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WCPFC Climate Change Workplan 2024 - 2027

WCPFC21-2024-12

01 November 2024

Submitted by the Co-Leads of the WCPFC Climate Change Workplan

Explanatory Note

During WCPFC20, the Commission:

(i) was updated by the SSP on the best available science on potential impacts of climate change on WCPFC fisheries and related ecosystems;

(ii) was updated by the WCPFC Secretariat on work done to incorporate climate change into the management of WCPFC's fisheries and also on activities in other regional fishery bodies ([WCPFC20-2023-12](#)); and

(iii) reviewed the activities of its subsidiary bodies in 2023 to consider climate change and provided advice to its subsidiary bodies to continue their work in 2024 to ensure climate change considerations are adequately reflected in the Commission's work.

Subsequently, WCPFC20 decided the following tasks for future work:

218. The Commission requested that the Ecosystem and Climate Indicator Report Card be updated and presented annually to the Commission and its subsidiary bodies.

219. The Commission recognised that there is increased importance for the Commission to ensure relevant information and data collection is adequate to support improved and updated understanding by the Commission on the impacts of climate change and implications for management of WCPFC fisheries.

220. The Commission tasked SC and TCC to include as part of the standing agenda item on climate change a review of available data to inform the Commission on climate change impacts to stocks and ecosystems in the WCPO, and the potential effects of climate change on related fishing activities.

221. The Commission tasked the Secretariat with continuing to provide a brief that summarises updates on international and regional fishery bodies (RFB) developments.

222. The Commission requested the Secretariat with the SSP explore the scope and feasibility of undertaking an assessment of active CMMs and to determine specific CMM provisions that may be susceptible to be impacted by climate change, and present the findings to the Science Committee, the Technical and Compliance Committee and the Commission.

223. The Commission recommended co-leads are identified to develop a Commission workplan for addressing climate change on WCPFC fisheries in the Convention Area. The co-leads would use the WCPFC Convention and Resolution 2019-01 as guides for that work. The draft workplan would be discussed and considered by each subsidiary body in 2024, with a view to taking this to WCPFC21 for consideration. The work plan will include, but not be limited to:

- a. *the scoping and feasibility study of an assessment of CMMs and their susceptibility to be affected by climate change*
- b. *tasking for the SC to explore:*
 - i. *how to capture potential effects of climate change on WCPFC fisheries and fish stocks.*
 - ii. *mechanisms to test the robustness of existing and candidate management procedures under plausible climate change scenarios within the MSE framework.*
- c. *Engagement with other Regional Fisheries Management Organizations and the Food and Agriculture Organization and their members to discuss shared challenges, leverage available resources, and identify potential pathways for cooperation on addressing climate change effects on fisheries.*

224. The co-leads on Climate Change will initially be one representative from the SIDS and one from the USA. The co-leads (RMI and the USA) seek to ensure the workplan addresses the risks of climate change to CMMs and other obligations, taking into account relevant Scientific Committee recommendations and the results of the scoping exercise regarding the assessment of active CMMs' susceptibility to be impacted by climate change.

225. In developing the Commission's Climate Change Work Plan, WCPFC20 requested that the co-leads work with members to incorporate ongoing efforts on climate change impact on fisheries from each of the subsidiary bodies and also provide a framework for coordinating Commission-wide work on climate change.

Summary of work by co-leads

The Republic of the Marshall Islands and the United States of America co-led the work tasked by WCPFC20 (paragraphs 223-225, WCPFC20 Summary Report). Co-leads met virtually several times between January to March 2024 to set up the work schedule and begin drafting a *Commission Workplan for addressing climate change on WCPFC fisheries in the Convention Area* ("the Workplan" hereinafter). Co-leads also met with WCPFC Secretariat and the SSP in April. (paragraph 222, WCPFC20 Summary Report).

Input from NC20, SC20, and TCC20 is included in the enclosed Workplan for the Commission's consideration at WCPFC21.

NC20 reviewed the Workplan and supported the proposed task of coordinating with the ISC as it considers how to incorporate climate change advice into management recommendations to NC. The NC also noted the importance of cooperation with other organizations including not only the ISC and tuna RFMOs, but also RFMOs that manage species such as sardine and mackerel in the NPO that are an important part of the ecosystem of northern stocks. The NC therefore agreed to request the Chair to contact the North Pacific Fisheries Commission on potential cooperation in relation to climate change. (Paragraph 55 of the NC20 Summary Report).

