



Climate and Oceans Support Program in the Pacific

FEBRUARY 2015



Afulilo hydropower station in Apia.
Photo: Fotu Vaai

Manager's message

A happy new year to all of our friends around the region. I hope you all had a safe and relaxing break with friends and family, and are ready to get stuck into 2015!

COSPPac had a busy last quarter in 2014 with traditional knowledge workshops, training with Fiji Met, the GIS user conference in Suva and the climate and hydropower workshop in Samoa.

Late last year, we also received the COSPPac mid-term review, which had a lot of great things to say about how the program has been implemented so far—with flexibility, gender balance, relevance, and a strong focus on stakeholder needs. There are still some areas where we can do better, and we'll be working to improve over the remainder of the project. Please keep providing us with your feedback and thoughts so we can keep meeting your expectations.

Coming up in May, the Management Team and I will present our final year work plan to the COSPPac Steering Committee. Our focus will be on a smooth transition of the products and services; and continuing to provide high-quality development opportunities for NMSs and Lands and Surveys Departments.

Looking forward to another exciting year,

Janita

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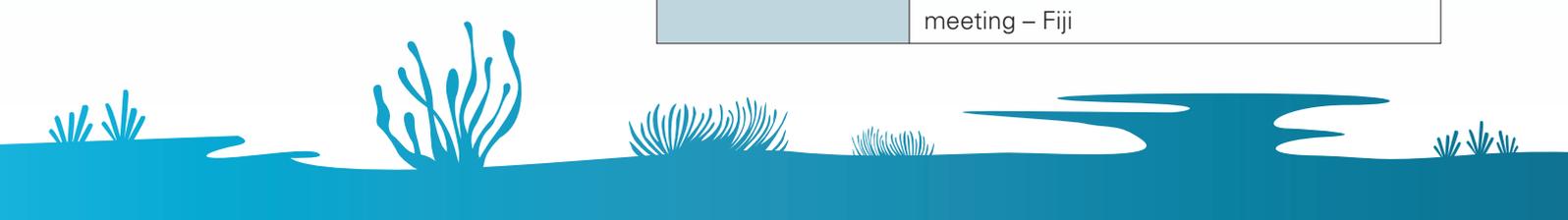
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Happy New Year from the COSPPac team! We are looking forward to another productive and rewarding year working with our partners across the Pacific.

Upcoming events	First tides and oceans conversation series meeting – Hawaii
	Second tides and oceans conversation series meeting – Samoa
	Third tides and oceans conversation series meeting – Fiji





NCCARF group

Pacific delegates make a mark at Climate Adaptation 2014: Future Challenges

Pacific representation shone at the Climate Adaptation 2014: Future Challenges conference on the Gold Coast in early October, with climate staff from thirteen partner countries presenting, networking and learning.

The conference brought together researchers, practitioners and decision makers to share their knowledge and experience in climate adaptation.

Seven climate officers gave short presentations on their research, covering a range of topics including drought, flooding, cyclones and ENSO. 15 scientific posters produced by the participants were on display at the event, prompting many fruitful conversations between climate officers and conference attendees. Warm congratulations are extended to Kila Kila from Papua New Guinea, whose hard work and dedication saw her win a 'highly commended' award for her poster 'Drought and water resource management in Port Moresby'.

The group stayed on for an additional four days of training on developing Seasonal Climate Outlooks, the SCOPIC seasonal prediction tool and the newly developed Drought Module.



Rossy and Zarn conducting a TK interview

Traditional knowledge projects underway in Niue, Samoa and the Solomon Islands

Over the past few months Niue, Samoa and the Solomon Islands have been eagerly collecting traditional weather and climate knowledge from as many community members as they can interview. All of the information collected is entered into their own Traditional Knowledge (TK) database.

The databases were installed late last year, with training workshops on how to use them provided by TK scientists Lynda and Roan.

