

Pacific Partnership Initiative on Sustainable Water Management

Logon to: Pacific Partnership Initiative on Sustainable Water Management

Issue: XIII, May 2007

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Welcome to the thirteenth official mail-out of the Pacific Partnership Initiative on Sustainable Water Management. This Quarterly Newsletter provides Water and Sanitation information to Pacific member governments, professionals, NGOs, CBOs, researchers, private sector and counterparts in the donor community who are interested in water sector issues and initiatives. This issue has a special focus on World Water Day and Projects carried out around the Pacific Island Countries.

We would appreciate your assistance in forwarding the newsletter to other colleagues who may be interested in this initiative so that it reaches the widest possible audience.

If you wish to print this newsletter, a PDF version is also available on the SOPAC website:

http://www.sopac.org/Community+Lifelines+Programme+Water+and+Sanitation

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For more information on World Water Day 2007 please visit: http://www.sopac.org/tiki/tiki-index.php?page=WWD+2007

or contact:

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Our Islands with Water - World Water Day 2007

This year's World Water Day is dedicated to better managing water resources.

SOPAC and Live and Learn Environmental Education organised another Pacific World Water Day campaign on 22 March 2007. With the slogan "Our Islands with Water", the Pacific's pledge fitted well with the World Water Day theme "Coping with Water Scarcity".

It challenges the Pacific to better manage its current water resources in terms of usage, access, supply, demand and quality and responsibility.

Globally, the water use is increasing at more than twice the rate of population growth and more people than ever are learning first-hand about coping with water scarcity. Scarcity could mean an absolute shortage of water or lack of access to safe water supplies.

Both SOPAC and Live & Learn developed awareness materials comprising of student activity booklets and stickers.

These materials have been distributed throughout the Pacific region to encourage the observance of World Water Day with financial support from the Trade Mission of Taiwan.



For further in information on Water Loss Management Workshop please contact:

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Mathias Kleppen Water Demand Management Officer

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Workshop held on Water Loss Management

SOPAC in partnership with Wide Bay Water Corporation (WBWC) from Australia have successfully executed a training workshop on managing water losses from urban water supply systems. The workshop was part of the NZAID funded Water Demand Management programme, and was held in Rarotonga, Cook Islands, 12 – 16 March 2007. Participants from the urban water utilities of the Cook Islands, Samoa and the Solomon Islands took part in the training.

Feedback from participants indicated that the training constituted a good mix of theory and practice with relevance for the different island settings. Dr. Kelvin O'Halloran, Director for WBWC Research and Training unit, Mr. Pank Mistry, WBWC Senior Demand Management Engineer and SOPAC's own Advisor in Water Use Efficiency, Mr. Mathias H. Kleppen, provided the lectures and the Department of Water Works in Rarotonga arranged a wide range of practical exercises in the field.

Items covered during the workshop included: the economic and social benefits of water loss management; how to use a water balance to create a system loss management plan; the benefits of pressure management for water loss reduction; practical exercise in sectorisation, water audits; leak detection, metering and flow logging; and how to develop a communication strategy to accompany a water loss management plan.

A reservoir drop test was conducted in the middle of the night to show how to establish baseline water usage in sections of a water supply network.

The focus of the WDM programme was on Leak detection, and extensive training was provided on the use of different equipment like listening sticks, ground microphones, noise loggers and noise correlators. A leak detection kit containing the most versatile and practical equipment was also supplied to the participating Team Leaders. As a part of awareness raising, and customer relation building *Cook Islands News* covered the training where the delegates undertook a sight and sound survey of a section of Rarotonga's distribution network. *The Cook Island News* interviewed the delegates who mentioned their key message on the programme: "to measure is to know!"



For further information on the Water Quality training workshop please contact:

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Prof. Bill Aalbersberg Director IAS-USP aalbersberg@usp.ac.fj



Tasleem Hasan Water Quality Programme Officer SOPAC Secretariat tasleem@sopac.org



Water Quality Monitoring Training

Two regional water quality laboratory training workshops are being planned as part of the WQM programme. One is hosted in Fiji by the Institute of Applied Sciences at the University of the South Pacific (14 - 18 May 2007) and the other will be hosted by the Environmental Protection Agency in Guam (16 - 20 July 2007).

The aim of the workshop will be to provide hands-on training to Water laboratory technicians on water analysis techniques. The training will concentrate on certain microbiological, chemical and physical parameters.



For further information on Rainwater Harvesting in Nauru please contact:

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Geographical Information System for Rainwater Harvesting in Nauru

Maximising the use of rainwater harvesting is recognised as one of the most sustainable options for the provision of long-term water resource availability in Nauru. After completing the reconnaissance in-country mission to Nauru in November 2006, the Island Vulnerability (EU) Project's Senior Advisor (Water) Stephen Booth made an early return to Nauru with a technical survey team to undertake a detailed asset condition survey of domestic and community rainwater harvesting systems.

Global Positioning System/Geographic Information System GPS/GIS field surveys in Nauru 13 - 22 January 2007.

It is envisaged that the baseline data collected will form a critical input to Nauru's EDF9 "B-Envelope" funding application for infrastructure improvements to help combat drought risk.

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For further in information on Water Safety Plans please visit:

Arthur Webb Coastal Processes Adviser SOPAC-EU Project

Survey of Pulaka Pits in Tuvalu

The Government and broader Tuvaluan community have raised concerns over increased salinity of ground waters in pits used to cultivate swamp taro or "Pulaka". Following which, the SOPAC EU Project was requested to investigate this issue. Despite years of ongoing discussion in Tuvalu no known previous or systematic assessment or monitoring has been undertaken. This study attempts to determine, through accurate conductivity measurements, the present condition of groundwater quality (salinity) within the pits throughout Tuvalu. Additionally, this data will now act as a baseline from which repeated sampling can be made and future results compared. However, for this to work, it needs to be monitored continuously. SOPAC/EU Project Intern, Ms Loia Tausi travelled to all Islands of Tuvalu except Niulakita between January and April 2006 to survey the pits on the islands. Conductivity sampling undertaken during this survey indicated that only the island of Funafuti (Fongafale) had consistent groundwater salinity conditions, which were too high for successful swamp taro growth. Niutao and Nukulaelae had isolated pit areas where conditions were too saline but conditions elsewhere on these islands were adequate for swamp taro growth. However, at the time of this study all other pits sampled on all other islands, showed

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adequate groundwater salinity conditions to allow successful swamp taro growth. Monitoring must continue to better develop these preliminary findings.

A Technical Report will soon be released to the Government of Tuvalu on the Assessment of salinity of groundwater in swamp taro (Cyrtosperma chamissonis) "Pulaka" pits in Tuvalu (EU-SOPAC Project Report 75).

