IATTC Ad hoc Permanent Working Group on FADs

8th Meeting

La Jolla (CA)- 7-8 June 2024

Agenda

PROVISIONAL AGENDA

1. Opening of the meeting
2. Adoption of the agenda
3. Review of recommendationsfrom the 7th meeting of the FAD Working Group
4. Advances on biodegradable FADs in the EPO
5. FAD data reporting established in Resolution C-19-01 & C-21-04
6. FAD fishery indicators
7. Initiatives to reduce impacts of FADs fishing
8. Conclusions and recommendations
9. Other business
10. Adjournment

AGENDA PROVISIONAL

1. Apertura de la reunión
2. Adopción de la agenda
3. Revisión de las recomendaciones de la 7ª reunión del Grupo de Trabajo sobre Plantados
4. Avances sobre plantados biodegradables en el OPO
5. Notificación de datos de plantados conforme a las resoluciones C-19-01 y C-21-04
6. Indicadores de la pesquería sobre plantados
7. Iniciativas para reducir los impactos de la pesca sobre FADs
8. Conclusiones y recomendaciones
9. Otros asuntos
10. Clausura

Agenda

8th Meeting of the Ad Hoc Working Group on FADs
07 jun-08 jun 2024 (La Jolla, CA)

1. **Opening of the meeting**
2. **Adoption of the agenda**
3. **Review of recommendations from the 7th meeting of the FAD Working Group**
4. **Advances on biodegradable FADs in the EPO**
   - [PPT] Update on biodegradable dFADS: current status and future prospects [Zudaire et al.]
   - [PPT] Experiences of biodegradable FADs in the EPO : TUNACONS [Moran et al]
   - [DOC] Update of the Jelly FAD performance in the EPO [Moreno et al.]
   - [DOC] Transitioning to Bio-FADs: Ongoing Trials with Jelly-FADs by fleets in the western and eastern Pacific Ocean [L. Escalle, G. Moreno]
   - [PPT] Testing of new compostable materials for the construction of dFAD raft [Zudaire et al.]
   - [PPT] A short-lived FAD in the Pacific: Implications and adaptations in the move to biodegradable Fish Aggregating Devices (J. Scutt Phillips et al)
   - [DOC] Jelly FADs construction guide [Moreno et al.]
5. **FAD data reporting established in Resolution C-19-01 & C-21-04**
   - [PPT] Data provisions: FAD forms: activations/deactivations, data formats Positions-Acoustics; Historic data [Lopez et al]
6. **FAD fishery indicators**
   - [DOC] The fishery on FADs in the EPO [Lopez et al]
   - [DOC] Updated biomass indicators from echosounder buoys [Uranga et al]
   - [DOC] Evaluate the impact of alternative management scenarios for the Eastern Pacific Ocean tropical tuna species using Poseidon [Vertpre et al.]
7. **Initiatives to reduce impacts of FAD fishing**
   - [DOC] Conclusions of the 1st FAD retrieval workshop [Galapagos] [Moreno et al]
   - [PPT] EPO FAD stranding database: status and perspectives [Lopez et al.] *
   - [PPT] Exploring technologies for remote identification of buoys [Lopez et al]
8. **Conclusions and recommendations**
9. **Other business**
10. **Adjournment**

8ª Reunión del Grupo de trabajo ad hoc sobre plantados
07 jun-08 jun 2024 (La Jolla, CA)

1. **Apertura de la reunión**
2. **Aprobación del orden del día**
3. **Revisión de las recomendaciones de la 7ª reunión del Grupo de trabajo sobre plantados**
4. **Avances sobre los plantados biodegradables en el OPO**
   - [PPT] Actualización sobre plantados biodegradables en las OROP – Situación actual y perspectivas [Zudaire et al.]
   - [PPT] Experiencias de plantados biodegradables en el OPO: TUNACONS [Moran et]
   - [DOC] Actualización del rendimiento de los jelly-FAD en el OPO [Moreno et al.]
   - [DOC] Transición a los Bio-FADs: Pruebas en curso con Jelly-FADs por flotas en el Océano Pacífico occidental y oriental [L. Escalle, G. Moreno]
   - [PPT] Ensayos de nuevos materiales compostables para la construcción de parrillas de plantados [Zudaire et al.]
   - [PPT] Un DCP de vida corta en el Pacífico: implicaciones y adaptaciones en el paso a los plantados biodegradables [J. Scutt Phillips et al.)
   - [DOC] Guía de construcción de jelly-FAD [Moreno et al.
5. **Comunicación de datos sobre DCP establecida en la Resolución C-19-01 y C-21-04**
   - [PPT] Provisión de datos: Formularios de plantados: activaciones/desactivaciones, formatos de datos Posiciones-Acústica; Datos históricos [López et al].
6. **Indicadores de la pesquería sobre DCP**
   - [DOC] La pesquería sobre DCP en el OPO [Lopez et al].
   - [DOC] Indicadores actualizados biomasa a partir de boyas con ecosonda [Uranga et al]
   - [DOC] Evaluar el impacto de escenarios de gestión alternativos para las especies de atún tropical del Océano Pacífico Oriental utilizando Poseidón [Vertpre et al.].
7. **Iniciativas para reducir el impacto de la pesca con DCP**
   - [DOC] Conclusiones del 1er taller de recuperación de DCP [Galápagos] [Moreno et al].
   - [PPT] Base de datos de varamientos de FAD en el OPO: situación y perspectivas [López et al.]*
   - [PPT] Exploración de tecnologías para la identificación remota de boyas [López et al].
8. **Conclusiones y recomendaciones**
9. **Otros asuntos**
10. **Clausura**

