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Progress of the FADMO-IWG Priority Tasks for 2024

WCPFC-SC20-2024/EB-WP-04 (Rev.01)[1]
1 August 2024

FADMO-IWG

[1] Rev.01: Recommendation section was added to this document

The Commission for the Conservation and Management of
Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

FAD MANAGEMENT OPTIONS INTERSESSIONAL WORKING GROUP
NINTH SESSION

EMAIL CORRESPONDENCE
14 June – 9 July 2024

PROGRESS of the FADMO-IWG PRIORITY TASKS and DISCUSSIONS for 2024[1]

FADMO-IWG09-01_Rev.04

Prepared by the FADMO-IWG Chair and Secretariat

A. PURPOSE

1. This paper provides background information on the tasks of the FAD Management Options IWG identified in the work plan for 2024 -2026 which includes:

a. Satellite Buoy Data Transmission Requirements

Consider requirements for the transmission of satellite buoy data from drifting FADs in 2024 to promote effective and sustainable FAD management in the WCPFC *(paragraph 56, WCPFC20 Outcomes Document)*

b. FAD Recovery Programs/Strategies

Consider ways to implement FAD recovery programs/strategies, including economic aspects and standards required for programs to be effective *(paragraph 52, WCPFC20 Outcomes Document)*

c. FAD logbook

Consider relevant information/materials to develop the WCPFC FAD logbook for vessel operators *(paragraph 53c, WCPFC20 Outcomes Document)*

d. Biodegradable FADs

Consider ways for the implementation of the stepwise introduction of biodegradable dFADs *(paragraph 53a, WCPFC20 Outcomes Document)*

[1] Refer to FADMO-IWG09 Chair's Summary Report for more details on the IWG discussions (FADMO-IWG09-WP-01_Rev.02, Attachment 2)

e. DFAD Deployment

Provide advice to WCPFC23 on the effectiveness of the limit on the number of dFADs deployed as set in paragraph [21] of the CMM 2023-01 *(paragraph 53b, WCPFC20 Outcomes Document)*

2. The FADMO-IWG is expected to provide progress and seek recommendations to the SC, TCC, and the Commission as needed.

B. BACKGROUND

3. Based on WCPFC20 discussions and recommendations, the FADMO-IWG Chair (Mr. Jamel James) informed CCMs and Observers through WCPFC Circular 2024/09, how he intends to progress the FADMO-IWG work in 2024.

4. The succeeding sections below are divided across the five (5) broad categories identified in the FADMO-IWG work plan for 2024 – 2026.

5. This paper should be read in conjunction with the Chair's Summary Report (**Attachment 2**).

C. SATELLITE BUOY DATA TRANSMISSION REQUIREMENTS

6. **ACTION NEEDED:** Consider requirements for the transmission of satellite buoy data from drifting FADs in 2024 to promote effective and sustainable FAD management in the WCPFC *(paragraph 56, WCPFC20 Outcomes Document)*

7. Below are key discussion points from SC19 related to satellite buoy transmission:

   a) SC19 noted the limitation in the scientific analyses of FAD tracking data due to the current incomplete data. SC19 noted the importance of complete FAD tracking data, including for historical periods, to support scientific analyses to detect trends in dFAD use; to evaluate the effectiveness of paragraph 21 of the Tropical Tuna Measure (CMM 2021-01); to determine the origin of FADs and buoys found stranded; and to explore spatial management options to reduce stranding events.

   b) SC19 supported the suggestion of the FADMO IWG on requiring the provision of the daily location records from buoys attached to dFADs to be provided, including historical periods, to research organizations (SPC), research organizations within CCMs, or to the Commission.

8. Some WCPFC CCMs have implemented rules for FAD tracking and FAD buoy registration. In particular, the Parties to the Nauru Agreement (PNA) have requirements for the transmission of satellite buoy data from drifting FADs in PNA waters, which is detailed in the PNA Fourth Implementing Arrangement Relating To Fish Aggregating Device (FAD) Tracking And FAD Buoy Registration: https://www.pnatuna.com/content/4ia-text-amended-april-2022.

9. When considering the design of the WCPFC data transmission/collection requirements related to Satellite Buoys, it will be important for the Commission to specify the monitoring and verification objectives that WCPFC intends for the data that is being collected. This will be an important element that underpins confidence in the effectiveness of management and to support robust tracking and identification and retrieval of drifting FADs as has been discussed most recently at SC19 and WCPFC20.

10. Noting the above task to consider requirements for the transmission of satellite buoy data from drifting FADs for scientific purposes and to promote effective and sustainable FAD management in the WCPFC, the following are proposed minimum required elements recommended by the FADMO-IWG. Further noting that some of these elements need further consideration.

a) FAD Buoy Registration: CCMs should require all FAD Buoy Operators/Service Providers to ensure that all FAD Buoys are registered in their country's FAD Buoy Register or CCMs nominated/recognized FAD Buoy Register (e.g. PNA FAD Register) system and sent to the WCPFC Secretariat before these are deployed in the WCPFC-CA.

b) FAD Buoy Communication/Transmission:

b.1. CCMs shall require FAD Buoy Operators/Service Providers to ensure that all FAD Buoy tracking devices are activated and reporting normally consistently, and automatically, and in near real-time to the CCMs system and/or WCPFC system while they are drifting the WCPFC-CA.

b.2. CCMs shall ensure that each transmission sent by the FAD Buoy Operators/Service Providers to the CCMs system and/or WCPFC system includes an agreed set of minimum agreed fields. (The following have been suggested and further consideration is needed):

i. FAD Buoy Unique Identification Number (Manufacturer's ID No.)
ii. FAD Buoy Owner
iii. Position fixes latitude and longitude
iv. Date and time (expressed in Universal Time Constant [UTC]) of the fixing of the position.
v. Fishing Company
vi. Vessel Name / Vessel IMO Number/ WCPFC RFV VID
vii. Buoy model
viii. Status of the buoy (i.e., in-water, on-board, stranded), if available for the related brand or model
ix. Water temperature
x. Speed
xi. Biomass estimation by layers (each brand provides different layers for information)
xii. Direction

b.3. CCMs shall require FAD Buoy Operators/Service Providers to report (including FAD Buoy Unique Identification number, position fixes latitude and longitude, date and time) within 72 hours to the CCMs system and/or WCPFC system when:

i. A FAD Buoy has been switched off following retrieval from the water;
ii. A FAD Buoy has been deactivated and the reason for its deactivation; or
iii. A FAD Buoy has been activated

iv. A communication with a FAD Buoy has been lost[2] for any other reasons;
v. A FAD Buoy has been stationary near shore for 72 hours and is believed to have drifted onto the reef or beach or similar area.
vi. A FAD buoy has been bought/transferred from another company
vii. A FAD buoy has been transferred to another company.

