

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

CONSIDERING that the further implementation of a multi-annual programme for the medium-term will contribute to the conservation and sustainable management of the tropical tunas fishery;

RECOGNIZING the necessity to adopt monitoring and control measures to ensure implementation of conservation and management measures and to improve the scientific assessment of those stocks;

RECOGNIZING the necessity to adopt data collection and transmission mechanisms to allow improvement of the monitoring and the scientific assessment of the related fisheries and associated stocks;

NOTING that further to the SCRS assessment conducted in 2015, the Standing Committee on Research and Statistics (SCRS) concluded that the bigeye tuna stock is overfished and that overfishing is occurring;

CONSIDERING that the SCRS recommended taking measures to reduce the bigeye TAC to levels that would allow a recovery with a high degree of probability and within a short timeframe and to find effective measures to reduce FAD-related and other fishing mortality of small bigeye tunas;

RECOGNISING that, in view of the state of the stock, it would be appropriate to carry out the stock assessment of bigeye in 2018;

RECOGNIZING that the SCRS concluded that the current area/time closure has not been effective at reducing the mortality of juvenile bigeye tuna, and any reduction in yellowfin tuna mortality was minimal, largely due to the redistribution of effort into areas adjacent to the moratorium area;

RECOGNIZING the contribution that a reduction in the harvest of juvenile tunas in the Gulf of Guinea can contribute to the long-term sustainability of the stocks;

NOTING that Recommendation 14-01 brought the coverage of national observers for purse seiner fishing for tropical tunas during the area/time closure period from the minimum of 5% of the fishing effort established by Recommendation 16-14 to a 100% coverage of fishing;

CONSIDERING that the SCRS concluded that current level of scientific observers (5%) seems to be inappropriate to provide reasonable estimates of total by-catch and recommended increasing the minimum level to 20%.

FURTHER CONSIDERING that the SCRS recommended studying the issue further, in order to determine the level of coverage appropriate to meet management and scientific objectives;

RECOGNIZING that the SCRS noted that the current mandatory level of observer coverage of 5% may have not been implemented by many of the fleets and underlined the need for achieving those minimum coverages so as the SCRS could address the mandate given by the Commission;

RECOGNIZING that the SCRS also notes that some fleets are currently implementing voluntary observer programmes that cover 100% of the fishing trips and that it also acknowledged the efforts conducted by some fleets to increase the observer coverage to 100% of the trips;

RECALLING recommendations by the SCRS to address the lack of reliable data collection mechanisms, particularly in tropical tuna fisheries carried on in association with objects that could affect fish aggregation, including FADs;

FURTHER RECALLING that as regards skipjack tunas SCRS stated in its 2014 report that the increasing use of FADs since the early 1990s has changed the species composition of free swimming schools, and that association with FADs may also have an impact on the biology and on the ecology of yellowfin and skipjack tunas;

NOTING that, according to the 2014 SCRS advice, increasing harvests and fishing effort for skipjack could lead to involuntary consequences for other species that are caught in combination with skipjack in certain fisheries;

NOTING that in its 2013 report, SCRS recognized the effect of FADs on both sea-turtle and shark by-catch and the need to provide advice on the design of FADs that would lessen their impact on by-catch species. Therefore, information on dimension and material of the floating part and of the underwater hanging structure should be provided. More particularly the entangling or non-entangling feature of the underwater hanging structure should be reported;

FURTHER NOTING that the activities of supply vessels and the use of FADs are an integral part of the fishing effort exerted by the purse seine fleet;

RECALLING measures related to FAD management plans in other tuna RFMOs;

CONSIDERING that the multispecies characteristics of the tropical tuna fisheries makes it appropriate to extend to skipjack tuna the multi-annual management and conservation plan for yellowfin and bigeye tuna;

RECALLING that the FAO International Guidelines on by-catch management and reduction of discards strongly encourage RFMOs to recognise the importance of addressing by-catch and discards;

RECOGNISING that it is appropriate to better manage by-catch and reduce discard practices in ICCAT fisheries, also taking into account food security issues and the importance to improve data collection for scientific purposes;

TAKING INTO ACCOUNT the recommendations of the 2016 ICCAT ad-hoc Working Group on FADs, which were endorsed by the SCRS at its 2016 meeting;

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

**PART I
GENERAL PROVISIONS**

Multi-annual Management and Conservation Programme

1. Contracting Parties and Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) whose vessels fish bigeye and/or yellowfin tunas in the Convention area shall implement the Multi-annual Management and Conservation Programme initiated in 2012. As from 2015, such programme shall also apply to the eastern stock of skipjack tuna.

