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DRIFTING FISH AGGREGATING DEVICES (FADs): DEFINITIONS, OBLIGATIONS AND RESPONSES

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Drifting Fish Aggregating Devices (FADs): definitions, obligations and responses

Preliminary Paper

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Abstract

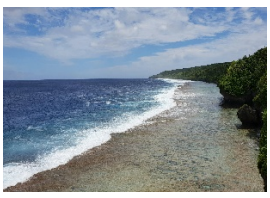
This paper provides a preliminary discussion of the legal status of drifting FADs. It is submitted in order to seek feedback for a subsequent study of the WCPFC obligations to monitor and manage vessels that deploy and set on drifting FADs.

Deploying or setting upon a FAD are clearly defined as 'fishing' and generate legal obligations for WCPFC members to monitor and control vessels that engage in these activities. But recent concerns about FADs drifting through closed areas raise questions about the legal status of a drifting FAD during the period when it is aggregating fish.

Preliminary analysis concludes that a drifting FAD is 'fishing' from deployment to recovery, thereby creating legal obligations for all WCPFC members to monitor, control and report drifting FADs, consistent with broader obligations for coastal and flag States.

This paper seeks feedback on three recommendations for the WCPFC to consider in response: a centralised FAD monitoring system; controls on the deployment of FADs so as to promote recovery and minimize lost or abandoned gear; defined appropriate responses for FADs that drift into an EEZ without a license, into a closed area, or into a closed season.



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Executive Summary

This paper analyses the definition of 'fishing' as it applies to drifting FADs and determines that the use of drifting Fish Aggregating Devices (FADs), from deployment to recovery, is within the definition of 'fishing' under the Western and Central Pacific Fisheries Convention (WCPF Convention). This includes the drifting stage when the FAD is remotely aggregating fish.

A recent study of FAD tracking data identified high densities of FADs drifting through Kiribati's Phoenix Islands Protected Area (PIPA). PIPA is closed to fishing and the FAD activity breaches PIPA's conservation goals. These drifting FADs have aggregated fish and potentially removed them from Kiribati's EEZ without a license and in contravention of Kiribati's closure of PIPA to fishing.

The WCPF Convention requires flag States to ensure their vessels do not conduct unauthorised fishing within areas under national jurisdiction, and to only authorise vessels to fish where it is able to exercise effectively its responsibilities under the United Nations Convention on the Law of the Sea (LOSC), the UN Fish Stocks Agreement (UNFSA) and the WCPF Convention. Among other things, this includes requirements that the flag State limits authorisations to fish in foreign EEZs to vessels that are licensed by that coastal State and operating satellite position-fixing transmitters, among other things.

The FAD tracking study also estimated that only 10% of the associated satellite buoys are recovered and at least 26% were lost, thereby resulting in marine pollution, with approximately 5% then beaching on Pacific island coastlines. The WCPF Convention Article 5(e) requires members to adopt conservation and management measures to 'minimise catch by lost or abandoned gear' and 'pollution originating from fishing vessels'. The 2017 Guidelines for the Implementation of the International Convention for the Prevention of Pollution from Ships (MARPOL) note that fishing gear, once discharged, becomes a harmful substance and encourages vessel operators, organisations and governments to take action to minimise the probability of loss, record and report losses, and maximise recovery of lost gear.

In this context, the WCPFC Commission has clear obligations to strengthen tracking, monitoring and control of drifting FADs consistent with its management of fishing and the sovereign rights of coastal States. This paper seeks feedback on the following recommendations to implement these obligations:

1. The Commission should establish a centralised FAD monitoring system consistent with the vessel monitoring system established under Article 24. This system should geo-fence EEZ and protected area boundaries and send alerts to the relevant flag and coastal State each time a FAD drifts across the boundary. Consistent with vessel monitoring system, this FAD monitoring system should be tamper proof and prohibit vessels from switching beacons off when they are drifting.
2. The Commission should establish controls on the deployment of FADs so as to minimize lost or abandoned gear and ensure that all deployed FADs are recovered consistent with Article 5(e). This shall require beacons to be operational and reporting to the WCPFC system when drifting.
3. The Commission should clearly define appropriate responses for FADs that drift into a EEZ without a license, into a closed area, or into a closed season – consistent with the sovereign rights of coastal States and flag State responsibilities.

