the ANABAC/OPAGAC Code of Good Practices and the ORTHONGEL's OCUP program.

Following IOTC Resolution 19/02 and the Seychelles Fisheries Comprehensive plan (2019), the use of natural or biodegradable materials in DFAD construction should be promoted to reduce as much as possible the amount of synthetic marine debris. . Petroleum-derived products such as plastic, PVC, and nylon nets, as well as metallic components employed in both the submerged and sub-surface structure of DFADs should be progressively replaced by biodegradable materials, i.e. naturally occurring materials (e.g., bamboo, cotton, or vegetal fibres), or in their absence, bio-based and biodegradable compounds complying with international standards such as CEN/TS 16137[2] or ASTM D6868[3], with the exception of materials used for the instrumented buoys, as per Clause 18 of IOTC Resolution 19/02. Recommendations from the experiments conducted throughout the BIOFAD project should be followed and trials pursued with the aim of progressively increasing the proportion of natural and biodegradable materials used in the DFADs deployed by the Seychelles fleet. A full review of the progress

[1] https://iss-foundation.org/knowledge-tools/guides-best-practices/non-entangling-fads/

[2] https://www.european-bioplastics.org/bioplastics/standards/

[3] https://www.astm.org/Standards/D6868.htm

accomplished in this domain will be made during the review in 2024 to define future directions and take measures related to the use of natural or biodegradable materials in DFAD construction in consultation with all stakeholders.

To ensure effective monitoring and control of DFAD design and components in line with the Seychelles Fisheries Comprehensive Plan (2019), a requirement was established for all DFADs deployed within Seychelles waters by Seychelles-flagged purse seiners and associated support vessels to be assembled on land in dedicated DFAD manufacturing workshops, where inspections would take place. This measure, recommended under the 2019 plan, has not yet been implemented due to the absence of a supporting regulatory framework. Seychelles is currently in the process of developing this regulatory framework and expects to implement the requirement in the near future.

2.4- Incidental bycatch reduction & utilization policy

All Seychelles vessels operating within the IOTC area must strictly comply with the IOTC Resolutions on the conservation of marine turtles (12/04), cetaceans (13/04), whale sharks (13/05), sharks (12/09, 13/06 and 17/05), and on the full retention for both targeted tuna species and finfish bycatch species (19/05). Information relative to the capture, retention and discarding practices (i.e. species composition, magnitude and status) must be collected through logbooks, landing reports and the Seychelles national scientific observer program and reported to the SFA at the scale of the fishing operation following the SFA logbook (Section DFAD logbook) and observer data collection forms. Data will be reported to the IOTC Secretariat in conformity with the IOTC reporting requirements, i.e. forms and formats of the Regional Observer Scheme and IOTC forms 1DI and 1DR.

Furthermore, the fishing companies operating Seychelles purse seiners must follow the best practices for materials and construction for non-entangling DFADs(section 2.3) and best practices for the handling and release of sensitive marine species (i.e. sharks, rays and marine turtles) taken as bycatch following the ISSF guidelines[4] in order to maximise their chances of survival through release. This includes sorting practices and equipment that allow for quick, safe and effective live release during sorting, and providing regular training for skippers and crew in bycatch handling.

It is strongly recommended that the fishing companies technically and/or financially contribute and support programs devoted to the study of handling practices and post-release mortality, e.g. based on tagging operations.

2.5- Statement or policy on 'DFAD ownership'

In line with the voluntary guidelines for the marking of fishing gear developed by the FAO to improve the state of the marine environment by combating, minimising and eliminating abandoned, lost or otherwise discarded fishing gear (ALDFG) and taking into account the fact that all DFADs deployed must be equipped with instrumented buoys and the frequent exchange of buoys attached to the DFADs, the marking ownership of each DFAD deployed by Seychelles-flagged vessels must be made through the attached buoy based on (i) the unique buoy identifier of the satellite transmission communication and (ii) the full name or approved acronym of the purse seiner to which the instrumented buoy is permanently assigned in compliance with IOTC Resolution 19/02 (Section 2.1 DFADs & buoys numbers). It is strictly prohibited to modify the buoy marking.

