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Welcome to the seventeenth 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.

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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UNICEF Pacific Water and Environmental Sanitation Programme

Health and Sanitation is one of the five major programmes in UNICEF Pacific Multi-Country Programme 2008 - 2012. The strategic vision of which is multilayered and involves bringing the child dimension to the Pacific regional policy debates, emphasizing child rights within Pacific regional strategies, and assuring the realization of key results at scale for children in three priority countries; Solomon Islands, Kiribati and Vanuatu.



The water, sanitation and hygiene project falls within the Health and Sanitation programme and is aimed at providing support for the development and implementation of community based hygiene improvement and water safety plans that lead to a reduction in childhood diarrhoea and other water related illnesses. Clean water, proper sanitation and hygiene are linked in many ways to people's livelihoods and sustainable development in general. It contributes directly to the Millennium Development Goal (MDG) 7 target 10, which is to "halve, by 2015, the proportion of people without sustainable access to improved drinking water sources and basic sanitation" and in one way or another is related to all the Millennium Development Goals. Through strategic

coordination within country programmes UNICEF can make significant contribution to the health and environment objectives of the Millennium Development Agenda.

Who are the partners?

Government ministries at regional, national and sub-national level, regional organizations/agencies in the water and sanitation sector and WASH coalition, NGOs, private sectors and academic institutions will be the main implementing partners at various levels.

Major activity highlights in 2008

Support provided to the government implementing partners on;

- Baseline survey on water and sanitation requirements (mainly schools and surrounding communities)
- Development of implementation strategy
- Develop multi-year strategic communication plan for behavior change
- Support World Water Day 2008 (with Sanitation as main theme)
- Review and improve hygiene education curriculum with main focus on hand washing at critical periods
- Coordinate and/or organize WASH cluster approach for UN agencies, NGOs and government partners

Emergency preparedness and response planning and management is integrated in all programme components and response coordinated through country-level national disaster management offices and various government and non-governmental partners as required.

For more information on UNICEF Pacific Water and Environmental Sanitation Programme, please contact:

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Tuvalu's Dealing with Water & Sanitation

During the last 5-10 years, Tuvalu has been slowly moving towards an integrated approach to water resources management (IWRM). IWRM provides a framework for managing water in a cross-sectoral way. Tuvalu faces a number of urgent water issues such as;

1. contamination of groundwater and coastal waters,
2. vulnerability to drought,
3. increasing water demands,
4. inefficient water use and
5. lack of wastewater treatment.

The Tuvalu Water and Sanitation Committee was established in 2001 and gathers representatives from different government departments, the Kaupule (traditional local government), and the Tuvalu Association for NGOs, providing a forum for coordination of water resources planning and management.

The Committee has played a central part in taking the first steps towards IWRM by drafting strategy documents supporting IWRM and water reform, including a draft National IWRM Plan and a draft Building Code with provisions for water catchment and wastewater treatment.

Unfortunately, due to lack of formal endorsement, terms of reference and budget allocation, the Committee has largely been dependent on external support. This has meant that the process to move IWRM forward has been on hold since 2005.

The Tuvalu Government is now reviving the IWRM process through the Water and Sanitation Committee Chaired by the newly appointed Permanent Secretary for Utilities, Mr Paulson Panapa.

One of the central priority actions for the Committee will be to review the draft National IWRM Plan and move it forwards towards adoption by Cabinet. Another priority will be to strengthen the Water and Sanitation Committee so that it is not dependent on external support.

The IWRM Plan will give overall strategic guidance for water management in Tuvalu and will involve processes such as drafting a national water policy, reviewing current legislation in accordance with water management needs, and reviewing the roles and responsibilities of different government departments in relation to water management.



For further information Tuvalu's Dealing with Water & Sanitation, please contact:

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Majuro EPA Water Quality Laboratory receives Certification

The U.S. Freely Associated States Voluntary Water Quality Laboratory Certification Program recently granted certification to the Republic of Marshall Islands (RMI) Majuro Environmental Protection Agency (EPA) water quality testing laboratory.

The Majuro EPA laboratory is now certified to analyze bacterial contamination for both drinking and marine waters.

Certified laboratories and analysts are necessary to ensure that the water quality data used for protecting public from health risks associated with drinking contaminated water is reliable.

Certification provides assurances that the laboratory produces scientifically valid and legally defensible data, and that the staff are qualified to analyse water samples for bacterial contamination.

Laboratories and personnel receive certification when they meet or exceed specific criteria established under the U.S. EPA Voluntary Certification Program. These include adequate lab space and facilities, a complement of functional and properly maintained basic equipment, adequate lab supplies, and rigorous quality control procedures.

The Pacific Islands Applied Geoscience Commission (SOPAC) and the World Health Organization (WHO) have assisted the Majuro EPA water laboratory with preparations for the Certification Program as part of their ongoing NZAID-funded Water Quality Monitoring (WQM) regional support programme.



An early partnership was established between SOPAC, WHO and the U.S. EPA Certification Program. This ensured that the support provided by SOPAC and WHO under the NZAID-funded WQM Programme was in line with the Certification Program requirements.

Mr. Tasleem Hasan, the SOPAC WQM Programme Officer said "The Majuro EPA water laboratory and technicians had prepared well for the certification audit, with support from the WQM Programme."

He further said "the certification is a great achievement for the RMI EPA Majuro water lab and a good success for the WQM Programme".

The U.S. EPA certification officers who conducted the certification audit, Ms Edna Buchan and Lieutenant Elena Vaouli, expressed their appreciation for the support provided by SOPAC and WHO in relation to the Certification Program.

