

 <p>United Nations Development Programme Pacific Office</p>	<p>BACK TO OFFICE REPORT (BTOR)</p> <p>Submitted by: Navin Bhan Title: Associate Project Manager Date Submitted: June 11, 2019 TA Serial Number:</p>
<p>1. Practice Area: RESPAC Project, Pacific Office 2. Service Line(s): Climate Early Warning, Disaster Preparedness and Recovery and Innovative Financial Instruments for Disaster Financing</p>	
<p>3. Mission Period (incl. of travel days): From: 20 May 2019 To: 29 May 2019</p>	
<p>4. Type of Service/Mission</p> <p><input type="checkbox"/> Advocacy <input type="checkbox"/> Analysis <input type="checkbox"/> Policy Advice <input checked="" type="checkbox"/> Programme / Technical Backstopping <input type="checkbox"/> Resource Person <input checked="" type="checkbox"/> Regional Technical Consultations <input type="checkbox"/> Training / Capacity Development <input type="checkbox"/> Others (specify):</p>	<p>5. Client(s)</p> <p>Bureau of Meteorology (COSPAC Management Unit) Cook Islands Water Works Division, Ministry of Infrastructure Cook Islands Meteorological Services (CIMS) National Institute of Water and Atmospheric Science (NIWA) Fiji Meteorological Services and RESPAC Team</p>
<p>6. Purpose of Mission:</p> <p>The primary purpose of the trip to Cook Islands was to participate in the planning meeting for the Climate and Oceans Support Programme (COSPAC) which is an Australian Government funded Programme that extends a 25-year partnership between the Australian Government and its Pacific partners in the area of climate and oceans support. COSPAC 1 is now coming to an end and will be superseded by a second phase valued at AUD39.3million. During the mission, the Associate Manager also visited the Cook Islands Water Works Division under the Ministry of Infrastructure entrusted with Hydrological to map out support under the India CLEWS project. The Associate Manager and the Senior Scientific Officer also visited the Cook Islands Meteorological Services (CIMS) to check out the status of data integration into CLiDE. Finally on return from New Zealand, the team had a pre-arranged meeting with the Pacific Manager for the National Institute of Water and Atmospheric Science to discuss data integration issues faced by CIM</p>	<p>7. Documents, Materials, Resources from Mission</p> <ul style="list-style-type: none"> - COSPAC Planning Meeting Documents and Presentations - Infrastructure Cook Islands Strategic Plan
<p>8. Mission Member(s) (include consultants if any)</p> <p>Navin Bhan – Associate Manager – CLEWS Bipen Prakash – Senior Scientific Officer - Climate</p>	<p>9. Cost (for RCC staff only)</p> <p>Air ticket = USD2,000 * 2 = USD4,000 DSA and Terminals = USD3,000 * 2 = USD6,000</p>
<p>10. Brief Summary of the Mission: 10A. Findings</p> <p>i) COSPAC 2 – Planning Meeting</p> <ul style="list-style-type: none"> - The Climate and Oceans Support Program in the Pacific (COSPPac) Phase 2 is a climate information 'subprogram' of the Climate Partnership that works to ensure policy, program development and implementation across the Pacific is appropriately climate-informed. 	

- COSPPac 2 is a continuation of Australia’s long-running investment in climate science and the provision of data, services and products that support good planning and decision making across partner Pacific countries and territories.
- The wider strategic purpose of COSPPac 2 is to strengthen the relevant Pacific partner institutions to enable ongoing collaborative and mutually beneficial peer relationships with BoM and GA— noting that the domestic mandates of these Australian organizations depends on reliable technical information from the Pacific.
- COSPPac2 deliverables have been organized through three ‘projects’/components: Pacific Sea Level and Geodetic Monitoring Project (PSLGM); Climate Data and Environment Project (CLiDE); Seasonal Predictions Project (SPP).
- On the climate side and as noted by the Associate Manager, a lot of emphasis is being placed on the analysis of data without much regard to how data is being collected and analyzed. Direct support to National Meteorological and Hydrological Services is severely lacking and ultimately will affect the quality of data and products that COSPPAC 2 aims to generate.
- Concerns relating to above was conveyed to COSPPAC 2 manager (Ms. Celine Becker) however there are not many expectations of the Australian Government deviating from its current track. Chances of collaboration with COSPPAC beyond the population of climate data into CLiDE and its related issues are minimal.