Introduction

This paper discusses the definition of fishing as it relates to drifting FADs and then considers the resulting obligations placed on WCPFC members. It is clear that placing a FAD or recovering a FAD are both 'fishing' within the Convention definition, and generate legal obligations for WCPFC members to monitor, control and report these activities. But is a drifting FAD 'fishing' when it is soaking in the water aggregating all the fish? If it is fishing, does the WCPFC and its members then have an obligation to monitor, control and report on drifting FADs?

Drifting FADs are now widely used throughout global purse seine tuna fisheries. Drifting FADs differ from other methods of fishing gear in that they don't capture fish while drifting but rather locate the fish in one identifiable place for subsequent capture by a vessel. Whereas other forms of oceanic fishing gears 'fish' while attached to their host vessel or in close proximity to their host vessel, drifting FADs aggregate their fish remotely and rely simply on attraction rather than restricting the free movement of their target. These characteristics raise significant management challenges and questions around responsibility.

Unlike opportunistic purse seine sets on randomly drifting natural logs, drifting FADS are explicitly deployed and monitored with the intent to aggregate fish for subsequent capture. In order to support the successful re-capture of the drifting FAD and its aggregation of fish, the vessels equip the drifting FAD with GPS technology to monitor its location, and sonar equipment to monitor fish aggregation. The FADs are deployed with extensive knowledge of drift patterns so as to target productive fishing grounds and maximise aggregations of target species.

Drifting FAD Tracks

A recent report by the Pacific Community and the Office of the Parties to the Nauru Agreement (PNA) analysed data from the PNA FAD Tracking Programme and studied the movement of drifting FADs.[i] The study was limited by geo-fencing that excluded most data from the high seas and noted that fishing companies only forwarded 30-40% of satellite buoy transmissions. Nevertheless, within these limitations, the analysis identified hotspots for FAD deployment and identified numerous tracks of FADs drifting through multiple PNA exclusive economic zones (EEZs) for up to two years. The average drift time was approximately 3 months, with an average drifting distance of just over 1000km.

The study uncovered a high density of FADs drifting through the Phoenix Islands Protected Area (PIPA). This 408,250km^2 marine protected area is closed to fishing and is inscribed on the UNESCO World Heritage List. PIPA protects one of the world's largest oceanic coral archipelago ecosystems and includes 14 underwater seamounts and other deep-sea habitats. Scientific surveys have so far identified over 800 species of fauna, including 200 coral species, 500 fish species, 18 marine mammals and 44 bird species. The waters are highly productive for tuna and recent studies have begun to investigate its significance for tuna spawning. The Government of Kiribati has implemented the highest level of protection for PIPA, prohibited fishing, and has previously arrested purse seine vessels for fishing inside the protected area, consistent with its rights under the Law of the Sea.[ii]

While the FAD tracking analysis did not identify any fishing sets within PIPA, it did identify a high density of FADs drifting through PIPA. This conflicts with PIPA's conservation goals and its management arrangements, and raises an important question that has regional ramifications: is a drifting FAD 'fishing' when it is drifting?

This isn't just a concern for PIPA, but ultimately is a concern for all coastal States and the flag States that register the responsible vessels. If drifting FADs are considered to be 'fishing', then coastal State's sovereign rights apply to FADs that drift through waters under national jurisdiction, and flag States have specific responsibilities to ensure their vessels do not engage in unauthorised fishing within foreign EEZs.