USA alternative text:
"In order to support the work of the SSP in analyzing the impact of FAD fisheries, while protecting business confidential data, CCMs shall report, or require their vessels to report, daily information on all active FADs to the SSP. The information provided shall be identical in form and content to the raw satellite buoy data provided by the buoy manufacturers to the original users (i.e., vessels and vessel administrators), as specified in ***Attachment 1****. Reporting shall occur at monthly intervals and with a time delay of at least 60 days, but no longer than 90 days."*

PNAO supported the USA approach with suggested edits to USA alternative text *(Attachment 1 will be deleted)*:

"b.2. CCMs shall report, or require FAD Buoy Operators to report, information on all active FAD Buoys to the WCPFC at least once in each 12-hour period. The Information provided shall be identical in form and content to the raw FAD buoy data provided by the Service Providers to their clients Reporting shall occur at monthly intervals beginning on 1st January 2025 and with a time delay of no longer than (90) days."

c) Timing of Data Submission:

The frequency of data submissions is every month. FAD Buoy data for the entire month should be submitted to the WCPFC Secretariat before the deadline of 90 days after the start of the month (of the FAD buoy data). An example of the submission schedule is provided below:

FAD Buoy data for the entire month of …	Submission deadline
Jan 2025	31 March 2025
Feb 2025	30 April 2025
Mar 2025	30 May 2025
…	…

Regular submission, in the format and frequency stated above, of FAD Buoy Communication/Transmission shall start on January 1st 2025. Historical data, from 2000 (or as far as data are available with the FAD Buoy Operators/Service Providers) through 2024, shall be made available to the CCMs system and/or WCPFC system by January 31st 2025. Noting that the suggested deadline for submitting historical data needs further consideration.

D. FAD RECOVERY PROGRAMS/STRATEGIES

[2] Lost means any FAD Buoy failing to transmit for 72 hours.

11. ACTION NEEDED: Consider ways to implement FAD recovery programs/strategies, including economic aspects and standards required for programs to be effective *(paragraph 52, WCPFC20 Outcomes Document)*

12. Below are key points from SC19:

    a) SC19 highlighted the need for in-situ data collection to better quantify FAD stranding events and the impacts of FADs on marine and coastal environments; and encouraged the expansion of the in-country stranded FAD data collection programs to other CCMs.

    b) SC19 highlighted the need to promote FAD retrieval, preferably by the owner of the buoy attached, and eventually through dedicated programs, before FADs are abandoned or lost and ultimately before FADs reach coastal areas. SC19 recommended that options for increased FAD detection and retrieval should be considered, including economic aspects and standards required for programs to be effective. SC19 recommended that a FAD recovery program/strategy be an agenda item for the FADMO IWG.

13. To date information on FAD recovery programs/strategies is limited but FADMO-IWG suggests/shares some best practices/guidelines based on CCM's experience having encountered these challenges and how they were able to address or how they think this could be addressed. Some of these would include:
    a. CCMs should consider having a stranded FAD data reporting and collection system to better quantify FAD stranding events and the impacts of FADs on marine and coastal environments, noting that data on entangling events is very sparse/limited.
    b. CCMs should require the FAD/and or buoy owner to have the capacity to retrieve both the FAD and the buoy.
    c. CCMs should encourage the FAD and/or buoy owner to retrieve both the FAD and the buoy in the open ocean or fishing ground (if possible) before these are abandoned or lost and eventually reach coastal areas or break-up.
    d. For FAD retrieval both in open ocean and from land:
        i. Encourage/require fleets to avoid loss and abandonment of FADs by sharing or selling their FADs to other fleets before they are lost or abandoned and deactivated.
        ii. Encourage/require fleets to share "non-fishing"[3] FADs in a common platform, to be used by FAD retrieval programs.
        iii. Regulate the deactivation or end of monitoring of the FAD in a way that allows for its recovery outside the fishing area.
        iv. Encourage sharing of FAD recovery vessels among fleets.
        v. Require FAD retrieval programs use indicators to assess their effectiveness.
        vi. Explore potential funding sources for the FAD Recovery Programs (FRPs).
    e. CCMs should encourage their fleet to participate in any FAD recovery programs in place, for instance by sharing the position of buoys in real-time with the relevant authority or program manager, to facilitate recovery of buoys and FADs lost or drifting near-shore and having the potential to strand.

[3] A "non-fishing" FAD is a FAD that is drifting beyond the fishing ground or out of the range of the vessel that deployed it.

f. CCMs should encourage/require their fleet to keep buoys attached to active FADs while drifting in the WCPFC-CA.
g. Consider banning deactivation of FAD buoys while they are drifting in open water or fishing ground.
h. Coastal states are encouraged to receive reports of deactivations, loss of communications and strandings of dFADs in their waters.
i. CCMs should encourage cooperation between the WCPFC and other international organizations, particularly the IATTC, to exchange shared challenges and identify effective FAD recovery programs/strategies.