Friday

Saturday

* Form proposal / Propuesta de formulario [US]

RESOLUTION C-15-03

COLLECTION AND ANALYSES OF DATA ON FISH-AGGREGATING DEVICES

Section 5. *Ad Hoc* Working Group on FADs

15. An *ad hoc* Working Group on FADs (Working Group) is established.
16. This Working Group shall be multi-sectorial, involving various stakeholders such as scientists, fishery managers, fishing industry representatives, administrators, representatives of non-governmental organizations, and fishers. Expressions of interest to participate in the Working Group shall be provided to the Director no later than 1 October 2015.
17. To the highest degree possible, the Working Group shall conduct its work electronically or, if convenient and cost-effective, in targeted face to face meetings that take place in conjunction with other Commission meetings.
18. The Working Group shall present an initial report of its findings at the 2017 meeting of the SAC.
19. The Terms of Reference of the Working Group are those indicated in Annex III.
20. The Working Group shall seek input from other similar working groups on FAD management established in other tuna regional fisheries management organizations (tuna-RFMOs).
21. The IATTC, at its 2017 annual meeting, will review the progress and outcomes of the Working Group and will decide on the necessity for its continuation.
22. This Resolution replaces Resolution C-13-04.

3. Review of recommendations from the 7th meeting of the FAD Working Group

Background

RESOLUTION C-19-01

AMENDMENT TO RESOLUTION C-18-05 ON THE COLLECTION AND ANALYSES OF DATA ON FISH-AGGREGATING DEVICES

Anexo III

The objectives of the Working Group are the following:

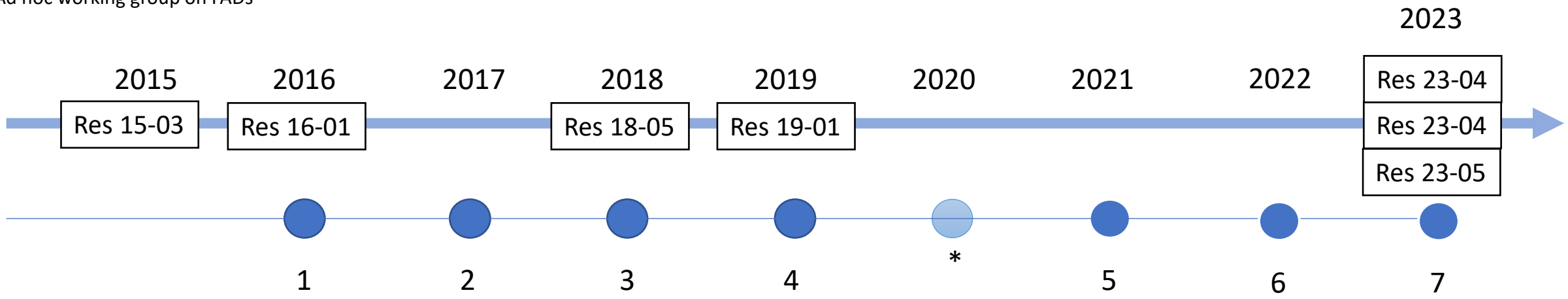
1. **Collect and compile information on FADs in the EPO**, including but not limited to data collected by the IATTC and reports prepared by the scientific staff of the IATTC;
2. **Review the FAD data collection requirements** established in this Resolution to assess the need for revision;
3. Develop data **reporting formats and definitions of terms related to FAD fishing** (e.g. biodegradable FADs, non-entangling FADs, etc.), to implement obligations under this Resolution, in cooperation with the scientific staff, to be submitted to the Commission for consideration;
4. Compile information regarding **developments on FADs in other tuna RFMOs**;
5. Compile information regarding developments on the **latest scientific information on FADs**, including information on non-entangling FADs, and identify priority areas for research;
6. Prepare **annual reports for the SAC**, including specific **recommendations**, as appropriate; and

Identify and review possible **FAD management measures**, in coordination with the scientific staff and the SAC, and make **recommendations to the Commission**, as appropriate.

