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FAD Minimum Data Fields to be Recorded by WCPFC Purse Seine Vessel Operators

WCPFC-SC18-2022/ST-IP/09

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PNA and Tokelau

Executive Summary

At WCPFC12:

“596. The Commission agreed that vessel operators should provide data on FADs covering the following two major areas:

- a. FAD design and construction of FAD to be deployed or encountered (materials, electronics, size, etc)
- b. FAD activity (deploying, retrieving, setting, visiting, loss etc.”

In response, the Parties to the Nauru Agreement (PNA)¹ have developed requirements for provision of data on FAD design and construction and FAD activity by purse seine vessel operators which are being applied for licensed vessels from January 1st 2022.

This information is critical for scientific analyses to guide management of FADs in the waters of PNA and the WCPO, as well as to monitor compliance.

The main differences between the fields of FAD data now required to be provided by vessel operators and the current ROP minimum data fields for FAD data are:

- a) requirements for quantitative and measurable information where the WCPFC ROP data fields require provision of qualitative information and descriptions;
- b) more details including in data fields regarding the buoy and materials for each component; and
- c) more details related to Species of Special Interest (SSI) focusing on SSI entanglement.

WCPFC-SC18 is invited to:

- a) Note the new PNA requirements for provision of FAD data by vessel operators for scientific and compliance purposes.
- b) Comment on any elements of the new requirements.
- c) Recommend the revision of the *Scientific Data to Be Provided to the Commission* to include compatible FAD data requirements.
- d) Note the need for a minimum transition period with data collection occurring from both observers and vessel operators to allow comparison of the quality and quantity of data collected.

¹ plus Tokelau

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1. Introduction

1. At WCPFC12:
“596. The Commission agreed that vessel operators should provide data on FADs covering the following two major areas:
 - a. FAD design and construction of FAD to be deployed or encountered (materials, electronics, size, etc)*
 - b. FAD activity (deploying, retrieving, setting, visiting, loss etc.”*

In addition:

“597. The Commission noted that the FADMgmtOptions-IWG recommendations that:

- (i) the FAD data fields to be reported by vessel operators should be based on the WCPFC ROP Minimum Standard Data Fields and the data fields collected by other RFMOs;*
- (ii) data collected by observers on FADs can be used for verification of FAD activities of vessels;*
- (iii) the FAD data should be provided to the Commission via flag State electronically using appropriate systems such as FAD e-logbooks or information systems such as PNA iFIMS etc.”*

2. In response, the Parties to the Nauru Agreement (PNA)¹ have developed requirements for provision of data on FAD design and construction and FAD activity by purse seine vessel operators which are being applied for licensed vessels from January 1st 2022. Consistent with the WCPFC12 Decision above, the FAD data fields required to be reported by vessel operators are based on the WCPFC ROP Minimum Standard Data Fields and take into account the FAD data fields collected by IATTC. The required FAD data fields also take into account additional information currently collected in the GEN-5 *“FAD/Payao and Floating Objects”* Form widely used by observers in the WCPO purse seine fishery.
3. This information is critical for scientific analyses to guide management of FADs in the waters of the PNA and the WCPO, as well as to monitor compliance. In particular, the last three most recent tropical tuna CMMs (CMM-2018-01; CMM-2020-01 and CMM-2021-01) have included additional requirements related to FADs: i) a limit on the number of active buoys monitored by a vessel at any given time; ii) the requirement to use Low-Entanglement risk FADs or Non-entangling FADs; and iii) encouragement to use biodegradable FADs. Scientific and compliance analyses have highlighted that critical information is missing in the current observer information, such as information related to FAD design and the type of materials (i.e. biodegradable or synthetic) and information on satellite buoys used. In addition, analyses of the PNA FAD tracking program as well as WCPFC scientific project (project 88: FAD acoustic, project 110: Non-Entangling and Biodegradable FADs) highlighted the critical importance of better matching buoy ID between observer, logsheet and FAD Tracking data for scientific and compliance needs. Limited recording of some of the fields in the ROP minimum FAD data fields which are difficult for observers to get access to, such as the buoy ID, also indicated that vessel operators would be better placed to record this information.