ii) Infrastructure Cook Islands (ICI) – Water Works and Sanitation Department

- ICI Water Works Division is a department under the Ministry of Infrastructure which had a dual role of maintaining the water reticulation system in Rarotonga as well as providing oversight role on water needs for Rarotonga and the rest of the Pa-Enea (outer islands).
- ICI Water Works was the key beneficiary of the 2018 Hydrological Training carried out by the National Institute of Hydrology (NIH) in Roorkee India whereby 2 of its officers participated in the 5-week training exercise.
- Given the separation of roles resulting in the Te Mato Vai project and the creation of the State Owned Enterprise (SOE) to look after water reticulation, ICI Water Works will now focus more on its regulatory functions and in particular focus on:

Outcome 1: Emergence of ICI as an empowered regulator

Strategic Goal(s)	Outputs	Achievement Indicators
1.1 Enabling policy and planning framework in place	Develop and implement national and organizational policies, technical standards and codes, master plans and strategies, legislation and regulations	Island Water Supply Master Plans completed
	A one stop shop for building control, electrical compliance, and water and sanitation regulation	Ongoing compliance and regulatory support
	Prepare and implement asset management plans (AMPs)	Updating of Water database continued
1.2 Access to reliable geoscience hydrographic and maritime boundaries information.	Establish National Hydrography Office and National Hydrography Committee and charting priorities	Ability to produce and maintain charts developed (through close cooperation with the historical charting authority)

Outcome 2: A sustainable environment

Strategic Goal(s)	Outputs	Achievement Indicators
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2.2 A built environment able to support human development and withstand disasters and climate change	Manage stormwater	Flood control works to discharge of flood waters in Karekare wetland completed
	Be prepared to manage drought on Rarotonga	Water tank subsidy reintroduced and fully taken up, linked to rooftop rainwater collection
	Ensure that the quality of marine water is safe and clean	Ongoing monitoring and support for sanitation and wastewater upgrades

- Outcome 3: Sustainable infrastructure

Strategic Goal(s)	Outputs	Achievement Indicators
3.1 Access for all to safe water	Improve water supply in Pa Enea	Atiu water reticulation completed

- With possible closure of the Water Works Division and amalgamation of its roles into the State Owned Enterprise (SOE), formal decision on the transfer of duties was pending at the time of the visit, officials from the Planning and Design Team of the ICI met with the UNDP Associate Manager.
- The meeting focused on the scope of assistance and the amount that can be leveraged from the India CLEWS project. On the scope, it was agreed that a resistivity machine be prioritized as a means to more economical mapping of the ground water sources in the outer islands. On funding it was tentatively agreed that a sum of USD100,000 will be available to ICI and a formal LOA will need to be signed so that the former can access this funding.
- It was agreed that the Water Works staff will submit a detailed workplan focusing on the completion of ground water mapping in Atiu and Mangaia. UNDP Associate Manager to finalize the LOA and submit for ICI review and signature once the workplan has been submitted.

iii) CLiDE Data Integration Issues (Meeting with CIMS Director and Manager Operations)

- The Associate Manager and the Senior Scientific Officer scheduled a meeting with the Director of CIMS on the issue of data integration from the AWS to CLiDE. This was particularly relevant for the Northern Group of Islands especially Manihiki, Pukapuka and Rakahanga.
- It was explained that a team from NIWA was on the ground for the past 2 weeks trying to resolve the issue and a brief summary of the problem is as per follows:
- There are 2 modes of telemetry: Option 1 is using BlueSky Internet and Option 2 is the BGAN Satellite Telemetry which is common to all countries. BlueSky Internet was hacked sometimes in 2019 prompting "denial of services" to legitimate customers. To counter these attacks, BlueSky took down the IP transfer facility however it was found out that the BGAN modem was also not sufficiently calibrated to provide daily transfer of data. The modems were sent back to New Zealand and till now, they have not been installed to provide the normal telemetry services. Hence all 3 northern stations are not transmitting data and it is not clear whether any data is being recorded.
- A snapshot table, attached as Annex 1 was provided to show data telemetered to CLiDE. As it can be seen, none of the data from the 3 northern stations are being received and stored in CLiDE. This matter needs further clarification from NIWA as the supplied modems were part of an order placed 2 years ago and funded under the SRICC project.

