Asia-Pacific Water Forum

5th WORLD WATER FORUM
ISTANBUL 2009
BRIDGING DIVIDES FOR WATER

3rd Progress Report
and
Pacific Position Paper
in preparation for the 5th World Water Forum
16-22 March 2009, Istanbul, Turkey

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Pacific Partnership Initiative on Sustainable Water Management

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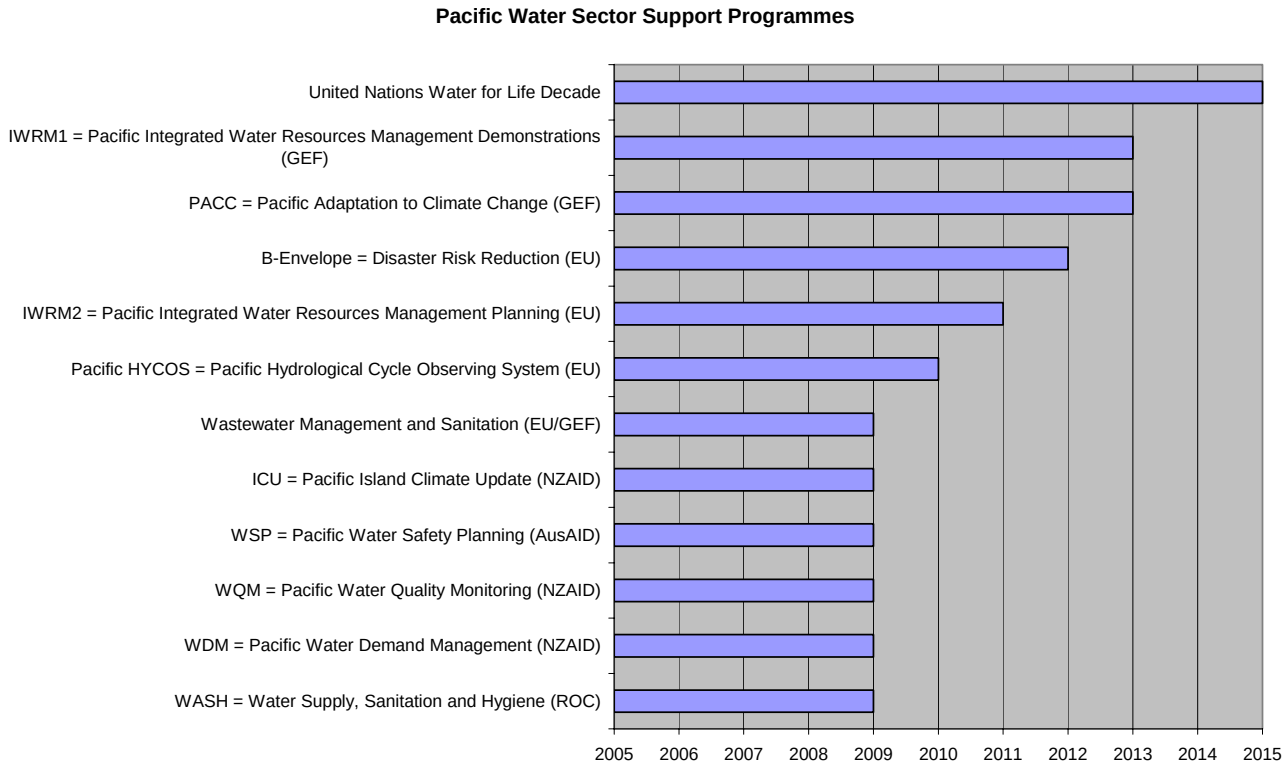
Introduction

The 2008 International Year of Sanitation marks a period of increased support for, and intervention in the region's water and sanitation sector. This unprecedented growth has been guided largely by a number of strategies developed by the region over the last eight years, through a broad series of coordinated and comprehensive consultations. This includes the **Pacific Wastewater Policy** and **Wastewater Framework for Action** (2001); the **Pacific Regional Action Plan on Sustainable Water Management** (2002) and the **Pacific Framework for Action on Drinking Water Quality and** Health (2005).

The above key strategies, along with the **Pacific Partnership Initiative on Sustainable Water Management**, ensured a more coordinated and strategic approach to water and sanitation activities in the region. The Partnership 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.

These advances in support for the water sector, with a total budget of over 30M USD in regional programmes (see figure below) for the next five years (2008-2012), are closely linked to ongoing and planned national developments and associated bilateral support to Pacific member countries' water and sanitation sector. These actions should jointly translate into improved management of water resources, increased water quality, as well as improved access to safe drinking water and basic sanitation within the decade 2005-2015, which has been branded by the United Nations as the "**International Water for Life Decade**".

Table: I



However, a recent WHO/SOPAC report on sanitation, hygiene and drinking water in Pacific Island Countries revealed that the annual incidence of diarrhoeal diseases in the Pacific, still nearly matches the numbers of its inhabitants with 6.7 million cases of acute diarrhoea each year,

responsible for the annual death of 2,800 people, most of them, children less than 5 years old. Country statistics on access to improved sanitation and improved drinking-water indicate that on average, approximately only half of the total population of the Pacific island countries are served with any form of improved sanitation or drinking-water (WHO/SOPAC, 2008).

It is clear that increased efforts are required to achieve the MDG targets of halving the proportion of people without access to safe drinking water and basic sanitation by 2015 as well as the target of developing national Integrated Water Resources Management and Water Use Efficiency plans.

The **Coordination Unit** of the Pacific Partnership Initiative on Sustainable Water Management is tasked to review the implementation of the Pacific Regional Action Plan on Sustainable Water Management and its complementary frameworks on wastewater and drinking water quality. It makes use of the **Pacific Action Matrix** to gauge in which areas specific actions have been undertaken and to identify further priority actions in the remaining years of the Water for Life Decade. The Partnership Coordination Unit will continue to monitor the progress in this regard and keep providing support to countries within the regionally agreed frameworks and working closely with all members of the Pacific Partnership.

The Coordination Unit as focal point for the Oceania component of the **Asia-Pacific Water Forum**, has been asked to assist in drafting and finalizing the Pacific sub-regional part of the Regional Position Paper for Asia and the Pacific, which is to be presented at the **5th World Water Forum**.

With this in mind, this draft paper serves two purposes as follows: a) as Progress Report for the 3rd Steering Committee of the Pacific Partnership Initiative on Sustainable Water Management to be held 10th September 2008 in Apia, Samoa in collaboration with the Pacific Water Association (PWA).; and b) as discussion document for the Pacific Position Paper for the 5th World Water Forum (5WWF) 16-22 March 2009 in Istanbul, Turkey.

This allows the Pacific region's stakeholders in water and sanitation to reflect on the strategic developments over the past 3 years and provides an excellent opportunity to review the implementation of the Kyoto Portfolio of Water Actions and in particular the Pacific Regional Action Plan (RAP).

Opportunities to provide input to the final version of the Pacific position paper will be possible through various regional water and wastewater consultations and meetings leading up to the Istanbul Forum.

The Science, Technology and Research network (STAR) Water Working Group meeting in November 2008 in Tuvalu in association with SOPAC's 37th Annual Session, provides further opportunity for inputs to the draft Pacific Paper. The draft paper will be placed on the Partnership's website **www.pacificwater.org** and circulated through the Pacific Partnership Initiative for further comment.

The 3rd Progress Report and draft Position Paper covers: the basic characteristics and main challenges of the Pacific region; the developed regional strategies; the status of implementation of regional and national actions; the MDG targets on Water and Sanitation and IWRM; the Partnership Coordination Unit; Pacific IWRM Resource Centre; Pacific Water Focal Groups; Advocacy and Political Will, Monitoring and Evaluation of Pacific RAP implementation including an overview of country indicators on water resources, water supply and sanitation; and a reference to key documents.

Mr. Filipo Taulima - a friend and a colleague

Mr. Filipo Taulima had been Tuvalu's Director of Public Works for more than 10 years. He was a member of Tuvalu's Water and Sanitation Committee and the National Development Coordinating Committee. Mr Taulima was also Focal Point for the International Hydrological Programme for Tuvalu and member of the Steering Committee of the Partnership.

There are no words to express our shock and sorrow on hearing the sad news about the sudden death of a friend and colleague. Not only was Filipo a dedicated champion for managing water resources for Tuvalu, he was also a strong regional advocate for this cause as well acting as a focal point for several regional initiatives including the Pacific Hydrological Cycle Observing System (HYCOS) and the Sustainable Integrated Water Resources Management Project in Pacific Island Countries (IWRM Project) projects to name a few.

We remember fondly our last moments with Filipo at the launch of the Pacific-HYCOS project in Brisbane and also at the 2nd Steering Committee Meeting of the IWRM Project in Nadi in April 2007 where he once again showed his strength of character and understanding of the needs for Tuvalu and the region. He will be dearly missed by his friends and colleagues in the region. May he rest in peace and may his family and friends find the strength to cope with his sudden passing.

Pacific Characteristics and Challenges

In the Pacific region there are 14 island countries and several island territories which together consist of only 550,000 km^2 of land with approximately 7 million inhabitants, speaking in the order of 1,000 different languages, spread across 180 million km^2 of ocean or about 36% of the world's surface. Pacific Island Countries are no different to any other in that freshwater is essential to human existence and the sustainable development of small economies. However, the ability of the island countries to effectively manage the water sector is constrained by their unique characteristics of small size, fragility, natural vulnerability, and limited human and financial resource base to mention but a few.

The challenges and constraints of sustainable water resources management in Pacific Island Countries were categorized into three broad thematic areas at the regional consultation on Water in Small Island Countries held in preparation of the 3rd World Water Forum in Kyoto 2003. These are:

1) Small island countries have uniquely fragile water resources due to their small size, lack of natural storage and competing land use, vulnerability to natural and anthropogenic hazards, including drought, cyclones and urban pollution. This requires detailed water resources monitoring and management and improving collaboration with meteorological forecasting services;

2) Water service providers face challenging constraints to sustaining water and wastewater provision due to the lack of both human and financial resource bases, which restrict the availability of experienced staff and investment, and effectiveness of cost-recovery. Future action is required in human resources development, water demand management and improving cost-recovery; and

3) Water governance is highly complex due to the specific socio-political and cultural structures relating to traditional community, tribal and inter-island practices, rights and interests. These are all interwoven with past colonial and 'modern' practices and instruments. These require

programmes to develop awareness, advocacy, and political will, at all levels to create a framework for integrated water resources management.

The challenges at the regional and international level can be summarized to include:

- Co-ordination and refocusing of aid programmes and project design to assist SIDS to develop water management capacity and to implement projects to improve the environmental sustainability of water supply and usage, consistent with regional priorities;
- Co-operation between existing regional agencies in the development of water sector related programmes and technologies; and
- Regional level support for national capacity building, advocacy and awareness.

Pacific Strategic development in Water and Sanitation

The unprecedented period of strategic water sector development in the Pacific region is now bearing fruit through concrete action implementation.

There are three main strategic documents that drive these regional water and sanitation developments in the Pacific:

1) The Pacific Wastewater Policy and associated **Pacific Wastewater Framework for Action**, were both completed in 2001 in Majuro, Republic of the Marshall Islands and developed as part of UNEP's Global Programme of Action for the Marine Protection from Land-based Sources of Pollution (GPA).

2) The more holistic **Pacific Regional Action Plan on Sustainable Water Management** (Pacific RAP) was completed in 2002, Sigatoka Fiji in preparation for the Water in Small Island Countries session at the 3rd World Water Forum in 2003, Kyoto. Pacific Heads of State endorsed this strategic framework in 2004 and recommended in 2006 that water, sanitation and hygiene challenges facing the region be directly addressed under the Pacific Plan through the Pacific Regional Action Plan on Sustainable Water Management, providing further political endorsement to this strategy.

3) The **Drinking Water Quality and Health Framework for Action** which was developed as a complementary framework building on the Pacific RAP. The Framework was developed by health and water officials at the WHO facilitated workshop on Water Quality Standards and Monitoring in Pacific Island Countries. It was recommended for implementation by the region's Ministers for Health at their 2005 Apia meeting.

Pacific Regional Action Plan Sustainable Water Management (Pacific RAP)

The overarching Pacific Regional Action Plan articulates the Pacific regional needs for both water and sanitation and it is therefore used as the point of departure for reviewing progress in the region. The product of eight months of consultation, the Pacific RAP is an attempt at a strategic holistic approach to achieving sustainable water management in the Pacific. The consultation process included the identification of national priority actions as determined by the participating countries on the basis of their national water strategies, national assessments and stakeholder consultations undertaken for the **World Summit on Sustainable Development** (WSSD) and the 3rd World Water Forum 'Water In Small Island Countries' Theme.

It included the development of agreed regional actions through a regional consultation meeting process of plenary discussion, working group review and country delegation approval. Endorsed by 18 countries, 16 at Heads of State level, the Pacific RAP not only provides a coordinated and agreed approach but has significantly driven water up the national and regional agenda. This has been seen to varying degrees in the initiatives taken by countries on water resource management and the increased political support given by governments since 2003.

The Pacific Regional Action Plan consists of six thematic categories as follows:

Theme 1: Water Resources Management - Water Resources Assessment and Monitoring; Rural Water Supply and Sanitation; IWRM and Catchment Management

Theme 2: Island Vulnerability - Disaster Preparedness; Dialogue on Water and Climate

Theme 3: Awareness - Advocacy; Political Will; Community Participation; Environmental Understanding; Gender

Theme 4: Technology - Appropriate Technologies; Demand Management and Conservation; Human Resources

Theme 5: Institutional Arrangements - Institutional Strengthening; Policy, Planning and Legislation

Theme 6: Financing - Costs and Tariffs; Alternative Models; Role of Donor Organizations and Financing Institutes

Each Pacific RAP theme contains 3-5 key messages, which broadly address the 20 or so challenges and constraints to achieving sustainable water management in the Pacific. For each key message a series of actions has been developed along with identifying responsible parties for implementing the action (e.g. national government, water utilities, regional organizations, donors). In this framework, a comprehensive strategic approach has been built up. Priority actions under each theme are listed in the **Figure I** below.

