



CREWS PROJECT PROGRESS REPORT

(January - June 2023)

1. Project title	Strengthening Hydro-Meteorological and Early Warning Systems in the Pacific (CREWS Pacific SIDS 2.0)	2. Project reference CREWS/RProj/05/Additional Financing Pacific
3. Implementing Partners involved in the project	World Meteorological Organization (WMO); World Bank Global Facility for Disaster Reduction and Recovery (WB GFDRR); United Nations Office for Disaster Risk Reduction (UNDRR)	4. Operational Partners involved in the project Secretariat of the Pacific Regional Environment Programme (SPREP); The Pacific Community (SPC); Australian Bureau of Meteorology (BoM)
5. Project Duration/Timeframe (from year - to year)	Jan 2021-Dec 2024	6. Total Funding Approved by Steering Committee (in US dollars), including fees USD 4,799,000
7. Reporting focal point(s) from Implementing Partners	WMO: Lina Sjaavik lsjaavik@wmo.int WB GFDRR: Jian Vun jvun@worldbank.org Simone Esler sesler@worldbank.org Andrew Hurley ahurley@worldbank.org UNDRR: Nazgul Borkosheva Nazgul.borkosheva@un.org	
8. Project overview	<p>Please include objectives, key project deliverables, leveraging, contextual information/statistics, significant events during the reporting period in <u>bullet points</u>. (max 250 words)</p> <p>CREWS Pacific SIDS 2.0 builds upon the CREWS Pacific SIDS project (2017-2022) and aims to upscale its efforts in the Pacific region. The project will enhance regional and national capacity and systems for risk informed services related to extreme and high impact hydro-meteorological events in the Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Republic of Marshall Islands (RMI), Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.</p>	

The project has five main outcomes that strengthen integrated and inclusive early warning systems that are part of the region's stronger and more comprehensive human security and resilience agenda:

1. Improved governance;
2. Enhanced product development and accessibility;
3. Enhanced service delivery;
4. Enhanced communication and awareness programmes on Early Warning Systems (EWS); and
5. Improved integration of gender including people living with disabilities across the EWS chain.

Leveraging

The project links closely with the following regional initiatives (leveraging of approximately USD 65M):

- [Climate and Oceans Support Program in the Pacific \(COSPPac\)](#)
- [Tuvalu Coastal Adaptation Project](#)
- [Recovery Support for Tropical Cyclone Pam](#)
- [Intra-ACP Climate Services and Related Applications Programme \(ClimSA\)](#)
- [ISLANDS: Pacific Regional Project \(unep.org\)](#)
- [Pacific Resilience Program \(PREP\)](#)

Key events during reporting period

- [Pacific Week of Anticipatory Action - 28-30 March 2023, Nadi - Fiji](#)

The inaugural Pacific Week of Anticipatory Action was held in Nadi, Fiji from 28 - 30 March 2023. It brought together over 80

participants (49 male/ 33 female) across the region, representing 15 Pacific Island Countries and regional partners to discuss how to better prepare for and take action before disaster strikes. The week consisted of three separate but connected workshops: The Pacific Anticipatory Action Sensitization Workshop (28 - 29 March 2023); Law and Institutional Frameworks for Anticipatory Action in the Pacific, (30 March) and the Pacific CREWS Steering Committee (31 March 2023).

Pacific regional and national partners involved in anticipatory action, national authorities responsible for Disaster Risk Management, National Meteorological and Hydrological Services (NMHSs) and key non-government partners including regional CROP agencies, and United Nations agencies (Food and Agriculture Organization (FAO), Office for the Coordination of Humanitarian Affairs (OCHA), United Nations Capital Development Fund (UNCDF), United Nations Children Fund (UNICEF), United Nations Office for Disaster Risk Reduction (UNDRR), the World Meteorological Organization (WMO) and the World Food Programme (WFP)), met for a three day sensitization workshop - 28 - 30 March 2023 - aimed at sensitizing regional and national partners on anticipatory action, developing a shared understanding across agencies and government organizations on the enabling environment for anticipatory action, and defining coordination structures while facilitating joint planning and streamlining approaches for anticipatory action in the Pacific. The sensitization workshop focused on the importance of early warning information and triggers as one of the key building blocks of anticipatory action that would trigger pre-agreed actions and financing.



- CREWS Pacific SIDS 2.0 Steering Committee Meeting – 31 March 2023, Nadi – Fiji

The first CREWS Pacific SIDS 2.0 Steering Committee took place on 31 March 2023 in Nadi, Fiji. WMO served as the secretariat and the main organizer of the meeting, which also counted with the programmatic support from UNDRR and virtual presence



of the WB-GFDRR. The following delegations, consisting of both or either one representative from NMHSs and NDMOs, were present at the meeting: the Cook Islands, Fiji, Kiribati, the Republic of Marshall Islands (RMI), the Federated States of Micronesia (FSM), Nauru, Niue, the Solomon Islands, Samoa, Tonga, Tuvalu and Tokelau. Representatives from SPREP, SPC, Pacific Disability Forum (PDF), and the Samoa Red Cross Society have attended the meeting as observers.