iv) Meeting with NIWA in Auckland

- The meeting held with Mr. Doug Ramsay, Manager Pacific Rim took place on Tuesday 29th May at the M-Central Apartments in Manukau. Meeting focused on 3 topics which included:
- NIWA Support for the Climate Health Initiative – the involvement of NIWA was discussed as early as 2017 however this has not been followed up. NIWA has volunteered one of its staff to help get the initiative started however the person is currently on vacation and most likely starting in the 3rd quarter. This was deemed a bit late and request was made to send a substitute data expert. NIWA

took heed of the request and will get back on this issue if they can identify someone from their team to take this role.

- The issue of Cooks Islands Data to CliDE was discussed in depth and request was made for NIWA to provide full disclosure of why the current modems needed off site upgrade. Also the status of data storage in the Data Loggers was also raised and assurance provided that no data will be lost if action is taken to replace the data modems in the next month.
- The case of resistivity machine for Solomon Islands hydrology was raised however NIWA clarified that they only provided the general specifications from which the SIWSAP project undertook its own procurement.

10B. Results Achieved (concrete outputs)

- Advocated for more attention to be placed on AWS Network Maintenance issues as opposed to focus primarily on data.
- Enhanced understanding of water issues in the Pa Enea.
- Identified critical shortcoming in the Data to Clide telemetry for the Northern Group of Islands.
- Future engagement with NIWA on Health-Climate interface.

10C. Expected Outcome(s) and Impact

- While chances of getting additional support through COSPPAC is minimal, there is hope that constant attention to detail and further support from NMHS Director will prevail allowing for greater allocation of fund to meet ongoing AWS Maintenance issues. Quality of products is dependent on quality of data is an apt moniker.

11. Key counterpart (s) and persons you met in each location and their contact details:

Name:

COSPPAC

Ms. Celine Becker - Manager

Infrastructure Cook Islands

Mr. Wilson Rani – Water Works Division

Mr. Othaniel Tangianau – Pa Enea Program Coordinator

Mr. Timothy Tangirere – Water Works Division

Cook Islands Meteorological Services

Mr. Arona Ngari – Director

Mr. Bates Manea – Manager Operations

National Institute of Water and Atmospheric Research

Mr. Doug Ramsay – Manager Pacific Rim

Contact Information:

12. Follow-up Action Matrix

12.1 Disaster Resilience for Pacific SIDs (RESPAC)

Actions to be taken	By Whom	Expected Completion Date
Invitation to COSPPAC Manager to attend RESPAC Meeting	Navin Bhan	30 August
LOA prepared for Cook Islands Infrastructure to	Navin Bhan	14 June

allocate funding under the India CLEWS project.		
Resolution of data logger and telemetry issues for the Northern Cooks	Navin Bhan/ Arona Ngari	30 June
13. Distribution List (BTOR sent to): Internal Clients: - RESD Group Email, MET Directors		

Annex 1: AWS Data to CLiDE

	DATA IN CLiDE											
	2016			2017			2018			2019		
STATION	Rainfall	Max Temp	Min Temp	Rainfall	Max Temp	Min Temp	Rainfall	Max Temp	Min Temp	Rainfall	Max Temp	Min Temp
Atiu				25%	x	x	100%	x	x	100%	x	x
Mauke				8%	8%	8%	100%	100%	100%	100%	100%	100%
Mangaia				25%	25%	25%	100%	100%	100%	50%	50%	50%
Manihiki				x	x	x	x	x	x	x	x	x
Mitiaro				8%	8%	8%	100%	100%	100%	100%	17%	x
Penrhyn							33%	33%	33%	100%	100%	100%
Rakahanga							x	x	x	x	x	x
Rarotonga EWS	100%	100%	100%	83%	83%	83%	75%	75%	75%	100%	100%	100%
Titikaveka				92%	92%	92%	100%	100%	100%	100%	100%	100%