SC20 recommended that in the further development of the draft Climate Change Work Plan, an indication of the status of SC tasks and whether there are ongoing projects or activities that need to commence, along with the resources required, be added in a new column, as well as details of expected outcomes and how these will inform the Commission's decision-making process. (WCPFC21-2024-SC20-01 paragraph 125-126)

TCC20 requested that the Co-Leads on Climate Change in the lead-up to WCPFC21 revise the Workplan for submission to the Commission for consideration taking into account the views and concerns expressed at TCC20 i.e. ongoing projects or activities that need to commence, along with the resources required, and the flow of outcomes from one Subsidiary Body to another (TCC20 Outcomes, paragraph 24).

FAC will consider the Workplan immediately before WCPFC21 and provide feedback to the co-leads.

Objective

Using the WCPFC Convention and Resolution 2019-01 as guides, in response to the WCPFC 20 Outcomes, and upon review and input from each subsidiary body (SB), this Workplan will inform the Commission's efforts to address climate change impacts on WCPFC fisheries in the Convention Area.

The following sections describe tasks to be taken by the Commission and its SBs to address climate change impacts on WCPFC fisheries in the Convention Area.

A schedule of ongoing and planned activities related to climate change work within the Commission and the Subsidiary Bodies is included.

Commission

- Consider and discuss appropriate ways to incorporate climate change into the work of the Commission and the SBs.
- Consider and discuss the SB's recommendations regarding the CMM Climate Change Vulnerability Assessment.
- Identify and discuss appropriate avenues for incorporating climate change resources available outside the Commission into the work of the Commission in support of executing the work of the Commission.
- Enhance cross-RFMO coordination for climate change discussions, especially with IATTC.

Northern Committee

- Coordinate with ISC as it considers how to incorporate climate change advice into management recommendations to NC
- Consideration of climate change impacts on predator-prey interaction, and ultimately on NC tuna stocks. This would include integration of this information to provide advice to NC and Commission, and engagement with other Pacific Fisheries Bodies

Scientific Committee

- Continue the ongoing work with respect to implementing an ecosystem approach to fisheries management (EAFM), including developing the ecosystem indicator report cards; climate and ecosystem modelling; enhancing information on essential habitats for WCPFC target and bycatch species, and on the potential changes to species interactions and spatial overlap in target and bycatch species
- Continue the ongoing work in the SC to agree to climate indicators to track the impact of climate change and ecosystem changes, and develop a process to provide advice to the Commission on the performance of those indicators and the impact of climate change on

WCPFC target stocks, non-target species and other scientific aspects, and continue to update and discuss the Ecosystem and Climate Indicator Report Card annually;

- Continue exploring ways to enhance data collection systems on environmental and climate information to inform the modelling;
- Consider how the SC structure might be updated to facilitate climate change work while still maintaining other core SC functions, and report on these deliberations and any conclusions to the Commission;
- SC to include as part of the standing agenda on climate change a review of available data to inform the Commission on climate change impacts to stocks and ecosystems in the WCPO, and the potential effects of climate change on related fishing activities, including incorporating climate considerations in the development of harvest strategies and management procedures. The annual review of available data should also provide advice and recommendations to the Commission which identifies information gaps, necessary analyses, and any additional tasks that may further enhance the Commission's ability to account for climate change impacts on WCPFC fisheries;
- Coordinate with SPC, ISC and IATTC in continued consideration of how to incorporate climate change advice into stock assessments and associated management recommendations;
- Consider outcomes from the CMM climate vulnerability assessment and discuss appropriate ways to incorporate scientific advice that may assist in future development of CMMs based on the outcomes of the assessment.

Technical and Compliance Committee

- Consider the outcomes and technical information from the CMM vulnerability assessment, and continue to discuss appropriate ways to incorporate climate change into the work of the TCC.
- TCC to annually review climate change information to provide the Commission with information, technical advice and recommendations relating to the implementation of, and compliance with, conservation and management measures
- TCC's annual review of available information to also provide recommendations to the Commission identifying information gaps, necessary analyses, and any additional tasks to ensure the Commission's conservation and management measures contribute to the long-term sustainability of the stocks in accordance with Article 10 of the Convention.

