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## 13<sup>TH</sup> MEETING OF THE SPRFMO COMMISSION

*Santiago, Chile, 17 to 21 February 2025*

### COMM 13 – Doc 06 Scientific Committee Multi-Annual Plan *Secretariat*

#### 1. Introduction

The SPRFMO Scientific Committee Multiannual Workplan contains the activities, timelines, and funding priorities for the short and medium-term work of the Scientific Committee. It is an instrument of cyclic synergy between the Scientific Committee and the Commission; it serves as a reference for the work of the Scientific Committee throughout the year and is endorsed and adopted annually by the Commission.

A proposed multiannual workplan is prepared by the Scientific Committee during its meeting and included as an annex within the SC meeting report. It is then put forward as a meeting document to the Commission for consideration, relevant amendments, and ultimately, adoption. The workplan adopted by the Commission is then published as a standalone Annex to the meeting report and guides the immediate intersessional and future work of the Scientific Committee.

The following tables associate each identified task with an expected timeline, coordinator and funding source, noting that:

1. Under the column labelled “timeline”, the year is associated with the Scientific Committee meeting at which the work is expected to be reported back on. In some cases, the work is expected to be repeated or carried out over multiple years, and this is indicated with a plus (+) sign or a range.
2. The column labelled “Coordinator” identifies the Member delegation(s) (in some cases the Secretariat or Chairperson) who has been assigned to ensure that progress towards the task is made intersessionally. In some cases, no delegation has been identified, and the cell is left blank; in these cases, the task is a responsibility of the SC as a whole.
3. The column labelled “funding” identifies the amount of additional funding required as well as funding sources (such as the SC Fund or a Member voluntary contribution), if known. A notation of “In-kind” signifies that the work will be conducted by Members and that no additional funding is expected to be required.

The Commission is invited to:

- ***Review and approve*** the SC12 proposed multi-annual workplan



## 2. Jack Mackerel Working Group

Jack Mackerel				
Task	Subtask	Timeline	Coordinator	Funding
Jack mackerel assessment	Review available input data and its quality for the JM assessment	2025	CHL/EU	In-kind
	Continue to update and compare standardizations of commercial tuning indices among different fleets and the impacts of increased efficiency in the fleets	2025	CHL, PER, EU	In-kind
	SC and other funds to support experts during SC assessment	2025+	SC Chair Secretariat	NZ\$ 15K
	Provide TAC advice according to Commission request	2025	SC	In-kind
	Update and compare standardizations of commercial tuning indices among different fleets and review the potential bias in CPUE indices due to possible increased efficiency of the fleet and observed changes in the jack mackerel spatial distribution (benchmark)	2025+	CHL	In-kind
	Organise a benchmark data workshop (1) for JM to compile relevant stock indicators such as CPUE, fisheries independent surveys and opportunistic acoustic survey data to be followed by a benchmark workshop (2) to address model configuration	2025-2026		24 k CHL for Workshop arrangements NZ\$ 30K SC fund for external reviewers and Sec
Jack mackerel MSE	MSE workshop at COMM13 with stakeholders and managers to present outcomes and receive feedback on future developments	2025	ECU	*New EU project from Aug 2024*
	Develop and carry out an MSE	2024+	EU	*New EU project from Aug 2024*
Jack mackerel connectivity research	In collaboration with the Ecosystem Working Group, use SDMs to predict seasonal distribution patterns of JM over time	2025	EU / CHL / PER	In kind
	Organise two in-person workshops to: 1. Identify key practical requirements and considerations for sampling approaches for progressing work on the identified priority topics (Genetics, tagging methods, Early stages & Reproduction) including outlining possible iterative/annual changes to sampling design. 2. Identify key hypotheses on connectivity and a description of how these hypotheses could be tested using the priority topics. Describe an approach for considering evidence. Produce workshop reports and outputs to inform the development of a sampling and research programme.	2025/2026	EU / CHL / PER	Coordination: \$6,000 NZD Research funding from the SC \$40,000 NZD



