Observer data analysis for the Atlantic Ocean purse seine tuna (GSK Marine S.A.) FIP

Version 1.0

May 2024

Project ref: 0082d

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Contents

Glossary

Acronym	Explanation
ICCAT	International Comission for the Conservation of Atlantic Tuna
FIP	Fishery improvement project
EEZ	Exclusive economic zone
MSC	Marine Stewardship Council
ETP	Endangered threatened and protected
FAD	Fish aggregating device
CMS	Convention on Migratory Species
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
IUCN	International Union for Conservation of Nature and Natural Resources

Executive Summary

This document presents the analysed catch data, retrieved from the observer data obtained from the Atlantic Ocean purse seine tuna (GSK Marine) FIP. The fishery targets yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), and bigeye (*T. obesus*) tuna in the high seas of the Atlantic Ocean, and the exclusive economic zones (EEZs) of Senegal, Mauritania, Guinea, Guinea Bissau, Sierra Leone, Liberia, Cape Verde. The fleet consists of two purse seine vessels flagged to Senegal and Guinea, and the fishery is regionally managed by the International Commission for the Conservation of Atlantic Tunas (ICCAT). One of the vessels, SEA FRONTIER, has been part of the FIP since the establishment of the project but SEA BREEZE was added to the fleet in October 2023.

The fishery is aiming to enter the Marine Stewardship Council (MSC) assessment process in 2025, but it must be able to evidence long-term observer data that is sufficient to meet the requirements of the MSC Fisheries Standard (version 2.01 and any upcoming change to the Standard). The aim of this report is to analyse and describe the total observer data from all the purse seine vessels within the FIP to understand the impact the fishery is having on both target and non-target species, including ETP. Third-party catch data, typically provided by human and electronic observers is the best and most reliable way to understand the potential impact of the fishery on non-target species. Therefore, the FIP provided observer data for review and analysis. To note, the observer data from SEA BREEZE is only available from October 2023 as this was when the vessel was added to the FIP. Further, SEA FRONTIER is flagged to Guinea and subsequently used Guinean observers onboard that were not recording the observer data in the same format as the Senegalese observers. GSK Marine provided specific observer training for the Guinean observers in early 2024 to ensure that they are now also recording the same data that is required by the MSC.

The data was collected by observers from 2023-2024 and analysis was conducted by consultants at Key Traceability Ltd.

The main findings from this report show that:

- Target species, yellowfin, skipjack, and bigeye tuna were caught in the highest abundance (55%);
- A high portion of the total catch was derived from primary species, little tunny (*Euthynnus alletteratus*)
- ETP species incidents were minimal, equating to 0.4% of the total catch.

There were only a few weaknesses of the observer data reports that limited the extent of the analysis able to be conducted on this catch data:

- The observer data varied in the extent that it reported the species fates when discarded, and must be improved before the next fishing trips

Introduction

This report presents the results of an analysis conducted on the observer data from the Atlantic Ocean purse seine tuna FIP (GSK Marine S.A.) fishing vessels within the Atlantic Ocean. The aim of this analysis is to provide critical information about the impact of the purse seine fishery on target catch rates of tuna, as well as bycatch rates of endangered, threatened, and protected (ETP) species, which is required to progress with Principle 2 actions of the workplan.

The fishery targets yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), and bigeye (*T. obesus*) tuna in the high seas of the Atlantic Ocean, and the exclusive economic zones (EEZs) of Senegal, Mauritania, Guinea, Guinea Bissau, Siera Leone, Liberia, and Cape Verde. The fleet consists of two purse seine vessels flagged to Senegal and Guinea, and the fishery is regionally managed by the ICCAT. The entire FIP scope can be found in Table 1 of this report.

Table 1: FIP Scope

Species	Yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), and bigeye (*T. obesus*) tuna
Stocks	Eastern Atlantic Ocean yellowfin, skipjack, and bigeye tuna stocks.
Fishing gear	Purse seine
Geographical area	Eastern Atlantic Ocean (FAO 34), and the following EEZs: Senegal, Mauritania, Guinea, Guinea Bissau, Sierra Leone, Liberia, Cape Verde
Management	International Commission for the Conservation of Atlantic Tunas (ICCAT)
Number of vessels	2

