

Figure 1. Underwater view of a conventional dFAD

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FAD Standard Operating Procedure FIA members

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Papua New Guinea Fishing Industry
Association Inc.



Procedure Information:

This FAD Standard Operating Procedure for FIA PNG members 2021;

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Acronym

aFADs	Anchored Fish Aggregating Devices
CMM	Conservation Management Measure
ETP	Endangered, Threatened and Protected
FAD	Fish Aggregating Device
ISSF	International Seafood Sustainability Foundation
NFA	National Fisheries Authority
PNGDFZ	Papua New Guinea Declared Fishing Zone
PNGFIA	Papua New Guinea Fishing Industry Association
RFMO	Regional Fisheries Management Organization
RSP	Responsible Sourcing Policy
UoC	Unit of Certification
VDS	Vessel Day Scheme
WCPFC	The Western and Central Pacific Commission



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Background

As we all know Fish Aggregating Devices (FADs) are an essential part of the purse seine fishing industry. Any floating materials attract schools of migrating fish species and especially tuna to aggregate and this behavior being observed over the years led to the use of FADs to imitate this on fishing grounds by the fishing fleet. Whether it be free floating or anchored, without a proper management plan, these structures may contribute to the depletion of the tuna stock in our oceans.

However, these man-made structures that imitate the aggregating device have some major impacts on the issues of resource sustainability, gear interaction, and excess resources. In this instance, studies have shown that FADs contribute to the depletion of fish populations. Therefore, scientific research is being made and management policies are being developed to promote the sustainability of resources with best management practices taken into consideration in a holistic approach to the tuna fishery business.

The National Fisheries Authority (NFA) is the mandated authority that promotes the management and sustainable development of fisheries, and for other related purposes to provide for and give effect to the Fisheries Strategic Plan, PNG Standard for fish and fishery product 2019 which provides systematic strategic planning tiered to achieve the National Goals and Directive Principles.

The Fishing Industry Association (PNG) Inc. (FIA PNG) is guided by the Fisheries Management Act 1998, the Regulation 2016 and the National FAD Management Policy 2002. FIA PNG works in close collaboration with NFA to promote and supports initiatives that will adopt best fishing practices and activities associated with its members' fishing operations. This led to the implementation of the Responsible Sourcing Policy (RSP) which was developed with the aim of becoming the world's best industry advocate for fisheries management and reputable business, social welfare, and sustainable resources also having strong governance and fisheries traceability management in place to implement the policy.

The FIA PNG's (RSP) incorporates best handling practices and the management of FADs as part of its pillars to the sustainable fishery and provides the way forward in terms of our tuna industry to the outside world.

This document is intended for our members due to a serious concern about the sustainability and management of tuna fisheries on the management and best practices on the use of FADs and taking into consideration the National Fishery Authority FAD's management plan from 2014, and the new measures of FAD management strategy as outlined in the ISSF Technical Reports 2019-11 and 2020-11 and the recommendations suggested.



1. Introduction

Following the FAO Code of Conduct for Responsible Fishing and the management objectives of the Fisheries Management Act 1998; and in line with the objectives of the National Tuna Fishery Management Plan Management Framework, the following policies set out the management arrangement by which the National Fisheries Authority (NFA) will monitor and control the use of anchored drifting Fish Aggregating devices (FADs) or in the purse-seine fishery for tunas in Papua New Guinea Declared Fishing Zone (PNGDFZ). These policies have been drawn up following a series of consultative meetings with the locally based purse-seine operators, longline operators, and NFA since 1998. [Fish Aggregating Device \(FAD\) Policy PNG.pdf](#)

This document will generally discuss the basic procedures of the FAD Management Policy (FAD MP) and how it is being implemented in the tuna purse seine fishery and also incorporate the new measures outlined in the ISSF Technical reports 2019-11 and 2020-11.

2. Scope

Applicable: FIA PNG fishing company members

Geographical area: PNG EEZ, PNG Territorial waters, PNG Archipelagic waters (AW), and WCPFC

Fishing gear: Purse seine, anchored, and drifting FADs

3. Purpose

This document is written for the purpose of our members and is solely intended on some of the major concerns that have been identified by the use of FADs in the fishing industry.