During the meeting, the Implementing Partners presented the update on project progress, offering the opportunity for countries to pose questions after the description of each of the five outcomes, and offered updates on the project financial delivery and description of the proposed workplan and budget for the year 2023-2024. The Implementing Partners also presented on Early Warning for All initiative and how existing early warning programs in the region could contribute to the implementation of the Executive Action plan 2023-2027

NMHSs and NDMOs jointly presented existing opportunities, challenges, needs and gaps across the four key elements of EWS value chain. This session proved to be a very productive space for countries to express their current level of satisfaction with the outcomes brought by the project since its inception, and a valuable guide for where country priorities lie for potential reprogramming and future projects in the region.

Discussions were also held around the existing project pipeline in the Pacific Region and space was given to the Project Officer of the UNEP-GCF project, Ms. Elizapeta Kerslake to briefly present the implementation status of the project and its synergies with the CREWS-funded projects. Space was also given to Mr. Salesa Nihmei, Meteorology & Climatology Adviser for SPREP, to present currently ongoing projects implemented by his organization in the Pacific, to Mr. `Ofa Faanunu, Director of the Tonga Meteorological Service, who presented the Weather Ready Pacific Programme to meeting participants, to Ms. Namulau'ulu Tautala Mauala, Secretary General of the Samoa Red Cross Society, who presented the delivery of Community-based Early Warning Activities made possible with CREWS Pacific SIDS funds in 2022, and to Mr. Katabwena Tawaka, Manager Humanitarian Resilience Development Unit at the Pacific Disability Forum, who presented PDF's work in the region.



- In-country user research training delivered by Risk Engineering and Development (RED) to staff of Samoa Meteorological Division (SMD) and Tonga Meteorological Department (TMD) - June 2023

9. Progress summary

What has been achieved during this reporting period? - Please list in bullet points the most significant and tangible outcomes? (max 250 words)

- National Strategic Plan (NSP) and National Framework for Weather, Water, Climate and Oceans Services (NS-FWCS) for the Solomon Islands, Samoa and Vanuatu - WMO
 - NS-FWCS for the Solomon Islands is currently being developed by the contracted consultant. In-

	<p>country consultations took place in Q1 2023, and the document is in its final approval stages with SIMS and WMO.</p> <ul style="list-style-type: none"> - Work is currently ongoing on the development of Vanuatu’s Meteorology and Geo-Hazard Department new strategic plan. A consultant is already working on the development of the document, and national consultations are expected to take place in August 2023. - The TOR for the NS-FWCOS for Samoa is now in its final stages awaiting endorsement before recruiting a consultant to begin the assignment. - The draft TOR for the NS-FWCS for Nauru is now being discussed and awaiting inputs from Nauru. - The procurement process for hiring a law firm to conduct the Tonga Meteorological Act 2017 has been completed, and services are expected to start in July 2023. <ul style="list-style-type: none"> • Solomon Islands NDMO review - WMO <ul style="list-style-type: none"> - A consultant has been contracted to carry out the NDMO review for the Solomon Islands, and consultations are expected to take place during Q3 2023. • Samoa’s groundwater Strategy - WMO <ul style="list-style-type: none"> - The ToRs for the development of Samoa’s NS-FWCS, and Strategy for Groundwater resources have been developed and finalised and are currently being validated by Samoan authorities. Activities are expected to kickstart during Q3 2023. • Solomon Islands Impact Based Forecast and Early Warning Services (IBFWS) - WMO <ul style="list-style-type: none"> - A workshop on the implementation for IBFWS in the Solomon Islands, aimed to explore the global EWS value cycle and strategic partnerships in support of a coordinated action plan for Early Warning System for All (EWS4A) in the country, was delivered on 23 – 27 January 2023. Follow up actions and consultations were also carried on following the workshop. • National Climate Outlook Fora (NCOF) - WMO <ul style="list-style-type: none"> - An introductory meeting to NCOF for Tokelau was held in April 2023 with Tokelauan authorities in Apia, Samoa. The introductory meeting aimed at kickstarting discussions and supporting the
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planning for the first ever Tokelau NCOF meeting, to take place in-country in October 2023.

