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Summary/short description/key points:

This paper provides a summary of SPC-FAME’s activities, since HoF15, to assist members with understanding and managing the impacts of climate change on Pacific fisheries. Key activities in 2023-24 include:

- The implementation of two projects supported by the Government of New Zealand: (1) “Climate Science to Ensure Pacific Tuna Access” project and (2) its preceding “Climate Change and Tuna Fisheries” project.
- The implementation of two projects supported by the Global Environment Facility: (1) Common Ocean II “Tuna and Climate Initiative” and (2) “Mainstreaming climate change adaptation and resilience and ecosystem-based management approaches into the sustainable management of the highly migratory fish stocks of the Western and Central Pacific Ocean”.
- The implementation of activities in two projects supported by the European Union: (1) “Pacific European Union Marine Partnership” and (2) NECCTON (New Copernicus Capability for Trophic Ocean Networks).
- These activities support the “Resolution on Climate Change as it relates to the Western and Central Pacific Fisheries Commission”.
- The submission of the ~USD 150 million Tuna Proposal to the Green Climate Fund.

Recommendations:

Members are invited to:

- Note the achievements since HoF15 to implement SPC-FAME work programme on climate;
- Support the planned activities under these projects for 2024/25

*FAME’s work programme on climate impacts on Pacific fisheries and ocean ecosystems*

**Status**

1. The work programme was presented and endorsed at the 13<sup>th</sup> Heads of Fisheries meeting (see [HoF13 WP6](#)). The endorsed work programme included three thematic areas: knowledge generation; regional and national capability; and solutions. Annex 1 provides a summary of the performance against identified KRAs in each of these theme areas.

*The New Zealand Ministry for Foreign Affairs and Trade “Climate Change and Tuna Fisheries”.*

**Status**

2. New Zealand announced at HoF13 a commitment of NZD 1,882,452 to support the WCPFC Climate Resolution. Progress to date includes:

Activity	Status
Climate vulnerability assessment for oceanic fisheries.	Completed and included in: <ul style="list-style-type: none"> <li>• Updated 2011 Climate Change Vulnerability Assessment (see <a href="#">WP6</a>).</li> <li>• Climate Rationale for GCF “Adapting tuna-dependent Pacific Island communities and economies to climate change” proposal.</li> </ul>
Evaluate and integrate climate indicators into tuna fisheries management.	Framework for evaluating and integrating climate indicators completed. See <a href="https://meetings.wcpfc.int/node/19391">https://meetings.wcpfc.int/node/19391</a> Projection dashboard completed. See <a href="https://ofp-sam.shinyapps.io/ofp-FEMA-climate-dashboard/">https://ofp-sam.shinyapps.io/ofp-FEMA-climate-dashboard/</a>
Integrate climate impacts into annual climate report cards (existing and new).	See <a href="https://meetings.wcpfc.int/node/19391">https://meetings.wcpfc.int/node/19391</a> See <a href="https://ofp-sam.shinyapps.io/ofp-FEMA-climate-dashboard/">https://ofp-sam.shinyapps.io/ofp-FEMA-climate-dashboard/</a>
Foster closer collaboration amongst the IPCC processes in the Pacific region to increase the profile of fisheries and ocean issues in UNFCCC negotiations	Formal arrangements established with University of Otago to support post-graduate studies.  Climate Awareness Workshop (CLAW) held to foster a deeper understanding of climate and climate change impacts on tuna fisheries and to establish closer collaboration between regional and international actors. A report of the CLAW is provided in <a href="#">Annex 2</a> .

*The New Zealand Ministry for Foreign Affairs and Trade “Climate Science to Ensure Pacific Tuna Access”.*

**Status**

3. New Zealand announced at the February 2023 Pacific Island Forum Special Leader Retreat a commitment of NZD 25 million to build the foundations for an advanced warning system to assist countries with planning for the impacts of climate change on tuna fisheries. Progress to date include:

Activity	Status
<i>Establishing key enabling conditions for Pacific Climate Science to support regional tuna fisheries management</i>	
Pacific Marine Specimen Bank Infrastructure  Research Vessel Functionality Analyses  Green Climate Fund Tuna Proposal	<ul style="list-style-type: none"> <li>• Genomics Lab Completed</li> <li>• Sclerochronology Lab Completed</li> <li>• Wet Lab under construction</li> <li>• Taxonomy Lab under renovation</li> <li>• Completed</li> <li>• V1.0 submitted</li> </ul>
<i>Establish baseline information for the climate intelligence system and its application</i>	
PMSB Standards and deployment  Attribution baselines  Climate Change Scenarios (CMIP6 ensemble)  Tuna Fishery Forecasting	<ul style="list-style-type: none"> <li>• SOP developed and undergoing testing</li> <li>• Port and observer sampling underway</li> <li>• CKMR designs developed for tuna</li> <li>• Genetic and epigenetic validation and calibration underway for tuna</li> <li>• Framework for monitoring impacts on coastal species</li> <li>• Definition and integration of spawning habitat</li> <li>• CC Ensemble upgraded to CMIP6</li> <li>• Tuna prey module validation underway</li> <li>• Seasonal forecasting capability tested</li> </ul>
<i>Capability amongst Pacific fisheries professionals</i>	
Vocational training	<ul style="list-style-type: none"> <li>• Training of specialist Pacific Marine Specimen Bank samplers underway</li> <li>• Re-establishment biological sampling capacity in the Regional Observer Programme through refresher training</li> <li>• Supplement national capacities through professional placements</li> </ul>