(...continued) Jack mackerel connectivity research	Design and undertake a sampling and research programme (including data analysis and reporting) across the 4 combined identified high priority topics <i>Genetics, Tagging methods and Reproduction / Early Stages</i> , to evidence jack mackerel connectivity.	2026 - 2032	EU / CHL / PER	Funding from the SC \$75,000 NZD / year Matched in-kind funding & seeking of industry funding
Jack mackerel ageing techniques	Workshop to evaluate methodologies for implementation in age readings in otoliths of jack mackerel ( <i>T. murphyi</i> ) among the age and growth laboratories of the SPRFMO .	2025+	CHL, PER	In-kind
Chub mackerel	Organize a data compilation workshop to compile an overview on catch, catch distribution, mixing densities in the JM fishery, life history characteristics and independent survey estimates on chub mackerel	2025	CHL, PER	Funding from the SC \$45,000 NZD  *New EU project from Aug 2024*

### 3. Deepwater Working Group

Deepwater group				
Task	Subtask	Timeline	Coord.	Funding
Orange roughy assessment	<ul style="list-style-type: none"> <li>1. Explore alternative stock assessment models</li> <li>2. Estimate stock status</li> <li>3. Provide advice on sustainable catch levels</li> </ul>	2025+	NZL	In-kind
Orange roughy assessment data	Coordinate and design acoustic surveys for relevant stocks ( <i>intersessional consideration</i> )	2025+	NZL	In-kind
Deep water stock structure	Review the list for deepwater stock structure analyses based on assessment for non-orange roughy stocks	2025+		In-kind
	Develop workplan to drive stock structure delineation studies for orange roughy and alfonsino and other key target species	2025+	NZL	In-kind
Other stock assessments, & ecological risk assessment	Review the risk assessment of teleost and elasmobranch species considering new available information and methods	2025	AUS	In-kind
	Develop a tier-based assessment framework for all DW stocks and recommend relevant reference points and/or management rules for these stocks	2025+	AUS	In-kind
VME Encounters and benthic bycatch	Develop VME taxa ID guide for benthic bycatch, following the steps proposed in SC9-DW12, and associated training videos	2025+	NZL	In-kind
	Further Investigations are required to establish whether bioregions may provide an additional spatial scale for evaluating the performance of spatial management measures	2025	NZL	In kind



Deepwater group				
Task	Subtask	Timeline	Coord.	Funding
	Assess the feasibility and develop a research programme within the SPRFMO Convention Area to allow the determination of taxon-specific estimates of catchability for VME indicator taxa.	2025+	NZL	In-kind
CMM 03 request regarding Encounters with VMEs	Developing a multi-spatial scale risk-based approach to assess encounters with VME indicator taxa	2025+	NZL	In-kind
	Review all reported VME encounters	2025+	DWWG	In-kind
CMM 03 request regarding ongoing appropriateness	Review all available data and provide advice on the ongoing appropriateness of the management measures to ensure the CMM continues to achieve its objective and the objectives of the Convention	2025+	DWWG	In-kind
Bottom Fishery Impact Assessment	The Scientific Committee shall review, and update if required, the SPRFMO BFIAS every 5 years, to ensure that it reflects, as appropriate, best practice. Standing item	2025	DWWG	In kind
	For VME taxa potentially at risk of SAI, improve and validate abundance models, using independent data	2025+	NZL	
	With a focus on VME Indicator taxa currently estimated to be most impacted by fishing, work to reduce uncertainties in risk assessments for benthic habitats and VMEs by exploring the overlap between the spatial distribution of bottom trawling fishing impact (i.e., the 'naturalness layer') and abundance estimates of VME indicator taxa [potentially at multiple spatial scales, including Management Areas] Contingent on previous task	2025++	NZL	In kind
	Complete Cumulative BFIA. Standing item	2026	AUS/NZL	
	Derive an SAI threshold from an empirical study tailored to the dRBS approach	2025+	NZL	in kind
CMM 03 request regarding Marine mammals, seabirds, reptiles and other species of concern.	<p>The Scientific Committee shall provide advice biennially to the Commission on:</p> <ol style="list-style-type: none"> <li>1. Direct and indirect interactions between bottom fishing and marine mammals, seabirds, reptiles and other species of concern;</li> <li>2. Any recommended spatial or temporal closures or spatially/temporally limited gear prohibitions for any identified hotspots of these species; and</li> <li>3. Any recommended bycatch limits and/or measures for an encounter protocol for any of these species.</li> </ol>	<p>2026</p> <p>2028</p>	AUS/NZL	In-kind