- Sub-season to seasonal climate prediction and training on tropical cyclone seasonal forecasts – WMO/BoM
 - Development of training modules for conducting national training on use of WMO GPC LRFs (Global Producing Centre for Long-range Forecasts) sub-seasonal to seasonal climate prediction products from ACCESS-S (the Australian Community Climate Earth System Simulator – Seasonal) was finalised.
 - Revision of the Southern Hemisphere Tropical Cyclone historical data archive continued. Tropical cyclone data for the 2018-2019, 2019-2020, 2020-2021 and 2021-2022 tropical cyclone seasons were obtained from the Australian Bureau of Meteorology (BoM) and the Regional Specialised Meteorological Centre (RSMC) Nadi, Fiji and added to the Southern Hemisphere Tropical Cyclone best track consolidated data archive.
 - Revision of functionality of tropical cyclone data portal continued. Functionality of the portal to provide accurate spatial selection ("where") was examined.
 - Development of training modules for conducting national training in tropical cyclone seasonal forecasting was finalised.
 - National training of Vanuatu Meteorology and Geohazards Department (VMGD) staff in (i) use of WMO GPC LRFs sub-seasonal to seasonal climate prediction products from ACCESS-S and (ii) tropical cyclone seasonal forecasts has been delivered in June 2023. An article which shared good practice of CREWS national training was published by the WMO.




- Coastal Inundation Forecasting – WMO/SPC
 - SPC, the Tuvalu Coastal Adaptation Project (TCAP) and the Enhancing Climate Information and Knowledge Services (ECIKS) project, has delivered a technical training and a stakeholder engagement workshop in Tuvalu in May 2023, as a continuation of the Coastal Inundation Forecasting activities being carried on since the first CREWS Pacific SIDS (2017-2022) project. The training and stakeholder engagement workshop focused EWS and ocean science to services, with dedicated sessions with Tuvalu Meteorological Service on the forecast system developed under the first CREWS-funded project. This successful mission marks the completion of SPC's planned technical delivery under the CREWS Pacific SIDS 2.0 project in Tuvalu.




- Improved Integration on Gender - UNDRR
 - UNDRR continues working closely with NDMO and NMHS on gender and disability inclusive early warning early action. A checklist/guide on integrating gender and disability into early warning system will be presented for feedback during the joint NDMO and NMHS meeting on 10 August. A training on accessible early warning systems was held jointly with four Disabled Peoples Associations of Rewa, Tailevu, Naitasiri and Levuka in Fiji. This resulted in identifying gaps and areas of opportunities to work with locally led disability organizations.

- Impact-based Forecasting in Samoa and Tonga
 - Initial recommendations from the technical assignment for Hydrometeorological Risk Analysis, Warning Production Software, Warning Design and Communication for Impact-Based Forecast and Warning Consultancy Service for Samoa and Tonga have been delivered to the Government of Tonga, including:
 - Recommendations on software tools to generate and issue public IBFWS products; technical inputs into the design and communication of impact-based warnings; risk identification for key hazards, including the relationship between hazard magnitude and severity of impacts.
 - Eighteen staff from SMD, TMD, the Government of Tonga and user research staff from RED completed an 'Introduction to User Research for IBFWS' training. The training outlined the importance of user research in IBFWS and how to conduct effective research. The training also included familiarization with the user research scripts to be used to gather IBFWS user needs and techniques for effective interviewing.
 - User research conducted in Samoa and Tonga to identify user needs for impact-based warning services
 - Support to the Government of Tonga to develop Terms of Reference for a firm to install an integrated forecasting platform to be financed under the Pacific Resilience Program - Tonga Project
 - Development of an education and awareness raising poster for Samoa on wind directions to help communicate local names for wind directions that will be used in IBFWS products and services.
 - Technical assignment for Hydrometeorological Risk Analysis, Warning Production Software,

	<p>Warning Design and Communication for Impact-Based Forecast and Warning Consultancy Service for Samoa and Tonga is being progressed by RED (Risk Engineering and Development). For Tonga, task 1 (inception) is complete. The draft report for the completion of task 2 (technical inputs and capacity building) has been received by World Bank and Government of Tonga for review. In country visit by RED and World Bank was conducted in June 2023 to consult government on Task 2 draft, advance the user research and technical inputs into the IBF warning design and communication activities.</p> <ul style="list-style-type: none"> - The completion of the first draft of the task 2 report has brought new risk decision aid information to TMS for key hazards, including rainfall, wind and flooding (surface water and storm surge), a greater understanding of the relationship between hazard magnitude and impact severity, options for software solutions for producing and disseminating warnings and design and communication recommendations for warning products and services. Once the report is finalized, the report findings can be pulled through into operation.
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10. Project Performance

Interpretation of color coding		
High		Good progress; on track in most or all aspects of delivery
Medium		Moderate progress or on track in some aspects of delivery
Low		Less than moderate or poor progress. Not on track in critical areas of its delivery. Requires remedial attention

	Rate of expenditure	Rate of delivery	Alignment of Objectives
Coding			
Narrative	The total expenditure of the project to date is USD 2,252,523 of which: WMO: USD 1,226,301	The rate of delivery is going according to plan, with the exception of Samoa and Tonga IBF-related activities, due to the impacts of the COVID-19 pandemic and	The project remains aligned to its objectives.