1.1 Data collection

Observer data from 2023-2024 was obtained from the FIP participants and the Direction de la Protection et de la Surveillance des Pêches (DPSP) in Dakar, Senegal. As mentioned, the Senegalese-flagged vessel, SEA BREEZE was added to the FIP in October 2023, therefore observer data for this vessel was only available from this date. The second vessel in the FIP, SEA FRONTIER, is flagged to Guinea and has been part of the FIP since the establishment in November 2021. However, prior to January 2024, the observers on board SEA FRONTIER were Guinean and were not using the same template for recording observer data as the Senegalese-flagged vessel. In March 2024, observer training was provided and involved the Guinean observers to ensure that the templates used are now aligned with the Senegalese observer records and with the MSC requirements. Therefore, observer data from March 2024 has been used to begin this assessment of non-target catch associated with the Atlantic Ocean purse seine tuna FIP (GSK Marine).

Data Analysis

2.1 MSC Principle 2 definition summary

This section provides a short summary of how the MSC Fisheries Standard designates components for Principle 2 to provide context of the following species' category allocations and analysis.

Fisheries assessed against the MSC Fisheries Standard are evaluated against 28 Performance Indicators (PIs) within the three principles. Principle 2 has 15 performance indicators split into three components (outcome, management strategy, information) for primary species, secondary species, endangered threatened and protected species, habitats and ecosystem.

The fishery under assessment is within the scope of the MSC Fisheries Standard (7.4 of the MSC Certification Process v2.1):

- The target species is not an amphibian, reptile, bird or mammal.
- The fishery does not use poisons or explosives.
- The fishery is not conducted under a controversial unilateral exemption to an international agreement.
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last two years.
- The fishery has in place a mechanism for resolving disputes, and disputes do not overwhelm the fishery.
- The fishery is not an introduced species-based fishery (ISBF) as per the MSC FCP 7.4.7.
- The free-school UoAs in this fishery are not classified as enhanced, but the FAD UoAs are, as per the MSC FCP 7.4.6. See paragraph directly below.

The FAD component UoAs for this fishery are classified as enhanced fisheries, as FADs are classified by MSC scope criteria as habitat modified (see FCP v2.1 G7.4): "Habitat modifications in enhanced fisheries can include both physical changes to the sea bed or river course and the use of a range of man-made structures associated with the rearing or capture of fish that are not strictly 'fishing gear'. In the first case, modifications can range from the construction of simple ponds in intertidal areas or river floodplains through to watercourse management measures aimed at improving spawning habitats. Examples of the second case are fish attracting and/or aggregating devices (e.g. FADs), lobster casitas and mussel culture ropes (in CAG systems). Such artificial habitat modifications either enhance the productivity of the fishery or facilitate the capture or production of commercial marine species".

Under the MSC Fisheries Standard (version 2.01), Primary species are defined as:

1. Species in the catch that are not covered under P1 because they are not included in the UoA;
2. SA3.1.3.2 Species that are within scope of the MSC program as defined in FCP Section 7.4; and
3. SA3.1.3.3 Species where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points.
    a. In cases where a species would be classified as primary due to the management measures of one jurisdiction but not another that overlaps with the UoA, that species shall still be considered as primary.

Secondary species are defined as:

1. Not considered 'primary' as defined in SA 3.1.3; or
2. SA3.1.4.2 Species that are out of scope of the program, but where the definition of ETP species is not applicable. SA3.1.5

The team shall assign ETP (endangered, threatened or protected) species as follows:

1. SA3.1.5.1 Species that are recognised by national ETP legislation;
2. SA3.1.5.2 Species listed in the binding international agreements given below:
    a. Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.
    b. Binding agreements concluded under the Convention on Migratory Species (CMS), including:
        i. Annex 1 of the Agreement on Conservation of Albatross and Petrels (ACAP);
        ii. Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
        iii. Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS);
        iv. Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
        v. Wadden Sea Seals Agreement;
        vi. Any other binding agreements that list relevant ETP species concluded under this Convention.
3. SA3.1.5.3 Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

2.2 Data Review

Analysis of the observer data demonstrated that the vast majority of the catch derives from target species (57%). This is a combination of the yellowfin, skipjack, and bigeye tuna total catch weight (MT). Of the 680 MT of non-target species, primary species contributed the highest percentage (39%), comprised of only little tunny (*Euthynnus alletteratus*). Secondary species contributed to 4% of the catch, and ETP species contributed only 0.4% of the total catch (Table 2).

Table 2: Total mass of species recorded in observer data (Mt) and designated by MSC Fisheries Standard (v2.01) group

MSC Designation	Sum of Total Captured (metric tonnes)
Target	55%
Primary	32%
Secondary	12%
ETP	0%

Table 3: Total number of individuals from each species caught from observer data.