[4] https://iss-foundation.org/downloads/16456/

2.6- Consideration of interaction with other gear types, including small scale fisheries

DFADs and associated buoys are not equipped with radar reflectors but are generally visible within a distance of 1-2 nautical miles, although some rafts are designed to be positioned below the water surface for stealthiness and more difficult to detect. Buoys are equipped with flashing lights which are remotely activated to detect the DFADs at sea but not used to indicate their presence and avoid an interaction with a vessel.

Interactions between the purse seine fishery and longline fisheries are considered to be limited as DFADs are small floating devices of surface area around 2.5-4 m^2, as compared to the length of a longline (10-150 km). Interactions with the semi-industrial longline fishery is spatially restricted as the main fishing grounds of the Seychelles semi-industrial longline fleet are situated on and around the Mahe Plateau where purse seiners do not operate, but where DFADs do drift. Some interactions with semi-industrial longliners and small-scale vessels have however been reported and may result in some high risk for the crew when the propeller of the outboard motor is entangled with the net and other components of the DFAD subsurface structure.

Cases of interaction between a DFAD and any fishing gear or whereby a DFAD could constitute a hazard to navigation within the Seychelles waters must be reported to the SFA and/or a designated third-party service provider with information on the date, position, and ownership of the buoy attached to the DFAD (if any) to assess the extent and nature of the issue and propose solutions through a consultative meeting with the company concerned when the DFAD ownership can be determined. Noting special considerations to avoid sensitive areas relative to MSP zoning, including the Seychelles Plateau and small gears that exploit these areas.

2.7- Plans for monitoring and retrieval of lost DFADs

Each fishing company operating Seychelles purse seiners must provide the SFA and/or a third-party service provider with the data set of GPS buoy positions (Section DFADs & buoys numbers)so as to monitor the movements of the tracked DFADs and determine beaching events (i.e., stranding in coastal environments), potentially damaging sensitive habitats such as coral reefs, and contributing to coastal marine debris and ghost fishing. Based on a methodology developed in consultation with the companies to determine when beaching occurs, the SFA will estimate the extent and location of beached DFADs in the Seychelles to contribute to the preparation of the DFAD tracking and recovery policy of the IOTC. The GPS buoys equipping DFADs considered to be beached by the companies must be kept in transmission for one month after stranding to ensure the location of the DFADs and facilitate their retrieval when possible, or until SFA deems them irretrievable.

All purse seine fishing companies with DFADs occurring within the Seychelles waters must contribute and participate to national projects of marine debris monitoring and cleanup activities, including initiatives to anticipate and predict stranding events, develop collaborations with national institutes and local NGOs to facilitate the removal of stranded DFADs and encourage recycling practices, particularly of non-functional instrumented buoys. FAD WATCH is an example of collaborative project with the industry which covered 10 islands of the Seychelles and involves all the purse seiners involve in the SIOTI Fisheries Improvement project.

3- Institutional arrangements for managing the DFAD-MP

The SFA is the agency responsible for the implementation and follow-up of the DFAD-MP on behalf of the MoFA and in close collaboration with the fishing companies operating purse seiners and support vessels flying the Seychelles flag or flying a foreign flag and operating within the Seychelles EEZ through access agreements. SFA is responsible for the monitoring and reviewing the DFAD-MP regularly so as to make the appropriate changes to the MP when needed in consultation with the industry and in line with the evolution of the IOTC Conservation and Management Measures (CMMs).

An annual report including information on the protocols, training, main results and challenges (including but not limited to monitoring, compliance, infractions) of the programs implemented by the companies to address the objectives of the DFAD-MP must be provided to the SFA a maximum of three months after the year of operation. Data confidentiality rules and arrangements relative to the data collected through the monitoring actions of DFAD-related activities must be defined as part of a general Memorandum of Understanding to develop between the SFA, the fishing companies or their associations, and/or a designated third-party service provider.