2. Description and protocol for FAD minimum data fields

4. The main differences between the fields required in the proposed FAD minimum data fields to be

provided by vessel operators and the current ROP minimum data fields for FAD data are:

- a) **Quantitative and measurable information** where the WCPFC ROP data fields require provision of qualitative information and descriptions, such as *“Simple Diagram to be drawn by observer indicating dimensions.”*; *“Observers are to describe the condition, attachments if any, and nature of the floating object when first investigated”*; and *“Observer to record in writing any FAD information not covered by the fields”*.
- b) **More details**, including in data fields regarding the buoy and materials for each component (i.e. raft, buoyancy device, wrapping, appendages, attractors), including details regarding whether a material is biodegradable or synthetic, the presence of nets and the mesh size, and condition of FAD materials.
- c) More details related to **Species of Special Interest (SSI)** focusing on SSI entanglement. However, this information is also recorded by the observer in the GEN-2 form. although it is not included in the WCPFC ROP Minimum Data Fields.

3. Implementation

5. The PNA requirements for FAD data to be provided by vessel operators are estimated to apply to more than 90% of the FAD sets in the industrial FAD fishery, excluding domestic purse seine fisheries of Indonesia and Philippines. Aligning the PNA and WCPFC FAD data requirements is important for ensuring compatibility on data standards across the range of the purse seine fishery.
6. It is expected that many of the more detailed technical data fields in the current ROP minimum data fields could be removed allowing observers to focus on collection of information for verification of FAD activities and FAD design and construction. There will need to be a period of trialling of the new data requirements for vessel operators including a period of overlap with current observer data collection to compare the data collected by both observers and check the quality of the data recorded by vessel operators.
7. The requirements are implemented through PNA FIMS adding on to the existing electronic forms on the iFIMS app which is an android app. The form is designed to be completed on the vessel and the data is sent daily to the PNA FIMS database.
8. To streamline data entry, vessel operators are able to define Standard FAD Designs and populate all the fields for a particular FAD at once using the Standard FAD Design feature.
9. The data is required to be provided by the operators of all vessels engaged in FAD activity, including vessels other than purse seine vessels used for deploying, servicing, and retrieving FADs.
10. The new PNA FAD data requirements are being implemented in association with the PNA FAD Tracking and FAD Buoy Registration arrangement which will be applied from January 1, 2023.
11. The new PNA FAD Data requirements have been generally well accepted by vessel operators. A concern has been that the burden placed on key crew members from the additional data requirements is reducing

their capacity to work on catching fish and adversely affecting the viability of vessels and the value of the purse seine fishery overall. The PNA position is that increasing information on FADs is being required from managers and vessels operators. Any vessel planning to continue using FADs should be planning to meet requirements for the provision of additional information on FADs from their crew.

12. PNA thank SPC for their very substantial contribution to the development of the new PNA FAD data requirements and this paper. PNA also appreciate the advice and support of Pew Charitable Trusts, ISSF, and MRAG Asia Pacific in this work. Responsibility for this paper and the implementation of the PNA requirements for FAD data from vessel operators lies with the PNA Office.

4. Recommendation

We invite WCPFC-SC18 to:

- a) Note the new PNA requirements for provision of FAD data by vessel operators for scientific and compliance purposes.
- b) Comment on any elements of the new requirements.
- c) Recommend the revision of the *Scientific Data to Be Provided to the Commission* to include compatible FAD data requirements.
- d) Note the need for a minimum transition period with data collection occurring from both observers and vessel operators to allow comparison of the quality and quantity of data collected.

Table 1. FAD minimum data fields to be recorded by WCPFC purse seine vessel operators

