

QUARTERLY

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SOPAC NEWS

SPC Applied Geoscience and Technology Division (SOPAC)



Some of the key participants at the first SOPAC Division meeting, clockwise from top left John Collen (Chair of STAR), Bernard Pelletier (Technical delegate, IFREMER), Gilles Fediere (Director of IFREMER, Pacific), Russell Howorth (Director of SOPAC Division), Litia Mawi (Head of Fiji Delegation) and Jimmie Rodgers (SPC Director-General). [Photo: Litia Mawi]

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FIRST ANNUAL SESSION AS A DIVISION

The first annual meeting of the SPC Applied Geoscience and Technology Division was held at the same place and around the same time of the year as the final SOPAC Commission annual session – at the Tanoa International, in Nadi, Fiji Islands; and in October (17–22). The meeting also preceded the 41st meeting of SPC's Committee of Representatives of Governments and Administrations (CRGA41); just as the last Commission annual meeting preceded the CRGA40, in 2010.

A procedure that the SOPAC Division is trying to get used to is the French language translation-interpretation requirement by SPC at its regional workshops and meetings. Translation of the key work programme reports to members had to be prepared beforehand and placed online for the French-speaking delegations. Also, it was the second year running with providing

English-French interpretation services at the SOPAC meeting.

The French territories are “thrilled” with the changes that accord them rights as full members of SPC to the SOPAC Division work programmes and engaging as full partners in conducting the geotechnical work for which French technical agencies can call on.

The meeting also continued with some of the old traditions like holding the first SOPAC Division meeting (SOPAC-1) alongside the Science and Technology Resources Network (STAR) annual science meeting. Professor John Collen presided over a packed 2-day programme under the theme: “Adaption to Climate Change and Environmental Change in the Pacific Islands”; which tied in well with the SPC CRGA41 theme of ‘Climate change and food security – managing risks for sustainable development’.



On an even more mundane level; since the meeting was a ‘technical meeting’ only; the record of the meeting will not be accompanied by the usual observance of protocol required by the SOPAC Governing Council and what happened this year was that a Summary of Outcomes was cleared within a week of the meeting and travelled up to the CRGA41 with the Director of Division. It is envisaged that the meeting records of the SPC Applied Geoscience and Technology Division will only be released electronically.

It was extremely useful to the SOPAC Division that Director-General Jimmie Rodgers took the time to be there for the entire duration of the meeting to be consulted with respect to protocols and the proper SPC way of doing what needed to be done. He was also sensitive that the format and conduct of the new division’s annual meeting

retain some of the SOPAC Commission flavour, giving unequivocal support to the continuation of STAR with a view that the concept could usefully be spread to the other sectors in SPC.

SOPAC-1 was chaired by the Government of the Cook Islands, and was originally supposed to be held in Rarotonga, Cook Islands. It was moved to Nadi, Fiji; when it became clear that costs to transit through New Zealand while it hosted the Rugby World Cup were through the roof.

All in all, golden oldies associates were on hand including Alf Simpson, former Director of the SOPAC Commission Secretariat (1998–2003) attended as special advisor to the Director of Division, with some old friendships renewed; as well as brand new friendships initiated.

Lala Bukarau

PUBLIC HEALTH, LAND RESOURCES AND SOPAC DIVISIONS OF SPC COORDINATE RESPONSE TO TUVALU WATER SHORTAGE CRISIS



Water rationing in Nukufetau, Tuvalu.

The Tuvalu Government declared a State of Emergency on Wednesday the 28 of September, 2011 after a prolonged period of drought and rationed the after distribution of fresh water from the national reserve.

From 13 October to 5 November 2011, the SOPAC Water Programme conducted a collaborative SPC-Tuvalu Needs Assessment Mission with the Agriculture Unit and Health Unit within the Secretariat of the Pacific Community (SPC). The assessment focused on the central and northern groups of atolls in Tuvalu. This SPC team mission followed a request from the Tuvalu Government and an appeal to the international community in Suva, Fiji, for emergency assistance and response after two atolls in Tuvalu (the capital Funafuti and the southern island of Nukulaelae) declared national crisis situations because of a prolonged period of below average rain or no rain and where the Government of Tuvalu

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identified the need for emergency measures to provide sufficient safe water for the populations living on these two islands.

