ADAPTATION FUND

Version: March 2022

PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Integrating Flood and Drought Management and Early Warning for Climate Change Resilience in the Pacific Islands
Countries: Fiji, Samoa, Solomon Islands and Vanuatu
Thematic Focal Area[1]: Disaster risk reduction and early warning systems
Type of Implementing Entity: Multilateral Implementing Entity
Implementing Entity: World Meteorological Organization (WMO)
Executing Entities: Secretariat of the Pacific Regional Environment Programme (SPREP), Pacific Community (SPC) and WMO.
Amount of Financing Requested: 13,959,881 (in U.S Dollars Equivalent)

Project / Programme Background and Context

All Pacific Islands are vulnerable to the adverse impacts of climate change on their efforts to achieve sustainable development. ~~and, in some cases, their survival and viability as nation states.~~ Pacific leaders have reaffirmed climate change as the single threat to the pacific and the climate emergency to meet the 1.5 degrees target. Owing to their geographic location and specific social, economic and environmental characteristics, they are fragile and vulnerable to a range of external shocks such as extreme weather, climatic variability and climate change. They have~~Small Islands have more~~ limited water resources, which are most~~re~~ susceptible to ~~natural hazard including droughts, floods, tropical cyclones and high tides~~these hydrometeorological hazards . Other water related issues affecting many PICs~~acific Islands Countries~~ including Fiji, Samoa, Solomon Islands and Vanuatu are Water quality degradation, insufficient knowledge of water management practices resulting from insufficient education and training and institutional capacity; the lack of relevant monitoring technology, methods and standards used; poor hydrological data collected and insufficient use and an overall weak water governance at the national and regional level.

The execution of the project at the national level are mandated to the National Meteorological and Hydrological Services (NMHSs) and their line ministries in the pilot countries. The NMHSs are accountable to provide short- and long-range weather forecast as well as early warning to institutions and communities. Thus, the need for flood forecasts in several major rivers is becoming urgent; flow data are needed to supplement rainfall data/forecasts. In addition, a drought forecasting capability is ~~increasingly regarded as~~ essential for water management. These improvements and enhanced systems will strengthen disaster preparedness, response and recovery for the pilot countries. These priorities are outlined in~~y have outlined this in~~ their national strategic frameworks in adaptation to climate change as well as NAPs and NDCs (e.g. Fiji National Climate Change Policy 2018-2030~~Fiji National Climate Change Policy~~; Samoa National Climate Chance Policy 2020~~Samoa Climate Change Policy (2020)~~, Solomon Islands Climate Change Policy 2012-2017~~Solomon Islands Climate Change Policy (2012-2017)~~; and Vanuatu National Climate Change

[1] Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

Adaptation Strategy for Land Based Resources (2012-2022)). The project will ~~Through this project, the pilot countries lead ministries will~~ enhance the~~ir~~ governance structures, monitoring networks for both surface and groundwater and improve capacity through certified trainings and establish a community of practice for sharing lessons and experiences in the pilot countries NHSs. It will support the region in establishing a regional governance framework and platform specific to hydrology matters ~~, similar to~~like the PMC setup. The idea of piloting this project in four NHSs with a regional approach is so to setup Regional Standards and a Framework for Hydrology that will guide the work of NHSs nationally through the support from WMO, SPC and SPREP who play leadership roles in managing weather, climate and water information that inform EWSs across the Pacific. The project will be implemented by WMO and executed by the national Government Ministries identified, regional technical partners SPREP and SPC ~~through the Pacific Meteorology Council Platform (PMC) Hydrology Panel~~ and the WMO. ~~Technical Departments.~~.

~~Global climate change is one of the most serious challenges to the development aspirations of Small Island Developing States (SIDS). Located in the region of the world exposed to, and with intense, frequent and increasing impactful hydro-meteorological disasters, SIDS vulnerability to these disasters is heightened due to their isolated geographic situation, ecological fragility, socio-economic disadvantages due to their small sizes, and is also exposed to geological hazards due to its proximity to the rim of fire and geological location. Flooding, climate change and water security have been identified as some of the key issues plaguing the Pacific region affecting the lives and livelihood of its people[2].. The AR6 Climate Change 2021[3] further highlights that the intensity and frequency of severe rainfall events and associated flooding, storm surges, coastal floods, coastal erosion clubbed with saltwater intrusion and longer dry spells are set to increase. Consequently, the limited water resources of the Small Islands become susceptible to these hazards[4]. These woes are further compounded by poor application of water management practices requiring strengthened education and training, leadership, and institutional capacity; the use of inappropriate technology and methods which are not supported or maintained; and weak water governance, uncoordinated policy and legislation and lack of enforcement. Some significant improvements have been made in recent years, but more effort and external financial and knowledge resources are needed. The four selected NHSs[5] from Fiji, Samoa, Solomon Islands, and Vanuatu are all from the Pacific region. During rainy season, tropical cyclones are major features of hydro-climate risks in the region. Tropical cyclones[6] in recent years all had significant loss of life and damage to infrastructures. Heavy rainfalls cause flash flooding in all seasons and warning times are short requiring specialised forecasting products. While some single catchment flood forecasting models have been installed, the agencies lacked capacity (staff, IT infrastructure and communication networks) to maintain them. In recent years flash flood forecasting tools, incorporating NWP[7] and data transmission networks have been developed, which coupled with local based solutions can improve accuracy and timeliness of flood early warning. Drought is another main disaster that is prevalent. Currently, NMSs[8] report on meteorological drought but less on the impact to water resources from droughts and other stresses, particularly groundwater. Monitoring of water resource impacts and changes in response to climate events will improve understanding and application of evidence based sustainable management practices and early warning systems and responses~~