Post-graduate Training	<ul style="list-style-type: none"> <li>• Pacific Island fisheries professionals</li> <li>• Specialist training workshop             <ul style="list-style-type: none"> <li>▪ R-Assistance Workshop (RAW) - A report of the RAW is provided in <a href="#">Annex 3</a>.</li> <li>▪ Climate Awareness Workshop - A report of the CLAW is provided in <a href="#">Annex 2</a>.</li> </ul> </li> <li>• Tuna prey validation PhD</li> <li>• Tuna biology PhD</li> </ul>
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### *The Global Environment Facility Initiatives.*

#### **Status**

4. The Global Environment Facility supports two new projects that include climate change components: a second Common Oceans project titled “Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction” and a third Oceanic Fisheries Management Project titled “Mainstreaming climate change adaptation and resilience and ecosystem-based management approaches into the sustainable management of the highly migratory fish stocks of the Western and Central Pacific Ocean”. Progress to date include:

Activity	Status
<i>Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction</i>	
New reference models for skipjack, bigeye, yellowfin and albacore tuna	<ul style="list-style-type: none"> <li>• Reference models for skipjack, bigeye developed</li> <li>• Yellowfin and albacore reference model commenced</li> </ul>
<i>Mainstreaming climate change adaptation and resilience and ecosystem-based management approaches into the sustainable management of the highly migratory fish stocks of the Western and Central Pacific Ocean</i>	
CC impacts on bycatch and food security species	<ul style="list-style-type: none"> <li>• Framework for measuring expected changes in species distribution and vulnerability to fishing established</li> </ul>

### *European Union Initiatives*

#### **Status**

5. The European Union supports two projects that include climate change components: the “Pacific European Union Marine Partnership” and the “NECTON” project. This latter project is administered by Mercator Oceans International. Progress to date includes:

Activity	Status
<i>Pacific European Union Marine Partnership</i>	
Ecosystem modelling and development of indicators	<ul style="list-style-type: none"> <li>• Refined methodology to measure marine heatwaves severity developed.</li> <li>• Validated a biochronology approach to detect climate drivers of fish populations.</li> <li>• Validated stomach microbiome and prey content to detect change in ocean state.</li> </ul>
<i>NECCTON (New Copernicus Capability for Trophic Ocean Networks)</i>	
Demonstrator focused on Spatial Management of Tuna Stocks and Fisheries under Climate Change	<ul style="list-style-type: none"> <li>• Web-tool allowing users (stakeholders) to run projections of changes (e.g., 30 years) of key tuna species with fishing scenarios including spatial management measures and selected climate IPCC scenarios of greenhouse gas release has been developed.</li> </ul>

*The Green Climate Fund “Adapting tuna-dependent Pacific Island communities and economies to climate change”.*

**Status**

6. Version 1.0 of the GCF Regional Tuna Programme funding proposal package has been submitted to the GCF Secretariat which will facilitate inclusion of the project for approval at the October 2024 GCF Board meeting. The requested GCF Grant is approximately USD 108 million with implementation undertaken by SPC, CSIRO, Forum Fisheries Agency, and the National Fisheries Administrations of each of the 14 participating countries. The total budget (including co-finance) exceeds USD 150 million.

**Actions required by HoF**

7. To note the submission milestone and commence preparations for project implementation. The most urgent being the completion of national capacity assessments to allow for granting of funds by SPC to each participating country once GCF project approval is obtained.

*The Australian Department of Foreign Affairs and Trade “Assessment of climate change vulnerability of Pacific Ocean resources – 10 year update”.*

**Status**

- See [HoF16 Agenda Item 18-19](#) and [Working Paper 6](#)

Annex 1. Progress reporting – FAME’s Climate Work Programme

Theme: Knowledge Generation		Theme: Generation of Regional and National Capability		Theme: Solutions	
KRA	Progress	KRA	Progress	KRA	Progress
Fishery Vulnerability		Information Systems		Responsive Monitoring Systems	
Species Vulnerabilities		Attachments		Indicators	
Range Shifts		Post Graduate Qualification		MSE Compatible products	
Marine Heatwave Impacts		Short course curriculum		Economic Forecasts	
Adaptive Capacity		Partnerships		Decision ready products	
Data Systems		Secondment, Visiting Fellows, Resident Thinkers		Small-scale tuna fisheries	
Stock Dynamics					
Fishery Forecasting					
Ocean Forecasting					
Adaptation triggers					
Gear innovation					
Food Systems					

  

Progress Key	
	<b>Significant progress</b> Progress towards results met or exceeded target last year or reported more outcomes and impacts
	<b>Some progress made</b> Some progress has been made towards meeting target last year (50-99%) or reported more outputs and few outcomes or impacts
	<b>No overall progress</b> No overall progress has been made in this KRA last year (1-49%) or there is no data available in this reporting period
	<b>Moving away from making progress</b> There is negative progress towards this KRA last year or there is no data available in this reporting period