E. FAD LOGBOOK

14. ACTION NEEDED: Consider relevant information/materials to develop the WCPFC FAD logbook for vessel operators *(paragraph 53c, WCPFC20 Outcomes Document)*

15. Below are key points from SC19:

a) SC19 recognized the scientific value of the PNA's proposal on *"Minimum Data Fields to be Recorded by WCPFC Vessel Operators"* (SC19-ST-WP-05).

b) Noting the current workload of observers, and some FAD data may be more effectively provided by vessel operators, **SC19 agreed on the need for developing a FAD logbook for vessel operators as a priority**.

c) SC19 noted that the PNA has developed the Standard Operating Procedures (SOPs) for the provision of FAD data by vessel operators for licensed vessels from January 2022 and IATTC has also adopted a FAD logbook, currently used for vessels operating in the EPO and in the overlap area. SC19 noted both could be used as the basis for discussion at FADMO-IWG.

d) SC19 **recommended WCPFC20 considers this work to be progressed intersessionally within the FADMO-IWG**.

16. The IATTC Resolution C-19-01 on the Collection and Analysis of Data on FADs including the related forms, requires the following data to be provided for each interaction with a FAD:
    i. Position
    ii. Date;
    iii. Hour;
    iv. FAD identification[4]

[4] CPCs shall obtain unique alphanumeric codes from the IATTC staff on a periodic basis and distribute those numbers to the vessels in their fleets for FADs that may be deployed or modified, or in the alternative, if there is already a unique FAD identifier associated with the FAD (e.g., the manufacturer identification code for the attached buoy), the vessel owner or operator may instead use that identifier as the unique code for each FAD that may be deployed or modified. The alphanumeric code shall be clearly painted in characters at least 5 cm in height. The characters shall be painted on the upper portion of the attached radio or satellite buoy in a location that does not cover the solar cells used to power the equipment. For FADs without attached radio or satellite buoys, the characters shall be painted on the uppermost or emergent top portion of the FAD. The vessel owner or operator shall ensure the marking is durable

v. FAD type (e.g., drifting natural FAD, drifting artificial FAD)
vi. FAD design characteristics (dimension and material of the floating part and of the underwater hanging structure);
vii. Type of the activity (set, deployment, hauling, retrieving, loss, intervention on electronic equipment, other (specify));
viii. If the activity is a set, the results of the set in terms of catch and bycatch; and
ix. Characteristics of any attached buoy or positioning equipment (positioning system, whether equipped with sonar, etc.)

17. Table 1 of SC19-ST-WP-05 is robust enough to cover all the data fields identified in the IATTC FAD Data Collection.

18. Developing a FAD Logbook for vessel operators appears to be a challenging task for the FADMO-IWG, assistance from WCPFC-SSP will greatly assist us in moving forward. Some suggestions would be:
    a. The FADMO-IWG Chair will liaise with WCPFC-SSP and the Secretariat to initially draft a FAD Logbook considering the data fields in Table 1 of SC19-ST-WP-05. The development of the FAD Logbook should also consider the need to cross-verify with available Satellite Buoy data collected to support effective and sustainable FAD management in the WCPFC, the need for data that can be used to support monitoring of FAD recovery programs/strategies, current obligations in CMM 2023-01 paragraphs 16 and 17 for non-entangling FADs, future obligations for stepwise introduction of biodegradable FADs, and monitoring and verification of quantitative limits on the number of dFADs (CMM 2023-01 para 21 and 22).
    b. When the draft FAD Logbook becomes available, this will be circulated for comments of the FADMO-IWG or consider a range of electronic data systems available and focus work on agreeing to the data fields to be provided by any data system.
    c. Next steps will be further discussed and determined by the FADMO-IWG Chair to the IWG members.

F. BIODEGRADABLE FADS

19. **ACTION NEEDED:** Consider ways for the implementation of the stepwise introduction of biodegradable dFADs *(paragraph 53a, WCPFC20 Outcomes Document)*

20. Below are key points from SC19:

    a) **SC19 recommended that the FADMO-IWG and TCC review the timelines for the stepwise introduction of biodegradable dFADs considering the expected outcomes of projects related to the design, cost-effectiveness and performance of biodegradable dFADs (e.g. jelly FADs) in the WCPO and other oceans.**

    b) SC19 viewed that moving to biodegradable FADs is important for reducing marine pollution and other impacts. However, SC19 noted that it is challenging for some CCMs, especially for purse seine operators that are going through a major process of eliminating netting in FADs, to meet the non-entangling requirement for 2024 and further noted that trials for biodegradable FADs are still

(for example, use epoxy-based paint or an equivalent in terms of lasting ability) and visible at all times during daylight. In circumstances where the observer is unable to view the code, the captain or crew shall assist the observer (e.g. by providing the FAD identification code to the observer).

ongoing. In this regard SC19 noted that, for some CCMs, the year 2025 to start the transition to biodegradable FADs implementation may not be viable.

c) SC19 noted IATTC's biodegradable FAD implementation program, which includes timelines with the mandatory use of categories I to IIIb by 2026 (Table FAD-1); and categories I to II by 2029, which could be reviewed by TCC and the FADMO IWG for consideration in the WCPO.

TABLE FAD-1: Preliminary categories of drifting FADs biodegradability levels (from non-biodegradable to 100% biodegradable) for the gradual implementation of biodegradable drifting FADs. *In year X, FADs of either category III(a) (biodegradable tail) or/and category III(b) (biodegradable raft) are required/implemented simultaneously.*

Categories[5]	Potential Timeline *(Suggestion 1)*	Potential Timeline *(Suggestion 2)*	Remarks
Category I. The FAD is made of 100% biodegradable materials.	Year X + 3	Year X + d	Year X will be determined by the WCPFC and subject to review based on available information and availability of materials
Category II. The FAD is made of 100% biodegradable materials except for plastic-based flotation components (e.g., plastic buoys, foam, purse-seine corks).	Year X + 2	Year X + c	Year X will be determined by the WCPFC and subject to review based on available information and availability of materials
Category III(a). The subsurface part of the FAD is made of 100% biodegradable materials, whereas the surface part and any flotation components contain non-biodegradable materials (e.g., synthetic raffia, metallic frame, plastic floats, nylon ropes).	Year X	Year X +b	Year X will be determined by the WCPFC and subject to review based on available information and availability of materials
Category III(b). The subsurface part of the FAD contains non-biodegradable materials, whereas the surface part is made of 100% biodegradable materials, except for, possibly, flotation components.	Year X	Year X +a	Year X will be determined by the WCPFC and subject to review based on available information and availability of materials
Category IV. The surface and subsurface parts of the FAD contain non-biodegradable materials.	Current	Year X	

Note These definitions do not apply to electronic buoys attached to FADs to track them.*

[5] The Categories were renumbered as follows: Category III = Category III(a); Category IV = Category III(b) and Category V = Category IV

d) SC19 recommended the FADMO IWG and TCC consider incentivising the use of biodegradable dFADs.

e) SC19 noted that some CCMs suggested one example of an incentive could be to allow biodegradable dFADs to be deployed during the FAD closure.

