

**RECOMMENDATION BY ICCAT TO REPLACE
RECOMMENDATION 16-01 BY ICCAT ON A MULTI-ANNUAL CONSERVATION
AND MANAGEMENT PROGRAMME FOR TROPICAL TUNAS**

RECALLING the current multi-annual conservation and management programme for tropical tunas;

NOTING that the stocks of bigeye and yellowfin tuna are currently overfished, and that bigeye tuna is also subject to overfishing;

RECOGNISING that the TAC for bigeye tuna for 2017 was exceeded by more than 20% and that this level of catch is projected to reduce the probability to reach the Convention objectives by 2028 is less than 10%;

ACKNOWLEDGING that the TAC for yellowfin tuna was also exceeded in 2016 by 37% and by 26% in 2017;

TAKING INTO ACCOUNT that Recommendation 11-13 on the Principles for Decision Making on Conservation and Management Measures of ICCAT mandates that for stocks that are overfished and subject to overfishing (i.e., stocks in the red quadrant of the Kobe plot), the Commission shall immediately adopt management measures, taking into account, *inter alia*, the biology of the stock and SCRS advice, designed to result in a high probability of ending overfishing in as short a period as possible. In addition, the Commission shall adopt a plan to rebuild these stocks taking into account, *inter alia*, the biology of the stock and SCRS advice;

TAKING FURTHER INTO ACCOUNT that it is necessary to explore alternative and more effective systems or regimes for the management of tropical tunas and for this the SCRS' recommendation is required;

CONSIDERING that the SCRS continues to recommend that effective measures be found to reduce FAD-related and other fishing mortality of small yellowfin and bigeye tuna;

TAKING INTO ACCOUNT the recommendations made by the Panel on the Second ICCAT Performance Review regarding the carryover of underage of catches from one year to another;

FURTHER TAKING INTO ACCOUNT the recommendations made by the first meeting of the Joint Tuna RFMO FAD Working Group and the third meeting of ICCAT's *Ad Hoc* Working Group on FADs, on FAD management objectives and the availability of FAD management measures to reduce juvenile tuna mortality;

NOTING that the SCRS has advised that increased harvests on FADs as well as other fisheries as well as development of new fisheries could have had negative consequences for the productivity of bigeye and yellowfin tuna fisheries (e.g. reduced yield at MSY);

FURTHER NOTING that support vessels contribute to the increase in efficiency and capacity of purse seiner vessels using FADs and that the number of support vessels has increased significantly over the years;

RECALLING the significant body of international law that recognizes the rights and special requirements of developing States, including but not limited to, as applicable, Article 119 of UNCLOS and Article 25 and Part VII of UNFSA;

RECOGNISING the interests of developing coastal States to develop their fishing opportunities, and committing to achieve a more equitable distribution of fishing opportunities to developing coastal States over time;

THE INTERNATIONAL COMMISSION FOR THE CONSERVATION
OF ATLANTIC TUNAS (ICCAT) RECOMMENDS THAT:

PART I
GENERAL PROVISIONS

Interim conservation and management measures

1. Without prejudice to the allocation of fishing rights and opportunities to be adopted in the future, for the years 2020 and 2021, the Contracting Parties and the Cooperating Non-Contracting Parties, Entities or Fishing Entities (hereinafter referred to as CPCs) with vessels that have been actively fishing for tropical tunas in the Atlantic will apply the following interim management measures with the objective of reducing current levels of fishing mortality of tropical tunas, in particular small bigeye and yellowfin, while the Commission obtains additional scientific advice to adopt a long-term multi-annual management and rebuilding programme.

Multi-annual Management, Conservation, and Rebuilding Programme

2. CPCs whose vessels have been actively fishing for tropical tunas in the Atlantic shall implement a 15-year rebuilding programme for bigeye tuna starting in 2020 and continuing through 2034, with the goal of achieving B_{MSY} with a probability of more than 50%. CPCs shall also implement management measures with the objectives of ensuring that the stocks of yellowfin and skipjack tuna continue to be exploited sustainably.

PART II
CATCH LIMITS

Catch limits for bigeye tuna

3. The Total Allowable Catch (TAC) for bigeye tuna shall be 62,500 t in 2020 and 61,500 t in 2021. The TAC for 2022 and future years shall be considered in 2021 on the basis of SCRS advice.
4. As an interim measure for 2020, the following provisions shall apply:
 - a) CPCs with catch limits greater than 10,000 t in para. 3 of Rec. 16-01, shall apply a 21% reduction to those catch limits.
 - b) CPCs that are not captured by (a) that have a recent average catch¹¹ of greater than 3,500 t, shall apply a catch limit that is 17% less than their recent average catch or their catch limit in para. 3 of Rec. 16-01.
 - c) CPCs that have a recent average catch of between 1,000 and 3,500 t shall apply a catch limit that is 10% less than their recent average catch.
 - d) Those CPCs with recent average catch of less than 1,000 t are encouraged to maintain catch and effort at recent levels.
5. The provisions of paragraph 4 of this Recommendation shall not prejudice the rights and obligations under international law of those developing coastal CPCs in the Convention Area whose current fishing activity for bigeye tuna is limited or non-existent, but that have a real interest in fishing for the species, that may wish to develop their own fisheries targeting bigeye tuna in the future. CPCs shall implement robust monitoring, control and surveillance measures, as applicable in relation to their capacity and resources.

¹¹ Recent average catch for the purposes of paragraph 4 means the annual average catch for the 4 year period 2014-2017 or the average of real catches for the 5-year period 2014-2018 if in that period the catch was equal to zero in any of those years.

