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2nd Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee

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Informing the development of guidelines for evaluating and approving electronic observer programs in SIOFA

Relates to agenda item: 5

Working paper info paper

Delegation of Australia

Abstract

This paper, including Annexes A and B, provides information to the SIOFA SC on the applicability of electronic monitoring systems to the SIOFA data standards to help inform the development of guidelines for evaluating and approving electronic observer programs in SIOFA.

Recommendation

That the Scientific Committee:

- Consider the applicability of electronic monitoring to collect observer data required under CMM 2016/02 (Data Standards), as set out in Annex A.
 - Make recommendations to the Compliance Committee and Meeting of Parties on the suitability of electronic monitoring for specific data collection purposes to help inform the development of guidelines for evaluating and approving electronic observer programs.
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Summary

Electronic monitoring (EM) is operational in Australian demersal longline, demersal gillnet and pelagic longline fisheries managed by the Australian Government through the Australian Fisheries Management Authority. As EM becomes an established data collection and verification tool, there is an opportunity to review how data is collected in the SIOFA Area. This includes consideration of how EM and on-board observers can be used together to ensure that scientific data needs are met in a cost-effective way, and follows on from discussion at SIOFA SC1 where it was noted that EM could be used to complement an observer program and strengthen monitoring in SIOFA.

This paper summaries the ability of EM to collect observer data required under CMM 2016/02 (Data Standards) to inform the development of guidelines for evaluating and approving electronic observer programs in SIOFA.

Background

EM is a system of sensors and video cameras capable of monitoring and recording fishing activities which can be reviewed later to independently verify logbook data. The specific configuration varies with gear and individual boat layouts, but an EM system typically includes several key components: three or more video cameras, a hydraulic gear sensor, a drum sensor, a GPS receiver, satellite communications and a control centre.

The EM cameras are activated during fishing operations, specifically when the hydraulics are running during the set and haul. The cameras remain activated for a period of time after the haul to record the processing of catch and all video and sensor data is recorded to a hard drive on the boat. Hard drives are encrypted and tamper evident.

Sensor data is transmitted back to the regulatory authority in real time and includes information on whether the system is fully operational, the location of the boat and whether fishing gear has been set or hauled. Hard drives with video data are exchanged frequently (monthly or at the end of any trip longer than 4 weeks) and submitted to the regulatory authority for analysis.

A random portion of the video footage (minimum 10 per cent of fishing activity) is analysed and the data on catch, effort and protected species interactions is compared to logbook reports. This provides independent verification of catch, discards and interactions with protected species, and ensures that the same reporting standards are followed across the fleet. Applications of EM within the Australian EEZ analyse at least 10 per cent of the video footage at random (per vessel trip) with a risk-based approach used to audit more footage from boats that are suspected of misreporting. An overview of Australia's EM program is at **Annex B**.

After the hard drives have been analysed, operators receive individual reports on their accuracy of reporting to encourage improved logbook reporting. Where significant misreporting is detected, higher levels of analysis are undertaken for those boats at the cost of the operator and potential compliance penalties may apply.

Data collection

Annex A summarises the data collected by EM (as currently deployed on boats operating in Australian domestic fisheries) against the SIOFA CMM 2016/02 *Data Standards*.

Discussion

A critical aspect of an EM system is its 'always-on' nature, where close to 100 per cent of operations are recorded and can be subject to later analysis, feedback and compliance action. The target sample coverage for analysis of the EM data is 10 per cent in Australian domestic fisheries. This contrasts with the coverage for traditional on-board observers, which has historically been between 5 and 10 per cent of fishing effort in Australian domestic fisheries.

The effectiveness of EM as a data collection tool is dependent on the data collection needed from the fishery. For example, if the objective of a monitoring program is to collect information on protected species interactions, EM may be very effective at undertaking this function as cameras can be set up to monitor areas where interactions are likely to be captured (e.g. line hauling stations or warp wires). To this end, EM has enabled the implementation of individual accountability management arrangements for seabirds and marine mammals in Australian domestic fisheries.

As demonstrated in Annex A, there are limitations in the range of data that can be collected by an EM system and EM is not able to provide the full range of data that has been provided in the past by observers. There are also a range of 'data continuity' issues with potential impacts on science delivery and stock assessment that need to be considered. Electronic monitoring must be supplemented by on-board observers and/or port sampling to maintain sufficient levels of biological data collection for stock assessments, however, can be a cost effective data collection and verification tool to complement on-board observers.

As EM can be used to collect or verify a range of different levels of information, it is important that any guidelines developed for evaluating and approving electronic observer programs be flexible to the proposed usage of EM in an overall observer program. Accordingly, Australia recommends that the SC discuss how EM can be suitably implemented from a scientific perspective to inform the development of the Guidelines referred to in CMM 2016/01.