Species	Common name	Designation	Category	Justification	Total catch (MT)	% composition of total catch
Katsuwonus pelamis	Skipjack tuna	Target	Main	>5% total catch	1314	42%
Thunnus albacares	Yellowfin tuna	Target	Main	>5% total catch	350	11%
Thunnus obesus	Bigeye tuna	Target	Main	>5% total catch	76	2%
Euthynnus alletteratus	Little tunny	Primary	Main	>5% total catch	1023	32%
Sarda sarda	Atlantic Bonito	Secondary	Minor	<5% total catch	3.28	6%
Caranx crysos	Blue runner	Secondary	Minor	<5% total catch	85	3%
N/a	Other	Secondary	Minor	<5% total catch	87	3%
Makaira nigricans	Blue marlin	Secondary	Minor	<5% total catch	16	<1%
Carcharhinus falciformis	Silky shark	ETP	N/a	CITES Appendix II, CMS Appendix II, IUCN Redlist VU.	12	<1%
Elegatis bipinnulata	Rainbow runner	Secondary	Minor	<5% total catch	3	<1%
Caretta caretta	Loggerhead turtle	ETP	N/a	CMS Appendix I, IUCN Redlist VU	2	<1%
Xiphias gladius	Swordfish	Secondary	Minor	<5% total catch	2	<1%

Sphyrna mokkaran	Great hammerhead	ETP	N/a	CITES Appendix II, CMS Appendix II, IUCN Redlist CR	0.4	<1%
Mobula hypostoma	Lesser devil ray	ETP	N/a	CITES Appendix II, CMS Appendix II, IUCN Redlist EN	0.4	<0.01%
Chelonia mydas	Green Turtle	ETP	N/a	CITES Appendix I, CMS Appendix I, IUCN Redlist EN	0.2	<0.01%
Istiophorus albicans	Atlantic sailfish	Secondary	Minor	<5% total catch	0.1	<0.01%
Carcharhinus longimanus	Oceanic white tip shark	ETP	N/a	CITES Appendix II, CMS Appendix I, IUCN Redlist CR	0.095	<0.01%
Sphyrna zygaena	Smooth hammerhead	ETP	N/a	CITES Appendix II, CMS Appendix II, IUCN Redlist CR	0.1	<0.01%

1. Catch data

The fishery uses a variety of drifting fish aggregating devices (FADs) and free-school sets in their operations. The use of these FADs is to attract tunas so the device ahead of operations as this can ensure a bountiful catch. FADs are also known to attract non-target species due to the vast quantity of tunas aggregating around them, therefore, incidents of ETP species bycatch can be prevalent. Therefore, the FIP has implemented a FAD management plan and policy within it's operations and is dedicated to reducing the number of entangling FADs and those using plastic materials in their construction. The FIP is currently undergoing a change in the number of non-entangling materials used in their construction with the intention of using 100% fully non-entangling FADs (without mesh or netting) by January 1, 2025. This is also aligned with the requirements of the International Seafood Sustainability Foundation (ISSF) conservation measure (CM) 3.7.

The main reason for the review of this observer data was to ensure that the observers are accurately and adequately reporting all data, including ETP species bycatch. The observers employed onboard these two vessels in the FIP have been recently trained to ensure that all the relevant and necessary data is being recorded in their reports. Therefore, this is a verification exercise as well as providing an opportunity to assess the FIP's impact on ETP species.

There are areas for improvement for the observer data, which must be communicated to the observers ahead of the next fishing trips to ensure that they continue to record bycatch incidents appropriately.

3.1 Catch composition

The majority of the catch was derived from the target tuna species (55%), comprising skipjack (42%) yellowfin (11%), and bigeye tuna (2%). There was only one primary species in this observer data but that contributed a large proportion of the total catch (32%), and this was little tunny (*Euthynnus alletteratus*). The remaining 12% of species that contributed to total catch composition were designated as secondary (11.6%), and ETP (0.4%) (Figure 1) as required under the MSC Fisheries Standard version 2.01.