21. Noting that a follow-up project to enhance WCPFC Project 110 by trailing additional non-entangling and biodegradable dFADs, and investigating alternative construction locations, and using locally sourced materials is still ongoing, it is viewed that the FADMO-IWG periodically reviews WCPFC Project 110 outcomes (as well as other relevant projects) as the projects progress , to have robust information on NEBD FADs discussion concerning the timeline for the stepwise introduction of biodegradable FADs including its design, cost-effectiveness, and performance and any monitoring and reporting requirements.

G. DFAD DEPLOYMENT

22. ACTION NEEDED: Provide advice to WCPFC23 on the effectiveness of the limit on the number of dFADs deployed as set in paragraph [21] of the CMM 2023-01 *(paragraph 53b, WCPFC20 Outcomes Document)*

23. Below are key points from SC19:

a) SC19 noted that, based on the information available, no vessel monitored more than 350 active buoys per day (the current buoy number limit under CMM 2021-01), with 90% of the vessels monitoring less than 130 buoys per day. It was noted these results were limited to the fleets that have provided tracking information since January 2023 and some differences for at least one fleet have been noted. SC19 recommended that the FADMO IWG and TCC further discuss the active FAD buoy limit and provide advice to TTMW4 and the Commission on this limit.

b) SC19 recommended that options should be developed by the FADMO IWG and TCC for reporting the number of active buoys per vessel (paragraph 21 of CMM 2021-01); and to develop processes to i) report the number of dFADs and buoys deployed and retrieved per year; ii) report lost and abandoned dFAD including reasons for lost and abandonment; and iii) to eventually abandon and deactivate buoy communication (paragraph 22 of CMM 2021-01).

c) SC19 supported the Pacific-wide collaboration on dFAD research, in particular on harmonising data collection processes, increasing non-confidential data exchanges and collaborating on data analyses.

24. CMM 2023-01 paragraph 22(3) “The FADMO IWG may consider any information provided by CCMs on their implementation of paragraph 22(1) to enable the development of recommendations to TCC and the Commission on lost, abandoned, or stranded dFADs in 2025.”

25. It would be reasonable to delay this discussion until next year and focus on other agenda items that the Commission needs to act on at WCPFC21.

H. RECOMMENDATIONS

26. It is acknowledged that these topics being discussed by the FADMO-IWG are technical, complex, and interconnected which needs further consideration by the IWG. SC20 is requested to provide suggestions on how the FADMO-IWG could efficiently progress its work on i) Satellite Buoy Data Transmission Requirements; ii) FAD Recovery Programs/Strategies; iii) FAD logbook; iv) Biodegradable FADs; and v) DFAD Deployment.

27. Noting that the FADMO-IWG work plan for 2024-2026 identified having a physical meeting on September 2024 and/or September 2025 but mindful that there was no funding for this year, it may be worth considering that SC20 supports a physical meeting of the FADMO-IWG in 2025 to be endorsed and funded by the Commission, back-to-back with TCC to reduce meeting cost.

Attachment 1

Format of the information to be requested to satellite buoy manufacturers

a. Daily information on buoy location

The following data fields should be included for all the buoys and positions recorded during the day, in fishing company-specific csv files:
- date [dd-mm-yyyy],
- time [hh.mm],
- unique buoy identifier code [the format varies for each buoy manufacturer but is always an alphanumeric code],
- IMO of the vessel associated to the buoy and receiving the information,
- latitude [expressed as decimal degrees],
- longitude [expressed as decimal degrees],
- speed [knots].

Additionally, whenever possible, the following information corresponding to each transmission will be included:

- Water temperature.
- Buoy in the water (only for those buoys with sensors that allow identifying buoys in the water)
- Activation and deactivation dates.
- Estate or transmission mode of the buoy (e.g. immediate information, retrieving, etc.)

Data should be received in csv files named "X-YYYY-MM-ZZZZZZZ.csv" where X is the code of the buoy manufacturer (M, S, Z, for Marine Instruments, Satlink, and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file will be prepared for company, year and month.

b. Information on acoustic records

The following data fields must be included for all the buoys and acoustic records recorded daily, in fishing company-specific csv files:

- ZUNIBAL: company, unique buoy identifier code, date (date, time), type (position or sounder), latitude, longitude, speed, drift, total

- SATLINK: Company, unique buoy identifier code, Message Descriptor (MD), date (date, time), latitude, longitude, battery charge (bat), temp, speed, drift, layer1, layer2, layer3, layer4, layer5, layer6, layer7, layer8, layer9, layer10, sum, max, mag1, mag2, mag3, mag4, mag5, mag6,mag7, mag8.

- MARINE INSTRUMENTS: company, unique buoy identifier code, TransmissionDate, TransmissionHour, lat, lon, mode, light, poll, temperature, vcc, SounderDate, gain, layers,

layerbits, maxdepth, sd1, sd2, sd3, sd4, sd5, sd6, sd7, sd8, sd9, sd10, sd11, sd13, sd12, sd14, sd15, sd16, sd17, sd18, sd19, sd20, sd21, sd22, sd23, sd24, sd25, sd26, sd27, sd28, sd29, sd30, sd31, sd32, sd33, sd34, sd35, sd36, sd37, sd38, sd39, sd40, sd41, sd42, sd43, sd44, sd45, sd346, sd47, sd48, sd49, sd50.

