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**REVISED CONCEPT PAPER ON ELECTRONIC MONITORING
IN THE WCPFC**

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Paper prepared by the ERandEMWG Chair

ELECTRONIC REPORTING AND ELECTRONIC MONITORING INTERSESSIONAL WORKING GROUP

2019 - Progress on electronic monitoring in the WCPFC

Introduction

I presented a chair's concept paper to the 3rd meeting of the ERandEM Working Group (WG) in Busan in 2018. The concept paper for electronic monitoring (EM) sets out a general framework for a WCPFC E-Monitoring Programme using a standards based approach drawing on Commission decisions and already established conservation and management measures. A standards based approach does not intend to prescribe the specifics of how a national programme is to be implemented but seeks to ensure that the outputs from national or subregional programmes are robust and reliable and are able to be used by the Commission. The concept paper included a draft conservation and management measure that included Minimum Standards for Electronic Monitoring Programmes (EM Programmes) as a starting point for discussions. The draft minimum standards cover four areas;

- programme standards - minimum standards relating to management of a national or subregional E-monitoring programme
- technical standards - minimum standards relating to the E-Monitoring system (including cameras, sensors, any storage devices and software (on board and on shore))
- logistical standards - minimum standards relating to the transfer of records from a fishing vessel to a reviewing or analysis centre
- records analysis standards - minimum standards relating to converting E-monitoring records into data that are submitted to WCPFC.

The paper progresses the ERandEMWG workplan as agreed by the WCPFC15 which was to focus on the minimum standards in 2019 and a draft Conservation and Management Measure (CMM) for a regional E-Monitoring Programme in 2020. This paper delivers against an outcome of TCC15 for the ERandEMWG chair to present a revised Electronic Monitoring concept paper to WCPFC16 taking into consideration Project 93 and relevant discussions as well as input from members. The paper proposes a goal, including sub objectives, for electronic monitoring in the WCPFC and includes revisions to the draft minimum standards informed by discussions at ERandEMWG3, a FFA led E-Monitoring Workshop in Honiara, Solomon Islands in October 2019 and information provided by CCMs as requested in Commission Circular 2019/70.

Background

Electronic monitoring discussions at the 3rd meeting of the ERandEMWG focused on the concept paper and broad principles, and included focused break out groups to discuss the draft minimum standards. There was valuable discussion around the objectives and scope of electronic monitoring in the Commission context. Many members noted that electronic monitoring technologies can support a number of objectives however further work was needed to better understand the suite of data collected by the current data tools and to guide development of an electronic monitoring CMM.

The discussion was taken up by SC14 and led to Project 93 that reviewed WCPFC data needs (both scientific and MCS), the current sources of data to supply those needs and identified the main gaps that could be addressed by electronic monitoring. SC15 considered the outcomes of Project 93 and noted that the largest WCPFC data gaps lay within the longline fisheries and noted that electronic monitoring technologies provided a potential solution to resolve those gaps. TCC15 noted that the outcomes of Project 93 were very useful to inform discussions and to guide future work, particularly with respect to electronic monitoring. Specifically:

52. TCC15 requested that CCMs with established or emerging national or subregional EM standards or specifications communicate them to the Chair of the ER&EM WG as soon as possible;

53. TCC15 supported the conclusions from Project 93 to inform the Commission of the current status of WCPFC data collection programmes and associated data gaps and needs;

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55. TCC15 recommended that the conclusions from Project 93 be considered by the next meeting of the ER & EM Working Group in the establishment of priorities and objectives for the development of regional EM standards;

Project 93 noted that TCC14 recommended that the Commission prioritise the use of electronic monitoring in areas where independent data collection and verification is low and where there are currently data gaps. The report also concluded that the technology was evolving and there was value in reviewing the outcomes to ensure that they remained current against the data needs of the Commission.

Objectives

The discussions at SC15 and TCC15 around Project 93 outcomes and the existing use of electronic monitoring in the region either through established programmes or through extensive trials provides useful input into the substance of objectives for a WCPFC EM CMM.

