Climate and Oceans Support Program in the Pacific

SEPTEMBER 2013

Janita Pahalad, COSPPac Manager.

Manager's message

On 1 July 2013 COSPPac celebrated its first birthday and I still wonder where the year has gone!

Since our last newsletter in April 2013, we have undergone another round of recruitment, finalising our work plan for 2013–2014 and welcoming our Regional Officer, Molly Powers, who is located at SPC/SOPAC in Suva, Fiji. I would also like to welcome Grant Smith (Oceanographer), Mark Caughey (IT Support Officer), Roan Plotz (Traditional Knowledge Scientist), David Martin (Traditional Knowledge Database Developer) and Rod Hutchinson (Climate Data Backup).

In early July I attended the Pacific Meteorological Council meeting in Nadi, where I had the opportunity to present the program's progress report and work plan. It was pleasing to note that COSPPac is well-aligned with partner countries national priorities and is designed to deliver a number of Pacific Key Outcomes as outlined in the Pacific Islands Meteorological Strategy 2012–2021.

The past few months have seen COSPPac start trials on a special climate bulletin for the regional Red Cross, begin development of the traditional knowledge database, and commence work on preparations for a new tidal gauge for Niue and a real-time display for tide gauge information. These are a few of the many activities undertaken by a group of highly motivated and enthusiastic people that I am proud to lead.

Janita

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Upcoming events

September	• Kiribati capacity mapping • Cook Islands capacity mapping • SPREP 24th Meeting • Pacific Small Island Developing States Symposium (Suva), (International Federation of Land Surveyors, FIG). • Tonga and Samoa high level stakeholder meetings
October	• Greenhouse 2013 Conference (Adelaide) • Tonga Capacity Mapping • Cook Islands—Stakeholder, Science and Media Workshop
November	• Solomon Islands—Malaria Early Warning System Workshop • Kiribati—Stakeholder, Science and Media Workshop

Brian Kirby (Bureau of Met) installing equipment for the Nauru Tide Gauge.

How is sea-level data used?

Many Pacific islanders are familiar with the daily tides that impact on local fishing, navigation, and tourism activities. Fewer people, however, are aware of the myriad uses of sea-level data.

The Bureau, SOPAC and Geoscience Australia have been monitoring sea level since 1991. At twelve stations across the Pacific, sensors record an observation every second. These stations are also calibrated to land-based stations, providing an accurate measure of sea-level changes relative to land movements.

'This is easily one of the most important data sets in the Pacific,' says Arthur Webb of SPC. 'It provides a consistent record of tides, wave anomalies, sea level, and geodetic movements that are critical to accurate modelling and development planning.'

Annual tidal predictions are based on this data. In addition, the data has recently been used to develop regional maritime boundaries, model tsunami in Tonga, assess inundation vulnerability in Kiribati, develop a simulated ships' pilot training in Fiji, and plan climate change adaptation projects throughout the region. Sea-level monitoring stations are also integral to the Pacific tsunami early warning network.

Over the next few years, the Pacific Sea-Level Monitoring Project will be working on some new products to make it easier to access and use the sea-level data.

Cecelia and Sina doing group work at the Samoan workshop.

Samoa workshop and Learning and Development Plan

Samoa Met Division recently hosted the Capacity Development team to work on their Learning and Development Plan. During our visit, we spoke to staff members from the climate and geophysics sections, who identified many different training priorities. Over the next three years we will work together with the Samoa Met Division to put their plan into action.

The first development activity was the four-day workshop in August. Around 20 people from the Met Division came together to learn about climatology and SCOPIC, oceanography, product development, climate research, stakeholder engagement and media.

Now that the workshop is done, we'll work to address as many of the training priorities as possible through more workshops, conferences, mentoring arrangements and attachment training.

Mike Waiwai presenting at the Climate Adaptation Conference, Sydney.

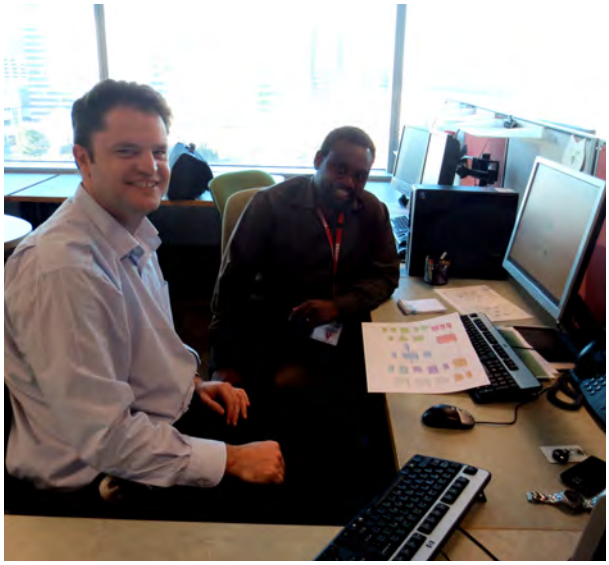
Attachment training with Mike from Vanuatu Met

Mike Waiwai from the Vanuatu Meteorology and Geoscience Department visited Melbourne and Sydney in June.

During the first week, he spent time with the Melbourne based Traditional Knowledge team—Lynda, Roan (our new TK scientist), and David (who is building the TK database—you'll remember him from his work with CliDE).

Mike also met with Bureau staff who have worked on Australian Indigenous TK projects, to share ideas and knowledge.

