CREWS Project Proposal Document		
Project Title	Scale up Inclusive Early Warning and Action in the Pacific (SIEWAP)	
Document Reference	CREWS/RProj/19/Pacific Phase 3	
Geographic coverage	Pacific Small Island Developing States (SIDS): Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Republic of the Marshall Islands, Nauru, Niue, Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu.	
Timeframe	Four years	
Total CREWS Contribution	US$ 5,596,325	
Lead Implementing Partner	World Meteorological Organization (WMO)	
	a. Execution	US$ 3,542,500
	b. Fees	US$ 460,525
	c. Total	US$ 4,003,025
Additional Implementing Partners	United Nations Office for Disaster Risk Reduction (UNDRR)	
	a. Execution	US$ 1,410,000
	b. Fees	US$ 183,300
	c. Total	US$ 1,593,300
Main objective(s)	Scaling up people-centered and end-to-end multi-hazard early warning systems across the Pacific.	
Project Recipient/ Beneficiary (*people and organisations at risk who are the intended beneficiaries of the project at impact level)*	The primary beneficiaries of this project are the communities and the 2.3 million people living in the participant 14 Pacific SIDS , who face directly and indirectly the impacts of multiple climate-related hazards such as tropical cyclones, floods, coastal inundation, tsunamis and droughts. These communities will benefit from enhanced Early Warning Systems (EWS), increased preparedness, and improved response capabilities. The key stakeholders involved in the delivery the project include: - National Meteorological and Hydrological Services (NMHSs) - Regional Specialized Meteorological Center (RSMC) Nadi - National Disaster Management Offices (NDMOs) - Line Ministries involved in the early warning value chain - Non-Government Organizations (NGOs) to support community outreach, education and capacity building activities - Organizations for persons with disabilities, youth and women's groups. - Local Communities	
Additional Operational Partners	The key partners for this project include regional, national, and international organizations that will directly benefit from enhanced capacity, products and services delivered by the project.	

(*intended direct beneficiaries of the project in the form of increased capacity, products and services the project will deliver)* [OBJ]	These partners will gain improved tools and resources, enhanced engagement and coordination among EWS stakeholders for better management of EWSs and disaster management coordination efforts. The partners are: - The Secretariat of the Pacific Regional Environment Programme (SPREP) - The Secretariat of Pacific Community (SPC) - The Pacific Disability Forum (PDF) - National Institute of Water and Atmospheric Research (NIWA) - International Groundwater Resources Assessment Centre (IGRAC)	
Initial state of play	a. Vulnerability, exposure to risks, disasters impact (on people and economy)	Of the approximately 4.6 billion people in Asia-Pacific, the 2.3 million inhabitants of the Pacific's Small Island Developing States (SIDS) still face the highest levels of disaster and climate risk. According to the Asia-Pacific Disaster Report 2022[1], the risk levels in Pacific SIDS remain three to four times higher than other subregions in Asia-Pacific, largely due to their exposure to cyclones, floods, and sea-level rise, alongside limited adaptation resources. Within the region, between 2015 and 2020, the subregion of the Pacific SIDS suffered the highest economic losses as a percentage of GDP, with an average loss of almost 9 per cent of GDP[2]. This was largely due to Tropical Cyclone Harold in Tonga, which alone caused an estimated economic damage of over $125 million or almost 28 per cent of the country's GDP for that year. The World Risk Report 2021[3] continues to rank several Pacific SIDS among the world's ten most at-risk countries. These include Vanuatu, Tonga, and the Solomon Islands, which frequently face extreme hydro-meteorological and geo-hazard events exacerbated by climate change. The socio-economic impacts of these disasters are pushing thousands into poverty each year. In Fiji, an average of 25,700 people—3% of the population—are being pushed into poverty annually due to climate-related disasters, with Cyclone Harold in 2020 being a recent example of a major event that devastated Fiji, Vanuatu, Solomon Islands, and Tonga. Prior to that, Tropical Cyclones Gita, Winston, Pam, and Evan caused an estimated US$1.7 billion in damage across the region. In 2023, Vanuatu was devastated by two Category 4 tropical cyclones, Judy and Kevin, both of which struck the islands in the same month. These cyclones caused widespread destruction, affecting over 271,000 people and leading the government to declare a national state of emergency. The damage included power outages, water shortages, and extensive damage to homes and infrastructure[4]. The increasing frequency and intensity of such disasters are pushing the region into deeper crisis, highlighting the need for urgent action on climate adaptation and disaster risk reduction. According to the Paris Agreement, limiting global warming to below 1.5°C will significantly reduce the risks

[1] Asia-Pacific Disaster Report 2022 from the UN Economic and Social Commission for Asia and the Pacific (ESCAP)(Resilience Portal).
[2] UNESCAP. Asia-Pacific Disaster Report 2023. https://www.unescap.org/kp/2023/seizing-moment-targeting-transformative-disaster-risk-resilience#
[3] World Risk Report 2021 findings on at-risk countries in the Pacific (Resilience Portal).
[4] Vanuatu National Disaster Management Office (NDMO) and the IFRC's reports on Cyclones Judy and Kevin (ArcGIS StoryMaps)(National Disaster Management Office)(DFAT)

		and adverse impacts of climate change, which includes increasingly frequent and extreme weather events. Countries situated in the Ring of Fire and sites of seismic activity around the edges of the Pacific Ocean will experience risks of climate hazards, such as flooding and tropical cyclones under both 1.5°C and 2°C levels of warming, in addition to the existing risk of tectonic shifts and earthquakes[5]. The climate crisis is not "gender neutral". Women and girls are often disproportionately impacted, amplifying existing inequalities. Drought conditions also continue to affect parts of the North Pacific, compounding the region's vulnerabilities. The Government of Kiribati declared a State of Disaster due to drought and two islands of Tuvalu (Nanumea and Nui) declared drought conditions in 2022. Water accessibility and availability, and health related needs were the primary concerns of affected people. Moreover, localized events, such as floods, storm surges and landslides, continue to erode development efforts. The January 2023 floods in Honiara, Solomon Islands, are a stark reminder of the cumulative impacts of such smaller but frequent disasters on communities. Pacific Island nations are on the frontlines of the climate crisis, with many having initiated radical adaptation strategies, including managed retreat and relocation. For these nations, climate adaptation is not a choice, but a matter of survival. Geological hazards also pose significant development challenges and destruction in the region. The Hunga-Tonga-Hunga-Ha'apai volcanic eruption in January 2022 triggered tsunami waves and affected 100,000 people living in Tonga. Houses, roads, infrastructure and communication lines sustained severe damage. Additionally, in December 2024, the 7.4 magnitude earthquake severely impacted the capital city Port Vila, of Vanuatu testing the nation's already fragile economy[6]. The earthquake claimed 14 lives and affected more than 80,000 people. In the region where hydrometeorological and geological hazards can have such devastating consequences, effective early warning and disaster risk management is crucial. The Pacific SIDS should continue investing in early warning systems, strengthen disaster risk reduction structures and coordination mechanisms.
	b. Status of the EWS, DRM institutions and NHMSs, actors / players present	Target G of the Sendai Framework for Disaster Risk Reduction monitors the availability of and accessibility to multi-hazard early warning systems and disaster risk reduction information. According to the report on the Global Status of the MHEWS in 2024, the Asia and Pacific region has the highest level of coverage, where two thirds (67%) of countries reported the existence of MHEWS.[7] Despite high coverage, gaps remain in the operationalization and maintenance of the observation networks, poor data availability and quality, weak governance, and limited human and

[5] UNESCAP. Asia-Pacific Disaster Report 2023. https://www.unescap.org/kp/2023/seizing-moment-targeting-transformative-disaster-risk-resilience#

[6] Vanuatu: The challenge to build back | Lowy Institute

[7] United Nations Office for Disaster Risk Reduction and World Meteorological Organization (2024). Global Status of Multi-Hazard Early Warning Systems. Geneva, Switzerland.