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For further in information on Water Safety Plans please visit: www.waterquality.crc.org.au/ and www.sopac.org/tiki/tiki-index.php? page=Water +Safety+Plan

or contact:

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Pacific Water Safety Plans Programme

During the first quarter of 2007, the pilot countries for the Pacific Water Safety Plans (WSP) programme worked on the completion of WSPs for urban and rural supplies. Tonga was the first one to compile three water Safety Plans (Nuku'alofa, Lomaiviti and Rain Water Cement Tanks.) Similarly Vanuatu, Cook Islands and Palau are working to complete their plans on different water supply schemes.

The next steps will be the formulation of the improvement schedules and preparation of a cost analysis. Technical experts and Engineers from MoH-NZ are assisting the countries in finalising the plans and assessing the supply systems for improvement strategies.







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Michael Bonte Risk Analyst

SOPAC Secretariat michael@sopac.org



New Flood Warning System Piloted for Navua

Recent flooding in Fiji has confirmed that inland flooding is the most frequent and damaging hazard facing Fiji's communities.

SOPAC estimates that on average, inland flooding costs Fiji around 10 lives and F\$20 million in total damage every year. SOPAC Risk Analyst, Michael Bonte, says a new flood warning system being developed for the Navua Delta could now provide residents with up to 2.5 hours warning following intensive rainfall higher in the catchment. SOPAC is piloting a new warning system in partnership with the National Disaster Management Office (NDMO), the Public Works Hydrology Division, the Fiji Meteorological Services and the Provincial Administrations of Serua and Namosi.

The system is being implemented as part of a regional EU-funded project to "Reduce Vulnerability in Pacific States". Bonte says the system is a combination of automatic river level gauges and rain gauges placed at strategic points within the Navua catchment. "These fully automated field stations will transmit their recordings via radio in real-time to a base station at the Fiji Hydrology Department in Suva. Although Rajendra Prasad, Director of Fiji's Meterological Services, believes the system is great news for Navua.

He cautions that any flood warning system will only be effective if communities and authorities are prepared to respond appropriately to the information it provides. For this reason, representatives from national government agencies and SOPAC are now working with local authorities to find the best means of disseminating information and warnings to local response agencies and the general public.

An economic analysis of the new system is now being undertaken to determine the monetary value of these benefits compared to the cost of designing, installing and operating the system. SOPAC economist, Paula Holland, says the analysis will be based on a survey of householders and businesses in Navua. She also added that they hoped to be able to demonstrate to donors and government agencies that continuing to fund the Navua warning system pays for itself.



For further in information on Hydrological Cycle Observing System please contact:

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Launch Pacific HYCOS project Steering Committee

Pacific HYCOS, a regional initiative to improve the management and protection of Pacific Island Countries' (PICs) freshwater resources had its first Steering Committee meeting in Brisbane on 17 April 2007.

It was launched in conjunction with a workshop on flood and drought forecasting hosted by the Australian Bureau of Meteorology (BOM) and organised by the World Meteorological Organization (WMO) and the Pacific Islands Applied Geoscience Commission (SOPAC).

The Launch was attended by the focal points from the participating 14 countries, with representatives with WMO Geneva, National Inistitute of Water and Atmospheric Research Ltd, and the Regional Association V Working Group on Hydrology members and SPREP. The launch also hosted the first steering committee meeting which consist of all the attendees.

Some of the components of the projects were discussed including Flood Forecasting, Ground water monitoring, drought forecasting, and databases and information sharing. Also dicussed was the workplan of the project with feedbacks from the participating countries on their needs and as to how the project could help them.

The Steering Committee suggested appropriate linkages to be made to other global observation systems and regional capacity building programmes such as the Pacific Islands Global Ocean Observing System (PI-GOOS); the Pacific Islands Global Climate Observing System (PI-GCOS); and the AusAID-funded Pacific Island Climate Prediction Programme (PI-CPP) and the information to be shared with the steering committee on bi annually basis.





For further in information on Integrated Water Resource Management please contact:

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GEF Preparations for IWRM Project Design Stage

Partners in the Sustainable Integrated Water Resources and Wastewater Management Project met in Fiji from 23 - 27 April to review national diagnostic water reports.

Building on the first Steering Committee meeting in Honiara, the meeting provided an opportunity to focus on demonstration project designs, including identification of cofinancing opportunities.

The Steering Committee agreed on deadlines for submission of final documentation to SOPAC as the executing in August, in close collaboration with UNDP and UNEP, and the member countries.

Despite the tight deadline for submission, member countries remain confident that demonstration project design will be successful and look forward to implementing the Full Sized Project, starting in 2008, with an anticipated GEF contribution of over 10M USD.



For further in information on World Conservation Union please visit: www.iucn.org/places/oceania/

or contact:

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World Conservation Union's new Regional Office for Oceania up and running in Suva

The World Conservation Union (IUCN) has recently signed a Memorandum of Understanding with the Fijian Department of Environment. The new Regional Office for Oceania is located in Suva, 5 Ma'afu St. With its new Oceania Programme currently being finalised and input from the Global Secretariat, it will support the global programme of the Union and add value where required, to the environmental and sustainable development work of the Pacific communities, their governments and regional organisations.

One component of programme aims to explore benefits of freshwater and related ecosystems to humankind to contribute to economic development and poverty alleviation while respecting and preserving its biodiversity values and other environmental services.

Its first objective is the security of people and their livelihood that is enhanced through the sustainable management of water resources and ecosystems. It also looks at improving water management and governance through public participation.

The programme also focuses on sound public and private investment in water management through economic and financial analysis. Through capacity development, outreach and network facilitation, the programme plans to promote leadership and learning on sustainable water management.

The IUCN (it used to be called International Union for the Conservation of Nature, hence the acronym) has been active in the Oceania region for a number of years through its network of expert volunteers from its six scientific commissions. Worldwide its members include states, government agencies, international and national non government organizations working together towards sustainability. Two members of IUCN in Fiji are the National Trust of Fiji and USP. IUCN's unique structure enables democratic and open dialogues between civil society and governments; since its creation in 1948, the steady growth of its knowledge and expertise, and the pooling of knowledge and resources in integrated approaches to conservation for sustainable development has gained respect.

Despite Australia and New Zealand being part of the Oceania region, the Programme invests mainly in the Pacific Islands region. This is where the greatest priority for conservation action exists.

Background on Water in Small Island Countries

The global water community acknowledged the special vulnerability and particular needs of small islands by the inclusion of "Water in Small Islands Countries" as a special theme at the 3rd World Water Forum that was held in Kyoto, Japan from 16-23 March 2003. SOPAC and the Asian Development Bank (ADB) jointly led this Water in Small Island Countries session as well as its preparation through a regional consultation in the Pacific (Sigatoka, Fiji Islands, 2002).