6. Small scale artisanal fishers shall be given special consideration to their specificities and needs.
7. The annual quotas and catch limits described in this Recommendation do not constitute long term rights and are without prejudice to any future process of allocation.
8. Korea may transfer up to 223 t of its bigeye tuna fishing possibilities to Chinese Taipei in 2020².
9. If the total catch exceeds in any year the relevant TAC specified in paragraph 3, the Commission shall review these measures.

Underage or overage of catch of bigeye tuna

10. Overage of an annual catch limit for CPCs listed in paragraph 4 for bigeye tuna shall be deducted from the annual catch limit of the following year:

<i>Year of catch</i>	<i>Adjustment Year</i>
2018	2020
2019	2021
2020	2022
2021	2023

11. Notwithstanding paragraph 10, if any CPC exceeds its annual catch limit:
 - a) In one year, then the amount deducted in the adjustment year shall be determined as 100% of the overage; and
 - b) During any two consecutive years, the Commission will recommend appropriate measures, which shall include reduction in the catch limit equal to 125% of the excess harvest.
12. For CPCs listed in Paragraph 3 of Rec. 16-01, underage or overage of an annual catch limit in 2019 shall be added to/or deducted from their 2021 annual catch limit, subject to 10% of initial quota restrictions noted in paragraphs 9a and 10 of Rec. 16-01.

Monitoring of catch

13. CPCs shall report quarterly to the Secretariat the amount of tropical tunas (by species) caught by vessels flying their flag, within 30 days of the end of the period during which the catches were made.
14. For purse seiners and large longline vessels (LOA 20m or greater), CPCs shall report on a monthly basis, increasing to weekly when 80% of their catch limits have been caught.
15. The Secretariat shall notify all CPCs once 80% of the TAC has been caught.
16. CPCs shall report to the ICCAT Secretariat the dates when their entire catch limit of bigeye tuna has been utilized. The ICCAT Secretariat shall promptly circulate this information to all CPCs.

TAC for yellowfin tuna

17. The annual TAC for 2020 and subsequent years of the Multi-annual Programme is 110,000 t for yellowfin tuna and shall remain in place until changed based on scientific advice.
18. Based on the stock assessment and SCRS advice, the Commission shall adopt additional conservation measures for yellowfin tuna at the 2020 annual meeting, which may include a revised TAC, closures or allocated catch limits.

² Japan may transfer up to 600 t of bigeye tuna fishing possibilities to China and up to 300 t of bigeye tuna fishing possibilities to the European Union.

19. If the total catch exceeds in any year the TAC in paragraph 17, the Commission shall consider additional management measures for yellowfin tuna. Any other measures shall recognise the obligations of international law and the rights of CPC developing coastal States.

Fishing Plans

20. CPCs should provide ICCAT with a fishing and capacity management plan on how they will implement any catch reductions necessary as a result of paragraph 4.
21. Any developing CPC intending to increase its participation in ICCAT fisheries for tropical tunas shall endeavor to prepare a statement of its development intentions for tropical tuna with the purpose of informing other CPCs of potential changes in the fishery over time. These statements should include details of proposed/potential fleet additions, including vessel size and gear type. The statements shall be submitted to the ICCAT Secretariat and be made available to all CPCs. Those CPCs may amend their statement as their situation and opportunities change.

PART III CAPACITY MANAGEMENT MEASURES

Capacity limitation for tropical tunas

22. A capacity limitation shall be applied for the duration of the Multi-annual Programme, in accordance with the following provisions:
- a) By 31 January each year, each CPC fishing with recent average catches of more than 1,000 t for tropical tuna shall produce an annual capacity/fishing plan that outlines how that CPC will ensure that its overall longline and purse seine fleet capacity will be managed to ensure that the CPC can meet its obligation to limit the catch of bigeye, and its yellowfin and skipjack catches, consistent with the catch limit established under paragraph 4.
 - b) Any CPCs with recent average catches of less than 1,000 t that have planned an expansion of capacity in 2020, will provide a declaration by 31 January 2020.
 - c) The Compliance Committee shall annually review CPCs' compliance with capacity management measures.
23. Any CPC having vessels that operate, part-time or full-time, in support of purse seiners shall report the names and characteristics of all of their vessels to the ICCAT Secretariat, including which of those vessels were active in 2019 in the ICCAT Convention area, and the names of the purse seiner(s) that received the support of each support vessel. This information shall be reported no later than 31 January 2020. The Secretariat shall prepare a report for the Commission to be able to consider the type of limitation that support vessels shall be subject to in the future, including a phasing-out plan, where required. Notwithstanding this, CPCs shall not increase the number of support vessels from the numbers recorded by the time of adoption of this measure.
24. For the purposes of this measure, a support vessel is defined as any vessel that carries out activities in support of purse seine vessels that increases the efficiency of their operations including, but not limited to deploying, servicing and retrieving FADs.

PART IV MANAGEMENT OF FADs

FAD management objectives

25. The general objectives for management of FADs and support vessels in the Convention area are defined as follows:

- a) To minimize potential impacts that high FAD density may have on purse seine fishing efficiency, while minimizing disproportionate impacts to the fishing opportunities of fleets that use other gear or other fishing strategies while also targeting tropical tunas;
- b) To minimize the impact of FAD fishing on the productivity of bigeye and yellowfin stocks that result from the capture of high numbers of juveniles that aggregate with skipjack on FADs;
- c) To minimize the impact of FAD fishing on non-target species, where appropriate, including entanglement of marine species, particularly those of conservation concern;
- d) To minimize the impact of FADs and FAD fishing on pelagic and coastal ecosystems, including by preventing the beaching, stranding or grounding of FADs in sensitive habitats or the alteration of pelagic habitat.