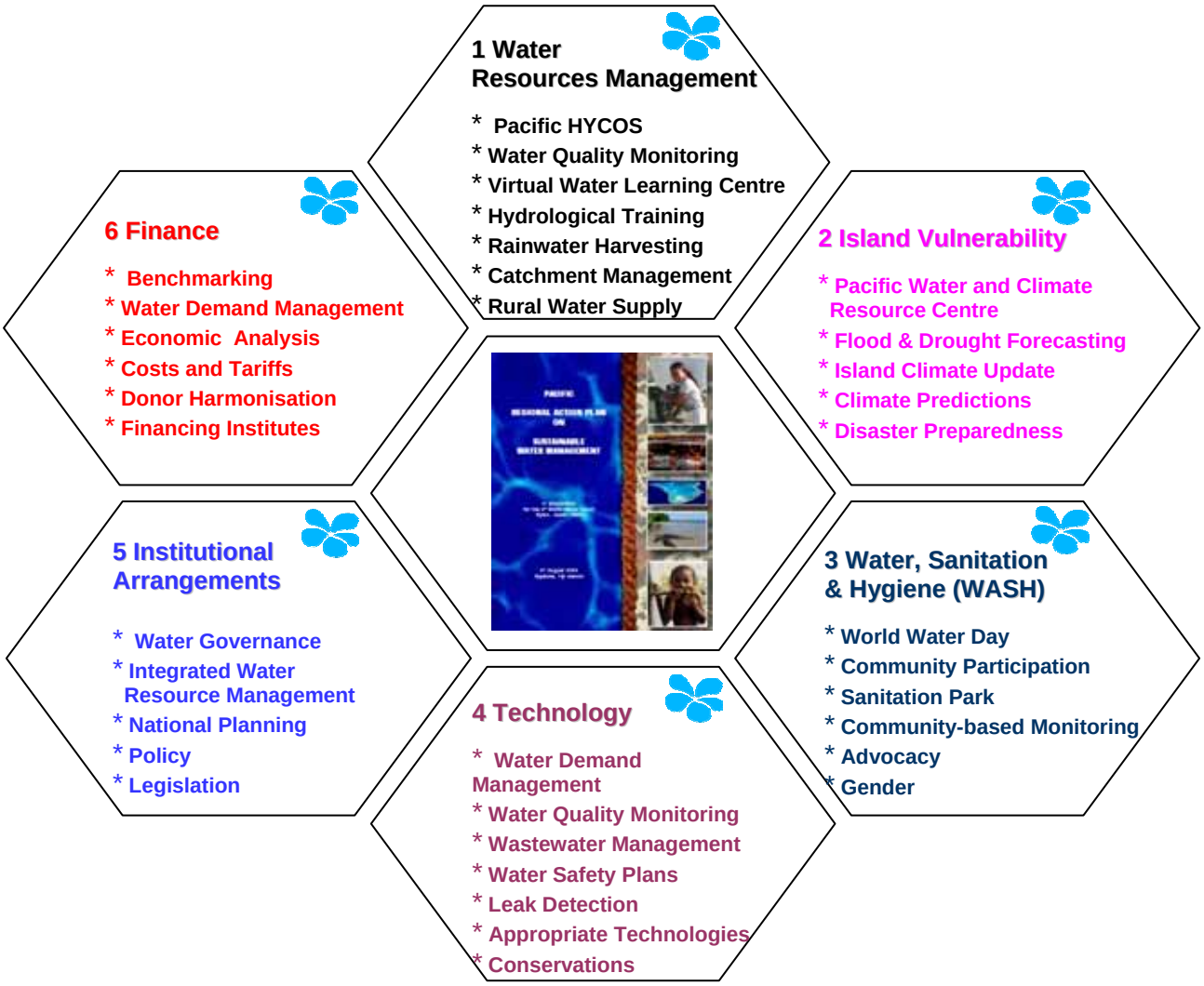


Figure I

3rd World Water Forum Outcomes

In March 2003, ADB and SOPAC facilitated the Water in Small Island Countries sessions at the 3WWF. The global SIDS position that resulted from this session was mainly the result of the **Dialogue on Water &** Climate (DWC) which linked the Pacific and Caribbean regions together on water and climate issues.

The close collaboration between the Caribbean and Pacific regions during preparatory work for the 3rd World Water Forum resulted in the formation of the **Joint Caribbean-Pacific Programme for Action on Water & Climate (JPfA).**

The JPfA comprises 22 action elements, common to both the Pacific and Caribbean regional consultation outcomes, covering four collaborative areas: research, advocacy and awareness, capacity building and governance. From this immediate priority actions were identified in 6 areas. The JPfA was formally launched at Kyoto by the delegations from both regions, and a Memorandum of Understanding was signed by the respective lead regional agencies for each region (SOPAC and CEHI).

The JPfA takes an Integrated Water Resources Management approach to addressing water and climate issues in SIDS, as demonstrated by Integrated Watershed and Coastal Area Management (IWCAM) in the Caribbean. The JPfA promotes the transfer of knowledge, expertise, positional statements and personnel between the two regions to the benefit of the 34 countries involved. The JPfA was used to strengthen the SIDS position at the 3rd World Water Forum, the 2004 WMO Congress and the 2005 UN SIDS Barbados Programme Of Action review meeting (BPOA+10) held in Mauritius.

The global SIDS sessions at the 3WWF followed a thematic structure of: Water Resources & Climate; Water Utilities; and Water Governance & Awareness. The outcomes from Kyoto included agreed positions, ministerial interventions and a submission to the Portfolio of Water Actions, and a 3WWF priority list of actions. The global SIDS agreed to six priority actions, referred to as the **Small Island Countries Portfolio of Water Actions** namely:

i) **Water resources management through the Hydrological Cycle Observing System (HYCOS)**
ii) **Water demand management programme**
iii) **Drinking water quality monitoring**
iv) **Improving water governance**
v) **Regional Type II Water Partnership support (using the Pacific Type II model)**
vi) **Inter-regional SIDS water partnership support (using the JPfA model)**

Table II Overview of Recent Strategic Regional Water and Sanitation Milestones

Event	Venue, Year	Organisers	Major Outcomes
Pacific Water Sector Planning, Research and Training	Honiara, 1994	UNESCO/SOPAC/UNDDSMS	Water & Sanitation Programme
Water Resources Workshop	Suva, 1997	UNESCO/SOPAC/USP	Priority Research Projects IHP
Hydrological Needs of Small Island Countries	Nadi, 1999	WMO	Pacific HYCOS
Pacific Wastewater Consultation	Majuro, 2001	SOPAC/SPREP/PWA/GPA	Policy and Framework for Action
From Vision to Action: Towards Sustainable Water Management in the Pacific	Sigatoka, 2002	SOPAC/ADB	Pacific RAP
World Summit on Sustainable Development	Johannesburg, 2002	United Nations	Pacific Partnership
Water in Small Island Countries 3rd World Water Forum	Kyoto, 2003	ADB/DWC/ SOPAC	Portfolio of Water Actions & Joint Programme of Action on Water and Climate
CSD 12	New York, 2004	UNDP/UNEP/GEF/SOPAC	GEF PDF-A
Partnership 1st SC meeting	Suva, 2004	SOPAC	1st Progress Report
Drinking Water Quality & Health	Nadi, 2005	WHO	Framework for Action
CSD 13	New York, 2005	UNDP/UNEP/GEF/SOPAC	GEF PDF-B
BPOA+10	Mauritius, 2005	United Nations	Mauritius POI

Hydrology for Life, Environment and Policy	Nelson, 2005	UNESCO	Pacific HELP
4th World Water Forum	Mexico, 2006	SOPAC/JWF	Asia Pacific Water Forum
Partnership 2nd SC meeting	Honiara, 2006	SOPAC	2nd Progress Report
IWRM Inception meeting	Honiara, 2006	SOPAC/UNDP	IWRM PIF
HYCOS Inception meeting	Brisbane, 2007	SOPAC/WMO	HYCOS Inception
1st Asia Pacific Water Summit	Beppu, 2007	APWF/SOPAC	APWF Policy
IWRM Planning meeting	Niue, 2008	SOPAC	IWRM National Plans
Partnership 3rd SC meeting	Apia, 2008	SOPAC/PWA	3rd Progress Report

Regional Action Implementation

The Pacific Partnership mechanism set up as a main outcome of the World Summit on Sustainable Development aims to facilitate the implementation of all listed actions in the Pacific RAP on a national, regional and international level. The 3rd progress report reviews the implementation of actions under each key message and identifies future needs and perspectives based on progress and continuing challenges.

Since its development, this coordinated approach has already proved successful in implementing projects or providing technical assistance to Pacific Island Countries. Many of those partnership activities have also resulted in increased donor collaboration and harmonization on in-country action plans and strategies.

The level of intervention by the partnership through regional programmes is largely restricted to capacity building, advocacy and awareness targeted at the key counterpart government departments in Pacific Island Countries. This not only impacts on the macro level of water resources management but creates the enabling environment for the implementation of water and sanitation actions at the national, local and community levels.

The success of the Pacific RAP, and its sister action plans on Wastewater and Drinking Water Quality and Health, ultimately results in longer-term changes in the health of Pacific Island people and the environment.

The review of action implementation for the purposes of this document is divided over the six thematic areas of the Pacific RAP, in each case with a re-statement of the key messages, followed by the regional intervention programmes; and national strategies and actions.

Within this framework it can also be seen that progress is being made on the six global SIDS agreed priority actions which are in various stages of development and implementation (Water resources management using HYCOS, Water demand management, Water quality monitoring, Water governance, Regional and Inter-regional Partnership).

The Pacific Partnership coordination unit has developed a detailed matrix of actions under each Theme of the Pacific RAP. The matrix provides the status of the action and the partners involved and is attached in **Appendix 1**.

The development and implementation of National Actions is more difficult to gauge and is better done on a national level through national water partnerships and associated consultations. The sourcing of co-financing for the regional GEF-funded IWRM demonstration programme revealed some of the national activities over the six Pacific RAP themes. Although not all-inclusive the overview provides some insights in what actions are ongoing and anticipated over the next few years.

Theme 1: WATER RESOURCES MANAGEMENT

Key Message 1: **Strengthen the capacity of small island countries to conduct water resources assessment and monitoring as a key component of sustainable water resources management.**

Key Message 2: **Implement strategies to utilise appropriate methods and technologies for water supply and sanitation systems and approaches for rural and peri-urban communities in small islands.**

Key Message 3: **Implement strategies to improve the management of water resources, and surface and groundwater catchments (watersheds) for the benefit of all sectors including local communities, development interests and the environment.**

Regional Programmes – Water Resources

Since 3WWF a number of water resources management regional programmes have been developed such as the hydrological training programme and the Pacific water and climate resource centre as well as appropriate technology support for rainwater harvesting and ecological sanitation. These initiatives led in turn to larger capacity building programmes such as the Pacific HYCOS, the regional water quality monitoring programme, the establishment of the Virtual Water Learning Centre at USP as well as new initiatives such as under the Australia Water Research Facility. Highly significant for this theme, countries have designed, through hot spot analysis and diagnostic reports on Integrated Water resources Management under the Global Environment Facility, individual IWRM demonstration programmes in each country which are to be implemented in the next five years. The focus of all of these programmes is building local capacity, and providing the knowledge and tools to key practitioners to better manage water resources.

Intervention Area	Partners	Strategic Donor	Indicative Budget*
Pacific HYCOS - Aims to improve the ability to manage water resources, and increase resilience to climatic extremes resulting in droughts and flooding.	WMO UNESCO FMS	ACP-EU WF	2.225M Euros
Water Quality Monitoring – Project to improve national and regional capacity to assess and monitor water quality, identify contamination sources and minimise the associated health and environmental impacts.	WHO IAS SOPAC	NZAID	700K
Rainwater Harvesting – Pilot project completed in Tonga with results published, disseminated and being promoted region-wide with translations in TV and TO.	UNEP SOPAC TCDT	NZAID Taiwan	40K
Sanitation Park – Demonstration of eco-sanitation	FSchM	NZAID	10K

best practices at the Fiji School of Medicine	SOPAC WHO	Taiwan	
Pacific Sustainable Integrated Water Resources and Wastewater Management Programme	SOPAC PWP UNDP UNEP	GEF	10.7 MUSD
Virtual Water Learning Centre - USP, on behalf of UNU, deliver a postgraduate level pilot course in IWRM.	USP UNU SOPAC	UNDESA	140K

* Unless otherwise stated amounts in FJD for multi-year programme

Pacific Hydrological Cycle Observing System (Pacific HYCOS)

The need for increasing water resource management capacity with respect to the intrinsic vulnerability of small island states to climatic extremes, both droughts and flooding, ENSO events and cyclones has been clearly identified in the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP) which explicitly stated that the Pacific Hydrological Cycle Observing System (Pacific HYCOS) should be implemented as a priority. Knowledge on how rivers, aquifers and rainwater harvesting respond to increased demands and climate variability is crucial to ensuring sustainable and productive water resources. Pacific island countries have limited alternate options and only relatively small and finite water resources available to meet increasing demands.

The Pacific HYCOS programme is being funded for three years through the European Union's Water Facility and is implemented by SOPAC jointly with the World Meteorological Organization (WMO), with UNESCO and the Fiji Meteorological Office as Associate Partners. Pacific HYCOS will assist Pacific island countries with collection, storage and analysis of information necessary for water resource management. Individual country implementation plans have been scoped up which identified a common theme of seriously reduced capacity for hydro-meteorological data collection and storage.

The Project Regional Centre based at SOPAC is now at full strength with a Pacific HYCOS coordinator, two hydrologists, a GIS database specialist and three project officers. To date, Pacific HYCOS has focused on in-country project implementation by setting up hydrological cycle observing systems through installation of new hydrological equipment; provision of a database and GIS training; household surveys of water catchment capacity; and provision of technical support.

The individual plans are now being implemented in countries with equipment being mobilised and the provision of on-the-ground training in close collaboration with ongoing bilateral interventions. Specific in-country activities undertaken included the Rewa river flood forecasting system in Fiji, GIS support to rainwater harvesting in Nauru and Tuvalu, rehabilitation of monitoring sites in the Marshall Islands, Solomon Islands and Vanuatu, support to Samoa's Water Sector Support Programme, deployment of loggers in the Cook Islands, groundwater monitoring in Niue, a review on water resources monitoring in Palau and Tonga, data rescue exercises in Samoa and Vanuatu, mobilisation of PACTAM water support officers in Tuvalu, Niue, engagement of hydrological research officers in Kiribati and the Marshall Islands, as well as the purchase of toughbook field computers for each of the 14 countries countries.

The Pacific HYCOS project specifically coordinated efforts with, and provided support to: the AusAID funded Vulnerability and Adaptation programmes in Kiribati and Tuvalu; the European Union EDF-B envelope projects on building resilience to droughts in the Marshall Islands, Nauru,

Tuvalu and Tonga; the scoping of European Union EDF10 interventions in the Cook Islands, Fiji, Kiribati and Tuvalu; as well as the development of the Pacific Adaptation to Climate Change programme in the Marshall Islands, Nauru, Niue, Tuvalu and Tonga.

A 2nd project steering committee meeting was held in Niue June 2008. A key outcome of that meeting included the urgent need to mobilise hydrological equipment in order to generate reliable data sets in countries and continue the building of national capacity. This requires further political commitment from countries to support National Hydrological Services.

A coordinating mechanism has been developed with other Pacific observing systems such as the Pacific Global Climate Observing System, (PI-GCOS), and the Pacific Global Ocean Observing System (PI-GOOS). In terms of awareness and advocacy, a joint e-newsletter has been released under the banner "Vai Pasifika", a Pacific HYCOS website (www.pacific-hycos.org) has been established, linkages were established with national disaster management committees, high level meetings were organised with permanent secretaries, and media coverage was arranged to highlight water management issues in various countries.

