INTER-AMERICAN TROPICAL TUNA COMMISSION

98TH MEETING

(by videoconference)

23 – 27 August 2021

DOCUMENT IATTC-98 INF-J

ACTIVE FAD LIMITS FOR THE PURSE SEINE FISHERY IN THE EASTERN PACIFIC OCEAN: STAFF'S CONSIDERATIONS

SUMMARY

The staff has concerns about the use of class-category limits on the number of active FADs (CCLs) for purse-seine vessels in the EPO, including CPC proposals C-2 (COL, EUR), C-3 (ECU), C-4 (USA), and C-6 (SLV, GTM, NIC). The staff is not recommending new CCLs for purse-seines, and if they are adopted, there is no guarantee that *status quo* reference levels will not be exceeded, with significant levels of uncertainty as to the impact on number of FADs at sea, fishing efficiency, number of floating-object (OBJ) sets, and ultimately, tuna stocks. Some of the staff's concerns about the efficiency of the new CCLs could possibly be addressed by i) establishing individual-vessel limits, ii) estimating a fleetwide active FAD limit, or iii) annually monitoring, and adjusting, if needed, the number of active FADs used with respect to the *status quo*, but this could require additional allocation provisions and correcting mechanisms to be made.

OVERVIEW OF CPC PROPOSALS

The main characteristics of CCLs proposals C-2 (COL, EUR), C-3 (ECU), C-4 (USA), C-5 (JPN) and C-6 (SLV, GTM, NIC) for the triennium 2022-2024 are (Table 1):

1) A reduction of current CCLs by ~30% (C-2 – COL, EUR; C-4 – USA), 4-30% (C-3 - ECU), and 3-22% (C-6 – SLV, GTM, NIC) has been proposed;
2) Proposal C-5 (JPN) proposes individual vessel limits (IVLs), computed independently for each vessel from its active FAD data for 2018-2019, as recommended by the IATTC scientific staff (IATTC-97-02);
3) Two proposals are for progressive CCLs (from 3-9% in 2022 to 9-22% in 2024 for C-6 – SLV, GTM, NIC; no changes in 2022, followed by a reduction of 4-30% in 2023-2024 for C-3 - ECU). The CCLs in the rest of the proposals (C-2 COL, EU; C-4 USA, C-5 JPN) are fixed (i.e., no changes during the 2022-2024 period);
4) Proposal C-3 (ECU) outlines a 4-5% of reduction in 2023-2024 (no changes in 2022) for vessels using/deploying at least 20% of FADs built with 100% of degradable materials (i.e., referred to as eco-FADs/biodegradable FADs in proposal C-3). Vessels using/deploying less than 20% of eco/biodegradable FADs would need to reduce their limits by ~30% in 2023-2024 (no changes in 2022);
5) Proposal C-6 (SLV, GTM, NIC) proposes different limits for vessels with and without DML[1]. Vessels without a DML would need to progressively reduce their limits between 3-9% in 2022 to 9-22% in 2024. Vessels with DML would have a limit of 5-10 active FADs, depending on their class (Class 1-3: 5; Class 4-6: 10).

[1] Dolphin mortality limit

Table 1. Summary of CCLs in proposals C-2 (COL, EUR), C-3 (ECU), C-4 (USA), C-5 (JPN) and C-6 (SLV, GTM, NIC). Added, for reference, current CCLs in place (Resolution C-20-06).

	C-20-06	C-2 (COL, EUR)	C-3 (ECU)		C-4 (USA)	C-5 (JPN)	C-6 (SLV, GTM, NIC)			
			Bio*	Non-Bio			2022	2023	2024	DML (2022-2024)
Class 6 (>=1,200 m^3)	450	315	430	315	315	IVL	410	380	350	10
Class 6 (<1,200 m^3)	300	210	285	210	210	IVL	285	270	255	10
Class 4-5	120	85	115	85	85	IVL	115	110	105	10
Class 1-3	70	50	67	50	50	IVL	68	66	64	5
Reduction	Fixed	Fixed	Progressive	Progressive	Fixed	Fixed	Progressive	Progressive	Progressive	Fixed

* For vessels with at least 20% of biodegradable FADs with respect to the total number of FADs active annually, starting in 2023

STAFF'S CONCERNS

Effectiveness of CCLs in maintaining number of active FADs at *status quo* levels

It is uncertain if any of the proposed CCL schemes will provide sufficient protection to keep daily active FAD levels from exceeding the *status quo* (along with other components of the fishery that are currently unregulated, such as total number of FADs at sea and FAD deployments).