Three specialists Fereti Atu (Plant Health Unit), Josaia Samuela (Health Advancement Unit) and Peter Sinclair (SOPAC Water Unit) from SPC arrived in Funafuti to work with the Tuvalu National Disaster Committee to assess the situation on Funafuti whilst finalising preparations for an assessment of the six atolls to the north: Nukufetau, Vaitupu, Nui, Nanumanga, Nanumea and Niutao.

The purpose of this Rapid Assessment Mission was to ascertain the extent and the severity of the dry weather on these six atolls, to determine the need for emergency water supply, identify possible interventions which could be acted upon to provide short and longer term solutions to the ongoing water needs on these islands, to reduce the potential for water shortages in the future, and to provide information on what the impacts of an extended period of reduced rainfall has had on human and animal health and food security.

Furthermore, the Disaster Risk Reduction Project (B-Envelope) funded by the European Union and implemented by SPC SOPAC Division has been supporting the Government of Tuvalu with more rainwater tanks since 2010. A total of

Euro 700,000 was allocated under the Project to address water security in Tuvalu. SOPAC has signed a new contract with Rotomould (Tuvalu) Ltd to supply twenty five rainwater tanks with 10,000 litre capacity. The Project Manager of the B-Envelope Project, George Beck, stated that this is additional to the 310 rainwater tanks already supplied and installed by the Project. The Government of Tuvalu indicated that the priority was in providing more tanks for houses on Funafuti with balances remaining in the project. The Water Programme of SOPAC is working very closely with the Government of Tuvalu and other development partners to address the immediate need of providing fresh water to Tuvalu. The additional tanks will increase storage capacity for households on Funafuti and ensure that the people have access to fresh water during dry periods.

George Beck further added that, "while it is important that we increase the storage capacity for residents in Tuvalu it is also equally important to address water management issues particularly in keeping water catchments clean". The B-Envelope Project is planning to launch a major training and awareness programme in Tuvalu in the first quarter 2012, with the Government of Tuvalu and key stakeholders to address water quality.



Newly installed water tank in Tuvalu funded by the B-Envelope Project.

SPC/SOPAC HOST THE ANNUAL PACIFIC ISLANDS GEOGRAPHIC INFORMATION SYSTEM AND REMOTE SENSING CONFERENCE

The 2011 Pacific Islands Geographic Information System and Remote Sensing Conference was held at the Fiji SPC Nabua campus in November. In his opening remarks, the Director of SPC/SOPAC Division, Russell Howorth, alluded to the gathering being the largest of its kind in the region and was set up to showcase new tools and concepts for improved data collection, capabilities and analysis in GIS and Remote Sensing.

He further added that GIS and Remote Sensing is clearly a technology to realise improving livelihoods and it will remain so into the future at the SOPAC Division of the SPC, and that every effort will be made to ensure it is adequately resourced to serve the needs of the region.

GIS is a computer-based tool used to combine and overlay information in the form of easily understood maps constructed from up-to-date satellite images and field data; while remote sensing is the collection of information about the earth from a distance.

The five-day conference provided a platform for government representatives from Pacific Island countries and territories, donor partner representatives and other stakeholders in the NGO and private sector to meet with scientists and GIS/remote sensing experts from around the world, and discuss new tools and options for collecting and applying data.

Of the 200 individuals that subscribed, 150 actually appeared at the conference. Presentations were made by representatives from Kiribati, New Caledonia, Papua New Guinea, Samoa, Tonga, Vanuatu and also from Australia, New Zealand, Hawaii, Canada, USA. A number of other national representatives were attending the conference as participants.

Organisations represented included regional agencies Secretariat of the Pacific Community (SPC), South Pacific Regional Environment Programme (SPREP), Pacific Islands Chapter of the Internet Society (PICISOC) and University of the South Pacific (USP). The national agencies were Native Land Trust Board (NLTB), World Conservation Society (WCS), Fiji Sugar Corporation (FSC), Telecom Fiji Limited (TFL), Airport Fiji Limited, Biosecurity Authority Fiji. Regional and international companies and agencies were present or presented: Electric Power Corporation of Samoa (EPC), Solomon Islands Electricity Authority (SIEA), Telecom Services and Kiribati Limited (TSKL), MacDonald Dettwiler and Associates Ltd (MDA), New Zealand Aerial Mapping Limited, Pacific Geomatics, Infoterra GmbH and DigitalGlobe International. Software and hardware companies presented and displayed their products and services included Eagle Technology (ESRI), Geosystems NZ Ltd and Lukemine Enterprises. Finally consultancy companies participated such as GNS Science, Air Worldwide and Information Technology Service.