~~2 Pacific Countries and Territories Hydrological Capacity Assessment and Needs, October 2019~~
~~3 https://www.ipcc.ch/assessment-report/ar6/~~
~~4 Natural hazards including droughts, floods, tropical cyclones, coastal inundation, salt-water intrusion, earthquakes, tsunamis, volcanic eruption, and landslides~~
~~5 NHSs (National Hydrological Services)~~
~~6 TC Evan in 2012 (Samoa), Pam in 2015 (Vanuatu), Winston in 2016 (Fiji) Harold in 2020 (Solomon Islands and Fiji)~~
~~7 NWP (Numerical Weather Prediction)~~
~~8 NMSs (National Meteorological Services~~

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Project / Programme Objectives:

The project aims to enhance Early Warning Systems in the Pacific by building resilience to hydro-meteorological hazards in the region with the focus on severe weather including tropical cyclones, floods/inundation and droughts. The project outcomes and outputs are highlighted in the table below.~~The goal is to assist Pacific Island member states to improve the integration of Meteorological and hydrological data, information, products services, and practices to better manage flood and droughts and further strengthen the climate change resilience of Pacific Island communities. It builds on existing infrastructure, data and information, institutional settings such as PMC[9], Pacific Islands Hydrology Panel, Pacific HYCOS[10]; several AF funded projects[11], contribute to initiatives undertaken by development partners ; enhance the safety, health, food and water security, livelihood, and socio-economic well-being of Pacific peoples.~~

~~The main project outcomesobjectives are:~~

- ~~To sStrengthened , develop and operationalise governance and coordination framework hmlogicalrn to address standardization of for monitoring, collection, exchange, management and interoperability of assured quality hydrological data, products, and informationTo Sedimprove hydrology infrastructure and communication particularly flood and drought data and forecasting systems to improve early warnings from regional, national and communities levelsto last mile connectivity.~~
- ~~To improve collection, management, interoperability and use of quality assured hydrological data to support hydrology products and services.~~
- ~~To strengthen collaboration among hydro-meteorological services, disaster management agencies, government, and relevant stakeholders to better manage water resources and develop a tailored flood and drought early warning systems.~~
- ~~To strengthen the capacity of NHSs through accredited trainings/qualifications at the national and regional levels.~~
- ~~To enhance user requirement processes and development of knowledge management products for public awareness and outreach at all levelss.~~

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Project / Programme Components and Financing:

~~Each of the Project Components will be implemented in each of the 4 selected countries mentioned.~~

Project/Programme Components	Expected Outcomes	Expected Outputs	Amount (US$)
1. To upgrade and enhance hydrology and water resource operational	1.1 Reduced exposure and strengthened EWS for climate related hazards and threats including at the Regional,	1.1.1 ,	500,000

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[9] ~~PMC (Pacific Meteorological Council) - https://www.pacificmet.net/pmc~~

[10] ~~https://hydrohub.wmo.int/en/projects/Pacific-HYCOS~~

[11] ~~AF Samoa https://www.adaptation-fund.org/project/enhancing-resilience-of-samoas-coastal-communities-to-climate-change/, AF Solomon Islands - https://www.adaptation-fund.org/project/enhancing-urban-resilience-climate-change-impacts-natural-disasters-honiara-3/,https://www.adaptation-fund.org/project/enhancing-resilience-of-communities-in-solomon-islands-to-the-adverse-effects-of-climate-change-in-agriculture-and-food-security/, AF Fiji https://www.adaptation-fund.org/project/increasing-resilience-informal-urban-settlements-fiji-highly-vulnerable-climate-change-disaster-risks-2/.~~

infrastructure and monitoring systems for improved resilience to hydro-met hazardsHydrology and water resource hazards and threats	national and community levelsReduce exposure and strengthened EWS for climate related hazards and threats including at the Regional, national and community levels. 1.2 Improved hydrological infrastructures and systems monitoring infrastructures and forecasting systems to support NHSs' accessing and analyzing hydro-metlogical and other related services data, information, and products at the regional and national levels. 1.3 Strengthened infrastructure and systems to disseminate, receive and exchange hydro-met and other related data, information and services between NHSs and communities at national level and among communitiesEWSs for Flood and Drought Forecasting at the national and communities' regional , levels to enhance EWS	1.1.2 Targeted population groupscommunities are provided with adequate drought, flood / and inundation hazard and risk reduction systems and information products .	1,320,000
		1.1.3 Targeted population groupscommunities are better responding/prepared to discuss, develop, implement, and sustainably managemanage, and sustain their community-based adaptation measures / responses to flooding / inundation n and and droughts. 1.2.1 Measuring, monitoring, collecting, data rescue, quality control, archiving equipment and systems such asUpdate and Upgrade telemetry systems and databases, taking into consideration community-based methods such as with community TKtraditional knowledge components for hydrology data incorporatedsuch as groundwater, river flows and levels and and other related data implemented.and establish Dadata sharing	2,000,000