For further information on Water Quality Training Course in Guam please contact:

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Predicting the salinity of the fresh groundwater underneath coral islands

The fresh water underneath Pacific islands provides an essential part of their daily livelihoods. Rainfall recharges the stores of water under the ground and many Pacific Islanders will have noticed that it tastes saltier after times of drought. We know that low islands are at the forefront of facing the negative impacts of climate change such as sea level rise. In the last issue we read that the water problems in the Asia-Pacific region will considerably worsen under the influence of climate change. It is also likely that climate change will influence the variation in climate and the weather that we experience. The most important source of climate variation in the Pacific relates to the El-Niño Southern Oscillation (ENSO) and it is associated with the spatial and temporal distribution of rainfall and therefore linked to the persistence of droughts.



We worked on a European Commission funded project on Tongatapu and showed that it is possible to predict the salinity of pumped groundwater some 10 months in advance using a simple ENSO indicator (the Southern Oscillation Index, see van der Velde et al., 2006). Since we have quite a good idea of the zones that are influenced by El Niño & La Niña, we suspect that similar relationships should exist elsewhere in the Pacific. As the sea level rises and the demand of freshwater increases with increasing population pressure, this information would be very useful for planning and sustainable management of our islands' freshwater resources. With this type of information we should be able to better use and protect the freshwater resource and ensure a sustained use in the future.

Our aim therefore is to find out if similar relationships between ENSO and groundwater salinity exist for other islands. We could establish this kind of relationships for your island - but we need one thing to be able to do so: data. So it would be great if you could contact me if you, your government institution or company has any historical information on salinity of the groundwater underneath low islands. Please also contact me if you are interested in our work and if you have any questions.

For further information on Salinity of fresh groundwater underneath coral islands, please contact:

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Reference: Van der Velde, M, Javaux, M, Vanclooster, M & Clothier BE, 2006. El Niño-Southern Oscillation determines the salinity of the freshwater lens under a coral atoll in the Pacific Ocean. Geophysical Research Letter, 33, L21403, doi:10.1029/2006GL027748.



Water Resources Policy Developments in Fiji



The Fiji National Water Committee (NWC) met on 25th April 2008 to discuss how to progress the process for adoption of a Water Resources Policy. The policy was drafted in response to a request by the Fijian government, in recognition of the need to move from a sectoral and fragmented management approach, towards integrated water resources planning and management. A draft Interim Water Resources Policy was adopted by Cabinet in 2005, subject to further consultation.

The meeting was hosted by the Chair of the NWC, the Mineral Resources Department with support from the EU funded IWRM National Planning Programme. It gathered representatives from a wide range of government departments to determine a way forward for moving the policy towards final adoption by Cabinet. It was agreed that the first steps will be to review the draft Water Resources Policy in view of recent developments within water governance reform, and to initiate a wider stakeholder consultation on the policy.

By formulating clear goals and principles for water governance in Fiji, the draft policy provides overarching vision and direction spanning over all water sectors and perspectives of water management (e.g. in relation to health, supply, land use planning, environment, finance, rights and allocation, etc.).

The policy is expected to provide the first step in a wider process to reform water governance. As such, it also outlines reform measures to be undertaken by government including development of legislation, institutional strengthening and coordination, public education and awareness, and provision of information for water management.

For further information on Adoption of Water Resources Policy in Fiji, please contact:

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Government of Fiji

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Nauru Rainwater Harvesting Assets Surveyed

The Government of Nauru, through the Department of Lands & Survey, Department of Environment, and the Nauru Rehabilitation Corporation and Eigigu Holdings recently worked with SOPAC on a joint technical survey. The purpose of the survey was to map the rainwater harvesting infrastructure across the entire country.

High resolution, remotely sensed imagery from the Quickbird Satellite, global position systems (GPS) and geographical information systems (GIS) were used to provide an accurate spatial database of all private, communal and government properties. Capacity building and training in equipment were key activities of the Survey mission.

3 teams conducted the survey over a period of three weeks. To support local staff a 2-day introductory GIS/GPS training session was conducted which was then reinforced during the field survey with the use of the GeoXM GPS system. The actual field work involved assessing the condition of the rainwater harvesting associated infrastructure and assets such as roofing (capture), gutters (transmission) and tanks (storage) for each building.



Two methods of data collection, manual survey forms and direct entry into the GeoXM, GPS system were employed by each team as an extra precautionary measure against the risk of data loss. The contents of the form were transferred into a digital data dictionary using the Pathfinder Office software and uploaded into each GeoXM unit. Field data from the unit were then downloaded and exported in a format compatible with the MapInfo GIS software. The paper forms were checked against the data collected through the GeoXM and data editing and verifications were done where necessary. The main attributes of the data collected were exported and stored in an Access database.

At the conclusion of both surveys in 2007 and 2008 all buildings in the 14 districts of Nauru were surveyed. There are a total of 1334 rooftops with the potential to harvest rainwater. The outcome of the survey will allow the asset managers to identify the buildings in need of repair or replacement of rainwater harvesting infrastructure.

This work was undertaken in March 2008 as a joint Pacific HYCOS/EDF9 technical mission funded by the EU Reducing Vulnerability of Pacific (ACP) Countries project.

For more information on Nauru Rainwater Survey, please contact:

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PACIFIC
HYCOS
PACIFIC HYDROLOGICAL CYCLE OBSERVING SYSTEM



Marshall Islands' Fragile Groundwater Lens



The Pacific Hydrological Cycle Observing System (Pacific HYCOS) project has recently been working with the Republic of Marshall Islands Environmental Protection Agency (RMI EPI) and the community of Laura on Majuro Atoll to better understand the underlying freshwater groundwater resource.

Andreas Antoniou, a student hydrogeologist, investigated the Laura Lens from November 2007 to January 2008 to better understand the underlying freshwater groundwater resource.