Met officers and staff from partner agencies will work over the next 18 months to collect information about local climate and weather indicators—such as trees, birds, fish, flowers, waves and the moon. After an indicator is identified, it is monitored over time to find how reliably it can predict future weather and climate. The next stage of the TK project in COSPPac is to develop the database further so that it can store the ongoing indicator monitoring information.

Reflections from PNG's representative at the international NCCARF conference

By Kila Kila, Papua New Guinea National Weather Service

In June 2014, I was given the opportunity to be part of the COSPPac Regional workshop in Melbourne, where each of us was asked to prepare an abstract with the assistance of a COSPPac scientist—a very challenging task in a short time! My abstract—Drought and water resource management in Port Moresby—was submitted to the NCCARF conference organisers, and accepted! Then I began the daunting task of putting together my poster and presentation. I went around interviewing locals and stakeholders and taking photos around the city, and at the end of the second week I had a lot of content to go onto my poster. My enthusiasm to work was great and I loved it all. Jason was my COSPPac mentor and I worked with him and Melissa doing analysis, writing the content and pulling all the bits and pieces together. Finally I received a draft copy of my poster and I was so amazed that I had eventually produced a poster.

I was privileged to be able to attend the NCCARF conference on the Gold Coast to present my work, thanks to my manager and director.

The conference was a great opportunity; I have never been to a huge conference before. I was confident and determined to get involved. I settled in and then met up with the COSPPac team and other Pacific colleagues, all looking energetic and excited for the week ahead. We began with a short meeting and then had the great privilege to meet the director of NCCARF, Prof. Jean Palutikof, before joining the main workshop.

All sessions I attended were excellent and challenging. I enjoyed the poster mixer sessions and the 'Birds of a Feather' session that focused on adaptation in the Pacific and the challenges that we are facing.

At the end of the conference, the organisers recognised companies and individuals for their work on the presentations and posters. I truly got the shock of my life when I was announced as a winner of the poster awards—the last thing I expected! And yes, hard work always pays off.

I wish everyone the very best in their careers and future endeavours. My biggest thank you to the COSPPac Team for the opportunity and a job well done.



Kila with her award, with Jason and Melissa

Drought and water resource management in Port Moresby, Papua New Guinea
By Kila Kila and Jason Smith

Rainfall at Port Moresby is heavily influenced by the El Niño-Southern Oscillation

- Port Moresby experiences high inter-annual and seasonal rainfall variability making the water resource sector particularly vulnerable to the impact of drought.
- El Niño events are generally associated with reduced rainfall around Port Moresby sometimes leading to severe drought which can threaten water and energy security.

Early warning to facilitate early action

- The Papua New Guinea National Weather Service provides seasonal rainfall outlooks to key stakeholders, including Ede Ruru and PNG Power, to assist them with managing water resources.
- The Weather Service also uses Seasonal Climate Outlooks in Pacific Island Countries (SCOPIC) software to monitor drought conditions.
- When used in conjunction, rainfall outlooks and drought monitoring tools can provide guidance on developing drought conditions.

Drought has severe impacts on water and energy resources

- Diatoms Dam is the primary source of Salt water and is essential to the Salt Moresby area. Ede Ruru is responsible for water distribution while PNG Power is responsible for energy distribution.
- A increasing population around Port Moresby has led to increased demand for water and electricity, putting additional strain on water resources and power supply.
- Port Moresby and surrounding communities during dry seasons experience domestic water shortages as a result of insufficient rainfall.
- Coastal villages in Port Moresby cannot collect water due to salt water intrusion. This has caused many communities to be particularly vulnerable to water shortages.
- Because Port Moresby is heavily reliant on hydropower, frequent power disruptions also occur, which has negative effects on both households and business.

Adaptation measures in the community – growing but not yet sufficient

- Only a few families can afford to purchase water tanks for use during the dry season.
- An small number of large water storage tanks, provided by donor agencies, are administered by the local communities which they use during dry season or during water shortages.
- Concrete water supplies have been developed for communities in Port Moresby by Ede Ruru as a local adaptation measure to improve the reliability of water resources.