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		arrangementsArrangements for sharing of data between NMSs and NHSsSs are established at the nationally and regionally level, and between NHSs and relevant regional / global institutions sush as WMO, SPREP and SPC, are established 1.2.2 EWSs for floodsing / inundation and droughts designed gned, built on, coordinated, and implemented with existing systems and institutions for selected river catchments and communities. Appropriate equipment and systems implemented in communities to for better access to impact based warnings and have these well-established connection and coordination with NHSs, NDMOs and other relevant national agencies.through relevant National Authorities. 1.3.1. Communication systems such as Mobile Appslication Community Early Warning and Response System (EWRS) and Cell Broadcasting to support EWSs for floodings/, inundation, droughts and other related hazards implemented.	2000,000 820,000
2. To strengthen communication and awareness on the applications and benefits of hydrological data and products	2.1 Strengthened awareness, ownership and responses to climate related hazards at regional and national scales -2.12 Enhanced capabilities of NHSs to analyze hydro-met and other related data, information, and products and develop hazards / impact-based information, forecasting, and warnings for adaptation measures / responses toincluding EWSs for floods and drought.	2.1.1 Strengthened capabilities and systems to collect, analyse, manage and disseminate hydrological and hazard information 2.1.2 Improved knowledge and learning products for NHSs through development of knowledge materials through the WMOand utilizing the HydroHub / Community of Practices for Hydrometry to allow NHSs and others to exchange and share knowledge and experiences.	400,000 200,000

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	2.23 Strengthened ownership of adaptation me climate risk reduction processes at village/provinc to ial level discuss, design, implement, manage, and sustain communities based designed adaptation measures / responses including EWSs for floods and droughtin. the selected communities through localised tangible adaptation measures Enhanced capabilities of NHSs to access data and analyse hydro-met hazards for improved warning messages disseminated.	2.2.1 NHSs have accessed to local scale ground-based data, global / regional-scaled remotely sensed satellite data, global / regional weather and climate models, global / region / basin-scaled hydrological data; to enhanceand IBFImpact based EWSs for floodsing / inundation and droughts, hydrological seasonal forecasting, prediction of seasonal water resources and flow of major rivers implemented. 2.3.1 Targeted populationcommunities groups participation in adaptation and risk reduction awareness activities relating to hydrology, and water resources, weather and climate, and impacts livelihoods to implement theed through the Community-Based Early Warning System (CBEWS) mechanism to enhance climate resilience, to enable communities to discuss, identify, design and implement community based innovative ideas, methods, strategies and initiatives such as livelihoods and traditional knowledge for resilience to floodings / inundation and droughts.	800,000 800,000
3. To improve capacity and knowledge of decision-makers and users of hydrological data and productsCapacity development	Strengthened capacity of stakeholders to address and respond to hydrometeorological hazards and threats 1.1 Increased adaptive capacity of NHSs and village/provincial communities to hydro-met hazards and risks induced by climate change	3.1 Improved Capacity for NHSs staff through recognised trainings and mentorship programmes with WMOImproved capacity for NHSs staff through recognised trainings and mentorship 3.2 Professional and technical training to NHSs personal in hydrology and water resources provided by accredited institution(s); and	1,850,000 500,000 1,000,000

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		NHSs are trained to produce seasonal hydrology prediction, understanding and seasonal prediction of water resources and flow in major river catachments.	
		3.3 Enhanced capacity of communities through training and consultations for preparedness and responses to floodsing / inundation and droughts'warnings. ~~at national level through trainings and consultations~~	800,000
4. To ensure effective and coordinated hydrology policy and legislation~~Policies, legislations and regulations~~	~~Improved policies, legislations, regulations and coordination that promote and enfirce resilience measuressty~~ 4.1 Strengthened institutional framework and capacity of national hydrology / water sectors to integrate disaster risk resilience into hydro-met related policy frameworks, processes and measures / responses. 4.2 Strengthened regional ~~hydro-met~~ framework for hydrological services to promote coordination, ~~and~~ collaboration, ~~and~~ ~~standardis~~zation, ~~exchanging, operatable of assured quality hydrological data and information~~ globally and regionally.	4.1.1 Improved integration of surface and groundwater hydrology and water resource management strategies into country development plans, legal frameworks and related policies	~~1,500,000~~ 200,000
		4.1.2 Develop NHSs ~~National Hydrological Services Sstrategic~~ plans / or business plans for the pilot countries with associated action~~/operational~~ plans ~~in line with World Water Data Initiative, HYCOS??~~ . The plan will include strengthening NHSs working relations with~~with other~~ national government agencies, provincial governments and communities.	250,000
		4.2.1 Develop ~~a R~~regional ~~F~~framework for ~~H~~hydrological ~~S~~services to strengthen ~~regional~~ coordination with ~~of hydrological services and~~ water resource~~s~~ management, and other~~engagement with regional bodies~~ water utilities and authorities.~~that will assist the work of the Hydrology Panel under the Pacific Meteorology Council~~ 4.2.2. Support to the PMC-PHS~~Pacific Meteorological Council (PMC) Panel for Hydrology Services~~, and	100,000 150,000

