INTER-AMERICAN TROPICAL TUNA COMMISSION

2ND WORKSHOP OF AN ELECTRONIC MONITORING SYSTEM (EMS) IN THE EPO: INSTITUTIONAL STRUCTURE, GOALS AND SCOPE OF THE EMS

(by videoconference)
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GOALS AND SCOPE OF AN EMS IN THE EPO

1. INTRODUCTION AND BACKGROUND

As requested by the Scientific Advisory Committee (SAC) at its 10th meeting (2019) in its Recommendation 3.1, which was endorsed by the Commission, and in compliance with Resolution C-19-08, paragraphs 9 and 10, the staff prepared, and subsequently presented at the 11th meeting of the SAC, Document SAC-11-10 "*An electronic monitoring system for the tuna fisheries in the eastern Pacific Ocean: Objectives and Standards"*.

That document contained information on the potential of an Electronic Monitoring System (EMS), a description of its potential components, a comprehensive evaluation of the minimum standards for these components, and the actions that would be required for its implementation.

On that basis, Document EMS-01-01, which was submitted to the 1st Workshop on Implementation of an Electronic Monitoring System, held in April 2021, included several recommendations made by the staff on the minimum standards and actions to be agreed upon in order to successfully implement an EMS for tuna fisheries in the eastern Pacific Ocean (EPO).

As a complement to these recommendations, Document EMS-01-02 (Rev.) proposed a workplan consisting in the holding of several workshops that would focus on the various EMS components and subcomponents and analyze them in a logical and chronological order. At its 98th meeting, held in August 2021, the Commission adopted Resolution C-21-02, which established the Terms of Reference for these workshops.

In accordance with the agreed workplan, this 2nd workshop is being held to address a number of organizational issues relating to the institutional structure as well as to the goals and the scope of an EMS for tuna fisheries in the EPO. The conclusions and recommendations reached at this workshop will necessarily impact and guide the exploration of other objectives and actions to be considered in the future workshops (e.g. EM data to be generated, EM review rate, EM coverage).

The purpose of this document is to focus on the second category of these issues, that is, the goals and scope of the EMS in the EPO.

2. GOALS

The objective of the Antigua Convention is *"to ensure the long-term conservation and sustainable use of the fish stocks covered by this Convention, in accordance with the relevant rules of international law."* Besides doing all the scientific work necessary to reach that objective, the IATTC staff also analyzes various types of data sources to monitor compliance with active resolutions. Some examples of these data are the information collected by scientific observers, fisheries logbooks, port sampling, and cannery data. Of

particular interest are scientific observers' data, currently collected exclusively through physical observers onboard. These data are mainly used for stock assessments, bycatch mitigation and issues related to compliance with bycatch mitigation measures, particularly in the context of AIDCP and dolphin mortality. However, fisheries observer data are not perfect and are not currently being collected in a systematic way for some segments of the fleets targeting tuna in the EPO (e.g., small purse-seine vessels, the majority of longline vessels).

In this context and for this purpose, the implementation of an EMS for tuna fisheries in the EPO can provide several benefits, all relevant and useful for the conservation and management of target and non-target species. The primary and overall benefit of an EMS in the EPO would be the collection of quantitative information related to fisheries activities covered by the Antigua Convention which would not be otherwise available to the Commission, its Members, and its staff. This information would be supplemented by data that could be collected on vessels with on-board observers (e.g., biological sampling), if observers are relieved of some of their most immediate duties. The second, derived and essential benefit of an EMS, would be the improvement of the analyses and tasks, current or new, for which these data would be made available. EMS data would therefore be used to further scientific research, but it is clear such data would constitute an additional and very efficient monitoring, control and surveillance (MCS) tool that could help CPCs implement their obligations under the Antigua Convention, and as elaborated in the decisions adopted by the Commission (e.g., resolutions). The same would be true concerning the Parties to the Agreement of the International Dolphin Conservation Program (AIDCP) with regards to their own commitments and obligations under that agreement. It is worth mentioning that, as of now, all the data received and processed by the staff are being used for both science and compliance. For science, as stipulated in Article XIII of the Antigua Convention and Article IV of the AIDCP, and for compliance as supported by the AIDCP through resolutions A-99-01, A-01-04, A-02-03, A-04-02, etc.

As a guidance to participants in the workshop, without prejudging the development and the contents of the discussion on this issue, it should be reminded that the IATTC staff has already recommended in the documents referred to above (EMS-01-01) that:

The EPO EMS should generate data to be made be available for use in both scientific and compliance related activities, as defined by the Members.