What more can be done?

- Education on best practice water management to enhance the capability of communities to withstand drought conditions by improving the harvesting and storage of rainfall and groundwater.
- Significant upgrades to water and energy infrastructure, including new reservoirs, are required to cope with increasing high levels of population growth in Port Moresby.
- Provision of adequate water storage tanks to allow communities to collect rainwater.
- Water cart services to assist outlying settlements and urban villages.
- The PNG National Weather Service to continue working in close partnership with Ede Ruru and PNG Power to provide timely, accurate and reliable early warning of climate events that could have an adverse effect on water supplies around Port Moresby.

Accomplishments

- First poster (NCCARF) for submission to attend the conference.
- Project: Kila Kila, Melissa Marawira, PNG Power.

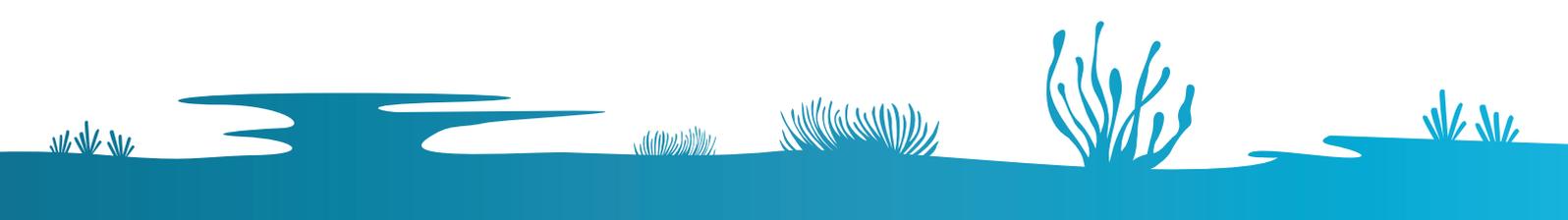
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Climate and Oceans Support Program in the Pacific

Kila's poster





Bipendra presenting on ENSO at the Fiji stakeholder workshop

Building drought resilience in Fiji

Stakeholder engagement was the focus of the Fiji Meteorological Service (FMS) Workshop in November last year.

The FMS worked with COSPPac to deliver the Drought Services Stakeholders' Workshop, which was held in Suva 20–21 November. Stakeholders from a range of sectors such as disaster management, water, agriculture, sugar and energy came along to participate.

The FMS Climate Services team led the way with presentations on the key drivers of Fiji's climate and the current drought situation. There were also presentations from key stakeholders including hydropower managers, sugar cane growers, fire authorities and local children's charities, to explain how water shortages affect their work.

It was clear through the discussions that drought is a big concern in many sectors in Fiji, and more climate information would help stakeholders to plan for times of low rainfall.

FMS will continue to work with stakeholders over the coming months, to support the development of a national drought management plan and ensure that the drought monitoring service they provide is aligned with stakeholders' needs.

Hydropower forecasts with Samoa Met and the Electric Power Corp

Over the past few years, COSPPac has been working with the Samoa Meteorological Division and the Electric Power Corporation to build a water storage outlook tool that will integrate climate information into the management of the Afulilo Hydropower Scheme, Samoa's largest source of renewable energy. Put simply, the project uses rainfall outlooks and other local environmental information to better predict how much electricity can be produced at different times of the year.

For example, if a wet period is expected there will likely be more water in the dam that can be used to create electricity. Using this tool, we can estimate how much electricity can be produced from the available water. The same applies to dry periods, where knowing the predicted electricity output can help feed into contingency plans for managing the supply of hydropower.

In November, a training and stakeholder workshop was held in Samoa to hand over the first operational version of a water storage outlook tool and produce the first official water storage outlook for Afulilo Dam. All partners will continue to work closely in the coming months to ensure the system transitions smoothly into routine operations and provides valuable climate information to effectively manage the resources of the Afulilo Hydropower Scheme.