3. Review of recommendations from the 7th meeting of the FAD Working Group

Background

Ad hoc working group on FADs



Thematic areas

Data collection & gaps	X	X	X	X	X	X	X
Research & scientific inf.	X	X	X	X	X		X
Management measures	X	X				X	X
Definitions		X	X	X		X	X
Indicators				X	X	X	X
Fishery status & impacts				X			X

3. Review of recommendations from the 7th meeting of the FAD Working Group

Background

Recommendations of the FAD WG

2016

The Group did not issue recommendations since it is not within its mandate, as currently stipulated in Resolution C-15-03

2017

1. Data on FADs: ... to set minimum data requirements and standards for the collection of the data specified in Resolution C-16-01.
2. FAD database: ..develop a common database for the management of FAD data collected pursuant to Resolution C-16-01.
3. Workshops on FAD data: ...CPCs, IATTC staff and staff from national observer programs should organize training workshops …
4. Collection of data on FADs: ...the Commission consider the appropriate levels of observer coverage (using both observers and electronic monitoring systems) in various fleet categories with the goal of improving FAD-related data collection.
5. Definitions of FAD-related terms: ... develop definitions for a suite of terms related to FAD fishing operations, within the context of Resolution C-16-01, taking into consideration the definitions used by other tuna RFMOs, as appropriate.
6. FAD research: ... support the research plan prepared by the Ad Hoc Working Group (Appendix 1) and work to identify priority areas for research.
7. Biodegradable FADs: The SAC recommends that future work on the development of biodegradable FADs take into account the social, economic and environmental sustainability of the materials evaluated.
8. Funding for FAD research: ... development of work plans and budgets for priority FADs research, and identify possible sources of alternative funding for initiatives that cannot be covered by the regular budget of the IATTC.
9. Future actions on FADs: ... develop a planning roadmap for future actions to be taken in support of progress on the key areas of action identified by the Joint Tuna-RFMO FADs Working Group Meeting.
10. FAD questionnaire: The SAC recommends that the Commission circulate an additional request to the FAD Working Group members, asking them to complete the questionnaire designed to inform its work.

2019

1. That the Commission directs the IATTC staff, in collaboration with the Working Group on FADs, to **further investigate CPCs' difficulties with the FAD data reporting provisions** set forth in resolutions C-18-05 and C-17-02 and develops recommendations for improved reporting.
2. That the Commission adopt specific provisions to require CPCs to **provide information regarding the brand of buoys that each of its vessels use** so that the IATTC staff can identify if the information provided by data buoy providers under Resolution C-17-02 is complete.
4. That Resolution C-18-05 be amended so that **vessel owners and operators are not required to provide data already collected by observers**. However, vessel captains should be responsible for providing the observer with the make, model and serial number of the buoys, when the observer is not capable of obtaining this information, when the captain has the capability of providing this information.
5. That the IATTC staff give **priority to the training of operators to comply with the data provisions** on the resolutions and that the staff include this as a constant plan of activities and that new technologies are considered, like videoconferences, or seeking the collaboration with the IATTC's field office staff, and that this is done, preferably, during the fishery closures.
6. The Commission should consider **clarifying the terms of reference for the FAD WG**, including the process for making WG recommendations to the Commission

2018

1. FAD data collection form 9/2016 and its instructions and the observer program's Flotsam Information Record will be modified to include new fields that will enable FADs to be tracked over time
2. The **new form for FAD data collection** related to the requirements of Resolution C-16-01 will be the default form to be used by the purse-seine fleet operating in the EPO.
3. Coordination with the working groups on FADs of other tuna RFMOs to propose the new FAD data form, with a view to developing a possible harmonized form to be used by captains or operators…
4. ... organize training workshops that will train vessel captains, crew and government authorities to properly fill out FAD data forms related to the requirements of Resolution C-16-01.
5. ... development of a common database to be used by the IATTC staff for the management of FAD data collected pursuant to Resolution C-16-01.
6. CPCs should report, or ask their vessels to report, FAD data from fishing trips required by Resolution C-16-01 to the IATTC staff as soon as possible, and at most with a 4-month delay…
7. CPCs shall provide to the IATTC staff the same daily raw buoy data received by original users (i.e. vessels, fishing companies) in line with the research needs defined in the Strategic Science Plan to be adopted by the Commission.
8. The guidelines for submission of FAD data pursuant to Resolution C-17-02 (Annex 1) will be the reference for complying with the provisions of paragraph 11 of the resolution on a provisional basis
9. The staff shall provide two email addresses to **centralize the submission** of FAD data required by Resolutions C-16-01 and C-17-02.
10. Incorporate experts from buoy providers as members of the ad hoc Permanent Working Group on FADs, to participate in the intersessional work of the group …
11. Organize a workshop on buoy technology and use on the margins of the Commission meeting in August 2018, with the active participation of experts from buoy provider companies.
12. ...continue developing definitions intersessionally for a set of terms related to FAD fishing operations.
13. Continue the project on the implementation of biodegradable FADs in the EPO that has been initiated by the IATTC scientific staff. The Working Group also recommends that the IATTC staff develop a robust experimental design…
14. The following **research initiative**s should be undertaken as an absolute priority….
1. consider the set of terms listed in Annex 1 as interim draft definitions related to FAD fishing operations. Some of these terms reflect the IATTC staff's definitions used for data analysis, such as those for floating objects, and none of the terms are intended to prejudge interpretations of existing resolutions or domestic regulations.
2. assign the following tasks as priority matters for the intersessional period before the 2019 Commission meeting. • Capacity-building [C-16-01 and C-17-02] • Data gaps – improvement of data collection related to C-16-01 and C-17-02 • Definitions • Indicators of FAD fishing • Follow the research activities related to FAD fisheries • Participate in the joint t-RFMO FAD working group and the small technical joint t-RFMO FAD working group • Develop an appropriate confidentiality framework

