CREWS PROJECT FINAL REPORT
(Date of submission)

Section 1. General Project Information

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. Lead Implementing Partner of the project	World Meteorological Organization (WMO)	**4. Other Implementing Partners involved in the project**	United Nations Office for Disaster Risk Reduction (UNDRR) World Bank Global Facility for Disaster Reduction and Recovery (WB GFDRR)
5. Operational Partners involved in the project	Secretariat of the Pacific Regional Environment Programme (SPREP); The Pacific Community (SPC); Australian Bureau of Meteorology (BoM)	**6. Expected Project duration/timeframe (from year – to year)**	Jan 2021- Jun 2025
7. Actual Project duration/timeframe (if no-cost extensions were approved)	Jan 2021-Dec 2024	**8. Total funding approved by Steering Committee (in US dollars), including fees**	USD 4,799,000
9. Total funding executed in actual duration	USD 4,799,000	**10. Reporting focal point(s) from Implementing Partners**	WMO: Guilherme Varro Guilherme.varro@wmo.int UNDRR: Nazgul Borkosheva Nazgul.borkosheva@un.org WB GFDRR: Jian Vun jvun@worldbank.org
11. Total funding leveraged by organization and what it was used for	- **Approximately USD 675,000 in funding leveraged by the Implementing Partners, through:** ○ **CREWS ASW – Tonga MACRES:** Leveraged approximately USD 215,000 under the CREWS Accelerated Support Window to develop the Tonga Mobile Applications Community Multi-Hazard Early Warning and Response System (MACRES). ○ **CREWS ASW – Vanuatu Warning Accuracy Assessment:** Secured around USD 226,000 to assess the accuracy of warnings issued during Tropical Cyclones Judy and Kevin, and to evaluate other hazard impacts on Vanuatu's Multi-Hazard Early Warning System (MHEWS). ○ **Solomon Islands EW4All Support:** Mobilized about USD 163,000 through the CREWS "EW4All MultiStakeholders Accelerator for LDCs and SIDS" project to facilitate national consultations, develop a national MHEWS roadmap, and establish the Flag Early Warning System (FEWS). ○ **WMO–CAP Workshop 2023:** Through partnerships with the VAN KIRAP Project (Vanuatu), UNEP CIS-Pac5, USAID, NOAA, and UNDRR, leveraged approximately USD 35,000 to host the workshop.		

	○ **Pacific Regional Hydrological Services Forum:** Cofinanced by WMO and SPC, leveraging resources totaling AUD 55,360 to convene the forum. ○ CREWS "EW4All MultiStakeholders Accelerator for LDCs and SIDS" project to facilitate national consultations and develop a national MHEWS roadmap in Solomon Islands, Kiribati, and Tonga **In Kind Support, through staff time and technical coordination and support was provided to the following initiatives/projects:** - UNDP Global EW4ALL Project that includes Fiji - Weather-Ready Pacific Investment Plan - Implementation of GCF SAP – CREWS Scale Up Framework for EWS in the Pacific region - GCF SAP CREWS Scale Up Framework for EWS for Fiji
12. Report Certified Accurate by (with signature):	