Key principles of FIA PNG FAD management include FAD data collection and reporting including buoy data, the use of non-entangling FAD designs, promoting the development of FAD recovery policies, use of biodegradable FADs, and strategies to mitigate shark bycatch in purse seine fisheries

4. Management area

The National Fisheries Authority has developed a FAD Management Policy under the Fisheries Management and Development Plan on Tuna fishery which is implemented by all fishing fleets in PNG EEZ and AW. The management practices that are in place include the limit on the number of FADs; its design, operation, and maintenance; its deployment and location with markings and reporting, closed areas, and the monitoring and reporting of the FAD fishery. (Source: NFA FAD Management Policy).

4.1 Reducing the number of FADs being deployed by each fishing vessel

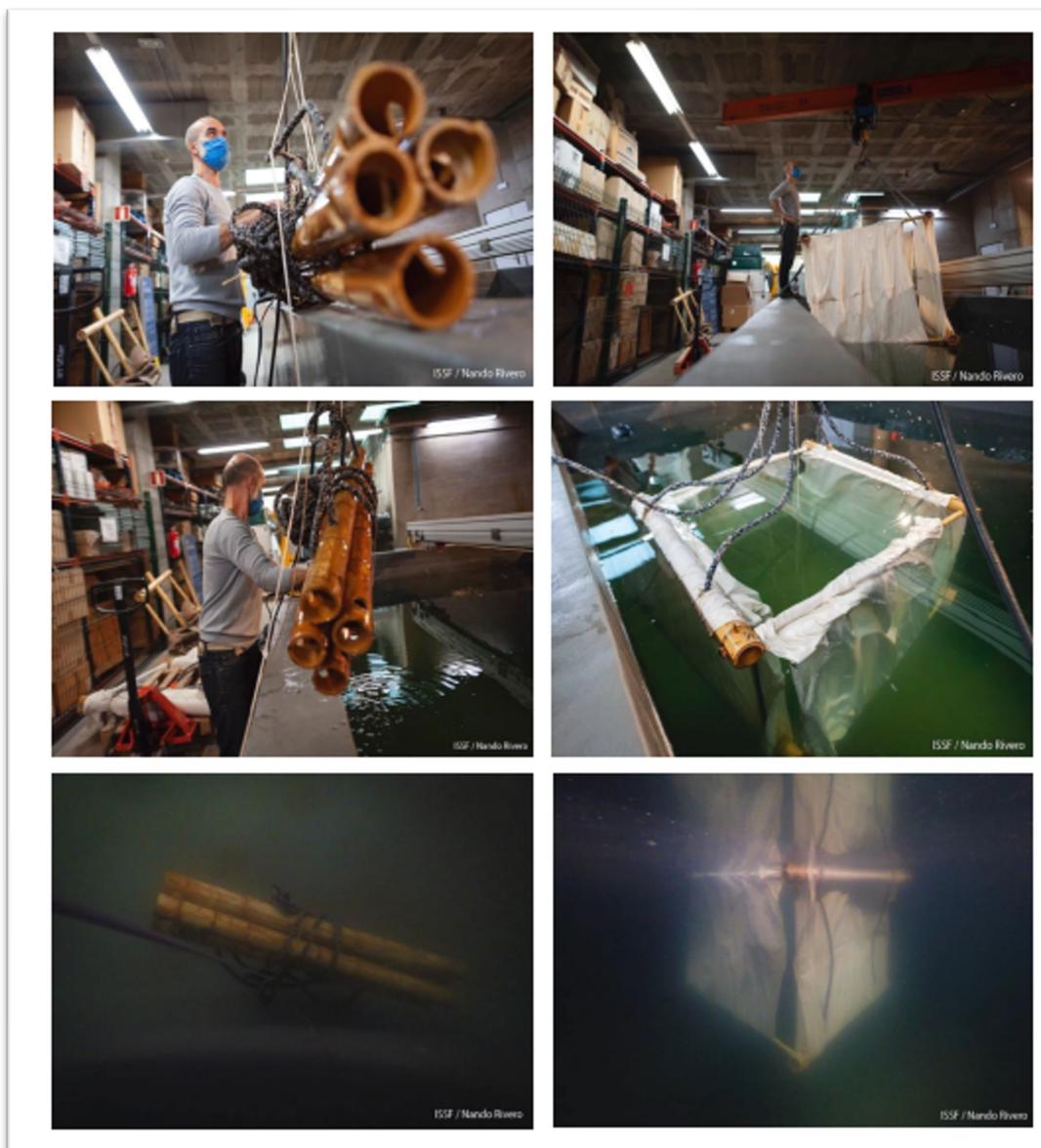
Under the Fisheries Management Act, 1998 states that only PNG licensed vessels may deploy FADs and the total number shall not exceed 1,500 and only NFA may allow 40 FADs per vessel to be deployed. This permission given by NFA can be reviewed in junction with the relevant provisions of the National Tuna Fishery Management Plan Framework.

