

8th MEETING OF THE SCIENTIFIC COMMITTEE

New Zealand, 3 to 8 October 2020

SC8-Doc07

Secretariat's report on Scientific Committee related activities

Secretariat

1. Introduction

This paper informs SC8 about relevant activities conducted over the past year by the Secretariat. These activities include [external meetings](#), [project inputs](#) and [data releases](#). This current paper continues on from the previous papers on this topic (most recently [SC7-Doc10](#)).

- SC8 is requested to note the contents of this paper, and
- self-identify a group of experts to provide feedback and recommendations on options to provide the Secretariat with an effective tool to integrate geographical data with catches and other scientific data (refer Annex 1)

2. External meetings/workshops

- **CCAMLR**

21-29 October 2019, Hobart, Australia. SPRFMO's Data Manager, Craig Loveridge, attended 3 separate CCAMLR meetings. During the first week the Scientific Committee (SC-CAMLR) met concurrently with the Standing Committee on Implementation and Compliance (SCIC) and following those meetings the CCAMLR Commission convened. A [report of the external meeting](#) is available.

- **ABNJ**

26-27 February 2020, Lima, Peru. SPRFMO was represented by New Zealand's Fisheries Principal Adviser, Dr Martin Cryer at the Dialogue Workshop "Enhancing the Knowledge Base for Cross-Sectoral Management and Ocean Governance in ABNJ of the Southeast Pacific, organised by the CPPS Secretariat and the STRONG High Seas Project. Dr Cryer gave a presentation addressing SPRFMO's ongoing work related to ABNJ and BBNJ. A [workshop summary](#) is available.

24 August 2020, via Zoom. FAO are planning for a 2nd ABNJ Deep Sea Fisheries Project and an Inception workshop was attended by SPRFMO's Acting Executive Secretary, Craig Loveridge. The Global Environment Facility (GEF-7) have approved a concept note for an FAO led project with the objective to ensure that deep Sea Fisheries in the ABNJ are managed under an ecosystem approach that maintains demersal fish stocks at levels capable of maximizing their sustainable yields and minimizing impacts on biodiversity, with a focus on data-limited stocks, deepwater sharks and vulnerable marine ecosystems. SPRFMO has been identified as a likely partner and further information on what this might entail is expected to be forthcoming.



3. Internal project coordination

EU Grant – Support to Jack Mackerel Assessment and data validation in SPRFMO

This grant, being coordinated by the Secretariat with research performed by the Wageningen University, for the period July 2019 to December 2020 consists of two parts: updating the Jack mackerel management targets and management plan (Management Strategy Evaluation) and defining the Jack mackerel habitat using statistical modelling. Progress on the MSE part is reported in SC8-JM05. Progress on defining the Jack mackerel habitat is continuing, with standardised statistical models to evaluate the extent of environmental conditions on the distribution of Jack mackerel being developed. A report on this work is due at the end of December.

EU Grant – Support for the Establishment of a Regional Observer Programme in SPRFMO

Paragraph 223 of the [COMM8-Report](#) confirmed the FAC and CTC Recommendations and selected MRAG as the SPRFMO Observer Programme Evaluator. The Secretariat therefore went into negotiations with MRAG, and a contract was signed between the Executive Secretary on behalf of SPRFMO and MRAG, covering the period 5 May 2020 to 31 December 2023. This contract, as required by Paragraph 19 of [CMM 16-2019](#) included Article 8 which maintains the confidentiality of any information received by a Member, CNCP or service provider pursuant to this accreditation process. A project Inception meeting was held on 22 May 2020 between the Secretariat and MRAG.

MRAG developed Draft Assessment Guidelines dated 17 July 2020 and MRAG was encouraged to start direct communications with the identified members. On the 3 August 2020 MRAG sent letters to four Members: Australia, Chile, European Union and New Zealand formally inviting them to begin the Accreditation Process and making available the Assessment Guidelines. The period for this grant is for the July 2019 to December 2020. The EU has decided not to launch the exercise this year, but Australia, New Zealand and Chile have begun the process of engaging with the SPRFMO Observer Programme Evaluator for Assessment.

EU Grant – Support to the scientific process and data management in the SPRFMO

This grant, being coordinated by the Secretariat for the period July 2020 to December 2021 consists of three parts. The first part provides support for science in terms of logistics, material, travel, hotels etc for the organisation of two planned workshops – one in January 2021 to progress the development of a Management Strategy Evaluation for Jack mackerel by engaging with members of the Commission, and the second a Benchmark workshop planned for July 2021 for Jack mackerel to improve the scientific advice for Jack mackerel.