FAD closure

26. For the purpose of this Recommendation, the following definitions shall apply:

- i. Floating object (FOB): Any natural or artificial floating (i.e. surface or subsurface) object with no capability of moving on its own. FADs are those FOBs that are man-made and intentionally deployed and/or tracked. Logs are those FOBs that are accidentally lost from anthropic and natural sources.
- ii. Fish-Aggregating device (FAD): Permanent, semi-permanent or temporary object, structure or device of any material, man-made or natural, which is deployed and/or tracked, and used to aggregate fish for subsequent capture. FADs can either be anchored (aFADs) or drifting (dFADs).
- iii. FAD set: setting a fishing gear around a tuna school associated with a FAD.
- iv. Operational buoy: Any instrumented buoy, previously activated, switched on and deployed at sea, which transmits position and any other available information such as eco-sounder estimates.
- v. Activation: The act of enabling satellite communication services by the buoy supplier company at the request of the buoy owner. The owner then starts paying fees for communication services. The buoy can be transmitting or not, depending if it has been manually switched on.

27. In order to reduce the fishing mortality of juvenile bigeye and yellowfin tunas, purse seine and baitboat vessels fishing for, or vessels supporting activities to fish for, bigeye, yellowfin and skipjack tunas in association with FADs in the high seas or EEZs shall be prohibited during a two- and three-month period, split into 2020 and 2021, respectively, as indicated in paragraph 28 below:

28. 1 January to 28 February for 2020 and 1 January to 31 March in 2021, throughout the Convention area. This should be reviewed and, if necessary, revised based on advice by the SCRS taking into account monthly trends in free school and FAD-associated catches and the monthly variability in the proportion of juvenile tuna in catches. SCRS should provide this advice to the Commission in 2020.

29. In addition, each CPC shall ensure its vessels do not deploy drifting FADs during a period of 15 days prior to the start of the closure period.

FAD limitations

30. CPCs shall ensure that, for vessels flying their flag, the following limits shall apply on the number of FADs with operational buoys at any one time according to definitions given in paragraph 26. The number of FADs with operational buoys will be verified through the verification of telecommunication bills. Such verifications shall be conducted by the competent authorities of the CPCs:

- a) 2020: 350 FADs per vessel
- b) 2021: 300 FADs per vessel

31. With a view to establishing FAD set limits to keep the catches of juvenile tropical tunas at sustainable levels, in 2021 SCRS should inform the Commission about the maximum number of FAD sets which should be established per vessel or per CPC. To support this analysis, CPCs with purse seine vessels shall urgently undertake to report to the SCRS by 31 July 2020 the required historical FAD set data. CPCs that do not report these data in accordance with this paragraph shall be prohibited from setting on FADs until such data have been received by the SCRS.

In addition, each CPC with purse seine fishing vessels is encouraged not to increase its total fishing effort on FADs from its 2018 level. CPCs shall report the difference between the 2018 level and the 2020 level to the 2021 Commission meeting.

32. CPCs may authorize their purse seine vessels to set on floating objects provided that the fishing vessel has either an observer or a functioning electronic monitoring system on board which is capable of verifying set type, species composition, and providing information on fishing activities to the SCRS.
33. Further analysis shall be conducted by the SCRS on the impact of support vessels on the catches of juvenile yellowfin and bigeye tuna to be considered in 2020.

FAD Management Plans

34. CPCs with purse seine and/or baitboat vessels fishing for bigeye, yellowfin and skipjack tunas in association with FADs, shall submit to the Executive Secretary Management Plans for the use of aggregating devices by vessels flying their flag by 31 January each year.
35. The objective of the FAD Management Plans shall be the following:
 - i. improve the knowledge about FAD characteristics, buoy characteristics, FAD fishing, including fishing effort of purse seiners and associated support vessels, and related impacts on target and non-target species;
 - ii. effectively manage the deployment and recovery of FADs, the activation of buoys and their potential loss;
 - iii. reduce and limit the impacts of FADs and FAD fishing on the ecosystem, including, where appropriate, by acting on the different components of the fishing mortality (e.g. number of deployed FADs, including number of FADs set by purse seiners, fishing capacity, number of support vessels).
36. The Plans shall be drawn up by following the Guidelines for Preparation of FAD Management Plans as provided in **Annex 1**.

FAD logbook and list of deployed FADs

37. CPCs shall ensure that all purse seine and baitboat fishing vessels and all support vessels (including supply vessels) flying their flag, and/or authorized by CPCs to fish in areas under their jurisdiction, when fishing in association with or deploying FADs, collect and report, for each deployment of a FAD, each visit on a FAD, whether followed or not by a set, or each loss of a FAD, the following information and data:
 - a) Deployment of any FAD
 - i. Position
 - ii. Date
 - iii. FAD type (anchored FAD, drifting artificial FAD)
 - iv. FAD identifier (i.e., FAD marking and buoy ID, type of buoy – e.g. simple buoy or associated with echo-sounder)
 - v. FAD design characteristics (material of the floating part and of the underwater hanging structure and the entangling or non-entangling feature of the underwater hanging structure)

- b) Visit on any FAD
 - i. Type of the visit (deployment of a FAD and/or buoy³, retrieving FAD and/or buoy, strengthening/consolidation of FAD, intervention on electronic equipment, random encounter (without fishing) of a log or a FAD belonging to another vessel, visit (without fishing) of a FAD belonging to the vessel, fishing set on a FAD⁴)
 - ii. Position
 - iii. Date
 - iv. FAD type (anchored FAD, drifting natural FAD, drifting artificial FAD)
 - v. Log description or FAD identifier (i.e., FAD Marking and buoy ID or any information allowing to identify the owner)
 - vi. Buoy ID
 - vii. If the visit is followed by a set, the results of the set in terms of catch and by-catch, whether retained or discarded dead or alive. If the visit is not followed by a set, note the reason (e.g. not enough fish, fish too small, etc.)