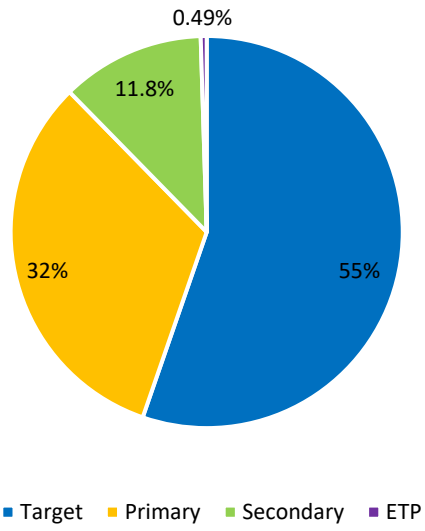

Figure 1: Total catch composition for the Atlantic Ocean purse seine tuna FIP (GSK Marine S.A.) demonstrating the percentage composition of target species (Target, Primary, Secondary, and ETP)

3.2 Principle 2 species

Non-target species comprised 45% of the total catch composition for this fishery as demonstrated through the observer data. The majority of the P2 species were designated as primary under the MSC Fisheries Standard version 2.01 requirements (42%). Secondary species contributed to 12% of the total catch of bycatch, and 0.4% were designated as ETP (**Error! Reference source not found.**). Further explanation of each designation can be found in the following part of the report.

3.2.1 Primary species

Under the MSC Fisheries Standard version 2.01, any non-target species that are caught as bycatch are considered to be primary species if there is some regional management in place to protect the species. These species are also able to be sold by the fishery but are not the target species. The majority of primary species were derived from little tunny (*Euthynnus alletteratus*) which is another tuna species that is often found in the same habitat and fishery as the target species of this fishery. Likewise, these species are also commonly found around FADs. Of the total primary species caught, 100% were retained onboard.

3.2.2 Secondary species

Secondary species contributed to 12% of the total catch from the Atlantic Ocean purse seine tuna FIP and was mainly comprised of Atlantic bonito (*Sarda sarda*) (48%), blue runner (*Caranx crysos*) (22%), and blue marlin (*Makaira nigricans*) (4%) .

3.2.3 ETP species

ETP species comprised the smallest contribution to total catch for this fishery (0.4%). There were no incidents of marine mammal or seabird interactions with this observer data, and the largest contributor to the ETP species category was from silky shark (*Carcharhinus falciformis*) (80%), followed by loggerhead turtle (*Caretta caretta*) (11%), and great hammerhead (*Sphyrna mokkaran*) (2%) (Figure 2).

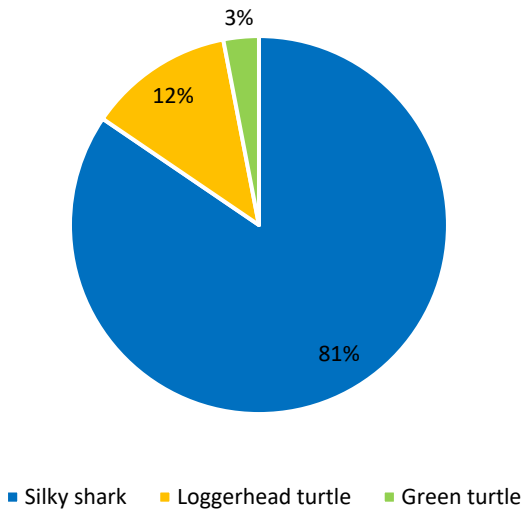

Figure 2: Percentage composition of all ETP species with reference to the three species that contribute to the highest proportion of catch, silky shark, loggerhead turtle, and green turtle

None of the ETP species were retained onboard the vessel, meaning that all were discarded into the sea when discovered. This aligns with the FIP's own management policies as well as the requirements made under the ICCAT recommendations 18-06, 2011-08, and 2010-08. The fate information varied across the different reports, but the majority of the records included a reference to the species' fate when discarded. The FIP has an anti-shark finning policy established within the management measures and policies for the fishery. The observer data obtained for this report can verify that the vessels have not been involved in shark finning incidents as there are zero incidents of shark retention.

2.3 FAD usage

The fishery uses a combination of FAD fishing, and free-school fishing. The majority of the sets made by the vessels in the fishery from 2023-2024 were on FADs. However, under ICCAT Recommendation 22-01, all purse seine fisheries that use FADs in the Atlantic Ocean must not set upon, nor deploy new FADs in the Convention area for 72 days starting from January and ending in early April every year. The observer data reports verified that the vessels were fully complying with this regulation.