		technical resources. These gaps and challenges were confirmed by the NMHS and NDMO representatives during the EW4ALL regional workshop and the CREWS Pacific 2.0 Steering Committee meetings in April 2024 as well as during the national EW4ALL rollout workshops in the Pacific. Pacific SIDS have been making significant investments in early warning systems by improving detection, monitoring and forecasting of hazardous events. However, reaching the last mile remains a challenge. Early warning products and services are not always accessible for all, especially persons with disabilities. Gender, disability and social inclusion analysis and approaches have not been sufficiently mainstreamed in the design and implementation of EWS at the national and local levels[8]. Fiji Meteorological Service (FMS) serves as WMO-designated RSMC-Nadi, specializing in tropical cyclone forecasting. In this role, it not only serves Fiji but also supports six other Pacific SIDS, namely Cook Islands, Kiribati, Nauru, Niue, Tokelau, and Tuvalu. Furthermore, it provides advisory assistance to Samoa and Tonga. As the RSMC is integrated within FMS, it operates without additional financial or human resources support, meaning the limited resources of FMS are stretched to cover both its national, regional and international responsibilities. This is particularly challenging given the wide area the RSMC-Nadi covers and the significant demands of its national, regional and international roles. Enhancing the capabilities of RSMC-Nadi has been a priority of the CREWS Pacific SIDS projects since its inception in 2017. NMHSs are key in delivering critical weather and climate-related information. They work alongside agencies such as NDMOs, emergency responders, the media, NGOs, and humanitarian organizations to facilitate national Early Warning Systems (EWS). Pacific SIDS NMHSs and NDMOs receive assistance from global partners like the UN agencies including WMO, UNDRR, UNDP, UNOCHA, WFP, UNICEF to name a few as well as regional organizations such as SPREP and SPC. Furthermore, technical assistance on hydrometeorology is also provided at the regional level by NIWA, the Meteorological Service of New Zealand, and the Australian Bureau of Meteorology (BoM), US NOAA, Metéo France, UK Met Office and BMKG. On inclusive EWS, Pacific NMHSs and NDMOs rely on the counsel and expertise of regional organizations such as the Pacific Disability Forum (PDF), who actively voice their demands on ensuring participation of people living with disability in the EW-value chain. Despite the support of various regional and international projects, Pacific NMHSs continue to face significant challenges. Limited resources, both financial and human, hinder their ability to provide comprehensive and timely weather forecasts and warnings. The vast geographical area they

[8] UNDRR (2023). Gender-responsive and disability-inclusive early warning and early action in the Pacific region

		cover, combined with the complexities of monitoring remote islands, further stretches their capacity. Additionally, many Pacific NMHSs lack the advanced technology and infrastructure needed for accurate, real-time data collection, exchange and analysis. NDMOs also face obstacles in effectively implementing disaster preparedness and response strategies. Communication gaps between agencies, insufficient community-level engagement, and limited integration of early warning systems in remote or vulnerable areas remain key issues. Furthermore, NDMOs often struggle with maintaining sustained funding and capacity-building initiatives, which are critical for long-term resilience in the face of increasing climate-related disasters. Pacific Governments and their national and regional partners have been exploring opportunities to test anticipatory action (AA) approaches at regional and national levels. The focus on anticipatory action in the region has been reprioritized since 2023 with the hosting of the first Pacific Week of Anticipatory Action (Nadi, Fiji March 2023) and with a follow up regional meeting held in Sigatoka, Fiji in April 2024. These regional events have subsequently resulted in a number of regionally and nationally led initiatives, including the development of AA Framework for Tropical Cyclone in Fiji, Anticipatory Insurance for Tropical Cyclone in Fiji, early Action protocols by Red Cross and the several national awareness raising workshops in the Pacific. These initiatives showcase the greater need for connecting early warnings to early actions through anticipatory approaches on top of IBFWS, CbEWS and others. With the support of the global and regional initiatives such as EW4ALL, WRP, CREWS and Anticipatory Action, UNDRR and WMO brought together NDMO and NMHS to enhance coordination mechanisms, partnerships and develop national MHEWS roadmaps. This strengthened coordination advances early warning and early action at the national and local levels.
	c. Projects and programs dealing with EWS and hydromet under implementation or preparation	**The project will complement and scale up the following regional and national initiatives:** • **The Weather Ready Pacific Program (WRPP)[9],** a decadal program providing the overarching programmatic framework for meteorology's priorities and coordination in the Pacific region with funding commitments from Australia of 30 million AUD, from New Zealand of 20 million NZD and from the UKMET Office – Weather and Climate Information Services (WISER) Program of 300,000 £, supporting priority activities in 2024 since its inception in mid-2023. The WRPP focuses on the following 5 key result areas (i) Management and coordination, (ii) Production of forecasts and warnings; (iii) Communications and delivery of forecasts to end users; (iv); Infrastructure; (v) Capacity development and training. The CREWS SIEWAP project jointly with WRP will support the establishment of the Regional MHEWS Technical Working Group (TWG) to coordinate EWS related initiatives in the Pacific. This TWG will be used for sharing information, coordinating and complementing EWS projects.

[9] Weather Ready Pacific | DEV ENVIRONMENT

		Furthermore, CREWS SIEWAP will complement activities implemented by the WRPP such as CAP and WIS2.0 implementation where WRPP is covering 7 countries and SIEWAP will support additional countries and vice-versa by sharing information regularly, through joint country missions and joint planning in its technical committee weekly meetings and project steering meetings. Both initiatives recognize the importance in complementing funding for the development and implementation of EWS activities in the Pacific Region. • **The Green Climate Fund (GCF) is providing a 49.9 million USD project titled** Enhancing Climate Information and Knowledge Services for resilience in 5 Island Countries of the Pacific Ocean (CIS-Pac5 Program). A 6 year (2020-2026), USD 49.9M GCF funded program and implemented by UNEP. The participating countries are the Cook Islands, Niue, Palau, Marshall Islands and Tuvalu. The program results including (i) Strengthened delivery model for climate information services and multi-hazard early warning systems covering oceans and islands; (ii) strengthened observations, monitoring, modelling and prediction of climate and its impacts on ocean areas and islands; (iii) improved community preparedness, response capabilities and resilience to climate risks; and (iv) enhanced regional knowledge management and cooperation for climate services and multi-hazard early warning systems. The new CREWS project will continue its collaboration with CIS-Pac5 Program to coordinate activities and support regional initiatives. • **Intra-ACP Climate Services and Related Applications Programme ClimSA Pacific region** – The EUR 9M Pacific component of ClimSA is implemented by SPREP and the global ClimSA programme has a total budget of EUR 85M under the intra ACP Cooperation. Key result areas are: (i) interaction between the users, researchers and climate services providers in ACP countries is structured; (ii) provision of climate services at regional and national levels is effectively guaranteed and secured; (iii) access to climate information is improved; (iv) capacity of ACP regions is enhanced to generate and apply climate information and products relevant to their particular concerns; and, (v) climate-informed decision-making is enhanced and climate services are mainstreamed into policy processes at regional and national levels. Focus countries are Kiribati, Nauru, Tonga and Samoa with Agriculture and Disaster Risk Reduction as the priority sectors. The new CREWS Project will continue to collaborate and coordinate activities with CLIMSA to ensure its support to its members on climate applications. • **Climate and Oceans Support Program in the Pacific – (COSPPAC) – 2012-2027**, this program is a component of Australia's contribution to minimizing the impacts of climate variability and change in the Pacific. Its focus is on 5 key deliverables that include Infrastructure support, Products and