Consistent with their sovereign rights, the Parties to the Nauru Agreement (PNA) began a FAD tracking program in 2016 and have begun to implement their own management of drifting FADs within their EEZs. The PNA recently announced that they intend to further develop their FAD management to:[iii]

- Improve reporting of the current FAD tracking trial through the Fisheries Information Management System
- Integrate FAD log sheets with electronic reporting by fisheries observers
- Develop a PNA FAD buoy tracking and registration measure.
- Address ecological issues associated with FADS, including FAD retrieval and liability for beaching of FADs.

More broadly, Pacific island governments and communities are becoming increasingly concerned at the marine pollution littering their beaches from lost or abandoned drifting FADs.

Definition of Fishing

Article 1 of the WCPF Convention defines fishing as:[iv]

> (i) searching for, catching, taking or harvesting fish;
> (ii) attempting to search for, catch, take or harvest fish;
> (iii) engaging in any other activity which can reasonably be expected to result in the locating, catching, taking or harvesting of fish for any purpose;
> (iv) placing, searching for or recovering fish aggregating devices or associated electronic equipment such as radio beacons;
> (v) any operations at sea directly in support of, or in preparation for, any activity described in subparagraphs (i) to (iv), including transhipment;
> (vi) use of any other vessel, vehicle, aircraft or hovercraft, for any activity described in subparagraphs (i) to (v) except for emergencies involving the health and safety of the crew or the safety of a vessel;

To qualify as fishing, the drifting phase of a FAD only needs to satisfy the elements of one of the six criteria for fishing. The drifting phase of a FAD is therefore fishing because it is an activity that meets the elements of subparagraph iii of the definition, specifically, the drifting phase is an activity which can reasonably be expected to result in the locating, catching, taking or harvesting of fish. Through the use of sounders, drifting FADs are also actively

searching for fish (subparagraph i), notifying the vessel when they have found enough fish to warrant setting a net.

According to Article 1(iii), 'engaging in any other activity which can reasonably be expected to result in the locating, catching, taking or harvesting of fish for any purpose' is fishing. A vessel's affirmative act of deploying and/or tracking a FAD satisfies the requirement of 'engaging' in an activity; that is clearly an 'activity which can reasonably be expected to result in the locating, catching, taking or harvesting of fish.' Given that the express purpose of using a FAD is to gather schools of fish and thereby increase the vessel's ability to locate and capture fish, it is reasonable to expect that the drifting period will yield a result.[1] Finally, it need not be demonstrated that the activity was engaged in by a vessel specifically for the purpose of locating or harvesting fish; the acknowledgment that the activity may be engaged in 'for any purpose' removes the need to demonstrate a subjective intention on the part of the subject vessel to harvest the aggregated fish itself.

In summary, the use of drifting Fish Aggregating Devices (FADs) is defined by the WCPF Convention as 'fishing' from deployment to recovery, including the drifting stage when the FAD is remotely aggregating fish. This then raises significant questions of flag State responsibility and obligations on the Commission to monitor and control drifting FADs whenever they are 'fishing', and report on their activity.

Obligations to Monitor, Control and Report 'fishing'

Under the LOSC, flag States have a duty to effectively exercise 'jurisdiction and control in administrative, technical and social matters' over their registered vessels. In the Sub-regional Fisheries Commission Advisory Opinion, the International Tribunal For the Law of the Sea (ITLOS) explained that this flag State duty, when coupled with the obligations under LOSC Article 192 to protect and preserve the marine environment, required flag states to ensure compliance with all relevant conservation and management measures by vessels flying their flag.[v]

The LOSC prescribes that Coastal States are principally responsible for the conservation and management of their fisheries resources. Coastal States have sovereign rights to explore, exploit, conserve and manage their natural resources.[vi] Under Article 56(1) and Article 62(4), Coastal States hold sovereign rights to make rules and regulations regarding the terms and conditions of access for foreign fishing vessels.[vii] Although the activities listed in those articles are not considered to be exhaustive, it has been interpreted to broadly cover all fishing and fishing related activities. In the MV Virginia G case, ITLOS affirmed the sovereign rights of the Coastal State and clarifies that these sovereign rights include fishing related activities because they have a direct connection to fishing.[viii]