**PART II
CATCH LIMITS**

Catch limits for bigeye tuna

2. The annual Total Allowable Catch (TAC) for 2016 and subsequent years of the Multi-annual Programme is 65,000 t for bigeye tuna. The following shall apply:
 - a) If the total of catches exceeds the TAC in a given year, the excess amount shall be paid back by CPCs to which a catch limit has been granted for the species concerned. Excess quantities shall be deducted the following year on a *prorata* basis from the adjusted quotas/catch limits of the CPC concerned, as per paragraphs 9 and 10.

- b) The TAC and catch limits for 2016 and subsequent years of the Multi-annual Programme shall be adjusted based on the latest scientific assessment available. Whatever the outcome, the relative shares used to establish the annual catch limits for the CPCs appearing in paragraph 3 shall remain unchanged.
3. The following catch limits shall be applied for 2016 and subsequent years of the Multi-annual Programme to the following CPCs:

<i>CPC</i>	<i>Annual catch limits for the period 2016-2018 (t)</i>
China	5,376
European Union	16,989
Ghana	4,250
Japan	17,696
Philippines	286
Korea	1,486
Chinese Taipei	11,679

4. Catch limits shall not apply to CPCs whose annual catch of bigeye tuna in the Convention area in 1999, as provided to the SCRS in 2000, is less than 2,100 t. However, the following shall apply:
- a) CPCs which are not developing coastal States shall endeavour to maintain their annual catch less than 1,575 t.
- b) if the catch of bigeye tuna of any developing coastal CPC not listed in paragraph 3 above exceeds 3,500 t in any given year, a catch limit shall be established for that developing CPC for the following years. In such a case, the relevant CPC shall endeavour to adjust its fishing effort so as to be commensurate with their available fishing possibilities.
5. CPCs shall report quarterly the amount of bigeye caught by vessels flying their flag to the Secretariat by the end of the following quarter. When 80% of the catch limit or threshold for a CPC is exceeded, the Secretariat shall notify that to all CPCs.
6. If the total catch exceeds in any year the TAC in paragraph 2, the Commission shall review these measures.

Quota transfers of bigeye tuna

7. The following annual transfer of bigeye tuna shall be authorized in 2016-2018:
- a) from Japan to China: 1,000 t
- b) from Japan to Ghana: 70 t
8. Notwithstanding the *Recommendation by ICCAT Regarding the Temporary Adjustment of Quotas* [Rec. 01-12], in between meetings of the Commission, a CPC with a catch limitation of bigeye tuna as per paragraph 3 may make a one-time transfer within a fishing year of up to 15% of its catch limit to other CPCs with catch limits, consistent with domestic obligation and conservation considerations. Any such transfer shall be notified to the Secretariat in advance and may not be used to cover over harvests. A CPC that receives a one-time catch limit transfer may not re-transfer that catch limit.

Underage or overage of catch of bigeye tuna

9. Underage or overage of an annual catch limit for CPCs listed in paragraph 3 for bigeye tuna may be added/to or shall be deducted from the annual catch limit as follows:

<i>Year of catch</i>	<i>Adjustment Year</i>
2015	2016 and/or 2017
2016	2017 and/or 2018

2017	2018 and/or 2019
2018	2019 and/or 2020

However,

- (a) The maximum underage that a CPC may carry over in any given year shall not exceed 15% of its annual initial catch limit;
 - (b) For Ghana, the overage catch of bigeye tuna in the period 2006 to 2010 shall be repaid by reducing the catch limit of Ghana for bigeye tuna by a yearly amount of 337 t for the period 2012 to 2021.
10. Notwithstanding paragraph 9 if any CPC exceeds its catch limit during any two consecutive years, the Commission will recommend appropriate measures, which may include, but are not limited to, reduction in the catch limit equal to a minimum of 125% of the excess harvest, and, if necessary, trade restrictive measures. Any trade measures under this paragraph will be import restrictions on the subject species and consistent with each CPC's international obligations. The trade measures will be of such duration and under such conditions as the Commission may determine.