Opening of the conference.

DISASTER RISK REDUCTION B-ENVELOPE PROJECT OF SPC/SOPAC DIVISION HELP NAURU IN BUILDING ITS RESILIENCE TO DROUGHT



Rainwater catchment almost completed.

The prevailing dry period affecting most of the Pacific small island states underscores the importance of water management and conservation. Nauru is taking steps to address vulnerability to drought with the construction of rain water catchments over all community tanks. Desalinated water is the predominant source of fresh water for potable use such as cooking and drinking. There are about forty five community tanks with 5,000 litre capacity distributed throughout Nauru with three tanks located in each community. The community tanks are filled from the desalination plant on a monthly basis at no charge to the community to provide them with clean water. Due to the high demand for potable water the community tanks are however empty for most of the month as most of them are not connected to any roof catchment.

The Disaster Reduction Programme (EDF9 B-Envelope Project) funded by the European Union and implemented by the SPC SOPAC is supporting the Government of Nauru to address water security by constructing water catchment sheds over all community tanks. This will ensure that they also capture rainwater and provide a more sustainable source of clean water for the communities.

Construction work is being undertaken by Central Meridian Ltd. and will cost around AUD150,561. Despite some delays in importing building materials to Nauru work has progressed. These catchments will reduce the dependence on desalinated water during the wet season. The EDF9 B-Envelope Project will invest Euro 500,000 into improving water security on Nauru. While these resources are not entirely sufficient to address the water needs on Nauru, it will provide a more sustainable solution to improving access to fresh water. The Government of Nauru is supporting implementation through supervision of construction work and providing technical advice on intervention initiatives.

Construction should be complete by the end of February 2012.

WELCOME



Anja Grujovic

Anja Grujovic joined the SOPAC Division in the position of ODI Fellow Resource Economist. She will be staying with us for the next 2 years, working mainly on cost benefit analyses of coastal adaptation strategies to climate change. Anja holds an MSc in Economics for Development from the University of Oxford and has previously worked for UNAIDS and on various development consultancies.

SOPAC DIVISION COLLABORATES WITH WHO IN SUPPORT OF GROUNDWATER ANALYSIS IN THE REPUBLIC OF MARSHALL ISLANDS

Uncontrolled and unmanaged land-based activities are known to have impacts on the groundwater quality resulting in contamination. In the Republic of the Marshall Islands (RMI), possible contamination sources to the groundwater lenses on Majuro include leaking septic tanks, piggeries, cemeteries, agricultural farms (fertilisers and pesticides) and solid waste.

There is also concern that the water collected off the airport runway may be potentially contaminated with aviation fuel.

An emerging concern expressed by the RMI population during the National Water Summit (March 2011) was on the status of the groundwater health in relation to contamination from the use of pesticides, embalming chemicals and heavy metals.

Republic of the Marshall Islands Environmental Protection Authority (RMI EPA) routinely monitors the quality of Majuro groundwater for faecal and nitrate contamination. Also through contractual service provided by Japan International Research Center for Agricultural Sciences (JIRCAS), Laura groundwater boreholes and some private wells are monitored for water levels, electrical

conductivity, nitrate-nitrogen, chemical oxygen demand (COD), calcium, chloride, pH acidity and turbidity. The RMI EPA drinking water quality monitoring programme outlines critical parameters to analyse within the available resources (capacity and funding) and from a drinking water safety planning aspect. Since the analysis of pesticides and heavy metals is very complex and requires expensive instrumentation, the testing for these have been suggested to be done off-shore at 3–5 year intervals, considering the risk.