3. Review of recommendations from the 7th meeting of the FAD Working Group

Background

Recommendations of the FAD WG

2021

1. The Commission to adopt the set of terms listed in Annex 1 as **interim draft definitions** related to FAD fishing operations.
2a. CPCs to provide the forms on FAD interactions from each fishing trip that is made without an observer aboard, to the IATTC staff as soon as possible after the trip terminates…
2b. The Secretariat to contact CPCs no later than **80 days before the SAC to check the status of incomplete data submissions** regarding the requirements of the Resolution C-19- 01.
2c. CPCs to require their vessels to **record data related to interactions with FADs of purse-seine vessels without an observer aboard** using exclusively the standard form developed by the IATTC staff
2d. CPCs to provide to the IATTC staff the **same raw buoy data** received by original users (i.e. vessels, fishing companies), including both trajectories and acoustic biomass information.
2e. The Commission scientific staff and CPCs to continue **exploring technologies to mark and read automatically and remotely marking** identification to improve FAD/buoy marking and to solve errors on data collection.
2f. The Commission and its members to reactivate the mechanisms of cooperation between the various tuna RFMOs regarding FADs, including in particular the **Joint tuna- RFMO FAD Working Group**.
3. The Commission to consider **additional options -- along with active FAD limits -- to lower the number of FADs in the water**, such as clarifying controls on remote activation and deactivation and controls on numbers of deployed FADs.

2022

1.1 Encourage **harmonization across t-RFMOs, as much as possible, the definition of biodegradable FADs, the guidelines and timeline** for their construction and implementation, as well as data collection priorities.
1.2 Consider the following **definition for Biodegradable**: Non-synthetic materials and/or bio-based alternatives that are consistent with international standards2 for materials that are biodegradable in marine environments. The components resulting from the degradation of these materials should not be damaging to the marine and coastal ecosystems or include heavy metals or plastics in their composition.
1.3 Further **large-scale sea trials** are needed on an ongoing basis to refine important practical/technical aspects of full implementation of biodegradable FADs (e.g., durability, designs, material availability and acquisition). Ideally, these trials should be monitored and conducted in collaboration with scientists.
1.4. Fishers supported by shipowners should continue t**rialling bioFAD designs in a continued effort,** deploying systematically a percentage of their FADs made of biodegradable materials from 2023 on.
1.5. Results of biodegradable trials at sea should be made available to the FAD WG.
1.6. A gradual, stepwise process for the implementation of fully biodegradable FADs should be considered based on the current state of the art of materials available and on the result of field tests.
1.7. The different **categories to be considered in this gradual implementation** process are(These definitions do not apply to electronic buoys attached to FADs to track them): - Category I. The FAD is made of 100% biodegradable 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). - Category III. 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). - Category IV. 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. - Category V. The surface and subsurface parts of the FAD contain non-biodegradable materials. These categories are preliminary and will be examined by the IATTC scientific staff and presented to the Commission.
1.8. In the gradual process of biodegradable FAD implementation, designs should **try to reduce, as much as possible, the amount of material** used and the non-biodegradable fraction used in their construction
1.9. Revise, as needed, IATTC data collection methods and tools, including fisheries observer data, so that the gradual implementation of biodegradable FADs in the EPO can be effectively monitored
1.10. In order to encourage the **replacement of current FADs with biodegradable FADs**, it is recommended that motivating **incentives for the industry** be established, without affecting fishing effort.
2.1. Consider the following **definition for Non-entangling FAD**: "A FAD that does not include any netting materials for any part of the FAD including both the surface structure (e.g., raft) and subsurface structure (e.g., tail)."
3.1. In case a CPC has difficulty reporting the full data described in Annex II and III of Resolution C-21-04 (i.e., **deactivations and remote reactivations**), report these data, in a temporary basis (i.e., 2022), using a **simplified form** prepared by the IATTC staff, which will be posted to the Commission web site when available. The simplified form shall contain the following elements: Date, buoy code, and reason for reactivation or deactivation.
3.2. Encourage the CPCs to provide to the IATTC staff the **historic, raw buoy data collected prior to January 1, 2022** and received by original users (i.e., vessels, fishing companies), including both trajectories and acoustic information.