Water Quality Monitoring

The need expressed by the Pacific island countries for improving and strengthening water quality monitoring is being addressed under the NZAID-funded Water Quality Monitoring Capacity Building Programme (WQM). The WQM programme is being implemented through a partnership between SOPAC, the World Health Organization (WHO) and the Institute of Applied Sciences of the University of the South Pacific (IAS-USP). The main objective of the programme is to build national capacity for monitoring the quality of drinking water, surface water, ground water and coastal waters.

The programme is currently being implemented in four pilot countries (Cook Islands, Niue, Marshall Islands and Vanuatu) through the provision of basic water testing equipment and in-country training on best laboratory practices. With support of the WQM programme, the laboratory of the RMI EPA (Environmental Protection Agency) was recently certified by laboratory assessors of the US EPA, under their support programme for EPA's in the North Pacific.

Improved management, interpretation and availability of water testing results are also part of the WQM programme. An electronic water quality database is currently being developed to help achieve this for Niue, the Marshall Islands and Samoa with the work in the Cook Islands and Vanuatu in progress. This database is being developed in partnership with the New Zealand Ministry of Health under NZ Government Agencies funding and in collaboration with Australia's Cooperative Research Centre for Water Quality and Treatment (CRC) for future application in regional and rural water supplies of Australia.

Other Pacific island countries are being assisted with specific requests under the WQM programme including the sharing of guidelines and establishment of monitoring regimes. Two sub-regional laboratory training courses were held in Fiji and Guam in 2007 attended by laboratory technicians from water utilities and Ministries of Health.

Rainwater Harvesting

The promotion of rainwater harvesting in the Pacific region is continued following the 2004 demonstration project in Tonga with TCDT and UNEP. The resulting rainwater harvesting guidelines and manual for participatory approaches are being widely distributed and are used as

bases for participatory exercises by NGOs, CBOs and by governments involved in rainwater harvesting throughout the Pacific region. SOPAC facilitated the translation of this manual from English to Tongan and Tuvaluan to allow a wider use and make it more accessible for rural communities. Various other countries and NGOs are making use of the guidelines and manual for their work.

SOPAC became founding member of a rainwater harvesting partnership under UNEP lead and is liaising with partners to further promote rainwater harvesting as option for domestic water supply in the Pacific region.

Sanitation Park

The International Year of Sanitation 2008, prompted partners working in the area of water supply, sanitation and hygiene activities in the Pacific region to come together to raise the profile of sanitation. As part of efforts taken to promote safe sanitation and hygienic practices, the Fiji School of Medicine has launched the Sanitation Park with renewed efforts along with it's Pacific WASH Coalition partners. The Sanitation Park Project was designed to provide support to communities and health workers in Fiji and the Pacific region to identify and address their sanitation problems. The park is located at the Fiji School of Medicine (FSMed), Tamavua Campus in Suva and can be visited by anyone with an interest in appropriate onsite sanitation technologies.

The Sanitation Park was initially launched in late 2004 with funding from New Zealand Agency for International Development. It is envisaged that the Park would be utilized to a greater extent through the Coalition members as a teaching tool and allow further dissemination of knowledge on affordable sanitation technologies in Fiji and the region. An Open Day was organized by Fiji School of Medicine on 6 August 2008, to introduce members of the Pacific WASH Coalition to the Park and allow on-going collaboration to be strengthened in the area of sanitation.

Sustainable Integrated Water Resources and Wastewater Management Demonstrations

Whilst many countries have made great progress to realising sustainable development and achieving the Millennium Development Goals (MDGs) and targets, such endeavors have been generally made through sectoral approaches. In doing so the competitive demands of different sectors have become difficult to manage, with increasing stress placed upon water resources as pollution increases and populations continue to grow increasing demand on already fragile water resources.

The Pacific Integrated Water Resources Management (IWRM) Programme is making strides to achieving the MDG's through an intelligent cross -sectoral, multi level approach by focussing on water resources management which also provides an entry point to addressing other inter-related sectors as well such as health and land management. There are two projects that comprise the Pacific IWRM Programme and these include 1) The Global Environmental Facility (GEF) funded "Sustainable Integrated Water Resources Management Project in Pacific Island Countries" (Pacific IWRM Project) and 2) European Union (EU) Funded "IWRM National Planning Programme".

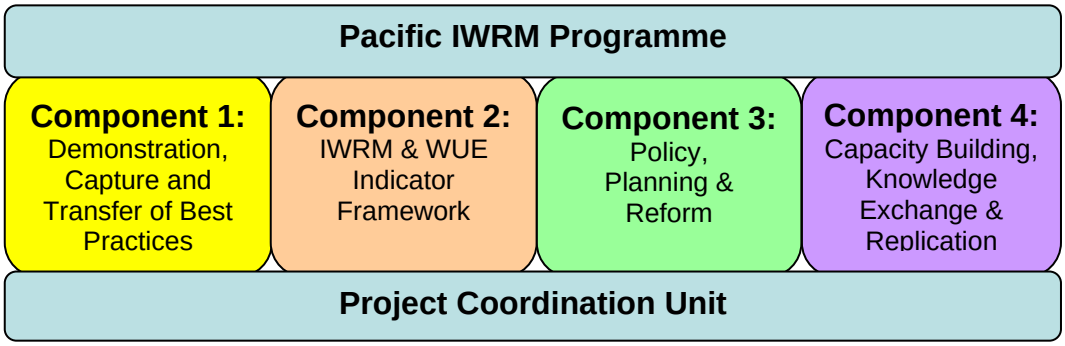
The innovative GEF funded Pacific IWRM project is being executed by SOPAC and implemented by UNDP and UNEP and includes 14 Pacific Island Countries. Following a vigorous country driven and designed project design phase, the project was recently approved for funding by the GEF in April 2008 for USD10.7M and will be implemented in 2009 – 2013.

There will be 13 country demonstration projects which will focus on the capture and presentation of on-the-ground IWRM interventions (UNDP Component C1) with details on each demonstration project provided below.

Table III: Overview of Country IWRM Demonstration Projects

IWRM Main Intervention	Country	Title of Demonstration Project
1. Watershed Management	Federated States of Micronesia	Ridge to Reef: Protecting Water Quality from Source to Sea in the FSM
	Palau	Ngerikiil Watershed Restoration for the Improvement of Water Quality
	Papua New Guinea	Rehabilitation, Management and Monitoring of Laloki River system for economical, social and environmental benefits
	Samoa	Rehabilitation and Sustainable Management of Apia Catchment
	Vanuatu	Sustainable Management of Sarakata Watershed
2. Wastewater Management & Sanitation	Republic of the Marshall Islands	Integrated Water Management and Development Plan for Laura Groundwater Lens, Majuro Atoll
	Nauru	Enhancing water security for Nauru through better water management and reduced contamination of ground water.
	Tuvalu	Integrated Sustainable Wastewater Management (Ecosan) for Tuvalu
3. Water Resources Assessment & Protection	Cooks Islands	Integrated freshwater and coastal management on Rarotonga
	Fiji Islands	Environmental and Socio-Economic Protection in Fiji: Integrated Flood Management in the Nadi River Basin
	Niue	Using Integrated Land Use, Water Supply and Wastewater Management as a Protection Model for Alofi Town Groundwater Supply and Nearshore Reef
4. Water Use Efficiency & Water Safety	Solomon Islands	Managing Honiara City Water Supply and Reducing Pollution through IWRM Approaches
	Tonga	Improvement and Sustainable Management of Niefu Aquifer Groundwater Resources in Vava'u Islands

The Regional Component will focus on national policy reform, improved institutional capacity and change, and IWRM indicator development through multicounty collaboration to address regionally coordinated solutions (UNEP Component C2, C3 and C4). It is anticipated that a Regional Project Coordination (PCU) and national project teams will be in place between October to December 2008 to start the project off. An overview of the components is provided in the below diagramme.



Pacific Water Virtual Learning Centre

The University of the South Pacific (USP) supported the development of a Post-graduate Diploma in Integrated Water Resources Management (IWRM) in Distance and Flexible Mode as a pilot project on behalf of the United Nations University (UNU). The course started early 2007 and is running on a part-time basis coordinated through the UN Water Virtual Learning Centre (WVLC), established at USP. Linkages will be made between the Pacific node of the Water Virtual Learning Centre at USP and the implementation of the Pacific IWRM programme.

Australia Water Research Facility

A project on Catchment-based risk assessment research is being carried out by the Australia Water Research Facility (AWRF) in the Solomon Islands. It aims to develop a framework determining priorities for water resource management actions in catchments.

Water resource managers face numerous constraints around ownership of the resource, financing, lack of awareness, poor legislative frameworks and limited technical capability. Managers must choose the most effective actions for greatest benefit with limited information. Recent activities in developing the Water Sector Steering Committee and the efforts of the Solomon Islands Water Governance Program provide a foundation for an integrated analysis of issues affecting catchment management. The Environmental Health Division from the Ministry of Health, the Water Resources Division from the Ministry of Natural Resources, and the Solomon Islands Water Authority are currently engaged in this sector wide approach.

A recent analysis of priorities for the water sector by the SOPAC administered Solomon Islands Water Governance Program identified in January 2006 four key pilot areas for attention: policies; legislative framework; creating and organizational framework; and awareness. At a recent study visit to Samoa for the same program, water shortages in catchments, a lack of data, and awareness were raised as key priorities.

For more information on the Australia Water Research Facility, please see www.watercentre.org

Theme 2: ISLAND VULNERABILITY

Key Message 1: **There is a need for capacity development to enhance the application of climate information to cope with climate variability and change.**

Key Message 2: **Change the paradigm for dealing with Island Vulnerability from disaster response to hazard assessment and risk management, particularly in Integrated Water Resource Management.**

Regional Programmes – Island Vulnerability

The impacts of climate variability and climate change have continued to be a critical issue for the international and regional agenda. This is reflected in the funding that has been made available for programmes aimed at collection and application dissemination of climate information but increasingly for programmes focused on climate adaptation and vulnerability. The use of climate information by water managers need further improvement through strengthening of climate forecasting by National Meteorological Services. GWP considers IWRM as the "most intelligent approach" for climate adaptation to water and the linkages to climate adaptation initiatives on water is of utmost importance. In addition, Water Safety Planning as risk management approach to water supply provision can be considered as a most effective measure for climate adaptation to the water sector. The mainstreaming of both risk management and climate proofing of water resources management requires further attention.

Intervention Area	Partners	Strategic Donor	Indicative Budget*
Pacific Water and Climate Resource Centre – Aims to promote and support work on Water and Climate and the implementation of theme 2 of the Pacific RAP.	CPWC SOPAC	ADB	100K
Island Climate Update - A multi-disciplinary, multi-national project providing three months regional climate forecasts.	NIWA SOPAC SPREP	NZAID	633K
Pacific Island Climate Prediction Programme - The project aims to develop the seasonal prediction capacity in Pacific Island Countries.	BOM NMS	AusAID	2M AUD
Resource Centre on Water and Climate – Aims to promote and support work on Water and Climate and the implementation of theme 2 of the Pacific RAP.	CPWC SOPAC	ADB	100K
Vulnerability and Adaptation Programme implemented in Kiribati (KAPII) and Tuvalu	WorldBank GEF	AusAID	4M AUD
B-Envelope Building Resilience to Drought in Tonga, Nauru, Marshall Islands, Tuvalu	SOPAC	EU	4.4K Euros
Pacific Adaptation to Climate Change (PACC) Tonga, Tuvalu, Niue, Marshall Islands, Nauru	SPREP	GEF	14M USD

* Unless otherwise stated amounts in FJD for multi-year programme

Pacific Water and Climate Resource Centre

Following the outcomes of the Pacific Dialogue on Water and Climate, the Asian Development Bank (ADB) supported the Pacific Resource Centre on Water and Climate to continue *"to improve the capacity in water resources management to cope with the impacts of increasing variability of the world's climate, by establishing a platform through which policymakers and water resource managers have better access to and make better use of information generated by climatologists and meteorologists".*

As main feat, the Pacific Resource Centre on Water and Climate was instrumental in securing the institutional and financial commitments to implement the Pacific HYCOS project in the Pacific region. The resource centre continued to provide guidance to coping and adaptation to climate change in the Pacific region through advocacy and inputs into global and regional fora such as the Asia Pacific Water Forum, the Asia Pacific Water Summit, and contributions to the 3rd World Water Development Report under the leadership of UNESCO as well as developing a perspective document on "water and climate in small island countries" for the 5th World Water Forum to be held in Turkey, March 2009.

Pacific Island Climate Update

The Pacific Island Climate Update (ICU) project is implemented by SOPAC, in collaboration with SPREP and NIWA - the National Institute of Water & Atmospheric Research, New Zealand, and supported by NZAID. The main output of the ICU process is the publication of a monthly seasonal climate bulletin for the Pacific region with a primary goal of assisting SOPAC member countries making informed planning and management decisions across of range of sectors through the provision of timely and accurate seasonal climate forecasts. The ICU bulletin is published by NIWA both in print and online, and is distributed to end users across the Pacific region.

Since 2006, the ICU project has undergone a series of reviews involving surveys and end user discussions, the purpose being to assess the efficacy of ICU in meeting end user needs for climate forecasting information. The outcome of these reviews can be summarised as follows.

i. There is broad support amongst Pacific Island National Meteorological Services (NMS), as the primary end users, for the continuation of the ICU.
ii. The monthly teleconference, the precursor to the production of the bulletin, is an important component of the ICU process by allowing a consensus to be generated on the current and future state of the climate in the Pacific region.
iii. The monthly bulletin has been successful in raising awareness of climate issues and has met some of the needs of NMSs for climate information, but in general has had less of an impact on secondary end users, such as hydrology, agriculture, fisheries, health etc.
iv. The needs of (local) secondary end users would be better served through media istributed by NMSs.

SOPAC recognises the important role of ICU in generating reliable and authoritative climate information of value to end users across the Pacific Islands region, and therefore seeks a continuation of the programme through its ongoing collaborative partnership with NIWA and SPREP. It is recommended that the ICU continues with a view to achieving the following objectives:

i. Increased participation by NMSs in the monthly teleconference through training and attachments at higher capacity NMSs, such as those in Fiji and Vanuatu.

ii. Greater support to the NMS through assessment of local secondary end users' needs and the production of national climate bulletins designed in such a way to deliver critical climate information of direct benefit to them.
iii. Continuation of a refocused and streamlined monthly regional bulletin, delivered electronically, that conveys critical climate information to a broad cross section of end users in a non-technical manner.

In conjunction with other partners on climate information such as Pacific National Meteorological Services, BOM Australia, NOAA and NIWA, SOPAC is evaluating how the above objectives can be met through a new, long-term regional programme.

Pacific Island Climate Prediction Programme

The Australian Bureau of Meteorology (BOM), in collaboration with a number of partners, is implementing an AusAID-funded project entitled "Enhanced application of seasonal climate predictions in Pacific Island Countries".

The project aims to develop the seasonal prediction capacity in Pacific Island Countries, similar to the Australian Bureau of Meteorology, so that the National Meteorological Services (NMSs) have the ability to perform seasonal predictions, or at least have access to predictions specifically tailored to their region/country.