	<p>WB: USD 340,666 (53%) disbursed; USD 287,556 (45%) committed</p> <p>UNDRR: USD 398,000</p>	<p>the volcanic eruption between the years 2020-2022. Nevertheless, implementation is expected to be completed by the end of the project, in Dec 2024.</p>	
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11. Risk Status

<p>Risk Status</p>	<p>What is the current risk status as compared to what was identified in the project proposal?</p> <p>The risk status of the project remains low to medium as identified in the project proposal.</p> <p>Other potential risks include the following:</p> <ol style="list-style-type: none"> 1. Severe natural hazards, such as tropical cyclones or volcanic eruption that may shift government's priorities from CREWS activities to immediate response actions or hinder communications with countries. 2. Time and availability-related issues by beneficiary NMHSs, NDMOs and other in-country, who may be busy with
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	<p>other commitments and/or priorities. This could affect technical assistance initiatives in place to support CREWS.</p> <p>3. Change of leadership or directorship of beneficiary NMHSs, NDMOs and other national entities.</p> <p>4. Time and availability- related issues of technical assistance teams affecting ability of team to fulfil TOR.</p> <p>5. CREWS closing date for WB-led activities (October 2023). The challenges caused by COVID-19 have resulted in delayed engagement of the required technical assistance teams to deliver CREWS objectives. If not extended, the current closing date will potentially result in incomplete deliverables.</p>
Measures to address	<p>What mitigation measures have been developed to address the risk status? <u>In bullet points</u></p> <ul style="list-style-type: none"> • The project team remains in close and regular dialogue with the beneficiary NMHSs, NDMOs, in-country and regional implementing agencies. • UNDRR continues to engage with key government stakeholders such as NDMOs and NHMS to discuss and plan activities for 2023. • WB GFDRR team continues to engage with the Met organisations through ongoing projects (such as the Pacific Resilience Program (PREP) where investment projects are being implemented in both countries). • WB GFDRR team continues to engage regularly with the technical assistance team to ensure team availability and deliverables remain on track. • WB has proposed to WMO/UNDRR to extend current closing date.

12. Contributions to CREWS Output(s)

(use number for activities and products and % for project component completion)

12.1 National Output(s)

CREWS Output(s) 1: National Meteorological and Hydrological Services service delivery improved, including the development of long-term service delivery strategies and development plans

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for reporting period	Progress by June 2023
1.1 Support the development of bills and legislation for	3 bills/policies on	The Solomon	0	A consultant has

<p>meteorology, hydrology, and disaster management.</p>	<p>Met/Hydro and DRM.</p>	<p>Islands NDMO review has been postponed to early 2023 due to the national COVID-19 responses in 2022. Discussions with the new NDMO leadership have taken place to set ground for future engagements.</p> <p>The ToR for the FMS Cost-recovery plan for Aviation has been finalized but details are still required form FMS in order to proceed with contracting the consultant. The activity is postponed to early 2023 given the new change</p>		<p>been contracted to support the revision of the Solomon Islands NDMO review, and discussions with the government are currently ongoing for the arrangement of national consultations. This activity is expected to be completed by the end of 2023.</p> <p>The ToR for the FMS Cost-Recovery Plan has been validated by FMS and a call for a consultancy is to be launched in mid-July 2023. This activity is expected to be completed by the end of 2023.</p>
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		<p>in Government.</p> <p>Discussions between WMO and Tonga MEIDECC for the drafting of regulations for Tonga's Meteorological Act of 2017 have been moved to Q1 2023 due to the pending NSP Activity ongoing in Tonga. The TOR is completed and will go through the WMO Tender process in 2023. The consultation budget is also ready.</p>		<p>The procurement process related to the drafting of regulations for Tonga's Meteorological Act of 2017 was finalized early July 2023, and the law firm selected is expected to start its work in August 2023.</p>
<p>1.2 Socioeconomic assessment of RSMC Nadi/Fiji Meteorological Service (FMS).</p>	<p>Development of socio-economic assessment</p>	<p>With national elections in Dec 2022, the implementation of this assessment has been delayed. The WB GFDRR team is discussing</p>	<p>N/A</p>	<p>WB has re-established communication with FMS however an action plan is not yet agreed.</p>