Data should be received in csv files named “X-YYYY-MM-ZZZZZZZ-Sounder.csv” where X is the code of the buoy manufacturer (M, S, Z, for Marine Instruments, Satlink, and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file will be pre

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

9th FAD Management Options Intersessional Working Group (FADMO-IWG09)

Email Communication
14 June – 9 July 2024

CHAIR'S SUMMARY REPORT: PROGRESS OF THE FADMO-IWG PRIORITY TASKS AND DISCUSSIONS FOR 2024

I. INTRODUCTION

1. The Chair of the FAD Management Options Intersessional Working Group (FADMO-IWG), Mr. Jamel James (FSM) has advised to reconvene the FADMO-IWG activities through email communications, this information was circulated through the WCPFC Circular 2024/09 dated 13 February 2024.

II. EMAIL COMMUNICATIONS ON THE FADMO-IWG PRIORITY TASKS AND DISCUSSIONS FOR 2024

2. The Chair sent the 1st email communication to the working group on 14 June 2024. The paper is divided across the five (5) broad categories identified in the FADMO-IWG work plan for 2024 – 2026. The Chair was seeking comments and suggestions on each of the items below as detailed in the paper.
    a. Satellite Buoy Data Transmission Requirements
    b. FAD Recovery Programs/Strategies
    c. FAD Logbook
    d. Biodegradable FADs
    e. DFAD Deployment

3. The Chair further informed the members that the working paper will be submitted to SC20, TCC20, and the Commission for their information and consideration.

4. After the first email, Chinese Taipei (CTP) viewed that regarding the 5 categories mentioned in the Chair's letter, they suggested using a stepwise approach to address the complexity and interconnection among these broad issues. CTP considers that data collection is the foundation of any successful management measure, CTP believed that the "Satellite Buoy Data Transmission Requirements" can provide the necessary background for our discussion. Additionally, since the "dFAD Deployment Limit" is a longstanding management measure adopted by the Commission in Tropical Tuna Measures, they suggested prioritizing these as the first 2 items for the IWG discussion this year. With the establishment of the "Satellite Buoy Data Transmission Requirements" and the "dFAD Deployment Limit," it will be easier to identify what kind of data remains to be collected through the "FAD Logbook."

5. For CTP once the aforementioned 3 items have been addressed, we should have sufficient information, or at least orientation, to guide IWG discussion regarding "FAD Recovery Programs/Strategies." Meanwhile, CTP viewed that we could continue our discussion and await the results of the ongoing material research on "Biodegradable FADs." Therefore, they suggested placing these as the last 2 items of IWG discussion.

6. The follow-up email of the Chair to gather additional comments and views from FADMO-IWG was sent on 28 June 2024.

7. On ranking the priority tasks/categories, ISSF believes that biodegradable FADs should be a high priority, not last. IATTC has already decided on a gradual transition to biodegradable FADs and WCPFC should do the same because such an action would eventually mitigate a number of different environmental impacts.

8. The following are general comments from French Polynesia (PF):

9. French Polynesia views that FAD Recovery Programs/Strategies have to be a priority as it is a very important issue already discussed last year, and even adopted within the last tropical tuna measure (TTM) in December 2023. FAD retrieval programs are already in process in WCPO and IATTC, and some information papers will be provided for the next SC. It is a very current and developing topic and experiences have to be shared. There is no need to wait for a logbook or biodegradable FADs to work for this. Indeed, logbook and biodegradability won't solve the stranding FADs issue.

10. Moreover, "Satellite buoys data transmission requirements" could still help "FAD recovery programs", as identifying drifting, stranding, and lost localization could help develop a retrieval program. That's why these two priority topics should be linked together, so the workplan and priorities provided in the initial FADMO-IWG09-01 were pertinent in their view:
    a. Satellite Buoy Data Transmission Requirements
    b. FAD Recovery Programs/Strategies
    c. FAD logbook
    d. Biodegradable FADs

11. French Polynesia supports most of the other comments done by members or observers, especially SPREP, SPC, and ISSF. French Polynesia would also strongly support the need to provide precise and detailed tracking information data from all purse seine fleets, including historical data, as some fleets have not provided this data yet. It is important to better address the FAD retrieval issue (areas and period of loss or deactivation etc).

12. The United States commented that it sees merit in the stepwise approach proposed and agrees with prioritizing Satellite Buoy Data Transmission Requirements. In addition to the suggested prioritization of dFAD Deployment Limits (per CMM 2023-01), the United States would also like to prioritize Biodegradable FADs recognizing these topics are interconnected. The United States also anticipates that results from the WCPFC biodegradable FAD study will be available next year and notes those results could impact the timeline for when the IWG may want to revisit and re-evaluate the Biodegradable FAD topic.

13. The PNAO considers that the FAD Logbook is equally high priority with the transmission requirements since these are the two basic datasets that need to be established.

III. SATELLITE BUOY DATA TRANSMISSION

14. ISSF commented on the SC19 recommendation related to the “daily” provision of location records from buoys attached to dFAD. ISSF viewed that the term ‘daily’ could be understood to mean that sending a single position per day is sufficient. However, it has been shown that in areas with a high density of FADs, assigning a catch to a specific FAD is complicated with only one daily position, due to the drift

of the FAD within a day. Therefore, instead of 'daily,' it might be better to request 'raw data' from echosounder buoys (i.e., all positions) or at least two positions per day.

15. PNAO noted that tracking data may also be required for compliance as well as scientific purposes. ISSF shares the same view.

16. The WCPFC Secretariat suggested that it may be useful to consider as proposals take shape, consideration is given to where proposed changes are to be specified, and, where this requires CMM change, the audit points checklist requirements will need to be considered as part of the outputs from this work.