Within the WCPFC, Article 24 requires member states to take measures to guarantee that its fishing vessels comply with the WCPF Convention and with conservation and management measures adopted by the Commission. The WCPF Convention also requires that member's fishing vessels only fish where and in the manner in which they are authorized to do so,

[1] It is noteworthy that this subparagraph does not require the successful catch of fish, simply that it is a reasonable expectation that the activity result in, at least, one of the five activities.

whether within areas under national jurisdiction or the high seas. Additionally, member states must require their vessels to use near-real time satellite position-fixing transmitters when fishing either in waters under national jurisdiction or on the high seas. When fishing in waters under national jurisdiction, they must also ensure that transmitters meet the standards, specifications and procedures of the coastal state. More broadly, the LOSC requires the flag state to comply with coastal state measures for exploration, exploitation, conservation, and management of its resources [ix]

WCPFC Conservation and Management Measure 2017-01 requires activated instrumented buoys on drifting FADs to be clearly marked, a requirement echoed in the FAO Voluntary Guidelines for the Marking of Fishing Gear.[x] Therefore, in fulfilment of its flag state obligations, member countries must monitor all FAD activities of its fishing vessels to ensure compliance with its WCPFC and LOSC obligations.

Consistent with their sovereign rights to adopt laws and regulations regarding fishing within their EEZ, coastal States can create legislation requiring flag States to collect and maintain relevant details on drifting FADs throughout the entire drifting periods and details on the vessels deploying the FADs. Flag States are obligated to comply with such laws as an extension of their responsibility to control their vessels as well as to comply with the regulations adopted by Coastal States in accordance with LOSC Article 58.[xi]

Obligations to Avoid Pollution and Ghost Gear

Drifting FADs in the WCPF Convention area also raise significant issues with respect to marine pollution. The FAD tracking study estimated that only 10% of of the associated satellite buoys are recovered and that at least 26% were lost, thereby resulting in marine pollution, with approximately 5% then beaching on Pacific island coastlines. On the 4-5 August 2018, the Sea Education Association expedition vessel, *Robert C. Seamans*, landed on the island of Nikumaroro in the Phoenix Islands and recovered 13 FAD transponders that were found beached. Of these, at least one was still active and blinking and transmitting data, and several looked very new.[xii]

The WCPF Convention (Article 5e) requires members to adopt measures to minimise catch by lost or abandoned gear and also the pollution originating from fishing vessels. The IMO's International Convention for the Prevention of Pollution from Ships 1973/78 (MARPOL) remains the preeminent international instrument addressing marine pollution originating from ships. MARPOL has six annexes dedicated to different pollution sources; Annex V – Prevention of Pollution by Garbage from Ships covers the provisions related to fishing operations.

Although MARPOL excludes FADs (as 'fishing gear released into the water with the intention for later retrieval') from its provisions concerning garbage or accidental loss, the *2017 Guidelines for the Implementation of MARPOL* note that fishing gear, once discharged, becomes a harmful substance. These new MARPOL guidelines require members to take action to minimise the probability of loss, record and report losses, and to maximise recovery of lost gear. They encourage vessel operators, organisations and governments to undertake research, technology development and regulations as necessary.

Governments are also required to regulate the reporting of accidentally lost, discharged, or abandoned fishing gear that poses a significant risk to the marine environment or navigation. Both vessel owners and governments are required to report information on lost, discharged or abandoned fishing gear and share it with coastal states, under certain circumstances. And lastly, governments are required to create communication frameworks to facilitate the reporting and sharing of information with coastal states.

These provisions clearly obligate flag States to regulate the fishing gear of their vessels, including monitoring and collecting information on the use, deployment, drifting and retrieval phases of a drifting FAD to minimize marine pollution due to their losses.