		services improved, Enhance communication with stakeholders, capacity building and training support and improved governance. All five deliverables have a strong Gender Equity and Disability Inclusion (GEDSI) focus. • **Climate Information Services for Resilient Development in Vanuatu** (**Van CIS RDP**), also known as Van-KiRAP, is implemented by SPREP and focuses on (i) capacity development; (ii) user interface platform; (iii) climate information services system; (iv) observations and monitoring; and (v) research, modelling and prediction. It is a USD 19.854M GCF Funded project. The SIEWAP project will complement the activities of the Van-KiRAP GCF project in expanding the support on VMGDs ICT infrastructure (WIS2.0 and CAP). • **Pacific Early Warning Systems for Floods** (**EWS-F**) and **Flash Flood Guidance System (FFGS)** projects are funded by the USAID/BHA and covers the following countries, Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. It aims to enhance the capacity of NMHSs in the selected countries enabling them to provide timely and accurate flood forecasts and warnings. • **SOFF** – is a delivery vehicle for the EW4ALL Initiative. It supports countries to generate and internationally exchange basic weather and climate observations and ensure GBON compliance. SOFF has approved support for 14 PICs amounting to USD 33M. SOFF hands on, peer-to-peer technical assistance in the Pacific is provided by the Australian Bureau of Meteorology (BOM), Met Service New Zealand and UK Met Office. Presently 2 Pacific SIDS, namely Solomon Islands (USD 8,488,524) and Kiribati (USD 11,155,102) have reached the investment which mean that fundings have been approved and disburse to them to implement SOFF. • **CREWS Pacific SIDS 2.0 Project- 2020-2024 (USD 4.8M**) – This is the ongoing CREWS project with a target to complete all implementation in early 2025. The project looked at enhancing the effectiveness and inclusiveness of regional EWS for local and vulnerable populations in Pacific SIDS, improving early warning capabilities of national and regional hydro-meteorological centers and strengthening existing governance structures. The CREWS SIEWAP project will build on and scale up the outcomes of the CREWS Pacific SIDS 2.0 project, notably those related to ICT and data capacity of NMHS, gender and social inclusion, and disability-inclusive EWS. • **CREWS EW4ALL** multi-stakeholders accelerator for LDCs and SIDS is an 18-month global multi-country project **(USD5,458,637**), implemented by UNDRR, WMO, ITU and IFRC in LDCs and SIDS (among which Kiribati, Solomon Islands, and Tonga) to strengthen the availability, access and use of accurate timely and disaggregated climate and risk information for MHEWS; Enhance the accuracy and timeliness of weather and climate related forecasts and warnings; Improve the quality and coverage of multi-hazard early warning communication and

		dissemination; Promote early and anticipatory action for various weather and climate related disaster and ensure preparedness and response capabilities are in place; and strengthen coordination of investment in MHEWS. CREWS SIEWAP complement and support the implementation of the gaps and priority activities identified in the MHEWS Roadmaps in Kiribati, Solomon Islands and Tonga. The priorities highlighted in the MHEWS roadmaps have helped WMO and UNDRR to frame activities for SIEWAP project. • **CREWS Tonga MACRES** - The CREWS Accelerated Support Window project, of USD 200,000, developed a MHEWS national mobile application for Tonga. The application has already been finalized and officially launched by Tonga Meteorological Services in 2024. The SIEWAP project will develop a communications plan for TMS that will reflect the MACRES App and responses for relevant sectors. • **CREWS Vanuatu ASW** – The CREWS Accelerated Support Window for Vanuatu, of approximately USD 250,000, aims at assessing the accuracy of warnings issued during Tropical Cyclones Judy and Kevin and Other Hazards and Impacts on Vanuatu's MHEWSa. The assessments that will be produced under the project will inform the VMGD EW4ALL Roadmap. The Roadmap will highlight VMGDs key priorities that SIEWAP will look to support and add value to. **Pipeline projects** • **Climate Information and Early Warning Systems, One Pacific Programme Concept Note – GCF**. The proposed project will contribute to the implementation of WRP and EW4ALL. Its goal is to consolidate and scale up the availability and use of climate and ocean information services and impact-based warning systems in the pacific to enhance adaptive capacity, strengthen resilience, reduce vulnerability, and minimize losses and damages associated with the adverse effects of climate change and extreme weather. The project will have a duration of 10 years and support all 14 Pacific SIDS. • **Upgrading Hydrological Services for Climate Resilient Water Security in the Pacific SIDs – SAP** proposal through SPREP for the focus countries -Niue, Fiji, Samoa, Solomon Islands, Tonga and Vanuatu. It has 3 components that include strengthening regional coordination mechanisms for NHSs, Capacity Building and Community engagement and awareness. • **Multi-country Project Advancing Early Warnings for All (EW4All) in Fiji (UNDP) -** The objective of the multi country support programme will be to accelerate and scale up EWS support to countries in an unprecedented manner through stimulating and fast-tracking the design and funding of multiple regional and national projects tailored to country needs over the next years. The GCF funded project once approved will deliver a minimum standard MHEWs, with a focus on countries and

		people left furthest behind. It is based on the priority actions required to meet the targets of EW4All. The project will begin to work with 7 countries (Antigua and Barbuda, Cambodia, Chad, Ecuador, Ethiopia, **Fiji**, and Somalia) under a Multi Country Framework. • **SOFF** – Pipeline approved for the Pacific are the following (USD): Nauru – 6,194,529 Samoa – 6,005,375 • **Pacific Region Preparedness, Adaptation and Resilience – Samoa** (2026-2031). A USD 30M proposal in the pipeline through the World Bank for Samoa Ministry of Natural Resources and Environment and Ministry of Works, Transport, and Infrastructure. The proposal looks at improving the capacity of the Government of Samoa to prepare for and manage the impacts of natural hazards effectively, to strengthen the resilience of select urban areas, and in case of an eligible crises or emergencies. • GCF- CREWS Scale-Up for early Warning will support Fiji, Vanuatu and Kiribati for up to USD25M. Currently consultations with the Governments and relevant agencies are under way.
	d. Describe the multiplier /leveraging potential of the CREWS investments	With an estimated total leveraging value of over USD 200 million, the new CREWS Pacific SIDS project will effectively scale-up ongoing efforts in the region, ensuring that investments and activities contribute to the shared goals of climate change adaptation and resilience, improved early warning systems and sustainable development. The new CREWS Pacific SIDS project is strategically designed to complement and leverage existing national, regional and global MHEWS initiatives in the Pacific. The project aims to leverage existing funding and program approaches, elevate national and local efforts to strengthen MHEWS and ensure strong collaboration and knowledge sharing. Specifically, the project will focus on enhancing synergies with ongoing and planned programs and projects funded by the Green Climate Fund (GCF), the Government of Australia, USAID/BHA, the OACPS and the European Union, World Bank and other partners. This will be done through close coordination and consultation with key stakeholders within the project preparation and implementation phase. The project will consolidate and strengthen existing efforts on climate and risk information technology systems, MHEWs, anticipatory action and climate adaptation and resilience across the Pacific SIDs. By aligning with the Weather Ready Pacific (WRP) and the EW4ALL Initiative, the CREWS project will build upon existing national capacities and infrastructure and leverage investments for nationally led MHEWS. Through close collaboration, the project will enhance coordination among EWS stakeholders at all levels, meaningfully engage with local communities, and incorporate their knowledge and coping strategies while ensuring that interventions complement and contribute to the overarching goals of WRP and EW4ALL. One of the main ways the CREWS project will leverage existing investments is through the GCF funded regional and national projects such as the CIS-Pac5 Program, with financial

		grant of approximately USD 49.9M. The project will complement this initiative by strengthening regional coordination, supporting infrastructure developments and providing co-support towards specific training. Additionally, the CREWS SIEWAP project aligns well with the other GCF projects developed and under development at the national level, such as the VANKIRAP Project (USD 19M),the SPREP EU-ACP CLIMSA Pacific project (USD 9M), and the GCF-CREWS scale-up for Fiji, Vanuatu, Kiribati (USD 25M each) on climate applications and services and utilizing its lessons learned to influence planned activities under the new project. Furthermore, the project will build on ongoing projects like the USAID EWS-F and FFGS to enhance and improve hydrological monitoring, flood forecasting and EWS to reduce PICs vulnerability to climate related risks through the development of a Pacific Hydrological Investment Plan that covers all the 14 PICs. The project will expand its scope to support the rest of the PICs not included under the EWS-F and FFGS projects. Additionally, the activities and lessons learned from the CREWS Pacific SIDS 2.0 project will serve as a baseline for the new initiative, enabling it to build on past successes and strengthen its efforts on EWS across the value chain, ensuring an end-to-end approach. The activities from the existing and the new CREWS projects will create an opportunity for the PICs as a pathway to access the CREWS-GCF Scale-Up mechanism which can ensure the sustainability of the activities implemented through the CREWS Pacific projects. The project is fully aligned with the UN Sustainable Development Goals (SDGs), the Paris Agreement, and the Sendai Framework. It will also contribute to the implementation of the National Adaptation Plans, Nationally Determined Contributions, NMHSs National Strategic Plans, DRR and MHEWS policies and strategies. This collaborative approach will leverage both existing and planned national, regional and global initiatives, creating synergies that enhance the impacts of the financial resources and provide long term sustainable benefits for the Pacific SIDs.
	e. Describe measures to ensure coherence with existing initiatives	The new CREWS Pacific project ensures coherence and synergies with ongoing and planned initiatives focused on MHEWS, climate change adaptation and resilience, and hydrometeorological services. The project will follow strategic measures that ensure alignment with existing national, regional, and global EWS initiatives. 1. Steering committee meetings and coordination – To ensure continued alignment with key regional initiatives such as the WRP, the project will coordinate and participate in back-to-back steering committee meetings alongside the WRP and other relevant regional programs. This will provide opportunities for regular updates, monitoring, collaboration and shared understanding of regional and national priorities on EWS. The steering committee meetings will assist in coordinating resources, ensuring no duplication of activities and form strong partnerships and collaborations amongst the project and its counterparts.