The project commenced in mid-2003 in the nine participating Pacific Island Countries: Fiji, Cook Islands, Vanuatu, Samoa, Tonga, Niue, Solomon Islands, Kiribati and Tuvalu.

The project consists of four parts:
1. Development and installation of PC-based climate prediction software;
2. Training of NMS personnel in the use of the climate prediction software and the establishment of a climate prediction service;
3. Facilitation of linkages between NMS staff and clients making climate sensitive decisions; and
4. Training of clients in the effective and prudent use of prediction information.

For more information, please see www.bom.gov.au/climate/pi-cpp/index.shtml

Kiribati Adaptation Programme

Kiribati is one of the world's most vulnerable countries to climate change and sea level rise. Most of the land in urban Tarawa is less than 3 meters above sea level, with an average width of only 450metres. The key goal of the World Bank's Kiribati Adaptation Project Phase II (KAP II) is, working in partnership with the Government of Kiribati, to reduce Kiribati's vulnerability to climate change, climate variability and sea level rise. Australia has committed $2.9 million to support the freshwater management component of KAP II. This funding will be used to purchase tanks, pipes and other materials, provide services, technical advice and capacity building activities to improve freshwater management and build resilience to water stress. Key activities to be undertaken include an update of the national water policy, planning and remedial actions for densely populated South Tarawa, including reduction in water leakage on Betio, establishment of new rainwater collection storage facilities, and an assessment and upgrade of out island water supply systems. KAP II is also support by New Zealand ($1.3 million) and the Global Environment Facility ($2.4 million).

Vulnerability and Adaptation Initiative in Tuvalu

Under the $4 million Vulnerability and Adaptation Initiative, Australia has committed $585,000 to enable the Government of Tuvalu to contract and manage the construction in Tuvalu of about three hundred 10,000 litre polyethylene household rainwater tanks. Tuvalu's Department of Works staff will be trained in the construction of tanks and in their installation, repair and maintenance. Household members will be taught how to maintain the roof catchment and pipes to ensure good water quality and how to manage their use of potable water from the tanks. In 2008 and 2009, Tuvalu expects to take on the supervision of several large donor-funded water infrastructure projects. The Tuvalu Government will also manage comprehensive public education and training programs on water resource management for the Tuvaluan communities. Australia has agreed to fund a water and sanitation specialist to work with the Department of Works to assist them to manage construction projects and improvements to water resource management and governance.

EU B-Envelope Building Resilience to Drought

National “B” envelope funding provided by the European Union, has traditionally focused on supporting unforeseen events linked to natural disasters, loss of export earnings, debt relief and the like. Countries in the event of a natural disaster have utilised these resources to support relief and rehabilitation activities. In the case of the 9th EDF, there has been global acceptance that to place more emphasis on support for disaster risk reduction (planning and preparedness) will benefit vulnerable communities, especially the poor. The focus of the EU B-Envelope interventions in Tonga, Marshall Islands, Tuvalu and Nauru has been to focus on disaster preparedness and risk management with regards to the access to safe drinking water. The interventions range from improved groundwater protection and management, improved water treatment and distribution; to improved household water collection and storage. The programme will be implemented in a four-year period from 2008.

Adapting to climate change

Four Pacific countries have prioritised water as a main focus under the Pacific Adaptation to Climate Change (PACC) project. Niue, Tonga and Tuvalu also identified water as a priority under the project.

Coordinated by the Secretariat of the Pacific Regional Environment Programme (SPREP), PACC will work with key partners to integrate adaptation to climate change priorities into national policies and programmes. PACC is working to build the capacity of Pacific islanders to adapt to climate change across three sectors; water resource management, food production and food security and coastal management. PACC is funded by the Global Environment Facility (GEF) and implemented through United Nations Development Programme (UNDP).

Theme 3: AWARENESS

Key Message 1: **A high quality participatory framework should be adopted at the National level to allow for open participation of communities in sustainable water and wastewater management.**

Key Message 2: **Access to, and availability of information on sustainable water and wastewater management should be provided to all levels of society.**

Key Message 3: **Water and sanitation education should be mainstreamed into the formal education system.**

Key Message 4: **Improve communication and coordination of all stakeholders in sustainable water and wastewater including government, civil society and the private sector.**

Regional Programmes – Awareness

The use of participatory frameworks has been promoted through mostly local initiatives as well as the development of guidelines such as Mobilising People towards IWRM, and the Manual on Participatory Approaches in Rainwater Harvesting. The development of frameworks on National level has not advanced much, although inclusion of civil society in national planning and management is increasing. Regional programmes such as the annual World Water Day campaigns continue to provide materials and information to communities and schools and efforts are ongoing to mainstream water, sanitation and hygiene education in school curricula. A significant new contribution to children's health is being provided by UNICEF who commenced their Water and Environmental Sanitation Programme for the region. The coordination of water supply, sanitation and hygiene activities in the region is being monitored and facilitated by the Pacific WASH Coalition comprising of the main regional players in this field. Future funding opportunities should be explored to make use of the Pacific WASH Coalition in order to benefit from the complementary strengths and local networks of the various partners.

Intervention Area	Partners	Strategic Donor	Indicative Budget*
Promotion of Community Participation and Gender Equity – Dissemination of materials, advice and assistance	WSSCC GWA SOPAC	Taiwan/ ROC	150K
World Water Day – Development of awareness and education materials & annual event for schools & public	LLEE SOPAC	Taiwan/ ROC	105K
Pacific Water and Environmental Sanitation Programme	UNICEF	UNICEF	400K USD
Pacific Water Supply, Sanitation and Hygiene Coalition (Pacific WASH Coalition)	LLEE FSchM UNICEF WHO IFRC SOPAC		

* Unless otherwise stated amounts in FJD for multi-year programme

Pacific WASH Coalition

As member of the global Water Supply and Sanitation Collaborative Council (WSSCC), SOPAC has mobilised partners in the region to coordinate activities in the Pacific region on water supply, sanitation and hygiene (WASH) and established the "Pacific WASH Coalition".

The International Year of Sanitation 2008, created an excellent opportunity to strengthen collaboration between a wide range of regional and international agencies to improve delivery of water supply, sanitation and hygiene activities. Partners in the coalition include the Foundation of the Peoples of the South Pacific International (FSPI), the Fiji School of Medicine (FSchM), Live and Learn Environmental Education (LLEE), the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and the International Federation of Red Cross (IFRC). Increasing interest in water and sanitation support provided to the region by donors and other organisations resulted in a large number of overlapping interventions and it becomes increasingly important to ensure that work carried out on this area is well coordinated in order to avoid duplication. The Pacific WASH Coalition is utilising existing partnerships such as established under the Pacific Partnership Initiative on Sustainable Water Management) and is building on ongoing work programmes and activities in Pacific island countries.

WASH activities in line with the International Year of Sanitation included in Tonga a Training of Trainers workshop on water quality, rainwater harvesting and sanitation and hygiene, school WASH and media campaigns and in Tuvalu a series of school workshops on water, sanitation and hygiene, translation and dissemination of rainwater harvesting manual and media campaign.

World Water Day 2008

The International Year of Sanitation guided the 2008 World Water Day campaign. Jointly with Live and Learn Environmental Education (LLEE), SOPAC organised activities under the theme "Sanitation for Healthy Pacific Communities" to celebrate World Water Day on 22nd March 2008. Activities included the development of educational materials (special emphasis on hand washing), raising awareness on water and sanitation through the distribution of materials throughout the Pacific; and incorporation of water education into school/community programmes through LLEE in PNG, Vanuatu, Fiji, Solomon Islands.

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.

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.

Support is 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.

Theme 4: TECHNOLOGY

Key Message 1: **Utility collaboration and regional partnership to reduce unaccounted for water will significantly improve the sustainability of utilities and reduce the need for developing new water resources.**

Key Message 2: **Appropriate institutions, infrastructure and information will support sustainable water and wastewater management.**

Key Message 3: **Island specific regional training programmes should be developed, resulting in sustainable levels of skilled and knowledgeable people and communities within the water and wastewater sector.**

Regional Programmes – Technology

Leak detection and system loss management planning has been supported through the regional Water Demand Management programme with some Pacific utilities. Many leakage rates are still unacceptably high and increased efforts are required to reduce unaccounted for water. Where infrastructure support is provided by bilateral donors use should be made of system loss management plans accompanied by water conservation education and awareness. The regional wastewater management training programme continued to provide managers with knowledge and tools to select, plan and finance appropriate and environmentally sound municipal wastewater management systems. The introduction of the Water Safety Planning concept in the region as risk management tool has increased countries ability to provide safe drinking water through strengthened collaboration between a wide range of agencies involved in water and health whilst maintaining involvement of local communities. The Water Safety Planning concept also serves as an excellent mechanism to prioritise capital investments for water utilities and guide support of bilateral donors. Further in-country training through the buddy system should be supported.

Intervention Area	Partners	Strategic Donor	Indicative Budget*
Water Demand Management	PWA SOPAC	NZAID	600K
Wastewater Management	GPA, IAS, UNESCO-IHE SOPAC	USAID	150K
Water Safety Planning programme - develop and implement a 'catchment to consumer' risk-management approach to safe drinking water	WHO IAS SOPAC	AusAID	1.6M
Reducing vulnerability of water services in the Pacific	CSIRO	AusAID	

* Unless otherwise stated amounts in FJD for multi-year programme

Pacific Drinking Water Safety Planning

The Pacific Drinking Water Safety Planning (WSP) Programme is a joint initiative of the World Health Organization (WHO) and SOPAC. It focuses on promoting a risk management approach for the provision of safe water supply in Pacific Island countries through piloting Water Safety Plans in four countries (Tonga, Vanuatu, Cook Islands and Palau). The programme is funded under AusAID's Water Quality Initiative and is jointly implemented by SOPAC and WHO.

The first phase of the programme (2005-2007) focussed on the development of Water Safety Plans for individual urban and rural water supplies with communities, health departments, water regulators and managers and water utilities. Under the second phase (2008-2010) of the programme, associated improvement schedules will be implemented for various water supply systems including: water supply of Nuku'alofa as well as rural supplies on Tongatapu, Kingdom of Tonga; Luganville and Mele, Vanuatu; Koror-Airai, Palau and Rarotonga, Cook Islands.

The New Zealand Ministry of Health, through its Pacific Island Countries assistance programme under NZODA funding, is providing additional in-kind support to the WSP programme with the strengthening of technical aspects of the programme through the mobilisation of New Zealand District Health Board drinking water assessors.

Public awareness programmes were conducted by in-country NGOs including Tonga Community Development Trust (TCDT), the Palau Conservation Society (PCS), Live and Learn Environmental Education (LLEE) Vanuatu and the Ministry of Environment Cook Islands.

Replication of Water Safety Planning is underway in Fiji, Niue, Marshall Islands and Samoa. Based on the lessons learned from the first phase guidelines have been developed which will be available to guide further application of the WSP concept throughout the region.

Water Demand Management Programme

SOPAC and the Pacific Water Association (PWA) are implementing the NZAID funded Pacific Water Demand Management Programme in five pilot countries (Niue, Cook Islands, Solomon Islands, Marshall Islands, Vanuatu and the Federated States of Micronesia). The purpose of the project is to improve the capacity for water demand management in Pacific urban water utilities. In partnership with Wide Bay Water Corporation (WBWC) sub-regional workshops were held in Rarotonga, Cook Islands and Pohnpei, FSM. In-country support was provided to establish System Loss Management Plans in each of the pilot countries. The programme is assisting the pilot countries to acquire both "hardware" such as water meters, leak detection equipment or bulk water-saving devices for incentive or rebate schemes, as well as "software" which include training, community education materials and technical expertise.

Wastewater Management Training

A training course for wastewater management has been jointly developed by UNEP's Global Programme for Action for the Protection of the Marine Environment from Land-based Sources of Pollution (GPA/UNEP) and the UNESCO-IHE Institute for Water Education.

The wastewater training course addresses one of the Guiding Principles of the Pacific Wastewater Policy and Framework for Action and will be implemented in the Pacific region from 2005-2006 by a consortium of SOPAC, USP-IAS, IOI, in collaboration with SPREP, UNESCO-IHE, GPA/UNEP and UN/DOALOS.

Using UN/DOALOS Train-Sea-Coast standards as well as the GPA Strategic Action Plan on Municipal Wastewater and the UNEP/WHO/UN-HABITAT/WSSCC Guidelines on Municipal Wastewater Management, the training will provide participants with analytical tools, substantive information, and skills on how to select, plan and finance appropriate and environmentally sound municipal wastewater management systems.

The training is divided into 3 modules:

Module 1: Objective oriented planning
Module 2: Conventional and innovative approaches to municipal wastewater management
Module 3: Presentation skills

A training needs assessment for the Wastewater Training Program has been completed showing that there are not many opportunities for training in wastewater management in the Pacific region. However, respondents in the field of water/wastewater management indicated that the training would be beneficial to them. The first series of training courses held in Suva, Guam and Port Moresby have been followed up through additional courses in Kiribati wit the Environment and Conservation Division of the Ministry of Environment, Lands and Agricultural Development (MELAD) and the Tonga Community Development Trust (TCDT).

Reducing vulnerability of water services in the Pacific

The Global Research Alliance (GRA) and the Australian Commonwealth Scientific and Research Organization (CSIRO - Australia's national science agency) are bringing together local stakeholders, funding agencies and experts to address the issue of vulnerability of water services in the Pacific.

This is done in a stepwise process with the main components being a Delphi consultation, which will be followed by a workshop. The Delphi consultation, which is email based, engages about 45 participants from around the world, including a number of major funding agencies, as well as representatives from countries such as Kiribati, Samoa, Tonga, Cook Islands, Papua New Guinea and Tuvalu. Via an iterative process, different panels have identified the following as the most important issues:

1. Experts: Appropriate technology: innovation, selection and uptake
2. Local stakeholders: Adjusting services to local contexts
3. Funding agencies: Ownership issues
4. GRA: Community participation

It has also been acknowledged that solutions depend on the context and that there is no one single solution for all nations, but rather a wide range of inter-related issues that need to be addressed, within a particular context. This reinforces the need for IWRM. As an output of this project, solutions to meet the needs of individual nations or groups of nations are anticipated.

To this end, subsequent to the Delphi consultation, a workshop is planned where participants will aim at taking the issues developed in the Delphi consultation forward as fully funded projects and is scheduled for September 2008.

For more information, please see www.csiro.au and www.research-alliance.net/.

Theme 5: INSTITUTIONAL ARRANGEMENTS

Key Message 1: **Work together through a comprehensive consultative process, encompassing good governance, to develop a shared National vision for managing water resources in a sustainable manner.**

Key Message 2: **Develop national instruments including National visions, policies, plans and legislation appropriate to each island country taking into account the particular social, economic, environmental and cultural needs of the citizens of each country.**

Key Message 3: **Promote and establish appropriate institutional arrangements resourced sufficiently to enable effective management of water resources and the provision of appropriate water services.**

Key Message 4: **Recognise and share the water resource management knowledge and skills of all stakeholders at a National and regional level in the process of developing and implementing the National Vision.**

Key Message 5: **National and regional leadership in water resource management should be recognised and encouraged.**

Regional Programmes – Institutional Arrangements

Following advances under the Pacific Programme for Water Governance in Kiribati, Fiji and Solomon Islands, countries have increasingly recognised the importance of improved institutional frameworks to enable effective water resource management and service provision. The Pacific IWRM Planning programme provides support to improving water governance through various mechanisms and building blocks. The programme is an important component of the IWRM demonstration programme.