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		transition to potential Pacific Hydrological Council (PHC) or equivalents established. ~~Establish agreements between the Meteorology and Hydrology services for data sharing~~	
5. Project/Programme Execution cost (9.5%)			1,116,250
6. Total Project/Programme Cost			12,866,250
7. Project Cycle Management Fee charged by the Implementing Entity (8.5%)			1,093,631
Amount of Financing Requested			13,959,881

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Project Duration: *5 years (60 months)*

PART II: PROJECT / PROGRAMME JUSTIFICATION

Project Components

~~The project has four components that will focus on achieving the following:~~ The project has four components that will focus on achieving the following: (i) To upgrade and enhance hydrology and water resource operational infrastructure and monitoring systems for improved resilience to hydro-met hazards; (ii) To strengthen communication and awareness on the applications and benefits of hydrological data and products; (iii) To improve capacity and knowledge of decision-makers and users of hydrological data and products; and (iv) To ensure effective and coordinated hydrology policy and legislation. The details on the specific outcomes and outputs are highlighted in the table above. The design the project to have national and regional specific outcomes as well as outputs so to differentiate on the specific needs as a region and as an NHS. The final component will be the Project Management Unit that will provide project oversight, coordination, M&E and reporting responsibilities in line with WMO and AF standards. The project will also establish a Project Steering Committee.

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~~(i) To ensure effective and coordinated hydrology policy and legislation; (ii) To upgrade and enhance hydrology and water resource operational infrastructure and monitoring systems for improved resilience to hydro-met hazards~~~~Component 1 – The objective of this component is to support the installation, operation and maintenance of observing and forecasting ;infrastructures for monitoring hydrological hazards including rapid and slow-onset events. This will build on the WMO Pacific HYCOS Framework. It will expand on existing monitoring networks for hydrological stations, develop regional and national databases to manage data quality and improve ICT infrastructures for data transmission. And improve understanding of risks associated with hydromet hazards.~~

~~Component 2 (iii) To strengthen communication and awareness on the applications and benefits of hydrological data and products~~~~services and build on community based EWS activities;, establish working agreements between NMSs on data sharing nationally and regionally~~ ~~and implement HydroSOS.~~~~and~~

- (iv) To improve capacity and knowledge of decision-makers and users of hydrological data and products.Component 3 - The Objective of this component is to strengthen regional institutions and capacities to complement and support national efforts to establish operational EWSs. Through training on prediction products, certifications on specialised trainings and related capacity building activities for communities, NHSs and Regional Technical partners.
- Component 4 - This component aims to strengthen policy, legal and regulatory frameworks on Hydrology at the national and regional level.
- The last component is on Project management, Monitoring and Evaluation. This component will support the Project Management Activities including oversight, coordination, monitoring, financial management and evaluation in line with WMO policies as well as AF standards. This includes the establishment of a Project Management Unit accountable for overall project Management, a project Steering Committee and National Level Project Management Units.

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Innovative Solutions

The project will be the first in the Pacific Region to establish a regional framework and platform for Hydrological spediscussions with the intention to raise its profile and establish relevant hydrology and water governance for the region. It will Uutilise PMC -PHS to strehtenstrengthen and coordiantion of . It will be a centralisedcentralized mechanism that will mirror the setup of the Pacific Meteorological Council with the aim to bring together hydrology, water resources (IWRM), sanitation and Hygiene (WASH), water authorities and, independent water schemes.eThis will improve the coordination and data sharing amongst national and regional institutionsinstitutions and move away from working in silos. It will also build on the Panel of Hydrology that has been established under the PMC and allow for this panel to. This coordination will be demonstrated through the WMO HydroSOS-platform.

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WMO will implement the HydroSOS[12] under the guidance of the PMC through the Hydrological Panel with the goal to raise the profile of hydrology in the PMC and appropriate water governance schematics at the national levels. thatHydroSOS will bring together NMHSs[13], disaster managersment agencies, policy makers and relevant stakeholders to improve the provision of reliable, timely, accurate and relevant hydrological status assessments and outlook products to inform water resources management and at the same time bridge the information gap between locally informed hydrological and information products and those developed globally. It should also address a lesson learned highlighted by the HYCOS Pacific Project on new technology and instrumentation support i.e.ability of national hydrology services to access technical support remotely for troubleshooting. HydroSOS will be delivered by NMHSs, offering accessible hydrological information to users such as government bodies, funding institutions, aid agencies, UN agencies and the public. HydroSOS is a valuable approach to help NMHSs and relevant stakeholders to develop localised solutions for hydrological products and informed decision-making. It is connected to other WMO initiatives such as HydroHub[14]/WHYCOS[15] and WHOS[16].

Cost Efficiency and Effectiveness

The project will enhance hydrological services in the four participating countries significantly. The investment will directly address financial, technical, capacity and coordination barriers to the effective delivery of hydrology services in the participating countries. A CBA[17] will be conducted to identify and assess costs and benefits of proposed interventions for each participating country.