17. The WCPFC Secretariat further suggested that when considering the design of the WCPFC data transmission/collection requirements related to satellite buoys, it will be important for the Commission to specify the monitoring and verification objectives that WCPFC intends for the data that is being collected. This will be an important element that underpins confidence in the effectiveness of management and to support robust tracking and identification and retrieval of drifting FADs as discussed most recently at SC19 and WCPFC20. Some questions that could be considered:
    - Is the data intended to be used by the Commission for monitoring and facilitating FAD recovery by CCMs?
    - Is the data intended to provide information to the Commission that will support monitoring and verification of FAD deployment activities, such as monitoring and verifying the current FAD closure (CMM 2023-01 para 14 and 15), quantitative limits on the number of dFADs in CMM 2023-01 (CMM 2023-01 para 21 and 22) and requirements for non-entangling FADs (CMM 2023-01 paragraphs 16 and 17)?
    - Is the data also intended to support other potential future obligations that could be adopted by the Commission to ensure effective and sustainable FAD management, such as stepwise introduction of biodegradable FADs?
    - The development of the Satellite Buoy transmission requirements should also consider the extent to which the data would be used to cross-verify with future FAD Logbook reporting.

    Clarifying these matters will then allow for consideration of the most efficient supporting implementation and reporting requirements.

18. Concerning the importance of having complete tracking data, the EU commented that clarification on the meaning of "complete" would be helpful. Example would 1 position per day be sufficient? EU's understanding is that this refers to the full trajectory of a buoy (from activation to deactivation).

19. In addition, on the daily location record, the EU viewed that it is important to find the right balance between what can be reported and what needs to be reported to support the scientific work sought. Noting the amount of data involved and the main purpose of the scientific work, EU viewed that one position per day would be a good and manageable compromise.

i. FAD Buoy Registration

20. On the FAD buoy registry, the intention was for each CCM to establish FAD buoy registry or their recognized or nominated registry (e.g. PNA FAD Buoy registry).

21. The United States notes that regardless of a FAD Buoy Registration system, it is important to ensure the data is being sent inclusive of part "b) FAD buoy communication/transmission". USA further notes that some vessels are already registering buoys under the PNA buoy registration system. While the

United States is unsure that it is necessary for any CCMs to have a FAD buoy registry system, if there is a FAD buoy registration system for CCMs, that it be harmonized with any existing registries.

22. ISSF supports having a FAD buoy registry. If each CCM that uses FADs is to have its register, then there should be harmonization between CCM (and PNA) registers, as the USA notes. This could be achieved in a way similar to the ROP, so that it can be verified (by the Secretariat?) that each register meets a set of criteria.

23. PNAO thinks that FAD buoy registration could be useful provided that the PNA FAD Buoy Register could be nominated as a country's FAD Buoy register to avoid duplication. Some further thought will be necessary including:
    a. Purposes of the Register: key elements for the PNA FAD Buoy Register include FAD Buoy identification, establishing responsibility for a FAD Buoy, establishing that a FAD Buoy is type approved, and managing the status of a FAD Buoy.
    b. Which FAD Buoys would a CCM be responsible for? PNAO noted that some FAD Buoys are owned and operated by a company that may not be a vessel-owning company, and which may own and operate FAD Buoys used by vessels of several flags. PNAO also knows that FAD Buoys could be transferred between vessels or groups of vessels, sometimes between vessels or groups of vessels of different flags.

24. The EU suggested considering developing a WCPFC FADs registry, which would also justify the role of the WCPFC Secretariat in receiving such information. In IOTC it was recently agreed to develop such a registry by 2026. Additionally, the issue of FADs drifting from the eastern Pacific (EP) should be also considered here. EU also noted that it is not clear how the issues related to the "ownership" of buoys are addressed or need to be addressed at this time.

25. The PNAO commented that if there is to be a Commission Register, then FAD buoy operators should be required to advise the Name and Contacts of the FAD Buoy Operator who will be responsible for the Buoy, Buoy ID, and other needed data. The Register is the place for notification of transfers, loss, stranding etc. with a capacity for CCMs to be able to check the status of a buoy.

ii. FAD Buoy Communication/Transmission

26. Last year, the United States proposed a new paragraph (23bis) to CMM 2021-01 (https://meetings.wcpfc.int/node/20524). We would like to suggest that alternatively, the following be considered:

    Para 23bis: "In order to support the work of the SSP in analyzing the impact of FAD fisheries, while protecting business confidential data, CCMs shall report, or require their vessels to report, daily information on all active FADs to the SSP. The information provided shall be identical in form and content to the raw satellite buoy data provided by the buoy manufacturers to the original users (i.e., vessels and vessel administrators), as specified in Attachment 4. Reporting shall occur at monthly intervals and with a time delay of at least 60 days, but no longer than 90 days."

27. The proposed specifications by the USA are in **Attachment 1** of the FADMO-IWG09-01.

28. The PNAO supports the USA approach to generally require all raw information provided by the Service Provider to be sent to the WCPFC but suggests these edits/alternative to the USA text.

    "b.2. CCMs shall report, or require FAD Buoy Operators to report, information on all active FAD Buoys to the WCPFC at least once in each 12-hour period. The Information provided shall be identical in form and content to the raw FAD buoy data provided by the Service Providers to their

clients Reporting shall occur at monthly intervals beginning on 1st January 2025 and with a time delay of no longer than (90) days."

29. The PNAO prefers the more direct approach of requiring all information received from service providers to be forwarded to the WCPFC, along with a minimum standard in a redrafted paragraph 10.b.2 based on the USA alternative text. The PNAO doesn't see the value in a detailed text relating to non-binding requirements for data that are already being exchanged. Reference to Attachment 1 could be deleted.

30. SPC suggested additional data fields (e.g. buoy model, sea surface temperature, speed, biomass estimation, etc) needs to be gathered and provided for the Scientific Services Provider (SSP) to conduct their analysis.

31. PNAO supports the requirement to ensure that all FAD Buoys are activated and reporting, but they think the proposed approach of placing obligations on CCMs to ensure that requirements on FAD Buoy Operators/Service Providers are met may need closer consideration. In particular, the Service Providers will not usually be under the jurisdiction of the flag state CCM. The alternative approach applied by the PNA is to establish type approvals for FAD Buoy makes and models, as with MTUs, and a type approval for FAD Service Providers with these requirements applied as conditions of maintenance of Service Provider approval. This approach could be considered by the Commission.