The second part involves various database developments for the SPRFMO database. Specifications have been written and a contract signed with FINNZ to begin work to redevelop and maximise the core functionality of the SPRFMO database to ensure longevity. Another element involves a spatial management module to be integrated with the SPRFMO database. The first task in the spatial element of the project was “refinement of specifications through consultation with relevant experts, in particular from the Scientific Committee to conceptualise what is possible in this area, leading to the



development of a paper for the Scientific Committee in 2020 to seek feedback and recommendations”. A specifications document is included as Annex 1 of this document, and feedback and recommendations from SC8 is sought. The final element of this part of the project involves alignment of the SPRFMO database with the new SPRFMO website.

A third part of the project (also scheduled for November 2021) involves staff training in spatial data management.

4. External project inputs

- November 2019, Fishing Operations and Technology Branch FAO – survey on Global Transshipping (including summary data about amounts and location of transshipments) to provide quantitative information on practices, further information on regulations and means of monitoring and control of transshipping.
- April 2020, FAO FIRMS – comments regarding SPRFMO fisheries resources and a “pilot release” of the Global Record of Stocks and Fisheries (GRSF).
- May 2020, FAO FIRMS – Comments regarding SPRFMO fisheries resources “fact sheets” now available at <http://firms.fao.org/firms/fishery/1033/en>
- June 2020, UN Division for Oceans Affairs and the Law of the Sea of the Office of Legal Affairs – contribution to the “Oceans and the Law of the Sea” report.
- July 2020, IASS Ocean Governance Research – survey on the role of the regional level in combatting marine plastic litter and microplastics.
- July 2020, OECD – questionnaire on COVID-19 implications for multilateral fisheries.
- August 2020, European Fisheries Statistics – consultation on current user needs and use of statistics related to aquaculture and fisheries.

5. Data releases

- October 2019 EU – compilation of all background Jack mackerel datasets (including Age Length Keys, Survey CPUE data and Raising sheets) for archiving for future Jack mackerel assessments.
- March 2020 Australia – SPRFMO catch histories for compilation of Fishery Status Reports.
- April 2020 Australia – all Australian trawl and line logbook and observer data for BFIA.
- July 2020 Australia – Catch and effort data from Australian flagged vessels catching Orange roughy in the SPRFMO Area during the 2007-2019 period to inform updates to ORY stock assessments of Lord Howe Rise and Northwest Challenger.
- July 2020 Australia and New Zealand- all data held by the Secretariat on captures or interactions with seabirds, marine mammals or other species of concern by Australian and New Zealand flagged vessels for input into the BFIA.
- July 2020, University of Edinburgh – public data for MSc dissertation reviewing on the bycatch of seabirds in trawl fisheries.
- August 2020, Dalhousie University – public data for multiyear project to assess the global shark meat trade using information on shark and rays catch/composition and trade from national level and global databases.



- August 2020 EU – offshore fleet Jack mackerel fishing activity data for input into CPUE analysis for Jack mackerel stock assessment.
- August 2020 Australia – repeat request for annual catch history data for orange roughy and other fish caught in FAO areas 81 and 57 to update Fishery Status Reports.



6. Specific SC-7 Requests to Secretariat

Document	Request	Status
SC7-Report Para 67	(Deepwater) Requested that the SPRFMO Secretariat work collaboratively with Members and CNCPs to resolve species coding issues in the SPRFMO database, which would provide additional certainty that all species potentially at risk are included in future assessments;	In June 2020 the Secretariat engaged collaboratively with the author of SC7-DW11 and in future will use a by-product of that work as a list of additional validation for species codes in Observer data submitted in future to minimise the chance of incorrect species codes in the database.
SC7-Report Para 154	(Deepwater) Agreed that the geodatabase will be held by the Secretariat and can be provided to Members and CNCPs to aid in the evaluation of encounters each year;	New Zealand/Australia to send files when they are available
SC7-Report Para 193	(Jack Mackerel) The SC recommends that for future years, the haul-by-haul data will continue to be made available by the Members of the offshore fleet, via the SPRFMO Secretariat, for the analysis of standardised CPUE.	Haul-by-haul data extract done and incorporated into SC8-JM02
SC7-Report Para 193	(Jack Mackerel) The SC recommends that Members work together on making historical (prior to 2008) haul-by-haul data available, via the SPRFMO Secretariat, for the analysis of standardised offshore CPUE.	No additional data provided to the Secretariat
SC7-Report Para 237	(Squid) The Secretariat presented SC7-SQ01 "Jumbo flying squid datasets held by the Secretariat". It was requested that the tables of catch currently available on the SPRFMO website are made available as downloadable excel files. The Secretariat agreed to follow up with affected delegations offline to resolve outstanding issues.	Available as a file on Teams site and also in SC8-SQ01
SC7-Report Para 297	(VMS) The SC requests the Secretariat to draft a template to request access to VMS data. This template should contain the annex 5 requirements and the following items: Clear objectives based on Commission requested advice, fishery to which the advice will be relevant, reasons for using the VMS data, type of data and type of associated analysis, what the output would be and for how long the data will be used.	Template drafted, presented to Commission and accepted (COMM8 Report Annex 8c) and now available on Science page of website
SC Workplan	SC Chair/Secretariat to coordinate experts for the SC Jack Mackerel assessment	Suitable expert contacted and available. Contract being drafted.
SC Workplan	Organise a workshop to estimate fishing effort prior to SC08 (two days meeting), provide advice on a potential management measure (Squid workshop)	Workshop cancelled due to requirement for a face to face meeting.
SC Workplan	Develop a template to support stock assessment (squid stock assessment)	Templates drafted and loaded to Teams
SC Workplan	Develop a template to monitor the fishery (squid)	Templates drafted and loaded to Teams
SC7-Report Annex 14	If the SC considers this as a positive initiative, CALAMASUR will work closely with the Secretariat to define what is possible over the next few weeks so as to appropriately advise the Commission.	Squid workshop cancelled due to requirement for a face-to-face meeting