Groundwater is withdrawn in Laura from 4 operational municipal water supply wells which supply an estimated total of more than 10,000m³ per month, approximately 40-50% of the water needs for the 25,000 people living on Majuro Atoll.

EPA and Andreas took 125 water samples from 33 monitoring bores to test for salinity and bacteria E Coli. The result enabled the identification of areas of bacteriological contamination within the groundwater, attributed to certain landuse activities, such as the use of animal waste for fertilisers and higher density living.

The study revealed an interesting link between recharge from rainfall and the depth at which the bacteria were concentrated. The study found that the highest concentrations were at 12-18 metres and the next highest concentrations near the surface at 3-6m. The presence of E Coli at depth suggests that pulse or piston type recharge plays a role in groundwater movement in Laura and surface contaminants. As additional samples will be taken under various climate conditions this picture will become clearer.

Subsurface loggers which record water level and salinity were installed in the monitoring bores providing a fascinating and easily understood example of complex data for use with community decision makers and resource managers. Data from the loggers demonstrated how ocean tides influence the groundwater and salinity level. A map was developed which identifies the variation (both horizontally and vertically) of salinity over time between boreholes which has implications for determining changes in the size of the freshwater resource and future monitoring.

The work to date has helped the community of Laura and the managers in RMI EPA to better understand their freshwater resource. This knowledge allows them to make informed decisions on how they can best continue to live and work on its surface and still maintain the quality of the groundwater to meet Majuro's growing water requirements.

For further in information on Marshall Islands Groundwater Hydrology, please contact:

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Marshall Islands' Fragile Groundwater Lens



A Delphi Study is being undertaken, specifically aiming at "Reducing the vulnerability and increasing the resilience of water services to global change". A list of factors linked to vulnerability of water services may provide a framework useful for evaluating the viability of a water development project addressing water services in PICs.

The Pacific Waterscapes forum has been set up to allow dialogue between stakeholders about how to make water services in PICs less vulnerable as well as to further develop and explore project ideas addressing vulnerabilities of water supply in the PICs. These project ideas are to be further explored at a workshop of the Pacific Water Association to be held in Apia in September 2008.

We hope that this web forum can enable wider participation into the project design stage, to make projects more context sensitive, and more attractive to a larger range of stakeholders. Participation is open to anyone, and the web forum is available at:

<https://pacificwaterscapes.csiro.au/>

To participate on the web forum, you need to do the following:

1. Login and create a user account (this should take only a couple of minutes)
2. Explore the existing project ideas, and add comments where you think that the project concepts need to be further developed

If none of the projects attract your interest, please feel free to add a new project idea. **PLEASE NOTE:** This is a great opportunity to have your project ideas developed and discussed by a large number of stakeholders all around the Pacific; including major funding agencies!

The latest project to be added is called "Integrating Gender into Water Resources Management in the PICs".

For more information on Pacific Waterscapes Forum, please contact:

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CSIRO Land and Water
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Pacific IWRM Project Approved by GEF Council

The Council of the Global Environment Facility (GEF) approved the Pacific Sustainable Integrated Water Resources and Wastewater Management Project for implementation when they met in Washington D.C. last week (22-25 April).

The approval was granted on the basis of the Project Identification Form (PIF) which provides a framework for full project implementation. This document can be downloaded from the SOPAC website for further information. As Executing Agency, SOPAC are now finalising the complete project documents between themselves, UNDP and UNEP, as the final step in the project submission process.

This final submission will capture all the efforts and contributions of the Pacific Island Countries to design the project, including the National Diagnostic Reports, Hot Spot Analyses, and the final Demonstration Proposals with co-financing letters and letters of support from partner organisations.



Congratulations to all Pacific IWRM Focal Points, other national government representatives, support personnel, partner organisations, and the Pacific Partnership who have worked hard to make this complex project happen.

The Pacific IWRM Project will start in 2008 and will run for five years to 2013 with a total contribution from the GEF of US\$10.7 million. The Project links closely with and is co-financed through a range of national and regional initiatives, notably the EU-funded National IWRM Planning Programme.

For further information on the GEF IWRM Programme, please logon to:

www.sopac.org/tiki/tiki-index.php?page=Integrated+Water+Resource+Management
www.gefweb.org/interior.aspx?id=21352

or contact:

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Pacific IWRM Planning Workshop, 18 - 25 July 2008, Alofi, Niue



The Premier of Niue, the Honourable Mititaiagimene Young Vivian, has offered to host the Pacific IWRM Planning Workshop between the 18th to 25th of July in Alofi, Niue. The workshop is sponsored by the European Union Water Facility and will gather representatives from government agencies working on water services and resources management the Pacific.

The Planning Workshop provides an opportunity to plan support to water resources management in the Pacific from several regional projects, and will also focus on capacity building and sharing of experiences on national water resources planning and governance.

The meeting fulfils five main purposes:

1. The Inception Meeting for the EU-funded IWRM National Planning Programme to build capacity and outline strategies for support to national water resources planning across the Pacific;
2. As the Pre-Inception Meeting to kick-start the GEF-funded Pacific IWRM Project through discussion on the resources available through the project, initiation of National IWRM Demonstration projects, and the recruitment of National Project Staff;
3. As a 2nd Steering Committee & Mid-term Project Review Meeting for the Pacific Hydrological Cycle Observing System (HYCOS) project;
4. To formulate key messages on water and climate interactions to be put forward to Pacific Leaders at the forthcoming Pacific Forum Leaders Meeting due to take place in Alofi in August; and
5. To recognise 2008 as the International Year of Sanitation, raising awareness on the water-related health risks of poor water supplies and sanitation and the need to improve the monitoring and treatment of sewage releases to reduce the overall volume of sewage entering the Pacific.