FAD minimum data fields			
TRIP LEVEL INFORMATION		OBSV	LOG
Vessel Name	Record the full name of vessel (as per the main logsheet)	X	X
Departure Date	Record the date the vessel departed from port (as per the main logsheet)	X	X
FAD ACTIVITY INFORMATION		OBSV	LOG
FAD activity log information. A new record to be recorded for each new FAD activity. Note that the date, time and position should have been recorded through the usual vessel operational activities, catch and effort reporting log and so these data fields may simply be referred to from that source. That is, the FAD Activity log may be referred to as a ‘child’ record to the purse seine vessel operational activity log record.			
Date of new FAD activity	Record date of each new FAD activity (refer to FAD Activities)	X	X
Time of new FAD activity	Record time of each new FAD activity (refer to FAD Activities)	X	X
FAD Activity – Code	Describes the distinct activity that the boat is involved with the FAD. Refer to Table A1	X	X
Latitude	Record Latitude when FAD activity occurred.	X	X
Longitude	Record Longitude when FAD activity occurred	X	X
BUOY INFORMATION			
Buoy attached (Y/N)	Enter Y or N if there s a Buoy attached		X
Buoy Manufacturers Serial No.	Enter the Buoy Manufacturers Serial No. or Communications ID link.	X	X
Buoy Communications ID	Enter the Buoy Communications ID		X
Buoy Make/Model	Enter the Buoy Make/Model		X
Buoy Type – Code	Enter the code for the Buoy type. Refer to Table A12		X
Buoy Operator	Enter the Buoy operator (if known).		X
Buoy lifted (Y/N)	Record whether the buoy was lifted out of the water (Y/N)	X	
GENERAL FAD INFORMATION			
FAD id or Markings	Enter any specific FAD Id or Markings.	X	X
Origin of FAD – Code	Select the Origin of the FAD (how did it get to be in the water) Refer to Table A2	X	X
FAD Type as found – Code	Indicate the type of FAD, <u>as found</u> . Refer to Table A3	X	X
FAD Lifted (Y/N)	Record whether the FAD was lifted out of the water (Y/N)	X	X
FAD Type as left – Code	Indicate the type of FAD, <u>as left</u> . Refer to Table A3	X	X
FAD deployment date	Record date when FAD deployment occurred.	X	X
FAD deployment location	Record Latitude and Longitude when FAD deployment occurred.	X	X
RAFT DESIGN INFORMATION			
Raft Design – Code	Indicate the code corresponding to the type of raft design (see Table A4), and referring to relevant images in ANNEX 2 .		X
Raft Main (1 st) Materials – Code	Indicate the code corresponding to the raft main material (top/1st) (see Table A5).	X	X
Raft Main (1 st) Materials %	Enter Raft Main Materials (top/1st) percentage (%)		X
Raft Main (2 nd) Materials – Code	Indicate the code corresponding to the raft main material (2 nd) (see Table A5).	X	X

FAD minimum data fields			
Raft Main (2 nd) Materials %	Enter Raft Main Materials (2 nd) percentage (%)		X
Raft Wrapping – Code	Indicate the code corresponding to the raft wrapping/covering (see Table A6).		X
Raft Buoyancy Devices – Code	Indicate the code corresponding to the raft buoyancy devices (see Table A7).	X	X
Net mesh size	If nets are used in any component of the raft, indicate the mesh size.	X	X
Floating structure Width (m)	Enter the Floating structure Width in metres.	X	X
Floating structure length (m)	Enter the Floating structure Length in metres.	X	X
Diagram	Draw the Floating object design and size	X	
HANGING STRUCTURE INFORMATION			
Handing Structure dimensions	Enter 1–Known, 2–Unknown or 3–Estimated	X	X
Hanging structure Width (m)	Enter the Hanging structure Width in metres.		X
Hanging structure length (m)	Enter the Hanging structure Length in metres.	X	X
Hanging Structure – Code	Indicate the code corresponding to the type of Hanging Structure (see Table A8) and referring to relevant images in ANNEX 3 .		X
Main Appendages (1 st) – Code	Indicate the code corresponding to the main appendages (top/1st) of the hanging structure (see Table A9).	X	X
Main Appendages (1 st) %	Enter Main Appendages (top/1st) percentage (%)		X
Main Appendages (2 nd) – Code	Indicate the code corresponding to the main appendages (2 nd) of the hanging structure (see Table A9).	X	X
Main Appendages (2 nd) %	Enter Main Appendages (2 nd) percentage (%)		X
Net mesh size	If nets are used in any component of the hanging structure, indicate the mesh size.	X	X
Attractors – Code	Indicate the code corresponding to the Attractors on the hanging structure (see Table A10).		X
Hanging weights – Code	Indicate the code corresponding to the Hanging weights used (see Table A11).		X
Hanging weight (kgs)	Enter the hanging weight in kilograms		X
Condition	Enter the condition of the Hanging structure (see Table A11).		X
GENERAL COMMENTS			
Comments	Enter any additional comments necessary	X	X
SPECIES OF SPECIAL INTEREST INFORMATION			
SSI Seen (Y/N)	Enter Y or N if a Species of Special Interest (SSI) is seen	X	X
SSI Seen – Species code	Enter three-letter code (selected from FAO Species code list) for each SSI seen	X	X
SSI Seen – Weight (kgs)	Enter the estimated WEIGHT in kilograms of each SSI seen	X	X
SSI Seen – Number	Enter the NUMBER of each SSI seen	X	X
SSI Entangled (Y/N)	Enter Y or N if a Species of Special Interest (SSI) is entangled	X	X
SSI Entangled – Species code	Enter three-letter code (selected from FAO Species code list) for each SSI entangled	X	X
SSI Entangled – Weight (kgs)	Enter the estimated WEIGHT in kilograms of each SSI entangled	X	X
SSI Entangled – Number	Enter the NUMBER of each SSI entangled	X	X