Section 2. Overall Project Performance

13. Summary of outcomes and outputs	*Provide a detailed account by project/programme outcomes and outputs of what was achieved. Include, per outcome, information which also demonstrates people-centered inclusive and gender responsive-related achievements.* *Provide a detailed account of which outcomes and outputs were not realized and why* *Describe any unexpected outcomes.* **<u>Outcome 1 – Improved Governance</u>** • WMO, under the project, supported the development of bills and legislation for meteorology, hydrology, and disaster management, including: the policy framework draft and drafting instructions for the revision of the Solomon Islands National Disaster Management Act (2024), this will be drafted by the Solomon Islands Crown Law as per internal Government processes; drafting of regulations for the revision of the Tonga Meteorological Act (2025) has been approved by MEIDECC and to be presented to the Cabinet in 2025; a cost-recovery plan for aviation for Fiji Meteorological Service (2024) was approved and now being utilised by FMS and Aviation Department; the development of a groundwater strategy for the Samoa Water Resources Division (2025) completed its phase one which was the assessment report to verify the information intended for the proposal plan; and technical inputs provided to the initial draft Multi-hazard early warning systems policy produced by Tonga Meteorological Service (2024). • National Strategic Plans for Meteorology and National Frameworks for Weather, Water, Climate and Ocean Services were developed under the project for Tokelau (2021) was completed and to be endorsed by the Tokelau Government (called the Taupulega), Tonga (2021) endorsed and operational, Solomon Islands (2022) endorsed and operational and Vanuatu (2023) endorsed and operational. • WMO continued its support to regional coordination mechanisms for meteorological, hydrological, disaster management, and other related environment disciplines. A consultant was engaged for the review of the governance structures of the Pacific Meteorological Council (PMC) and the Pacific Meteorological Desk Partnership (PMDP) (2025). Likewise, The Pacific Partner Coordination Framework (PPCF) has been developed, and a regional dashboard mapping regional stakeholders involved in the EWS has been launched (2023). Support has been given, through SPREP, to the organization of PMC meetings (2023, 2024), the Pacific Ministerial Meeting on Meteorology (PMMM) (2024), and the operationalization and implementation of activities of PMC's 6 Technical Panels (2021-2024). This review is now informing the

planned review for the Pacific Islands Meteorological Plan (PIMS) planned in 2025.

- Support provided to SPC to organize the Pacific Regional Hydrological Services Forum (2025) and to carry out assessments for Flash Flood Forecasting System (FFGS) and Early Warning System for Floods (EWS-F) in Fiji, Kiribati and Solomon Islands (2025) were completed and will be utilized in the planning and drafting of the Pacific Hydrological Plan
- Support provided to NIWA to carry out assessments on FFGS and EWS-F for Samoa, Tonga and Vanuatu (2025) were completed and shared with all the selected countries. These reports will be upscaled by the USAID Project FFSG and ESW-F.
- Under this outcome, one output related to the formalization of collaboration between FMS/RSMC Nadi and the Pacific Islands and Territories' (PITCs) National Meteorological Services (NMSs) it serves, was not realized. This was due to changing priorities at the managerial level of Fiji Meteorological Service (FMS). This output will be reconsidered in the third phase of the CREWS Pacific SIDS project, starting in 2025 which now titled "Scale Up Inclusive Early Warning System and Actions in the Pacific (SIEWAP).

Outcome 2 - Enhanced product co-development and accessibility

- WMO and WB-GFDRR, under Outcome 2, directly supported four Pacific countries (Samoa, Solomon Islands, Tonga and Vanuatu) in the development of Integrated and inclusive operational EWS plan and systems, including through: Workshops and trainings on the implementation of IBFWS in the Solomon Islands (2023), Vanuatu (2024), Samoa and Tonga (2023); and the delivery of a regional Common Alerting Protocol (CAP) training and implementation workshop for the Pacific Region, delivered to over 23 participants from 12 Pacific SIDS in Port Vila, Vanuatu (2023).
- WMO, through SPC, continued the implementation of coastal inundation forecast systems in Kiribati and Tuvalu, started under the first phase of the CREWS Pacific SIDS project. Under this project, two trainings were offered to Kiribati and Tuvalu Meteorological Services on the utilization of these systems (2022) in phase 1 and 2 and approximately 30 participants in Kiribati and 41 participants were recorded for Tuvalu.
- WMO continued offering support to FMS/RSMC Nadi. Under this output ECMWF ecChart licenses were provided for two years (2021-2022) to FMS for the utilization of Numerical Weather Prediction (NWP) products. In addition, a series of trainings on NWP were organized to FMS staff in collaboration with the Indonesian Meteorological Service (BMKG) (2023-2024) with approximately 15 participants taking part. An additional activity, included under this output as per request from FMS during the 2023 Project Steering Committee, was the procurement of storage nodes to complement the existing memory capacity of the High-Performance Computer purchased to FMS under the first phase of the CREWS Pacific SIDS project in 2020. The additional nodes were delivered to FMS in August 2024.
- WMO, through the implementation of the Bureau of Meteorology of Australia, delivered in-country trainings in the Cook Islands and Vanuatu on ACCESS-S, tropical cyclone seasonal forecasts, tropical cyclone data and portal, and tropical cyclone climatology with approximately 30 participants all together. In addition, a regional tropical cyclone seasonal prediction training was delivered to FMS/RSMC-Nadi staff including other participants from across the region.
- Under this outcome, a variety of Community-based Early Warning Systems (CBEWS) activities were implemented, notably in Niue and Kiribati, and a scoping mission was carried out in the Federated States of Micronesia (FSM). In Niue, support has been given for traditional-knowledge related activities being implemented by the Girls and Boys Brigade and the Niue Meteorological Service – notably the growing and harvesting of yam crops as a method to predict and measure the impacts of climate change and severe weather events in the country. In Kiribati, WMO, through the implementation of SPREP, worked on a variety of capacity development activities for KMS, including the organization of a national stakeholder coordination training and simulation workshop aimed at identifying and developing standard operating procedures (SOP) for issuing warnings for drought and severe weather events. Likewise, the CREWS project allowed for the procurement of communication equipment to the Kiribati Meteorological Service (KMS) for the enhancement of early warnings and a server for the Traditional Knowledge database. In FSM a scoping mission was carried out by SPREP to understand the way they operate between the 4