3. Review of recommendations from the 7th meeting of the FAD Working Group

Background

Recommendations of the FAD WG

1. Acerca de plantados biodegradables	1. On Biodegradable FADs
1.1. Considerar la siguiente definición del término Biodegradable: Materiales no sintéticos y/o alternativas de base biológica que se ajusten a las normas internacionales2 para materiales biodegradables en entornos marinos. Los componentes resultantes de la degradación de estos materiales no deben ser perjudiciales para los ecosistemas marinos y costeros ni incluir metales pesados o plásticos en su composición”	1.1. Consider the following definition for Biodegradable: Non-synthetic materials1 and/or bio-based alternatives that are consistent with international standards2 for materials that are biodegradable in marine environments. The components resulting from the degradation of these materials should not be damaging to the marine and coastal ecosystems or include heavy metals or plastics in their composition.
1.2. Las siguientes son categorías de plantados en función de su grado de biodegradabilidad (de no biodegradable a 100% biodegradable), en el entendido de que las respectivas definiciones no aplican a las balizas electrónicas que se sujetan a los plantados a fin de darles seguimiento: ü Categoría I. El plantado está fabricado con materiales totalmente biodegradables. Categoría II. El plantado está fabricado con materiales totalmente biodegradables, excepto los componentes de flotación de plástico (por ejemplo, boyas de plástico, espuma, corchos de cerco). ü Categoría III. La parte sumergida del plantado está fabricada con materiales totalmente biodegradables, mientras que la parte superficial y cualquiera de los componentes de flotación contiene materiales no biodegradables (por ejemplo, rafia sintética, armazón metálico, flotadores de plástico, cuerdas de nailon). ü Categoría IV. La parte sumergida del plantado contiene materiales no biodegradables, mientras que la parte superficial está fabricada con materiales totalmente biodegradables, con excepción de los componentes de flotación. ü Categoría V. La parte superficial y la subsuperficial del plantado contienen materiales no biodegradables.	1.2. The following are FAD categories, based on their degree of biodegradability (from non-biodegradable to 100% biodegradable), with the understanding that the respective definitions do not apply the electronic buoys that are attached to FADs in order to track them.: ü Category I. The FAD is made of fully biodegradable materials. ü Category II. The FAD is made of fully biodegradable materials except for plastic-based flotation components (e.g., plastic buoys, foam, purse-seine corks). ü Category III. The subsurface part of the FAD is made of fully biodegradable materials, whereas the surface part and any flotation components contain non-biodegradable materials (e.g., synthetic raffia, metallic frame, plastic floats, nylon ropes). ü Category IV. The subsurface part of the FAD contains non-biodegradable materials, whereas the surface part is made of fully biodegradable materials, except for, possibly, flotation components. ü Category V. The surface and subsurface parts of the FAD contain non-biodegradable materials.
1.3. A pesar de las categorías anteriores, se pueden utilizar materiales no biodegradables, en particular cuerdas de nailon, con el solo propósito de reforzar la estructura del componente flotante o subacuático del plantado de las categorías I y II, si es necesario, y como solución temporal.	1.3. Notwithstanding the above categories, the use of non-biodegradable materials, in particular nylon ropes, can be used exclusively to strengthen the structure of the floating or underwater component of the FAD categories I & II, if required and as a temporary solution.
1.4. Que la Comisión establezca un cronograma gradual para la implementación de plantados biodegradables que considere los resultados de las pruebas de investigación actuales y la disponibilidad de los materiales.	1.4. That the Commission establish a gradual timeline for implementation of biodegradable FADs that take into consideration the results of ongoing research trials and the availability of materials.
1.5. Considerar los prototipos 1 y 2 [Documento FAD-07-02] y el “Jelly FAD”, y sus mejoras, como ejemplos potenciales actuales para la construcción eficaz de plantados biodegradables.	1.5. Consider prototypes 1 and 2 [Document FAD-07-02] and the “Jelly FAD”, and their improvements, as current potential examples for effective biodegradable FAD construction.
1.6. Reducir, en la medida de lo posible y dentro del proceso gradual de implantación de los plantados biodegradables, la cantidad de material y los componentes no-biodegradables para el diseño y la construcción de los mismos, siempre que no se comprometa la eficacia de la pesca.	1.6. Reduce, to the extent possible and within the gradual process of biodegradable FAD implementation, the amount of material and the non-biodegradable components for their design and construction, provided that fishing efficiency is not compromised.
1.7. Los pescadores apoyados por los armadores deberían continuar probando diseños de FADs biodegradables en un esfuerzo continuado, sembrando sistemáticamente un porcentaje de sus plantados construidos con materiales biodegradables y compartiendo los resultados con el GTSP.	1.7. Fishers supported by ship-owners should continue trialling bioFAD designs in a continued effort, deploying systematically a percentage of their FADs made of biodegradable materials and sharing the results in the FADWG.