		2. Strategic Location of Offices – The presence of the WMO Sub-regional Office in Apia, Samoa, alongside project management units at SPREP for: the Weather Ready Pacific, the GCF funded Van-KiRAP project, the Intra-ACP Climate Services and Related Applications (ClimSA) programme, and the GCF funded CIS-Pac 5 programme, allows for an environment conducive to fostering partnerships and collaboration in implementation across multiple related projects and programmes. Similarly, the UNDRR Pacific Subregional Office in Fiji has well established coordination mechanism and collaboration with national governments, UN agencies, regional organizations such as SPC, PIFS and NGOs to advance partnerships and joint implementation. Joint workplans – The new project will maintain its collaboration with relevant regional and national initiatives and partners such as WRP and EW4ALL by sharing and co-developing annual workplans. These workplans will ensure alignment of the interventions with regional and national priorities and facilitating the co-financing of training sessions and workshops that fall within the project's scope. 3. Leveraging existing mechanism for coordination – The CREWS project will utilize established communication channels and coordination mechanisms, including the Pacific Meteorological Council, the forthcoming Regional MHEWS TWG and Anticipatory Action Community of Practice as well as relevant Pacific Resilience Partnership TWGs for information sharing and collaboration. 4. Capacity Development Synergies – The project will continue and scale-up capacity development through collaboration with ongoing training activities under CIS-Pac5, WRP, COSPPac and SOFF. This will include joint training workshops on seasonal and sub-seasonal tropical cyclone forecasting, climate service delivery and gender responsive EWS. This will also allow for more targeted, relevant and sustainable capacity building opportunities for all stakeholders to improve the quality of the services they provide. 5. Sectoral Coordination – The project will ensure that sector-specific initiatives such as agriculture, health, water, tourism, marine and infrastructure align with broader regional and national goals through the ClimSA and VANKIRAP projects. 6. Knowledge sharing and learning – CREWS project will promote exchange and learning opportunities among EWS stakeholders to strengthen cooperation among Pacific SIDS and foster shared learning on early warning systems, anticipatory action and disaster risk reduction in the region. The knowledge exchange will facilitate sharing and learning new tools, technologies and strategies.
Project Rationale	a. Who, where and in what ways and to what hazards people	In the Pacific region, both populations and ecosystems are highly exposed to various climate-related hazards, which are becoming more frequent and severe due to climate change. Tropical cyclones, coastal flooding, droughts, and rising sea levels pose significant risks to both people and

	and ecosystems are exposed and vulnerable	natural environments, particularly in SIDS. Atoll island countries such as Marshall Islands, Kiribati and Tuvalu are increasingly exposed and vulnerable to climate impacts. Overcrowding, land reclamation, economic and food related issues make people more vulnerable to climate-induced hazards such as coastal flooding and erosion. The WMO State of the Climate in the South-West Pacific 2023 report highlights the increasing vulnerability of Pacific Island nations due to climate change impacts. Notably, sea level rise in the region exceeds the global average, and sea surface temperatures have increased at a rate three times faster than the global norm since 1980. This rapid change has resulted in a doubling of marine heatwaves during that same period, with significant implications for local ecosystems and communities. In 2023, the region experienced 34 hydrometeorological hazard events, primarily related to storms and floods, leading to over 200 fatalities, and affecting more than 25 million people. The human population, particularly in low-lying coastal areas, is at heightened risk. Approximately 90% of the population lives within five kilometers of the coast, and half of the critical infrastructure is located within 500 meters of the shoreline[10]. In countries like Tuvalu and the Marshall Islands, rising sea levels are projected to displace significant portions of their populations by the end of the century, as well as contaminate freshwater sources with saltwater intrusion[11]. Marine ecosystems, including coral reefs and fisheries, are also at risk. Coral reefs, which are crucial for coastal protection and biodiversity, face severe degradation due to ocean warming and acidification. SPREP reports that 40% of Pacific coral reefs are already at high risk from climate change and local impacts, such as overfishing[12]. This degradation not only threatens biodiversity but also impacts food security, as 70-80% of the protein consumed in Pacific Island nations comes from marine sources SPREP Marine Ecosystems[13]. These vulnerabilities highlight the critical need for robust climate information and EWS in the Pacific. While there have been improvements through regional efforts, challenges remain in reaching remote communities, many of which lack access to timely and accurate weather information. Strengthening EWS, integrating them with traditional knowledge, and ensuring they are inclusive of vulnerable populations, including women and people with disabilities, will be essential for reducing the risks and enhancing resilience. OBJ
	b. Describe proposed partnerships and approach for stakeholder	**Project Design Process** The SIEWAP project is designed with a strong focus on stakeholder engagement to ensure national and regional needs are integrated into the project activities highlighting a bottom-up approach. To ensure the project is aligned with the priorities and challenges faced by Pacific SIDS, the

[10] https://wmo.int/publication-series/state-of-climate-south-west-pacific-2023
[11] https://www.sprep.org/publications/state-of-environment-and-conservation-in-pacific-islands-2020
[12] https://www.sprep.org/climate-change/pacific-meteorological-council
[13] https://www.sprep.org/programmes/healthy-islands-oceans/strengthening-pacific-marine-conservation

	engagement in design and in implementation	following approach for engagement during the design phase was proposed and actioned: 1. Regional Workshop on Inclusive Early Warning Systems and Climate Services in the Pacific (April 2024): EW4All Pillar leads (UNDRR, WMO, ITU, IFRC) in collaboration with the CROP agencies (SPC and SPREP) co-hosted a regional EW4ALL workshop on 17 April 2024 in Fiji. The workshop aimed to explore how EW4All can complement and supplement what is being taken forward under the WRP Program and other, related EWS and climate service initiatives in the region. More than 100 participants representing NMHS, NDMO, Ministry of Finance, Ministry of Women and Social Protection, Private Sector and civil society attended the workshop. The workshop resulted in the development of a comprehensive report on the regional and national needs, gaps and priorities on MHEWS, stock take of existing initiatives and funding mechanisms on EWS, and discussions on resource mobilization and leveraging coordination. These discussions greatly contributed to validating existing needs and gaps on EWS and inform project activities for the new phase of the CREWS initiative. 2. EW4ALL national consultations in the Pacific: In the Pacific, there are 5 countries that were prioritized by the EW4ALL initiative, notably: Fiji, Tonga, Samoa, Solomon Islands and Kiribati. In 2024, consultations and stock take of needs, gaps and priorities on EWS were conducted in Tonga, Fiji and Solomons Islands which resulted in the draft MHEWS Roadmaps. Similar workshops are planned for Samoa and Kiribati in early 2025. The priorities highlighted in the MHEWS roadmaps have helped WMO and UNDRR to frame activities for these three countries. The same will be done with Samoa and Kiribati once their consultations have taken place. All EW4ALL Pillar Leads, including UNDRR, ITU, IFRC and WMO took part in the consultations and review of the national roadmaps, therefore their inputs and guidance on the activities are also captured in this process. 3. CREWS Project Steering Committee Meetings in 2023 and 2024 took place in Fiji and brought together the Directors of the NMHS and NDMOs. The meeting provided an opportunity to discuss, document and validate national needs, gaps and priorities across four pillars of MHEWS. These findings will inform the interventions and project activities for the new CREWS Pacific project. 4. Discussions with Pillar Leads: Discussions on the new CREWS Pacific SIDS project were carried out during 2024 with all pillars leads i.e. IFRC and ITU not directly involved as implementing partners of the current CREWS project. 5. Validation of Country Priorities: Project activities and country priorities collected during the needs and gaps assessment, strategic plans, EW4ALL roadmap consultation were further validated through online and one-on-one consultations with the NMHSs and NDMO from all the pacific SIDSs. This validation