TAC for yellowfin tuna

11. The annual TAC for 2012 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.

If the total catch exceeds the TAC for yellowfin tuna, the Commission shall review the relevant conservation and management measures in place.

PART III CAPACITY MANAGEMENT MEASURES

Capacity limitation for bigeye tuna

12. A capacity limitation shall be applied for the duration of the Multi-annual Programme, in accordance with the following provisions:
- (a) The capacity limitation shall apply to vessels 20 meters length overall (LOA) or greater fishing bigeye tuna in the Convention area.
 - (b) CPCs which have been allocated a catch limit in accordance with paragraph 3 shall each year:
 - i. Adjust their fishing effort so as to be commensurate with their available fishing possibilities;
 - ii. Be restricted to the number of their vessels notified to ICCAT in 2005 as fishing for bigeye tuna. However, the maximum number of longline and purse seine vessels shall each year be subject to the following limits:

<i>CPC</i>	<i>Longliners</i>	<i>Purse seiners</i>
China	65	-
EU	269	34
Ghana	-	17
Japan	231	-
Philippines	5	-
Korea	14	-
Chinese Taipei	75	-

- (c) Ghana shall be allowed to change the number of its vessels by gear type within its capacity limits communicated to ICCAT in 2005, on the basis of two baitboats for one purse seine vessel. Such change must be approved by the Commission. To that end, Ghana shall notify a comprehensive and detailed capacity management plan to the Commission at least 90 days before the Annual Meeting. The approval is notably subject to the assessment by the SCRS of the potential impact of such a plan on the level of catches.
- (d) The capacity limitation shall not apply to CPCs whose annual catch of bigeye tuna in the Convention area in 1999, as provided to the SCRS in 2000, is less than 2,100 t.
- (e) Curaçao shall be allowed to have up to 5 purse seiners.
- (f) El Salvador shall be allowed to have up to 4 purse seiners.
- (g) For CPCs for which a capacity limitation applies, vessels fishing tropical tunas in the Convention area may be replaced only by vessels of equivalent capacity or lesser vessels.

PART IV MANAGEMENT OF FADs

Area/Time closure in relation with the protection of juveniles

13. Fishing for, or supported activities to fish for bigeye, yellowfin and skipjack tunas in association with objects that could affect fish aggregation, including FADs, shall be prohibited during the period 1 January to 28 February in the following area:
 - Southern limit: parallel 4° / South latitude
 - Northern limit: parallel 5° / North latitude
 - Western limit: meridian 20° / West longitude
 - Eastern limit: the African coast
14. The prohibition referred to in paragraph 13 includes:
 - launching any floating objects, with or without buoys;
 - fishing around, under, or in association with artificial objects, including vessels;
 - fishing around, under, or in association with natural objects;
 - towing floating objects from inside to outside the area.
15. As soon as possible and at the latest by 2018, the SCRS shall evaluate the efficacy of the area/time closure referred to in paragraph 13 for the reduction of catches of juvenile bigeye and yellowfin tunas. In addition the SCRS shall advise the Commission on a possible alternative area/time-closure of fishing activities on FADs to reduce the catch of small bigeye and yellowfin tuna at various levels.

Limitation of FADs

16. CPCs shall ensure that for purse seiners flying their flag and fishing for bigeye, yellowfin or skipjack tunas on FADs the following provisional limits are not exceeded:
 - No more than 500 FADs with or without instrumental buoys are active at any one time in relation to each of its vessels through such measures as, for example, the verification of telecommunication bills.
17. The Commission shall review the provisional limits laid down in paragraph 16 at its 2017 Annual meeting following the advice of SCRS and the conclusions of the *Ad Hoc* Working Group on FADs.

FAD Management Plans

18. CPCs with purse seine and baitboat vessels fishing for bigeye, yellowfin and skipjack tunas in association with objects that could affect fish aggregation, including FADs, shall submit to the Executive Secretary Management Plans for the use of such aggregating devices by vessels flying their flag at least one week in advance to the 2016 meeting of the *Ad Hoc* Working Group on FADs and subsequently by 31 January each year.
19. The objective of the FAD Management Plans shall be to:
 - 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 targeted and non-targeted 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 FAD's set by purse seiners, fishing capacity, number of support vessels).
20. The Plans shall be drawn up by following the Guidelines for Preparation for FAD Management Plans as provided in **Annex 6**.

