



## **NATIONAL FISHERIES AUTHORITY**

# **The NATIONAL FISH AGGREGATING DEVICE MANAGEMENT POLICY**

**2002**

A MANAGEMENT POLICY FOR THE DEPLOYMENT AND USE OF  
ANCHORED FISH AGGREGATING DEVICES IN THE PAPUA NEW GUINEA  
PURSE-SEINE TUNA FISHERY.

## CONTENTS

<b>Background</b>	<b>3</b>
The Fish Aggregating Device	3
Issues on Fish Aggregating Device	3
<i>Terms used</i>	3
<b>1. Preamble</b>	<b>4</b>
<b>2. Limits on the number of licensed FADs</b>	<b>4</b>
<b>3. The design, operation and maintenance of FADs</b>	<b>4</b>
<b>4. Application process for deployment of FADs</b>	<b>5</b>
<b>5. Location of FADs and reporting</b>	<b>5</b>
<b>6. Marking of FADs</b>	<b>5</b>
<b>7. Location in relation to navigational routes and shipping</b>	<b>5</b>
<b>8. Closed areas</b>	<b>5</b>
<b>9. Deployment of FADs in archipelagic waters</b>	<b>6</b>
<b>10. The effect of FAD fishing by purse-seine vessels on tuna longline fishing</b>	<b>6</b>
<b>11. Monitoring of the FAD fishery</b>	<b>6</b>
<b>12. The effect of FAD fishing on sizes of tuna taken</b>	<b>6</b>
<b>13. The effect of FAD fishing on by-catch species</b>	<b>6</b>
<b>14. Reporting requirements for FAD fishing</b>	<b>6</b>
<b>15. Reporting of species mix in the FAD fishing</b>	<b>6</b>
<b>16. Reporting of by-catch in FAD fishing</b>	<b>7</b>
<b>17. Reporting of utilisation of by-catch</b>	<b>7</b>
<b>18. Conflict resolution in relation to FADs</b>	<b>7</b>
<b>19. License status of vessels in relation to areas of FAD deployment</b>	<b>7</b>
<b>20. Replacing of lost FADs</b>	<b>7</b>
<b>21. Access to FAD areas</b>	<b>7</b>
<b>22. Confidentiality of FAD position information</b>	<b>7</b>
<b>23. Number of tender vessels per catcher vessel.</b>	<b>7</b>

## Background

### ***The Fish Aggregating Device***

The behavior of aggregating under floating objects shown by schools of tuna, has long been observed by fishermen who have over the years constructed imitations of these floating objects to aggregate the fish and thus improve their catch. These man-made imitations are termed as “Fish Aggregating Devices” (FAD) and are deployed in the fishing grounds. The FADs vary in shape and size but they are either anchored or drifting. In some cases, fishermen have tied together floating natural logs to act as FADs.

FADs are deployed in certain positions where they are anchored and the subsequent fish aggregations monitored by tender vessels. Drifting FADs, on the other hand, are deployed with call-up buoys and some even have sensors that can give information on the aggregations via satellite transmission. FADs are set on at night or early morning depending on the size of the aggregations and the fish. FAD catches are high with very high success rate compared to sets on free swimming schools.

FADs have been in use in PNG waters since the entry of the purse-seine fishing by the Taiwanese and the Philippines but no detailed information has been gathered until recently with the operation of some major projects such as the RD fishing and the associated cannery. There is however very limited information on the use of drifting FADs in PNG waters even though their use in PNG waters is common.

### ***Issues on FADs***

FADs are an essential part of purse-seine fishing. But there are also concerns that relate mainly to issues of resource sustainability, gear interaction and access to resource. In the first instance, FADs are said to contribute to the depletion of the bigeye population, as catches of juvenile bigeye tuna are observed to be higher in FAD associated sets than any other forms of set. In this regard there are concerns on the number of FADs used both (anchored and drifting) and there are moves to reduce the fishing effort on the FADs. The second and third issues are exclusive to anchored FADs and may be a particular problem to Papua New Guinea. The issue is that the longline gear may tangle with the mooring ropes of inactive FADs. This then leads to the loss of gear or fishing time and the fear of losing the gear or fishing time may discourage longline operators from fishing in areas where FADs are deployed, therefore potentially depriving the long line operators from accessing the resource available in the area.