3. Review of recommendations from the 7th meeting of the FAD Working Group

Recommendations of the FAD WG

1. Acerca de plantados biodegradables	1. On Biodegradable FADs
1.1. Considerar la siguiente definición del término Biodegradable: Materiales no sintéticos y/o alternativas de base biológica que se ajusten a las normas internacionales2 para materiales biodegradables en entornos marinos. Los componentes resultantes de la degradación de estos materiales no deben ser perjudiciales para los ecosistemas marinos y costeros ni incluir metales pesados o plásticos en su composición"	1.1. Consider the following definition for Biodegradable: Non-synthetic materials1 and/or bio-based alternatives that are consistent with international standards2 for materials that are biodegradable in marine environments. The components resulting from the degradation of these materials should not be damaging to the marine and coastal ecosystems or include heavy metals or plastics in their composition.
1.2. Las siguientes son categorías de plantados en función de su grado de biodegradabilidad (de no biodegradable a 100% biodegradable), en el entendido de que las respectivas definiciones no aplican a las balizas electrónicas que se sujetan a los plantados a fin de darles seguimiento: ü Categoría I. El plantado está fabricado con materiales totalmente biodegradables. Categoría II. El plantado está fabricado con materiales totalmente biodegradables, excepto los componentes de flotación de plástico (por ejemplo, boyas de plástico, espuma, corchos de cerco). ü Categoría III. La parte sumergida del plantado está fabricada con materiales totalmente biodegradables, mientras que la parte superficial y cualquiera de los componentes de flotación contiene materiales no biodegradables (por ejemplo, rafia sintética, armazón metálico, flotadores de plástico, cuerdas de nailon). ü Categoría IV. La parte sumergida del plantado contiene materiales no biodegradables, mientras que la parte superficial está fabricada con materiales totalmente biodegradables, con excepción de los componentes de flotación. ü Categoría V. La parte superficial y la subsuperficial del plantado contienen materiales no biodegradables.	1.2. The following are FAD categories, based on their degree of biodegradability (from non-biodegradable to 100% biodegradable), with the understanding that the respective definitions do not apply the electronic buoys that are attached to FADs in order to track them.: ü Category I. The FAD is made of fully biodegradable materials. ü Category II. The FAD is made of fully biodegradable materials except for plastic-based flotation components (e.g., plastic buoys, foam, purse-seine corks). ü Category III. The subsurface part of the FAD is made of fully biodegradable materials, whereas the surface part and any flotation components contain non-biodegradable materials (e.g., synthetic raffia, metallic frame, plastic floats, nylon ropes). ü Category IV. The subsurface part of the FAD contains non-biodegradable materials, whereas the surface part is made of fully biodegradable materials, except for, possibly, flotation components. ü Category V. The surface and subsurface parts of the FAD contain non-biodegradable materials.
1.3. A pesar de las categorías anteriores, se pueden utilizar materiales no biodegradables, en particular cuerdas de nailon, con el solo propósito de reforzar la estructura del componente flotante o subacuático del plantado de las categorías I y II, si es necesario, y como solución temporal.	1.3. Notwithstanding the above categories, the use of non-biodegradable materials, in particular nylon ropes, can be used exclusively to strengthen the structure of the floating or underwater component of the FAD categories I & II, if required and as a temporary solution.
1.4. Que la Comisión establezca un cronograma gradual para la implementación de plantados biodegradables que considere los resultados de las pruebas de investigación actuales y la disponibilidad de los materiales.	1.4. That the Commission establish a gradual timeline for implementation of biodegradable FADs that take into consideration the results of ongoing research trials and the availability of materials.
1.5. Considerar los prototipos 1 y 2 [Documento FAD-07-02] y el "Jelly FAD", y sus mejoras, como ejemplos potenciales actuales para la construcción eficaz de plantados biodegradables.	1.5. Consider prototypes 1 and 2 [Document FAD-07-02] and the "Jelly FAD", and their improvements, as current potential examples for effective biodegradable FAD construction.
1.6. Reducir, en la medida de lo posible y dentro del proceso gradual de implantación de los plantados biodegradables, la cantidad de material y los componentes no-biodegradables para el diseño y la construcción de los mismos, siempre que no se comprometa la eficacia de la pesca.	1.6. Reduce, to the extent possible and within the gradual process of biodegradable FAD implementation, the amount of material and the non-biodegradable components for their design and construction, provided that fishing efficiency is not compromised.
1.7. Los pescadores apoyados por los armadores deberían continuar probando diseños de FADs biodegradables en un esfuerzo continuado, sembrando sistemáticamente un porcentaje de sus plantados construidos con materiales biodegradables y compartiendo los resultados con el GTSP.	1.7. Fishers supported by ship-owners should continue trialling bioFAD designs in a continued effort, deploying systematically a percentage of their FADs made of biodegradable materials and sharing the results in the FADWG.