Upon request by RMI EPA and as part of their regional mandate, the SOPAC Division of SPC and WHO supported the groundwater quality analysis in Majuro through sampling and testing of the source waters for the Majuro Water and Sewage Company (MWSC) supply and selected monitoring bores in Laura, in light of the issues mentioned above.

The results provided useful information in determining the natural composition of the Majuro groundwater, especially Laura and Delap, for chemical constituents such as chloride, calcium, iron, magnesium, phosphates and sodium.

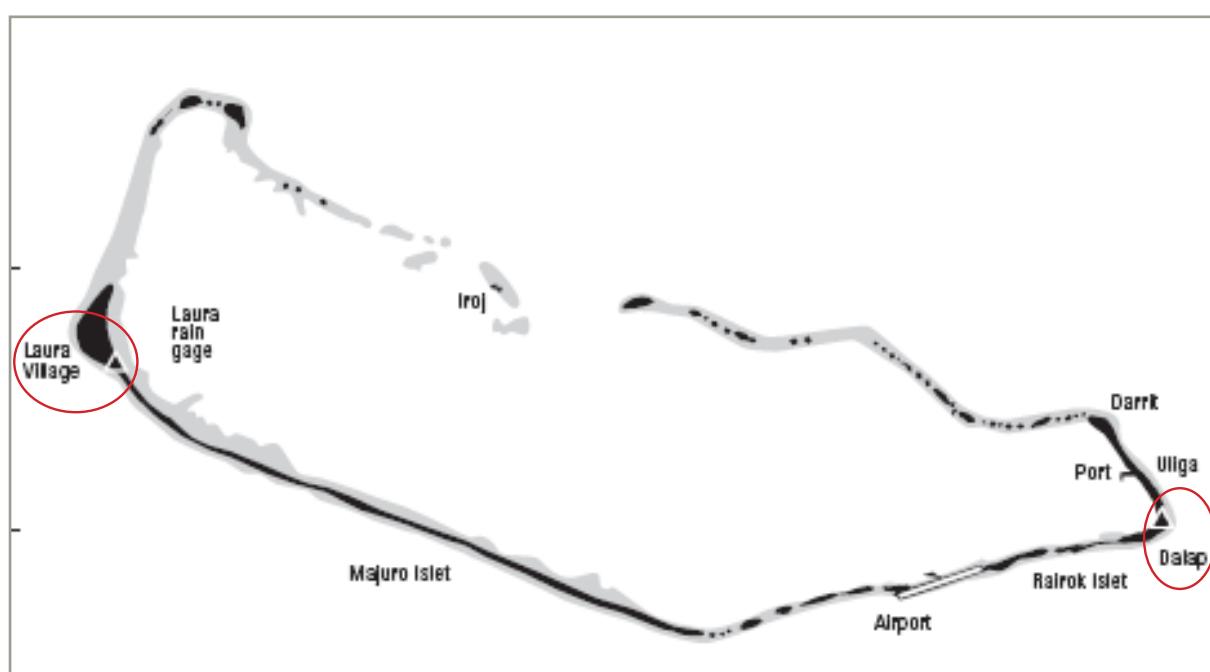


Image of Majuro Atoll, with Laura and Delap areas highlighted.

SPC SOPAC DIVISION IN SUPPORT OF TSUNAMI PREPARATIONS AT PACIFIC LEVEL

About 75 percent of the world's earthquakes and tsunami occur in the Pacific. On average, the Pacific has a tsunami every year, with a major Pacific-wide tsunami occurring a few times each century. Three destructive and deadly tsunami have occurred in the Pacific in the last three years: Samoa (2009), Chile (2010) and Japan in 2011.

Hence, a Pacific wide exercise to test and improve the emergency response to tsunami took place on 20 November, 2011 with 20 Pacific island countries, including Australia and New Zealand, running simulations and drills.

This was the third international tsunami warning exercise, the first two having occurred in 2006 and 2008.

Known as Pacific Wave 11, the exercise asked countries to pick one of 10 regional or local tsunami scenarios to react to. The hypothetical tsunami were created by powerful earthquakes off the shores of either Russia, Ryukyu Islands, west and east of the Philippines, Vanuatu, Tonga, Chile, Ecuador, Central America, and Aleutian Islands. Fiji, for instance, based their scenario on a magnitude 8.9 earthquake in the Tonga Trench, while Palau based theirs on a massive earthquake in the Philippine Trench.