### ***Terms used***

Fish Aggregating Device	Man made structures deployed in the fishing grounds to aggregate fish, especially tuna
Payao	Fish aggregating device, in Philippine language.
Mooring rope	Anchor line that extends from the anchor to the float section of the FAD
Inactive Fish Aggregating Device	Fishing Aggregating Device that has the float sections detached and are no longer in position, and fish may be caught in association with the drifting FAD

## 1. PREAMBLE

- a) Following the FAO Code of Conduct for Responsible Fishing; 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 and Fish Aggregating Devices (FADs) or Payaos 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.

## **2 LIMITS ON THE NUMBER OF LICENSED FADS**

- a) Only PNG companies with substantive onshore investment, whose purse seine vessels and support vessels are licensed to fish under the Fisheries Management Act 1998 may deploy and use anchored FADs. The total number of anchored Fads allowed to be deployed in the PNG DFZ for the commercial surface fishery shall not exceed 1,500. NFA may allocate to individual fishing company permission to deploy up to 40 FADs per licensedpurse-seine vessel.
- b) The total number can be reviewed in accordance with provisions in the National Tuna Fishery Management Plan Management Framework.
- c) FADs deployed for the purpose of game fishing and artisanal fisheries are outside the restrictions imposed by this management plan.

## **3. THE DESIGN, OPERATION AND MAINTENANCE OF FADS**

- a) NFA will apply certain minimum design standards for FADs as follows:
  - i) They should be constructed such that they can be readily located at their place of deployment.
  - ii) The design should include an appropriate number of counter weights along the synthetic rope to ensure that the rope sinks to the bottom in the event that the floater has come detached and drifted away.
  - iii) The design, operation and maintenance of FADs will be the responsibility of the companies deploying the FADs.

## **4. APPLICATION PROCESS FOR DEPLOYMENT OF FADS**

- a) The companies shall give prior notice and information to NFA of their intention to deploy FADs. The information to be provided shall include;

- i) location in terms of latitude and longitude, to the nearest second
  - ii) date of deployment,
  - iii) new or replacement FAD, and
  - iv) Fad number assigned
- b) All FAD deployment exercises, be they for new or replacement FADs, may be witnessed by a Fisheries officer or an observer from the NFA

## **5. LOCATION OF FADS AND REPORTING**

- a) Companies operating FADs in the purse-seine tuna fishery in PNG should submit quarterly lists of FADs deployed in the fishery waters of PNG. The list should provide position of each FAD in terms of latitude and longitude, date of deployment, and identification of lost FADS. The quarterly list shall be submitted to NFA within 30 days of quarter concerned.

## **6. MARKING OF FADS**

- a) All markings of FADs shall be in accordance with the *Fisheries Management Regulations* and specifically as described in paragraph 10, hereunder.
- b) All FADs will be suitably marked, with the raft section clearly painted with reflecting paint so that the raft can be seen from a distance of one kilometre. In addition, the raft section should support a radar reflector that must be suspended at least two meters above the waterline of the raft such that at all times, the raft registers on radar at a reasonable distance. Electronic devices such as transponders and radio beacons which automatically and continuously indicate their position by means of signals may be used in addition to other devices, but must not be operated at radio frequencies that would conflict with other devices used for navigation and search and rescue purposes. The Fad number must be on a detachable plate on each Fad so that in the event that the that original Fad is moved to a new location the number plate is detached and attached to the new Fad ensuring that the same fad number corresponds to the same location in terms of latitude and longitude.

## **7. LOCATION IN RELATION TO NAVIGATIONAL ROUTES AND SHIPPING**

- a) FADs shall not be set at locations of known high volume of sea traffic. General areas where FADs are deployed shall be reported to the Department of Transport to be published as Notice to Mariners. NFA reserves the right to refuse FAD deployment in areas of known high volume of sea traffic.

## **8. CLOSED AREAS**

- a) FADs deployed for the purpose of purse seine fishing shall be prohibited from all waters inside the 12-mile from any land or island. Other closed areas include the Torres Strait Protected Zone, the Mogado Square, the whole Solomon Sea, any other area that may from time to time be declared to be prohibited areas.

## **9. DEPLOYMENT OF FADS IN ARCHIPELAGIC WATERS**

- a) Foreign licensed vessels are prohibited from setting and fishing on FADs in the Archipelagic Waters.