States and with the US National Atmospheric and Oceanic Administration (NOAA) and the national agencies. The activity implemented in FSM focused on building the capacity of communities to apply the information produced by the national and state Weather Service Offices (WSOs) on a daily, weekly, and monthly basis to decision-making and their pre-existing early warning processes.

Outcome 3 - Enhanced service delivery

- Under this outcome, and under the output related to the support and development of a regional ICT strategy, including the WMO Information System (WIS), to exchange and deliver meteorological, hydrological and ocean data information, WMO organized a regional WIS 2.0 workshop in 2024, delivered to approximately 20 technical staff of 13 Pacific SIDS participating in the project. This workshop will enable the implementation of WIS 2.0 in the Pacific before 2030, and for five countries under the next phase of the CREWS Pacific SIDS project.
- In May 2025, two workshops were organized by WMO for Regional Association V (South-West Pacific) Members on the efficient use of WIGOS tools in the context of Regional WIGOS Centres Functions, and on the advancement of RBON development and implementation in Region V. A total of 29 participants joined the workshops, of whom 28% were women.
- A Meteorology, Climatology and Hydrology database system (MCH) has been installed and configured at the premises of the Samoa Water Resources Division (WRD). WRD staff were trained in using the system (2023).
- Three National Climate Outlook Forums (NCOFs) have been successfully organized in the region, in Samoa (2021), the Solomon Islands (2022), and most recently, in Tokelau (2024) with support from NIWA. As part of Tokelau's initial phase, six participants from the Department of Economic Development, Natural Resources and Environment (ENDRE) were trained in New Zealand on the use of climate, ocean, and weather products to support informed decision-making across sectors and communities. In addition, NIWA developed a dedicated website to facilitate easy access to these climate products.

Outcome 4 - Enhanced communication and awareness programmes on early warnings

- Awareness raising posters for introducing impact-based warnings to a public audience and the impact from tropical cyclones were developed for Samoa under a WB-GFDRR activity. Posters for the Kiribati CBEWS activity were also printed and distributed by SPREP to the Kiribati Government Ministries.

Outcome 5 - Improved integration of gender across the EWS value chain

- Improved integration of gender and disability across the EWS chain. UNDRR promoted inclusive EWEA in a number of regional meetings and workshops by organizing special sessions on inclusive early warnings and bringing Pacific organizations for persons with disabilities. UNDRR jointly with key partners hosted special sessions on inclusive early warning early action at the Regional Meeting on Anticipatory Action in April 2024 and the Pacific Meteorological Council Meeting (PMC-7) in 2024 which promoted accessible warning for persons with disabilities.