A major outcome of the Pacific regional consultation was the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP), which details priority actions of the water sector in the region. This action plan, endorsed by 18 island countries, 14 at ministerial level, (and 16 countries at Head of State level including Australia and New Zealand) has been incorporated into the Type II Water Partnership Initiative and was submitted by the Pacific Island Countries to the UN Commission for Sustainable Development (CSD) in Johannesburg during the World Summit for Sustainable Development (WSSD) in August 2002.

The objective of this Partnership Initiative is to implement the Pacific Regional Action Plan on Sustainable Water Management, inclusive of its sister strategies, the Pacific Wastewater Policy Statement and the Pacific Wastewater Framework for Action, as effectively as possible.

Over 200 participants were involved in the national and regional consultations and the Water in Small Islands Countries session and they form the core of the Partnership. Now, over 750 individuals have joined this network. Hardcopies of the Regional Action Plan have been distributed to all attendees of Sigatoka and Kyoto and are available from the SOPAC Secretariat. In addition you can obtain more information through the following website:

http://list.sopac.org.fj/Secretariat/Programmes/H2O/3rd_world_water_forum/index.html

Arrangements of the Pacific Type II Partnership Initiative on Sustainable Water Management

The overall aim of the Partnership Initiatives is to ensure coordination and increased partnerships in meeting the WSSD goals through its Plan of Implementation.

The Pacific Partnership Initiative on Sustainable Water Management is coordinated and facilitated by the intergovernmental organisation SOPAC (South Pacific Applied Geoscience Commission), which has the regional mandate to support the Pacific Island Countries in water & sanitation. SOPAC is assisted in this task by a deputy facilitator, the University of the South Pacific (USP).

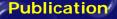
The Partnership has a Facilitator (based at SOPAC) who is responsible for implementing the core functions of the partnership: liaising between the regional stakeholder groups and their sub-networks; researching and receiving stakeholder information on on-going and planned water activities; tracking donor and development agency programmes; identifying areas requiring implementation; and coordinating proposal submissions and project implementation. The Facilitator is also responsible for high-level advocacy of the strategic approach.

Monitoring and evaluation are carried out using a matrix inventory of previous, existing, planned and proposed activities, including details of the stakeholders involved, the intervention objectives, implementation duration and status, and anticipated impact.

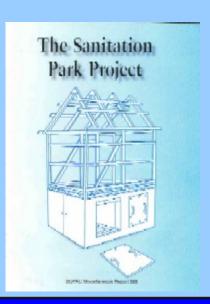
The Facilitator enables countries and development agencies to: identify successful previous activities and therefore improve the sustainability of subsequent interventions; reduce and prevent duplication of activities; link country requirements to development programmes (and vice versa); and augment existing and proposed activities nationally and regionally.

A working group of CROP agencies (Council of Regional Organizations of the Pacific) and NGO representatives has been set up to act as the overall coordinating body of the Pacific Type II Initiatives. Facilitators are asked to report to this Sustainable Development Working Group on a regular basis.

If you have comments on this Initiative or would like to make contributions and be further involved please do not hesitate to contact Marc Overmars marc@sopac.org



Sanitation Park Project Flyer



A flyer on the Sanitation Park Project was developed to provide background information to community members, students and to interested individuals/institutions visiting the Park or for those who would like to make a visit. The flyer gives a brief description of the available Sanitation Park systems and their features. Existing demonstration systems include; a sanitary well, a water seal latrine, a septic tank and soakage trench, a ventilated improved pit latrine and a waterless or composting toilet. Wherever possible pictures and illustrations have been used to present these systems for better understanding. Lastly, some useful references have been listed for those keen on further investigation on one of the wastewater treatment option. Contact details on personnel of the project team are provided should you require specific data on a topic.

Copies of the Sanitation Park Project Flyer can be obtained from the **SOPAC Secretariat** (<u>kamal@sopac.org</u>) or you can download the document via the following website:

http://www.sopac.org/Sanitation+and+Hygiene

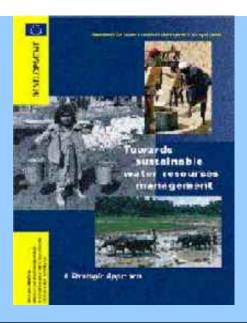
Water Resources development and management in an integrated and sustainable way for the benefit of all is based on a set of guiding principles.

These Guidelines set out a strategic approach to the management and sustainability of water resources and the delivery of water-related services, providing a broad perspective of all aspects of water resources activities. They are designed to respond to the needs of EC staff and those of partner country governments and other professionals working for the Commission and its Delegations. Water issues are cross-cutting and the Guidelines should enable experts and non-experts to cross disciplinary and sectoral boundaries.

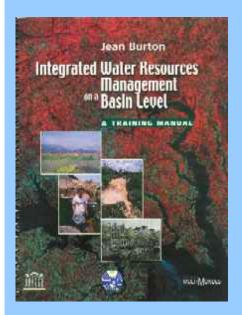
Copies of the Guidelines for water resources development co-operation towards sustainable water resources

Guidelines for water resources development cooperation towards sustainable water resources management

management can be obtained from the **European Commission**. For further information contact development@cec.eu.int.



Integrated Water
Resource
Management on a
Basic Level - A
Training Manual



This manual is an introduction to the principles underlying the integrated water resources management concept: the focus will be on the approaches and management tools that facilitate its application, taking into account the size of the territory, whether it be national and international basins or sub-basin of local interest.

The manual is first destined to trainers who, through a national or a regional seminar, would bring the participants to produce a diagnosis of their basin and an action plan. A simple and field-tested framework will guide them throughout this learning process. On the other hand, those who would like to prefect their knowledge and improve their capacity to manage water uses in a more sustainable fashion can also use the manual.

Copies of the Integrated Water Resource Management on a Basic Level - A Training Manual can be obtained from **UNESCO** or can be downloaded from the following website: http://www.unesco. org/water/ihp/iwrm_basins.shtml

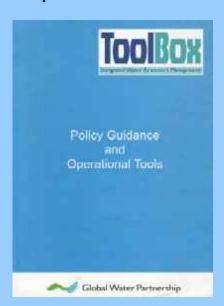
The purpose of Global Water Partnership's (GWP) ToolBox on Integrated Water Resources Management is to provide water management professionals clear examples of good and bad practices and lessons learned from real life experiences of implementing IWRM.

The GWP ToolBox contains a description of 50 tools for developing IWRM, each of which is supported with case studies, reference and organisations. Version 1: contains discussions on way IWRM and how the ToolBox can help - 'Policy Guidance' and the descriptions of the tools for IWRM themselves.