[12] HydroSOS (Hydrological Status and Outlook System)https://public.wmo.int/en/resources/bulletin/hydrosos-%E2%80%93-hydrological-status-and-outlook-system
[13] NMHSs (National Meteorological and Hydrological Services)
[14] HydroHub (WMO Global Hydrometry Support Facility) - https://hydrohub.wmo.int/en/home
[15] WHYCOS (World Hydrological Cycle Observing System)
[16] WHOS (World Hydrological Observing System - https://public.wmo.int/en/our-mandate/water/whos
[17] CBA (Cost Benefit Analysis)

A feasibility assessment of such investment will also be conducted at the concept proposal development stage. The project will build on existing hydrological monitoring infrastructure, strengths, and planned actions such as institutional capacity building which will be developed in an efficient, cost-effective, and complementary manner. The selected countries NHSs will take ownership of systems built in the project after the completion and will be required to allocate sufficient resources for maintenance. The idea of a regional project is to establish a baseline on hydrology and meteorology needs and expectations from the region as well as capture lessons that can assist national governments with their direct national project proposals

Consistency with Sub-National, National, Regional and International Strategies

This project is aligned with national priorities in adaptation to climate change such as their development and water strategic plans, national climate change policies mentioned previously, NDCs and NAPs. It will also address the countries DRR priorities as outlined in the FRDP~~wil~~. ~~Strengthened disaster preparedness, response and recovery is one of the three key strategies of the FRDP, as endorsed by the Pacific leader at the Pacific Island Forum in September 2016.~~ ~~The first Pacific Ministerial Meeting on Meteorology recognized the importance of Hydro-Meteorological services in support of protection of life and property and improving the safety and security of the region. Ensuring consistency with national and regional strategic frameworks is important so to enhance ownership and commitment of the project pilot countries. Furthermore, t~~The pilot countries will be involved in the development of the project concept to enhance ownership of the project and ensure the activities are driven by country needs and priorities. At a Regional level, the project will assist countries in achieving their commitments to S.A.M.O.A Pathway~~S.A.M.O. A[18] Pathway~~ and SDGs Goal 6,9, 13 and 17. ~~NHSs enactment of PIMS 2017-2026[19] contributes to the regionally led FRDP[20], PMC[21] Panels' Action Plans~~Pacific Islands Meteorological Strategy 2017-2026,WMO Strategic Plan 2020-2030, RA V Operation Plan, Weather Ready Pacific- A Decadal Program of Investment~~the Weather Ready Pacific Decadal Programme of Investment~~[22], and the Pacific Roadmap for Strengthened Climate Services 2017-2026~~the Pacific Roadmap for Strengthened Climate Services 2017-2026~~[23]. ~~In addition, it will assist Governments to achieve specific targets under their respective national development strategic plans[24]. Globally, PIMS addresses Government's adaptation commitments under the Paris Agreement (NDC[25]), WMO Strategic Plan 2020-2023[26] and the RA V[27] Operational Plan. The hydrological information system, underpinned by hydrological data sharing, meteorological forecasts and climate prediction information with advances from the global research community will support the 2030 Agenda for Sustainable Development and, the broader global community in water management.~~The project brings added value to existing and ongoing projects in the scope of integrating~~ion~~ hydro-met information to EWS and builds on the success of other adaptation programs/projects nationally and regionally implemented including Pacific HYCOS Project, UNEP GCF Project, GCF Van-KiRAP, CREWS Pacific SIDs Project, PACC and the SPREP One Pacific Programme in the pipeline. The project will also take onboard the recommendations highlighted in the "Pacific Countries and Territories-Hydrological Capacity Assessment and Needs" Report,

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~~[18] S.A.M.O.A (SIDS Accelerated Modalities of Action) - https://sustainabledevelopment.un.org/samoapathway.html~~
~~[19] PIMS 2017-2026 (Pacific Island Meteorological Strategy 2017-2026)~~
~~[20] FRDP (Framework for Resilience Development in the Pacific~~
~~[21] PMC (Pacific Meteorological Council) - https://www.pacificmet.net/pmc/expert-panels~~
~~[22] Weather Ready Pacific- Decadal Investment Program (https://www.pacificmet.net/sites/default/files/inline-files/documents/Weather%20Ready%20Pacific%20-%20Decadal%20Program%20of%20Investment%20Executive%20Summary_0.pdf)~~
~~[23] Pacific Roadmap (https://www.pacificmet.net/sites/default/files/inline-files/documents/PMC-4%20WP%2024.1%20Att%201%20-%20Pacific%20Roadmap%20for%20Climate%20Services.%20docx.pdf)~~
~~[24] Solomon Islands (https://solomonislands-data.sprep.org/dataset/national-development-strategy-2016-2035), Fiji (https://www.fiji.gov.fj/About-Fiji/National-Development-Plan), Vanuatu (https://www.gov.vu/index.php/resources/vanuatu-2030), Samoa (https://www.mof.gov.ws/wp-content/uploads/2021/03/Samoa-2040-Final.pdf)~~
~~[25] NDC (National Determined Contributions~~
~~[26] https://library.wmo.int/doc_num.php?explnum_id=9939~~
~~[27] RA V (WMO Regional Association V (South-West Pacific)~~

2019. The Pre-Concept will be piloted in the selected countries under AF with the rest of the Pacific Islands covered under a sister project proposal currently in the pipeline to the GCF for approval via SPREP, 'Climate Information and Early Warning Systems, One Pacific Programme'.