Finance and Administration Committee

- Consider and prioritize any Commission or Secretariat requests for supplementary funds or other resources needed to carry out expanded scientific work or technical assessments associated with climate change.
- [Additional tasks and objectives developed through discussion with the FAC Chair]
- [Additional tasks developed through FAC]

Science and Management Dialogues and other WCPFC Intersessional Fora

- Addressing climate change is an underlying question for all WCPFC fora, including the 2024 SMD. Include discussions on the incorporation of climate considerations in the development of management procedures for skipjack and South Pacific albacore.

The tasks defined in this Workplan will be adaptive and flexible to respond to the discussions and needs of the Commission and its Subsidiary Bodies.

Schedule of Activities included in the Workplan

Rows in blue are new activities that will require agreement on timeline. In the final column, where no funds are listed, an activity does not need funds to take place.

<u>Schedule</u>	<u>Activity</u>	<u>Project/link to SB workplan</u>	<u>Expected outcome</u>	<u>Overall link to advice to Commission (link to policy)</u>	<u>Responsible/ Funds assigned-available?</u>
2024	Climate change expert workshop	WCPFC Project 121: Ecosystem and Climate Indicators (ECI) + Report cards	Test the candidate ECI, progress and refine these, based on expert feedback	Providing key information for monitoring the pathway through which climate change is manifesting in the WCPO, enabling the ground-truthing of oceanographic models, monitoring which physical properties of the Western and Central Pacific Ocean (WCPO) are approaching climate change induced tipping points, and supporting the inputs to and monitoring of implemented harvest strategies.	SSP Funds available under project 121
2025-2027	Indicator Validation				SC Further funds are required

Annually	Ecosystem and Climate Indicator Report Card to be updated and presented annually to the Commission and its subsidiary bodies. (WCPFC20 request)				SSP
2024-25	Review of existing modelling and data to improve understanding of drivers of trends in the early life history of skipjack tuna in the Western Pacific Warm Pool	WCPFC Project 115: Exploring evidence and mechanisms for a long-term increasing trend in recruitment of skipjack tuna in the equatorial Pacific and the development and modelling of defensible effort creep scenarios Tuna Research Plan	Environmental or technological impact on estimated SKJ recruitment trends, to improve the robustness of future stock assessments and inform skipjack OMs	The analysis of CPUE indices in skipjack stock assessments is vital for informing effective fisheries management policies, as misleading stability in these indices—potentially due to effort creep—could mask declines in stock biomass, leading to unsustainable fishing practices.	SSP

2024-25	Calibrating and evaluating the precision of epigenetic ageing as a tool for rapid and cost-effective ageing of WCPO key tuna stocks	WCPFC Project 100c: Preparing western and central Pacific tuna fisheries for application of close-kin-mark-recapture (CKMR) methods to resolve key stock assessment uncertainties	Provide an improved understanding of connectivity and adaptive potential and variation, which is increasingly important for understanding how stock biomass will respond to climate change and other changes to environmental conditions.	Accurately estimating absolute spawning biomass is a key challenge in WCPFC stock assessments. Close-Kin Mark-Recapture (CKMR) offers a practical solution, providing not only biomass estimates but also insights into population structure, connectivity, and natural mortality to improve management decisions	SSP Funded under the project
Annually	Identifying sampling gaps in biological data (age & growth) stored within the Tuna Tissue Bank and developing a biological sampling plan to collect age and growth information for key WCPFC tuna species	WCPFC Project 117: WCPFC Tuna Biological Sampling Plan	A structured sampling program is expected to directly translate into stock assessments with more reliable estimates of growth and with sufficient temporal observations to identify how growth may be changing as a function of climate change.	A well-designed and comprehensive sampling plan for collecting biological data (e.g., age, growth) will significantly enhance the accuracy of stock assessments, providing a stronger foundation for informed management decisions.	SSP Funded under the project