Further information on the Pacific IWRM Planning Workshop will be available in the coming weeks.





Pacific HYCOS 2nd Steering Committee & Mid-term Project Review



The opportunity to interface with the IWRM meeting due to our mutual Water Resources interest will be a great boost to both programs. With Pacific HYCOS midway through its 3 year time frame, this opportunity will be utilised to review progress made to date, and consider lessons learnt for better project delivery for the remaining 18 months. Implementation is occurring in most of the countries with positive benefits being recognised already with increased capacity and data capture from remote stations. PIC's are starting to take ownership of the project and their mutual comments, feedback and presentations will reinforce their support and commitment to this program collecting valuable baseline water resources data.

Draft Meeting Agenda items may include:

- Progress to date and issues
- Project implementation - MoU's and CIP's
- Procurement of equipment and services
- Country and regional Database (TIDEDA) and GIS development
- Data rescue activities
- Progress in Flood warning & drought analysis (extreme events)
- Sustainability issues and life beyond HYCOS
- On going training and capacity development
- Perhaps a case study presentation from Samoa who are currently implementing
- Pacific HYCOS linkages to IWRM
- Lessons learnt to date and mitigation measure

For further information on the Pacific IWRM Planning Workshop, please contact:

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PACIFIC
HYCOS
PACIFIC HYDROLOGICAL CYCLE OBSERVING SYSTEM





Niue Leads the Way in Mobilising and Adopting Integrated Water Resources Management

As one of the smallest nations in the world sat on top of a large reserve of pure freshwater you may question why integrating water resource management is so important? Niue's unique hydrogeology means that, although they have a large reserve of fresh water and use very little of it, the porous nature of the 'Rock of Polynesia' poses a threat to the groundwater from pollution, such as human and animal waste and fuel spills. Pollution of the fragile water groundwater resource would have serious consequences on the health and well-being of this island nation, with no surface water resources to rely on.

Niue Water Works Department and other Government Agencies have progressed in a wide range of water interventions including hydrology (HYCOS); water resources management (IWRM); water quality monitoring (WQM); water demand management (WDM) and water safety planning (WSP) as well as the development of water resources legislation.

Niue's Water Demand Management Programme can be found on:

http://www.pacificwaterefficiency.com/niue_1.html



Niue will implement two GEF-funded programmes under the Pacific Alliance for Sustainability (PAS) the IWRM Demonstration project and the Pacific Adaptation to Climate Change (PACC) project besides the current Sustainable Land Management Project.

The IWRM project will focus on integrating land use, water supply and wastewater management around Alofi Town to protect the groundwater from pollution sources, and look to minimise polluting surface run-off entering coastal waters.

The temporary National Water Working Committee established for Water Safety Planning will be supported by the EU Water Facility IWRM Planning Programme to formalise the Committee into a broader National Water and Climate Committee, avoiding overlap and duplication between sectors and raising awareness about the cross-cutting issue of climate change.

Changing rainfall patterns could influence the quantity and quality of Niue's groundwater resource, and careful assessment of the resource and the back-up water storage needs are required. Rainwater Harvesting is not a common practice in Niue because of the currently abundant and high quality groundwater, therefore reserve tanks may be the best option to provide a buffer during future low rainfall periods and during power outages, especially given Niue's position in the devastating cyclone belt.





Following a session on Pacific Islands Water and Climate facilitated by SOPAC at the Asia Pacific Water Summit held in Beppu, Japan December 2008, Niue offered to host the Pacific IWRM Planning Workshop between the 18th to 25th of July in Alofi. Furthermore Niue is considering a potential Side Session focused on Water and Climate at the Pacific Forum Heads of State meeting in August 2008.

<http://www.apwf.org/>

http://www.apwf.org/archive/documents/summit/Message_from_Beppu_080130.pdf



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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://www.sopac.org/tiki/tiki-index.php?page=Water+in+Small+Islands+Consultations>





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

Publication

Integrated Water Resource Management in Pacific Island Countries A Synopsis

Under the Global Environment Facility funded Integrated Water Resources and Wastewater Management Project 14 countries of the Pacific Region prepared detailed Diagnostic Reports summarising the status of their water resources and assessing the barriers to implementing Integrated Water Resource Management (IWRM) approaches in their respective countries. This Synopsis report represents a summary of the 14 Diagnostic Reports, providing a baseline status of IWRM approaches in country. It will provide a useful monitoring report over the coming years as countries start to implement IWRM approaches. The report provides some simple solutions to achieving IWRM in small island environments.

Copies of the Synopsis Report are available directly from SOPAC, or can be downloaded from the IWRM website:

<http://www.sopac.org/tiki/tiki-index.php?page=IWRM+Outputs>

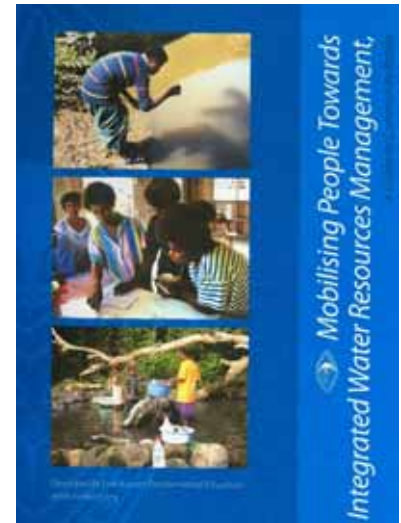




IWRM Community Mobilisation Guidelines

The final Community Mobilisation Guidelines to help assist communities and facilitators working with them to look at IWRM approaches at a village and community level are now available.