4.2 Design and operation

As much as possible to eliminate the use of netting in the construction (already a requirement by the IOTC CMM 19-02 and WCPFC CMM-2021-01).

The use of organic materials instead of plastics and in some cases measures also encourage the use of bio-degradable and non-entangling in the construction of FADs. ([Non-Entangling-and-Biodegradable-FADs-Guide-2019-English.pdf](#)).

Figure 1. Assessment of the evolution of the density of the organic materials (bamboo canes, rope, and cotton fabric) during two months in a seawater tank.



Source: [FAD-06-INF-B Jelly-FAD-A-paradigm-shift-in-bio-FAD-design.pdf](#)

4.3 Closed areas

FAD closure is designed to mitigate the purse seine catch of juvenile tuna species which are captured mainly in sets on floating objects. Another measure is to restrict gears in these areas at a point in time.



For example, sessional bans on FADs and vessel restriction in archipelagic waters which is operated concurrently with the Vessel Day Scheme (VDS).

5. Deployment

According to the NFA FAD Management Policy fishing companies must give prior information of where they intend to deploy with clear markings, these include the location; the date of deployment, whether it be new or replaced, and the number assigned. All these must be witnessed by a Fisheries Officer or an Observer present on board.

Areas of FAD Location, Figure 2 shows in general where the FADs have been deployed. The FAD MP does not allow FADs to be deployed in Morgador square, the whole of the Solomon and Coral Seas. It further mentions that FADs can only be deployed in the areas currently used and not in other new areas. The FAD MP is however pending the National Fisheries Authority Board decision and can only be implemented after approval by the Board and subsequent gazettal in the National Gazette (Ludwig K,2007)