Mike and Lynda prepared a presentation on Vanuatu's Traditional Knowledge project for the Climate Adaptation Conference 2013 (run by NCCARF). They gave the joint presentation to an audience of over 60 scientists and traditional knowledge experts.



Mike Waiwai and David Martin working on the TK database.

Traditional Knowledge Database development has begun

David Martin has begun building the Traditional Knowledge Database. The database will be used to record and monitor local traditional knowledge for climate and weather forecasting. Things that can be entered into the database might be that early fruiting of the mango tree indicates a cyclone is coming, or that when the albatross flies early you can expect a heavy rain season. As well as plant and animal indicators, the database will also hold records of physical indicators like the movement of the stars, moon, cloud and winds.

The database will be able to store photos, video and audio files, as well as notes on how the information was collected. You'll also be able to record how the indicator changes over time.

Once enough data has been entered, work will begin on integrating the traditional indicators with the seasonal outlooks produced by the Met services.

David will install the initial pilot version of the TK Database in Vanuatu in late August, with a user interface written in English, Bislama and French.

Afulilo catchment, Samoa

Climate variability and hydropower—Samoa

A water balance model is currently being developed so the Afulilo Hydropower Scheme can better predict dam levels so they can provide a more constant supply of power to the Samoan community.

The Afulilo Hydropower Scheme supplies between 30 per cent and 40 per cent of Samoa's energy, with the remainder being provided by two diesel power stations and a number of smaller 'run-of-the-river' hydropower stations. With increasing energy demands, and the rising cost of diesel imports, the hydropower company is looking to manage their resources more efficiently to maximise the supply of energy.

By combining monthly rainfall outlooks with water storage data, we are hoping to be able to produce monthly tercile forecasts of the reservoir water level - which gives an indication of how much water will be available for electricity generation over the next month. This will allow for monthly tercile forecasts of the reservoir water level to be made directly from the tercile rainfall forecasts which are produced by the Met Division using SCOPIC.

This project is a partnership between the Samoan Met Division, the Electric Power Corporation and COSPPac.

Climate crabs

'The Pacific Adventures of the Climate Crab' is a great new animation that tells the story of a little Pacific crab and how her life is affected by El Niño and La Niña. The short film talks about the impacts of ENSO on Pacific Islands—like very wet or very dry conditions, and an increase in extreme events like cyclones. We are shown how these events can impact on water quality, food security, infrastructure (for example houses and roads), livelihoods and health.

The aim of the short clip is to raise awareness of the science and impacts of El Niño and La Niña, and encourage people to use forecasts and warnings so they can anticipate and prepare for extremes and changing risks.

There's a tool kit that goes with the film which aims to get stakeholders talking about ENSO. You can find the Climate Crab animation and tool kit at http://www.pacificclimatechangescience.org/animations/climatecrab/

The Climate Crab project was led by the Vanuatu Met Service, Red Cross and the Australian Government in collaboration with a host of other regional organisations.

Participants at the 2nd Pacific Meteorological Council Meeting, Nadi.

The Second Pacific Meteorological Council and Joint Disaster and Climate Change Meetings

During the first two weeks of July, Fiji was buzzing with regional activity. Representatives from across the Pacific gathered in Nadi to participate in meetings on climate, hydrology, and disaster risk reduction.

During the Second Pacific Meteorological Council meeting, Directors and representativeness from 18 Meteorological Services came together to report on the progress of the Pacific Island Meteorological Strategy, share success stories, and learn about new projects and funding opportunities in the region.

COSPPac manager Janita Pahalad, and our regional team member Molly Powers were both at the meeting to learn from the participants and get some feedback on COSPPac activities.

After the PMC meeting, many Met representatives stayed on in Nadi to participate in the first Joint Meeting of the Pacific Platform for Disaster Risk Management and the Pacific Climate Change Roundtable—the first of its kind globally. Representatives from Tonga, Samoa, Vanuatu, Solomon Islands, and many more, presented on initiatives, projects, and best practices from their countries to the 400 participants from around the world. Dissemination of seasonal climate outlooks and tsunami early warning systems were among the best practices presented, highlighting the value of seasonal forecasting software and tide gauge data.

Roan at work in the African savanna.

People profiles

Roan Plotz, COSPPac Traditional Knowledge Scientist

Roan has recently started with COSPPac as the Traditional Knowledge Scientist.

He has spent much of his life living and working in rural Africa and he's always had a keen interest in traditional cultural and ecological knowledge. He loves to travel, and so far he's visited more than 30 countries across five continents.

Roan is a field ecologist and studied the black rhinoceros for his PhD. He's also spent many years as a school teacher both in Australia and England. But by far his greatest achievement is his new baby boy—Ryker.

Roan's role with COSPPac is to work with Pacific Meteorological Services to identify traditional knowledge indicators linked to climate conditions. Once this information is gathered, we'll try to combine it with the seasonal climate outlooks to improve accuracy and community understanding.

Maara with his fruitful crop, Rarotonga.

Maara Vaiimene, Operations Manager, Cook Islands Meteorological Service

Maara Vaiimene is an Operations Manager, who coordinates activities within the Met service to the community at all levels.

Maara has a keen interest in weather and climate, and likes to get people involved in getting to understand this topic, as it affects their daily planning in many ways.

Subsidence farming is Maara's favourite pastime and he enjoys the feeling of relaxation when working on his farm of pigs and other crops, especially bananas for home consumption…any extras he likes to share with the neighbours.

Tell us about your work on climate and sea levels

Down here in chilly 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.