- A special session on inclusive early warning early action was organized at the Media Mana Class (Communications Training) at PMC meeting in Vanuatu in September 2024. As part of the recommendations to the PMC Outcome document, NMHSs were encouraged to prioritize inclusive early warning messages and enhance financing and capacity building, including application of the UNDRR's Inclusive early warning early action checklist at the national level. UNDRR will follow up on these recommendations jointly with Gender Equality, Disability and Social Inclusion (GEDSI) specialist in 2025.

- UNDRR and WMO jointly with the EW4ALL Pillars leads and national governments conducted national EW4ALL stakeholders workshops in Fiji, Tonga and Solomon Islands in 2024. These workshops spotlighted the importance of inclusive early warning early action by bringing representatives from women's groups, organizations

	for persons with disabilities and civil society. The workshops resulted in the development of the MHEWS roadmaps which prioritize inclusive early warning early action, including accessible warning messages and communication. • WMO organized the second Women in Leadership in Meteorology and Hydrology Workshop (WILS) in Port Vila, Vanuatu, in September 2024, giving continuation to a successful training delivered under the first phase of the CREWS Pacific SIDS project in 2019. The workshop, attended by 30 women from 14 countries across the Pacific region as well as from interested technical partners, aimed to enhance leadership skills, foster collaboration, and provide a platform for participants to share experiences and learn from each other. • Media Mana Class training workshop - A two-day Media and Communications Mana Class was conducted on 11–12 September 2024 at the Warwick Le Lagon Conference Room in Port Vila, Vanuatu, ahead of the Seventh Pacific Meteorological Council Meeting (PMC-7). The training aimed to build the capacity of Pacific Meteorology, Hydrology, and Disaster Management professionals in effectively communicating weather forecasts, warnings, and critical messages to communities, particularly during extreme weather events. The workshop was delivered in partnership with the SPREP Communications and Outreach Unit, with support from Radio New Zealand Pacific, and Pasifika TV. A total of over 50 participants from 15 Pacific Island countries attended, including members of the Vanuatu Society for People with Disability. The training covered topics such as media engagement, inclusive communication, social media use, disaster messaging, and broadcast interview techniques. The activity highlighted the importance of strengthening collaboration with media partners to ensure timely and accurate dissemination of information to the public, supporting efforts to build resilience across Pacific communities
1.	

14. Rating of CREWS Indicators achievement

Complete the following for the selected CREWS indicators in the project results framework, at both outcome and output level. Use the unit of measure and disaggregation level defined for each indicator[1].

CREWS Outcome 1: National and local multi-hazard early warning systems prioritized and funded					
Indicator	**Baseline level**	**End-of project target level**	**End-of-project result (Set as a percentage)**	**If target was not achieved, please summarize the reason. If target was achieved, please summarize main achievements**	**Progress rating[2]**
# of LDCs and SIDS with national investment plans and budgets prioritizing multi-hazard early warning programmes	4 (Fiji, Kiribati, Tonga and Solomon Islands	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	1	Samoa has launched the Samoa MHEWS Policy for Meteorological Hydrological and Geophysical Hazards. In addition, through the project National Strategic Plans developed for Tonga, Solomon Islands, Vanuatu and Tokelau. These national strategic plans	

[1] CREWS Results Framework.
[2] Use scale system provided in the Annex of this document.