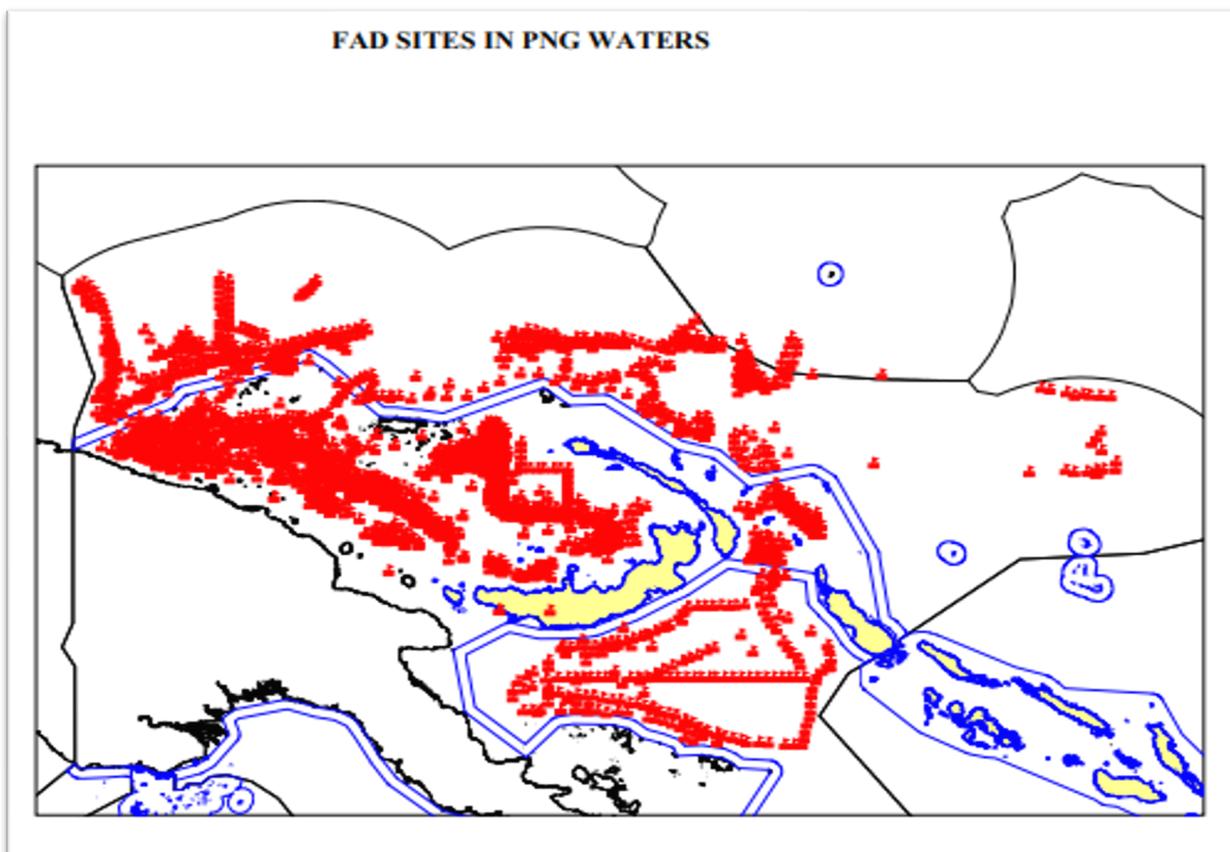


Figure 2. Map showing the location of where FADs are being deployed here in PNG.

Source: [*FTWG-12 Status of FAD in PNG Ludwig K 2007.pdf](#)



6. Challenges/issues

Increasing awareness of the impacts of FADs must be made to reduce catch mortality and also mitigate marine pollution created by lost, discarded or otherwise abandoned FADs. The FIA PNG members will comply by adopting the new measures of this FIA PNG FAD Implementation Plan (FAD IP). According to ISSF Technical reports 2019-11 and 2020-11, we will;

(1) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type

Provision to WCPFC of routine FAD fishery statistics (e.g. activity on FADs, number of active FADs, etc.) as per WCPFC CMMs (e.g. 2018-01, 2013-05) requirements is essential to assess and manage the impacts of FAD fisheries. ISSF suggests that information on FAD fishery statistics as well as information on observer data (100 % coverage) as per WCPFC requirements are provided to flag States, WCPFC, and the Science Provider.

(2) Voluntarily report additional FAD buoy data for use by RFMO science bodies

To meet ISSF's best practices on this aspect, ISSF recommends the client fishery provides information on the position and acoustic record for the whole track or at least one position and echosounder record per day to scientific research institutes or WCPFC and the WCPFC Science Provider.

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

To meet WCPFC's Recommendations and ISSF's best practices for limiting the number of FADs and to strengthen the effectiveness of these FAD measures, ISSF recommends committing to actions such as (i) deploying only FADs with satellite tracking buoys, (ii) not activating remotely the buoys of inactive FADs in the water (i.e. dormant FADs), (iii) allowing buoys to report at least once per day while they are in the water, and (iv) adopting alternative possible measures such as FAD closures to reduce their impact.

Regarding anchored FADs (aFADs), the report does not clarify if the fishery is deploying these types of FADs but it does indicate that sets are made. In case the fishery is actively deploying aFADs, ISSF recommends that the client fishery provides support science-based limits on the overall number of FADs in an area and set maximum aFADs limits per area.

(4) Use only non-entangling and biodegradable FADs to reduce ghost fishing

o A new ISSF non-entangling and biodegradable FADs guide was published in August 2019 and, thus, ISSF encourages fisheries to commit to the new definition of fully non-entangling FAD (without any netting). This will allow following the best practice of Technical Paper 2019-11 to commit to using only non-entangling FADs.

o ISSF encourages incorporating in the FAD IP actions to reduce and remove entangling FADs from the water, including encountered FADs not owned by the fishery client.