FAD logbook and list of deployed FADs

21. 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 fish aggregating devices (FADs), including objects that could affect fish aggregation (e.g. carcasses, trunks) shall 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 buoy¹, 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 FAD²)
 - ii. Position
 - iii. Date
 - iv. FAD type (anchored FAD, drifting natural FAD, drifting artificial FAD)
 - v. FAD identifier (i.e., FAD Marking and buoy ID or any information allowing to identify the owner)

¹ 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 FAD's owner).

² 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 of a FAD (opportunistic).

- vi. 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 the report 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, for harmonized formats. In both cases, CPCs shall use the minimum standards recommended by SCRS in **Annex 3**.

- 22. CPCs shall also ensure that all vessels referred to in paragraph 21 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

- 23. 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 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 Task I and Task II requirements as “purse seine associated to baitboats” (PS+BB).

Non-entangling and biodegradable FADs

- 24. 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. replace by 2016 existing FADs with non-entangling FADs in line with the guidelines under **Annex 7** of this Recommendation.
 - ii. undertake research to gradually replace existing FADs with fully biodegradable and non-entangling FADs, with a view to phase out non-biodegradable FADs by 2018, if possible.

CPCs shall 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

25. 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

26. 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.
27. A CPC may allow by-catch of tropical tunas by vessels not authorized to fish for tropical tunas pursuant to paragraph 25 and 26, 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 bycatch limit it allows for such vessels. That information shall be compiled by the ICCAT Secretariat and made available to CPCs.
28. 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.
29. 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.
30. 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.
31. 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

32. 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.

33. The provisions of paragraphs 25 to 32 do not apply to recreational vessels.

Recording of catch and fishing activities

34. 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 1** 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

35. 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 and not out of compliance with the provisions of paragraphs 13 and 14. 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, request the vessel to stop fishing and, if necessary, leave the area without delay. The flag CPC shall, without delay, report to the Executive Secretary the results of its investigation and the corresponding measures taken.
36. 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.
37. The Executive Secretary shall propose to include any vessels identified in accordance with paragraph 36, or vessels for which the flag CPC has not carried out the required investigation and taken, if necessary, adequate measures in accordance with paragraph 35, on the provisional IUU list.

Observers and compliance with area/time closure

38. Each CPC shall:
- (a) Take appropriate action to ensure that all vessels flying its flag, including support vessels, when engaged in fishing activities during the area/time closure referred to in paragraph 13, have an observer on board in accordance with **Annex 5** and report the information collected by the observers each year by 31 July to the ICCAT Secretariat and to SCRS;
 - (b) Take appropriate action against vessels flying their flag that do not comply with the area/time closure referred to in paragraph 13;
 - (c) Submit an Annual Report on their implementation of the area/time closure to the Executive Secretary, who shall report to the Compliance Committee at each Annual Meeting.

Scientific Observers

39. For scientific 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:
- (a) Scientific observers shall automatically be recognized by all CPCs. Such recognition shall allow the scientific observer to continue the collection of data throughout the EEZ visited by the vessel observed. The coastal CPCs concerned shall receive from the flag CPC which mandated the observer the scientific information collected by the observer and related to fishing activities on ICCAT species in their EEZ.

- (b) CPCs that do not accept that their national scientific observer may collect data in the EEZ of another CPC, or that do not recognize as valid the data collected in their EEZ by a scientific observer of another CPC, must inform the Executive Secretary, for immediate transmission to the SCRS and the Compliance Committee, of their refusal within three months after the entry into force of this Recommendation or their accession to ICCAT. By such refusal, the CPC concerned shall refrain to require the deployment of its national scientific observer on vessels of another CPC.
40. For purse seine and longline vessels flying their flag 20 meters length overall (LOA) or greater targeting bigeye, yellowfin and/or skipjack in the Convention area, CPCs are encouraged to increase the observer coverage stipulated in Recommendation 16-14, in line with the 2016 SCRS recommendations.
41. The ICCAT Secretariat shall compile the information collected under domestic observer programs, including on the observer coverage for each tropical tuna fishery, and make it available to the Commission before the 2017 Annual Meeting for further deliberation.
42. In 2017 the SCRS shall review its 2016 recommendations on observer coverage and advise the Commission on appropriate coverage levels for each tropical tuna fishery, taking in consideration the full suite of monitoring tools in the fishery.