ANNEX 1 – FAD Logsheet Reference Code Tables

Note that these codes are found in the GEN-5 form, the PS-2 form or the GEN-2 form.

Table A1. Codes for FAD Activity

Code	Description for FAD Activities
1	Investigating (no other activity listed below)
2	Fishing Set (Retrieving FAD)
3	Fishing Set (FAD left in water after set)
4-a	Deployment – New FAD
4-b	Deployment – Retrieved FAD
4-c	Deployment – A FAD without buoy
5	Retrieving (without being set on)
6	Servicing or modifying raft and/or attachment
7	Detaching Buoy found attached
8	Attaching a Buoy to
9	Retrieving Buoy only
10	Transfer a Buoy to another vessel at sea
11	Transfer a Buoy from another vessel at sea
12	Retrieving a Buoy in port
13-a	FAD Buoy Signal Loss – Buoy switched off locally i.e. by magnetic switch
13-b	FAD Buoy Signal Loss – Satellite feed terminated
13-c	FAD Buoy Signal Loss – Sank Buoy
13-d	FAD Buoy Signal Loss – Signal loss for unknown reason
13-e	FAD Buoy Signal Loss – Other (please specify last reported date and position in COMMENTS)
14	Other Activity (please specify in COMMENTS)

Table A2. Codes for Origin of FAD

Code	Description for ORIGIN of FAD
1	Deployed by your vessel this trip
2	Deployed by your vessel previous trip
3-a	Deployed by other vessel – another purse seine vessel
3-b	Deployed by other vessel – purse seine SUPPORT vessel
3-c	Deployed by other vessel – LONGLINE vessel
3-d	Deployed by other vessel – CARRIER or BUNKER vessel
3-e	Deployed by other vessel – Other
4	Drifting and found by your vessel
5a	Other origin – deployed by your vessel this trip
5b	Other origin – deployed by your vessel previous trip
5c	Other origin – deployed by other vessel for use by your vessel
5d	Other origin – (please specify in COMMENTS)

Table A3. Codes for FAD Type

Code	Description for FAD Types
1	Drifting FAD (man-made)
2	Non-FAD (man-made)
3	Tree or logs (natural, free floating)
4	Tree or logs (converted into FAD)
5	Debris (flotsam bunched together)
6	Dead animal(s) (specify, i.e., whale, horse, etc.)
7	Anchored raft FAD or Payao
8	Anchored tree or logs
9	Other (please specify)
10	Man-made object (Drifting FAD) - changed

Table A4. Codes for Raft Design (refer to [ANNEX 2](#))

Code	Description of RAFT DESIGN
1	Bamboo with Floats Design 1
2	Bamboo with Floats Design 2
3	Bamboo Design 1
4	Bamboo Design 2
5	Bamboo Design 3
6	Burrito
7	Log
8	Payao
9	Small House
9	Other (please specify in COMMENTS)
11	No raft