3. Review of recommendations from the 7th meeting of the FAD Working Group

Recommendations of the FAD WG

2. Acerca de plantados no-enmallantes	2. On non-entangling FADs
1.2. Revisese el Anexo II de C-19-01 para requerir exclusivamente el diseño y despliegue de plantados no-enmallantes. *Un plantado que no incluye ningún material de red para ninguna parte del plantado, incluyendo tanto la estructura superficial (por ejemplo, la balsa) como la estructura subsuperficial (por ejemplo, el rabo)" (Documento IATTC-100-03 ADD.1, Sección 2.2.)*	2.1. Revise Annex II of C-19-01 to require exclusively the design and deployment of non-entangling FADs. *A FAD that does not include any netting materials for any part of the FAD including both the surface structure (e.g., raft) and subsurface structure (e.g., tail) (Document IATTC-100-03 ADD.1 , Section 2.2).*

3. Acerca de varamientos de plantados	3. On stranding FADs
3.1. Considerar **mecanismos alternativos de continuar monitorizando las boyas** que vayan fuera del area de la convencion o las zonas de pesca y que son susceptibles a desactivar, teniendo en cuenta las implicaciones respecto a los limites de plantados activos por buque	3.1. Consider **alternative mechanisms to continue monitoring buoys** that are leaving the convention area or fishing grounds and that are susceptilble for deactivation, taking into account the implications with regard the limits on active FADs per vessel
3.2. En medida de lo posible, proporcionar a la Secretaría la **información de la trayectoria completa de los plantados**, incluso cuando estén transitando a zonas afuera del area de la convencion y las zonas de pesca, monitoreada a través de nuevos sistemas de marcado de plantados, la boya del plantado u otros sistemas.	3.2. To the extent possible, **provide data to the Secreatariat on the entire trajectory of FADs**, even when transiting outside the conventoin area or the fishing grounds, monitored through new FAD marking systems, the FAD's buoy or other systems.
3.3. Considerar establecer una serie de **mejores practicas, para optimizar la recuperacion** de plantados.	3.3. Consider putting in place a set of **best practices for optimizing FAD retrieval**.
3.4. **Promover programas de recuperacion de plantados**, tanto desde tierra como desde el mar, y definir los estandares para que esos programas sean efectivos.	3.4. **Promote FAD recovery programs**, both from the land and from the sea, and establish standards to ensure the effectiveness of these programs.
3.5. Generar conciencia sobre los varamientos de plantados y fomentar la ampliación de los esfuerzos nacionales de recopilación de datos sobre varamientos de plantados en el OPO para **armonizarlos con los esfuerzos de la SPC-WCPFC en la WCPO**.	3.5. Create awareness of FAD strandings and encourage the expansion of the in-country data collection efforts on FAD strandings in the EPO to **harmonize with SPC-WCPFC efforts in the WCPO**.
3.6. Desarrollar **soluciones para procesar/reciclar los materiales** de los plantados.	3.6. Develop **solutions to process/recycle FAD materials in ports.**

SAC14 → 8. Taking into account the importance of FAD recovery, the SAC requests that the Commission clarify if **vessels other than authorized purse seiners could carry out this recovery** and under what circumstances, and considers, should it be necessary, an update of Resolution C-99-07 on FADs

3. Review of recommendations from the 7th meeting of the FAD Working Group

Recommendations of the FAD WG

4. Acerca de la recolección de datos	**4. On data collection**
4.1. El personal de la CIAT provea **retroalimentación a las CPCs** con miembros de la flota que estén reportando incorrectamente datos de boyas para que ello se pueda corregir lo antes posible.	4.1. The scientific staff to **provide feedback** to those CPCs with fleet members providing incorrectly buoy data so that the issue can be corrected in as early as possible.
4.2. **Realizar talleres con empresas pesqueras, capitanes, tripulantes, y proveedores de boyas** para poder mostrar los procedimientos correctos de reporte de información de boyas. Y usar estos talleres a su vez para recolectar información directa de primera mano sobre las dinámicas de la pesquería.	4.2. **Organize workshops with fishing companies, captains and crew and buoy providers** to try to showcase the correct reporting protocols for buoy data. And use these workshops also to collect first-hand direct information on the fishery dynamics.
4.3. Las compañías pesqueras y los proveedores de boyas faciliten la **información histórica de las boyas acústicas** de los barcos para no perder esos datos de enorme valor para la ciencia, y en particular la evaluación de las poblaciones.	4.3. Fishing companies and buoy providers to make available **the historical buoy acoustic information** to avoid losing data of enormous value for science, and in particular stock assessment.

5. Acerca de la investigación	**5. On research**
5.1. Promover la **colaboración en la región del Pacifico sobre investigación en plantados**, y en particular, sobre diseños de plantados y el uso de materiales biodegradables y aumentando la comunicación entre WCPFC-IATTC sobre experimentos presentes y futuros sobre objetos no enmallantes y biodegradables y otros proyectos de interés, así como la armonización en recolección de datos, intercambio de información no confidencial y análisis de datos.	5.1. Increase **Pacific-wide collaboration on drifting FAD research**, in particular on the design of dFADs and the use of biodegradable materials. This includes higher WCPFC-IATTC 4communication on current and planned Non-entangling and Biodegradable FAD trials and other research projects; as well as homogenizing data collection processes, increasing non-confidential data exchanges and collaborating on data analyses.
5.2. **Complementar la investigación del índice acústico de boyas** con otras herramientas acústicas disponibles en los buques atuneros (e.g., sonar, ecosondas).	5.2. **Complement research on the buoy acoustic index** with other acoustic tools available on tuna vessels (e.g., sonar, echo sounders).
5.3. Continuar con el trabajo de **discriminación acústica** para mejorar los índices derivados de las boyas satelitales.	5.3. Continue the work on **acoustic discrimination** to improve buoy-derived abundance indices.
5.4. Realizar **ensayos para probar** y proponer mejoras tecnológicas para cumplir los requisitos de **marcado de los plantados** y comprender mejor el ciclo de vida de los mismos	5.4. Conduct further **tests** to test and propose technology improvements to meet **FAD marking** requirements and better understand the life cycle of FADs.