There is broad support for the use of electronic monitoring in areas where data gaps exist and where data collection and verification is currently low. There are examples where electronic monitoring has been used for auditing purposes and/or for MCS purposes. There is a reasonable presupposition that as the technology evolves CCMs may identify further purposes to which the technology may provide an effective or efficient way of monitoring fishing activities or validating other sources of data.

I propose that the overarching goal for e-monitoring programmes in the Western and Central Pacific Ocean is to collect independently verifiable information relating to fishing activities to support a range of objectives. Under this broad goal, a number of objectives can be described:

- to strengthen fisheries management through provision of reliable catch data and enhanced stock assessments
- to inform monitoring, control and surveillance responses
- to improve safety of fisheries monitoring at sea by observers

These objectives are not mutually exclusive but acknowledge that electronic monitoring is a tool that could be used by CCMs to support a number of national or regional objectives.

Draft Minimum Standards for Electronic Monitoring Programmes (EM Programmes)

The draft minimum standards in Annex 1 are taken from the concept paper presented to ERandEMWG3. They have been updated to reflect discussions at ERandEMWG3 focused sessions as well as discussions during the FFA-led electronic Monitoring Workshop in October 2019. Consideration was also given to the standards and specifications provided by members as part of national programmes, either implemented or currently being trialled.

They are presented for consideration and discussion at WCPFC16 and will be subject to further consideration during 2020 as part of work to progress a draft CMM.

Annex 1 to the draft CMM for an Electronic Monitoring Programme

Minimum Standards for Electronic Monitoring Programmes

A.1 Programme standards – minimum standards relating to management of a national or sub-regional EM programme

A.1.1 CCMs wishing to use E-Monitoring as a data collection or validation tool shall apply to the WCPFC Secretariat to have their programme accredited. The WCPFC Secretariat shall audit the national or sub-regional programme against these minimum standards and, if the programme meets the standard, then the programme shall be considered accredited by WCPFC. Any national or sub-regional programme that has been accredited shall be subject to regular and periodic audits. The Secretariat will report annually to the Commission on the status of national or sub-regional EM programmes.

A.1.2 CCMs shall adopt protocols that ensure personal data (including E-Monitoring records) is handled in a manner that maintains an individual's privacy and confidentiality.

A.1.3 CCMs shall document and implement procedures to manage the failure of E-Monitoring systems. Such procedures will may include, but are not limited to, predeparture checks to ensure E-Monitoring systems are working prior to leaving port, liaison with vessel crew operator in relation to malfunctioning systems and the imposition of sanctions for ~~malicious or~~ deliberate tampering of equipment.

A.1.4 CCMs shall ensure that there are laws and regulations to support national implementation of an EM programme.

A.1.5 CCMs shall ensure that there are appropriate data rules and systems in place that give regard to data security, ownership and confidentiality.

A.1.6 CCMs shall share E-Monitoring records and data with flag States, subject to national laws, and data exchange arrangements.

A.1.7 CCMs shall ensure that E-Monitoring programmes are independent, impartial, transparent and accountable.

A. 1. 4 OTHERS?

A.2 Technical standards – minimum standards relating to the E-Monitoring system (including cameras, sensors, any storage devices and software)

A.2.1 CCMs shall require any E-Monitoring system to:

- a. include ~~multiple a sufficient number of~~ cameras to view fishing activity (set, haul, line cut offs, interactions with species of special interest, processing and transshipment),
- b. include ~~sensors indicators~~ that monitor gear usage to show when fishing activity occurs that record when fishing equipment is deployed,
- c. have ~~enough sufficient~~ storage for all recorded imagery and sensor information for a trip or ensure backup arrangements are in place,
- d. be of sufficient camera resolution to enable species identification,

- e. includes a Global Positioning System (GPS) receiver to monitor vessel position, route and speed as well as provide information on fishing time and location, provide GIS data on fishing location
- f. be capable of sending real time automated alerts when the system is malfunctioning,
- g. prevent any manual data input or external data manipulation,
- h. be tamper evident,
- i. be capable of securely sending records with data encrypted information,
- j. be capable of providing port to port monitoring,
- k. be installed by an installer approved by the CCM (or other? Accredited REMP services provider?),
- l. be robust and withstand rough conditions at-sea with minimum human intervention.