3. DEFINING SCOPE

Leaving open the question of the fishing activities carried out near the coast by very small and artisanal vessels, there are essentially three categories of fishing activities in the EPO that should be covered by the EMS: those of the purse seine fleet, and those of the longline fleet, to which must be added the authorized operations of transshipments at sea.

(a) Tuna purse-seine vessels:

- Small tuna purse-seine vessels (<363 t) are rarely sampled by observer programs (some vessels and trips are observed under certain circumstances or by voluntary programs; e.g., Fuller *et al.* 2021, *A description of the IATTC bycatch database for use in ecosystem approaches to fisheries and bycatch mitigation*, in prep.), which leads to significant data gaps. For example, when these vessels' logbooks are abstracted and cannery data from their trips are collected, those data provide basic catch information on target species, but information on tuna discards and catch of non-target species is typically unavailable.

Similarly, the FAD form 9/2018, a form designed by the IATTC staff dedicated to collect data when observers are not on board, has to be filled by purse-seine vessels for all interactions with FADs, as per Resolution C-19-01. However, this FAD form can only be completed by operators (i.e., skippers), and applies exclusively to interactions with floating objects, and the information is not provided at the species level for vulnerable bycatch species. In addition, and despite recent improvements, the reporting rate and quality of the data provided by the CPCs through the FAD form 9/2018 are not ideal (e.g., FAD-03-INF-A). Thus, other data collection tools such as EM are needed for a complete catch and bycatch information for a significant fraction of the small purse-seine fleet.

- Class-6 vessels (>363 t) have 100% observer coverage, and detailed fishery data are collected by observers on board. However, as management needs have evolved, additional data are required for management and science. For example, high resolution spatiotemporal size composition data to estimate relative abundance indices by age (i.e., size) are necessary for application of new methods for tuna catch-per-unit-effort (CPUE) modelling, which will lead to improved assessments. In addition, for bycatch species for which assessments are not currently possible, data with which to estimate average size for stock status indicators would be beneficial. However, currently observers only collect length measurements opportunistically for select species groups such as sharks and billfishes, but not for other species of scientific interest or in a systematic manner. Similarly, observers could perform at-sea sampling of size composition for more species, including tunas, but they currently do not have adequate time due to other duties, especially during the brailing period of the set. Moreover, observers could conduct other types of biological sampling that would be of great interest for the Commission if time allows, such as tissue sampling for genetic analyses, or stomach and gonads sampling for relevant ecological and biological studies of the species. In this regard, EM may be a useful tool to assist with some regular fisheries activities data collection so that observers could perform other at-sea sampling duties.

(b) Longline vessels of 12 meters in length or more and motherships of longline vessels less than 12 m in length :

- Tuna CPUE modelling, including for the tuna longline fisheries, requires high resolution spatial-temporal size composition data, as well as high-resolution operational data, to estimate relative abundance indices. Such data for longline fisheries are currently only available from observers. However, the level of observer coverage (nominally 5%) is too low to generate useful data sets for CPUE modelling. EM would help to produce such data, which would lead to improved indices of relative abundance for tuna stocks and in turn improve the tuna stock assessments.

- The current level of observer coverage of 5% for longline vessels greater than 20 meters length, established by Resolution C-19-08, has been considered too low by both the IATTC staff and the IATTC Working Group on Bycatch, with observed sets and catches not representative of the fleet, in either space or time (BYC-10 INF-D). It has been suggested that observer coverage be raised to a minimum of 20%. EM could be used to supplement human observer coverage.

- Logistical, financial and space constrains have made observer placement onboard longline vessels challenging, especially for small longline vessels. However, these small vessels, even as small as 12 m LOA, contribute a substantial portion of the total longline catch in the EPO. For example, it was estimated in 2015 that 135,000 metric tons (mt) of fish were landed by the Ecuadorian artisanal fleet during 2008-2012 year-period, the majority being caught by fiber-glass skiffs ('*fibras'*) operating with pelagic longlines and motherships (Martínez-Ortiz *et al*., 2015, The Ecuadorian artisanal fishery for large pelagics: species composition and spatio-temporal dynamics). Thus, is important to monitor the longline fleet for vessels with LOA 12 m or larger.

(c) All transshipments at sea:

- As carried out under Resolution C-12-07, authorized carriers have to be monitored by human observers on board, who are thus susceptible to be complemented or replaced by EM.
- Some Members suggested, during the 1st workshop on EMS, that operations of all transshipments at sea should be covered by EM. To date, no objections have been made in this regard by any Member.

Based on the information above, the staff's recommendation on the scope of the EMS is the following:

The EPO EMS should include the following types of vessels operating in the IATTC Convention Area: tuna purse-seine vessels of all sizes; all longline vessels of 12 meters in length or more and motherships of longline vessels less than 12 meters in length, and transshipment authorized carriers.