		internally on the viability of completing this work before the closing date.		
1.3 National Strategic Plans for Meteorological Services inclusive of costed implementation plans and National Framework for Weather, Water and Climate Services (NS-FWCS) for meteorology, hydrology, disaster risk management, and other related environmental disciplines developed for six Pacific SIDS (Nauru, Samoa, Solomon Islands, Tokelau and Vanuatu).	5 NS-FWCS	<p>NSP/NSFWWCOS for Tokelau finalized and endorsed. NS-FWCS for Tonga has been drafted, reviewed and is currently under final formatting before Cabinet's approval and formal distribution.</p> <p>A consultant was hired for the development of the NS-FWCS for the Solomon Islands. Completion of the plan is expected in Q1 2023, after the conclusion of consultations - scheduled</p>	0	<p>NSP/NSFWWCOS for Tokelau and Tonga are completed.</p> <p>The Solomon Islands NS-FWCS is under its final stages of development and is currently being validated by government authorities in the Solomon Islands.</p> <p>Work is currently ongoing on the development of Vanuatu's Meteorology and Geo-Hazard Department new strategic plan. A consultant is already working on the</p>

		<p>tentatively January 2023.</p> <p>The concept note for the review of Vanuatu’s Meteorology and Geo-Hazard Department and the development of a new strategic plan for VMGD has been completed and a consultant is expected to be hired and start duties in Q1 2023. Technical evaluations are currently ongoing.</p> <p>Discussions are currently ongoing with Samoa on the development of their NS-FWCS and the update of their ground water strategy. A ToR for the</p>		<p>development of the document, and national consultations are expected to take place in August 2023.</p> <p>The ToRs for the development of Samoa’s NS-FWCS, and Strategy for Groundwater resources have been developed and are currently being validated by Samoan authorities. Activities are expected to kickstart during Q3 2023.</p> <p>The draft TOR for Nauru has been circulated for inputs from Nauru Met Office.</p>
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		development of the NSP has been circulated. The Strategy for groundwater Resources TOR and the related consultancy work are expected to start in Q1 2023.		
1.4 WMO and regional coordination mechanisms for meteorological, hydrological, disaster management, and other related environmental disciplines and services improved.	2 Pacific Meteorological Council (PMC) documents for improved coordination mechanisms developed.	The approach on the review of the PMC and PMDP is currently postponed to 2023 with SPREP to finalise their approach in moving forward. WMO has started drafting the template to start the engagement with the donors that work in the region, the draft has been shared with SPREP for review and feedback. This will be finalised in Q1 2023 and	Draft ToR for PMC and Pacific Partners Coordination Mechanism Framework.	The ToR has been developed and discussed with SPREP. The revised version is now being circulated for endorsement from SPREP before moving to the recruitment process. WMO in partnership with SPREP is organising the Pacific Donor and Partners Coordination meeting in the

		<p>circulated to the relevant partners to begin the gathering of information and data. The outcome is expected to be presented at PMC in August 2023.</p>		<p>PMC-6 meeting in August 2023. The outcome of the meeting will finalize the Pacific Partners Coordination Mechanism Framework. At the same meeting WMO will present the findings of the donor and partners data collection campaign through a dashboard that is being developed.</p>
<p>1.5 Collaboration between RSMC Nadi/FMS and the Pacific Islands and Territories' Meteorological Services it serves formalized.</p>	<p>8 Agreements (such a Service Letter Agreement (SLAs), Memorandum of Understanding (MoUs) or equivalents) for the service provision developed or drafted.</p>	<p>This activity is to be discussed in the 2023 PMC meeting for clear directions in moving forward and was not expected to take place in 2022.</p>	<p>N/A</p>	<p>Discussions on this activity are ongoing with FMS. Initial exchanges pointed towards assessing the best approach to formalize these collaborations. Further</p>



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				information on this will be available after the 2023 PMC, scheduled in August 2023.
<p>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 – 200 words). <u>Please list in bullet points.</u></p> <ul style="list-style-type: none"> • <i>Multiplier</i> demonstrating the value of the services provided by FMS and RSMC Nadi has the potential to increase future investments in the RSMC; the review of PMC policies and documents will support future resource mobilization for PMC and NMHSs and NDMOs in the region. • <i>Gender responsive & people centered</i>: The activities to strengthen capacities as well as the legislation and NSPs which outlines action plans for the NMHSs, aim to strengthen EWS in a way that will reach more people - specifically the ones most at risk, and further contribute to the concept of people-centered EWS. • <i>Unique</i>: The production of a Cost-Recovery Plan for Aviation for FMS aims to increase the institutional and operational efficiency of FMS by revisiting existing frameworks on aviation. 				