After receiving the simulation warnings, authorities in the countries involved tested all the

necessary steps to respond to a warning prior to informing the public. In some countries, this will be followed by coastal evacuations and other on-the-ground activities as part of an end-to-end tsunami warning and response practice.

On-the-ground activities in Fiji included the evacuation of 20 schools located within Suva's tsunami danger zone. The exercise involved 11,350 students and tested the emergency evacuation plans of schools and emergency agencies.

Noa Tokavou, Disaster Management Advisor at the SPC/SOPAC Division, said simulation exercises like Pacific Wave 11 helped countries be better prepared for such disasters.

"The exercise will further improve countries' ability to respond to an alert and improve regional coordination in the event of a tsunami," Mr Tokavou said.

SOPAC has supported Pacific island countries in developing tsunami response plans.

Pacific island countries and territories involved in the exercise included: American Samoa, Cook Islands, Guam, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.

GOOD BYES



Elizabeth Whippy joined the Division initially as an attaché in 1998 before taking on the role of Geographic Information Systems (GIS) and Remote Sensing Project Officer in September 2000. Elizabeth was working for a Taiwan funded project which targeted watershed management when she resigned on December 2011 to go and work for Lion One Limited as a GIS specialist and to set up their GIS System.

Elizabeth Whippy



Federica 'Kika' Gerber commenced work as a Resource Economist under the ODI scheme in October 2009. Kika had a Bachelor of Science in Environmental Policy and Economics from the London School of Economics and a Master of Science in Environmental and Resource Economics from University College, London. She departed in October 2011 and is now working with a British-based consultancy, Maplecroft, which works to assess the impact of social, environmental and political issues on strategic decision making, business continuity and reputation.

Federica 'Kika' Gerber



Sakaio Manoa

Sakaio Manoa commenced work at SOPAC in early 2004 as System Administration Project Officer. He then progressed to the position of Adviser in Information, Communication and Technology in 2005 before jumping to the role of a Systems Support Engineer in 2011. Sakaio holds a Bachelor of Information Technology and a Diploma in Business Studies (Applied Computing). Sakaio left in December 2011 to further his studies in Australia.



Tasleem Hasan

Tasleem Hasan joined SOPAC in April 2005. He headed the Regional Water Quality Monitoring Programme which was implemented from 2006 to 2009. The programme built the local capacity of SOPAC member countries in the field of water quality monitoring in terms of laboratory analysis and data storage. Before joining SOPAC, he was a Scientific Officer at the Institute of Applied Sciences at the University of the South Pacific (USP). Tasleem resigned in November 2011 to emigrate to Australia and is now working as a Senior Project Officer in the Office of the Water Supply Regulator in the Department of Environment and Resource Management in Brisbane.

IN CELEBRATION OF THE GLOBAL HAND-WASHING DAY

The SOPAC Division worked with partners including the Ministry of Health, UNICEF and Live & Learn Environmental Education Fiji with kind support from Colgate Palmolive to hold the national celebration on 15 October 2011. Participating schools as well as exhibition booths and displays from NGOs and government departments helped in highlighting the importance of hand-washing to the general public.

Some life-saving facts on hand-washing:

- Simply washing hands with soap breaks the transmission route of infectious diseases, which is crucial in saving lives.
- Washing hands with soap at critical times can reduce diarrhoeal incidence by 47%.
- Diarrhoea occupies a leading position among diseases as a cause of death and illness, especially in children. In the Pacific region, around 3000 children under the age of 5 years die from diarrhoea annually.
- Globally, hand washing could save around 1 million lives, more than any single vaccine or medical intervention.
- Hand washing with soap at critical times is a simple and cost-effective measure to improve health and will significantly reduce the two leading causes of childhood mortality



Water and Sanitation display booth at MHCC.

worldwide – diarrhoeal disease and acute respiratory infection.

- Critical times include events such as after going to the toilet; before preparing and eating food; after you sneeze, cough or blow your nose; after playing with your pets; and after changing baby's nappy or diaper.
- Simple is often beautiful, which is the case with hand hygiene. Remember clean hands save lives.

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