#### 4. Squid Working Group

Squid				
Task	Subtask	Timeline	Coordinator	Funding
Squid workshop	Squid Workshop including potential assessment techniques, abundance indices and simulated assessment; to be held in person	2025	SQWG Chair/ Secretariat	TBD (2025)
Squid assessment and CMM development	Develop a plan for more detailed within-season fishery Monitoring depending upon the uptake of EM, etc.	2025	SQ WG	In-kind
Squid assessment and CMM development	Form a task team to conduct simulation and model evaluations for squid stock assessments	2024-25	SC Chair	In-kind
	Design and evaluate MSE and harvest control rules	2026+	SQ WG	In-kind
Observer Coverage	Provide advice on the appropriate level of observer coverage in the jumbo flying squid fishery	2026	SQ WG	In kind
Squid assessment data	Develop template for monthly data, including catch, effort and CPUE	2025	SQ WG	In kind
	Develop a template for biological data, including time, location, length, weight and maturity stage	2025	SQ WG	In kind
	Protocol for data submission and templates management	2025	SQ WG	In kind
Squid connectivity	Collect samples for population genomic studies (Convention Area and adjacent National Jurisdiction Areas)	2024-25		NZ\$ 97K (CHN)
	DNA Sequencing using lcWGS, for population genomics analysis	2026+		In kind
	Provide a single report describing the genetic diversity based on mtDNA ND2 gene marker, integrating data from all members and include a review of the existing protocol	2025		In-kind



## 5. Ecosystems Working Group

Ecosystems				
Task	Objective	Timeline	Coordinator	Funding
Evaluate the applicability of data collected from fishing vessels targeting pelagic species	Mapping spatial-temporal population density distribution of jack mackerel using a combination of the existing acoustic survey data and acoustic information as obtained from industry vessels	Permanent	PER/CHL	In-kind
	To provide acoustic indices from fishing vessels for consideration in the data and stock assessment benchmarks of jack mackerel and chub mackerel	2025	PER/CHL	In-kind
	To assess the feasibility of developing a regional integrated index based on acoustic surveys to inform the jack mackerel stock assessment	2025	PER/CHL	In-kind
Further developments of standardised oceanographic data products and modelling	Characterise jack mackerel habitat (e.g., past studies done in Peru and Chile)	Permanent	PER/CHL	In-kind
	Provide ecosystem status overview for SC at seasonal to decadal scale	2025+	PER/CHL	In-kind
	Explore the concept of jack mackerel habitat under an interdisciplinary ontogeny approach for jack mackerel and other species (by life history stages and regions) <i>Workshop to be virtually conducted</i> in synergy with the JM connectivity Task Group.	2025	PER/CHL	In-kind
	Integration of databases provided by different members of the HMWG and other working groups of the SC with linkage to a metadata repository	2025+	PER/CHL	In-kind
Species behaviour and preferences	Analyse the habitat preferences of jumbo squid ,	2025+	PER/CHL	In-kind
	Analyse behaviour, distribution, and abundance information about mesopelagic, euphausiids and other key species of the Humboldt Current System	2025+	PER/CHL	In-kind
Use of new Tools	Develop new approaches based on different tools such as GAM, GLM, INLA, ROMS, eADN, Biogeochemical, Geostatistics, big data and machine learning (e.g., for acoustic classification of targets) and utilization of different platforms (Scientific surveys, fishing vessels, satellite oceanography, gliders, buoys, AUV)	Permanent	PER/CHL	In-kind
Symposium	Symposium on State of the Art of Habitat Monitoring (2023, Concepción, Chile). Publication of a Special Issue of Scientific Journal.	2025	Symposium Steering Committee	NZ\$ 15k (US) (USA-)
Modelling	Analysis and modelling of the spatial distribution and habitat preferences of jack mackerel and chub mackerel, showing its relationship with the environment and impacts of climate change to changes in its distribution.	2025	EcoWG Chair	In kind