CREWS Output(s) 2: Risk Information to guide early warning systems and climate and weather service developed and accessible

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for the reporting period	Progress by June 2023
2.1 Integrated and inclusive operational EWS plan and system to addressing new and existing multi-hazards developed (includes SWFP, FFGS, CIFI).	Existence of operationalized EWS plan / Existence of integrated EWS	A consultant has been contracted to develop the IBFWS plan for	Coastal Inundation Forecasting Training and stakeholder	Workshop on the implementation of IBFWS in the

	platform.	the Solomon Islands. A workshop on the implementation of IBFWS in the Solomon Islands, has been scheduled and will take place in Honiara, 23-27 January 2023.	engagement workshop in Tuvalu.	<p>Solomon Islands has been delivered. Another IBF workshop is being planned in Vanuatu in January 2024.</p> <p>A workshop on Common Alerting Protocol is being planned in Vanuatu between Q3 and Q4 2023.</p> <p>A 10-day technical training and a 3-day stakeholder engagement workshop was delivered in Tuvalu as part of the Coastal Inundation Activities being carried on by SPC.</p>
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				Options for an integrated forecasting platform for TMD, Tonga, being considered.
2.2 Implementation of a high-resolution NWP mesoscale model in Fiji completed and operational.	<p>1 established verification and validation programme.</p> <p>2 ECMWF licenses provided.</p> <p>15 staff trained.</p>	<p>ECMWF ecChart license provided to FMS under CREWS Pacific SIDS until September 2022. Discussion are underway with FMS to explore if FMS still views it as a useful operational tool to consider renewal of its license.</p> <p>A mission was organized between BMKG and FMS on the assessment of NWP conditions and for the installation of NWP high</p>	<p>ECMWF ecChart license provided.</p> <p>Implementation plan of future training by BMKG.</p>	<p>ECMWF ecChart license provided to FMS under CREWS Pacific SIDS until the end of the project.</p> <p>BMKG has been offering online support to FMS ever since the on-site visit late 2022. An implementation plan of future training is being developed by BMKG but depends on a formal letter from FMS requesting this assistance. An LOA between</p>

		resolution at FMS, between 21 Nov- 9 Dec 2022. Further interactions including online support by BMKG, and onsite training activities will continue during 2023.		WMO and BMKG is envisioned once this request is formalized and activities authorized.
2.3 Capacities to detect, monitor and forecast severe high impact meteorological, hydrological, and other related environmental hazards' events improved.	<p>25 services with in-country capacity building sessions.</p> <p>25 capacity building sessions conducted.</p> <p>25 forecasts produced with input from training.</p>	Selected countries to receive the trainings are yet to be confirmed. BoM to confirm in 2023 and start planning the training sessions for the selected countries.	1 in-country training	<p>1 in-country training on ACCESS and tropical cyclone seasonal forecasts was delivered in June 2023 in Vanuatu.</p> <p>Two additional in-country training are being planned in Fiji (RSMC) and the Cook Islands (in view of the El Niño under development in the region)</p>
2.4 Communities' response to multi-risk information and	N/A	The International	Production of	Education and

<p>warnings improved</p>		<p>Technical Advisor designed and facilitated stakeholder workshops for IBFWS – developing impacts tables, advice and action statements and communication and warning products Samoa & Tonga Stakeholder workshops for impact tables and advice and action statements completed IBFWS product design and communication workshop completed for Samoa Technical evaluation for a</p>	<p>communication awareness for Samoa. User research completed.</p>	<p>awareness raising materials for wind direction developed for Samoa. User research completed in Tonga and Samoa. Technical assignment Task 2 draft submitted to Government of Tonga and World Bank for review. Mission to Tonga conducted in June to advance IBF warning design and communication activities. User research in Tonga and Samoa to identify user</p>
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		firm to support further development of IBFWS completed (implementation of this is likely to be supported through the PREP projects in the respective countries)		needs (public and stakeholders) for IBFWS, including effective dissemination channels and communication methods
2.5 CB-EWS implemented	<p>2 communities with CBEWS in place.</p> <p>Risk maps developed / updated.</p> <p>Existence of response plans.</p>	An LoA with SPREP has been drafted and is expected to enter into force early 2023. The delay in this activity is due to the closing of CBEWS activities under CREWS Pacific SIDS project (2017-2022).	N/A	The Implementing Arrangement between WMO and SPREP, which includes CBEWS activities, has been signed in July 2023. Activities are expected to start in August 2023.
<p>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></p> <p><i>Unique</i> The collaboration between BMKG and FMS, with the overall coordination of WMO, showcases a strong partnership within the Asia-</p>				

Pacific community and South-South cooperation and support.

Multiplier / Promote Coherence Coastal Inundation Forecasting – Tuvalu

The Tuvalu wave and inundation forecast system, originally developed under the first CREWS Pacific SIDS project (2017-2022) is operational and is being further advanced through the UNEP/GCF ECIKS projects. With a high-resolution national-scale wave and inundation forecast based on state of the art bathy/topo data (i.e. Lidar), TMS now provides an unrivalled ocean and warning service for Tuvalu. Such service is bringing new opportunities for public/private partnership in the country. As of last week, TMS started providing tailored ocean forecast products to Hall International, a company contracted to undertake coastal development work (reclamation, wharf, coastal protection) over the next few years, and across few islands in Tuvalu. Under the ECIKS project, SPC developed a new module in the CREWS-funded ocean forecast system to auto-generate tailored ocean products (designed in partnership with TMS and Hall).