Consultative Process

Through the PMC-PHS Panel for Hydrological Services (Chair and the selected countries), the NHSnational hydrological country focal points identified in the commitment letters, AF NDAs were all consulted virtually on the pre-concept content. Including the regional technical partnersThe regional agencies like SPREP and SPC.C were also consulted on the pre-concept note. During the concept preparation and project design, a stakeholder engagement will be conducted is to be undertaken to identify key regional and national stakeholders including community representatives, NGOs and private sector. This is to, assess their roles and responsibilities during relevancy in the project and define their roles and responsibilities in the project implementation, and most importantly to capture and address their needs, concerns and any TKtraditional knowledge that surrounds hydrometeorology. The project builds on existing institutions and there will be buy-in from countries focal points. The consultation and participatory process will take into consideration gender, TK, traditional knowledge and cultural aspects. The project will contribute to strengthening and enhancement of the involvement of women and young professionals across the project in all facets of hydrology to improve the gender and age distribution. The technical partners will also be consulted on their specialised areas and capacities for the NHSs through the PMC-PHS.

Economic, Social and Environmental Benefits

The scope of the project will advance the operation of NMHSs in the selected countries with some community-based activities which will strengthen the self-help capabilities and resilience to the climate extremes. This will eventually to improve livelihoods, access to clean water and advancing their early warning response mechanisms to hydro-met related hazards through community-based warning dissemination channels, response support to vulnerable groups, identification of safer zones, coordination and collaboration with local agencies and stakeholders . The project is a Category B (to be assessed during the preparation of the CN)B3U in accordance with AF classification and should not have any negative impacts on the environment, livelihoods of people and economic developments. A full screening of AF ESS[28] and gender principles will be completed at the next stage to ensure compliance with the AF requirements.

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Leveraging achievements from other funding sources

The project will upscale and complement results and lessons learned from Pacific HYCOS 2006-2010 projects highlighted in the "Pacific Countries and Territories Hydrological Capacity Assessment and Needs" Report, 2019. This will be piloted in the selected countries under AF with the rest of the Pacific Islands covered under a sister project proposal currently in the pipeline to the GCF for approval via SPREP, 'Climate Information and Early Warning Systems, One Pacific Programme'. The participating countries are encouraged to utilise national AF allocations with accredited agencies to further sustain and build on from regional activities proposed under this proposed project. There is also the potential to upscale and complement activities established and implemented under UNEP GCF project[29], GCF Van-KiRAP[30], CREWS[31] Pacific SIDS Project, with relevant project components and activities including the day-to-day work of NMHSs.

Justification for Funding Requested

[28] ESS (Environment and Social Safeguard)

[29] UNEP GCF Project, 'Enhancing Climate Information and Knowledge Services for Resilience in 5 Island Countries of the Pacific Ocean (Prodoc). Cook Islands, Niue, Palau, the Republic of the Marshall Islands and Tuvalu.

[30] GCF Vanuatu (https://www.greenclimate.fund/project/fp035)

[31] CREWS Project (https://www.crews-initiative.org/en/projects/crews-pacific-sids-%E2%80%93-strengthening-hydro-meteorological-and-early-warning-systems-pacific)

The proposed project with a budget of USD 13,959,881 aims to contribute to adaptation strategies, through investment in combination of infrastructures and non-structural measures to improve preparedness, build awareness of best practices and behaviour change among practitioners, policymakers and communities to support and sustain in the long term the actions undertaken in the development of its activities, both within countries and at the regional level.

Sustainability

The project will institutionalise the integration of hydrometeorological ~~surface and groundwater hydrology~~ priorities ~~in~~ to existing national frameworks. It will also follow the same mechanism planned under the CREWS Pacific Project for formalising support agreements between the RSMC-Nadi and the Pacific Countries it serves. Similarly, for the Hydrology community at the National and Regional level will establish data sharing agreements with the purpose of strengthening early warning systems, this will assist in the project sustainability in the scope of improving data analysis, modelling and accurate information for the people. This will embed the actions and deliverables from this project to the pilot~~articipating~~ country activities including knowledge management and awareness programmes.~~.~~