Penalties and fines following infractions and non-compliance with the DFAD-MP will be defined and included in national legislations and as licensing conditions or as conditions of the Certificate of Authorisation (COA).

3.1 - Application processes for DFAD and/ or DFAD deployment

Vessel owners and operators shall notify the Seychelles Fisheries Authority of the number of DFAD including instrumented buoys they planned to deploy prior to leaving for any fishing operation. All actual deployment shall be recorded in the purse seiner and support vessel logbook as per appendix II.

3.2 Satellite Transceivers (requirement for serial number)

Any DFAD deployed at sea shall be equipped with an Instrumented buoy and shall be identified by the associated buoy serial number. The master of the vessel shall maintain a specific record on the buoys (serial number, brand and type in the appropriate logbook (appendix II), at the time of deployment of the corresponding DFADs. Additionally, the same information, as well as type of operation undertaken on DFAD shall be recorded for any DFAD visited.

4- Applicable areas

In a first step, the Seychelles DFAD-MP concerns the IOTC area of competence for the Seychelles flag purse seine and support vessels. Discussion is ongoing with relevant stakeholders, with the DFAD-MP aims to include all the foreign-flagged purse seine and support vessels operating within the Seychelles Exclusive Economic Zone through the Access Agreement (EU/Seychelles Sustainable Fisheries Partnership Agreement, Mauritius/Seychelles Fisheries Agreement and private fishing agreements.

5- Applicable period for the DFAD-MP

The current Seychelles DFAD-MP is valid for a duration of one year and covers the period December 2024- December 2025.

6- Monitoring & reviewing implementation of the DFAD-MP

The implementation of the DFAD-MP-2024-2025 will be monitored and reviewed at regular intervals by the SFA based on the feedback of the different stakeholders and changes in the Seychelles fisheries regulations and IOTC Conservation and Management Measures. Its revision was initiated in early 2025, to better include stakeholder feedback and align with national policies such as Seychelles' Marine Spatial Plan Initiative processes. DFAD-related data sets are managed by SFA and/or the designated third-party service provider. If a third-party service provider is selected, they will provide SFA with access to reports, data, and associated secured databases that ensure the storage and easy extraction of data. The monitoring will be conducted in close collaboration with the purse seine fishing companies and their associations to ensure the guidelines and actions of the DFAD-MP are clear and agreed by all stakeholders and modified in a transparent way (Section Institutional arrangements for managing the DFAD-MP). The DFAD-MP will be updated as and when required to account for the evolution of the IOTC Conservation and Management Measures (CMMs) related to DFADs. A progress report on the implementation of the DFAD-MP will be submitted to the IOTC Secretariat on a yearly basis.

7- DFAD logbook

The SFA designed a logbook for purse seiners and support vessels that includes the DFAD and buoy-related activities within the traditional skipper logbook that mainly focuses on fishing operations and associated catch (Appendix III).

Appendix I. Third-Party Service Provider Roles and Responsibilities Overview

Key Roles – Purse Seine Fishery (Licensed Flagged and non-Flagged, including vessels operating under chartering arrangements)				
Function/Task	**RESPONSIBILITY**			
	Fisheries Agency (where applicable)	**Industry/Fishers**	**Third-Party Service Provider**	***Costs***
Project inception: scoping, installation, and launch	Prequalify vendors	Contract vendors as needed for equipment procurement, shipping, installation, and servicing/maintenance. Contract with vendors for video review	Perform services as procured by industry/fishers	*Industry*
Data collection	Sets minimum FAD requirements for data collection	Ensures hardware, software, storage, maintenance, security, etc. meets FAD performance standard and data management plan	Work with industry to develop required FAD systems and procedures to meet minimum data requirements	*Industry*
Transmission of data	Sets protocols to ensure non-tampering, confidentiality and privacy	Transmits data to FAD data review centers in accordance with data management plan and other protocols	Receives and stores data in accordance with protocols; submits analyzed data to national authority; provides raw data to national authority under pre-specified protocols; provides data and reports to national authority and industry as specified in data management plan	*Industry*
FAD inspection and maintenance	Reserves right to inspect systems in accordance with applicable regulations	Ensures regular functionality of FAD systems	Performs maintenance as required (in collaboration with industry)	*Industry*
Data storage	Sets FAD data retention specifications	N/A	Stores raw FAD data in accordance with minimum retention requirements	*Industry*

