SPRFMO
South Pacific Regional Fisheries Management Organisation

12TH MEETING OF THE SPRFMO COMMISSION

Manta, Ecuador, 29 January to 02 February 2024

COMM 12 – Doc 06_rev1

2024 Scientific Committee multi-annual workplan

1. Introduction

Paragraph 36 of the 11th Scientific Committee (SC) Meeting Report records that "*The 2024 workplan was posted as SC11-Doc05 and developed during the meeting sessions. The SC reviewed the tasks and developed a draft 2024 multi-annual workplan (Annex 5)*". Within each SC session, there was a sub-agenda item *Advice to the Commission* that served to allocate time to develop relevant workplan tasks for the coming years. Developing the workplan during the meeting sessions was an approach that proved productive and well received. This report summarizes results from those activities.

The following tables are meant to track priority tasks with timelines. The year noted 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 over several years, and this is indicated with a plus (+) sign. The column labelled "Coordinator" identifies the Member(s) (or in some cases the Secretariat or Chairperson) who has specifically been assigned to ensure that progress towards the task is made intersessionally. In some cases, no Member has been specifically identified and this is indicated with a blank. The amount of additional funding required is identified as well as funding sources (such as the SC Scientific Support 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.

COMM12 is invited to:

- ***Review and approve*** *the SC11 proposed multi-annual workplan*

(New items, with respect to the previous workplan approved by COMM11, are tracked)

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	2024	Chile/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	2024	Chile, Peru, EU	In-kind
	SC and other funds to support experts during SC assessment	2024+	SC Chair Secretariat	NZ$ 15K (SC)
	Provide TAC advice according to Commission request (based on the updated assessment and MSE results)	2024	SC	In-kind
	Evaluate the impact on stock status in the short and medium term based on deterministic projections of the jjm model.	2024	SC	In-kind
	Development of projection software for the jjm model to support catch scenario evaluation.	2024+	EU	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+	Chile	In-kind
	Develop protocol for inclusion of acoustic data in the JM assessment (benchmark)	2025+	Chile	In-kind
Jack mackerel MSE	MSE workshop at COMM12 with stakeholders and managers to present outcomes and receive feedback on future developments	2024	ECU	In-kind
	Develop and carry out an MSE (see COMM8-Report Annex 8b). This shall include revising the operating model to be consistent with the assessment developed during the 2022 benchmark workshop. Initial management procedures (MPs) will be developed to accommodate some desired management settings (e.g., paragraphs 80, 102, 118 COMM8-Report; including carryover).	2023+	EU	NZ$ 60k (EU)
Jack mackerel connectivity research	Task group on CJM connectivity to improve the understanding of origin and admixture of populations or subpopulations of jack mackerel in the Southern Pacific. Terms of reference as included in G137-2022.	2024-2027	Chile Peru	NZ$ 161K/ yr (SC) [NZ$ 15k 2024]
Jack mackerel ageing techniques	Organize a workshop to (1) establish an age-reading protocol for jack mackerel otoliths and (2) perform otolith age-readings consistency tests for national age readers on the basis of a reference set.	2024	Chile	NZ$ 15k (EU)

Jack Mackerel				
Task	Subtask	Timeline	Coordinator	Funding
Jack and chub mackerel habitat and impact of climate change	Analyse the spatial distribution of jack mackerel and chub mackerel, showing its relationship with the environment and impacts of climate change to changes in its distribution	2024+	Chile, Peru	In-kind
Chub mackerel	Compile available catch, effort and biological sampling data to support the development of stock assessment models for Chub mackerel	2024+	Peru, Chile	In-kind

3. Deepwater Working Group

Deepwater group				
Task	Subtask	Timeline	Coord.	Funding
Orange roughy assessment	• Explore alternative stock assessment models • Estimate stock status • Provide advice on sustainable catch levels	2025	NZ	In-kind
Orange roughy assessment data	Coordinate and design acoustic surveys for relevant stocks (*intersessional consideration*)	2024+	NZ	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	2024+	NZ	In-kind
Other stock assessments, & ecological risk assessment	Review the risk assessment of teleost and elasmobranch species considering new available information and methods	2024	AU	In-kind
	Develop a tier-based assessment framework for all DW stocks and recommend relevant reference points and/or management rules for these stocks	2024+	AU	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	2024+	NZ	In-kind
	Development of a process to review all recent and historical benthic bycatch data to determine the ongoing effectiveness of the spatial management measures.	2024+	NZ	In-kind
	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.	2024+	NZ	In-kind
CMM 03 request regarding Encounters with VMEs	Developing a multi-spatial scale risk-based approach to assess encounters with VME indicator taxa	2024+	NZ	In-kind
	Develop an encounter review standard	2024	NZ	
	Review all reported VME encounters	2024+	DWWG	In-kind

Deepwater group				
Task	Subtask	Timeline	Coord.	Funding
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	2024+	DWWG	In-kind
Bottom Fishery Impact Assessment	Explore thresholds for "significant" adverse impact (SAI) for VMEs at different spatial scales, and understanding knowledge gaps and uncertainties	2024	NZ	NZ$ 74K (EU)
	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
	Validate abundance models for VME taxa using independent data	2024+	NZ	
	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	2024++	NZ	In kind
	Complete Cumulative BFIA. Standing item	2026	AU/NZ	
	Update the quantitative benthic impact assessment for the 2023 BFIA.	2024	AU/NZ	In kind
CMM 03 request regarding Marine mammals, seabirds, reptiles and other species of concern.	The Scientific Committee shall provide advice biennially to the Commission on: • Direct and indirect interactions between bottom fishing and marine mammals, seabirds, reptiles and other species of concern; • Any recommended spatial or temporal closures or spatially/temporally limited gear prohibitions for any identified hotspots of these species; and • Any recommended bycatch limits and/or measures for an encounter protocol for any of these species.	2024 2026 2026	AU/NZ	In-kind