Port Sampling Programme

43. The port sampling programme developed by the SCRS in 2012 aimed at collecting fishery data for bigeye, yellowfin, and skipjack tunas that are caught in the geographical area of the area/time closure referred to in paragraph 13 for surface fishery 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 FINAL PROVISIONS

Availability of data to SCRS and to national scientists

44. CPCs shall ensure that:
- a) Both paper and electronic fishing logbooks referred to in paragraph 34 and the FAD-logbooks referred to in paragraph 21, 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.
45. 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.
46. With the objective of providing information useful to estimate the fishing effort related to FAD-fishing each CPC should provide to its national scientists full access to:
- (a) VMS data of their fishing and support vessels and trajectories of FADs;
 - (b) Data recorded by echo-sounders;
 - (c) FAD logbooks and the information collected pursuant to paragraph 23;

47. CPCs shall undertake historical data mining on the use and number of deployed FADs with a view to possibly submit the relevant information by 31 January 2017 to the ICCAT Executive Secretary, who shall make them available to the *Ad Hoc* Working Group on FADs and to the SCRS.

SCRS activity and stock assessment

48. The SCRS shall conduct the next stock assessment of bigeye in 2018.
49. At its 2017 meeting the SCRS shall:
- (a) address to the extent possible the Recommendations made by the FAD Working Group in 2016 (**Annex 8**) and for the remaining ones develop a work plan to be presented to the Commission at its 2017 Annual meeting;
 - (b) provide performance indicators for skipjack, bigeye and yellowfin tuna as specified in **Annex 9**, with the perspective to develop management strategy evaluations for tropical tunas;
 - (c) develop a table for consideration by the Commission that quantifies the expected impact on MSY, B_{MSY} , and relative stock status for both bigeye and yellowfin resulting from reductions of the individual proportional contributions of longline, FAD purse seine, free school purse seine, and baitboat fisheries to the total catch.

Confidentiality

50. 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.

Fishing management plans

51. The Commission shall establish at its 2018 meeting conservation and management measures on the basis of the SCRS advice resulting from the new stock assessment on bigeye as well as the *Resolution by ICCAT on Criteria for the Allocation of Fishing Possibilities* [Res. 15-13]. In support of this effort, the Commission shall consider development/management plans of coastal developing CPCs and fishing/management plans of other CPCs submitted in 2017, so that adjustments can be made to the existing catch and capacity limits and other conservation measures in 2018, as appropriate. Those plans shall include comprehensive information about how the CPC manages capacity in the bigeye fishery. Each CPC shall submit to the Executive Secretary its 2018 development or fishing/management plan by 15 September 2017, in accordance with a template to be provided by the ICCAT Secretariat.

Reduction of discards

52. CPCs shall:
- submit to the SCRS information on by-catches and discards made by fishing vessels flying their flag fishing for tropical tunas;
 - encourage the vessel owners, masters and crew fishing for tropical tunas under their flag to implement good practices to better manage by-catches and reduce discards;
 - consider designing and adopting management measures and/or management plans to better manage by-catch and reduce discards.
53. The SCRS shall:
- evaluate the contribution of by-catches and discards to the overall catches in ICCAT tropical tuna fisheries, on a fishery by fishery basis;
 - advise the Commission on possible measures allowing to reduce discards and to mitigate onboard post-harvest losses and by-catch in ICCAT tropical tuna fisheries.

54. When revising this Recommendation, the Commission shall consider the adoption of possible provisions for a better management of by-catches and reduction of discards in ICCAT tropical tuna fisheries.

Repeals and review

55. This Recommendation replaces Rec. [15-01] and shall be revised as appropriate.

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) or 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

FAD logbook

FAD marking	Buoys ID	FAD type	Type of visit	Date	Time	Position		Estimated catches			By-catch			Observations	
						Latitude	Longitude	SKJ	YFT	BET	Taxonomic group	Estimated catches	Unit		Specimen released alive
(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/mm/dd or °E/W/mm/dd.
- (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 neither associated beacon ID is available, report in this section all available information 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 ^[1] _{SEP}	Drifting FAD	Bamboo or metal raft
AFAD	Anchored FAD ^[1] _{SEP}	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>
FOB	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
Buoy	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.