## **10. THE EFFECT OF FAD FISHING BY PURSE-SEINE VESSELS ON TUNA LONGLINE FISHING**

- a) In relation to possible conflict between purse-seine fishing and tuna long lining arising from the wide spread use of FADs in the purse-seine fishery, the situation will be monitored. In particular information will be collected on the performance of the tuna longline fishery as it expands into the northern parts of the PNG zone, and on the characteristics of purse-seine catches as determined through observer and port sampling programs. Adverse impacts as a result of FADs or parts of FADs having interfered with the operation of longline fishing will cause this policy to be reviewed should such impacts be unequivocally established.

## **11. MONITORING OF THE FAD FISHERY**

- a) Catch data may be collected from the developing PNG purse seine tuna fishery based on the use of FADs, to monitor the species composition of tunas and other details of the FAD- associated catches.

## **12. THE EFFECT OF FAD FISHING ON SIZES OF TUNA TAKEN**

- a) NFA may make best efforts to monitor the size of tuna in the fish catches of this fleet to ascertain the extent to which the taking of small tuna in the catches occur.

## **13. THE EFFECT OF FAD FISHING ON BY-CATCH SPECIES**

- a) NFA will through the observer and port sampling programme, monitor the by-catch in both the anchored and drifting FAD tuna purse-seine fishery in PNG with a view to establishing the average weight of by-catch in the sets, and the species composition of the by-catch. The programme will also record the fate of the by-catch.

## **14. REPORTING REQUIREMENTS FOR FAD FISHING**

- a) Operators in the purse-seine tuna fishery who use FADs as with other fisheries are to comply with requirement under the *Fisheries Management Act* and submit information on their catches to the NFA. The information should also include information on the FAD involved in each set.
- b) Operators in the FAD fishery will be required to carry on board Fisheries Observers to monitor their fishing activities, FAD deployment practices, and mother ship operations, up to 100% coverage.

## **15. REPORTING OF SPECIES MIX IN FAD FISHING**

- a) Fishers in the tuna purse-seine fishery using FADs are required to submit information on the quantities of the different tuna species in the catches, on the average size of the main species of tunas in the catches, and of the incidence of small tuna, by species, in the catches. This will be done to the extent possible through catch logsheets.

## **16. REPORTING OF BY-CATCH IN FAD FISHING**

- a) Fishers operating in the tuna purse-seine FAD fishery be required to submit information on the by-catch taken during fishing operations broken down into species, and either estimates of volume, or estimates of number of fish in catches. This will be reported through the logsheets.

## **17. REPORTING OF UTILISATION OF BY-CATCH**

- a) If the by-catch taken in the tuna purse-seine FAD fishery is utilized in any way, it is required that the fishers who make use of the by-catch, submit a report on the disposition of the by-catch on a species-by-species basis.

## **18. CONFLICT RESOLUTION IN RELATION TO FADS**

- a) Any conflict arising between the operators in the purse-seine FAD fishery, shall be referred to the Fishing Industry Association in the first instance and where this referral not cause the dispute to be resolved than the industry may refer dispute to the managing director of NFA whose decision shall be final.

## **19. LICENSE STATUS OF VESSELS IN RELATION TO AREAS OF FAD DEPLOYMENT**

- a) NFA will avoid designating areas within which FADs are deployed that attempts to separate areas of operation of different companies.

## **20. REPLACING LOST FADS**

- a) The company shall notify the NFA before lost FADs are replaced and an observer may be required to witness the replacement of the FADs. Replacement FADs shall be deployed in the same position, with the same number as the previous one.

## **21. ACCESS TO FAD AREAS**

- a) Each FAD and its surrounding area shall not be regarded as an exclusive fishing area for the company that deploys FADs in the area.

## **22. NOTIFICATION OF FAD POSITION INFORMATION**

- a) The location of FADs zone will be forwarded to the Marine Division of the Department of Transport as one off “Notice to Mariners” information as it relates to navigational safety requirements. FAD zones will generally be located north of five (5) degrees South latitude.

## **23. NUMBER OF TENDER VESSELS PER CATCHER VESSEL**

- a) The maximum number of tender vessels to be used per catcher vessel shall be two (2) light boats and one (1) ranger boat.