				outline Meteorological priorities on EWS and infrastructure. Similarly, CIS-PAC 5 project reviewed and updated, Cook Islands, Niue NMSs national strategic plan and the National Framework for Weather, Climate and Ocean Services (NFWCOS). Building of FSM , Marshall Islands and NMSs national strategic plans and FWCOS developed under the first phase of CREWS Pacific SIDS project, CIS PAC-5 developed the related implementation plans.	
Output 1.1 A country and/or region has developed or strengthened legislative and/or institutional frameworks to support and sustain multi-hazard early warning systems					
# of national plans, strategies and legislations on early warnings approved and/or implemented	9	8 – Tonga Legislations and regulation, NSP/FWCOS – Tokelau, Tonga, Solomon Islands and Vanuatu, EWEA Legal Framework for the Pacific, Solomon Islands NDMO Act 1989 review drafting instructions. Fiji Cost Recovery Framework for aeronautical meteorological services and the Samoa Groundwater Strategy Assessment.	100%	NSP and NFWCOS for Nauru, and Samoa were later picked up and funded by the ClimSA project through SPREP and WMO.	
# of coordination mechanisms strengthened or established to enhance collaboration on early warning among national or regional institutions	1	1	100%	The project supported the revision of the governance structures of PMC and PMDP thats resulted to the SPREP restructure with the creation of a new Division called the Climate Science and Information(CSI)	
Output 1.2 Multi-hazard needs, gaps and priority assessments, analyses and related investment plans for early warning systems in a country or region are driven by CREWS financing					
# of multi-hazard assessments, analyses and other mapping of needs, gaps priorities that inform investment requirements on early warning	**0**	14 countries have conducted gaps and needs assessments during the steering committee meetings for planning and prioritization purposes. Including technical assessments prepared for Tonga and Samoa by WB and assessments on FFGS and EWS-F for Fiji, Kiribati, Samoa, Solomon Islands and Vanuatu..	14	14 Pacific Countries have conducted their mapping of priorities needs that will be utilised to inform the next phase of CREWS in the Pacific. In additional technical assessments were conducted on FFGS and EWS-F for five countries as well as a technical assessment on Samoa's Groundwater status.	

Output 1.3. Partnerships and cooperation frameworks developed for financing and scaling up support to multi-hazard early warning systems					
Total volume of funds leveraged by national institutions and development partners (in USD) through CREWS investments	0	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.		Approximately USD 675,000 in funding leveraged by the Implementing Partners through the CREWS Pacific SIDS 2.0 project.	
# of LDCs and SIDS benefiting from GCF resources through the GCF-SAP CREWS Scaling Up Framework	0	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	1	Official letters from Fiji and Vanuatu to the SPREP requesting SPREP as the AE to assist with developing the GCF SAP - CREWS Scaleup Framework for EWS proposals for Fiji and Vanuatu. SPREP responded and agreed to be the AE and to assist Fiji and Vanuatu to develop the proposal.	

CREWS Outcome 2: Improved early waning service delivery and accessibility by national and regional institutions					
Indicator	**Baseline level**	**End-of project target level**	**End-of-project result**	**If target was not achieved, please summarize the reason. If target was achieved, please summarize main achievements**	**Progress rating**
EW Maturity Index	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A	N/A	
# of hazards which pose a risk of life and economic loss for which forecasting and warning services are in place in LDCs and SIDS through CREWS support	3	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	4	The CREWS Pacific SIDS 2.0 project actively supported NMHSs in enhancing their capacities in forecasting and producing warning on tropical cyclones, coastal inundation, droughts and flooding risk criteria were developed. Workshops on IBFWS and CAP were implemented in selected countries at the regional level.	
Output 2.1 Risk information and tools generated by countries to enable the delivery of impact-based early warnings					
# of risk data tools developed or strengthened to generate early	2 Samoa and Tonga (WB)	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the	2	The project developed IBFWS for Vanuatu and Solomon Islands after identifying their priority risk and establishing a	

warning products and/or support impact-based warnings.		development of the CREWS MEAL Framework.		risk matrix and process of implementing IBF nationally. The project was able to successfully implement a train the trainer model with Solomon Islands Experts supporting Vanuatu's implementation. The project also completed the implementation of the impact-based coastal inundation forecasting for Kiribati and Tuvalu through SPC.	
Output 2.2. Monitoring, analysis and forecasting of hazards that threaten the country/region are improved and sustained by the countries					
# of functioning monitoring and observation systems established or strengthened per hazard		No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.			
# of hazards monitoring, analysis and forecasting processes developed or improved	0	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	5 processes developed and/or improved (includes SWFP, FFGS, CIFI, IBFWS)	5 countries completed FFGS and EWS-F assessment reports. Additionally, 1 country implemented IBFWS to improve its warning messaging. FMS SWFP was improved with the installation of equipments and trainings to improve its services in forecasting.	
# of forecasting and prediction products developed and/or accessed from WMO Global Prediction Centers (GPCs), Regional Specialized Meteorological Centers (RSMCs) and NMHSs.	1	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	2	The CREWS Pacific SIDS 2.0 project directly supported the technical and human reinforcement of FMS/RSMC-Nadi, through the procurement of storage nodes for FMS high-performance computer, and capacity building of personnel working in support of the region. In addition, the project provided FMS/RSMC Nadi with ECMWF modelling tool for numerical predictions.	
Output 2.3 Warnings are communicated by the countries based on common alerting protocols under agreed standard operational procedures (SOPs)					