There was no information available in the current observer data that indicated towards the type of FADs being used by the fishing vessels (entangling, low-entangling, or fully non-entangling). However, GSK Marine has a strict FAD management policy that describes the use of non-entangling materials in their FAD construction (Appendix), which has been in place since 2022, and updated in 2024 to comply with ISSF CM 3.7. Further information from the observers will be required to verify that the materials used are non-entangling and comply with the requirements of the FAD management policy.

2. Conclusion

The information presented in this report outlines the observer data from the Atlantic Ocean purse seine tuna FIP (GSK Marine) from late 2023 – early 2024. As anticipated, the greatest proportion of the total catch was derived from target (principle 1) species, skipjack, yellowfin, and bigeye tuna. The subsequent catch was a combination of largely primary and secondary species, including little tunny and other finfish, and a small proportion were ETP species, which consisted of mostly true sharks and turtles. The fishery operates using FAD and free school sets.

Overall, the data was consistent across the year that was obtained and was useful in understanding more about the fishery's specific interaction rate with non-target, and in particular ETP species, which will be critical when considering applying for MSC assessment. The information obtained from this report will be used in ensuring that fishery-specific management practices are developed and relevant to the fishery itself. The very small numbers of ETP species interactions is positive for the fishery because it means that the potential interaction with these animals is minimal.

Regarding the fishery's aim of obtaining MSC certification within the next few years, the observer data was also assessed against the new MSC Fisheries Standard (version 2.01) to understand more about how it would be scored. The main issue found during the assessment of this data and the fishery is the lacking information about the fate and condition of a species once discarded, especially those that are ETP. It is recommended that the fishery contact the observer authority in Dakar to request that this information is consistently recorded during each fishing trip to ensure that fate and condition data is available.

The fishery has specific shark finning policies in place that prohibit the finning of sharks onboard the vessel. There have been no reports of shark retention nor explicit mention of shark finning onboard the vessels. This will need to continue in order to demonstrate compliance with this policy.

Finally, in order to verify the use of non-entangling FADs by the fishery, observer data will need to be improved to include reference to the types of materials that have been used in the FAD construction. These details will then be able to clearly demonstrate the application and compliance with the updated FAD management policy of 2024.

3. Appendix

GSK MARINE S.A

Fish Aggregating Devices "FAD" Management Public Policy

Atlantic Ocean tuna - purse seine (GSK Marine S.A.) - March 2024

https://fisheryprogress.org/fip-profile/atlantic-ocean-tuna-purse-seine-gsk-marine-sa

GSK Marine S.A. is a fishing company operating out of Dakar, Senegal and targets primarily tuna species in the Atlantic Ocean. The fishery is part of a Fishery Improvement Project (FIP) to improve the sustainability of its fishing operations and eventually become certified by the MSC. The fishery targets Atlantic bigeye (Thunnus obesus), eastern Atlantic skipjack (Katsuwonus pelamis) and Atlantic yellowfin (Thunnus albacares) tunas through free-school and FAD associated purse seine sets. The fishery has two purse seine fishing vessels, which are flagged to Senegal and Guinea Conakry, and operate on the high seas of the eastern Atlantic Ocean and the Exclusive Economic Zones (EEZs) of the following coastal states: Senegal, Mauritania, Cape Verde, Guinea Bissau, Guinea, Sierra Leone and Liberia. The fishery is managed regionally by the International Commission for the Conservation of Atlantic Tunas (ICCAT).

The fishery aims to improve its sustainability and reduce its impact by working towards the objectives below.

- Sustainable fish stocks - Formal commitment to working towards the sustainable exploitation of target and bycatch species in the Atlantic Ocean, to as far as is practicable for this FIP.
- Minimising environmental impacts - To promote the ecosystem-based approach to fisheries management and promote best practices with FAD fishing.
- Effective management - To strengthen governance systems in flag and coastal states, RFMO and the fishery itself.
- Overall, we aim to meet an unconditional pass of the MSC Fisheries Standard by April 2026.

To ensure the participating vessels meet the above objectives the fishery has made this commitment to achieve using only non-entangling Fish Aggregating Devices (NEFADs) by January 2025 and for that purpose is currently using **a mixture** of Low Entangling Risk FADs (LEFAD) and of NEFADs. The fishery aim to achieve 100% NEFADs by the end of December 2024 with the following timetable in place :

Up To August 2024 - 50% LEFAD / 50% NEFAD

September - 40% LEFAD / 60% NEFAD

October - 30% LEFAD / 70% NEFAD

November - 20% LEFAD / 80% NEFAD

December - 10% LEFAD / 90% NEFAD

LERFADs, as defined by the International Seafood Sustainability Foundation (ISSF) permits the use of net with a small mesh size < 2.5 inch / 7cm. The fishery deploys LEFADs which is compose of net only in the submerge part of it structure following ISSF Guide on Non Entangling and Biodegradable FADs.