- c) Loss of any FAD
 - i. Last registered position
 - ii. Date of the last registered position
 - iii. FAD identifier (i.e., FAD Marking and buoy ID)

For the purpose of the collection and reporting of the information referred to above and where paper or electronic logbooks already in place do not allow it, CPCs shall either update their reporting system or establish FAD logbooks. In establishing FAD logbooks, CPCs should consider using the template laid down in **Annex 2** as reporting format. When using paper logbooks, CPCs may seek, with the support of the Executive Secretary, harmonized formats. In both cases, CPCs shall use the minimum standards recommended by SCRS in **Annex 3**.

- 38. CPCs shall also ensure that all vessels referred to in paragraph 30 keep updated on a monthly basis and per 1°x1° statistical rectangles a list of deployed FADs and buoys, containing at least the information as laid down in **Annex 4**.

Reporting obligations on FADs and on support vessels

- 39. CPCs shall ensure that the following information is submitted every year to the Executive Secretary in a format provided by the ICCAT Secretariat. This information shall be made available to the SCRS and to the Ad Hoc Working Group on FADs in a database developed by the ICCAT Secretariat:
 - i. the number of FADs actually deployed on a monthly basis per 1°x1° statistical rectangles, by FAD type, indicating the presence or absence of a beacon/buoy or of an echo-sounder associated to the FAD and specifying the number of FADs deployed by associated support vessels, irrespective of their flag;
 - ii. the number and type of beacons/buoys (e.g. radio, sonar only, sonar with echo-sounder) deployed on a monthly basis per 1°x1° statistical rectangles;
 - iii. the average numbers of beacons/buoys activated and deactivated on a monthly basis that have been followed by each vessel;
 - iv. average numbers of lost FADs with active buoys on a monthly basis;
 - v. for each support vessel, the number of days spent at sea, per 1° grid area, month and flag State;
 - vi. purse seine and baitboat catches, efforts and number of sets (for purse seines) by fishing mode (floating-object associated schools and free school fisheries) in line with Task II data requirements (i.e. per 1°x1° statistical rectangles and per month);
 - vii. when the activities of purse seine are carried out in association with baitboat, report catches and effort in line with Task I and Task II requirements as “purse seine associated to baitboats” (PS+BB).

³ Deploying a buoy on a FAD includes three aspects: deploying a buoy on a foreign FAD, transferring a buoy (which changes the FAD's owner) and changing the buoy on the same FAD (which does not change the FADs owner).

⁴ A fishing set on a FAD includes two aspects: fishing after a visit to a vessel's own FAD (targeted) or fishing after a random encounter with a FAD (opportunistic).

Non-entangling and biodegradable FADs

40. In order to minimize the ecological impact of FADs, in particular the entanglement of sharks, turtles and other non-targeted species, and the release of synthetic persistent marine debris, CPCs shall:
 - i. Ensure that all FADs deployed are non-entangling in line with the guidelines under **Annex 5** of this Recommendation, in accordance with previous ICCAT Recommendations;
 - ii. Endeavour that as of January 2021 all FADs deployed are non-entangling, and constructed from biodegradable materials, including non-plastics, with the exception of materials used in the construction of FAD tracking buoys;
 - iii. Report on an annual basis on the steps undertaken to comply with these provisions in their FADs Management Plans.

PART V CONTROL MEASURES

Specific authorization to fish for tropical tunas

41. CPCs shall issue specific authorizations to vessels 20 meters LOA or greater flying their flag allowed to fish bigeye and/or yellowfin and/or skipjack tunas in the Convention area, and to vessels flying their flag used for any kind of support of this fishing activity (hereafter referred to as "authorized vessels").

ICCAT Record of authorized tropical tuna vessels

42. The Commission shall establish and maintain an ICCAT record of authorized tropical tuna vessels, including support vessels. Fishing vessels 20 meters LOA or greater not entered into this record are deemed not to be authorized to fish, retain on board, tranship, transport, transfer, process or land bigeye and/or yellowfin and/or skipjack tunas from the Convention area or to carry out any kind of support to those activities, including deploying and retrieving FADs and/or buoys.
43. A CPC may allow by-catch of tropical tunas by vessels not authorized to fish for tropical tunas pursuant to paragraph 41 and 42, if this CPC establishes a maximum onboard by-catch limit for such vessels and the by-catch in question is accounted for within the CPC's quota or catch limit. Each CPC shall provide in its Annual Report the maximum by-catch limit it allows for such vessels and information about how the CPC ensures compliance with the limit. That information shall be compiled by the ICCAT Secretariat and made available to CPCs.
44. CPCs shall notify the list of authorized vessels to the Executive Secretary in an electronic form and in accordance with the format set in the *Guidelines for Submitting Data and Information Required by ICCAT*.
45. CPCs shall, without delay, notify the Executive Secretary of any addition to, deletion from and/or modifications of the initial list. Periods of authorization for modifications or additions to the list shall not include dates more than 45 days prior to the date of submission of the changes to the Secretariat. The Secretariat shall remove from the ICCAT Record of Vessels any vessel for which the periods of authorization have expired.
46. The Executive Secretary shall, without delay, post the record of authorized vessels on the ICCAT website, including any additions, deletions and/or modifications so notified by CPCs.
47. Conditions and procedures referred to in the *Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels 20 meters in Length Overall or Greater Authorized to Operate in the Convention Area* (Rec. 13-13) shall apply mutatis mutandis to the ICCAT record of authorized tropical tuna vessels.