32. PNAO also shared that securing some of this data from buoy transmissions is not straightforward. The FAD Service Providers do not necessarily know or transmit Fishing Company or Vessel Name/IMO Number. But Service Providers know who is paying for the service. Transmissions received by the PNA system take different forms. Some transmissions have a Fishing Company field, some have a Vessel Name field, some have both, some have neither – and the Fishing Company and Vessel Name fields have a mix of Company names, Offices, Vessel names and Individuals' names. A key issue is the extent to which the Commission is going to require changes to the content of transmissions. The PNA system does not. The PNA system just receives copies of transmissions.

33. PNAO also notes that the IATTC has the same approach. IATTC Resolution C-21-04s says *"CPCs shall report, or require their vessels to report, daily information on all active FADs to the Secretariat. The information provided shall be identical in form and content to the raw satellite buoy data provided by the buoy manufacturers to the original users (i.e., vessels and vessel administrators)."*

34. On the reporting requirements, the PNAO agrees with these which are the same as what they require at PNA. But pose the same question as above about how a flag state CCM will apply obligations to FAD Buoy Operators and/or Service Providers. Further to this the PNAO also suggested there might be other considerations, including:
    a. *Cost to the Commission*; and
    b. *Data access*: the PNA understanding is that this data will be Commission non-Public Domain Data and access to this data will be covered by paragraph 19 of the Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the Commission.

35. The PNAO shared that no service providers currently include the buoy model in transmissions to their clients received by the PNA system. This can be deduced from the Buoy ID number. Otherwise, the buoy model information should be on the register.

36. The following fields: Fishing Company, Vessel Name / Vessel IMO Number, Status of the buoy (i.e., in-water, on-board, stranded), if available for the related brand or model, Water temperature, Speed, Biomass estimation by layers (each brand provides different layers for information), Direction. The PNAO considers these fields could be identified as additional information to be provided, when possible, but they think that these may be redundant with the USA proposal that the information provided be identical in form and content to the raw satellite FAD buoy data provided by the Service Providers to their clients which seems to cover all data provided.

37. Regarding the text *"The Information provided shall be identical in form and content to the raw FAD buoy data provided by the Service Providers to their clients"*, SPC noted that vessels and vessel administrators or clients never access the data in the same format as what would be transferred by CSV, as they are accessing the data on a brand-specific software. It would be important that the format and the fields that should be transferred be defined.

38. The WCPFC Secretariat suggested that perhaps given the questions on monitoring that are not yet clear, it is useful to consider this just as WCPFC systems noting there are comparable systems already in place for some of the proposals and that this captures any SSP involvement for implementation in any event. How they may best be achieved will depend on answers relating to whether requirements are binding and the degree of assurance on the quality of reported information and follow-up to ensure that quality.

39. On the 90-day deadline for submitting data, the WCPFC Secretariat commented that this timeframe might be suitable for scientific purposes, but will limit the potential use of this data for monitoring and verification to promote effective and sustainable FAD management - including FAD program recovery/strategies.

40. On the proposed historical data, from 2000 (or as far as data are available with the FAD Buoy Operators/Service Providers) through 2024, shall be made available to CCMs system and/or WCPFC-SSP system by 31 January 2025. EU viewed that this deadline seems rather short noting the considerable amount of data to be compiled.

IV. FAD RECOVERY PROGRAMS/STRATEGIES

41. The United States shared its view on the retrieval of FAD and buoy before these are abandoned or lost that do not find this to be practical or possible under most situations. The US fleet is participating in a FAD retrieval project in Palmyra and one of the issues is that even in areas that have a high stranding history, the stranding occurs over vast areas (50-100+ miles) over long periods (days, weeks, or months). The USA suggested changing "required" to "encouraged".

42. On the stranded FAD data collection system, SPC noted that they already have developed a format used by 15 countries and IATTC recently adopted the same format. SPC suggested having this format used by WCPFC for homogeneity.

43. The PNAO considers that management of FAD stranding is by definition a coastal state issue, and it is best handled by coastal state law. However, PNAO supports the preparation by the Commission of a common standard for reporting on stranded FAD Buoys to ensure the value of this information. PNAO considers that banning the deactivation of FAD buoys while they are drifting is a crucial step in addressing stranded FAD buoys. PNAO also suggests consideration of the opportunity for coastal

states to choose to receive reporting of deactivations, loss of communications, and strandings in their waters, etc. The PNAO further proposes banning abandonment by banning the deactivation of any FAD buoys while drifting.

44. For CCMs reporting only within 72 hours that i) a FAD Buoy has been deactivated; or; ii) a communication with a FAD Buoy has been lost[6] for any other reasons; and iii) a FAD Buoy has been stationary near shore for 72 hours and is believed to have drifted onto the reef or beach or similar area. The WCPFC Secretariat commented that this would not be sufficient for the WCPFC Secretariat to be able to record this in a meaningful way. The data to be reported would need to include the fields listed in 10.b.2, and the positions would need to cover a period of [x] days before the event covered by the report occurred.

45. On the suggestion to ban the deactivation of buoys while drifting open ocean, the EU suggested an option which could be to consider a system whereby an operator can request deactivation (for a justified reason - to be determined) and then the buoy's communication is switched to a "low cost" mode of transmission to reduce the cost of maintaining permanent communication. Sending one position transmission per day or every 2 days (when in the open sea) could be sufficient, and when approaching coastal areas increase the frequency.

46. On the suggestion that CCMs should encourage/require their fleet to report any transfer of FAD buoys from/to another company; the PNAO commented that this is better done through a transfer process in the Register with both Parties agreeing to the transfer.

47. In addition, to the suggestion that *"CCMs should encourage cooperation between the WCPFC and other international organizations, particularly the IATTC, to exchange shared challenges and identify effective FAD recovery programs/strategies"*; the PNAO proposes deletion but there could be a reference to more specific collaboration with IATTC.

V. FAD LOGBOOK

48. On FAD identification, ISSF emphasized identifying not only the buoy but both, the buoy and FAD structure is important to account for the origin of FAD structures found stranded without buoy.

49. USA suggested the need for harmonization of the FAD logbook among the EPO and WCPO, PNA, and CCMs. The EU also supports harmonization between WCPFC and IATTC FADs logbooks.

