



ADAPTATION FUND

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 Area¹: 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

The Pacific region is exposed to natural hydro-meteorological and geological hazards due to its proximity to the equator and rim of fire. Small Islands have limited water resources, which are susceptible to these natural hazards². The AR6 Climate Change 2021³ highlights that heavy precipitation and associated flooding events are projected to become more intense and frequent in Pacific Islands, as well as storm surges, coastal floods and erosion due to sea level rise, together with salt intrusion in groundwater and increased extreme drought. Hydrology related issues affecting Pacific Islands include 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 NHSs⁴ 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 cyclones⁵ 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 and approaches. 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 NWP⁶ 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, NMSs⁷ 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

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

² Natural hazards including droughts, floods, tropical cyclones, coastal inundation, salt-water intrusion, earthquakes, tsunamis, volcanic eruption, and landslides

³ <https://www.ipcc.ch/assessment-report/ar6/>

⁴ NHSs (National Hydrological Services)

⁵ TC Evan in 2012 (Samoa), Pam in 2015 (Vanuatu), Winston in 2016 (Fiji) Harold in 2020 (Solomon Islands and Fiji)

⁶ NWP (Numerical Weather Prediction)

⁷ NMSs (National Meteorological Services)

response to climate events will improve understanding and application of evidence based sustainable management practices and early warning systems and responses.

Project / Programme Objectives:

The goal is to assist Pacific Islands develop hydrological and water resources data, information, products services, and management practices, to strengthen resilience of Pacific Islands' communities to floods and droughts. It builds on existing infrastructure, data and information, institutional settings such as PMC⁸, Pacific Islands Hydrology Panel, Pacific HYCOS⁹; several AF funded projects¹⁰, and other regional and bilateral initiatives undertaken by development partners to enhance the safety, health, food and water security, livelihood, and other socio-economic well-being of Pacific peoples.

The main specific objectives are:

- To improve hydrology infrastructure and communication particularly flood and drought data and forecasting systems to improve early warnings.
- 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, government, and stakeholders to better manage water resources and 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 levels.

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. Policies, legislations and regulations | Improved policies, legislations, regulations and coordination that promote and promote resilience measures | Improved integration of surface and groundwater hydrology and water resource management strategies into country development plans, legal frameworks and related policies | 1,500,000 |
| 2. Hydrology and water resource hazards and threats | Reduce exposure and strengthened EWS for climate related hazards and threats including at | Flooding/Inundation, Drought and Groundwater related risk and vulnerability assessments conducted and updated and monitoring infrastructure systems installed | 6,400,000 |

⁸ PMC (Pacific Meteorological Council) - <https://www.pacificmet.net/pmc>

⁹ <https://hydrohub.wmo.int/en/projects/Pacific-HYCOS>

¹⁰ 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/>,

| | | | |
|---|--|--|-------------------|
| | regional and national scales | Targeted population groups provided with adequate flood and inundation risk reduction systems and information products | |
| 3. Communication awareness, knowledge products and data management | Strengthened awareness, ownership and responses to climate related hazards at regional and national scales | Strengthened capabilities and systems to collect, analyse, manage and disseminate hydrological and hazard information | 2,000,000 |
| | | Improved knowledge and learning products through development of knowledge materials | |
| | | Targeted population groups participation in adaptation and risk reduction awareness activities relating to hydrology and water resources | |
| 4. Capacity development | Strengthened capacity of stakeholders to address and respond to hydrometeorological hazards and threats | Improved capacity for NHSs staff through recognised trainings and mentorship | 1,850,000 |
| | | Enhanced capacity for preparedness and responses at national level through trainings and consultations | |
| 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 |

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: (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; (iii) To strengthen communication and awareness on the applications and benefits of hydrological data and products; and (iv) To improve capacity and knowledge of decision-makers and users of hydrological data and products.

Innovative Solutions

WMO will implement the HydroSOS¹¹ whose main objective is to develop a system that will bring NMHSs¹² together to improve the provision of reliable, timely, accurate and relevant hydrological status assessments and outlook products to inform water resources management. 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

¹¹ HydroSOS (Hydrological Status and Outlook System) <https://public.wmo.int/en/resources/bulletin/hydrosos-%E2%80%93-hydrological-status-and-outlook-system>

¹² NMHSs (National Meteorological and Hydrological Services)

products and informed decision-making. It is connected to other WMO initiatives such as HydroHub¹³/WHYCOS¹⁴ and WHOS¹⁵.

Cost Efficiency and Effectiveness

The project will enhance hydrological services in the four participating countries due to the public good nature of such services and limited availability of national funding. The investment will directly address financial, technical, capacity and coordination barriers to the effective delivery of hydrology services in the participating countries. A CBA¹⁶ will be conducted to identify and assess costs and benefits of proposed interventions for each participating country. 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 which will be developed in an efficient, cost-effective, and complementary manner. The selected countries will take ownership for systems built in the project after the completion and allocate sufficient resources for maintenance.