In 2019, WCPFC Conservation and Management Measure 2017-04 on Marine Pollution will enter into force, requiring and encouraging members to implement new controls and research new methods to prohibit and minimise marine pollution. Among other things, the measure obligates members to encourage their fishing vessels to retrieve abandoned, lost or discarded fishing gear. Where retrieval is not possible or does not occur, members shall encourage their fishing vessels to report the location, type, size and age of abandoned, lost or discarded fishing gear. Members are also encouraged to develop communication frameworks to enable the recording and sharing of information on fishing gear loss in order to reduce loss and facilitate recovery of fishing gear, and develop frameworks or systems to assist fishing vessels to report the loss of gear to their flag State, relevant coastal States, and the Commission.

WCPFC management of drifting FADs

Legal analysis determines that a drifting FAD is 'fishing' from placement to recovery, thereby creating legal obligations for all WCPFC members to monitor, control and report drifting FADs at all times when in use, consistent with broader obligations for coastal and flag States. The WCPFC Commission has clear obligations to implement monitoring, control and reporting of drifting FADs throughout the Western and Central Pacific Ocean.

Operationally, this presents significant challenges. In this context, this preliminary paper seeks feedback on the following recommendations to implement the Commission's obligations:

1. The Commission should establish a centralised FAD monitoring system consistent with the vessel monitoring system established under Article 24. This system should be compatible with coastal State systems and geo-fence EEZ and protected area boundaries, and send alerts to relevant the flag and coastal State each time a FAD drifts across the boundary. Consistent with vessel monitoring system, this FAD monitoring system should be tamper proof and prohibit vessels from switching beacons off when they are drifting. This system should also support implementation of CMM 2017-04.

2. The Commission should establish controls on the deployment of FADs so as to minimize lost or abandoned gear and ensure that all deployed FADs are recovered consistent with Article 5e. This shall require beacons to be operational and reporting to the WCPFC system when drifting. The Commission should prescribe measures to

be taken against vessels that deploy FADs without a beacon, or switch off beacons on un-retrieved FADs, thereby effectively abandoning the FAD and causing marine pollution.

3. The Commission should clearly define appropriate member and Commission responses for FADs that drift into a EEZ without a license, into a closed area, or into a closed season – consistent with the sovereign rights of coastal States and flag State responsibilities. The Commission should develop measures and potentially expand the application of the IUU Vessel List to support coastal State actions against a vessel that intentionally deploys a FAD in a location where it will then drift through an EEZ or protected area, or subsequently set on such FADs without a license after they have drifted back out of an EEZ or protected area, whether it be the original vessel that placed the FAD, or a second vessel that may have purchased the beacon data.

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[ii] Phoenix Island Protected Area Regulations 2008 (Kiribati) s 6(5).
[iii] PNA to Strengthen FAD Management. https://www.pnatuna.com/content/pna-strengthen-fad-management
[iv] *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*, opened for signature 5 September 2000, (entered into force 19 June 2004), Art 1.
[v] *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission*, (Advisory Opinion), International Tribunal of the Law of the Sea, Case 21, 2 April 2015, [120] (*Advisory Opinion)*.
[vi] *LOSC* art 56.
[vii] Ibid; Ibid art 62.
[viii] *M/V "Virginia G"* (Panama/Guinea-Bissau) (2014), Judgment, ITLOS Reports 2014, 215.
[ix] United Nations Convention of the Law of the Sea (*LOSC)*, 1982, 1833 UNTS 3 art 58; *Advisory Opinion* 102.
[x] Western Central Pacific Fisheries Commission, Conservation and Management Measures 2017-01 (*WCPFC CMM*); Food and Agriculture Organization, Voluntary Guidelines for the Marking of Fishing Gear (2018), 9, s 52.
[xi] *LOSC* art 58.
[xii] Jan Witting, Report of FAD transponder float collection on Nikumaroro Island, Phoenix Islands Protected Area, during SEA Cruise S-281, 4-5 August 2018. Submitted to PIPA Implementation Office and PIPA Conservation Trust. 2018.