Vessels actively fishing tropical tunas in a given year

48. Each CPC shall, by 31 July each year, notify to the Executive Secretary the list of authorized vessels flying their flag which have fished bigeye and/or yellowfin and/or skipjack tunas in the Convention area or have offered any kind of support to the fishing activity (support vessels) in the previous calendar year. For purse seines this list shall also include the support vessels that have supported the fishing activity, irrespective of their flag.

The Executive Secretary shall report each year these lists of vessels to the Compliance Committee and to the SCRS.

49. The provisions of paragraphs 41 to 47 do not apply to recreational vessels.

Recording of catch and fishing activities

50. Each CPC shall ensure that its vessels 20 meters LOA or greater fishing bigeye and/or yellowfin and/or skipjack tunas in the Convention area record their catch in accordance with the requirements set out in Annex 6 and in the *Recommendation by ICCAT Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area* (Rec. 03-13).

Identification IUU activity

51. The Executive Secretary shall, without delay, verify that any vessel identified or reported in the context of this Multi-annual Programme is on the ICCAT record of authorized vessels. If a possible violation is detected, the Executive Secretary shall, without delay, notify the flag CPC. The flag CPC shall immediately investigate the situation and, if the vessel is fishing in relation to objects that could affect fish aggregation, including FADs, during the period of closure request the vessel to stop fishing and, if necessary, leave the area. The flag CPC shall, without delay, report to the Executive Secretary the results of its investigation and the corresponding measures taken.
52. The Executive Secretary shall report to the Compliance Committee at each annual meeting of the Commission on any issue related to identification of unauthorized vessels, the implementation of the VMS, the observer provisions, and the results of the relevant investigation made as well as any relevant measures taken by the flag CPCs concerned.
53. The Executive Secretary shall propose to include any vessels identified in accordance with paragraph 52, or vessels for which the flag CPC has not carried out the required investigation and taken, if necessary, adequate measures in accordance with paragraph 51, on the provisional IUU list.

Observers

54. For observers on board vessels targeting bigeye, yellowfin and/or skipjack tunas in the area east of meridian 20°/West longitude and north of parallel 28°/ South latitude, the following shall apply:
- Observers shall automatically be recognized by all CPCs. Such recognition shall allow the scientific observer to continue the collection of information throughout the EEZ visited by the vessel observed. The coastal CPCs concerned shall receive from the flag CPC which mandated the observer the information collected by the observer and related to fishing activities on ICCAT species in their EEZ.
55. For longline vessels flying their flag 20 meters length overall (LOA) or greater targeting bigeye, yellowfin and/or skipjack in the Convention area, CPCs shall ensure a minimum of 10% observer coverage of fishing effort by 2022, through the presence of a human observer on board in accordance with **Annex 7** and/or an Electronic Monitoring system. For this purpose, the Working Group on Integrated Monitoring Measures (IMM WG), in cooperation with the SCRS, shall make a recommendation to the Commission for endorsement at its 2021 Annual meeting on the following:

- a) Minimum standards for an electronic monitoring system such as:
 - i) the minimum specifications of the recording equipment (e.g. resolution, recording time capacity), data storage type, data protection
 - ii) the number of cameras to be installed at which points on board
- b) What shall be recorded
- c) Data analysis standards, e.g., converting video footage into actionable data by the use of artificial intelligence
- d) Data to be analyzed, e.g., species, length, estimated weight, fishing operation details
- e) Reporting format to the Secretariat

In 2020 CPCs are encouraged to conduct trials on electronic monitoring and report the results back to the IMM and the SCRS in 2021 for their review.

CPCs shall report the information collected by the observers or the electronic monitoring system from the previous year by 30 April to the ICCAT Secretariat and to SCRS taking into account CPC confidentiality requirements.

- 56. CPCs shall submit all relevant data and administer scientific observer programs for tropical tunas in accordance with *Recommendation by ICCAT to Establish Minimum Standards for Fishing Vessel Scientific Observers* [Rec. 16-14]. In 2023, the SCRS shall provide advice on the improvements to observer programs including how coverage should be stratified across vessels, seasons and areas to achieve maximum effectiveness.
- 57. CPCs shall endeavour to further increase observer coverage rates for longline vessels, including through trials and implementation of electronic monitoring to supplement human observers. CPCs that trial electronic monitoring shall share technical specifications and standards with the Commission towards the development of agreed ICCAT standards.
- 58. For purse seine vessels flying their flag and targeting bigeye, yellowfin and/or skipjack in the Convention area, CPCs shall ensure 100% observer coverage of fishing effort, through the presence of an observer on board in accordance with **Annex 7** or through an approved electronic monitoring system. CPCs shall report the information collected by the observers from the previous year by 30 April to the ICCAT Secretariat and to SCRS.
- 59. Each year, the ICCAT Secretariat shall compile the information collected under observer programs, including on the observer coverage for each tropical tuna fishery, and make it available to the Commission before the annual meeting for further deliberation, taking into account CPC confidentiality requirements.
- 60. In 2020, IMM shall explore the possible scope and benefits of ICCAT adopting a regional Observer Program for tropical tuna fisheries taking into account the need for harmonization and coordination of national observer programs for tropical tuna fisheries.