SEYCHELLES FISHING AUTHORITY

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Annexe II: Logbook for Seychelles Flagged Tuna Purse Seiners

Version 04.2016

SALIDA / DEPARTURE			LLEGADA / ARRIVAL		PATRON / PATRON / MASTER		BARCO / VESSEL	HOJA SHEET
PUERTO / PORT			PUERTO / PORT				NOMBRE/NAME:	
DATE / FECHA			FECHA / DATE				INDICATIVO/CALL SIGN	
HORA / HOUR			HORA / HOUR		VIAJE / TRIP		BANDERAF/FLAG	
CORREDERA / LOCH			CORREDERA / LOCH					

		POSICION				LANCE			CAPTURAS ESTIMADAS (toneladas)/ Estimated catch (Tonnes)														ASOCIACION						ACTIVIDAD SOBRE LOS DCP						CORRIENTE		VIENTO		OBSERVACIONES
									YELLOWFIN		SKIPJACK		BIGEYE		ALBACORE		OTHERS			DISCARDS																			
FECHA/ DATE	HORA /TIME	LATITUDE.		LONGITUDE.		POSITIVO / SUCCESSFUL	NULO / NIL	Cuba/N0 Cuve/Well	CAT.	TONS	CAT.	TONS	CAT.	TONS	CAT.	TONS	ESPECE/ SPECIES.	CAT.	TONS	ESPECE/ SPECIES.	CAT.	TONS	OBJETO / RAFT	LIBRE / FREE	AVES / BIRDS	BALLENA / WHALE	TIBURON BELEINA/WHALE SHARK	BARCO de APOYO/ Supply	TIPO DE VISITA/ VISIT TYPE	TIPO DCP/ FAD TYPE	MARCAS DEL DCP	TIPO BALIZA/ BUOY TYPE	ID BALIZA/ BUOY ID	TEMPERATURA (°C)	DIRECCION (grados)	VELOCIDAD (m/s)	DIRECCION (grados)	VELOCIDAD (nudos)	

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Annexe II: Logbook for Seychelles Flagged Support Vessels

Version 04.2016

SALIDA / DEPARTURE		LLEGADA / ARRIVAL		PATRON / PATRON / MASTER		BARCO / VESSEL	HOJA SHEET
PUERTO / PORT		PUERTO / PORT					
DATE / FECHA		FECHA / DATE					
HORA / HOUR		HORA / HOUR		VIAJE / TRIP			
CORREDERA / LOCH		CORREDERA / LOCH					

		POSICION		ACTIVIDAD SOBRE LOS DCP (See worksheet Referentials)											TONELAJE TOTAL ESTIMADO					CORRIENTE			VIENTO		COMENTARIOS
					BALIZA AL LLEGAR					BALIZA AL PARTIR															
FECHA DATE	HORA TIME	LAT.	LONG.	TIPO DE VISITA/ VISIT TYPE (S	TIPO DCP/ FAD TYPE	MARCAS DEL DCP	ID BALIZA/ BUOY ID	TIPO BALIZA/ BUOY TYPE	PROPIA/ AJENA	TIPO DCP/ FAD TYPE	MARCAS DEL DCP	ID BALIZA/ BUOY ID	TIPO BALIZA/ BUOY TYPE	PROPIA/ AJENA	YELLOWFIN (MT)	SKIPJACK (MT)	BIGEYE (MT)	ALBACORE (MT)	MT	TEMPERATURA (°C)	DIRECCION (grados)	VELOCIDAD (m/s)	DIRECCION (grados)	VELOCIDAD (nudos)	