PART III: IMPLEMENTATION ARRANGEMENTS

~~A.~~ The AF will provide resources to WMO as the Implementing Entity in line with the accreditation agreement to mobilise the project with a Project Manager to be based in the WMO Representative Office for the South-West Pacific, in Apia. WMO will enter into agreement with a consortium of national and regional partners to execute the project. The executing agencies include the –Fiji Ministry of Infrastructure and Meteorological Services, Samoa Ministry of Natural Resources and Environment, Solomon Islands Ministry of Environment, Climate change, Disaster Management and Meteorology and Ministry of Mines, Energy and Rural Electrification and the Vanuatu Ministry of Environment, Climate Change, Meteorology, Geohazards, Environment, Energy and National Disaster Management, ~~national focal points identified in the endorsement letters,~~ SPREP, ~~and~~ SPC and~~as well as~~ WMO.~~O, will implement specific project components and activities in collaboration with the NMHSs or line ministries, disaster management agencies and targeted communities to be identified during the concept stage. WMO as the accredited entity, will provide general oversight for the preparation, implementation and management of the project including monitoring and financial management to ensure consistency with its project management policies and procedures as well as AF fiduciary standards. For this purpose a project implementation unit will be established to manage on a day to day basis, track progress, coordinate all activities and liaise with partners etc. The National focal points will execute activities pertaining to community awareness and EWSs as well as any sector priorities, SPC and SPREP will provide the regional technical trainings and adviceadvise to the National Focal Points so to align with Regional Priorities in the PIMS at the PMC level through its Hydrology Panel. Due to the nature and scope of the project, WMO will also executinge project activities through its Technical Department, this is so the national pilot countries align their activities in accordance with the WMO standards on Hydrology as well as assist the region to establish a hydrology framework to guide the work of the region.~~ A Project Steering Committee (PSC) will be established to oversee the project implementation and provide oversight and~~f~~ overall guidance and direction to the Project Manager and executing agencies. The PSC will be responsible for the approval of all major revisions in the project strategy and implementation approach, annual workplans, and M&E[32] Plans. The composition will be ~~representatives from the 4 pilotselected countries including NMHSs, NDMOs and NDAs to AF or relevant national agencies, SPREP, SPC, WMO, technical partners and donors~~ confirmed at Concept Stage. It is important to note that local community

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[32] M&E (Monitoring and Evaluation)

engagement is key to the successful implementation of the project and will therefore be involved in the consultations and project planning exercises in the selected participating countries.

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PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[33] *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme. (Revised endorsement letters will be submitted by September 9, 2022)*

(Enter Name, Position, Ministry)	Date*: (Month, day, year)*
(Enter Name, Position, Ministry)	Date*: (Month, day, year)*
(Enter Name, Position, Ministry)	Date*: (Month, day, year)*
(Enter Name, Position, Ministry)	Date*: (Month, day, year)*

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Republic of Fiji National Adaptation Plan, Samoa National Adaptation Programme of Action, Solomon Islands National Adaptation Programme of Action, and the Republic of Vanuatu National Adaptation Programme of Action) ~~(……list here……)~~ and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.
   Jean-Paul Gaudechoux Head Regional Strategic Division Member Services and Development Department Implementing Entity Coordinator

Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Date: *(Month, Day, Year)*	Tel. and email:+41795144261
Project Contact Person: Lina Sjaavik	
Tel. And Email: lsjaavik@wmo.int	

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MINISTRY OF ECONOMY

P.O.Box 2212, Government Buildings, Suva, Fiji; Tele: (679) 330 7011, Fax: (679) 330 8654
Website: www.economy.gov.fj, Email: Economyinformation@economy.gov.fj
Ro Lalabalavu House, 370 Victoria Parade, Suva

8 September 2022

Email: Secretariat@Adaptation-Fund.org

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat

Dear Secretariat,

Endorsement for Pre-Concept on Regional Programme for Integrating Flood and Drought Management Early Warning for Climate Change Resilience in the Pacific

1. In my capacity as designated authority for the Adaptation Fund in Fiji, I confirm that the above regional project/programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Fiji and the Pacific.

2. The outcome of the proposal complements key areas of Fiji's Climate Change Act, Fiji's National Development Plan, the National Climate Change Policy, National Adaptation Plan, Fiji's National Climate Finance Strategy.

3. Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund without affecting Fiji's national allocation to the Adaptation Fund. If approved, the project/programme will be implemented by the World Meteorological Organization (WMO) and executed by the Ministry of Infrastructure and Meteorological Services, the Secretariat of the Pacific Regional Environment Programme (SPREP), and the Pacific Community (SPC) and WMO.

4. Please note that this Letter of Endorsement (**'LoE'**) applies to the Concept Note Only. We will issue a subsequent LoE to the accredited entity for the implementation of the project upon receipt of a Full Funding Proposal. This will also be subject to a comprehensive review from the Fiji Climate Finance Sectorial Working Group.

5. For any enquiries, please contact Mr. Prelish Lal on email via prelish.lal@govnet.gov.fj.

Sincerely,

Mr. Shiri Gounder
Permanent Secretary for Economy (AF DA)

GOVERNMENT OF THE INDEPENDENT STATE OF SAMOA
Ministry of Foreign Affairs and Trade

Postal: P.O. Box L1859
Apia, Samoa
Tel. No.: (685) 21-171
Fax No.: (685) 21- 504

Our Ref:
Your Ref:
Please address all correspondences to
The Chief Executive Officer

7th September 2022

TO: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 622 32405

Dear Secretariat,

Endorsement of the Pre-Concept on Regional Programme for 'Integrating Flood and Drought Management and Early Warning for Climate Change Resilience in the Pacific.

In my capacity as the Chief Executive Officer of the Ministry of Foreign Affairs and Trade; the designated authority for the Adaptation Fund in Samoa, I confirm that the above project/programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Samoa

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by the World Meteorological Organization (WMO) as the Implementing Entity and executed by the Ministry of Natural Resources and Environment, the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Pacific Community (SPC) and WMO.