Port Sampling Programme

- 61. The port sampling programme developed by the SCRS in 2012 shall be continued for landing or transshipment ports. Data and information collected from this sampling programme shall be reported to ICCAT each year, describing, at a minimum, the following by country of landing and quarter: species composition, landings by species, length composition, and weights. Biological samples suitable for determining life history should be collected as practicable.

PART VI
MANAGEMENT PROCEDURES/MANAGEMENT STRATEGY EVALUATION

Management Strategy Evaluation (MSE) and Candidate Harvest Control Rules

62. The SCRS shall refine the MSE process in line with the SCRS roadmap and continue testing the candidate management procedures. On this basis, the Commission shall review the candidate management procedures, including pre-agreed management actions to be taken under various stock conditions. These shall take into account the differential impacts of fishing operations (e.g. purse seine, longline and baitboat) on juvenile mortality and the yield at MSY.

PART VII
FINAL PROVISIONS

Availability of data to SCRS and to national scientists

63. CPCs shall ensure that:
- a) Both paper and electronic fishing logbooks and the FAD-logbooks referred to in paragraph 37, where applicable, are promptly collected and made available to national scientists;
 - b) The Task II data include the information collected from the fishing or FAD logbooks, where applicable, and is submitted every year to the ICCAT Executive Secretary, to be made available to the SCRS.
64. CPCs should encourage their national scientists to undertake collaborative work with their national industry to analyse data related to FADs (e.g. logbooks, buoy data) and to present the outcomes of that analysis to the SCRS. CPCs should take steps to facilitate making the data available for such collaborative work, subject to relevant confidentiality constraints.

Confidentiality

65. All data submitted in accordance with this Recommendation shall be treated in a manner consistent with ICCAT's data confidentiality guidelines and solely for the purposes of this Recommendation and in accordance with the requirements and procedures developed by the Commission.

Final Provisions

66. Actions required from the SCRS and the Secretariat:
- a) The SCRS shall explore the efficacy that full fishery closures along the lines of those proposed in PA1_505A/2019⁵ might have to reduce the catches of tropical tunas to the agreed levels; and the potential of such scheme to reduce the catches of juvenile bigeye and yellowfin tunas, in line with recommendations from the SCRS;
 - b) The ICCAT Secretariat shall work with the SCRS in preparing an estimate of capacity in the Convention area, to include at least all the fishing units that are large-scale or operate outside the EEZ of the CPC they are registered in. All CPCs shall cooperate with this work, providing estimates of the number of fishing units fishing for tuna and tuna-like species under their flag, and the species or species groups each fishing unit targets (e.g. tropical tunas, temperate tunas, swordfish, other billfish, small tunas, sharks, etc.); this work shall be presented to the next meeting of the SCRS in 2020 and forwarded to the Commission for consideration;

⁵ Available upon request from the Secretariat or on the 2019 Commission meeting documents webpage (<https://www.iccat.int/com2019/index.htm#en>).

- c) The ICCAT Secretariat shall identify a Consultant to carry out an evaluation of the monitoring, control and surveillance mechanisms in place in ICCAT CPCs. This work shall primarily focus on the evaluation of data collection and processing systems in each CPC, and the ability to produce estimates of catch and effort, and length frequency for all stocks under ICCAT management, with a focus on stocks for which input and/or output measures are in place; in preparing this work the Consultant shall evaluate how efficient the catch monitoring systems that each CPC has implemented are to achieve robust estimates of catches for the stocks subject to a TAC; the ICCAT Secretariat shall work with SCRS scientists to prepare a TOR for this work as soon as possible.
- 67. An intersessional meeting of Panel 1 will be held in 2020 to review existing measures and *inter alia* develop catch limits and associated catch verification mechanisms for 2021.
 - 68. This Recommendation replaces Rec. 16-01⁶ and 18-01 and shall be reviewed by the Commission in 2021.
 - 69. All CPCs commit to implement the present Recommendation on a voluntary basis as of 1 January 2020.

⁶ Recommendation 16-01 is preserved as necessary for the cross-references herein.

Guidelines for Preparation of FAD Management Plans

The FAD Management Plan for a CPC purse seine and baitboat fleets must include the following:

1. Description
 - a) FAD types: AFAD = anchored; DFAD = drifting
 - b) Type of beacon/buoy
 - c) Maximum number of FAD to be deployed per purse seine and per FAD type and active at any one time per vessel
 - d) Minimum distance between AFADs
 - e) Incidental by-catch reduction and utilization policy
 - f) Consideration of interaction with other gear types
 - g) Statement or policy on "FAD ownership"
 - h) Use of support vessels, including from other flag CPCs

2. Institutional arrangements
 - a) Institutional responsibilities for the FAD Management plan
 - b) Application processes for FAD deployment approval
 - c) Obligations of vessel owners and masters in respect of FAD deployment and use
 - d) FAD replacement policy
 - e) Additional reporting obligations beyond this Recommendation
 - f) Conflict resolution policy in respect of FADs
 - g) Details of any closed areas or periods e.g. territorial waters, shipping lanes, proximity to artisanal fisheries, etc.

3. FAD construction specifications and requirements
 - a) FAD design characteristics (a description)
 - b) Lighting requirements
 - c) Radar reflectors
 - d) Visible distance
 - e) FAD markings and identifier
 - f) Radio buoys markings and identifier (requirement for serial numbers)
 - g) Echo-sounder buoys markings and identifier (requirement for serial numbers)
 - h) Satellite transceivers
 - i) Research undertaken on biodegradable FADs
 - j) Prevention of loss or abandonment of FADs
 - k) Management of FADs recovery.