Appendix III. Mandatory reporting requirements of the Indian Ocean Tuna Commission pertaining to the use of DFADs and buoys

- Form 3DA: Yearly interactions with Fish Aggregating Devices (FAD) set by purse seiners and supply vessels by moth, grid and fleet: https://data.iotc.org/reference/latest/forms/

- Form3BU: Detailed monthly report of active buoys by vessel https://data.iotc.org/reference/latest/forms/

Tanzania 2025 DFADs Management Plan

THE DEEP SEA FISHING AUTHORITY

FISH AGGREGATING DEVICE MANAGEMENT PLAN FOR TANZANIAN FLAGGED VESSELS 2025

March, 2024

1. Background

According to the fisheries management policies that Tanzania has been traditionally carrying out in order to assure the sustainable management of the fishing resources in general; also considering that the control of fishing effort is a necessary issue in the IOTC area; and with the aim to guarantee the sustainability of the target and bycatch populations of species related to tuna fisheries, the following Fish Aggregating Device[1] Management Plan is hereby established for the year 2025.

2. Objectives

i. To provide a scientific basis for the approval of measures that guarantee the rational use of FADs in the tuna fisheries of the Indian Ocean.

ii. To widen the technical knowledge of these devices and of their eventual positive or negative impact on the ecosystems.

iii. To develop joint information exchange schemes between operators, scientists and Administrations to facilitate the communication of any progress made in this field and the implications it could have.

iv. To improve the knowledge on the composition of species and sizes to be found in the sets made on FADs.

3. Application field

This Management Plan applies to the tuna purse seiner vessels authorized to fish in the Indian Ocean.

4. Definitions

Fish Aggregating Device (FAD): Floating objects, either natural or man-made, which gather some species underneath, thus making those species more accessible to their search and subsequent catch by fishing vessels.

5. FAD types:

[1] Hereinafter referred to as FADs.

- Anchored FADs: those that are artificially fixed to the bottom of the sea preventing them from drifting; these include the support vessels anchored at an underwater mountain.

- Drifting object with a net: those non anchored FADs composed of either a continuous panel or one in the shape of a grill, which is associated to a hanging piece of net or rope, which serves as a sail under the sea.

- Drifting object without hanging materials: those non anchored FADs composed of either a continuous panel, or one in the shape of a grill.

- Natural FADs: any floating object found at sea, such as vegetable waste, dead animals or debris of human origin used as a FAD.

- Other drifting FADs: any FAD that differs from the above-mentioned.

Activities related to FADs:

- Deployment: The activity that involves the deployment of any given FAD at sea.

- Checking: The fishing activity that involves the monitoring of the previously deployed FADs to carry out maintenance tasks or verify the fish gathering underneath the device.

- Strengthening: Consolidation of a FAD.

- Set: The fishing operating to catch the fish schools associated to a FAD.

- Collection: The fishing activity that involves the recovery of a FAD from the sea.

- Shut down: End of transmission of the buoy.

Buoy types:

GPS buoy: A buoy equipped with a GPS system.

Visual buoy: A buoy equipped with no electronic system, only identifiable at sight.

Oceanographic buoys: buoys used for oceanographic research.

5. Identification of FADs

Each FAD to be deployed must be previously assigned a sequence of characters that will identify it. That sequence must be maintained during its lifetime.

Operators might select the identification system they prefer, provided that the sequence assigned remains individual and unique for each FAD.

Depending on the results obtained by the application of the present Plan, this Administration could, if needed be, establish common and compulsory marking system for all the FADs used by the fleet flagged in Tanzania.

6. Register and communication of FAD related information

6.1. Specific Activity Registry

Operators must keep a Registry that includes all activities related with FADs.

The information to be incorporated in this registry is included in Annex II.