		process provided the opportunity for NMHSs and NDMOs to provide a commitment and finalise their priorities under the new CREWS project. 6. Confirmation of Technical Partners – Consultations were conducted with the regional CROP Agencies including SPREP, SPC, NIWA, BOM, PDF and IGRAC to verify and confirm their commitments in delivering technical activities for the NMHSs and NDMOs. These discussions have been done in person and virtually. The Project will be implemented by WMO and UNDRR with Project Officers based in the WMO Representative Office for the South-West Pacific in Apia, Samoa and the UNDRR Regional Office in Suva, Fiji. The implementing partners will enter into agreements with a consortium of national and regional partners to execute the project activities. The partners include SPREP, SPC, NIWA, PDF, IGRAC and the NMHSs and NDMOs. A Project Steering Committee (PSC) will be established to oversee the project implementation, providing guidance and direction to the Project Officers and partners. The PSC will review and approve the project workplans and activities and M&E Plans. The PSC composition includes NMHS and NDMOs representatives from all the 14 Pacific SIDS as well as implementing partners. This composition is tentative with the understanding that to involve all 14 PICS, co-financing and support from other programmes/projects in the region, such as the Weather-Ready Pacific, FFGS and EWS-F, will be necessary. Alternatively, if funding is not available, the PSC will be held virtually.
Project design	a. Project components and activities, including describing what and how people centered, risk informed, and gender responsive approaches will be applied and how people most-at-risk, local actors and organizations will be engaged	**The project structure follows the CREWS Monitoring, Evaluation and Learning Framework both at the Outcome and Output level. Activities are further detailed in the annexed project log frame.** **Outcome 1: National and local multi-hazard early warning systems prioritized and funded.** *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.* - The project aims to strengthen disaster risk management (DRM) and early warning systems (EWS) laws and policies in the Pacific Island Countries (PICs), using the Early Warning Early Action (EWEA) Legislative Guide developed under the CREWS Pacific SIDS 2.0 project. This will include support for the drafting of National Meteorological and Hydrological Services (NMHSs) Acts and/or Bills, as well as reviewing and renewing the National Strategic Plans for NMHSs, specifically Fiji, Kiribati, Nauru and Solomon Islands. *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.*

		- This output will develop a hydrological investment plan for the Pacific Region, facilitate South-South exchanges/cooperations on Early Warning Early Action, and support the MHEWS Technical Working Group (TWG) meetings. - A social economic benefit analysis will be conducted to assess the long term economic and social impacts of MHEWS in the Pacific Region. This analysis will be an extension of the WMO Hydro-Hub planned SEB Forum for the Pacific in 2025. *Output 1.3 – Partnerships and cooperation frameworks developed for financing and scaling up support to multi-hazard early warning systems.* - This output will support organizing the RA V Regional Hydrology Assembly and implementing the EW4ALL roadmaps in Fiji, Kiribati, Samoa, Solomon Islands, and Tonga. Additionally, support will be continued to the Pacific Meteorological Council (PMC) and assist with the migration of the Pacific Partnership Coordination Mechanism (PPCM), piloting it in two PICs to streamline and maintain data collection processes. Furthermore, this activity will also provide support to set up regional MHEWS TWG to coordinate all the EWS related projects and initiatives in the Pacific. **Outcome 2 – Improved Early Warning Service delivery and accessibility by national and regional institutions.** *Output 2.1 -Risk Information and tools generated by countries to enable the delivery of impact-based early warnings.* This output will strengthen regional and national severe weather forecasting and warning systems using impact-based approaches, vulnerability assessments and the risk modelling that will better prepare communities to deal with high impact and weather events. - The project will support the implementation and scale-up of RiskScape, a software application used to analyse natural hazard risks, make risk-based decisions, and implement cost-effective risk reduction products in Cook Islands, Kiribati, RMI, Samoa, Tonga, Tuvalu, and Vanuatu. Additionally, scale up the Impact-based forecasting and warning services (IBFWS) project in Vanuatu and Solomon Islands through the installation of a visualization reporting tool and follow up training workshops. The project will also organise a regional conference that allows countries implementing IBFWS to share lessons and experiences and assist countries to improve their messaging and EWS. *Output 2.2 – Monitoring analysis and forecasting of hazards that threaten the country/region are improved and sustained by the countries.* - This output will support the expansion of the Coastal Inundation Forecasting System through a regional feasibility study to examine infrastructure and governance requirements. It will also support the implementation of the WMO Information

		System (WIS 2.0) in Fiji, Samoa, Vanuatu, Solomon Islands, Tonga, and Kiribati. Additionally, the project will continue to support two sessions of the RA V Tropical Cyclone Committee (TCC) and Regional Subprogramme Management Team (RSMT) meeting, as well as the RA V working group on infrastructure. *Output 2.3 – Warnings are communicated by the countries based on common alerting protocols (CAP) under agreed standard operational procedures (SOPs).* - This output will develop communication strategies and guidelines for a selected NMHS namely Tonga and conduct workshops on media and communication tools to enhance staff skills and improve the dissemination of early warnings. It will support the operationalization of CAP in Fiji, Samoa, Kiribati, Tonga, and Nauru through national trainings. *Output 2.4 – Warnings are received, understood, and acted upon based on co-produced preparedness and response plans by the countries.* Anticipatory Action is an activity that takes place prior to an extreme weather event and is based on a forecast trigger, to mitigate the anticipated impact on food security, lives and livelihoods[14]. The CIS-Pac5 programme has also initiated work for developing anticipatory actions in the 5 programme countries. In March 2023, the first Pacific Week of Anticipatory Action in Fiji brought together over 80 participants, including representatives from national meteorological services, national disaster management offices, and Pacific national societies, representing 15 PICs and regional partners. The second forum was organized in April 2024, with consensus emerging on the need for anticipatory actions to be Pacific built and owned. It is also critical to build on existing networks and mechanisms at regional and national level rather than establishing new structures. - The project will support the development and roll out of Anticipatory Action (AA) and financing in selected countries. Support will also be provided for the implementation of NCOFs, PICOFs and training opportunities on operational tropical cyclone in country and assist selected countries with the implementation of early warning initiatives in communities. Additionally, the project will enhance media communications on risk and awareness raising activities at the community level. - Community based and early warning services (CbEWS) activities will also be supported through the project to build on the successes of CbEWS in the previous phases of the CREWS Pacific SIDS project with the Federated States of Micronesia as the focus country under this new project. This activity will support the integration of Traditional Knowledge (TK) into NMHS products, services and tools to significantly improve forecast communication while expanding the spatial and temporal

[14] de Wit, S (2019), Getting ahead of crises: A thesaurus for anticipatory humanitarian action

		relevance of the forecasts and increasing community acceptance of NMHS materials. - Support to the NCOF, PICOF and Hydrological Outlook forums will be in collaboration with existing projects and programmes. Similarly, a regional and national training on operational tropical cyclone forecasting will be funded to improve the NMHSs skills and services. **Outcome 3 – Early Warning Programmes are driven by people-centered and gender-responsive principles and promote private sector engagement.** *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.* - The project will continue to elevate women's leadership in meteorology, hydrology, and disaster management in the Pacific through training workshops. It will also introduce a youth mentorship and leadership program in one selected country. Additionally, innovative activities aimed at raising awareness EWS and climate change for schoolchildren will be supported. Gender-responsive and disability-inclusive EWS activities will be developed, focusing on creating accessible products and services for people with disabilities. *Output 3.2 – Private Sector is engaged to foster innovation and sustainability in delivery of early warning services.* - This output will organize a public-private partnership engagement for early warning systems, co-organized with partners such as WRP, EW4ALL, and SOFF. This collaboration will foster innovation and ensure the sustainability of early warning services.