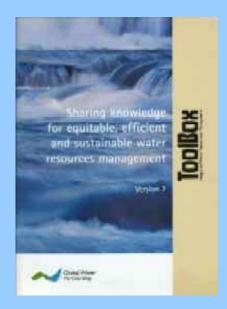
Copies of the Policy Guidance and Operational Tools document is available from **GWP**. More information on ToolBox is available on the GWP website:

http://www.gwpforum.org/

Policy Guidance and Operational Tools



Sharing knowledge for equitable, efficient and sustainable water resources management



The primary users of the IWRM ToolBox are water resource management professionals such as water resource planners, policy makes, river basin managers and political advisors. Other users will include local government staff, non-government organisations and the general public with water interests.

Version 2 - 'Sharing knowledge for equitable, efficient and sustainable water resources management ' is aimed to assist with the development of practices inspired by the principles of IWRM.

Copies of the Sharing knowledge for equitable, efficient and sustainable water resources management is available from **GWP**. More information on ToolBox is available on GWP website:

http://www.gwpforum.org/

After 3 years of operation beginning on 1996, the Technical Advisory Committee (TAC) of Global Water Partnership (GWP) felt there was a need for a clarification and formulation of certain principles and recommendations within integrated water resources management - serving a general purpose of contributing to the implementation of IWRM, but also an internal purpose of establishing a common understanding within GWP and TAC.

The present paper represents the "corporate view" of TAC on integrated water resources management and has been authored by all members of TAC in the period 1996 through 1999.

Copies of the Integrated Water Resource Management-Technical Advisory Committee Background Papers is available from GWP.

More information on Integrated Water Resource Management-Technical Advisory Committee Background Papers is available on **GWP** website:

http://www.gwpforum.org/

Integrated Water Resource Management-Technical Advisory Committee Background Papers



The Island Climate Update



The ICU is a multi-disciplinary, multi-national project providing Pacific island countries with 3-month climate forecasts. It is published monthly both in print and online by the National Institute of Water and Atmospheric Research (NIWA) in New Zealand and is funded by NZAID. Every month, 1200 printed copies of the ICU are distributed free-of-charge by NIWA, the publisher, directly to subscribers.

Online versions of the ICU bulletin can be downloaded from the following **NIWA ICU** website:

http://www.niwascience.co.nz/ncc/icu/archive

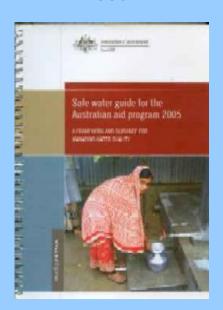
The Safe water guide provides an overview of the approach that AusAID has adopted for managing water quality in activities implemented under the Australian aid program. That approach is based on managing risks.

The guide outlines the steps that may need to be taken when designing, implementing, monitoring and evaluation water-related activities, particularly the provision of safe drinking water suppliers. It provides guidance on the procedures for identifying and managing existing and potential water quality problems.

Copies of the Safe Water guide for the Australian aid program 2005 can be obtained from **AusAID**. For further information visit their website:

www.ausaid.gov.au

Safe Water Guide for the Australian Aid Program 2005



An Overview of
Integrated Water
Resources Management
in Pacific Island
Countries: A National
and Regional
Assessment



The report concentrates on regional and national progress and activities in the Pacific region on IWRM, and where relevant refers to national and sub-national level examples of "roll-out" of these developments.

Copies of the An Overview of Integrated Water Resources Management in Pacific Island Countries: A National and Regional Assessment is available on **SOPAC** website:

http://www.sopac.org/tiki/tiki-sopac_download.php?path=
/data/virlib/MR/MR0554.pdf&file=MR0554.pdf&loc=MR

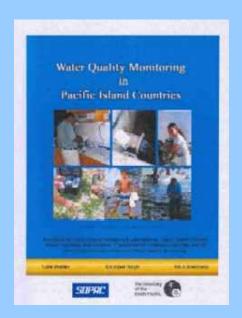
The Water Quality Monitoring in the picture is the first of its kind guideline that has been developed by the Institute of Applied (IAS) of the University of the South Pacific (USP) and the South Pacific Applied Geoscience Commission (SOPAC). The publication is divided into sections on how to design a water quality monitoring programme; selection of drinking and recreational water sampling; solid and liquid waste management and general notes on sampling and laboratory procedures.

This handbook is aimed for those people working in the water and wastewater sectors in the Pacific region, with local examples to allow more understanding and adaptation.

Copies of the Water Quality Monitoring in Pacific Island Countries can be obtained from the **SOPAC Secretariat** (tasleem@sopac.org) or you can download the document via the following website:

http://www.sopac.org/tiki/tiki-sopac_download.php?path=
/data/virlib/TR/TR0381.pdf&file=TR0381.pdf&loc=TR

Water Quality Monitoring in Pacific Island Countries



Directory of
Environmentally
Sound Technologies
for the Integrated
Management of
Solid, Liquid and
Hazardous Waste for
Small Island
Developing States
(SIDS) in the
Pacific Region

The Directory of Environmentally Sound Technologies for the Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States (SIDS) in the Pacific Region represents the combined efforts and achievement of numerous people from UNEP, SOPAC and SPREP.

The directory provides an overview of solid, hazardous and wastewater technologies.

- Solid waste technologies discuss information on different municipal solid waste management (MSWM) technologies that are currently used in different regions of the world.
- Hazardous Waste Technologies addresses the proper management of various types of hazardous wastes, as they require special handling, treatment and disposal due to their hazardous potential.
- Liquid waste or wastewater technologies in SIDS wastewater disposal systems are just as important for public health as a water supply distribution system.

Copies of the Directory of Environmentally Sound Technologies



for the Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States (SIDS) in the Pacific Region are available from the **SOPAC Secretariat** (kamal@sopac.org) or you can download the document via the following website:

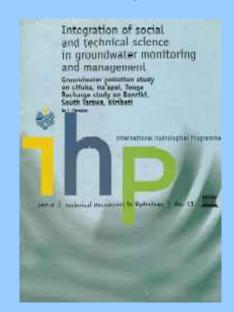
http://www.sopac.org/tiki/tiki-sopac_download.php?path= /data/virlib/JC/JC0143.pdf&file=JC0143.pdf&loc=JC

The integration of Social and Technical Science in Groundwater Monitoring and Management describes a groundwater pollution study on the island of Lifuka in the Kingdom of Tonga, in a village where private wells are an important source of water, in addition to dependence on household rainwater tanks and a public reticulated system. Comparison is also made with the findings of a ground water recharge project, which was undertaken on the island of Tarawa in the Republic of Kiribati, Central Pacific, where a reticulated groundwater system, sourced from a government controlled water reserve, was the primary focus of the study.