Intervention Area	Partners	Strategic Donor	Indicative Budget*
Pacific IWRM Planning Programme	SOPAC PWP	ACP-EU WF	2.824M Euro
Pacific Programme for Water Governance – 18 month (2005 –2006) in Fiji, Solomon Islands & Kiribati	NWP SOPAC	EU	330K

*** Unless otherwise stated amounts in FJD for multi-year programme**

Pacific IWRM Planning Programme

The IWRM demonstration project mentioned under Theme 1 is occurring in conjunction with the EU funded National IWRM Planning Programme, which is co-financing the Pacific IWRM Project and will provide policy improvement and institutional support to help PICs in the development and delivery of national IWRM plans in line with the 2005 MDG targets. The 3-year Pacific SIDS IWRM Planning programme commenced in 2008 and an Inception Meeting was held in Niue from 18-25 July 2008. This programme is enabling countries to develop a policy, strategy and action for water reform for IWRM with National Water Committees being used in each of the countries to help drive the process. Outputs from this programme resulted in guidelines for community participation in IWRM, a synopsis of IWRM for the region and a brochure on the cross cutting aspects of IWRM as a process (see Table IV).

Table IV: IWRM Project Design Phase Outputs

Integrated Water Resource Management in Pacific Island Countries: A Synopsis
Under the Project Design Phase 14 detailed Diagnostic Reports summarising the status of national water resource management and assessing the barriers to implementing Integrated Water Resource Management (IWRM) approaches in PICS were prepared. This Synopsis report represents a summary of the 14 Diagnostic Reports, providing a snapshot 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.

IWRM Community Mobilisation Guidelines
Developed by regional NGO Live and Learn Environment Education, supported by SOPAC and UNDP and UNEP, the Community Mobilisation Guidelines are a key output from the Project Design phase of the project. The guidelines are a valuable resource to assist communities and facilitators working with them to look at IWRM approaches at a village and community level.

The Pacific Integrated Water Resource Management Programme Brochure
Developed by the Resource Centre at SOPAC the Pacific IWRM Brochure provides details about the projects contributing towards IWRM across the Pacific, includes brief details on the Demonstration Projects and wider governance reform activities supported by GEF and the EU Water Facility. The brochure contains a poster intended to explain to a wide audience some of the water and environmental problems faced across the Pacific Islands.

Manage your Water Resources with Wisdom

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.

Theme 6: FINANCE

Key Message 1: **Create a better and sustainable environment for investment by both the public and private sector, by developing and implementing National, sector and strategic plans that identify the economic, environmental and social costs of different services and develop pricing policies, which ensure the proper allocation of resources for the water sector.**

Key Message 2: **Establish financially viable enterprises for water and sanitation that result in improved performance by developing appropriate financial and cost recovery policies, tariffs, billing and collection systems, financial and operating systems.**

Key Message 3: **Reduce costs through improved operational efficiency, using benchmarking, development of leak detection programmes and improved work practices.**

Key Message 4: **Ensure access for the poor to water and sanitation services by developing pro poor policies that include tariffs with lifeline blocks and transparent and targeted subsidies.**

Key Message 5: **Achieve sustainable rural water and sanitation services at a community level through developing strategies that incorporate mechanisms for appropriate financing and capacity building.**

Regional Programmes – Finance

Development banks such as ADB and the WorldBank were undertaking efforts to address the financing of water and sanitation services through a regional review of infrastructure development as well as advancing benchmarking for utilities. This has however no resulted in the use of benchmarks to improve service delivery throughout the region and the launch of the Pacific Region Infrastructure Facility may be able to advance this further.

Pacific Region Infrastructure Facility

ADB and the WorldBank recently launched a new Pacific Region Infrastructure Facility. This joint initiative will greatly assist Pacific Island Countries to overcome the significant challenges they face in linking people to vital services and make progress toward the Millennium Development Goals. The Facility will coordinate donor assistance to develop and maintain critical economic infrastructure in the Pacific Island Countries. The Facility will provide up to $200 million funding over four years.

Improvements to the quality, reliability and availability of infrastructure in both rural and urban areas are crucial for boosting economic growth, creating jobs and providing access to basic services such as health and education. The Facility will help develop competitive local private sectors to deliver infrastructure maintenance and construction services. This will contribute to both job creation and sustainable economic growth in the Pacific.

The Facility will be developed over time to respond to regional requirements. An initial focus on building long-term partnerships with Pacific countries and other donors will ensure that the Facility is best able to respond effectively to the needs of the region.

Transport infrastructure is expected to be an early priority for assistance. The Facility will assist Pacific Island countries to improve roads, ports and transport systems; support reliable energy and communications infrastructure; and improve their water, sanitation and waste management systems. An inaugural workshop will be held in October to bring senior officials from Pacific Island Countries together to begin exploring ways in which countries may access the Facility.

MDG Targets on Water and Sanitation

The Millennium Development Goals and targets are part of the Millennium Declaration which was agreed by 189 countries in September 2000. A resolution adopted by the United Nations General Assembly in 2005 complemented these targets. Goal 7, Target 7C aims to "Halve, by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation".

As stated in the WHO/SOPAC 2008 report on Sanitation, Hygiene and Drinking Water in Pacific Island Countries, neither the sanitation target for the Pacific island countries nor the drinking-water target will be achieved if the past trends are confirmed towards 2015. The implication of such an insufficient progress extrapolates the water and sanitation sector as the overall MDGs are influenced by the sanitation and drinking-water targets as demonstrated in Table V.

Table V Influence of basic sanitation and drinking-water in achieving the Millennium Development Goals

MDG Goals	Influence of basic sanitation in achieving the goals
Goal 1: Eradicate extreme poverty and hunger	Basic sanitation and safe drinking-water prevent illnesses which otherwise would affect the productivity of the household members. Such illnesses, especially helminths, take away calories from their hosts and make the poor less able to absorb nutrients in food. Adequate sanitation and good drinking-water prevent water-related illnesses. Such illnesses generate high health and economic costs which affect the capacity of the community to combat poverty and hunger. Ecosystems degradation due to inadequate sanitation hampers local-level development, which affects especially the poor. This is particularly crucial for the Pacific island countries where the ecosystems are fragile and highly susceptible of being harmed by inadequate excreta disposal management.
Goal 2: Achieve universal primary education	Having separate sanitation facilities for girls and boys in school increases girls' attendance. This is not the reality of many primary and secondary schools in the Pacific island countries and is a major area of concern which is directly related to the achievement of the targets associated with this goal.
Goal 3: Promote gender equality and empower women	Sanitation facilities closer to home put women and girls at less risk of attack while searching for privacy. Similarly, drinking-water is normally fetched by women and children, which places an enormous burden on their quality of life and perspectives of personal development.
Goal 4: Reduce child mortality	Basic sanitation and safe drinking-water reduce considerably infant and child morbidity and mortality.
Goal 5: Improve maternal health	Basic sanitation, safe drinking-water and good hygiene behaviours are needed in health care establishments to prevent contamination following delivery.
Goal 6: Combat HIV/AIDS, malaria and other diseases	Basic sanitation and safe drinking-water help prevent diseases, including diarrhoeal diseases, trachoma and helminths. This is of fundamental importance, considering organisms already debilitated by long-lasting illnesses such as HIV/AIDS.
Goal 7: Ensure environmental sustainability	Adequate treatment and disposal of wastewater contributes to better ecosystem conservation and less pressure on scarce freshwater resources, which is of special relevance to coral islands and fragile ecosystems of the Pacific islands. Adequate excreta management and wastewater disposal prevents contamination of groundwater and helps minimize the cost of water treatment.

Goal 8: Develop a global partnership for development	Development agendas and partnerships should recognize the fundamental role that basic sanitation and safe drinking-water play in economic and social development.

Source: adapted from WHO/UNICEF (2004b)

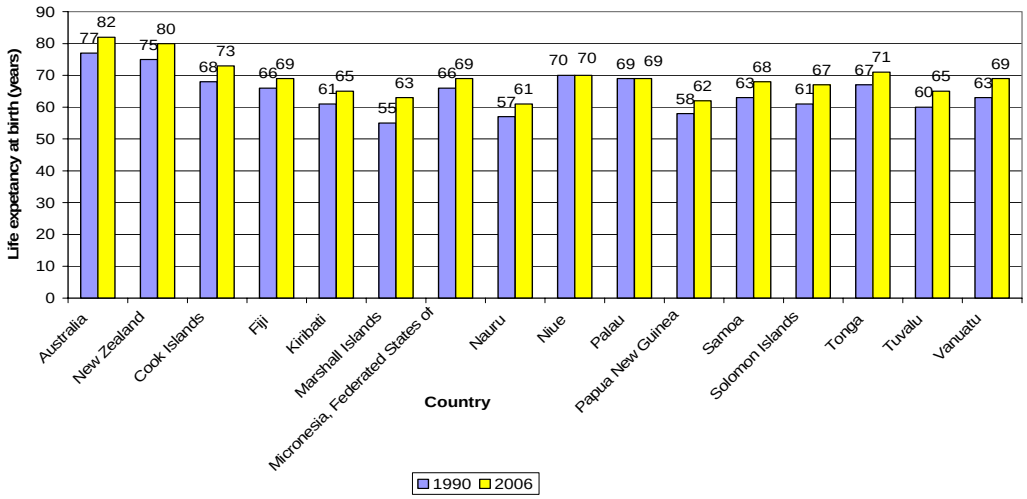
Access to Safe Drinking Water and Adequate Sanitation

The below sections on access to drinking water and sanitation are extracted from a report by Jose Hueb on Sanitation, Hygiene and Drinking Water in Pacific Island Countries, and which is to be released shortly (WHO/SOPAC 2008).

Life expectancy is an important indicator of human development and is closely related to the status of access to basic sanitation and safe drinking-water as demonstrated in numerous researches worldwide. Although some progress has been made from 1990 to 2006 in the Pacific island countries in increasing life expectancy, it remains considerably lower than that of developed countries (Figure 3). The influence of sanitation, drinking water and hygiene on life expectancy is more prominent in the most vulnerable age groups: children under 5 years old and people over 60 years of age (WHO, UNICEF, 2005). Improved sanitation services, better hygiene behaviour and access to safe drinking-water especially by mothers are crucial in cutting child mortality and extending the life of the elderly.

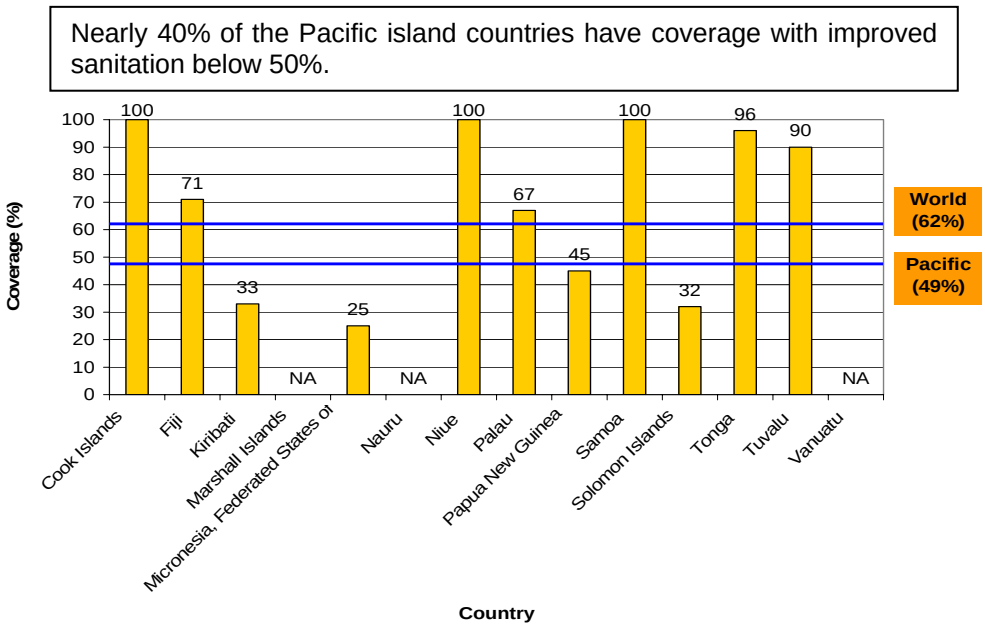
Figure II Life expectancy at birth in the Pacific island countries, 2002

People in the less developed countries of the Pacific island countries live over 20 years less than those of developed countries.



Source: WHO (2008b)

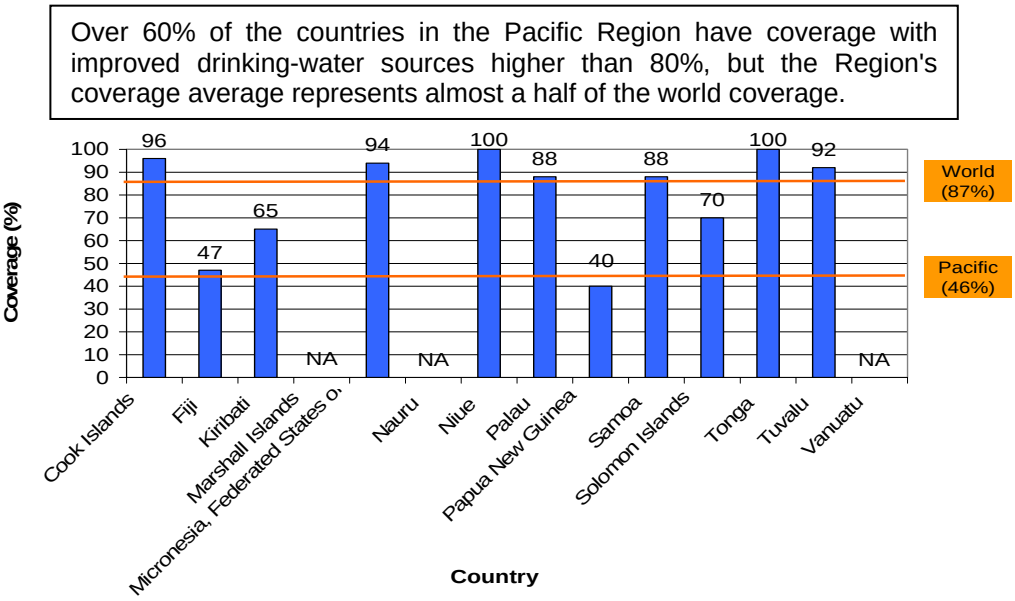
Figure III Coverage with improved sanitation by country, 2006



Source: primary country coverage data from UNICEF, WHO (2008)

In 2006, only 46% of the population in the Pacific Islands had access to improved drinking-water sources (Figure 7). This represents almost a half of the 2006 coverage attributed to the world population by the JMP. Although less populated countries present high coverage, the low coverage of Papua New Guinea, which represents alone three quarters of the Region's population, steers the average coverage to levels comparable to those of least-developed regions.

