

WP\_7.0\_Att.\_1\_Concept Note - Strengthening the Hydro-Met Partnership in PICT's

**Title: Strengthening Hydrological and Meteorological Partnerships in Pacific Island Countries**

Proposal for a regional project to build capacity in hydrology for the Pacific Islands region

**Background**

The Pacific Islands are often subject to frequent flooding and periods of low rainfall which can severely impact on rural and urban communities alike. Recent floods in Fiji in 2009, 2012, and in Samoa 2013, whilst drought events in Kiribati, and Tuvalu in 2011, and Republic of Marshall Islands 2013, resulted in the declaration of States of Emergency and States of Disasters, and caused extensive damage and hardship to communities. These recent examples indicates the frequency and magnitude of severity that are regular felt by Pacific Island Countries to climatic events

There is enormous diversity of landscape found in the Pacific, from mountainous areas to atolls which may only be a few 100 metres wide. These landscapes influence the type and nature of the water systems which are found, where surface water and groundwater systems are generally very dynamic contributing to the volatility of the river systems and the fragility of the groundwater systems. The capability of these water systems to accommodate the large variations in rainfall and climate that are regularly present in the Pacific is limited. The result is often flood and drought events that can have devastating impacts on communities and a countries development.

Water is at the top of the list of concerns for both the Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) communities, where water security is fundamental to the very survivability of many Pacific island communities and flood and drought surveillance and warning is identified as an intricate part of the disaster preparedness and recovery.

Recent examples of the responses and the warnings to natural disasters in the Pacific demonstrate the importance of bridging the meteorological and hydrological communities in Pacific island countries to ensure a strong and responsive partnership with the capacity to provide relevant and timely information to help countries, communities and agencies be better equipped to respond to droughts and floods and better predict these rapid onset events.

In the majority of Pacific island countries government activity in the water sector is primarily confined to supplying the domestic and potable water needs to communities. Resources, skills and institutional frameworks to respond to additional demands outside of this core activity is often limited. There is a need to ensure that during floods and droughts the essential information is available to help in the response, and that dedicated teams are able to be mobilised to collect and provide the relevant information if necessary. To this end national metrological offices with their established institutional frameworks, governance and culture towards supplying targeted and timely information are well placed to partner with hydrological services and provide support to ensure data collection, data management and the delivery of adequate forecasts and warnings of droughts and floods.

**Objectives**

1. To improve the hydrological data monitoring and archival programs and strengthen human capacity within participating countries and territories.

2. Integrate meteorological and hydrological services in participating countries and territories to ensure data collection, timely and adequate information needs and warnings are provided to governments, public and stakeholders during extreme events.
3. To develop and implement regionally consistent strategies to help manage extreme hydrological events based on identifiable thresholds appropriate to the issues faced by each individual country or territory.
4. Establish a regional “centre of excellence” in operational hydrology capable of supporting other countries and territories within the region.

#### Methodology

1. Strengthen rainfall data capture, river monitoring, groundwater monitoring to targeted locations across the region with the installation of suitable monitoring equipment and monitoring schedules. Where appropriate and in key locations information gathered by these instruments will be sent in real time by telemetry to facilitate an early warning program managed by local hydro-meteorological services. (Managed by SOPAC/SPC)
2. Train hydro-meteorological service staff in participating countries to interpret hydrological and meteorological data so that they may provide valued added assessments pertaining to the state of water resources at select locations. Fiji meteorological services, following from a WMO review of the provision of hydrological in July 2012, now is responsible for national hydrological services and the provision of flood forecasting and warnings. Fiji also houses the Regional centre for Meteorological Services. It is recognised that skills, equipment and importantly leadership is required to build an effective hydrological service that can meet these needs. It is proposed that support be provided to Fijis NHMS to ensure they are well placed to deliver on the needs of an integrated NHMS. The placement of a hydrological expert in Fiji Meteorological Service for a period of 12 to 24 months (to be determined) to ensure hydrological services are well integrated into the NMHS in Fiji is proposed. This attachment would build on existing efforts already being undertaken in Fiji such as the CIFDP-F project already underway to develop the capacity of the meteorological service in Fiji. Salary for officer would be supported by a regional institution (e.g. NIWA or BoM) while allowances and travel costs supported by the project. (co-jointly managed by SPREP and SOPAC/SPC)
3. Integrate hydro meteorological data into current and future plans for participating countries to minimize the impacts of extreme hydro-meteorological events (flood and drought) on social and economic sectors including agriculture, water security and health. In conjunction with NDMO’s, optimize early warning plans to ensure appropriate actions are taken at appropriate times to respond to the insidious impact of drought on small island countries, in particular atoll nations. (co-jointly managed by SPREP and SOPAC/SPC).

**Comment [P1]:** This should be linked to 3. That is we install equipment and introduce monitoring with a specific purpose ie to provide warning for flood and drought

**Comment [P2]:** Is this agreed to with BOM. We could also use NIWA who have some good experience in the region if we find the funding?

#### Outcomes

- A core “centre of excellence” in hydrology is established in Fiji to provide national and regional hydrological analysis and prediction.
- Fiji Meteorological Service able to provide direct services to smaller countries in the region and additionally train other countries to further build their own hydrological services.

- Governments better able to manage extreme hydro-meteorological events in a strategic and consistent manner thereby minimizing their impact on the communities within their country.
- A model approach is piloted demonstrating the advantages of hydrological and meteorological cooperation and integration for use by other Pacific Island Countries

**Budget**

Activity 1 - Improved monitoring and data collection - USD500,000

Activity 2 - Capacity building within NMHS's - USD350,000

Activity 3 - Development and Revision of strategic plans - USD150,000

**Co - funding**

Support for CIFDP-F (KOICA / AusAID?)

Salary for Hydrologist to be appointed to FMS (NIWA / BoM?)

NMHS capacity building for services delivery (Finland / AusAID)