3. Review of recommendations from the 7th meeting of the FAD Working Group

4. Advances on biodegradable FADs in the EPO

- [PPT] Update on biodegradable dFADS: current status and future prospects [Zudaire et al.]
- [PPT] Experiences of biodegradable FADs in the EPO : TUNACONS [Moran et al]
- [DOC] Update of the Jelly FAD performance in the EPO [Moreno et al.]
- [DOC] Transitioning to Bio-FADs: Ongoing Trials with Jelly-FADs by fleets in the western and eastern Pacific Ocean [L. Escalle, G. Moreno]
- [PPT] Testing of new compostable materials for the construction of dFAD raft [Zudaire et al.]
- [PPT] A short-lived FAD in the Pacific: Implications and adaptations in the move to biodegradable Fish Aggregating Devices (J. Scutt Phillips et al)
- [DOC] Jelly FADs construction guide [Moreno et al.]

4. Avances sobre los plantados biodegradables en el OPO

- [PPT] Actualización sobre plantados biodegradables en las OROP – Situación actual y perspectivas [Zudaire et al.]
- [PPT] Experiencias de plantados biodegradables en el OPO: TUNACONS [Moran et]
- [DOC] Actualización del rendimiento de los jelly-FAD en el OPO [Moreno et al.]
- [DOC] Transición a los Bio-FADs: Pruebas en curso con Jelly-FADs por flotas en el Océano Pacífico occidental y oriental [L. Escalle, G. Moreno]
- [PPT] Ensayos de nuevos materiales compostables para la construcción de parrillas de plantados [Zudaire et al.]
- [PPT] Un DCP de vida corta en el Pacífico: implicaciones y adaptaciones en el paso a los plantados biodegradables [J. Scutt Phillips et al.)
- [DOC] Guía de construcción de jelly-FAD [Moreno et al.]

4. Advances on biodegradable FADs in the EPO/Avances sobre los plantados biodegradables en el OPO

5. FAD data reporting established in Resolution C-19-01 & C-21-04

- [PPT] Data provisions: FAD forms: activations/deactivations, data formats Positions-Acoustics; Historic data [Lopez et al]

6. FAD fishery indicators

- [DOC] The fishery on FADs in the EPO [Lopez et al]
- [DOC] Updated biomass indicators from echosounder buoys [Uranga et al]
- [DOC] Evaluate the impact of alternative management scenarios for the Eastern Pacific Ocean tropical tuna species using Poseidon [Vertpre et al.]

5. Comunicación de datos sobre DCP en Resoluciones C-19-01 y C-21-04

- [PPT] Provisión de datos: Formularios de plantados: activaciones/desactivaciones, formatos de datos Posiciones-Acústica; Datos históricos [López et al].

6. Indicadores de la pesquería sobre DCP

- [DOC] La pesquería sobre DCP en el OPO [Lopez et al].
- [DOC] Indicadores actualizados biomasa a partir de boyas con ecosonda [Uranga et al]
- [DOC] Evaluar el impacto de escenarios de gestión alternativos para las especies de atún tropical del Océano Pacífico Oriental utilizando Poseidón [Vertpre et al.].

5. FAD data reporting established in Resolution C-19-01 & C-21-04

6. FAD fishery indicators

7. **Initiatives to reduce impacts of FAD fishing**
   - [DOC] Conclusions of the 1st FAD retrieval workshop [Galapagos] [Moreno et al]
   - [PPT] EPO FAD stranding database: status and perspectives [Lopez et al.] *
   - [PPT] Exploring technologies for remote identification of buoys [Lopez et al]
8. **Conclusions and recommendations**
9. **Other business**
10. **Adjournment**

7. **Iniciativas para reducir el impacto de la pesca con DCP**
   - [DOC] Conclusiones del 1er taller de recuperación de DCP [Galápagos] [Moreno et al].
   - [PPT] Base de datos de varamientos de FAD en el OPO: situación y perspectivas [López et al.]*
   - [PPT] Exploración de tecnologías para la identificación remota de boyas [López et al].
8. **Conclusiones y recomendaciones**
9. **Otros asuntos**
10. **Clausura**

7. Initiatives to reduce impacts of FAD fishing
8. Conclusions and recommendations
9. Other business
10. Adjournment