Figure IV Coverage with improved drinking-water sources by country, 2006



Source: primary coverage data from UNICEF, WHO (2008)

MDG Target on Integrated Water Resources Management

The third "water-related" MDG target of developing National Integrated Water Resources Management Plans by 2005 has been modified after the World Summit into: "setting processes in motion" towards National IWRM Plans.

Advances in IWRM are being made as has been reported above. Realistically National IWRM Plans will not be achieved by each country at the end of the 3-year IWRM Planning programme. However, the introduction of IWRM as a process in each Pacific island country has implications far beyond the water and sanitation targets as can be seen in the table below.

Table VI: MDGs linked to water resources management

Goal	Target	Progress Indicators
Ensure Environmental Sustainability 	**Target 9:** Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources	**25.** Proportion of land area covered by forest **26.** Ratio of area protected to maintain biological diversity to surface area
Ensure Environmental Sustainability 	**Target 10:** Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	**30.** Proportion of population with sustainable access to an improved water source, urban and rural **31.** Proportion of population with access to improved sanitation, urban and rural
Develop a Global Partnership for Development 	**Target 14:** Address the special needs of landlocked developing countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)	**34.** Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) **37.** ODA received in small island developing States as proportion of their GNIs

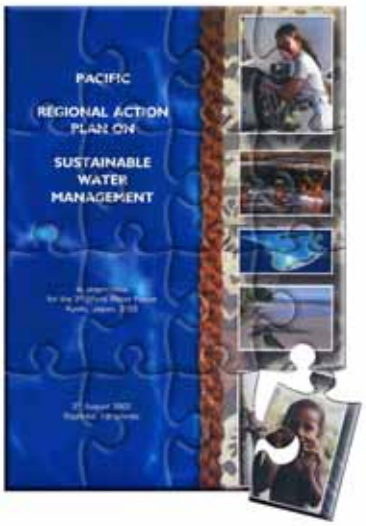
Note: Focussing on water provides a wider entry point than water alone. Environmental degradation is often linked to poor water use, management and understanding. Furthermore, supporting water interventions, especially in a cross-sectoral and multi-level such as through IWRM supports the achievement of the other MDGs, especially in health, food security, maternal care, etc.

The achievements of the water-related MDGs have become a key target for countries in the region. The successful implementation of the targets set by the three major Frameworks for Action will move the region in a positive direction towards achieving the MDGs.

Monitoring of progress towards the MDG targets is being jointly undertaken by the CROP agencies facilitated by SPC and the 2004 Pacific Islands Regional MDG Report is available at http://www.spc.org.nc/mdgs/MDGReport/Reg_report.htm. Monitoring programmes contained in the Pacific RAP should be further linked to national census data acquisition and analysis.

Pacific Partnership Initiative and Partnership Coordination Unit

The Pacific Regional Action Plan on Sustainable Water Management has been incorporated in a partnership arrangement titled "Type II initiatives" submitted by the Pacific Island Countries to the Commission for Sustainable Development (CSD) in Johannesburg during the World Summit for Sustainable Development (WSSD) in August 2002. Pacific Forum Leaders also endorsed this umbrella Type II water initiative amongst 13 others at the WSSD.



The main objective of the Partnership Initiative is to achieve sustainable water and wastewater management in Pacific Island Countries through:

- The establishment of a regional water network of persons and organisations, inclusive of country governments, development agencies, professional associations and donors, that represent a variety of interests in water resources management and service delivery within the region, to improve regional coordination and collaboration;
- Implementation of the "Pacific Regional Action Plan for Sustainable Water Management";
- Implementation of the "Pacific Wastewater Policy;
- Implementation of the "Pacific Drinking Water Quality and Health Framework for Action".

The Partnership has a Facilitator (based at SOPAC) responsible for implementing the core functions of the partnership. The Facilitator's key responsibilities include: 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. SOPAC is assisted in this task by a deputy facilitator based at USP.

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 coordination unit was established for the partnership which acts as a regional clearing house with the following roles agreed to by the Partnership Steering Committee:

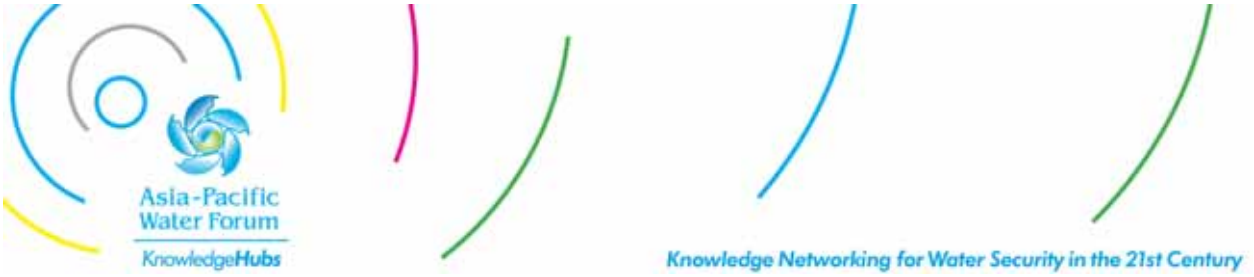
- Production of a Quarterly Newsletter (Calendar Of Events, Lessons Learned, National Case Studies, Update On Actions And Partners)
- Development and maintenance of a Water Action Matrix in database format
- Development of bi-annual progress reports

- Development of a dedicated website and dissemination by CD-Rom
- Establishment of E-mail based focal groups
- Advocate for the implementation of the Pacific RAP
- Provide input to International and regional forums
- Assist in National Level implementation of the Pacific RAP
- Promotion of National Level Water Partnerships
- Promotion of Technology Transfer
- Provide linkages to donor community
- Coordinating Capacity Development

The Partnership Coordination Unit was established as an attachment to SOPAC with financial support by the ADB. ADB recognised that advocacy, coordination, networking, implementation monitoring and partnership of the Pacific RAP requires a significant and dedicated effort, to ensure they are continued and maintained. Exchange of information and facilitation of the coordination of projects, will ultimately improve and accelerate progress towards achieving sustainable water management in the Pacific region.

A quarterly newsletter on Partnership activities is still being produced and is distributed to over 825 members that have joined this network. Pacific Water E-mail Focal Groups have been established and a specific website has been developed for the partnership accessible through:
http://www.pacificwater.org

Pacific IWRM Resource Centre and Knowledge Hub for Asia Pacific Water Forum



The Pacific IWRM Resource Centre has been established as one of the priority actions under the region's Portfolio of Water Actions and is initially funded through the EU Water Facility under the Pacific IWRM Planning Programme. The Pacific IWRM Resource Centre has been included as regional knowledge hub for the Asia Pacific Water Forum with an established vision, mission, goal and objectives which are aligned with the Pacific RAP and the Pacific IWRM programme and is closely associated with the Pacific Partnership Initiative on Sustainable Water Management.

Vision

The Pacific IWRM Resource Centre shares the vision of the Pacific Partnership Initiative on Sustainable Water Management, which is a voluntary partnership of water and wastewater stakeholders in the Pacific region, with a common goal of achieving sustainable water and wastewater management in Pacific Island Countries.

Mission

The Pacific IWRM Resource Centre will provide technical assistance to Pacific Island Countries in the development and implementation of National Integrated Water Resources Management Plans

and assists in the coordination of regional water sector support programmes implemented with partner organisations.

Goals

The goal of the Pacific IWRM Resource Centre is to develop, disseminate and build capacity in Small Island Developing States (SIDS) partnership and IWRM best practices; strengthen and support national and catchment scale stakeholder partnerships; and help the country water partnerships to develop formal and endorsed IWRM policies and water use efficiency plans (WUE) using multi-stakeholder participatory consultations.

Objectives

The regional resource centre will support IWRM national and catchment partnership and policy development; identifying and documenting existing small island IWRM practice at different scales; critiquing previous transfer of IWRM regional practice from one island to another; establishing multi-stakeholder and multi-sectoral, government-civil society partnerships as a pre-requisite to sustainable IWRM planning and implementation; using short-term political and public priorities to highlight relevance of IWRM; ensuring the initial focus is on extreme catchment events (droughts, floods and related landslides) to demonstrate the economic, social and environmental benefits of IWRM; and supporting the partnerships to develop long term integrated water policies and shorter term priority catchment issue resolution (e.g. flood mitigation).

The Centre will act as a clearing house, developing and promoting best practice and training to build national and local capacity in multi-stakeholder consultation, partnership, IWRM issue identification analysis, and IWRM policy and institutional coordination and harmonisation models, using existing regional networks operated by the Pacific Partnership Initiative on Sustainable Water Management. It will also perform a regional coordination role for IWRM issues and promote IWRM initiatives to the countries as well as SIDS IWRM issues on the global agenda.

Activities Planned for 2008-2010

<u>Establishment of the Pacific IWRM Resource Centre</u>
Recruitment of appropriate staff
Portfolio of appropriately qualified and experienced short term consultants
Procurement of office equipment, communications *etc*
Inaugural meeting of IWRM Steering Committee (SC)

<u>Regional Partnership Multi-stakeholder Consultations</u>
Consultation with Steering Committee on proposed annual programmes
Liaison and discussion with country contacts on representation
Regional multi-stakeholder meeting on country involvement, IWRM process and responsibilities

<u>Database for inventory of IWRM in the region and website</u>
Liaison with national water stakeholders
Liaison with donors and development agencies in the region
Operational database of IWRM activities, dates, values, outcomes

<u>Regional and International collaboration and coordination of IWRM initiatives (including south-south inter SIDS regional partnership)</u>
Liaison with Pacific regional stakeholders (operation of virtual water sector focal groups)

Liaison with other SIDS regions (including GWP-Caribbean, Caribbean Environmental Health Institute (CEHI), Jamaica, White Water 2 Blue Water) on IWRM, Barbados +10 reviews, Commission on Sustainable Development (CSD) reporting, 4th World Water Forum (4WWF). collaboration with global IWRM initiatives and SIDS advocacy (GWP, GEF, UNU, EU)

Development of IWRM Indicators
Review of existing literature sources (GWP Toolbox and IWRM indicator development)
Review of IWRM experience in SIDS
Development of process indicators – consultation, informal partnership, planning, policy
Development of primary impact indicators – institutional, water quality, drought and flood
Development of secondary indicators – economic (food production, disaster cost minimisation), social (health), environmental (biodiversity, reef health)

Pacific Water Focal Groups

Through a service provided by the Pacific Partnership for Sustainable Water Management Coordination Unit at SOPAC, it is now possible to join one or more of the Pacific Water E-mail Focal Groups. Everyone working in the Pacific is facing challenges of remoteness, isolation and lack of access to information and human or technical resources.

With the Water E-mail Focal Groups, the Coordination Unit aims to address these challenges by building an active network of people working in the water sector in the region. By exchanging experiences and offering a forum for asking questions and promoting discussion, the Unit hope to assist in tackling some of the issues that water specialists face.

Four separate groups have been set up in the areas of Hydrology and Water Resources Monitoring; Water Engineering; Water Quality; Integrated Water Resources Management; and Wastewater and Sanitation. You can subscribe to any of the groups as follows:

The Hydrology and Water Resources Monitoring group is co-ordinated by the Pacific HYCOS progarmme and comprises mainly of hydrological technicians and focal points for UNESCO's International Hydrological Programme. To join send an e-mail to PICHydrologicalNetwork-subscribe@yahoogroups.com or hycos@sopac.org.

The Water Engineering group is primarily targeted at those working at water utilities and is co-ordinated by SOPAC's Water Demand Management engineer. To join send an e-mail to PICWater-subscribe@yahoogroups.com.au or arieta@sopac.org.

The Water Quality group has members from both the water supply and health sectors and is co-ordinated by Tasleem Hasan. To join send an e-mail to water quality-subscribe@yahoogroups.com or tasleem@sopac.org.

The IWRM group has members from water and natural resources management departments and is coordinated by Rhonda Bower. To join send an e-mail to iwrm@sopac.org.

The Wastewater focal group looks at raising awareness on water, sanitation and hygiene issues and implementation of the Pacific Wastewater Policy and Framework for Action with membership from wastewater operators, specialists as well as NGO's and is co-ordinated by Kamal Khatri. To join send an e-mail to wastewater_group-subscribe@yahoogroups.com or kamal@sopac.org.

Advocacy and Political Will

1st Asia Pacific Water Summit

The 1st Asia-Pacific Water Summit was held on 3 – 4 December, 2007 in Beppu, Japan, and was attended by six Pacific Island Leaders from the Federated States of Micronesia, Palau, Tuvalu, Nauru, Niue and Kiribati as well as Ministers from Fiji, Cook Islands and Papua New Guinea. SOPAC, as focal point for the Oceania component of the Asia-Pacific Water Forum, provided support to countries participating in the summit and facilitated a special session on water and climate in small island countries.

The large participation by Pacific Heads of State at this Summit was a testament of their strong political commitment to meeting future water challenges and their efforts to cope with an increasingly variable climate, and adapt to the future effects of global climate change.

Attention was raised to the opportunity that presents itself at this moment, to mainstream Climate Adaptation, Disaster Risk Reduction and Water Safety Planning into Integrated Water Resources Management. Combined with adequate priority given to water and sanitation in National development plans and strategies, these measures will be the best approaches to achieve the MDG targets of halving the proportion of people without access to safe drinking water and basic sanitation by 2015 and be prepared for the future for our peoples to live free and worthwhile lives.

The Pacific Leaders attending the summit in Beppu re-affirmed their commitment to accord the highest priority to water and sanitation in our economic and development plans; improve governance, efficiency, transparency, and equity in all aspects related to the management of water, particularly as it impacts on poor communities; take urgent and effective action to prevent and reduce the risks of flood, drought and other water-related disasters; and support the region's vulnerable small island states in their efforts to protect lives and livelihoods from the impacts of climate change.

5th World Water Forum

One of the main outcomes of the 4th World Water Forum held in Mexico in 2006, was the establishment of the Asia Pacific Water Forum with SOPAC as one of its founding members coordinating the inputs from Oceania.

After the successful organization of the 1st Asia Pacific Water Summit APWF members agreed that the 5th World Water Forum in March 2009 is one of the milestones in the process towards the 2nd Asia-Pacific Water Summit to be hosted by Singapore in 2010.

The APWF will organize a side-event at the 5th World Water Forum to enable regional partners to highlight their respective achievements and to invite regional Ministers on water to participate. The Ministerial Statement of the side event together with the summary of the recommendations of the regional partners will be presented to the plenary session for Asia-Pacific with the presentation of the Policy Brief and Beppu Message. As coordinator for the Oceania sub-region SOPAC will assist in drafting and finalizing the Pacific sub-regional part of the Regional Position Paper for Asia and the Pacific.