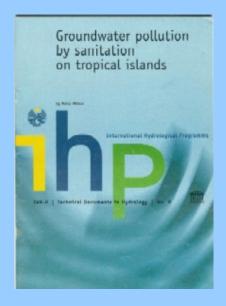
Copies of the Integration of Social and Technical Science in Groundwater Monitoring and Management can be obtained from the **SOPAC Secretariat** (<u>kamal@sopac.org</u>) or you can download the document via the following website:

http://www.sopac.org/CLP+Publications

Integration of Social and Technical Science in Groundwater Monitoring and Management



Groundwater Pollution by Sanitation on tropical Islands



The objective of the Groundwater Pollution by Sanitation on tropical Islands is to review the scientific foundations for managing this issue with particular reference to small tropical islands. This includes a brief assessment of the extent of groundwater pollution by sanitation systems, the nature of contaminants, their fate in the subsurface environment including factors affecting their attenuation, and the methods which have been used to study the movement of sewage contaminants in groundwater. The report concludes with a summary of the options for managing this problem, including sitting, design, and maintenance of sanitation systems, and techniques to undertake site specific studies.

Copies of the Groundwater Pollution by Sanitation on tropical Islands can be obtained from the **SOPAC Secretariat** (kamal@sopac.org) or you can download the document via the following website:

http://www.sopac.org/CLP+Publications

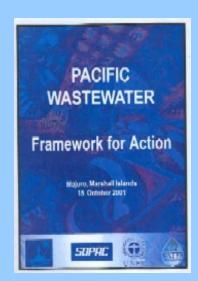
The Pacific Wastewater Policy Statement sets out a framework of guiding principles and policies to guide future development and co-operation by the Pacific Island Countries (PICs).

The Pacific Wastewater Framework for Action comprises a list of proposed actions to be undertaken at national and regional levels to achieve the goals that are laid out in the Pacific Wastewater Policy Statement and which refers to the GPA Strategic Action Plan and Guidance Document on Wastewater (UNEP/GPA, WHO, UNCHS-Habitat & WSSCC).

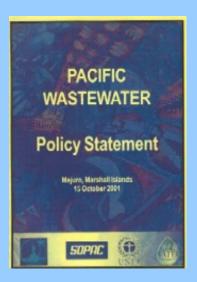
Copies of the Pacific Wastewater Framework for Action can be obtained from the **SOPAC Secretariat** (<u>kamal@sopac.org</u>) or you can download the document via the following website:

http://www.sopac.org/CLP+Publications

Pacific Wastewater Framework for Action



Pacific Wastewater Policy Statement



The Global Programme of Action for the Protection of the Marine Environment from Land based Activities (GPA) identifies the priority for action on sewage. In the Pacific region, a consultation process was facilitated by SOPAC, SPREP, PWA and the UNEP/GPA Coordination Office on wastewater management. A Regional Wastewater Management Meeting was held 10-15 October 2001 in Majuro, Republic of Marshall Islands and was the latest in the consultation process, which included preliminary sessions in February and March 2001 in Auckland and Apia. The Majuro meeting was sponsored by the Governments of Belgium, New Zealand and Taiwan/ROC.

The meeting brought together representatives from 15 Pacific Island countries (American Samoa, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, New Zealand, Niue, Papua New Guinea, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu), technical experts from in and outside the region, regional and international organisations (SOPAC, SPREP, SPC, PWA, WHO, UNESCO, UNEP/GPA), potential donors and NGO's, to complete the Pacific Wastewater Policy Statement and the Pacific Wastewater Framework for Action.

Copies of the Pacific Wastewater Policy Statement can be obtained from the **SOPAC Secretariat** (<u>kamal@sopac.org</u>) or you can download the document via the following website:

http://www.sopac.org/CLP+Publications

<u>Pacific Regional Action Plan on Sustainable Water</u> <u>Management</u>

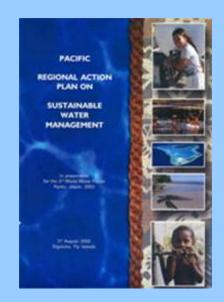
The national consultations as well as a regional meeting held in Sigatoka, Fiji from 29 July – 3 August 2002 provided a platform through which participants translated ideas into decisions and policy changes resulting in the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP).

The outcomes of the consultation were carried forward and presented during the 3rd World Water Forum in Kyoto as part of the theme "Water in Small Island Countries".

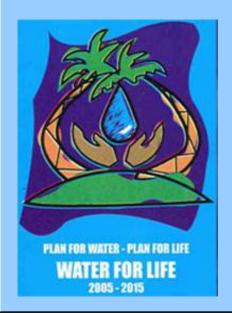
Copies of the Pacific RAP can be obtained from the **SOPAC Secretariat** (mathias@sopac.org) or you can download the document via the following website:

http://www.sopac.org/CLP+Publications

Pacific Regional Action Plan



World Water Day Campaign



World Water Day Material 2006 available: Water for Life

The World Water Day "Water for Life 2005-2015" Activity Booklet has been produced for schools and communities to further consider water issues through participative activities. The Activity Booklet should be used with the Water for Life Cartoon Scenes on the posters or calendars as the activities are linked to each cartoon scene. Alternatively, it can be used on its own to address different components of the theme "Water for Life".

Copies of the World Water Day Campaign are available from the SOPAC Secretariat (kamal@sopac.org) or Live & Learn Environment Education (marie@livelearn.org.fj). You can also download the document via the following website:

http://www.sopac.org/tiki/tiki-index.php?page=World+Water+Day+2006

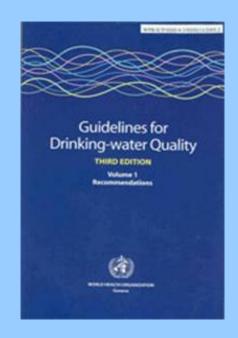
Third Edition WHO Guidelines for Drinking-Water Quality

Since the second edition of WHO's Guidelines for Drinking water Quality, there have been a number of events that have highlighted the importance and furthered understanding of various aspects of drinking-water quality and health. These are reflected in this 3rd edition of the Guidelines.

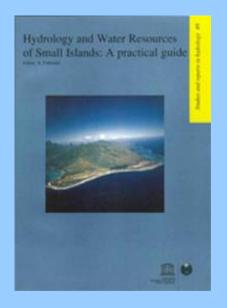
The Guidelines are addressed primarily to water and health regulators, policy-makers and their advisors, to assist in the development of national standards. The Guidelines and associated document are also used by many others as a source of information on water quality and health and on effective management approaches.

Copies of the Guidelines for Drinking - Water Quality are available from **WHO's** website: http://www.who.int/ water_sanitation_health/dwq/gdwq3/en/

or from the WHO's Pacific Regional Office (IddingsS@sp. wpro.who.int).