A.2.2 CCMs shall document the roles and responsibilities of fisheries government authorities and vessel crew with respect to *inter alia* installing and maintaining equipment, routine cleaning of cameras, sending storage devices, access to E-Monitoring records and data, responses to mechanical or technical failure of E-Monitoring system.

A.2.3 CCMs shall prescribe how costs for purchase, installation and maintenance, replacement of equipment shall be attributed, including any cost recovery mechanisms.

A.2.4 CCMs shall work with service providers to ensure that there are regular updates of hardware/software.

A.2.5 CCMs shall implement have in place predeparture protocols to ensure that E-Monitoring systems are operational before a vessel departs port or any other event, such as if the vessel or E-monitoring system has undergone maintenance.

A.2.6 CCMs shall ensure customised E-Monitoring system installation to vessel level. There is no standard configuration that will cover all vessels in a fleet.

OTHERS?

A.3 Logistical standards – minimum standards relating to the transfer of data from a fishing vessel to a data reviewing centre

A.3.1 CCMs shall prescribe the method of transmission of E-Monitoring records to data review centres (e.g. electronic exchange via cellular/satellite/internet or via storage device exchange). Consideration shall be given to the volume of data to be transferred and location of fishing activity (eg high seas vs in zone).

A.3.2 If using storage device exchange, CCMs shall have in place operational procedures for the secure collection and distribution of storage devices and other associated equipment, taking into consideration any necessary evidentiary or chain of custody arrangements. Such procedures may require bilateral or multilateral agreements between CCMs setting out roles and responsibilities including dispute resolution.

A.3.3 If using electronic exchange, CCMs shall have in place operational procedures for the receipt and back up of E-Monitoring records, taking into consideration any necessary evidentiary or chain of custody arrangements. Such procedures may require bilateral or multilateral agreements between CCMs setting out roles and responsibilities, including dispute resolution.

A.3.4. CCMs shall document handling and storage procedures for E-Monitoring records including data confidentiality, retention, disposal or clearing of storage devices.

A.3.5 CCMs shall prescribe how costs for such logistical arrangements shall be attributed, including any cost recovery mechanisms.

A.3.6 CCMs shall collaborate to ensure national programmes are compatible and harmonised to the extent possible.

A.3.5 OTHERS?

A.4 Data analysis standards – minimum standards relating to converting E-Monitoring record into data to be submitted to WCPFC

A.4.1 CCMs shall ensure that the data that needs to be collected by an E-Monitoring programme are documented and if necessary any supplementary programmes (~~eg port sampling, crew cooperation~~) are in place to collect mandatory data fields as prescribed by the Commission. It is a CCMs responsibility to meet obligations regarding the provision of robust and reliable data to the Commission.

A.4.2 CCMs shall ensure E-Monitoring analysts are trained (including induction and refresher training) and familiar with fishing activity and are adept at identifying, at a minimum:

- a. fish species and species of special interest,
- b. fishing methods used in the Western and Central Pacific Ocean,
- c. events that may indicate non compliance with Western and Central Pacific Fisheries Commission Conservation and Management Measures (CMMs),
- d. start and finish of fishing activity, and
- e. mitigation devices or methods.

A.4.3 CCMs shall implement mechanisms to ensure that analysis of E-Monitoring records is quality controlled (including data entry checks and debriefing as required) and includes appropriate feedback mechanisms for both industry and E-Monitoring analysts.

A.4.4 CCMs shall have in place steps to initially respond to any serious matters of non-compliance suspected incidents of misreporting or other potential non-compliant activity (including but not limited to ~~education programmes, workshops, legislated penalties directing a vessel to cease fishing, to return to port~~). In such situations, CCMs may seek to collect additional information to support investigations.

A.4.5 CCMs shall require that data is submitted to WCPFC Secretariat in a timely manner and in the appropriate format as prescribed in the ER data standards.

A.4.6 CCMs shall also give consideration to ensuring that analysis of E-Monitoring records for audit purposes are representative, random and risk based.

A.4.7 CMMs may nominate independent institutions, organisations and/or companies, as required, to report and analyse E-monitoring records. Such arrangements may require bilateral or multilateral agreements between parties setting out roles and responsibilities including dispute resolution.