The 3rd progress report of the partnership will be used as a bases for this contribution. Following the Caribbean participation in the recent Pacific IWRM planning meeting SOPAC was requested

by the Caribbean counterparts at CEHI to investigate option for a joint Pacific Caribbean SIDS input to 5WWF.

Monitoring and Evaluation

Monitoring and evaluation of Pacific RAP implementation 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. www.pacificwater.org.

Beyond the monitoring of individual projects, there is an urgent need to strengthen monitoring mechanisms in countries themselves, to understand where investments are being made, where investment gaps occur, and what the impact is of different interventions and investments. This information is invaluable for national sustainable development planning and sectoral strategic planning and to determine best practices which need to be replicated. Donors monitor for reporting to their national governments/investors, and to improve their programming but how can monitoring across donors and sectors be harmonized?

Partnerships and Networks have a critical role to play in monitoring and recording investment data and understanding the impact of those investments. Capacity building and mainstreaming can often produce intangible benefits. Greater impact may be created by seconding and implanting staff into Pacific Island Governments to improve capacity through mentoring.

Monitoring the impact of water investments can be linked to wider development outcomes, such as health and economic growth indicators. However, it is often difficult to assign attribution due to the lack of control over exogenous variables, lack of data, and lack of statistical rigour. However, the direct outputs of physical infrastructure, services, quality and resource mobilization are clearly measurable and this is not receiving enough attention.

Economic analysis, including benefit-cost analysis, can provide a useful framework for determining the pay-off from proposed investments in the water and sanitation sector. Given scarce resources available for investing in improved water management in Pacific Island Countries, benefit cost analysis can be used to determine which investments are most efficient, i.e. provide the best value for money, by comparing the benefits of a particular project or activity with its costs.

Within SIDS, due to the complex multi-donor environment, multiple cross sectoral impacts (due to the small size and complex hydrogeological nature of the islands) it becomes difficult to determine all the causal links and specific monitoring and evaluation rules need to be determined. Little information exists on private sector involvement (including the value of community engagement, time, and contributions to projects and programmes). It is difficult to determine baseline activities, i.e.: those activities solely for the benefit of a particular sector due to the volume of different donor initiatives. Government funding tends to dominate sectoral funding but private sector funding is often not recorded, included, or is discounted.

SOPAC uses the Pacific Water Action Matrix under the Pacific Partnership Initiative on Sustainable Water Management. By collating information on projects and programmes in the Pacific knowledge is improving on investments made. This data focused approach takes considerable time but by starting the process it provides a valuable benchmark for the future. Completed project information is being sourced now but it is difficult to locate.

A Monitoring and Evaluation Framework with IWRM, Water Use Efficiency (WUE) and Water Safety Planning (WSP) indicators will be established under the GEF and EU Water Facility funded Pacific IWRM programme as well as the AusAID funded WSP programme. These frameworks will include process indicators, environmental and socio-economic stress reduction indicators with linkages to the monitoring of the MDG targets on water and sanitation as well as IWRM.

The various interventions in the water and sanitation sector are or will be imbedded in National sustainable development plans, water sector strategies, policies and action plans and will be incorporated specifically in National IWRM plans which are to be developed over the period 2008-2010.

For starters, countries achievements in building their capacity and adopting concepts through the various regional water sector support programmes are highlighted in the following tables on hydrology and water resources assessments, water quality monitoring, water safety planning, water demand management and IWRM and WUE planning.

Table VII: Hydrological Cycle Observing System (HYCOS)

HYCOS	**Countries**													
Component	CI	FSM	FJ	KI	RMI	NR	NI	PA	PNG	SA	SI	TO	TV	VA
Flood forecasting capability	NA	NA		NA	NA	NA	NA					NA	NA	
Water resources assessment				NA	NA	NA	NA					NA	NA	
Water resources databases														
Drought forecasting														
Groundwater monitoring														
Water quality monitoring														

Not existing — Underway or ongoing

Completed — N/A Not Applicable

Table VIII: Water Quality Monitoring

Water Quality Monitoring	**Countries**													
Component	CI	FSM	FJ	KI	RMI	NR	NI	PA	PNG	SA	SI	TO	TV	VA
Laboratory and monitoring assessment	P				P		P							P
Water quality monitoring training	P				P		P							P
Water quality monitoring network	P				P		P							P
Community based monitoring	P				P		P							P
Water quality database	P				P		P			P				
Global Environmental Monitoring System	P				P		P							P

Not existing — Underway or ongoing

Completed — P — Pilot country

Table IX: Drinking Water Safety Planning

Drinking Water Safety Planning	**Countries**													
Component	CI	FSM	FJ	KI	RMI	NR	NI	PA	PNG	SA	SI	TO	TV	VA
WSP training national stakeholders	P							P				P		P
National water safety plan	P							P				P		P
Urban and rural water safety plans	P							P				P		P
Improvement schedule	P							P				P		P
Monitoring of behaviour change	P							P				P		P
Health surveillance water-borne diseases	P	NA				NA		P	NA		NA	P	NA	P

Not existing — Underway or ongoing

Completed — P — Pilot country

Table X: Water Demand Management

Water Demand Management	Countries													
Component	CI	FSM	FJ	KI	RMI	NR	NI	PA	PNG	SA	SI	TO	TV	VA
Water Demand Management Training	P	P			P		P				P			
System Loss Management Plans	P	P			P		P				P			
Conservation Awareness	P	P			P		P				P			
Benchmarking	P	P			P		P				P			

Not existing

Underway or ongoing

Completed

P Pilot country

Table XI: National Planning for Integrated Water Resources Management and Water Use Efficiency

IWRM and WUE Planning	Countries													
Component	CI	FSM	FJ	KI	RMI	NR	NI	PA	PNG	SA	SI	TO	TV	VA
Inter-sectoral water coordination body														
National water resources policy														
Overarching water resources legislation														
IWRM Plan/Strategy														
Water Use Efficiency Plan														

Not existing

Draft/interim – not formally adopted, functions outlined, fully inter-sectoral or proactive

Formally adopted, fully inter-sectoral and active

Way Forward

If the MDG targets on water and sanitation are to be achieved (reduce by halve the people without access to safe drinking water and basic sanitation before 2015) additional resources have to be made available to the water sector in the Pacific.

With the regional support and capacity building programmes being relatively well established and funded, there is now an increased need to focus on implementation at the national and local levels through a two-pronged approach: i) further improvements in national strategy, planning and institutional arrangements (partly through the development of national IWRM/WEU plans) and ii) increased focus on water and sanitation improvements in the national sustainable development strategies. Prioritization of water and sanitation in the national political agendas as well as harmonization of donor agency programmes, are in this respect key to maximize the impact of actions and would need to be supported by a regional framework for monitoring of investments and results.

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List of Acronyms

3WWF	Third World Water Forum
4WWF	Fourth World Water Forum
ACP-EU WF	African Caribbean Pacific - European Union Water Facility
ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BOM	Bureau of Meteorology (Australia)
BPOA+10	Barbados Programme of Action +10
CBO	Community Based Organisation
CEHI	Caribbean Environmental Health Institute
CIDA	Canadian International Development Agency
CPWC	Collaborative Programme on Water and Climate
CROP	Council of Regional Organisations in the Pacific
CSD	UN Commission for Sustainable Development
DFID	Department for International Development (UK)
DWC	Dialogue on Water and Climate
EPA	Environmental Protection Agency
EU	European Union
FSchM	Fiji School of Medicine
GEF	Global Environment Facility
GIS	Geographical Information Systems
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Sources of Pollution (UNEP)
GWA	Gender and Water Alliance
HYCOS	Hydrological Cycle Observing System
IAS	Institute of Applied Sciences (USP)
IWCAM	Integrated Watershed and Coastal Area Management
IWP	International Waters Project
IWRM	Integrated Water Resources Management
JPfA	Joint Caribbean-Pacific Programme for Action on Water & Climate
JWF	Japan Water Forum
LLEE	Live & Learn Environmental Education
MDG	Millennium Development Goal
MOH	Ministry of Health
NGOs	Non-governmental Organizations
NHS	National Hydrological Service
NIWA	National Institute for Water and Atmospheric Research (New Zealand)
NMS	National Metrological Services
NWP	National Water Partnership
NZAID	New Zealand Agency for International Development
NZHC	New Zealand High Commission
PWA	Pacific Water Association
RAP	Regional Action Plan on Sustainable Water Management
ROC	Republic of China (Taiwan)
SIDA	Swedish International Development Agency
SIDS	Small Island Developing States
SOPAC	South Pacific Applied Geoscience Commission
SPREP	South Pacific Regional Environment Programme
STAR	Science Technology and Resources Network

TCDT	Tonga Community Development Trust
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education Scientific and Cultural Organisation
UNU	United Nations University
USAID	United States Agency for International Development
USP	University of the South Pacific
WHO	World Health Organization
WMO	World Meteorological Organisation
WSSCC	Water Supply and Sanitation Collaborative Council
WSSD	World Summit on Sustainable Development