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

This project will assist countries in achieving commitment to S.A.M.O. A¹⁷ Pathway and SDGs Goal 6,9, 13 and 17 on Clean Water and Sanitation. NHSs enactment of PIMS 2017-2026¹⁸ contributes to the regionally led FRDP¹⁹, PMC²⁰ Panels' Action Plans, the Weather Ready Pacific Decadal Programme of Investment²¹, and the Pacific Roadmap for Strengthened Climate Services 2017-2026²². In addition, it will assist Governments to achieve specific targets under their respective national development strategic plans²³. Globally, PIMS addresses Governments adaptation commitments under the Paris Agreement (NDC²⁴), WMO Strategic Plan 2020-2023²⁵ and the RA V²⁶ Operational Plan. The hydrological 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.

Consultative Process

Through the PMC Panel for Hydrological Services (Chair and the selected countries), the national hydrological country focal points, AF NDAs were all consulted virtually on the pre-concept. The regional agencies like SPREP and SPC were also consulted on the pre-concept note. During the concept preparation, a stakeholder engagement is to be undertaken to identify key regional and national stakeholders, assess their relevancy in the project and define their roles and responsibilities in the project implementation. The consultation and participatory process will take into consideration gender 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.

Economic, Social and Environmental Benefits

¹³ HydroHub (WMO Global Hydrometry Support Facility) - <https://hydrohub.wmo.int/en/home>

¹⁴ WHYCOS (World Hydrological Cycle Observing System)

¹⁵ WHOS (World Hydrological Observing System - <https://public.wmo.int/en/our-mandate/water/whos>)

¹⁶ CBA (Cost Benefit Analysis)

¹⁷ S.A.M.O.A (SIDS Accelerated Modalities of Action) - <https://sustainabledevelopment.un.org/samoapathway.html>

¹⁸ PIMS 2017-2026 (Pacific Island Meteorological Strategy 2017-2026)

¹⁹ FRDP (Framework for Resilience Development in the Pacific)

²⁰ PMC (Pacific Meteorological Council) - <https://www.pacificmet.net/pmc/expert-panels>

²¹ 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)

²² Pacific Roadmap (https://www.pacificmet.net/sites/default/files/inline-files/documents/PMC-4%20WP%2024.1%20Att%20-%20Pacific%20Roadmap%20for%20Climate%20Services_%20docx.pdf)

²³ 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>)

²⁴ NDC (National Determined Contributions)

²⁵ https://library.wmo.int/doc_num.php?explnum_id=9939

²⁶ RA V (WMO Regional Association V (South-West Pacific))

The scope of the project will advance the operation of NHSs in the selected countries with some community-based activities to improve livelihoods, access to clean water and advancing their early warning response mechanisms to hydro-met related hazards. The project is a Category 3 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 ESS²⁷ will be completed at the next stage to ensure compliance with the AF requirements.

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 project²⁸, GCF Van-KiRAP²⁹, CREWS³⁰ Pacific SIDS Project, with relevant project components and activities with hydrology focus.

Justification for Funding Requested

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.

PART III: IMPLEMENTATION ARRANGEMENTS

- A. The AF will provide resources to WMO as the Implementing Entity to mobilise the project with a Project Manager to be based in the Office for the South-West Pacific, in Apia. The executing agencies, SPREP and SPC as well as WMO, will implement specific project components and activities. The project will also establish a Project Steering Committee (PSC) to oversee the project implementation and be the strategic decision-making body of the project providing overall guidance and direction to the Project Manager and executing agencies. The PSC will be responsible with the approval of all major revisions in the project strategy and implementation approach, annual workplans, and M&E³¹ Plans. The composition will be representatives from the selected countries including NMSs, NHSs, NDMOs and NDAs to AF or relevant national agencies, SPREP, SPC, WMO, technical partners and donors. It is important to note that local community engagement is key to the successful implementation of the project, therefore, will need to be involved in the consultations and project planning exercises in the selected participating countries.

²⁷ ESS (Environment and Social Safeguard)

²⁸ 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.

²⁹ GCF Vanuatu (<https://www.greenclimate.fund/project/fp035>)

³⁰ CREWS Project (<https://www.crews-initiative.org/en/projects/crews-pacific-sids-%E2%80%93-strengthening-hydro-meteorological-and-early-warning-systems-pacific>)

³¹ M&E (Monitoring and Evaluation)

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

- A. Record of endorsement on behalf of the government³²** *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme.*

| | |
|---|---------------------------------|
| <i>(Enter Name, Position, Ministry)</i> | <i>Date: (Month, day, year)</i> |
| <i>(Enter Name, Position, Ministry)</i> | <i>Date: (Month, day, year)</i> |
| <i>(Enter Name, Position, Ministry)</i> | <i>Date: (Month, day, year)</i> |
| <i>(Enter Name, Position, Ministry)</i> | <i>Date: (Month, day, year)</i> |

B. Implementing Entity certification

| | |
|---|------------------------------------|
| <p>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 (.....list here.....) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p> | |
| <p>Jean-Paul Gaudechoux Head Regional Strategic Division Member Services and Development Department Implementing Entity Coordinator</p> | |
| <i>Date: (Month, Day, Year)</i> | <i>Tel. and email:+41795144261</i> |
| <i>Project Contact Person:</i> | |
| <i>Tel. And Email:</i> | |

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.