This showcases an exciting outcome, leveraging , and coherence between regional projects (CREWS and ECIKS projects). This is proof that strengthened ocean services and EW capacity can foster opportunity towards income generating activities, especially in Pacific SIDS. It also showcases the need for development work to move from being project-based to programme-based to achieve tangible outcomes.

People-centred, solution-oriented, promote coherence Options for an integrated forecasting platform have considered the needs of TMD and good practice from neighbouring countries and other NMHSs, whilst building on recommendations and relevant software solutions from previous and ongoing projects, such as the System Integrator and SPC

People-centred, solution-oriented, gender-sensitive, promote coherence The findings from user research in Tonga and Samoa will inform IBFWS design, communication and dissemination, which will improve how warning information is accessed, understood and acted upon by members of the public and stakeholders. The research also provides insights that can be used to inform future projects for developing NMHS capability

People-centred, gender-sensitive User research has collated data to identify user requirements for IBFWS in Tonga and Samoa.

CREWS Output(s) 3: Information and Communication Technology, including common alerting protocol, strengthened

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for the reporting period	Progress by June 2023
3.1 Support development of Regional ICT Strategy that includes WIS to exchange and delivery of meteorology, hydrology, and ocean data and information.	50 % of data sharing between members	Several online discussion meetings were conducted in 2022 to discuss the preparation for the WIS 2.0 pilot phase and the development of a WIS 2.0 in-a-box pilot project in the Pacific Island Members.	N/A	Discussions on the assessment of gaps and limitations of the Pacific Region to be WIS compatible, and a workshop to increase understanding of WIS, have been ongoing with WMO technical teams. Concept notes are being prepared and the actual activities are expected to take place in Q1/Q2 2024 due to the busy training schedule in the Pacific Region, and availability of experts.

				<p>Discussions have been ongoing with NIWA on the development of a regional ICT Strategy. A Letter of Agreement between NIWA (the National Institute of Water and Atmospheric Research of New Zealand) and WMO is expected to be signed in Q3 2023 for the implementation of this activity.</p> <p>WMO and the Samoa Water Resources Division are working on the deployment of the Meteorology, Climatology and</p>
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				Hydrology database system (MCH) for Samoa. A mission for WMO staff to Samoa is scheduled for October 2023 to assist with the deployment of the database and training for the staff.
3.2 Communication of early warning Improved.	<p>Number of stakeholder consultations identifying communication channels.</p> <p>Existence of communication strategy.</p> <p>30% in communities reached for EW.</p>	No activity as pilot has not started	N/A	No activity as pilot has started
3.3 National and regional platforms for NMHSs to exchange and share meteorological, hydrological, and other related environmental information among stakeholders including those in the socio-economic	17 national and regional platforms taken place.	2 NCOF took place - Solomon Islands and Samoa	Introduction to NCOF for Tokelau.	2 NCOFs took place - Solomon Islands and Samoa.



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sectors strengthened.		Initial discussions with Tokelau for the organization of their first NCOF in 2023.		An introduction to NCOF in Tokelau workshop was held in Apia, Samoa, in April 2023. The first ever NCOF is being planned to take place in Tokelau in October 2023, with the support and partnership with NIWA.
<p>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></p> <p><i>Unique</i> - Discussions with Tokelau on the organization of their first ever NCOF are a direct result of the NSP-FWCS concluded under the CREWS Pacific SIDS 2.0 project. This will be delivered in coordination with NIWA</p>				

CREWS Output(s) 4: Knowledge products and awareness programmes on early warnings developed

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for the reporting period	Progress by June 2023
4.1 Knowledge products and publications developed	4 knowledge products developed	A scoping study on gender-responsive and disability	N/A	The scoping study on gender-

		<p>inclusive EWEA in the Pacific is finalized and planned to be published on PreventionWeb in Q1 of 2023.</p> <p>Awareness raising posters for introducing impact-based warnings to a public audience and the impact from tropical cyclones developed for Samoa.</p>		<p>responsive and disability inclusive EWEA in the Pacific is finalized and planned to be published on PreventionWeb in September 2023.</p>
<p>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 – 200 words). <u>Please list in bullet points.</u></p> <p><i>People-centred, solution-oriented</i> Samoa Meteorology Division (SMD) provided user needs requirements for two posters: 1) introduce the concept of IBFWS to the people of Samoa, 2) show the magnitude and impacts cause by Tropical Cyclones in Samoa. WB consulted SMD, and applied good practice from other impact-based warning services and policies, to ensure the imagery and language is suitable for a diverse Samoan audience (people-centred, solution-oriented).</p>				