4. Applicable period for the FAD Management Plan

5. Means for monitoring and reviewing the implementation of the FAD Management Plan

FAD logbook

<i>FAD marking</i>	<i>Buoys ID</i>	<i>FAD type</i>	<i>Type of visit</i>	<i>Date</i>	<i>Time</i>	<i>Position</i>		<i>Estimated catches</i>			<i>By-catch</i>			<i>Observations</i>	
						<i>Latitude</i>	<i>Longitude</i>	<i>SKJ</i>	<i>YFT</i>	<i>BET</i>	<i>Taxonomic group</i>	<i>Estimated catches</i>	<i>Unit</i>		<i>Specimen released alive</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7)	(8)	(8)	(8)	(9)	(10)	(11)	(12)	(13)
...
...

- (1,2) If FAD marking and associated beacon/buoy ID are absent or unreadable, report it in this section. However, if FAD marking and associated beacon/buoy ID are absent or unreadable, the FAD shall not be deployed.
- (3) Anchored FAD, drifting natural FAD or drifting artificial FAD.
- (4) I.e., deployment, hauling, strengthening/consolidation, removing/retrieving, changing the beacon, loss and mention if the visit has been followed by a set.
- (5) dd/mm/yy
- (6) hh:mm
- (7) N/S/(in degrees and minutes) or °E/W/(in degrees and minutes).
- (8) Estimated catches expressed in metric tons.
- (9) Use a line per taxonomic group.
- (10) Estimated catches expressed in weight or in number.
- (11) Unit used.
- (12) Expressed as number of specimen.
- (13) If no FAD marking or associated beacon ID is available, report all available information in this section which may help to describe the FAD and to identify the owner of the FAD.

Table 1. Codes, names and examples of different types of floating object that should be collected in the fishing logbook as a minimum data requirement. Table from 2016 SCRS report (section 18.2 Table 7).

<i>Code</i>	<i>Name</i>	<i>Example</i>
DFAD	Drifting FAD	Bamboo or metal raft
AFAD	Anchored FAD	Very large buoy
FALOG	Artificial log resulting from related to human activity (and related to fishing activities)	Nets, wreck, ropes
HALOG	Artificial log resulting from human activity (not related to fishing activities)	Washing machine, oil tank
ANLOG	Natural log of animal origin	Carcasses, whale shark
VNLOG	Natural log of plant origin	Branches, trunk, palm leaf

Table 2. Names and description of the activities related to floating objects and buoys that should be collected in the fishing logbook as a minimum data requirement (codes are not listed here). Table from 2016 SCRS report (section 18.2 Table 8).

	<i>Name</i>	<i>Description</i>
FO	Encounter	Random encounter (without fishing) of a log or a FAD belonging to another vessel (unknown position)
	Visit	Visit (without fishing) of a FOB (known position)
	Deployment	FAD deployed at sea
	Strengthening	Consolidation of a FOB
	Remove FAD	FAD retrieval
	Fishing	Fishing set on a FOB ¹
Buo	Tagging	Deployment of a buoy on FOB ²
	Remove BUOY	Retrieval of the buoy equipping the FOB
	Loss	Loss of the buoy/End of transmission of the buoy

¹ A fishing set on a Fishing Object (FOB) includes two aspects: fishing after a visit to a vessel's own FOB (targeted) or fishing after a random encounter of a FOB (opportunistic).

² Deploying a buoy on a FOB includes three aspects: deploying a buoy on a foreign FOB, transferring a buoy (which changes the FOB owner) and changing the buoy on the same FOB (which does not change the FOB owner).

List of deployed FADs and buoys on a monthly basis

Month:

<i>FAD Identifier</i>		<i>FAD & electronic equipment types</i>		<i>FAD</i>				<i>Observation</i>
<i>FAD Marking</i>	<i>Associated buoy ID</i>	<i>FAD Type</i>	<i>Type of the associated buoy and /or electronic devices</i>	<i>FAD floating part</i>	<i>FAD underwater hanging structure</i>			
(1)	(1)	(2)	(3)	(4)	(5)			(6)
...
...

- (1) If FAD marking and associated beacon/buoy ID are absent or unreadable, the FAD shall not be deployed.
- (2) Anchored FAD, drifting natural FAD or drifting artificial FAD.
- (3) E.g. GPS, sounder, etc. If no electronic device is associated to the FAD, note this absence of equipment.
- (4) Mention the material of the structure and of the cover and if biodegradable.
- (5) E.g. nets, ropes, palms, etc., and mention the entangling and/or biodegradable features of the material.
- (6) Lighting specifications, radar reflectors and visible distances shall be reported in this section.

Guidelines for reducing the ecological impact of FADs in ICCAT fisheries

1. The surface structure of the FAD should not be covered or only covered with material implying minimum risk of entangling by-catch species.
2. The sub-surface components should be exclusively composed of non-entangling material (e.g. ropes or canvas).
3. When designing FADs the use of biodegradable materials should be prioritised.