Table A5. Codes for Raft Main Materials

Code	Description for RAFT Main Materials
1	Bamboo
2	Timber/ planks/ pallets/ spools
3	Metal
4	PVC/ plastic
5	Other (please specify in COMMENTS)

Table A6. Codes for Raft Wrapping/Covering

Code	Description for Raft Wrapping/Covering
1-a	Canvas and/or canvas bags and/or cloth – Synthetic fiber
1-b	Canvas and/or canvas bags and/or cloth – Natural fiber
2-a	Non-entangling Net – Synthetic fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
2-b	Non-entangling Net – Synthetic fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
2-c	Non-entangling Net – Natural fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
2-d	Non-entangling Net – Natural fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
3-a	Entangling Net – Synthetic fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
3-b	Entangling Net – Synthetic fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
3-c	Entangling Net – Natural fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
3-d	Entangling Net – Natural fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
4	Palm fronds
5	No wrapping
6	Other (please specify in COMMENTS)

Table A7. Codes for Raft Buoyancy Devices

Code	Description for Raft Buoyancy Devices
1	Plastic Buoys
2	Plastic Containers
3	Net Corks
4	Metal
5	Wood (e.g. balsa wood)
6	Other natural material (please specify)
7	No floats in addition to raft
8	Other (please specify)

Table A8. Codes for Hanging Structure Design (refer to ANNEX 3)

Code	Description for Hanging Structure Design
1	Design 1
2	Design 2
3	Design 3
4	Design 4
5	Design 5
6	Design 6
7	Design 7

Table A9. Codes for Main Appendages of Hanging Structure

Code	Description for Main Appendages of Hanging Structure
1-a	Open Net – Synthetic fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
1-b	Open Net – Synthetic fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
1-c	Open Net – Natural fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
1-d	Open Net – Natural fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
2-a	Cord/Rope – Synthetic fiber
2-b	Cord/Rope – Natural fiber
3	Palm fronds
4	Bamboo
5	Other wood/ pallets or spools
6	Metal
7	No hanging structure
8	Other (please specify in COMMENTS)

Table A10. Codes for Attractors

Code	Description for Attractors
1-a	Canvas and/or canvas bags and/or cloth – Synthetic fiber
1-b	Canvas and/or canvas bags and/or cloth – Natural fiber
2-a	Netting – Synthetic fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
2-b	Netting – Synthetic fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
2-c	Netting – Natural fiber – (Mesh size \geq 2.5 inch or \geq 7cm)
2-d	Netting – Natural fiber – (Mesh size $<$ 2.5 inch or $<$ 7cm)
3	Palm fronds
4	No attractors
5	Other (please specify in COMMENTS)

Table A11. Codes for Hanging weights used

Code	Description for Hanging weights used
1	Rock
2	Sand
3	Synthetic
4	Other (please specify in COMMENTS)

Table A12. Codes for Buoy type

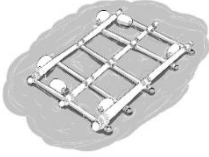
Code	Description for Buoy type
1	GPS Sphere type
2	Satellite with Echo-Sounder
3	Satellite with no Echo-Sounder
4	Other (please specify)

Table A13. Codes for Condition of hanging structure

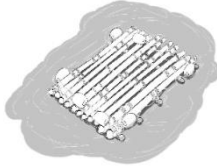
Code	Condition of Hanging Structure
1	Excellent
2	Very Good
3	Good
4	Regular
5	Bad
6	Very Bad

ANNEX 2: RAFT DESIGN

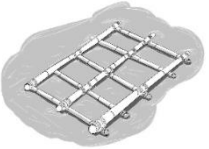
Done



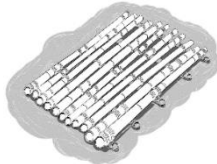
Bamboo with Floats Design 1



Bamboo with Floats Design 2



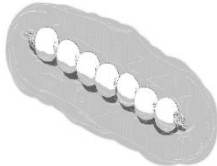
Bamboo Design 1



Bamboo Design 2



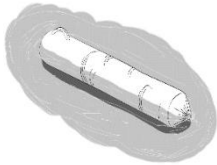
Bamboo Design 3



Burrito



Log



Payao



Small House

ANNEX 3: APPENDAGES