Resolution C-17-02, now C-20-06, requires CPCs or their vessels to report, on a monthly basis, daily information on all active FADs to the Secretariat[2] and established CCLs to control fishing mortality in the OBJ fishery (vessels with higher number of active FADs may make more OBJ sets or have increased fishing efficiency, e.g., Lopez et al. (2014), FAD-04-01). However, vessels in the same CCL can have different strategies in the use of FADs, as well as different overall fishing strategies (e.g., DML, non-DML), and any fleetwide restriction or CCLs will impact some vessels more than others (e.g., FAD-04-01, FAD-05-INF-A, FAD-05 INF-C). Adjusting the current CCLs, e.g., decreasing those by a specific percentage, would have a significant adverse effect on a number of vessels but will, conversely, still be significantly high or generous for a large segment of the fleet. It is important to note that the staff, considering different computing scenarios, estimated that a potential reduction of 30% of current active FADs CCLs (i.e., proposals C-2, C-3, C-4) would only impact 7-30% of vessels, and that those affected would need to reduce the number of active FADs by an average of between 14-90 to comply with the proposed CCLs, depending on the vessel class-category (see document FAD-04-01 for further details on the impact analysis). An updated analysis presented during the IATTC-97 meeting, with improved data reporting rates for 2018-2019, showed that only 8-20% of Class 5-6 vessels will be affected (i.e., 5-30 active FADs reduction on average per affected vessel), whereas no Class 2-4 vessel would be affected by a potential 30% of reduction of current CCLs. As a consequence, some vessels would have to reduce their number of active FADs substantially while others would be allowed to increase their number of active FADs, since their current active FADs usage is well below any of the proposed limits (e.g., SAC-11 INF-M, SAC-12-08, FAD-04-01, FAD-05 INF-A, FAD-05 INF-C), potentially exceeding daily active FADs with regard to the *status quo*. As an example, even with active FAD restrictions in place, certain fleets significantly increased their use of active FADs in other oceans in recent years (Imzilen *et al.* 2020). Therefore, the staff believes that adjustments to CCLs in C-17-02 and C-20-06 would not necessarily prevent, or efficiently limit, most

[2] FADs are currently identified using satellite buoys, per Resolution C-19-01

vessels increasing their use of active FADs with respect to the *status quo* (same for other currently unregulated components, such as total number of FADs at sea and FAD deployments).

Staff's proposed solution: To ensure that the *status quo* is not exceeded, one of the following actions should take place: 1) establish IVLs on the daily number of active FADs, computed independently for each vessel from its active FAD data for 2018-2019 (see SAC-12-08 for details on the proposed computing method). Unlike with adjustments to CCLs in C-17-02 and C-20-06, vessel-specific active FAD limits will prevent the total number of active FADs from increasing because each vessel will be limited to its level of FAD use over the 2018-2019 period. Moreover, by limiting the number of active FADs per vessel, the number of FADs at sea and FAD deployments would be indirectly limited to some extent, provided remote activation does not occur or is not widespread (i.e., Resolution C-17-02 and C-20-06 prohibit remote activations); **OR**, 2) establish a fleetwide limit on active FADs using 2018-2019 data. A fleetwide limit on active FADs is not ideal because the existing active FAD measures and reported data are by vessel and currently some vessels do not report, or report incompletely. Extrapolating for those vessels that did not report during 2018-2019 would be problematic without an accurate relationship between vessels' operational characteristics and the number of active FADs. Therefore, the staff proposes to use existing past data to estimate a global limit (if appropriate, a deadline could be set for those vessels willing to report missing data; e.g., 30 September 2021); **OR**, 3) use a correcting mechanism to limit the number of active FADs. The staff will conduct an assessment of the number of active FADs used by the fleet each year, starting in 2022, specifically to determine the level of the current number of active FADs relative to the *status quo*, and in case that the *status quo* of number of active FADs has been exceeded, the management measure should be modified considering new recommendations by the staff and the SAC. The staff prefers the first option (see SAC-12-16 and IATTC-97-02).

Effectiveness for the conservation and management of BET

It is uncertain if the proposed CCLs will help to keep bigeye tuna (BET) fishing mortality at *status quo* levels. As seen in other documents (Lopez et al. (2014), FAD-04-01, FAD-05-INF-C), vessels with higher numbers of active FADs may make more OBJ sets or have increased efficiency, and adjustments to CCLs in C-17-02 and C-20-06 would not necessarily prevent, or efficiently limit, vessels increasing their use of active FADs (as well as FAD deployments and FADs at sea) with respect to the *status quo*. A potential increase in number of FADs at sea would have an unknown effect on tuna population spatial distribution and behavior (e.g., school fragmentation *vs* density-dependent behavior), fleet efficiency, and catch rates, among others. Moreover, preliminary results of the pilot project M.5.a (SAC-11-11) suggest that both traditional FADs and biodegradable FADs have similar catch rates of tuna. It is noted that no clear definition of biodegradable FADs exists yet in the EPO, nor are their guidelines for FAD construction or data collection, all of which will pose challenges for compliance monitoring. Therefore, and until these issues are clarified by the Commission and the results of the ongoing controlled experiments, making clear distinctions between FAD types in terms of conservation and management may be problematic (note that currently no IATTC Resolution makes distinctions between FAD types).

Staff's proposed solution: The staff considers that the following actions could help improve the effectiveness of active FAD measures for the conservation and management of BET: 1) discuss and adopt mechanisms that guarantee that *status quo* levels for number of active FADs are not exceeded (see previous section for options); 2) use scientific advice to define guidelines for biodegradable FADs construction, data collection of FAD characteristics and compliance monitoring. Currently, no definition or clear guidelines exist for biodegradable FADs in the EPO, which is a basic requirement if different limits are to be adopted for different FAD types; 3) provide to the IATTC staff the same raw buoy data received by original users (i.e., vessels, fishing companies), including both trajectories and acoustic biomass information so that the staff can more rigorously evaluate the potential effects of FADs on catch rates, taking into consideration each FADs at-sea history, distances between FADs or FAD densities, among others.

REFERENCES

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