50. Canada suggested including a space to indicate the FAD categories in the FAD logbook.

51. The PNA considers this issue of very high priority because the PNA expects that reporting requirements on FADs by vessel operators will need to be in place before the Commission can adopt additional FAD reporting requirements or requirements for the use of biodegradable material in FADs. They noted that it is nearly 10 years since the Commission agreed at WCPFC12 that vessel operators should provide data on FADs covering the two major areas of FAD design and construction of FAD and FAD activity and this task has still not been completed. The PNA has put in place electronic reporting requirements as described in the SC paper. These cover over 90% of the WCPO industrial purse seine FAD fishing.

[6] Lost means any FAD Buoy failing to transmit for 72 hours.

PNA is currently working on proposed changes to the Scientific Data Rules to implement requirements for these fields in association with the existing requirements for operational-level catch and effort data.

52. PNA further notes that reference to drafting a logbook should not be taken as drafting a form. A range of electronic data systems has already been developed to capture FAD-related data provided by vessel operators. The task now is to agree on the data fields to be provided by any data system. The requirements need to apply to all vessels deploying or retrieving FADs, including carriers and longline vessels, and not just purse seine vessels.

53. EU agrees that PNA proposal would cover all current IATTC requirements, but they think it is important to consider:
    - practicability of some fields (% of each material, SSI identified at species level)
    - usefulness of a standardized form between IATTC and WCPFC. In this regard, it would be useful to note there is a FAD logbook form developed by the IATTC secretariat and guidance on FAD reporting (https://www.iattc.org/en-US/Resources/Forms)

    Their preference is to strive for a similar/compatible approach between WCPFC and IATTC.

54. The WCPFC Secretariat suggests that to guide this work, further guidance will be needed from the FADMO IWG participants, from SC20 and/or TCC20, to ensure the intended monitoring purposes for the FAD Logbook are clear. Such guidance might clarify:
    i. if there is a need to cross-verify with available Satellite Buoy data collected?
    ii. if the intention is to support effective and sustainable FAD management in the WCPFC?
    iii. if there is a need for data to be collected that can be used to support monitoring of FAD recovery programs/strategies?
    iv. if there is a need for data to be collected that can be used to support monitoring of current obligations in CMM 2023-01 paragraphs 16 and 17 for non-entangling FADs?
    v. if there is a need for data to be collected that can be used to support monitoring of future obligations for stepwise introduction of biodegradable FADs, and monitoring and verification of quantitative limits on the number of dFADs (CMM 2023-01 para 21 and 22)?

VI. BIODEGRADABLE FADS

55. On biodegradable FAD categories, ISSF noted that the category numbers do not coincide with those of IATTC. Since some vessels fish in both areas and the overlap area and FADs drift across the Pacific, it would be worth thinking about harmonizing nomenclatures. This concern was noted, and it is good to harmonize the category numbers, but should also be recalled that the current category numbers were suggested from our previous FADMO-IWG discussions and the definition of each category number was not changed.

56. USA noted that with the first phase of the IATTC bio-FAD timeline taking effect in 2026, it may be useful to look at how the buildup of material goes after that first phase is completed. Supply issues are much more difficult in the Pacific region. However, the USA supports finding ways to incentivize earlier adoption and capacity buildup.

57. SPREP raised the idea of seeking funding to build biodegradable FADs and provide them free. SPC also noted that WCPFC project 110 and the WCPFC follow-up project (agreed at WCPFC20) have been funded to build and provide free non-entangling and biodegradable FADs to the industry. The project is led by the WCPFC-SSP, and they are still struggling to find interested fishing companies to test/use bio-FADs.

58. EU sees value in exploring incentives, but at this stage, they think exemptions such as the one proposed could affect the performance of the tropical tuna CMM, have MCS implications, and may also allow for loopholes.

59. The PNAO supports the proposal to revisit this issue when additional information is available. In addition, PNAO notes that the Commission will need to have a FAD logbook in place before adopting requirements for the use of biodegradable materials in FADs.

60. PNAO reiterates the following:
    a. The PNAO agrees with the proposed approach to focus on other agenda items in 2024. PNAO notes that the language of the CMM is "*The Commission no later than 2026 based on consideration of the FAD Management Options Working Group shall review the effectiveness of the limit on the number of FADs deployed as set out in paragraph 21 and whether the current limit of 350, or any limit, is appropriate and provide advice on the monitoring of FADs".* PNAO anticipates some discussion about whether this kind of limit is effective and alternative measures.
    b. The PNAO supports appropriate reporting on FADs deployed, retrieved, lost, and deactivated. We expect that this reporting will be based on the implementation of the FAD logbook and FAD buoy reporting requirements and not duplicate these reporting processes.
    c. The PNAO considers that abandoning FADs should be banned by prohibiting deactivation, except in approved circumstances, such as after a FAD buoy has been stranded for some time.

61. The EU noted that WCPFC Project 110, funded by the EU and others, could be analyzed in conjunction with other initiatives the EU is also contributing to. EU scientists have expressed their willingness to collaborate and provide results from work in other oceans. It should be noted that SPC is currently collaborating with EU researchers on WCPFC Project 110. WCPFC-SSP will also include results from other bio-FAD trials in Project 110 reports.

VII. DFAD DEPLOYMENT

62. There were limited discussions related to this topic.

VIII. CLOSE OF EMAIL COMMUNICATIONS

63. There was no consensus on the ranking of priority topics for discussion by the FADMO-IWG. But noticed that we received more responses and inputs on these topics: satellite buoy data transmission, FAD logbook, FAD recovery programs/strategies, and biodegradable FADs. It is also acknowledged that these topics are complex and interconnected which need further consideration by the IWG.

64. Noting that the FADMO-IWG work plan for 2024-2026 identified having a physical meeting on September 2024 and/or September 2025 but mindful that we do not have funding for this year, it may be worth considering that a physical meeting in 2025 for the FADMO-IWG will be endorsed and funded by the Commission, back-to-back with TCC21 to reduce cost.

65. The email communications for the 9th session of the FADMO-IWG were closed on July 9, 2024.

ATTACHMENT A

FAD Management Options Intersessional Working Group
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