Developed by Live and Learn Environment Education, supported by SOPAC and UNDP and UNEP, the guidelines are a key output from the Project Design phase of the Sustainable Integrated Water and Wastewater Management project supported by the Global Environment Facility. This project will work with 14 countries in the Pacific starting in 2008. Through a network of national Demonstration Projects supported by regional capacity building components the project aims to raise awareness on IWRM approaches and strengthen national and regional approaches to integrate improved water management in the water sector and into wider national and community interventions.



The **IWRM Community Mobilisation Guidelines** is available on SOPAC website for download: <http://www.sopac.org/tiki/tiki-index.php?page=CLP+Publications>

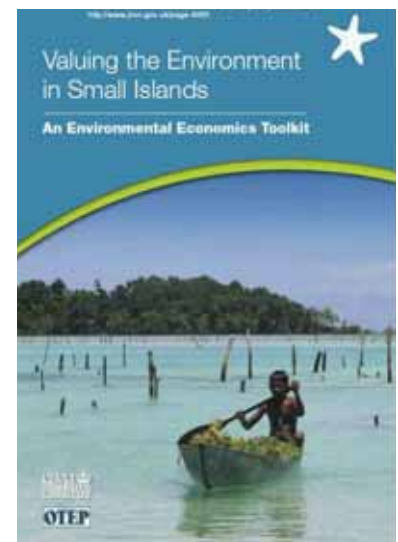
Valuing the Environment in Small Islands

Although a large number of guides already exist on aspects of environmental valuation, none of these references specifically focus on the issues and needs of small islands. This toolkit was developed to address this gap. Its core aim is to provide a practical resource to meet the pressing needs of a group of pioneering stakeholders in Bermuda, the Cayman Islands and Montserrat who will lead valuation studies, but have no, or only limited, knowledge of environmental economics. In addition, the toolkit is designed to be of use to a wider audience of stakeholders in small islands around the world who wish to learn about practical aspects of environmental valuation, but struggle to find a reference adapted to small island contexts.

The development of this toolkit was jointly funded by OTEP and the Joint Nature Conservation Committee (JNCC). OTEP is a joint programme of the UK Government Foreign and Commonwealth Office and the Department for International Development to support the implementation of the Environment Charters and environmental management more generally in the UK Overseas Territories. JNCC is the statutory adviser to the UK Government on UK and international nature conservation, including in the UK Overseas Territories.

For more details on the UK Overseas Territories valuation projects please visit the following website: <http://www.ukotcf.org/OTEP/docs/OTEP2007PROJECTS.pdf>

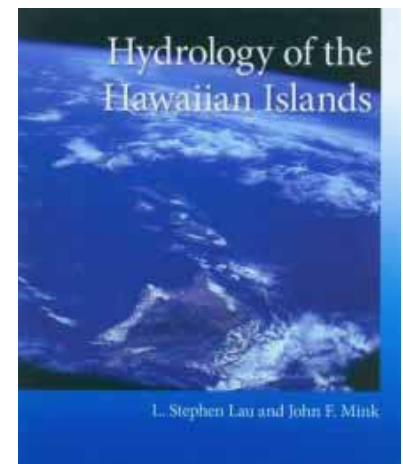
For more details on the UK Overseas Territories Environment Charters please visit: http://www.ukotcf.org/OTEP/docs/general_brochure.pdf





Hydrology of the Hawaiian Islands

Why is groundwater the predominant drinking water source in Hawaii? Why are groundwater sources susceptible to pesticide contamination? How long does it take for water in the mountains to journey by land and underground passages to reach the coast? Answers to questions such as these are essential to understanding the principles of hydrology—the science of the movement, distribution, and quality of water—in Hawaii. Due to the humid tropical climate, surrounding ocean, volcanic earth, and high mountains, many hydrologic processes in the Islands are profoundly different from those of large continents and other climatic zones. Management of water, land, and environment must be informed by appropriate analyses, or communities and ecosystems face great uncertainty and may be at risk. The protection of groundwater, coastal waters, and streams from pollution and the management of flood hazards are also significant. This volume presents applications of hydrology to these critical issues.



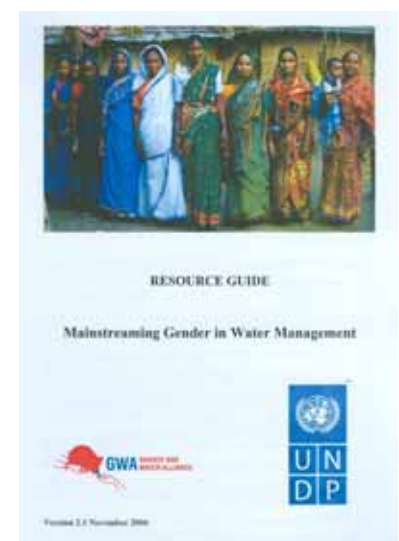
The authors begin by outlining fundamental hydrologic theories and the current general knowledge then expand into a formal discussion specific to Hawaii and the distinctive elements and their interrelations under natural and human-influenced conditions. They include chapters on rainfall and climate, evaporation, groundwater, and surface runoff. Details on the quantification of hydrologic processes are available to those with more technical knowledge, but general readers with an interest in the topic—one of singular importance for the Hawaiian Islands—will find much in the volume that is timely and accessible.

For further information on Hydrology of the Hawaiian Islands please visit the following link:
www.uhpress.hawaii.edu/cart/shopcore/?db_name=uhpress&page=shopflypage&product_id=4226

Resource Guide - Mainstreaming Gender in Water Management

This is the second edition of the **Resource Guide** on Mainstreaming Gender in Water Management of August 2006, which was first published by the United Nations Development Programme (UNDP) in 2003. The Guide is a reference document to assist water and gender practitioners and professionals as well as persons responsible for gender mainstreaming, and anybody else who is interested in the water sector. It is a compilation of newer resources – documents, papers, books, case studies, tools and toolkits - on gender mainstreaming in Integrated Water Resource Management (IWRM). It is meant to support action and further reading and research.