In the event of using a natural FAD, operators must also register this information, assuming by “deployment” the assignment of a buoy and as “collection” its removal

Whenever a fishing or auxiliary boat carries out any given activity which is related to a FAD that originally did not belong to that ship, all information regarding this activity must still be registered. In these cases, the box that contains the identification of the FAD must be filled with the word “external”, along with a visible character sequence that leads to the identification of the FAD.

Lastly, for each activity carried out on a FAD, all events related to by catch must be recorded, including the following data: species, number of individuals and number of individuals which were set free alive.

This Registry of Activity must be delivered to the competent Authorities at least on a quarterly basis.

6.2. Logbook entries

Apart from the specific record mentioned in the previous section, Masters must continue to record in the logbook the following information related to the activity over FADs:

- Set on FADs: position, date, identification and results must be indicated.

- As stated in the previous point, all the sets made on FADs not originally belonging to the fishing vessel, as well as set made on natural FADs which are to be included in the inventory, must be duly recorded in the logbook.

- Catches associated to marine mammals, whale sharks, underwater mountains, or any element that could contribute to gather fish (such as dead animals, concentration of random materials, etc.) have to be recorded as well. The aim is to provide the most complete possible information about the set made, including position, date and result of the set.

7. FAD monitoring

The vessels must, to the extent possible, keep the monitoring information for each FAD that carries a satellite buoy. Such information must be linked to the ID number assigned to that particular FAD.

8. Measures to avoid the loss of FADs

The operators of the vessels must avoid as much as possible the loss of FADs at sea.

In case of loss or impossibility to recover any given FAD (i.e. those that fall in areas or periods closed for the fishing) operators must record in the Specific Activity Registry its last known position and date.

9. Measures to mitigate the catch of juvenile and non-target species

The use of the most selective methods to avoid the catch of juvenile and associated species will be encouraged. These might include, among others, size-sorting grids incorporated in the purse seine nets.

Along with that, the use of acoustic systems (such as echo sounders) will also be encouraged. They should help to avoid the catch of non target species or sizes, allowing their identification before the set is made.

Research related to mechanisms that provide an alternative to net pieces hanging below the FADs will be promoted. These systems should avoid the entangling of marine species, especially turtles, by using different materials or smaller nets, in order to minimize their negative impact. Vessel shall also develop new FAD prototypes made of biodegradable materials.

10. FAD limits:

Tanzania shall ensure that for purse seiners flying our flag and fishing for Bigeye, Yellowfin, or skipjack tunas on FADs the following limits are not exceeded as per RES 19/02:

No more than 300 operational FADs per vessel (activated, switched on and deployed at sea, which transmits position) are active at any one time in relation to each of our vessels through such measures as, for example, the verification of telecommunication bills.
The number of instrumented buoys that may be acquired annually for each purse seine vessel is set at no more than 500.
No purse seine vessel shall have more than 500 instrumented buoys (buoy in stock and operational buoy) at any time. An instrumented buoy shall be made operational only when physically present on board the purse-seine vessel to which it belongs or its associated supply or support vessel

11. Control and monitoring measures

The relevant authorities could carry out documentary inspections regarding the provisions specified in the present plan. They might request, if needed be, the data referred to in the sixth paragraph.

DSFA will be the responsible for processing and monitoring the information supplied by the operators. This Authority shall be entitled to prepare the monitoring reports of the present plan and also to propose the measures it may see fit in order to improve the overall performance of the system.

12. Non-entangling and biodegradable FADs

Operators should ensure that all FADs deployed are non-entangling in line with the guidelines under Annex V of RES 19-02, in accordance with previous IOTC Resolutions. Besides, they should endeavour that as of January 2021 all FADs deployed are non-entangling, and constructed from biodegradable materials, except for materials used in the construction of FAD tracking buoys.

13. Measures for the confidentiality of the data supplied by the operators

The information supplied by the operators will always be treated confidentially. Its use will be strictly limited to scientific ends, or those of control, if necessary. The ARAP assumes that this information will not be made public beyond the above-mentioned limits, at least without the express consent of the shipowners.