# of warnings issued in CAP format	1	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	0		
# of updated LDCs and SIDS entries in the WMO register of alerting authorities	1	1	100%	Vanuatu joined the Solomon Islands in becoming the second country in the Pacific region CAP compliance and operational.	
# of communication channels through which warnings are disseminated in the area covered by a prediction service for a given hazard(s)	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	0		
Output 2.4 Warnings are received, understood, and acted upon based on co-produced preparedness and response plans by the countries					
# of preparedness and anticipatory action plans or Standard Operating Procedures (SOPs) that are operational and linked to prediction and warning services	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A0		
# of risk maps, advisory and other warning products that are available and adapted to the user group/development sector needs	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	5	Community-based EWS for Kiribati produced SOPs for communities in its outer islands to respond and allowed for awareness training on warning messages and products. Traditional Knowledge was also collected and stored in procured hardware.	

CREWS Outcome 3: Early warning programmes are driven by people-centered and gender-responsive principles and promote private sector engagement					
Indicator	**Baseline level**	**End-of project target level**	**End-of-project result (Set as a percentage)**	**If target was not achieved, please summarize the reason. If target was achieved, please summarize main achievements**	**Progress rating**
Level of integration of people centered and	1	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A3	Completion of the EW-EA Checklist and guide, this was developed with consideration of specific needs of persons with disabilities. In addition, a Women Leadership	

gender responsive approaches [3]				Workshops enabled more than 30 women to be coached and trained on leadership aspects and expectations. Finally, the project conducted a Media Mana Class for all NMHSs Directors to develop skills on communicating information through various media forms including persons with disabilities.	
Level of users' engagement satisfaction in the people-centered and gender-responsive approaches/activities[4]	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A		🔴
Output 3.1 People of different backgrounds, gender, youth, older persons, people with disability, poor, marginalized, displaced, and non-native, as well as related institutions have co-produced climate and weather information products tailored to their needs					
# of climate and weather information products co-designed to users' needs by group representing vulnerable segments of exposed populations	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A		🔴
# of women and men trained through X # of capacity building programmes provided by CREWS	0	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	More than 100	Approximately 53.69% of people trained under the CREWS Pacific SIDS 2.0 project are women.	🟢
# of CREWS projects that have included gender equality early warning as an objective or outcome.	1	1	100%	The CREWS Pacific SIDS 2.0 project included gender equality early warning as a specific project outcome.	🟢
# of target outputs and activities on gender early warning (e.g., assessments and capacity building)	0	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	2	The CREWS Pacific SIDS 2.0 project had a specific outcome and output, with specific activities on gender early warning, including the Women in Leadership Workshop, and the development of an inclusive	🟢

[3] Please grade your project based on the following criteria: **Low**- The project did not perform consultations, activities to promote gender quality, and activities /developed products with a people-centered approach. **Medium**- There is evidence of the project performing at least one consultation, one activity to promote gender equality, and one activity/product developed with a people-centered approach. **High**- There is evidence the project performed more than one consultation, activities to promote gender equality, and activities/products developer with a people-centered approach.