Requirements for Catch Recording

Minimum specification for paper or electronic logbooks:

1. The logbook must be numbered by sheets
2. The logbook must be filled in every day (midnight) and before port arrival
3. One copy of the sheets must remain attached to the logbook
4. Logbooks must be kept on board to cover a period of one-trip operation

Minimum standard information for logbooks:

1. Master name and address
2. Dates and ports of departure, Dates and ports of arrival
3. Vessel name, registry number, ICCAT number and IMO number (if available)
4. Fishing gear:
 - (a) Type FAO code
 - (b) Dimension (length, mesh size, number of hooks...)
5. Operations at sea with one line (minimum) per day of trip, providing:
 - (a) Activity (fishing, steaming...)
 - (b) Position: Exact daily positions (in degree and minutes), recorded for each fishing operation or at noon when no fishing has been conducted during this day
 - (c) Record of catches
6. Species identification:
 - (a) By FAO code
 - (b) Round (RWT) weight in t per set
 - (c) Fishing mode (FAD, free school, etc.)
7. Master signature
8. Observer signature, if applicable
9. Means of weight measure: estimation, weighing on board and counting
10. The logbook is kept in equivalent live weight of fish and mentions the conversion factors used in the evaluation.

Minimum information in case of landing, transhipments:

1. Dates and port of landing/transhipments
2. Products: number of fish and quantity in kg
3. Signature of the Master or Vessel Agent

Observer Programme

1. The observers referred to in paragraph 54-60 of this Recommendation shall have the following qualifications to accomplish their tasks:
 - Sufficient experience to identify species and fishing gear;
 - Satisfactory knowledge of the ICCAT conservation and management measures assessed by a certificate provided by the CPCs and based on ICCAT training guidelines;
 - The ability to observe and record accurately;
 - The ability to collect biological samples;
 - A satisfactory knowledge of the language of the flag of the vessel observed.
2. The observers shall not be a crew member of the fishing vessel being observer and shall:
 - (a) Be nationals of one of the CPCs;
 - (b) Be capable of performing the duties set forth in point 3 below;
 - (c) Not have current financial or beneficial interests in the tropical tuna fisheries.
3. The observer tasks shall be in particular:
 - (a) To monitor the fishing vessels' compliance with the relevant conservation and management measures adopted by the Commission.

In particular the observers shall:

- i. Record and report upon the fishing activities carried out;
 - ii. Observe and estimate catches and verify entries made in the logbook;
 - iii. Sight and record vessels which may be fishing in contravention to ICCAT conservation and management measures;
 - iv. Verify the position of the vessel when engaged in catching activity;
 - v. Verify the number of instrumental buoys active at any one time;
 - vi. Carry out scientific work such as collecting Task II data when required by the Commission, based on the directives from the SCRS, observing and recording data on FAD properties in accordance with **Table 1** below.
- (b) Establish general reports compiling the information collected in accordance with this paragraph and provide the master the opportunity to include therein any relevant information.

Obligations of the observer

4. Observers shall treat as confidential all information with respect to the fishing and transshipment operations of the fishing vessels and accept this requirement in writing as a condition of appointment as an observer.
5. Observers shall comply with requirements established in the laws and regulations of the flag State which exercises jurisdiction over the vessel to which the observer is assigned.
6. Observers shall respect the hierarchy and general rules of behaviour which apply to all vessel personnel, provided such rules do not interfere with the duties of the observer under this programme, and with the obligations of vessel personnel set forth in point 7 of this Annex.

Obligations of the flag States of fishing vessels

7. The responsibilities regarding observers of the flag States of the fishing vessels and their masters shall include the following, notably:
 - a) Observers shall be allowed to access to the vessel personnel and to the gear and equipment;
 - b) Upon request, observers shall also be allowed access to the following equipment, if present on the vessels to which they are assigned, in order to facilitate the carrying out of their duties set forth in point 3 of this Annex:
 - i) satellite navigation equipment;
 - ii) radar display viewing screens when in use;
 - iii) electronic means of communication, including FAD/buoys signals.
 - c) Observers shall be provided accommodations, including lodging, food and adequate sanitary facilities, equal to those of officers;
 - d) Observers shall be provided with adequate space on the bridge or pilot house for clerical work, as well as space on deck adequate for carrying out observer duties; and
 - e) The flag States shall ensure that masters, crew and vessel owners do not obstruct, intimidate, interfere with, influence, bribe or attempt to bribe an observer in the performance of his/her duties.

Table 1. FOB/FAD information added to observer onboard form to comply with RFMOs recommendations. Table from 2016 SCRS report (section 18.2 Table 9).

<i>Properties</i>	<i>DFAD</i>	<i>AFAD</i>	<i>HALOG</i>	<i>FALOG</i>	<i>ANLOG</i>	<i>VNLOG</i>
FOB built using biodegradable materials (true/false/undefined)	X	X	X	X		
FOB is non-entangling (true/false/undefined)	X	X	X	X		
Meshed material (true/false/undefined) in FOB	X	X		X		
Size of largest mesh (in millimeters)	X	X		X		
Distance between the surface and the deepest part of the FOB (in meters)	X	X	X	X		
Approximate surface area of the FOB	X	X	X	X		
Specifies the FOB's ID whenever present	X	X	X	X		
Fleet owning the tracking device/echo sounder buoy	X	X	X	X	X	X
Vessel owning the tracking device/echo sounder buoy	X	X	X	X	X	X
Anchorage type used for mooring (AFAD registry)		X				
Radar reflectors (presence or not) (AFAD registry)		X				
Lighting (presence or not) (AFAD registry)		X				
Visual range (in nautical miles) (AFAD registry)		X				
Materials used for the floating part of the FOB (list to be defined)	X	X	X	X		
Materials making up the FOB underwater structure (list to be defined)	X	X	X	X		
Tracking device TYPE+ID if possible, otherwise no or undefined.	X	X	X	X	X	X