## 6. Other (Crosscutting issues)

Crosscutting				
Task	Subtask	Timeline	Coord.	Funding
Seabird/ bycatch monitoring	Progress southern hemisphere quantitative risk assessment (SEFRA)	2025+		In-kind
Seabird bycatch mitigation	Convene a workshop to prioritize and draft amendments to CMMs 02 and 09 based on the review carried out by ACAP and the best-practice advice provided (SC11-Obs04)	2025+	NZL/PER	In-kind
EBSA	Evaluate impacts of fishing activities	2025+		In-kind
CMM 17 Marine pollution	SC Members and CNCPs are encouraged to undertake research into marine pollution related to fisheries in the SPRFMO Convention Area to further develop and refine measures to reduce marine pollution and are encouraged to submit to the SC and the CTC any information derived from such efforts	2025+		In-kind
Climate change	Identify management implications of climate change on habitat and fisheries in the SPRFMO area (Decision 13-2023)	2024+	USA	In-kind
	Form a task team to identify ways in which climate change limits the advice SC currently provides and propose work to address those limitations.	2025	PER	In kind
	Compile, review and assess climate-related data, reanalysis and models needed for SPRFMO research, including climate change scenarios; identifying any gaps and limitations.	2025	Secretariat/ SC Chair	NZ\$ ~19.7k (SC2024)
CMM 02- 2020 Data Standards	Review and update data standards to ensure appropriate scientific data are collected in SPRFMO fisheries (Paragraph 8 of CMM 02-2020)	2024+		In-kind
FAO ABNJ Deep Sea Fisheries	Coordinate activities over their next five-year plan that could involve member scientists and a number of SPRFMO science projects	2024+	Secretariat	In-kind
Alignment	Work involving the alignment of Deepwater and Ecosystem workstreams	2024+		In-kind
Species synopses	To update long version profiles (FAO species synopsis format) for jack mackerel, chub mackerel and jumbo flying squid	2024+		
Research in the Nazca and Salas y Gomez ridges area	Publication of a review of the oceanography, geology, biodiversity, ecology, importance, connectivity, threats, fishing importance, governance and conservation of the Salas y Gomez and Nazca Ridges.	2025	CHL	In-kind
	Analysis, systematisation, reporting and publishing data gathered to the Salas y Gomez and Nazca Ridges.	2025	CHL	In-kind
	Form a task team to review and discuss the data and present possible measures to SC13.	2025	USA	In kind
Data Working Group	Prioritise data needs of Members. Provide input to the Secretariat in developing improved data management infrastructure including databases, data repositories and data processing tools	2025+	DWG	In-kind



Crosscutting				
Task	Subtask	Timeline	Coord.	Funding
CPPS joint work plan	Increase cooperation and collaboration between both organisations.	2025+	Secretariat	In-kind
	Update existing MoU	2025	Secretariat	
Secretariat scientific support	Continue with analyses of catch composition and fishing activities; support CPUE analyses; and general scientific analyses, as capacity allows.	2025+	Secretariat	In-kind
Assessment and monitoring	Development of assessments for species in the SPRFMO Convention Area that are bycaught or subject to targeted fishing operations (in line with tier-based assessment approach)	2025+		In-kind
SC functioning	Development of terms of reference for all WG	2025	SC Chair	In kind