Organization and operating procedures	a. Institutional framework (Describe the planned project management set up and how all the organisations involved in implementing the project will work together. Give a brief description of each partner/actor's key roles by component)	**Governance Structure for the Project** The governance structure for the CREWS Project is designed to ensure effective management, coordination, and oversight of the project's implementation, with clear roles and responsibilities for all stakeholders involved. This structure promotes a collaborative, inclusive approach, integrating national, regional, and international partners to deliver robust early warning systems and disaster risk management services in the Pacific region. 1. Project Steering Committee (PSC) - The PSC will provide strategic oversight, direction, and guidance to ensure that the CREWS project is implemented effectively and in alignment with the priorities and needs of the Pacific Island countries (PICs) NMHSs and NDMOs. It will also be responsible for reviewing and confirming work plans,

		activities, and monitoring and evaluation (M&E) plans, ensuring that the project remains responsive to evolving needs. **Composition** - Representatives from all 14 PICs including NMHSs and NDMOs. They are the beneficiaries of the activities and are also executing specific activities on the national level. - Implementing Partners (WMO and UNDRR) – the two leads as well as the secretariat to prepare all documents for the PSCs including technical reports, meeting minutes and workplans. They are also responsible for producing the progress and financial reports for the CREWS Secretariat. **Observers** - Technical partners (SPREP, SPC, NIWA, IGRAC, PDF). They execute specific technical activities with WMO and UNDRR through signed implementing agreements or letters of agreements and provide updates for the PSC meeting reports and workplans. **Frequency of meetings** - The PSC will be organized every two years, apart from attending to urgent matters. Whenever possible, and preferably, the PSC will be co-organized with other regional meetings and workshops, such as those organized by the Weather Ready Pacific Programme, FFGS, EWS-F and ClimSA, to leverage participation, resources and awareness on activities planned for the region. If co-funding opportunity is not available, or limited, the PSC will be held virtually as an alternative option.
	b. Monitoring and evaluation system (ensure sufficient resources for monitoring and evaluation)	The Monitoring and Evaluation (M&E) system for the SIEWAP project is designed in alignment with the CREWS MEAL Framework, and aims to ensure continuous tracking of project performance, identification of challenges or risks, and assessment of the effectiveness of the project's activities. The system will provide timely data to inform decision-making and enable the implementation of mitigation measures when necessary. Two evaluations will be conducted throughout the project's lifecycle: 1. **Mid-term Evaluation**: This evaluation will be led by the implementing partners and assess the project's progress at the halfway point. It will review the workplan and logical framework to ensure alignment with planned activities and outcomes, evaluate the effectiveness of interventions in improving livelihoods and Early Warning Systems (EWS), and identify any emerging challenges or risks. The evaluation will also provide recommendations

		for adjustments to the project strategy or activities, if necessary, to ensure continued progress toward achieving the project's objectives and outcomes. The implementing partners will meet at mid-term to conduct this review and present the findings and any changes to the PSC that follows. 2. **Final Evaluation:** The final evaluation will take place towards the end of the project and will be conducted by an external consultant, following M&E requirements agreed upon by the implementing partners and the donor. It will be funded by the project. The Terms of Reference (TOR) and the design of the evaluation will be jointly agreed upon by the donor and the implementing partners. The final evaluation will assess the project's overall impact, including the sustainability of its results, and evaluate its effectiveness in achieving objectives and addressing implementation challenges. It will identify lessons learned, including successes, challenges, and areas for improvement, and provide recommendations for future programming and project design. Additionally, the evaluation will highlight best practices and strategies that can be replicated in similar projects in the region.
Project viability and sustainability	a. Main identified risks	**Environmental risks (medium):** Hazards such as severe weather, floods and drought have the potential to cause delays in project implementation. *Mitigation measures:* To manage this risk, the project will adopt a flexible approach allowing for the adjustment of the sequence of activities. Regular project reviews will ensure that any delays caused by environmental factors are identified and addressed. As the project mainly provides technical assistance no large civil works are anticipated and hence, will not generate any negative environmental impact. **Commitment from the countries (low):** The risk of lack of commitment, by national institutions, in the implementation of this project is considered low. However, the complex structure of the various institutions and authorities involved in the project along with the potential administrative complications may compromise implementation. *Mitigation measures*: The Implementing Partners (WMO and UNDRR) will establish and maintain strong communication lines with national hydrometeorological and disaster management institutions. This will include the creation of a systematic communication channel with project stakeholders and beneficiaries and will anticipate – whenever possible – commitment and/or performance issues.

		Human resources / capacity risks (medium): The human and technical capacity of the national hydrometeorological and disaster management institutions and authorities to support the project activities on top of their regular activities is a risk that can impact the project outputs. While capacity building is a key aspect of the project, the issue of scarce human resources and brain drain from Pacific SIDS may not be fully addressed through the project, though efforts will be made to provide guidance and support to the main project beneficiaries. Mitigation measure: Whenever possible, UNDRR and WMO will consult and align priorities with projects and programmes being implemented in the Pacific region to avoid the overwhelming the capacity of NMHS and NDMA staff in implementing project activities. Furthermore, the project will take into consideration the existing funding landscape in the region in order to avoid investing in areas and countries that are already supported by other donors. **Financial capacity risks (medium):** The financial capacity of NMHS and NDMAs in the region to effectively utilize allocated funds presents a significant risk that must be accounted for during project implementation. Additionally, the timely reporting capabilities of beneficiaries and implementing partners pose another challenge, as substantial delays are likely to occur due to competing national and regional priorities and overcapacity of supporting staff. Mitigation measure: Whenever possible, implementing partners will set up contractual arrangements with partners and beneficiaries that will include a staggered disbursement of funds. Furthermore, reporting deadlines will be clearly stated and communicated throughout project implementation to avoid delays. **Financial Risk (medium):** This is the project providing expensive hydrometeorological equipment's (hardware and software) that will not be maintained beyond the life of the project due to the limited financial resources in the responsible government agencies to sustain it. *Mitigation measure:* The project will address this by establishing specifications for procurement including negotiation of regional agreements for warranty and maintenance. The project will be conducting SEB analysis that demonstrates likely losses and damage costs if an effective EWS is not maintained in comparison to the relatively small financial need for maintaining the equipment's, replacing damaged equipment, and continuing the outreach and communications to remote vulnerable communities and sectors.

		Political Risk (low): The Governments may change in political leadership during national elections. This can potentially lead to changes in priorities, policies and regulations that may impact the implementation of projects in a country. *Mitigation measure:* Identify and engage key stakeholders early in the project including Government officials and local communities when verifying planned activities. Regular communication through the PSC can help build awareness and address concerns that may arise and allow the project activities to continue with implementation.
	b. Critical assumptions	- The government institutions of the 14 participating SIDS remain committed to the development and enhancement of climate, hydrology, meteorology and oceans information services including MHEWS, and the implementation of the project. - Governments are committed to mainstreaming Hydrometeorological information and data into national policy, disaster risk management and planning. - Stakeholders and partners are willing to adopt new governance, institutional and regulatory mechanisms to ensure the integration of hydrometeorological data and information into disaster management and decision-making processes. - Key sectors are willing to utilize hydrometeorological information and data to improve resilience and reduce vulnerabilities to climate related hazards. - Governmental institutions, the private sector and civil society organizations will participate, cooperate and coordinate effectively in the design, implementation and scaling of EWS, with a focus on strengthening disaster preparedness and response. - NMHSs will engage with end-users and ensure that their inputs are reflected in the design and delivery of early warning messages. - Communities and the public are willing to change behaviors and adopt climate-resilient livelihood strategies based on the information provided through EWS and hydrometeorological services. - Communities and the public can access and understand new hydrometeorological and disaster risk information ensuring they can act on early warnings and respond effectively to climate risks. - Countries in the Pacific continue to strengthen regional cooperation, knowledge management and training on hydrometeorological and disaster risk management including sharing best practices, lessons learned and expertise to EWS.
	c. Judgment on the project sustainability	<u>Judgement on Environmental Sustainability</u>