For the regular updating of the website version of the Resource Guide please visit the following website:
www.genderandwater.org/

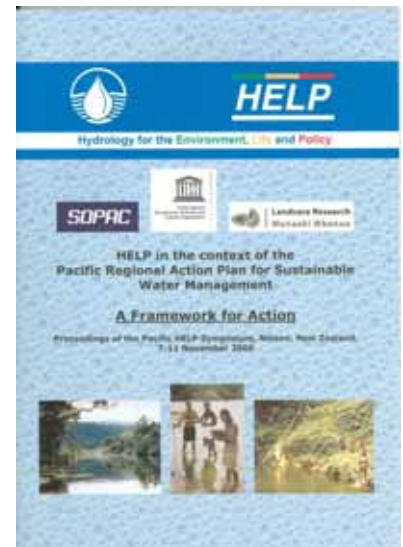




Hydrology for the Environment, Life & Policy

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.

Best Practices Guide for Water Laboratories

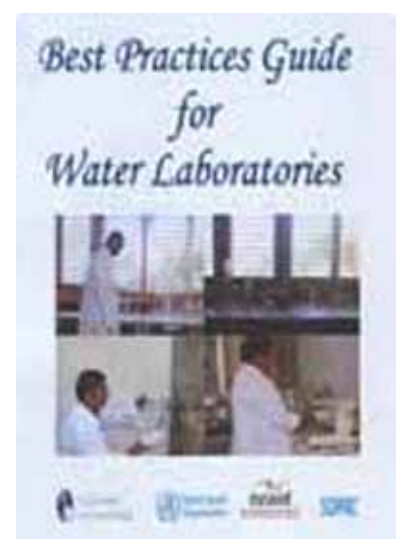
The guide is prepared as part of the NZAID-funded Pacific Water Quality Monitoring Capacity Building Programme that is being implemented by SOPAC, WHO and IAS-USP. It is intended to be a resource guide for small PIC water laboratories on best practices that can be employed in water laboratories.

The Guide is comprises two parts:

Part 1 - outlines the 10 keys features that an ideal water quality monitoring laboratory is recommended to have in order to successfully conduct its role.

Part 2 - outlines other aspects that are to be addressed in supporting the development of a water monitoring laboratory.

For more information on the guide or to obtain copies, please contact SOPAC Secretariat (tasleem@sopac.org).





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 for 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** (arieta@sopac.org) or you can download the document via the following website:

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



Harvesting the Heavens: Guidelines for the Rainwater Harvesting in the 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 (UNEP) 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>



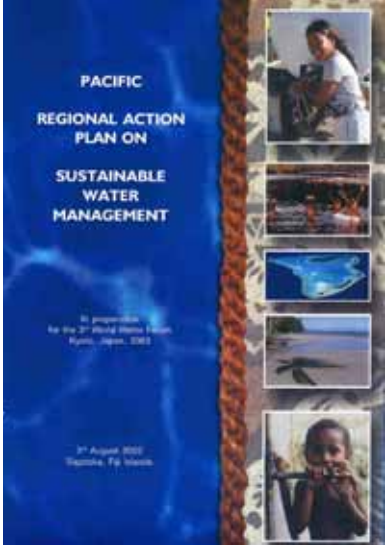
Pacific Regional Action Plan

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 on water and sanitation 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 Regional Action Plan** 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>



ICU bulletin

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>



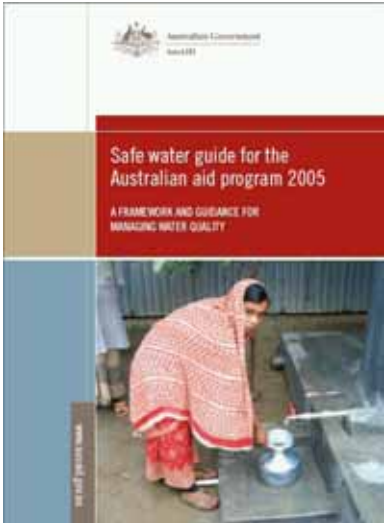


Safe Water guide for the Australian aid program

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** can be obtained from **AusAID**. For further information visit their website: www.ausaid.gov.au



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:

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





Water Quality Monitoring in Pacific Island Countries

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:



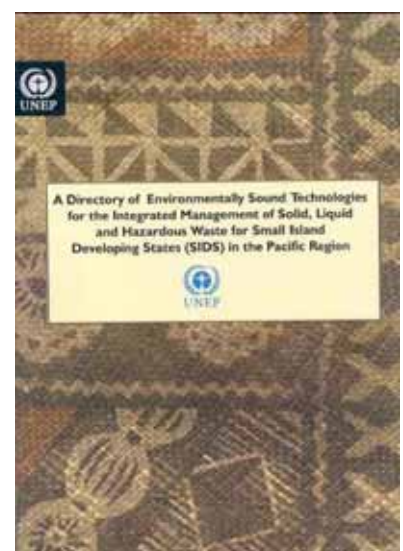
www.sopac.org/tiki/tiki-sopac_download.php?path=/data/virlib/TR/TR0381.pdf&file=TR0381.pdf&loc=TR

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:

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

World Water Day Campaign

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/WWD+2007>

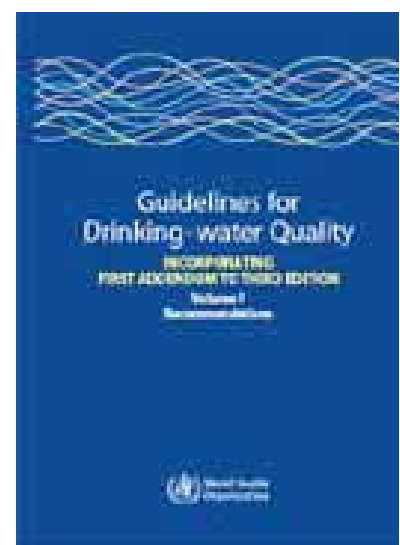


Guidelines for Drinking - Water Quality

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).