Observer Programme

1. The observers referred to in paragraph 38 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) Report without delay, with due regard to the safety of the observer, any fishing activity associated with FADs made by the vessel in the period referred to in paragraph 13 of this Recommendation.
 - c) 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

Guidelines for Preparation of FAD Management Plans

The FAD Management Plan for a CPC purse seine and bait boat 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

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.

Activities to be included in the work plan to be developed by SCRS

1. Review the available information on fishing capacity and provide advice on adapting the fishing capacity in all its components (number of FADs, number of fishing vessels and support vessels) to achieve the management objectives for tropical tuna species.
2. By taking into account as baseline the outputs of the EU CECOFAD research project (SCRS/2016/30) the SCRS shall:
 - (a) develop a set of definitions for floating objects and types of activities developed on them including “FAD sets” and “FAD fishing”. In particular, definitions and characteristics of non-entangling and bio-degradable FADs should be established;
 - (b) review and recommend additional changes, as appropriate, to the minimum standard reporting requirements on data to be collected in FAD fisheries through logbooks;
 - (c) establish guidelines addressed to vessel masters detailing how data and more particularly qualitative information would have to be reported.
3. Develop fisheries indicators describing catch compositions, size structures and catch average sizes of the different métiers contributing to the tropical tunas' fishing mortality and in particular of purse seine fleets fishing on floating objects.
4. Provide advice on possible modifications of fishing patterns affecting the catch-at-size composition and their impact on MSY and relative stock status.
5. In collaboration with the Secretariat, provide advice to establish a consolidated database of records of FAD activity across all purse seine fleets.

Indicative Performance indicators to support decision-making

<i>Performance metrics and associated statistics</i>	<i>Unit of measurement</i>	<i>Type of statistics</i>
1. Status		
1.1 Minimum biomass relative to B_{MSY}	B / B_{MSY}	Minimum over [x] years
1.2 Mean biomass relative to B_{MSY} ¹	B / B_{MSY}	Geometric mean over [x] years
1.3 Mean fishing mortality relative to F_{MSY}	F / F_{MSY}	Geometric mean over [x] years
1.4 Probability of being in the Kobe green quadrant	B, F	Proportion of years that $B \geq B_{MSY}$ & $F \leq F_{MSY}$
1.5 Probability of being in the Kobe red quadrant ²	B, F	Proportion of years that $B \leq B_{MSY}$ & $F \geq F_{MSY}$
2. Safety		
2.1 Probability that biomass is above B_{lim} ³		Proportion of years that $B > B_{lim}$
2.2 Probability of $B_{lim} < B < B_{thresh}$		Proportion of years that $B_{lim} < B < B_{thresh}$
3. Yield		
3.1 Mean catch – short term		Mean over 1-3 years
3.2 Mean catch – medium term		Mean over 4-10 years
3.3 Mean catch – long term		Mean over [x] years
4. Stability		
4.1 Mean absolute proportional change in catch	Catch (C)	Mean over [x] years of $(C_n - C_{n-1}) / C_{n-1}$
4.2 Variance in catch	Catch (C)	Variance over [x] years
4.3 Probability in shutdown	TAC	Proportion of years that TAC=0
4.4 Probability of TAC change over a certain level ⁴	TAC	Proportion of management cycles when the ration change ⁵ $(TAC_n - TAC_{n-1}) / TAC_{n-1} > X\%$.
4.5 Maximum amount of TAC change between management periods.	TAC	Maximum ratio of change ⁶

1. This indicator provides an indication of the expected CPUE of adult fish because CPUE is assumed to track biomass.

2. This indicator is only useful to distinguish the performance of strategies which fulfil the objective represented by 1.4.

3. This differs slightly from being equal to 1- Probability of a shutdown (4.3), because of the choice of having a management cycle of 3 years. In the next management cycle after B has been determined to be less than B_{lim} the TAC is fixed during three years to the level corresponding to F_{lim} , and the catch will stay at such minimum level for three years. The biomass, however, may react quickly to the lowering of F and increase rapidly so that one or more of the three years of the cycle will have $B > B_{lim}$.

4. Useful in the absence of TAC-related constraints in the harvest control rule.

5. Positive and negative changes to be reported separately.

6. Positive and negative changes to be reported separately.