Hydrology and Water Resources of Small Islands: A Practical Guide



Hydrology and Water Resources of Small Islands: A practical guide

In most small islands water development projects have not achieved any goal. This is often because the technologies, design and materials were not suitable for either the environment or the cultural habits of the population, or because the operation and maintenance cost were excessive. Combined with geological and other physical complexities and the exposure to natural disasters, the hydrological and water resources problems, must be carefully considered. The situation is aggravated by lack of qualified personnel.

This guide has been prepared to assist technicians, hydrologists, engineers and managers in the identification, assessment, development, management and protection of water resources of islands. It is intended to be a guide to the selection of methods and practices appropriate to the special conditions of small islands.

Copies of the Hydrology and Water Resources of Small Islands: Practical Guide can be obtained from the **SOPAC Secretariat** (mathias@sopac.org) or from the **UNESCO** Apia Office (hans@unesco.org.ws).

Harvesting the Heavens, A Manual for Participatory Training in Rainwater Harvesting

This manual of Participatory Training in rainwater Harvesting was developed as part of the United Nations Environment Programme (UNEP) project titled "Pilot Project on Empowering Women in Rainwater Harvesting in the Pacific Atoll Islands" with funding from the Government of Sweden.

The manual is targeted fro use by Non-Government Organisations (NGOs), Community-Based Organisations (CBOs) or people involved in rainwater harvesting, and contains a number of participatory techniques, tools and activities based on best practices from a variety of sources.

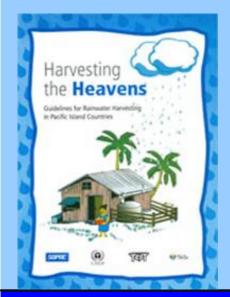
Copies of this Manual can be obtained from the **SOPAC Secretariat** (<u>arieta@sopac.org</u>) or you can download the document via the following website:

http://www.sopac.org/CLP+Rainwater+Harvesting

Harvesting the Heavens, A Manual for Participatory Training in Rainwater Harvesting



Harvesting the Heavens, Guidelines for Rainwater Harvesting in Pacific **Island Countries**



Harvesting the Heavens, Guidelines for Rainwater **Harvesting in Pacific Island Countries**

The "Harvesting the Heavens: Guidelines for the Rainwater Harvesting in the Pacific Island Countries" were developed as part of the United Nations Environment Programme (UNDP) demonstrating projects on "Empowering Women in Rainwater Harvesting" funded by the Government of Sweden through their development agency SIDA and carried out in Africa (Kenya) and the Pacific (Tonga).

The guidelines capture the lessons learned during the preparation and the implementation of the demonstration project executed by the South Pacific Applied Geoscience Commission (SOPAC) and carried out in the Island group of Vava'u of the Kingdom of Tonga through the Village Women's Development Programme (VWDP) of the Tonga community Development Trust (TCDT).

Copies of this Guideline can be obtained from the SOPAC Secretariat (arieta@sopac.org) or you can download the document via the following website:

http://www.sopac.org/CLP+Rainwater+Harvesting

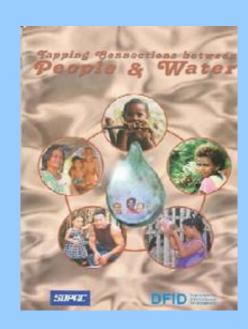
Tapping Connections between People & Water

Everyone uses water and everyone needs some kind of sanitation. The way water is used depends on the island where you live: the climate, the landforms, and the source of water. It also depends on the tradition and customs of the family and community, their income and the size of the population.

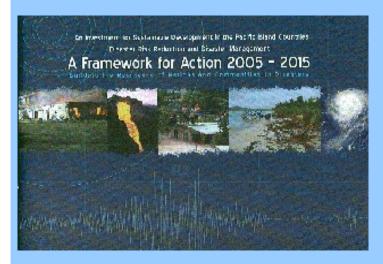
The handbook can be used by field workers when working with communities to install and maintain water and sanitation systems. It can also be used to support health and hygiene programmes. The handbook raises seven Questions to think about. The Questions can be a checklist to identify important connections between people and their

Copies of the Manual can be obtained from the **SOPAC** Secretariat (arieta@sopac.org) or you can download the document via the following website:

water and their land.



http://www.sopac.org/data/virlib/MR/MR0577.pdf



A Framework for Action 2005 - 2015

There is ongoing and increasing vulnerability of Pacific Island nations and communities to impacts of disaster. This has led to increased national regional commitments to disaster risk management on an 'all hazard' basis in support of sustainable development. This Framework for Action 2005 - 2015 has been developed to respond in part to these commitment.

Copies of this Guideline can be obtained from the **SOPAC Secretariat** or you can download the document via the following website:

www.sopac.org/tiki/tiki-sopac_download.php?path=/data/
virlib/

MR/MR0613.pdf&file=MR0613.pdf&loc=MR

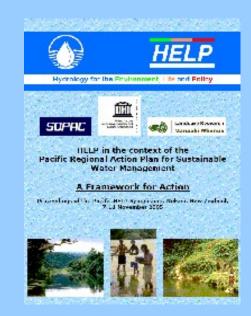
HELP (Hydrology for the Environment, Life & Policy)

HELP (Hydrology for the Environment, Life & Policy) is a joint initiative of the United Nations Educational Scientific Organization (UNESCO) and the World Meteorological Organization (WMO). HELP is led and coordinated by UNESCO's International Hydrological Programme (IHP). In the Pacific, the IHP is administered by the UNESCO Office for the Pacific States in Apia, Samoa, through a memorandum of understanding with the South Pacific Applied Geoscience Commission (SOPAC).

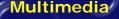
Under the title "HELP in the context of the Pacific Regional Action Plan for Sustainable Water Management: A Framework for Action", the proceedings of the Pacific HELP Symposium were prepared in response to the recommendations by the Pacific Island country participants and supports the implementation of catchment management actions envisioned in the overarching Pacific Regional Action Plan on Sustainable Water Management.

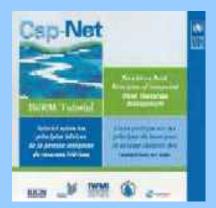
This document consists of the Framework for Action itself, as well as a CD-Rom containing electronic editions of all presentations and papers delivered at the HELP Symposium.

Participating Pacific Island Countries in the HELP Symposium: Cook Islands, Fiji, Papua New Guinea,



Samoa, Solomon Islands and Vanuatu.