NEFADs, as defined by the International Seafood Sustainability Foundation (ISSF) are constructed with no netting material to minimise ghost fishing (entanglement of fauna, primarily sharks and turtles). For a FAD to be completely non-entangling, it must not use netting materials either in the surface structure (raft) or the submerged structure (tail).

By using a composition of NEFADs and of small mesh size netting in FADs, tuna-vessel owners and fishers can minimize the entanglement and "bycatch" of sharks, sea turtles, and other non-target marine species.

The fishery is dedicated to make trials with various biodegradable materials and aims to implement fully biodegradable FADs in the near future. By choosing vegetal-based instead of plastic-derived materials for FADs, fishers can avoid contributing to the ocean pollution caused by abandoned, lost and discarded fishing gear.

The fishery intends to engage on minimising habitat and ecosystem impacts by engaging on a number of related actions for biodegradable FADs and recovery programmes.

The fishery recognises this and adopts the following practices and commitments:

- To transition to only deploying fully NEFADs without any netting in any components, including both the raft and the tail, with 100% NEFADs deployment achieved by January 1st, 2025, in accordance with ISSF conservation measures 3.7.
- To implement ISSF best practices and participate in trials of Biodegradable FADs and FADs recovery programs.
- For all skippers to attend training to understand the reason for these changes and agree best practices.
- All vessels will comply with ISSF recommended best practices mitigating bycatch of sharks and sea turtles.

- If encircled by a purse seine net, actively releasing sharks (via other fishing gear) and turtles (via manual capture).
- If brought on deck, practicing safe-handling techniques for sharks and resuscitation/revival techniques for sea turtles, to reduce mortality after release and record Interactions.
- Develop a FIP strategy for FAD recovery to retrieve (where practicable) or replace any encountered pre-existing FADs (whether a set is done or not) which is not in compliance with ISSF conservation measures. The strategy will include provisions to minimise loss, abandonment, or interaction with sensitive habitats.
- Monitoring of FAD deployments and locations of drifting FADs with the goal of understanding FAD density impacts on the pelagic ecosystem and to avoid high-risk deployment areas.
- Provide FAD track data on the position of FADs in confidentiality to scientists or ICCAT upon their request, in order to quantify their impacts on coastal environments, and to measure the efficiency of the initiatives taken to mitigate the loss and abandonment of FADs. If FADs are deactivated when they drift out of the fishing zone, these buoys can still communicate position to buoy providers.
- To report FAD position data and FAD echosounder biomass data to ICCAT science bodies and CRODT the national scientific institutions and to the Fishery Directorate, with a maximum time lag of 90 days.
- Frequently review and Improve procedures in line with best practices.
- Promote FAD marking schemes and FAD ownership rules. This may Include collaborations with other FIPs in the eastern Atlantic to develop a collaborative marking ownership scheme that will rely less on activities on opportunistically encountered FADs.
- Continue to mark FADs deployed to indicate its ownership.
- All vessels will comply with ISSF Best Practices for FAD management Plans, including the ISSF Guide for Non-Entangling FADs and be listed on the ISSF Proactive Vessel Register (PVR).

Recommendation for fully non-entangling FAD designs are as follows:

- **Raft:** The surface structure shall not be covered with netting or meshed materials. If covered, cover with canvas, tarpaulin, shade cloth, or non-entangling materials.
- **Tail:** Subsurface structure is made with ropes, canvas sheets, or other non-entangling materials.
- No netting should be used anywhere on the FAD (raft or tail) to prevent any entanglement.

Recommendations for biodegradable FAD configurations are as follows:

- **Raft**: Rafts should be constructed using bamboo, balsa wood or other natural materials that degrade without producing pollution on the marine environment. For FAD flotation, the use of plastic buoys and containers should be reduced as much as possible (e.g., reducing the weight and volume of the FAD structure would require less flotation).
- **Tail:** Only natural and/or biodegradable materials (cotton ropes and canvas, manila hemp, sisal, coconut fibre, etc.) should be used, so that they degrade without causing impact on the ecosystem.

In accordance with the above Non-Entangling and Biodegradable Fish Aggregating Devices - Public Policy, the policy is effective from the date signed below.