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

ISSF recommends the FAD management plan incorporate specific actions to address the impact of FAD losses. For example, ISSF suggests the fishery under assessment works towards early adoption of



biodegradable FADs in the Pacific Ocean and the construction and deployment of simpler, smaller biodegradable FADs.

(6) For silky sharks and elasmobranchs in general (the main bycatch issue in FAD sets) implement further mitigation efforts

ISSF supports the adoption by the fishery under assessment of measures to reduce shark bycatch (e.g. developing and implementing a Code of Good Practices for bycatch) and suggests the fishery further develops measures to ensure that silky shark mortality is reduced (e.g. directing more effort to school sets and decrease FAD sets, avoiding small sets or with high bycatch/tuna ratio, releasing sharks from the net when safe and practical, implementing live and safe release of sharks (and rays) from the deck).

ISSF encourages FAD fisheries to further test and develop shark and rays release techniques from the deck (with a special focus on big individuals) and to identify the tools/tactics used to safely release sharks (hoppers, stretchers, release ramps, etc.).

We urge the fishery to place extra effort in reducing post-release mortality rates for all non-retained species, which are ultimately the key elements to determining that the strategy is working and that the fishery does not hinder their rebuilding or recovery of these species. The success of the partial strategy in improving survival rates of accidentally caught nontarget and ETP species is dependent on well-designed and implemented handling and release techniques.

Recent research on silky shark handling and release techniques and post-release mortality has been carried out by an MSC-certified tuna fishery in the Indian Ocean and similar work could be undertaken by the UoC.

7. Monitoring and reporting

The NFA is the regulatory agency that assigns and allows the deployment of FADs per fleet, based on a fishery assessment done by the NFA fisheries management division.

For this to be effectively monitored and reported on, it is a requirement that there is 100% observer coverage and that a qualified fisheries observer is placed onboard our vessels to collect and collate data and information on the species catch composition and other requirements outlined in the NFA FAD management policy.

An observer is also required to report in near real-time data and information of the operations for FAD deployment setting, including endangered, threaten, and protected species (ETP).

In addition, the NFA tracks, monitors and records any FAD activities using the integrated Fisheries Information Management System (iFIMS) almost in real-time. This information is then exported to our FIA PNG office iFIMS platform where we can control and monitor the deployment and use of FADs.

Our tuna fishing fleet members report the number of FADs deployed per year and by the fishing company to our office, FIA PNG reports and shares this data on our website in the “FADs tracking”. These numbers can be easily crossed check with the NFA iFIMS tracking system.

The data and information received through our iFIMS platform will enable the FIA PNG office to proactively recommend to NFA new measures to be put in place through the review of the NFA FAD



Management Policy that would help improve the accuracy of FAD activities, data, and information on bycatch ETP and overall best handling practices.

8. Conclusion

To conclude this FAD implementation plan will become the new guide or implementing tool used by our members for our tuna fisheries so that our tuna stock is managed in the most sustainable manner.

9. History of Revision

Revision No	Date	Reasons/Details
1.0	2021	Creation of the FIA PNG FAD management plan for MSC CAP
2.0	July 2022	Full document review and revision by Sustainability Coordinator Nialangis Posanau



10. Reference

1. [Fish Aggregating Device \(FAD\) Policy PNG.pdf](#)
2. [Non-Entangling-and-Biodegradable-FADs-Guide-2019-English.pdf](#)
3. [FAD-06-INF-B Jelly-FAD-A-paradigm-shift-in-bio-FAD-design.pdf](#)
4. [*FTWG-12 Status of FAD in PNG Ludwig K 2007.pdf](#)
5. https://www.google.com/search?q=ISSF+Technical+reports+2019-11+and+2020-11&rlz=1C1GCEB_enPG822PG824&oq=ISSF+Technical+reports+2019-11+and+2020-11&aqs=chrome..69i57.27494j0j7&sourceid=chrome&ie=UTF-8
6. [Fisheries in the Pacific-The Challenges of Governance and Sustainability.pdf](#)
7. [fisheries-pacific-2018.pdf](#)
8. [ISSF-CM-3.7-FAD-Mgmt-Policy_V2-1.pdf](#)
9. [background paper status and management of tuna in the wcpfc.pdf](#)