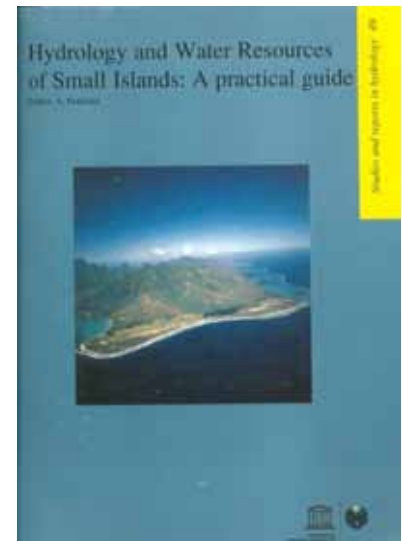


Hydrology and Water Resources of Small Islands: Practical Guide

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).



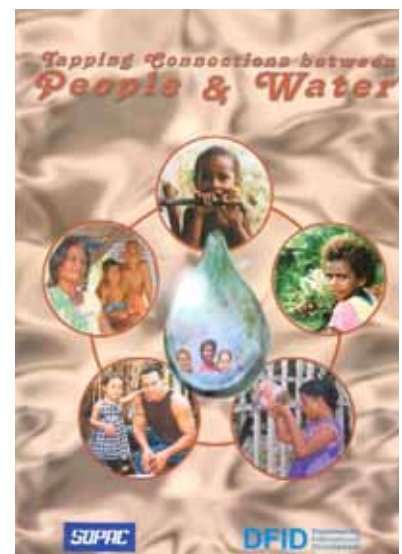
Tapping Water Connections

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 **"Tapping Water Connections"** 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 water and their land.

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

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





Multimedia

Don't Bug Me? – Pathogens and Pathways in Drinking Water Supplies



This is the DVD 1 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans programme as public awareness material. This video informs on the access and presence of pathogens in the drinking water supplies. It is intended for the small drinking water supplies and can be used in the Pacific Island Countries.

Copies of this documentary are available from New Zealand , Ministry of Health.

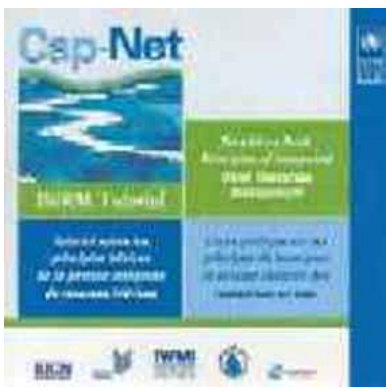
Making It Safe? - Principles and Methods of Treatment for Small Drinking Water Supplies



This is the DVD 2 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans Programme as public awareness material. This video informs on the principles and methods of treatment for small drinking water supplies. It can be used for educating the pacific island communities as well.

Copies of this documentary are available from New Zealand Ministry of Health.

Cap-Net - IWRM Tutorial



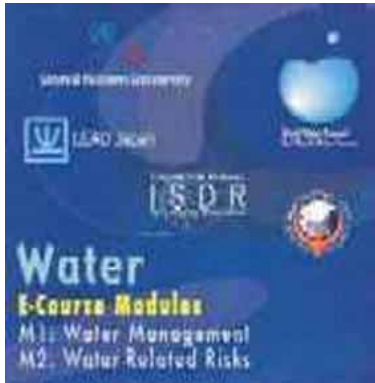
This DVD contains a brief introductory tutorial aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principle. It provides the case for IWRM and the argument against those who may oppose it on institutional or sectoral grounds.

Copies of the **Cap-Net - IWRM Tutorial 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.

Copies of the **Water E-Course Modules DVD** can be obtained from the **United Nations University**.

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 the **Toolbox 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 the **Harvesting the Heavens** documentary 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+Rainwater+Harvesting>



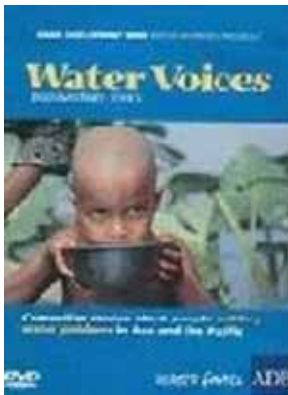
Cook Islands & Samoa Fresh Water Management



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



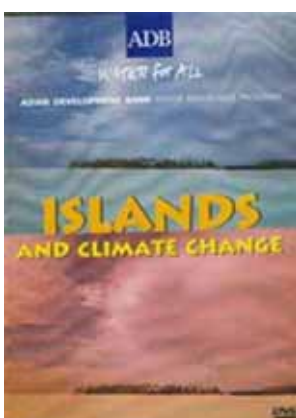
Water is essential to all life. And yet one in three Asians lacks access to safe drinking water, and half the people living in Asia and the Pacific do not have access to adequate sanitation. Conflicts over sharing of scarce water resources are increasing at an alarming rate.