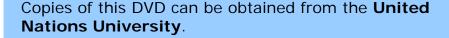
Cap-Net - IWRM Tutorial

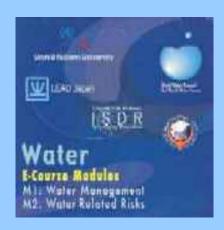
This DVD contains a brief introductory tutorial aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principle. It provides the case for IWRM and the argument against those who may oppose it on institutional or sectoral grounds.

Copies of this DVD can be obtained from the **United Nations Development Programme**.

Water E-Course Modules

The content of this DVD includes an overview of the major concern related to water use and management. The workshop consisted of a series of lectures which included the status of global water crisis, measures being taken by the global community, issues related to water resource assessment, water sharing, floods and concerns related to dam construction.







Toolbox

This DVD contains a brief introductory tutorial aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principle. It provides the case for IWRM and the argument against those who may oppose it on institutional or sectoral grounds.

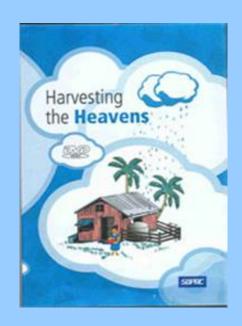
Copies of this DVD can be obtained from the **Global Water Partnership Secretariat.**

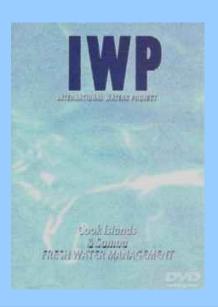
Harvesting the Heavens

A DVD documentary which follows the pilot project in Vava'u. The video highlights the important aspects of the project including community participation and ownership, encouraging women as well as men to participate in water management and promoting sustainable approaches. Harvesting the Heavens follows a rainwater harvesting demonstration project carried out in the villages of 'Utungake and Matamaka in the island group of Vava'u in Tonga. The project focused on the importance of community participation and ownership, encouraging women as well as men to participate in water management and promoting sustainable approaches.

Copies of this documentary can be obtained from the **SOPAC Secretariat** (mathias@sopac.org) or you can download the document via the following website:







Cook Islands & Samoa Fresh Water Management

A DVD documentary which follows the pilot project in Cook Islands and Samoa fresh water management. The International Water Project ensures that by establishing a good fresh water management plans our water quality would be safe for consumption.

Copies of this documentary can be obtained from the **SPREP Secretariat**.

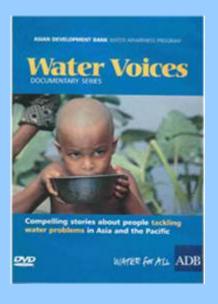
Water Voices Documentary Series

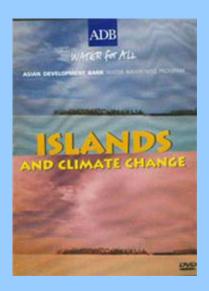
Water is essential to all life. And yet one in three Asians lacks access to safe drinking water, and half the people living in Asia and the Pacific do not have access to adequate sanitation. Conflicts over sharing of scarce water resources are increasing at an alarming rate.

A documentary series that recognizes the power of good examples and lessons learned to inspire 'home grown' solutions to water problems. The series recognizes the power of good examples and lessons learned to inspire 'home grown' solutions to water problems and looks specifically at communities in Fiji, Kiribati and Tonga.

Copies of this documentary can be obtained from the SOPAC Secretariat (arieta@sopac.org) or the Asian Development Bank







Islands and Climate Change

Islands and Climate Change examines and reports on a unique initiative on Fiji's Coral Coast where coastal communities and the tourist industry try to protect water resources. The Water Awareness Program aims to increase public understanding about vital water issues in the Asia and Pacific region; promote water sector reform; improve delivery of water services, especially to the poor; and foster conservation and integrated management of water resources.

Copies of this documentary can be obtained from the **SOPAC** Secretariat (arieta@sopac.org) or the **Asian Development Bank**.

(http://www.adb.org/Water/CFWS/Water_Voices_Videos.asp).

Pacific Water Agenda 2007

DATE

EVENT

LOCATION

DETAILS

February th 12 - 24 th	Water & Sanitation for Development & Emergencies	Fort Dauphin, Madagascar	This course will provide a very broad overview of technical and theoretical aspects of water and sanitation projects in development situations as well as emergencies. While certain technical options are feasible in both environments, important differences exist, especially concerning methodology, beneficiary participation, scale and planning. http://www.irc.nl/page/31497
February 21 - 22 nd	1 st Meeting of the Asia Pacific Water Forum Governing Council	Singapore	The discussion shall focus on how to organize and present the input from activities of the APWF to the 1st Asia-Pacific Water Summit (to be held in 3-4 December, 2007, in Oita, Japan). http://www.apwf.org/event/
February th 26 - 28 th	U.N. Framework Convention on Climate Change expert meeting	Rarotonga Cook Islands	U.N. Framework Convention on Climate Change expert meeting on adaptation for small island developing States.
March	Water Demand Management Training Course	Rarotonga Cook Islands	
March 22 nd	World Water Day 2007	Suva, Fiji	Organised by: SOPAC and Live and Learn in Suva Fiji marking the Food and Agriculture Organisation Theme: Our Islands with Water. http://www.sopac.org/CLP+Water+Awareness
March 22 nd	World Water Day 2007	International	Organised by: FAO Theme: Coping with Water Scarcity The international observance of World Water Day is an initiative that grew out of the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. www.unesco.org/water/water_celebrations/index.shtml
April 16 th - 20 th	1 St Steering Committee Meeting for HYCOS	Brisbane Australia	
April 16 th - 20 th	Planning Meeting for National Coordinators and Regional Representatives	Geneva Switzerland	The first two days will focus on looking back, to give the NCs and RRs the opportunity to share with each other and the WSSCC Secretariat all the activities that they have been engaged in around WASH over the past two years, and to compare experiences between all the different countries and regions. The third day will be a Thematic Fair, where a number of the Council's Thematic Working Groups will come and present their work to the NCs/RRs, and get feedback from them as to how they could make their thematic work as relevant and appropriate as possible so that the national groups will benefit from it more directly. The last two days will be spent looking forward, and planning for action by the national and regional groups and the Secretariat, and discussing some organisational issues.