[4] This indicator will only be completed when the survey is performed. Please provide the overall result of your survey result based on the following criteria: **Low**- Users do not feel the project considered their opinion, context and experience when developing or strengthening early warning systems. **Medium**- Users feel the project somewhat considered their opinion, context and experience when developing or strengthening early warning systems. **High**- Users feel the project considerably considered their opinion, context and experience when developing or strengthening early warning systems.

				early-warning early-action guide.	
Output 3.2 Private sector is engaged to foster innovation and sustainability in delivery of early warning services					
# of agreements with private sector to co-finance or co-implement Early Warning System initiatives	N/A	No end-of project target level was developed for this indicator at the time of the project development (2020) – previous to the development of the CREWS MEAL Framework.	N/A		

15. Lessons learned and challenges

Provide important challenges and lessons learned, in bullet points, in terms of what worked well, what did not, what can be improved from the project, including what were the factors that hindered or enabled successful project implementation (200 to 250 words).

Challenges

- Long delays in receiving reports from implementing partners and vendors resulted in the delays of activities and requests for no-cost extensions to the CREWS Secretariat.
- Travel and communication delays resulting from hazardous events: COVID-19, Hunga Tonga- Hunga Ha'apai volcano eruption.
- Availability of local experts to support activities led to delays in recruitment. First attempts to recruit successful firms/consultants were unsuccessful and recruitment campaigns had to be revised and issued for a second time.
- Long periods to conclude operational processes, notably procurement of goods and services.
- The emphasis on communication materials and visibility products needs to be improved so to capture lessons and best practices.
- NMHSs' human resources are often stretched, as they balance project-related activities with national operational priorities. This can lead to delays in implementing activities on the ground, particularly when staff are required to take on additional responsibilities without corresponding increases in capacity or support.

Lessons Learned

- CREWS funding is most effective when used with awareness of other active projects to complement/ supplement activities
- Identify activities that can be grouped together to make packages of work more attractive to consultants/ firms to improve the chances of a successful recruitment campaign.
- The importance of identifying key user needs for impact-based warnings to inform warning designs, communication and dissemination methods (Tonga and Samoa).
- Through thorough training in good practice for designing and communicating impact-based warnings, countries recognise the difference consistent, clear, risk-based information can make to the effectiveness of warning information (Tonga and Samoa)
- In the absence of sufficient historical datasets for hydromet hazards, more investment is needed for effective risk decision aid tools, to translate hazards into impacts
- Early engagement with disaster management agencies facilitates the development of impact-based warning services.
- CREWS initiative facilitated a platform/avenue to bring hydro-meteorological and disaster management communities together for joint discussions and planning of the early warning activities at the country level (regional workshops and steering committee meetings).
- CREWS initiative facilitated engagement with broader stakeholders such as women's groups and organisations for persons with disabilities, communicates and civil society across the Pacific region.

A few lessons learned captured by the Project Evaluation report include the following:

- Value Added: Small, well-targeted investments addressed critical gaps and delivered meaningful benefits.
- Flexible Delivery: Light governance and a trust model enabled responsive and adaptive implementation.
- Regional Coordination: Continuous WMO presence in Samoa strengthened links between countries, regional agencies, and Geneva.

Areas for Improvement:

- Develop a clear Theory of Change to link activities to impacts.
- Refine indicators and monitoring (gender, feedback, and results tracked consistently over time).
- Consider in-country project management support to ease workload on national agencies.

16. Sustainability and exit strategy

Provide a description of the exit measures undertaken to ensure sustainability of the results attained by the project/programme. The section should also cover key recommendations to guide and/or improve similar interventions in the future. (200 to 250 words).

The approved Pacific SIEWAP project under the third phase of CREWS funding in the region represents a direct continuation of CREWS 2.0, aiming to scale up impact-based early warning services and strengthen coordination between hydrometeorological and disaster management sectors.

Additionally, several strategic measures have been implemented. Key activities especially under Outcome 2.1, which focuses on institutional strengthening and impact-based forecasting are being integrated into ongoing World Bank–supported programs such as the Pacific Resilience Program (PREP) in Tonga and the proposed PREPARE initiative in Samoa, ensuring continued impact and institutional progress

In addition, technical components like the Common Alerting Protocol (CAP) implementation and improved risk communication are being advanced through the Weather Ready Pacific Programme. The Systematic Observations Financing Facility (SOFF) is also supporting National Meteorological and Hydrological Services (NMHSs) in implementing WIS 2.0, enhancing data sharing and building on previous CREWS capacity-building investments.