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**

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

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 2008

DATE	EVENT	LOCATION	DETAILS
May 26th - 28th	PECC Meeting	Noumea, New Caledonia	For more information http://www.pecc.org/
June 12th	WASRAG World Water Summit - June 12, 2008	Los Angeles Location - 2008 RI Convention	HEAR, first hand, President Wilf Wilkinsons emphasis on water & sanitation. BE INSPIRED by Sunita Narain, World Water Laureate, recognized for her work on rainwater harvesting and community-based sustainable resource management. LEARN how to ensure sustainability in your projects. SHARE with others the lessons you have learned. DISCOVER how to qualify for multi-million funding for your water programs. PARTICIPATE in setting the direction for WASRAG. www.sporg.com/pom/registration
June 23rd - 27th	4th Caribbean Environmental Forum & Exhibition (CEF-4)	Grenada	CEF-4 will be held in collaboration with the 14th Annual Wider Caribbean Waste Management Conference (ReCaribe 2008), an event that attracts professionals from various disciplines to share their experiences and knowledge. http://www.cehi.org.lc/Website/index.htm
July 11th - 17th	RA V Tropical Cyclone Committee - Twelfth session	Alofi, Niue	



Pacific Water Agenda 2008 - continued

<p>July 18th - 25th</p>	<p>Partnership and IWRM Steering Committee Meeting</p>	<p>Alofi, Niue</p>	<p>From our IWRM perspective and needs, the purpose of this meeting is two-fold: 1. To bring IWRM Focal Points together, with UNDP/UNEP to discuss the status of our submission to GEF to provide them with an update since we all last met in November, and to discuss recruitment procedures, initial training, project mgmt, Focal Point responsibilities, reporting, etc. All practical initial project implementation things. We will do this on the Saturday morning for half a day; 2. To bring IWRM Focal Points, and other national representatives we have identified of relevance to the EU IWRM Programme (so in some cases, two people from the same country) together to discuss the EU IWRM Programme. This has been initially planned to be a 3 day meeting focussed on producing specific outputs to guide the EU IWRM Programme. Some sessions will therefore only involve the country representatives in order to maintain focus in the group work and help them and us deliver for the project.</p>
<p>September 9th- 11th</p>	<p>Pacific Water Association 7th Annual General Meeting</p>	<p>Apia, Samoa</p>	<p>www.pacificwaterassociation.org/index.htm</p>
<p>October 21st- 30th</p>	<p>SOPAC Annual Session and STAR Water Working Group Meeting</p>	<p>Funafuti, Tuvalu</p>	
<p>November 17th - 21st</p>	<p>Coastal Cities Summit 2008</p>	<p>St Petersburg, Florida, USA</p>	<p>One of the most challenging issues facing the ocean today is rapid coastal urbanization whose implications have yet to be assessed. Today, the majority of the world's population lives within sixty kilometres of the coast line and this is steadily increasing. This profound demographic shift has significant implications for the coastal environment, inhabitants and ecosystem stability. www.coastalcities.org/</p>



Selected Water Websites

<p>ADB Water in Small Island Countries www.adb.org/Water/theme3.asp</p>	<p>Pacific ENSO Update http://lumahai.soest.hawaii.edu/Enso/subdir/update_dir/update.html</p>
<p>AOSIS Alliance of Small Island States www.sidsnet.org/aosis</p>	<p>Pacific Water Association www.pwa.org.fj</p>
<p>AUSAID www.usaid.gov.au</p>	<p>SIDSNET www.sidsnet.org</p>
<p>Australian Water Portal www.developmentgateway.com.au/water/index.html</p>	<p>UNEP http://freshwater.unep.net/</p>
<p>Barbados +10 www.sidsnet.org/Mauritius2004/</p>	<p>UNESCAP www.unescap.org</p>
<p>CSD12 www.un.org/esa/sustdev/csd/csd12/csd12.htm</p>	<p>UNESCO www.unesco.org/water</p>
<p>CSD13 http://www.un.org/esa/sustdev/partnerships/csd13_partnership_fair.htm</p>	<p>UNU www.inweh.unu.edu/inweh</p>
<p>Co-operative Programme on Water and Climate www.waterandclimate.org</p>	<p>WHO www.who.int/water_sanitation_health/en/</p>
<p>East-West Centre www.EastWestCenter.org/climate</p>	<p>WMO www.wmo.ch/web/homs/index.html</p>
<p>ESCAP www.unescap.org/esd/water/activities</p>	<p>World Bank www.worldbank.org/html/fpd/water</p>
<p>European Union www.europa.eu.int/comm/development/publicat/water/en/frontpage_en.htm www.euwi.net</p>	<p>SOPAC Water www.sopac.org/Community+Lifelines+Programme+Water+and+Sanitation</p>
<p>Gender and Water Alliance www.genderandwateralliance.org</p>	<p>World Water Council www.worldwatercouncil.org</p>
<p>Global Water Partnership www.gwpforum.org</p>	<p>USP www.usp.ac.fj</p>
<p>GWP Australia www.gwpaustralia.org</p>	<p>WSSCC http://www.wsscc.org/</p>
<p>Island Climate Update www.niwa.cri.nz/NCC/ICU</p>	<p>NIWA www.niwa.co.nz</p>
<p>NZAID www.nzaid.govt.nz</p>	<p>SPC www.spc.int</p>
<p>USGS http://hi.water.usgs.gov</p>	<p>Japan Water Forum http://www.waterforum.jp/eng/index.html</p>
<p>Water Virtual Learning Centre (WVLC), University of the South Pacific www.earth.fst.usp.ac.fj/index.php?id=4043</p>	<p>UN-Water http://www.un.org/waterforlifedecade/</p>
<p>World Summit on Sustainable Development www.johannesburgsummit.org</p>	<p>World Wide Fund for Nature www.wwfpacific.org.fj</p>



--- 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:

Marc Overmars



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