<p>Identifying sampling gaps in biological data (age & growth) stored within the Tuna Tissue Bank and developing a biological sampling plan to collect age and growth information for billfish species</p>	<p>WCPFC Project 118: WCPFC billfish biological sampling plan. Billfish Research Plan</p>	<p>A structured sampling program is expected to directly translate into stock assessments with more reliable estimates of growth and with sufficient temporal observations to identify how growth may be changing as a function of climate change.</p>	<p>A well-designed and comprehensive sampling plan for collecting biological data (e.g., age, growth) will significantly enhance the accuracy of stock assessments, providing a stronger foundation for informed management decisions.</p>	<p>SSP Funded under the project</p>
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2024-26	Quality checking and resolving issues including collection of samples for estimation of spawning potential through histological analyses of tropical tunas	WCPFC Project 120: Updated reproductive biology of tropical tunas	Establish baselines of reproductive potential for tropical tunas in the WCPO for monitoring the impacts of climate change	Improving the estimation of spawning potential is essential for enhancing the accuracy of stock assessments, which directly informs policy decisions on sustainable harvest strategies and conservation measures. Without reliable data, management policies may be less effective in ensuring the long-term sustainability of tropical tuna stocks, especially in the face of climate change impact	SSP Funded under the project
2025-26	Exploring new tuna stock assessment software	WCPFC Project 123: Scoping the next generation of tuna stock assessment software	Establish a new WCPFC tuna stock assessment software as a successor to the MULTIFAN-CL	Establishing new software for WCPO tuna stock assessments is essential for informing effective management decisions and policies. Enhanced modelling capabilities of the new software can assist in providing options for sustainable harvest strategies and adaptive management practices, particularly in the face of climate change impacts on the tuna population.	SSP Funds are required

2024-27	Continued enhancements to the SEAPODYM	SEAPODYM (Spatial Ecosystem and Population Dynamics Model)	climate-informed stock assessments	SEAPODYM is integrating biological, ecological, and environmental data to help inform policy decisions by projecting the effects of climate change on tuna distribution and abundance, enabling fisheries managers to have information to support adaptive strategies to ensure the long-term viability of tuna resources in WCPO.	SSP
2024-[27]	Collation and curation of regional marine specimens, including genetic samples.	Project 35b: WCPFC Pacific Marine Specimen Bank	Time series of biological samples to underpin improvements to inputs to stock assessments and monitoring of climate impacts	Improved estimation of biological parameters is essential for enhancing the accuracy of stock assessments, which directly informs policy decisions on sustainable harvest strategies and conservation measures. Ongoing collection of reliable data allows monitoring of potential climate impacts and informed advice.	SSP Funded under the project, a 2% annual increase is requested
Annually	Tagging and monitoring of tuna and tuna-like species, collection of marine specimens, including	Project 42: Pacific tuna tagging programme	Time series of biological samples to underpin improvements to inputs to stock assessments and monitoring of climate impacts	Improved estimation of biological parameters is essential for enhancing the accuracy of stock assessments, which directly informs policy decisions on sustainable harvest strategies and conservation measures. Ongoing collection of reliable data allows monitoring of	SSP Funded under the project

	genetic samples.			potential climate impacts and informed advice.	
Annually	Updates on international and regional fishery bodies developments related to climate change (paragraph 20 WCPFC20 Outcome document)			The Commission will get regular updates on other international and regional fisheries bodies activities and relevant news and information regarding climate change that is valuable for WCPFC to engage with.	WCPFC Secretariat
TBD	Explore mechanisms to test the robustness of existing and candidate management procedures under plausible climate change scenarios within the MSE framework.	Harvest Strategy Workplan		Activity to be discussed and refined by SC. TCC to discuss how to provide advice to the Commission regarding MSE and climate change.	TBD

[202#]	Engagement with other Regional Fisheries Management Organizations and the Food and Agriculture Organization and their members to discuss shared challenges, leverage available resources, and identify potential pathways for cooperation on addressing climate change effects on fisheries	2019-01 WCPFC Resolution on Climate Change	Create a community of practice within the RFB/RFMOs regarding cooperative fisheries management and climate change.	Will inform this workplan, and allow for updates as appropriate.	Commission, Secretariat, SSP, and Members
[2025 - 202#]	CMM Climate Change Vulnerability Assessment		[Identify information GAPS and analysis that need to be further undertaken to understand the implications of	Will provide information for Members consideration on vulnerability to climate change on specific CMM provisions	Consultant with support of Secretariat Funds available through voluntary contributions

			climate change on certain CMM provisions.]		
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