Key recommendations highlight the importance of:

- Aligning new projects early with national priorities and existing programs (e.g., PREP, PREPARE, Weather Ready Pacific) to foster national ownership and long-term sustainability.
- Strategically packaging activities and tailoring support to NMHSs' capacity, which can reduce implementation delays and improve the delivery of project outcomes on the ground.

17. Knowledge management and social media

Provide a list of knowledge activities / products (when applicable) that were produced and not included in the last status report. Include any links to press releases, videos, or communication items and/or social media. Please attach with this report any supporting files, including photos, videos, stories, and other documents.

UNDRR Asia-Pacific on X: "Persons with disabilities are often the most affected by disasters. Our brand-new guide will help ensure that early warning systems are tailored to the specific needs of persons with disabilities.

Vanuatu Meteorology and Geo-hazards Department (VMGD) staff prepare for upcoming Tropical Cyclone season

Empowering Pacific Women: Leadership in Meteorology and Hydrology

Strengthening coordination for improved response to early warnings in Kiribati | Pacific Environment

Kiribati begins preparations for yet another La Niña in the Pacific | Pacific Environment

CREWS Pacific project enhances communication of early warnings in Kiribati with donation of communications equipment | Pacific Environment

Strengthening coordination for improved response to early warnings in Kiribati

Niue CBEWS

Multi-hazard early warning systems in Fiji

How the Pacific is leading the way in anticipatory action | UNDRR

18. Partnerships & stakeholder engagement

Optional: If the project worked with any of the following partners that were not included in the last status report, please provide a summary of the partnership activities.	
Civil Society Organisations and/or NGOs	The project worked with National Red Cross Societies in delivering CBEWS activities in partnership with SPREP as the lead agency. In addition, the Pacific Disability Forum were fully engaged in the development of the EW-EA guides and checklists for the NMHSs. Additionally, the various village communities from the Pacific Island Countries as beneficiaries all contributed to the development of their SOPs for EWS. The project also engaged with the Niue Girls Brigade in advancing its work on climate science awareness and traditional knowledge.
Academic Institutions	ır activities were not with universities specifically but in partnerships with BMKG, NIWA,)M as technical agencies provided quality trainings and workshops that improved the skills d knowledge of the NMHS staff.
Private Sector	The project, through the Pacific Meteorological Council Meeting support, worked closely with Varysian through the partnerships with SPREP to bring together Private companies to participate in PMC-7 in Vanuatu.

19. Financial management

Total financing approved (in approved project proposal):	USD 4,799,000
Cumulative amount by end-of-project *(how much has been used, actual expenditure)*:	USD 4,774,098.36
Percentage used by end-of-project*:*	99%

20. Supporting documents

List and annex to the report any documents providing details on project activities that where NOT reported in the final status report such as reports of training sessions, assessment reports, online solutions and tools, manuals, summaries of high-level discussions etc.

Inclusive early warning early action: checklist and implementation guide
Gender-responsive and disability-inclusive early warning and early action in the Pacific region
Final report of the 21st RA V Tropical Cyclone Committee South Pacific and South-East Indian Ocean
Common alerting protocol (CAP) implementation workshop for Pacific, Port Vila Vanuatu, from 14 to 16 November 2023
Task 2 Technical Report Tonga
Task 2 Technical Report Samoa
User Research Report Tonga
User Research Report Samoa
Pacific Partner Coordination Mechanism Dashboard
Pacific Regional Women in Leadership Workshop – Port Vila, Vanuatu

WMO RA V WIGOS Hybrid Workshops (19-23 May 2025) SPREP Narrative Reports

1. Annex. Progress rating

Interpretation of color coding		
Achieved		The indicator achieved its end-of-project target.
Partially achieved		The indicator's end-of-project target was only partially achieved.
Not achieved		The indicator's end-of-project target was not achieved, and no progress was made during implementation.