COSPPac and Samoa meteorological staff touring the Afulilo dam site



Participants at the International Surveyors and Geospatial meeting

Historic meeting for the regions' land surveyors in Suva

Surveyors from 14 Pacific islands gathered in Suva in November to discuss regional collaboration through a new Pacific Geospatial and Surveying Council.

Pacific surveyors play a key role in understanding how sea level is changing, by monitoring the slight movements of the land. They also provide vital information for coastal planning and infrastructure projects.

Over two days, more than 30 geospatial specialists and surveyors from the Pacific Islands discussed the collection and management of data and capacity building for geospatial practitioners and surveyors.

The group decided to form an official Pacific Geospatial and Surveying Council to develop a regional strategy, in the same way that the Pacific Meteorological Services have come together through the Pacific Met Council.

While in Suva, the participants from 14 Pacific Islands also attended sessions at the Geographic Information Systems and Remote Sensing Conference, with topics ranging from sea bed mapping to maritime boundaries.

COSPPac's tide prediction calendars are enthusiastically received

It's that time again—the COSPPac annual tide prediction calendars have been distributed around the Pacific. The tide prediction calendars are used widely by Pacific communities—from the meteorology services, port authorities, local fishing communities, the shipping industry and tourism.

This year's calendars, covering 17 locations around the Pacific, have some new useful features including indicators showing the highest and lowest tide for each month, an 'extreme tides' table listing the top ten highest and lowest tides expected during the year, and measurements in inches and feet as well as centimetres and metres to make it more useful for our Northern Pacific friends.

The calendar also includes a new information sheet explaining how tides work.

Also new for 2015, the Marshall Islands and Kiribati calendars include extra information for the outer island communities. We've used our latest scientific knowledge to extend the standard tide prediction from the Marshall Islands (Majuro) and Kiribati (Betio) to communities on at least six other islands/islets/atolls in each of these two countries, giving tide predictions to an extra 12 remote island communities.



Tuvalu's tide gauge





Grant Smith

People profiles

Grant Smith, Oceanographer with COSPPac

Grant is the resident Oceanographer in COSPPac's Climate and Ocean Monitoring and Prediction team. With a background in environmental engineering, Grant went on to study ocean wave modelling as part of his PhD studies. His role in COSPPac is to provide specialist ocean information and advice to Pacific Meteorological Services and other in-country agencies. At the moment, Grant is busy working with the IT team to develop a newly-designed Ocean Portal website for the Pacific that will deliver ocean information in a highly visual way over the internet.

Grant enjoys going out to see live music, snowboarding and surfing, and watching Batman cartoons with his little boy Zach.



Bart in the Cook Islands

Bart Thomas, GNSS Training Officer, Pacific Sea Level Monitoring Project, Geoscience Australia

Bart joined the COSPPac team through his role with Geoscience Australia (GA) in late 2013. He completed his Bachelor of Geomatics degree in 2004, and then began work as a land surveyor in his home State of Tasmania before moving to central Australia in 2008. Based out of Alice Springs, he regularly led a survey team in the remote outback of Australia, and gained experience using modern survey equipment on projects ranging from mining exploration to road construction. In late 2013 Bart moved to Canberra to begin the role of GNSS Training Officer at GA, working on the Pacific Sea Level Monitoring geodetic component.

This job sees him training survey staff in the Islands on how to use modern GNSS surveying equipment that has been provided through the project. This year has involved a lot of travel, but Bart says he is always welcomed as part of the team when arriving in each location. He says 'It's great to work with survey staff in each country and see them so keen to learn and be able to make immediate use of the new equipment.'

When not working, Bart keeps active and enjoys mountain biking in the hills where he lives, and is a keen photographer.



Australian Government

Tell us about your work on climate and sea-level

Down here in Melbourne, we'd love to hear about the work you are doing in the sunny islands. If you have attended a terrific climate or sea-level conference, done some interesting work with stakeholders, or even just broken a climate record recently, drop us an email to let us know about it!: COSPPac_CDC_Unit@bom.gov.au