4. Squid Working Group

Squid				
Task	Subtask	Timeline	Coordinator	Funding
Squid workshop	Squid Workshop including potential assessment techniques and abundance indices; to be held virtually intersessionally	2024	SQWG Chair/ Secretariat	NZ$ 10K (SC)
Squid assessment and CMM development	Develop a plan for more detailed within-season fishery Monitoring depending upon the uptake of EM, etc.	2024	SQ WG	In-kind
	Form a task group to conduct simulation and model evaluations for squid stock assessments	2024-25	SQ WG	In-kind

Squid				
Task	Subtask	Timeline	Coordinator	Funding
	Design and evaluate MSE and harvest control rules	2026+	SQ WG	In-kind
Standardise biological sampling	Identify where protocols differ, e.g., type of sampling, areas and timing of sampling, ageing	2024	Peru, Chile	In kind
Observer Coverage	Provide advice on the appropriate level of observer coverage in the jumbo flying squid fishery	2024+		In kind
	~~Explore the possibility of a pilot observer placement and/or EM program to determine the optimal level of observation coverage for both squid and bycatch.~~	~~2024~~		~~In kind~~
Squid assessment data	Revise data template to sufficient detail and create scripts and data repository to allow assessment methods to be used. This should also allow future higher resolution approaches (e.g., depletion estimator by phenotype) to be conducted	2024		In-kind
Squid connectivity	Collect and analyze samples for population genomic studies (Convention area and adjacent National Jurisdiction Areas)	2024-25		NZ$ 90K (China)
	Register DNA sequences in public DNA database (GenBank), considering a list of metadata related to samples analysed (using the template in the SC9-Report).	2024		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	2024		In-kind
	Reaching an updated agreement on consistent approaches to population genomic analyses (SNPs) for jumbo flying squid and provide a report describing the population genomics structure.	2024+		In-kind

5. Habitat Monitoring Working Group

Habitat Monitoring				
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	Peru/Chile	In-kind
	Subgroup of specialists to evaluate advantages and biases of analysis methods *Workshop to be virtually conducted*	2024	Peru/Chile	In-kind

Habitat Monitoring				
Task	Objective	Timeline	Coordinator	Funding
	Subgroup of specialists to organise classification of fishing fleets and develop an inventory of technologies available aboard fishing vessels in order to identify the potential to collect data using the technologies currently being deployed *Workshop to be virtually conducted*	2024	Peru/Chile	In-kind
Further developments of standardised oceanographic data products and modelling	Characterise jack mackerel habitat (e.g., past studies done in Peru and Chile)	2024	Peru/Chile	In-kind
	Provide ecosystem status overview for SC at seasonal to decadal scale	2024	Peru/Chile	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) *Workshop to be virtually conducted*	2024	Peru/Chile	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	2024+	Peru/Chile	In-kind
	Development an inventory of available climate-related data and existing models applicable for SPRFMO fisheries and identifies any gaps.	2024+	US/Chile/Peru	
Species behaviour and preferences	Analyse the habitat preferences of jumbo squid and jack mackerel, noting the useful data and analyses provided by Peru and Chile	2024+	Peru/Chile	In-kind
	Habitat suitability modelling of jack mackerel	2024+	Peru/Chile	In-kind
	Incorporate behaviour, distribution, and abundance information about mesopelagic, euphausiids and other key species of the Humboldt Current System	2024+	Peru/Chile	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	Peru/Chile	In-kind
Symposium	Symposium on Habitat Monitoring organised after the 2023 meeting of the Commission to review the state of the art of habitat research in order to recommend specific lines of investigation in this topic within the framework of the SPRFMO Publish in a special volume in a journal	2023-2024	Symposium Steering Committee	NZ$ 63k (SC) US$ 25k (USA)

6. Other (Crosscutting issues)

Crosscutting				
Task	Subtask	Timeline	Coord.	Funding
Seabird/ bycatch monitoring	Progress southern hemisphere quantitative risk assessment (SEFRA)	2024+		In-kind

Crosscutting				
Task	Subtask	Timeline	Coord.	Funding
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)	2024+	NZ/PER	In-kind
EBSA	Evaluate impacts of fishing activities	2024+		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	2024+		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
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 Habitat Monitoring 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	Research cruises aimed to know the bio-oceanographic and meteorologic characteristics of Salas y Gomez ridge; as well as biodiversity, current circulation, morphology and geology of sea bottom.	2023 - 2024	Chile	In-kind
	Climate change impacts of fisheries in Salas y Gomez and Nazca ridges	2024	Chile	In-kind
	Expedition to Salas y Gomez and Nazca aboard oceanographic research vessel	2024 - 2025	Chile	In-kind
Data Working group	Create terms of reference and prioritization for data needs of Members (SC10 report).	2024+		In-kind
CPPS joint work plan	Increase cooperation and collaboration between both organisations as envisioned under the existing MoU (SC10 report)	2024+	Secretariat	In-kind
Secretariat scientific support	Continue with analyses of catch composition and fishing activities; support CPUE analyses; and general scientific analyses, as capacity allows.	2024+	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)	2024+		In-kind