Annex 1: Spatial Management Module Specifications

Introduction

The Secretariat is administering an EU Grant, which among other things allows for:

"upgrading the SPRFMO IT system to provide an effective tool to, amongst other, integrate geographical data with catches and other scientific data".

One of the objectives of the grant is to make spatial data options available to the Secretariat so that SPRFMO data assets can be made more available and widely used.

- As the Scientific Committee have a great deal of expertise in the area of spatial data analysis, the Secretariat is seeking feedback on what is possible in this area, and what tools might be most appropriate.

The EU Grant

The EU grant includes the following item:

"To integrate a spatial management module with other elements of the SPRFMO database using statistical software to enable accurate and improved analysis and monitoring for spatially distributed fisheries data (including VMS). The result will be the ability to use digital geo-referenced data to produce maps plus other textual, graphical and tabular output at varying spatial scales to contribute to an improved decision-making process in SPRFMO."

With a first step of:

"Refinement of specifications through consultation with relevant experts, in particular from the Scientific Committee to conceptualise what is possible in this area, leading to the development of a paper for the Scientific Committee in 2020 to seek feedback and recommendations."

The Current State

Currently the Secretariat holds on behalf of the organisation a large amount of geo-referenced data, all of which is subject to confidentiality considerations, including:

- Fishing Activity data – comprehensive data for where fishing occurred, including latitude and longitude to 1/10 or some cases 1/100 degree
- Observer data – detailed data for a subset of fishing where an Observer was on board
- Transshipment data
- VMS data

Paragraph 6(a)(i) of CMM 02-2020 (Data Standards) requires that *"public domain"* data be compiled and disseminated including

"data on fishing activities, aggregated by flag state and month and 1 degree by 1 degree areas, except in those cases where such data describes the activities of less than 3 vessels (in which case a lower resolution will be used)".



Currently if the Secretariat receives a request for data that falls outside the bounds of “*public domain*” it takes a great deal of Secretariat time to produce a summary which fits the “*public domain*” definition.

The EU grant will provide the Secretariat with geospatial analysis capability that will enable the efficient compilation and dissemination of summarised information to ensure that the best scientific evidence is available while maintaining confidentiality.

Examples of geo-spatial analyses

- 1) Finding out where catches and other activity (e.g. transshipments) are occurring, in relation to defined (complicated) boundaries (e.g. the SPRFMO zone).
- 2) Grouping up catches or fishing activity spatially (e.g. to 1-degree squares) to achieve confidentiality for data release.
- 3) Comparing fishing activities with each other and with VMS tracks for data verification and consistency checks.
- 4) Generating heat maps of fishing activity (or similar).
- 5) Calculating Observer coverage (on a spatial basis).
- 6) Investigate degree of overlap between fishing activities and species distributions (for example of birds, mammals, reptiles or other species of concern)
- 7) Specify spatial limits other than rectangles so that data can be extracted from the database for scientific purposes such as habitat suitability studies or to study the spatial and temporal variability in the different fisheries (especially JM and Squid).

Some options for solutions

- a) The SPRFMO database provider FINNZ have recently increased their fisheries spatial capability, developing tools to display fisheries data from within the New Zealand jurisdiction, overlaying data from different sources. One option would be to contract FINNZ to produce specific tools to meet each of the requirements that have been identified, to be built as “standardised reports” into the existing database front end. For example, one report could export a csv file of all fishing activity within the SPRFMO zone aggregated into one-degree squares, flag State and month. Another custom built report could compare a geo-referenced SPRFMO dataset (such as a selection of transshipment data) to a pre-loaded complex spatial boundary (such as the SPRFMO zone) and export a csv file allowing identification of which points were inside and which outside the zone.
- b) Instead of developing pre-built reports in the SPRFMO database, a more flexible approach could be to extract the data from the database in a standardised way, and then to use specialised software to develop tools for spatial analysis and display. There are suites of tools available for spatial analysis in statistical software applications such as R (for example www.vfstools.org). This approach could involve the development of skills within the Secretariat to allow the tools to be developed, used, and improved upon, as the needs change.