April 23 rd - 27 th	2 nd Steering Committee Meeting for IWRM	Suva, Fiji	
May 2 nd - 5 th	Conference ICLEI Oceania	Grand Hyatt Melbourne Australia	In May 2007, ICLEI-A/NZ will host an international gathering of leaders in local government, ICLEI Campaigns and sustainable development from the Oceania region. http://www.iclei2007.com.au/
May 14 th - 18 th	Water Quality Monitoring Workshop	IAS - USP Fiji	
May 15 th - 18 th	5 th South Pacific Stormwater Conference	Auckland New Zealand	The aim of this conference is to provide delegates with an opportunity to upskill in various areas of stormwater science and management, network with their peers and hear new and cutting edge stormwater information. www.unesco.org/water/water_events/Detailed/1455.shtml http://www.nzwwa.org.nz/indexsw.htm
June 4 th - 6 th	WasteQ 2007: Leadership in a Climate of Change	Gold Coast, Queensland Australia	The aim of WasteQ 2007 is to bring together leaders in all areas of waste and secondary resource management to exchange technical knowledge, ideas and together to plan for viable industry and government sectors that can work in partnership to meet the challenges we all face in the next decade. http://www.wmaa.com.au/wasteq/index.html
June 18 th - 21 st	25th Pacific Islands Environment Conference	Guam	For additional information regarding the conference please contact: Lee-Ann Choy Jon Ordenstein PIEC Conference Coordinators Pacific Rim Concepts LLC prc@hawaiibiz.rr.com
June 18 th - 22 nd	26th Pacific Islands Environmental Conference	American Samoa	For additional information regarding the conference please contact: Carl L.Goldstein (goldstein.carl@epa.gov; 415-972-3767) of EPA's Pacific Islands Office.
July 16 th - 20 th	Water Quality Monitoring workshop	Guam	
July 31 st - August 3 rd	International Water Conference	Cape Town, South Africa	The purpose of the conference is to share experiences and innovative practices among GEF's global International Waters portfolio (nearly \$4 billion), promote learning and capacity building, develop strategies to enhance stakeholder collaboration, and encourage GEF International Waters projects to apply evolving GEF policies and procedures during implementation. http://www.getf.org/ewebeditpro/items/038F11453.pdf

August 14 th - 17 th	2007 American Rainwater Catchment Systems Association Conference	Kilauea Military Camp Hawaii	This conference will present information valuable to users, public health officials, academics, designers, installers, architects, builders, product vendors, students, planners, and water utility staff. http://www.arcsa07.com/
August 20 th - 22 nd	nd 2 International Conference on Water Resources Management of the International Association of Science and Technology for Development (IASTED)	Honolulu, Hawaii, United States	The purpose of this conference is to act as an interdisciplinary forum for decision-makers, academics, and professionals interested in the development and application of technology to ensure the sustainable use and management of water resources. The forum will cover both hard and soft technology and will serve to promote the use of appropriate technologies. The conference topics include: water supply and sustainable use; wastewater and stormwater management; integrated watershed management; pollution prevention and reduction in industry; issues in implementing environmentally sound technologies. http://www.iasted.org/conferences/home-578.html
September 3 rd - 6 th	Third International Conference on Climate and Water	Helsinki, Finland	The conference web-site: www.environment.fi/syke/cw3
September 3 rd - 6 th	10th International Riversymposium & Environmental Flows Conference	Brisbane Australia	The symposium will feature presentations on innovative practices and case studies from all over the world and a wide range of perspectives on managing river flows for people and ecosystem health. http://www.riversymposium.com/index.php?page=Home
December 3 rd - 4 th	1st Asia-Pacific Water Summit	B-con plaza (Beppu Convention Center), Oita Prefecture, Japan	Open Summit is a series of events which will be organized by the host local government (s)/regional offices of the Japanese Governments, CSOs in cooperation with the Summit SC in Oita Prefecture as well as in any other places in Japan on the occasion of the 1st Summit. The events will include: public symposium, seminars and workshops, exhibitions, and technical visits and excursions. http://www.apwf.org/news/index.html

ADB Water in Small Island Countries www.adb.org/Water/theme3.asp	Pacific ENSO Update http://lumahai.soest.hawaii.edu/Enso/ subdir/ update.dir/update.html
AOSIS Alliance of Small Island States www.sidsnet.org/aosis	Pacific Water Association www.pwa.org.fj
AUSAID www.ausaid.gov.au	SIDSNET www.sidsnet.org
Australian Water Portal www.developmentgateway.com.au/water/index.html	UNEP http://freshwater.unep.net/
Barbados +10 www.sidsnet.org/Mauritius2004/	UNESCAP www.unescap.org
CSD12 www.un.org/esa/sustdev/csd/csd12/csd12.htm	UNESCO www.unesco.org/water
Co-operative Programme on Water and Climate www.waterandclimate.org	UNU www.inweh.unu.edu/inweh
East-West Center www.EastWestCenter.org/climate	WHO www.who.int/water_sanitation_health/en/
ESCAP www.unescap.org/esd/water/activities	WMO www.wmo.ch/web/homs/index.html
European Union www.europa.eu.int/comm/development/publicat/water/ en/frontpage_en.htm www.euwi.net http://europa.eu.int/comm/development/index_en.htm http://europa.eu.int/comm/environment/water/index.html	World Bank www.worldbank.org/html/fpd/water
Gender and Water Alliance www.genderandwateralliance.org	World Summit on Sustainable Development www.johannesburgsummit.org

Global Water Partnership www.gwpforum.org	World Water Council www.worldwatercouncil.org
GWP Australia www.gwpaustralia.org	World Wide Fund for Nature www.wwfpacific.org.fj
Island Climate Update www.niwa.cri.nz/NCC/ICU	WSSCC http://www.wsscc.org/
NZAID www.nzaid.govt.nz	NIWA www.niwa.co.nz
USGS http://hi.water.usgs.gov	SPC www.spc.int
USP www.usp.ac.fj	Japan Water Forum http://www.waterforum.jp/eng/index.html
SOPAC Water http://list.sopac.org.fj/Secretariat/Programmes/H2O/ 3rd_world_water_forum/index.html	UN-Water http://www.un.org/waterforlifedecade/
USP – IWRM website http://www.earth.fst.usp.ac.fj/index.php?id=4043	

--- Please let us know if you think other websites are worth mentioning here! ---

We have changed the frequency of issuing this newsletter from semi-annually to quarterly so you can be kept updated on the latest developments. As mentioned in earlier mail outs we would appreciate it if you could forward this to colleagues who may be interested in this initiative so that it reaches the widest possible audience.

To subscribe please send an email to sanjeshni@sopac.org to add your contact to our mailing list.

and

Send a blank email message with the words

"unsubscribe" in the subject field to: sanjeshni@sopac.org to unsubscribe from this list if you wish not to receive any further issues in the future.

The Pacific Water Partnership Initiative News is produced by the Pacific Partnership Initiative on Sustainable Water Management for Water Awareness Program to provide water information to Pacific member governments, professionals, researchers, private sector and their counterparts in the donor community who are interested in water sector issues and initiatives.

For comments or more information:

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*

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Web site: http://www.sopac.org/CLP+Pacific+Partnership

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Web site: http://www.sopac.org/CLP+Pacific+Partnership

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