CREWS Output(s) 5: Gender-sensitive training, capacity building programmes provided

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for the reporting period	Progress by June 2023
5.1 Guidance on mainstreaming gender and disability developed.	Existence of Women In Leadership (WIL) Community of Good Practice (CoP). Percentage (to be defined after UNDRR assessment) of women trained under WIL.	A draft guidance/ checklist on mainstreaming gender and disability into EWEA is developed and under review. Expected to be finalized by Q1 2023.	N/A	A draft guidance/ checklist on mainstreaming gender and disability into EWEA is developed and under review. Expected to be finalized by Q3 2023.
<p>Additional information: briefly indicate the contributions, with concrete examples, to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list bullet points.</u></p> <p>N/A</p>				

12.2 Regional Output(s) (for Regional Projects)

CREWS Regional Output(s): Institutional and human capacities at Regional WMO and Intergovernmental organizations to provide regional climate and weather services to LDCs and SIDS increased

State Project Output(s) in this section	Overall Project Target	Progress by December 2022	Target for the reporting period	Progress by June 2023
R.1 Implementation of a high-resolution NWP	FMS/RSMC Nadi staff	A mission was	N/A	An

mesoscale model in Fiji.	have the necessary skill set to implement high resolution NWP model in Fiji.	organized between BMKG and FMS on NWP LAM installation and training, between 21 November to 9 December 2022.		implementation plan of future training is being developed by BMKG. An LoA between WMO and BMKG is envisioned once that is complete.
R.2 Access for FMS and RSMC Nadi to high-quality NWP products and relevant tools.	ECCharts for FMS/RSMC Nadi in place.	WMO consulting with FMS if they wish to continue licensing ECCharts.	N/A	ECCharts for FMS/RSMC Nadi provided until the end of the project timespan.
<p>Additional information: briefly indicate, with concrete examples, the contributions to CREWS value propositions (gender-responsive, multiplier, people-centered, promote coherence, solution-oriented, unique), as relevant (150 - 200 words). <u>Please list in bullet points.</u></p> <p>N/A</p>				

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13. Certification on Use of Resources

This needs to be provided at the end of the year as part of the submission of the 2nd semester report. Each Implementing Partner to provide a certification of the use of resources signed by their authorized representative.

14. Visibility products

- a. *Insert or copy any links to press releases, videos or communication items and/or social media links produced during the reporting period only*

[Samoa Wind Poster](#)

15. Supporting documents

- a. *List and annex to the report any documents providing details on project activities conducted during the reporting period such as reports of training sessions, assessment reports, online solutions and tools, manuals, summaries of high-level discussions etc.*

[Pacific Week of Anticipatory Action - Report](#)

[Solomon Islands Impact-based Forecast Workshop Report](#)

[User Research Training Workshop - Samoa](#)

[Draft Task 2 Technical Report Tonga](#)

[Pacific Partner Coordination Mechanism Dashboard](#)

16. Project History

- a. *Highlight key achievements since project started in bullet points, include all visibility and supporting documents other than those from the last 12 months*

- NS-FWCS for Tokelau
- NCOF Samoa and Solomon Islands
- Appointment of Technical IBFWS Specialist to support CREWS delivery in Tonga and Samoa
- IBFWS stakeholder awareness raising Tonga and Samoa: An Introduction to IBFWS (paper), Developing IBFWS – Key lessons from global IBFWS (workshop), Advice and Action Statements (workshop), Impact Tables (workshop), Product Design and Communication (workshop), IBFWS in Practice (workshop – Samoa only)
- Appointment of Technical Assistance Team to review and make recommendations on: Hydrometeorological Risk Analysis, Warning Production Software, Warning Design and Communication for Impact-Based Forecast and Warning



- Initial recommendations from Technical Assistance Team on Hydrometeorological Risk Analysis, Warning Production Software, Warning Design and Communication for Impact-Based Forecast and Warning delivered to the Government of Tonga
- User research training conducted for SMD and TMD and key stakeholders
- User research data to identify user needs for IBFWS in Tonga and Samoa collected and collated.
- Education and awareness raising materials (posters) developed for Samoa for tropical cyclone, introducing IBFWS and wind directions.



Impact-based Weather Warning Services



Feedback from our communities is being used to change our weather warnings to **impact-based weather warnings**

Impact-based weather warnings will tell you what severe weather you can expect **AND** what impacts the weather might cause

Advice and guidance on what you can do to protect yourself and your community will be included

Impact-based warnings will be easier to understand

Impact-based weather warning services can:

<p>→ be used by disaster management organizations to help you prepare for severe weather in your community</p>	<p>→ help disaster management organizations prepare to respond to severe weather impacts</p>	<p>→ help you make decisions and take action to save lives and reduce the impacts of severe weather</p>
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