The Government of Samoa looks forward to the favourable consideration of this project proposal, to support the advancement of National Hydrological Services and water resources information management in Samoa. For more information, please do not hesitate to contact Fraces Brown-Reupena (fran.reupena@mnre.gov.ws) and Malaki Iakopo (malaki.iakopo@mnre.gov.ws) of the Ministry of Natural Resources and Environment.

Yours sincerely,

Peseta Noumea Simi
Chief Executive Officer
Designated Authority

MINISTRY OF FOREIGN AFFAIRS AND TRADE
SAMOA

SOLOMON ISLANDS GOVERNMENT

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE, DISASTER MANAGEMENT & METEOROLOGY

P O BOX 21, HONIARA, SOLOMON ISLANDS

7th September 2022

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Dear Secretariat,

Subject: Endorsement for Pre-Concept on Regional Programme for Integrating Flood and Drought Management and Early Warning for Climate Change Resilience in the Pacific

In my capacity as designated authority for the Adaptation Fund in Solomon Islands, I confirm that the above regional project/programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Solomon Islands and the Pacific.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by the World Meteorological Organization (WMO) and executed by the Ministry of Environment, Climate Change, Disaster Management and Meteorology and Ministry of Mines, Energy and Rural Electrification, the Secretariat of the Pacific Regional Environment Programme (SPREP), and the Pacific Community (SPC) and WMO.

Sincerely,

Chanel Iroi
Deputy Secretary Technical
Designated Authority to the Adaptation Fund

GOVERNMENT OF THE
REPUBLIC OF VANUATU
MINISTRY OF CLIMATE CHANGE
ADAPTATION, METEOROLOGY,
GEO-HAZARDS, ENVIRONMENT &
ENERGY & NDMO
PMB 9074, PORT VILA
VANUATU

GOUVERNEMENT DE LA
RÉPUBLIQUE DE VANUATU
MINISTÈRE DE L'ADAPTATION AU
CHANGEMENT CLIMATIQUE, LA
MÉTÉOROLOGIE, LES RISQUES
GÉOLOGIQUES, ENVIRONNEMENT &
ENERGIE & NDMO
SPR 9074, PORT-VILA, VANUATU

Tel: (678) 22068
Website: www.mocca.gov.vu

Ref : PV/MoCC/NAB/PROJ-AFB:4.A.1

8th September 2022

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Dear Secretariat,

Subject: Endorsement for Pre-Concept on Regional Programme for Integrating Flood and Drought Management Early Warning for Climate Change Resilience in the Pacific

In my capacity as designated authority for the Adaptation Fund in Vanuatu, I confirm that the above regional project/programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Vanuatu and the Pacific.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by the World Meteorological Organization (WMO) and executed by the Ministry of Environment, Climate Change, Meteorology, Geohazards, Environment, Energy and National Disaster Management in Vanuatu, the Secretariat of the Pacific Regional Environment Programme (SPREP), and the Pacific Community (SPC) and WMO.

Sincerely,

REPUBLIC OF VANUATU
Director General of Climate Change Adaptation, Meteorolgy, Geohazards Environment, Energy & NDMO
Directeur Général Du Climat Change Adaptation, Meteorologie Georisques, Environement, Energie et NDMO
REPUBLIQUE DE VANUATU

Esline Garaebiti
Director General, Ministry of Climate Change
Designated Authority to the Adaptation Fund

ADAPTATION FUND

Project Formulation Grant (PFG)

Submission Date: 5 August 2022

Adaptation Fund Project ID:
Country/ies: Fiji, Samoa, Solomon Islands and Vanuatu
Title of Project/Programme: Integrating Flood and Drought Management and Early Warning for Climate Change Resilience in the Pacific Islands
Type of IE (NIE/MIE): Multilateral Implementing Entity
Implementing Entity: World Meteorological Organization (WMO)
Executing Entity/ies: World Meteorological Organization (WMO), Secretariat of the Pacific Regional Environment Programme (SPREP) and Pacific Community (SPC).

A. Project Preparation Timeframe

Start date of PFG	**January 2023**
Completion date of PFG	**April 2023**

B. Proposed Project Preparation Activities ($)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
<u>Scoping/Desktop Review</u> Collect/compile relevant documents and data such villages / communities, provinces, districts, and national plans, legislation, regulations and policies, assessments, demographic and socioeconomic information, previous project evaluations, other ongoing or proposed project documents that will inform the development of the concept note	An inception report including a list of documents, data and information that will inform the development of the concept note.	5,000
<u>Proposed project scope/contents</u> • Review and validate the pre-concept note document and the results from the the desktop review • Develop a Theory of Change (ToC) and a draft	A draft concept note that incorporates the results from the desktop review including a ToC and detailed logical framework and budget estimates.	15,000 *Proposing that all workshops will be virtual*

Logical Framework to clearly outline the proposed project interventions (these include problem and objective trees) • Develop a project budget estimate • Convene virtual workshop(s) to include key stakeholders in the review, validation and development of the ToC and logical framework		
Total Project Formulation Grant		**20,000**

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Jean-Paul Gaudechoux, Office for Resource Mobilization and Development Partnerships		5 August 2022	Jean-Paul Gaudechoux and Lina Sjaavik	+41227308311 +41779590005	jpgaudechoux@wmo.int LSjaavik@wmo.int