		The implementing partners (WMO and UNDRR) will count on Pacific-based project managers, which will minimize negative environmental impacts related to travel. The project activities planned will not disrupt or cause environmental hazards in the selected Pacific SIDS. Judgement on technological sustainability Little to no investment is expected in meteorological infrastructure during the implementation of this project, thanks to past investments already made during the first two phases of CREWS Pacific SIDS. Whatever investments are made, and equipment purchased, efforts will be made by the implementing partners to ensure and pass onwards ownership of the infrastructure to national and regional institutions. In addition, the project will provide support to the NMHSs that are selected to improve their services through enhancing the technologies utilized to distribute or capture data to ensure EW messages are delivered on a timely manner. Judgement on social sustainability A key aspect of the project is its focus on gender and disability-inclusive early warning systems. Through tailored activities, the project will strengthen the capacity of marginalized groups to be better prepared to respond to natural hazards beyond the project timeframe of four years. Likewise, special attention will be given to the inclusion and promotion of traditional knowledge in EWS, hopefully strengthening the capacity of national institutions to include traditional knowledge in their work. Judgement on institutional sustainability The project will strengthen the human and institutional capacity of national hydrometeorological and disaster management institutions in the Pacific. Knowledge transfer will be ensured throughout the project implementation to strengthen the capacity of national authorities in producing and issuing early warning beyond the project timespan. The project is also fully aligned to the EW4ALL initiative, WRP and SOFF, all of which are planned to be implemented beyond the four years of the new CREWS investment in the Pacific. The CREWS projects in the Pacific have been and will continue to be essential in building up the capacity of NMHS and NDMO staff in the region, alongside strengthening the institutional frameworks of Pacific SIDS to what it relates to EWS. These investments are key sustainability factors for the sound implementation of the EW4ALL initiative, WRP and SOFF programmes.

Attachment 1: Budget Breakdown (USD)

Attached Separately

Attachment 2: Workplan/Timeline for implementation

Attached Separately

Attachment 3: Logical framework

Attached Separately

Alignment to the CREWS MEAL framework

CREWS MEAL Outcomes		Outcome 1. National and local multi- hazard early warning systems prioritized and funded			Outcome 2. Improved early waning service delivery and accessibility by national and regional institutions				Outcome 3. Early warning programmes are driven by people- centered and gender responsive principles and promote private sector engagement	
CREWS MEAL Outputs / Project Outputs		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	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	Output 1.3. Partnerships and cooperation frameworks developed for financing and scaling up support to multi-hazard early warning systems	Output 2.1 Risk information and tools generated by countries to enable the delivery of impact- based early warnings	Output 2.2. Monitoring, analysis and forecasting of hazards that threaten the country/region are improved and sustained by the countries	Output 2.3 Warnings are communicated by the countries based on common alerting protocols under agreed standard operational procedures (SOPs)	Output 2.4 Warnings are received, understood and acted upon based on co-produced preparedness and response plans by the countries	Output 3.1 People of different backgrounds, gender, youth, older persons, persons 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	Output 3.2 Private sector is engaged to foster innovation and sustainability in delivery of early warning services
	Output 1.1:	✓								
	Output 1.2:		✓							
	Output 1.3:			✓						
	Output 2.1:				✓					
	Output 2.2:					✓				

	Output 2.3:						✓			
	Output 2.4:							✓		
	Output 3.1								✓	
	Output 3.2									✓

Attachment 4: Monitoring and Evaluation Plan

4.1 Theory of Change

This section will present the Theory of Change (and logic model) for the project, inclusive of key causal factors, assumptions and risks. Please ensure alignment with the CREWS MEAL framework Theory of Change.

The ToC and logic model are attached separately

4.2 Monitoring

This section describes how the project will monitor performance and track progress toward planned results in the results framework.

- **Roles and responsibilities for monitoring activities**

Responsible	Tasks
Project Officers WMO and UNDRR	• Oversee the overall monitoring and evaluation (M&E) process. • Ensure alignment of monitoring activities with the project's goals and objectives. • Monitor project activities, including assessing progress toward deliverables. • Review and approve monitoring plans and performance reports. • Carry out internal mid-term evaluation to assess project progress.
External Evaluator	• Conduct independent end-of-project assessments or evaluations to validate internal monitoring results. • Provide recommendations based on findings to enhance future project performance. • Assess whether the project outcomes and impacts are in line with the goals and objectives.
Project Steering Committee	• Review monitoring reports to provide strategic guidance. • Hold the project accountable for achieving its stated objectives.

A baseline data report which is a tool that presents the initial magnitudes of indicators, i.e. their value at the start of an intervention:

1. Introduction	*Briefly explain the purpose of the report and relevant information about the process of collecting the baseline data (period of collection, mention of methods used, locations where data was collected, total number of indicators in the report, team or individual who undertook the collection, and other elements that the manager finds important).* This baseline data report supports the CREWS Pacific SIDS project, ensuring alignment with national and regional priorities in the Pacific. It documents the initial status of NMHSs, NDMOs, and EWS capabilities, providing a foundation for monitoring project progress. Data was collected through a participatory process, led by the CREWS Pacific SIDS 2.0 project management teams at UNDRR and WMO during 2024, involving: • Face-to-face Needs and Gaps Assessment: Conducted with NMHSs, NDMOs, and Red Crescent Societies to identify gaps in climate services and EWS.

	• Face-to-face EW4ALL Consultations: Draft roadmaps were developed for Fiji, Tonga, and Solomon Islands, with Samoa and Kiribati to follow. • Face-to-face and virtual stakeholder engagements: Validation of priorities through one-on-one consultations with NMHSs and NDMOs across Pacific Island Countries. • Technical Partner Coordination: In-person and virtual discussions with regional agencies like SPREP, SPC, and BOM. This collaborative process ensures the project's baseline reflects the challenges and priorities of key stakeholders. Additionally, a desktop review was conducted on the national and regional projects/programmes ongoing and planned with partners and NMHSs to gather data on what they have achieved and where the gaps still exist especially gaps that have not been addressed through other donors aside from CREWS.
2. Summary of intervention (program, project or investment)	*Briefly describe the intervention in question, including objective, approach, main components, partners, start-up, duration and any other elements considered relevant.* *Intervention:* The proposed project will contribute to the implementation of WRP, Pacific Islands Meteorological Strategy (2017-2026), The WMO Global Framework for Climate Services, WMO Global Climate Observing System Implementation Plan in the Pacific and the Pacific Meteorological Council and expert panels. It will also contribute to achieving the objective of the EW4ALL in the Pacific, the Sendai Framework and the 2015 Paris Agreement. The project objective is to scale up people-centered and end-to-end multi-hazard early warning systems across the Pacific. This ensures enhancing adaptive capacity, strengthen resilience and reduce vulnerability and adverse impacts related to climate change and extreme weather events. The project will be implemented within 4 years, building on the first and second phases of the CREWS Pacific SIDS project, and will provide support to the 14 Pacific SIDS, WMO and UNDRR members and Regional Partners, through regional and national level activities based on their respective needs and in alignment with other relevant initiatives and programmes. Approach: The components and output of the project are summarized below: Partners: - The Secretariat of the Pacific Regional Environment Programme (SPREP) - The Secretariat of Pacific Community (SPC) - The Pacific Disability Forum (PDF) - National Institute of Water and Atmospheric Research (NIWA) - International Groundwater Resources Assessment Centre (IGRAC)
3. Baseline values for the indicators	*Include the following information for each indicator:* • *Indicator name and code* • *Type of indicator* • *Output or result measured by the indicator* • *The immediate and/or intermediate outcomes (as appropriate) into which the immediate output or outcome fits (the results chain).* • *Baseline data, including baseline data broken down by corresponding categories if applicable.*

	• *Target, including annual targets and end-of-project targets, including targets broken down by corresponding categories if applicable.* **The baseline values and indicators are attached separately**

4.3 Evaluation

This section describes all anticipated evaluations from performance to impact, relevant to the project, and can be used to track evaluations over the project's timeframe. It can include:

- **An evaluation plan, which identifies the different types of internal and external evaluations to be carried out over the implementation period. It also includes the timetable for carrying out the evaluations, as well as the budget, i.e. the human and financial resources required.**

Evaluation type	Evaluation management		When it will be performed				Resources	Budget
	Internal	External	Yr 1	Yr 2	Yr 3	Yr 4		
Formative evaluation (mid-term or process evaluation)	X			X			Internal resources WMO and UNDRR	N/A
Final evaluation		X				X	External Consultant / Independent Evaluator	USD 50,000
Impact evaluation		X				X		

4.4 Learning

The learning section identifies how the project will use available information to learn and adaptively manage implementation. It can include:

- **A learning plan which describes the learning activities to be carried out over a given period (annual, biannual, etc.), specifying objectives and expected results, participants and timetable.**

Type of activity	Objective/ expected results	Methodology/ material needed	Target audience/participants	Execution calendar
SIDS to SIDS learning and exchange on EWEA	The overall objective of this workshop is to promote SIDS to SIDS learning (south-south cooperation) on EWEA, with a focus on lessons learned and best practices. Cooperation with regional CREWS projects being implemented in SIDS, such as the CREWS Caribbean and SWIO projects, will be leveraged for the implementation of this activity.	The methodology and materials will be defined by WMO and UNDRR during the implementation of the project.	Staff from selected NMHS and NDMOs (EW4ALL Priority countries) from the Pacific and other SIDS (Caribbean, SWIO, etc.)	
Strengthening nationally led production and application of risk information for effective early warning and decision making in	This activity will complement PARTneR-2 initiative to strengthen operationalization of the nationally led production and use of risk information through capacity building and training opportunities in Cook	Materials and methodologies from NIWA and SPC will be used for the implementation	Staff from selected NDMOs in Cook Islands, Republic of Marshall Islands, Samoa, Tonga, Tuvalu and Vanuatu.	

Cook Islands, Republic of Marshall Islands, Samoa, Tonga, Tuvalu and Vanuatu	Islands, Republic of Marshall Islands, Samoa, Tonga, Tuvalu and Vanuatu. This will be implemented in close collaboration with SPC and NIWA at the country level.	of this capacity building activity.		
Strengthening capacity and peer-to-peer learning on the production and use of risk information for early warning systems at the regional level through training of trainers (ToT)	Peer-to-peer learning exchange on the generation and application of risk information for early warning systems at the regional level. This activity will complement ongoing capacity-building initiatives on risk information and modelling at the regional level.	The methodology and materials will be defined by UNDRR during the implementation of the project.	Staff from selected NDMOs in the Pacific.	
Organize National Communication and Media Class for Fiji and Tonga NMHSs and NDMOs	Media and communication capacity building tailored to the needs of the NMHSs and NDMOs of Tonga and Fiji.	The methodology and materials will be developed by WMO and UNDRR with partnership with the SPREP Communications Team and follow similar methodologies used during past CREWS Pacific SIDS Mana and Communications Workshops but tailored to the needs and demands of the two countries.	Selected staff from the NMHS and NDMO of Tonga and Fiji	
Conduct follow up IBFWS training for Vanuatu and Solomon Islands	Follow-up trainings with the NMHSs of Vanuatu and Solomon Islands will be implemented in order to support the two institutions in advancing and enhancing their IBFWS-capacities	The methodology and materials will be developed by WMO experts with the support from external consultants with expertise on IBFWS.	Selected staff from the NMHS of the Solomon Islands and Vanuatu.	
Assess, implement and Operationalize WIS 2.0 in Fiji, Samoa, Vanuatu, Solomon Islands, Tonga, Kiribati	Training of NMHS staff in Fiji, Samoa, Vanuatu, Solomon Islands and Kiribati on the utilization and technicalities of the WMO Information System (WIS 2.0).	The methodologies and materials will be developed by WMO experts and tailored to each country's needs	Selected staff from the NMHSs of Fiji, Samoa, Vanuatu, Solomon Islands and Kiribati	
Samoa MCH review	Training of staff from the Samoa Meteorological Office and the Samoa Water Resources Division on the utilization of the	The methodology and materials used are standardized by WMO for the	Selected staff from the Samoa Meteorological Office and the Samoa	

	Meteorological, Climate and Hydrology (MCH) database, installed in Samoa during the CREWS Pacific SIDS 2.0 project.	deployment of MCH around the world. The WMO expert will tailor the training to Samoan staff based on feedback received during the CREWS Pacific SIDS 2.0 project.	Water Resources Division	
Implement and operationalize CAP in Fiji, Samoa, Kiribati, Tonga and Nauru and facilitate peer learning amongst Pacific SIDS on CAP	Training on CAP operationalization at the national level in Fiji, Samoa, Kiribati, Tonga and Nauru, following the regional CAP training delivered under the CREWS Pacific SIDS 2.0 project.	The materials and methodologies for the tailored national trainings will be developed and delivered by WMO experts.	Selected NMHS staff from Fiji, Samoa, Kiribati, Tonga and Nauru	
Support regional and national capacity building on anticipatory action	Build on existing anticipatory action initiatives in the Pacific and continue capacity development and awareness raising activities on anticipatory action (planned and potential national level AA workshops in Samoa, Kiribati, Tuvalu, Palau, FSM)	The methodology and materials will be defined by WMO and UNDRR during the implementation of the project.	Selected NMHS and NDMO staff from Samoa, Kiribati, Tuvalu, Palau and FSM	
Regional and National Trainings on Operational Tropical Cyclone Forecasting trainings	Regional and national training on tropical cyclone forecasting will be continued to be delivered by WMO, in partnership with BOM and regional institutions.	The methodology and materials for the trainings will be developed by WMO and regional partners, such as BOM	Selected NMHS staff from the Pacific region.	
Women in Leadership	A third women in leadership workshop is planned for the next phase of the CREWS Pacific SIDS project and has as its main objective creating nourishing space for female professionals working in the fields of Meteorology, Hydrology, DRR and related disciplines, to be empowered, share experiences and learn leadership skills.	The methodology and materials are developed by an external gender expert, who tailors the material and methodology of the workshop to the reality of the Pacific Region	Selected female staff from NMHS, NDMOs and regional CROP agencies from the Pacific Region.	
Capacity development on gender responsive and disability inclusive early warning early action at the national and local level	Support NDMO, NMHS, OPDs and women's organizations to mainstream gender responsive and disability inclusive early warning early action at the national and local levels. This will include application and mainstreaming of the Inclusive early warning early action	The chosen methodology will be based on the Inclusive early warning early action checklist and implementation guide developed	Selected staff from NDMO, NMHS, OPDs and women's organizations in the Pacific Region	

	checklist and implementation guide into national plans and frameworks on EWS, practical exercises and trainings.	under the CREWS Pacific SIDS 2.0 project		
Public awareness raising and capacity building on EWS and disaster preparedness	In close collaboration with national governments and local actors, support public awareness activities and drills on EWS/ disaster preparedness. Support celebration of the International Day for Disaster Risk Reduction, Tsunami Awareness Week and other events.	Methodology and materials will be developed by UNDRR and WMO during the project implementation	Selected staff from NMHS and NDMOs in the Pacific Region	

Attachment 5: References

List of Acronyms

ClimSA	Intra-ACP Climate Services and Related Application Programme
BOM	Bureau of Meteorology
CIS-PAC5	Climate Information Services for the Pacific
COSPPAC	Climate and Oceans Support Program in the Pacific
CREWS	Climate Risk and Early Warning Systems
DRM	Disaster Risk Management
EW4ALL	Early Warnings for All
EWS	Early Warning Systems
IFRC	International Federation of Red Cross and Red Crescent Societies
IGRAC	International Groundwater Resources Assessment Centre
ITU	International Telecommunication Union
MHEWS	Multi-Hazard Early Warning Systems
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NDMO	National Disaster Management Office
NMHSs	National Meteorological and Hydrological Services
PMC	Pacific Meteorological Council
PMDP	Pacific Meteorological Desk Partnership
SOFF	Systematic Observations Financing Facility
SPC	Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNRC	United Nations Resident Coordinator
WB	World Bank
WMO	World Meteorological Organization
WRN	Weather-Ready Nation

WRP	Weather-Ready Pacific

Reference Materials

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Lowy Institute	Vanuatu: The challenge to build back | Lowy Institute
United Nations Office for Disaster Risk Reduction and World Meteorological Organization	Global Status of Multi-Hazard Early Warning Systems, 2024 https://www.undrr.org/reports/global-status-MHEWS-2024
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World Meteorological Organization	State of the Climate in the South-West Pacific 2023 report https://wmo.int/publication-series/state-of-climate-south-west-pacific-2023
Secretariat of the Pacific Regional Environmental Programme	State of Environment and Conservation in the Pacific Islands: 2020 Regional Report https://soec.sprep.org/