Appendix 1 Pacific Partnership Matrix of Actions

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 1: Water Resources Management								
1.1.1	Strengthen National Capacity	Pacific HYCOS	SOPAC	Regional	2006	2009	ACP-EU WF	2.3 M Euros
1.1.2	Hydrological Training	WMO/UNESCO/SOPAC/NIWA regional training proposal	SOPAC	Regional	2003	2006	NZAID	240K NZD
1.1.3	Research	Catchment & Communities	DGMWR	Vanuatu	2002	2005	UNESCO	
1.1.3	Research	Hydrology for Life, Environment and Policy (HELP)	DGMWR	Vanuatu and Regional	2005	2007	UNESCO	5K NZD
1.1.3	Research	Groundwater Recharge & Agricultural pollution	PUB, MEW, MLSNR	Kiribati, Tonga	2003	2005	ACIAR	
1.1.3	Research	Rainwater Harvesting	TCDT	Tonga	2002	2004	SIDA	
1.1.3	Research	CROPPRO Surface Water Pollution from Agricultural activities	Min of Agriculture	Fiji, Samoa, Tonga	2001	2004	EU	
1.1.5	Community Water Quality	Catchment & Communities	DGMWR	Vanuatu	2002	2005	UNESCO	
1.1.5	Community Water Quality	River Care	Live & Learn	Fiji	2002	2004	NZAID	
1.1.5	Community Water Quality	International Waters Project (Freshwater Component)	Dept of environment (PROJECT COUNTRIES)	Samoa, Cook Islands	2000	2006	UNDP/GEF	1.5 M USD
1.1.6	Water Quality Capacity Building	Water Quality Monitoring Capacity Building Programme for Pacific Island Countries	WHO	Regional	2006	2008	NZAID	700K FJD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
1.1.7	Communication Exchange NMS/NHS	Dialogue on Water & Climate	SOPAC	Regional	2002	2003	ISDWC	
1.1.6	Communication Exchange NMS/NHS/ WQ	Pacific HYCOS	SOPAC	Regional	2004	2008	EU WF	2.3 M Euros
1.2.1	WRM Planning	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2005	2006	EU PfWG	318K FJD
1.2.1	WRM Planning	Regional & National Water Strategy Development Project	SOPAC	Regional	2001	2004	DFID	
1.2.1	WRM Planning	Strategic Planning Management of Water Resources	ESCAP, SOPAC	Regional	2002	2004	ESCAP	
1.2.1	WRM Planning	Integrated River Basin Management (Nadi Basin Pilot)	ESCAP, MRD Fiji	Fiji	2003	2004	ESCAP	
1.2.1	WRM Planning	WRA Outer Islands	MOID	Cook Islands	2003	2006	AusAID	
1.2.1	WRM Planning	Leadership Seminar Water and Wastewater Managers	East West Centre	Regional	2004	2004	EW Centre USDOI	
1.2.2	Water Supply & Sanitation Technology Information Dissemination	Freshwater Augmentation (Rainwater Tanks, Surface Water Intakes, Infiltration Galleries)	UNEP, IETC, ACTEW, SOPAC	Regional	1998	2000	UNEP IETC	
1.2.2	Water Supply & Sanitation Technology Information Dissemination	Solid & Liquid Waste Disposal Directory	SOPAC	Regional	1999	2003	UNEP IETC	
1.2.2	Water Supply & Sanitation Technology Information Dissemination	Sanitation Park Demonstration Facility	FSchM,	Regional	2003	2004	NZAID WHO	
1.2.3	Rainwater Harvesting Programmes	Rainwater Harvesting Best Practice & Research	TCDT, MoH	Tonga	2002	2004	UNEP	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
1.2.4	Abstraction Pilot Studies (SW, GW, Solar)	Scavenger Wells	MWSC	Marshall Islands	2002	2003	UNDESA	
1.2.4	Abstraction Pilot Studies (SW, GW, Solar)	Gallery designs	WEU	Kiribati	2004	2004	WEU	
1.2.5	Renewable energy (solar pumping)	SPC/SOPAC Regional Renewable Energy Projects	SPC, SOPAC, SPREP	Regional		2003		
1.2.7	Demand Management & Conservation	Regional Water Demand Management Programme	SOPAC	Regional	2006	2009	NZAID	600K FJD
1.2.7	Demand Management & Conservation	Regional Awareness & Education Programmes – World Water Day	Live & Learn,	Regional	Annual	Annual	Taiwan	31K FJD
1.2.8	National guidelines for drinking water quality	Programme for Water Safety Plans in Pacific Island Countries	WHO, SOPAC	Regional	2005	2007	AUSAID	500K AUD
1.2.8	National guidelines for drinking water quality	Water Quality Monitoring Capacity Building Programme for Pacific Island Countries	WHO	Regional	2006	2008	NZAID	700K FJD
1.2.9	WQ Monitoring & Mitigation Standards	Water Quality Monitoring Capacity Building Programme for Pacific Island Countries	WHO, SOPAC, IAS-USP	Regional	2006	2009	NZAID	707K NZD
1.2.10	Pollution prevention through better sanitation	Sanitation Park Demonstration Facility	FSchM	Regional	2003	2004	NZAID WHO	
1.2.10	Pollution prevention through better sanitation	International Waters Programme (Coastal Component)	SPREP	Tuvalu, Kiribati, Fiji	2000	2006	GEF UNDP	
1.2.11	Water Sector Community participation	Healthy Islands Programme	MoH Fiji	Regional			WHO	
1.2.11	Water Sector Community participation	Rural Sanitation Demonstration Facility & Community Participation Project	FSchM, MoH Fiji	Regional	2003	2004	NZAID WHO	
1.2.11	Water Sector Community participation	Regional Awareness & Education Programmes – World Water Day	Live & Learn Environmental Education	Regional	Annual	Annual	NZHC BHC DFID	31K FJD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
1.3.1	Implement IWRM principles & practices	Strategic Planning Management of Water Resources	ESCAP	Regional	2002	2005	ESCAP	
1.3.1	Implement IWRM principles & practices	Island Systems Management programme	SOPAC	Regional	2002	2007	EU EDF 8 EDF 9	
1.3.1	Implement IWRM principles & practices	Sustainable Integrated Water Resources Management in Pacific Island Countries	Pacific Partnership	Regional	2004	2005	GEF UNDP UNEP	
1.3.1	Implement IWRM principles & practices	Sustainable Integrated Water Resources for Wastewater Management in Pacific Island Countries	Pacific Partnership	Regional	2006	2008	GEF UNDP UNEP	695 K USD
1.3.1	Implement IWRM principles & practices	Sustainable Integrated Water Resources Management in Pacific Island Countries	Pacific Partnership	Regional	2007	2012	GEF Full Project UNDP UNEP	10.7M USD
1.3.1	Implement IWRM principles & practices	Pacific SIDS Integrated Water Resources Planning Programme	Pacific Partnership	Regional	2007	2010	EU WF	2.2M Euro
1.3.1	Implement IWRM principles & practices	Pacific Programme for Water Governance	SOPAC	Regional	2005	2006	EU PfWG	318K FJD
1.3.1	Implement IWRM principles & practices	Virtual Water Learning Centre for IWRM	SOPAC, USP, UNU, UNDESA	Regional	2005	2006	UNDESA	140K FJD
1.3.2	Appropriate national legislation & planning	Strategic Planning Management of Water Resources	ESCAP, SOPAC	Regional	2002	2005	ESCAP	
1.3.2	Appropriate national legislation & planning	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2003	2005	EU PfWG	318K FJD
1.3.2	Appropriate national legislation & planning	IWRM Overview	SOPAC	Regional	2004	2004	GWP	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
1.3.3	Implement catchment management practices	Hydrology for Life, Environment and Policy (HELP) Symposium	UNESCO	Regional	2005	2005	UNESCO	5K FJD
1.3.3	Implement catchment management practices	Water Governance Programme	SOPAC	Regional	2005	2006	EU PfWG	318K FJD
1.3.3	Strengthen National Capacity	Water Quality Monitoring Capacity building Programme in Pacific Island Countries	SOPAC, WHO, IAS-USP	Regional	2006	2009	NZAID	707K NZD
1.3.3	Implement catchment management practices	Catchment & Communities	DGMWR	Vanuatu	2002	2004	UNESCO	
1.3.3	Implement catchment management practices	Hydrology for Life, Environment and Policy (HELP)	DGMWR	Vanuatu	2005	2006	UNESCO	5 K FJD
1.3.3	Implement catchment management practices	Hydrology for Life, Environment and Policy (HELP)	MRD LWRM LandCare	Fiji	2007	2008	UNESCO	10 K FJD
1.3.3	Implement catchment management practices	Pohnpei Forestry Conservation Project		FSM	2005	2006	JFIT UNESCO	
1.3.3	Implement catchment management practices	CROPPRO Surface Water Pollution from Agricultural activities	Min of Agriculture	Fiji, Samoa, Tonga	2001	2005	EU	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 2: Island Vulnerability								
2.1.1	Enhanced Application of Climate Information	Piloting Climate Change Adaptation to Protect Human Health	Fiji School of Medicine, Fiji Ministry of Health, World Health Organisation	Fiji	2006	2007	GEF	469K USD
2.1.1	Enhanced Application of Climate Information	Pacific Islands Global Climate Observing System	SPREP	Regional			AusAID	
2.1.1	Enhanced Application of Climate Information	Pacific Island Climate Update (ICU)	NIWA, SOPAC, SPREP	Regional	2000	2008	NZAID	369K NZD
2.1.1	Enhanced Application of Climate Information	Pacific Islands Adaptation to Climate Change (PACC)	SPREP	Regional	2006	2007	GEF	350K USD
2.1.1	Enhanced Application of Climate Information	Climate Change Adaption in Rural Communities in Fiji	Pacific Centre for Environment and Sustainable Development (PACE-SD)	Fiji	2006	2009	AusAID	400K AUD
2.1.1	Drought Prediction Schemes	Pacific Island Climate Update (ICU)	NIWA, SOPAC, SPREP	Regional	2000	2008	NZAID	369K NZD
2.1.1	Drought Prediction Schemes	Pacific Historical Climate Data Rescue	NOAA, NIWA	Regional	2004	2008	NOAA	180K USD
2.1.1	Drought Prediction Schemes	Climate Information and Products for Pacific Communities	SPREP	Regional	2007	2008	NZAID	272K USD
2.1.1	Increased Capacity Hazard & Risk Management	Pacific Island Climate Update (ICU)	NIWA, SOPAC, SPREP	Regional	2000	2006	NZAID	369K NZD
2.1.1	Climate Forecasting Based Risk Reduction	Pacific Historical Climate Data Rescue	NOAA, NIWA	Regional	2004	2008	NOAA	180K USD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
2.1.1	Enhanced Application of Climate Information	Pacific Island Climate Update (ICU)	NIWA, SOPAC, SPREP	Regional	2000	2006	NZAID	NZD 369K
2.1.1	Climate Forecasting Based Risk Reduction	Pacific Island Climate Update (ICU)	NIWA, SOPAC, SPREP	Regional	2000	2006	NZAID	369K NZD
2.1.1	Enhanced application of climate information	Pacific HYCOS	SOPAC	Regional	2005	2008	EU WF	2.3 M Euros
		Piloting Climate Change Adaptation to Protect Human Health		FIJI	2006		GEF	
2.1.1	Enhanced application of climate information	Pacific Island Climate Prediction Programme	BOM	Regional	2004	2006	AusAID	
2.1.2	Drought Prediction Schemes	Pacific regional hydrological training programme	SOPAC	Regional	2003	2006	NZAID	240K NZD
2.1.3	Climate Information & Prediction Water Sector Applications	PI Training Institute for Climate Extremes	NIWA,	Regional	2003	2006	NOAA	
2.1.3	Climate Information & Prediction Water Sector Applications	Pacific Island Climate Prediction Programme	BOM	Regional	2004	2006	AusAID	
2.1.3	Climate Information & Prediction Water Sector Applications	US-NZ Climate Accord Partnership Programme	NIWA, NOAA, PEAC	Regional	2003	2006	NOAA	
2.2.1	Increased Capacity Hazard & Risk Management	Comprehensive Hazard And Risk Management (CHARM) Project	SOPAC	Regional	2000	2005	AusAID	
2.2.2	Increased Capacity Hazard & Risk Management	EW Centre Leadership Seminar Disaster Preparedness for Water Managers	East West Centre	Sub-regional	2004	2005	USDOI NZAID	
2.2.3	Increased Capacity Hazard & Risk Management	Island Systems Management programme	SOPAC	Regional	2002	2007	EU EDF 8 & EDF 9	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
2.2.3	Climate Analysis as part of Hazard & Risk Management	Pacific Island Climate Prediction Programme Phase 1	BOM	Regional	2004	2006	AusAID	
2.2.5	Climate Forecasting Based Risk Reduction	Pacific Island Climate Prediction Programme Phase II	BOM	Regional	2007	2009	AusAID	
2.2.5	Climate Forecasting Based Risk Reduction	Pacific HYCOS	SOPAC	Regional	2004	2008	EU WF	2.3 M Euro
2.2.5	Climate Forecasting Based Risk Reduction	Pacific regional hydrological training programme	SOPAC	Regional	2004	2006	NZAID	480K NZD
2.2.5	Climate Forecasting Based Risk Reduction	Dialogue on Water & Climate	SOPAC	Regional	2002	2003	ISDWC	
2.2.5	Climate Forecasting Based Risk Reduction	US-NZ Climate Accord Partnership Programme	NIWA,NOAA, PEAC,	Regional	2003	2006	NOAA	
2.2.5	Climate Forecasting Based Risk Reduction	Climate Prediction Tools	NIWA	Regional	2005	2007	NZAID	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 3: Awareness								
3.2.1	Householder on-site W&S training programmes	Kiribati - Ecosanitation Training					Taiwan	
3.1.3	Ensure quality Community Participation	Guidelines for Community Participation in Water Supply and Sanitation: "Tapping the Connections between Water and People"	SOPAC	Regional	2003	2004	DFID	
3.1.3	Ensure quality Community Participation	Guidelines for Community Participation in Rainwater Harvesting: "Harvesting the Heavens"	SOPAC	Regional	2001	2005	UNEP SIDA	
3.1.4	Improved W&S for squatter and rural dwellers	Wailea Squatter Settlement Project - IWP and DOE	IWP-FIJI, DOE	Fiji	2005	2006	DOE GEF	
3.2.1	Toolboxes for water education for all society	Sanitation Park facility for training EHO's on rural sanitation CP	Fiji School of Medicine, Fiji MoH	Regional	2003	2004	NZAID	
3.2.1	Toolboxes for water education for all society	Water Education Toolkit	Live & Learn	Regional	2002	2003	UNEP NZAID	
3.2.1	Toolboxes for water education for all society	River Care Pilot Project for watershed community management	Live & Learn	Fiji, Vanuatu Solomons	2002	2004	NZAID	
3.2.1	Support Theatre and Media Groups use	Water and Youth Water Awareness Programme	Live & Learn	Regional	2003	2004	DFID	
3.2.2	Increased capacity for information dissemination (government, NGO, CBO)	Regional NGO workshops on Theme 3 Awareness Implementation	WWF, L&L, ANU, national NGOs, AusAID, Wateraid	Regional	2003	2003	AusAID DFID	
3.2.3	Strengthen capacity in water and wastewater management	ADB Technical Assistance Community Education and Awareness Program (CEAP)	ADB Technical Assistance Team, WSD	Suva-Nausori	2005		ADB	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
3.3.1	Water Education in the national curriculum	World Water Day Campaigns	Live & Learn	Regional	2002	2008	DFID BHC NZHC	
3.3.2	Curriculum developers and teachers trained	World Water Day Campaigns	Live & Learn	Regional	2002	2008	DFID BHC NZHC	
3.3.2	Curriculum developers and teachers trained	Pacific Freshwater Education and Awareness Kit	SOPAC	Regional	2001	2008	DFID NZHC UNESCO	
3.4.1 3.4.2	National stakeholder consultation	PNG Roll-Out of the Pacific RAP	PNG Govn, PNG WB	Papua New Guinea	2003	2004	PNG DFID SOPAC	
3.4.1 3.4.2	National stakeholder consultation	Samoa Water for Life Consultation	Samoa Govn, SWA	Samoa	2002	2008	EU	
3.4.1 3.4.2	National stakeholder consultation	Fiji National High level water strategy consultations	Fiji Govn, MRD	Fiji	2002	2008	ESCAP	
3.4.1 3.4.2	National stakeholder consultation	Fiji Water Governance Programme	Live & Learn, Fiji Provincial Councils	Fiji	2003	2005	EU	318 K FJD
3.4.1 3.4.2	National stakeholder consultation	Tuvalu Water Master Plan Review	Tuvalu Govn,	Tuvalu	2003	2003	Tuvalu	
3.4.3	Improved community policy & legislation awareness	Education for Sustainable River and Water Conservation	Live & Learn	Vanuatu	2003	2005	ADB	
3.4.3	Improved community policy & legislation awareness	Community Participation components of Kiribati National Water Resources Assessment	Kiribati Govn, Consultants,	Kiribati	2003	2004	ADB	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 4: Technologies								
4.1.1	Appropriate Technology Selection	Practical Training in Sustainable Sanitation	IWP Tuvalu	Tuvalu	2006	2006	GEF	
4.1.2	Island Specific Training Programmes	Improving Sanitation and Wastewater Management in PICs	UNEP/GPA, SOPAC	Fiji	2005		UNEP GPA	36K USD
4.1.2	Island Specific Training Programmes	Wastewater Management Training in Guam and PNG	SOPAC, UNEP/GPA,	Guam and PNG	2006	2006	UNEP GPA	34K USD
4.1.2	Appropriate Technology Selection	Minimising nutrient release from animal waste in a Chinese Model project	Coastal and Ocean Management Institute	Xiamen, China	2007	2007	UNEP GPA	
4.1.2	Appropriate Technology Selection	Eco-sanitation Training	Environment and Conservation Division	Kiribati	2007	2007		
4.1.3		Technical Assistance to the FSM for Preparing the Omnibus Infrastructure Development		FSM	2001	2002	ADB Japan	814K USD
4.1.3	Asset management capacity building/planning	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
4.1.3	Asset Management Wise Practice	Pacific Utilities Benchmarking	PWA	Regional	2001	2005	ADB	
4.1.4 4.2.1	Appropriate Technology Selection	Rainwater Harvesting Guidelines: "Harvesting the Heavens"	SOPAC	Regional	2001	2005	UNEP	
4.1.4 4.2.1	Appropriate Technology Selection	Directory of Environmentally Sound Technologies for Wastewater Management	SOPAC	Regional	1998	2002	UNEP	
4.1.5	Monitoring of Water Resources	Hydrological Training Programme	SOPAC	Regional	2003	2004	NZAID	240K NZD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
4.1.5	Monitoring of Water Resources	Hydrological Support Programme	SOPAC, NIWA	Regional	2005	2007	NZAID	
4.1.6	Disaster preparedness for W&S assets	Disaster preparedness Guidelines for Water Utilities	SOPAC	Regional	2001	2002	WSSCC	
4.1.6	Disaster preparedness for W&S assets	Leadership Seminar Disaster Preparedness for Water Managers	EW Centre	Regional	2004	2005	USDOI NZAID	
4.2.1	Reduce Unaccounted for Water	Regional Water Demand Management Programme	SOPAC	Regional	2005	2007	NZAID	600K FJD
4.2.2 4.3.4	Training Programmes for UFW	Regional Water Demand Management Programme	SOPAC	Regional	2006	2009	NZAID	600K FJD
4.2.4	Water conservation devices, awareness etc	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
4.2.4	Water conservation devices, awareness etc	Water and Youth Water Conservation Project	Live & Learn	Vanuatu, Solomons	2003	2004	DFID	
4.2.4	Water conservation devices, awareness etc	World Water Day 2000/01/02/03 Regional Awareness Campaigns	Live & Learn	Regional	2001	2004	Various	
4.2.4	Water conservation devices, awareness etc	Pacific Freshwater Education & Awareness Kit	SOPAC	Regional	2001	2003	NZAID UNESCO	
4.3.1	Human resources development planning.	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
4.3.2	Training Needs Analyses	Wastewater Training in the Pacific region	SOPAC/IAS	Regional	2005	2007	UNEP GPA	50K USD
4.3.2	Training Needs Analyses	See paper Skeet A PWA	PWA Skeet Arasmith	Northern Pacific	2003	2005	USDOI	
4.3.2	Training Needs Analyses	Regional Water Demand Management Programme	SOPAC	Regional	2005	2007	NZAID	600K FJD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 5: Institutional Arrangements								
5.2.2	National water planning review	Fiji Water Strategy Development	Fiji, ESCAP	Fiji	2002	2004	ESCAP	
5.1	Initiation of national vision development process	Papua New Guinea 3WWF follow-up national water consultations	PNG	Papua New Guinea	2003	2004	PNG DFID	
5.1	Prepare draft consultation strategy for national vision	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2005	2006	EU PfWG	318 K FJD
5.1	Inclusion and consultation with stakeholders	Fiji Water Strategy Development	Fiji, ESCAP	Fiji	2002	2004	ESCAP	
5.1	Seek stakeholders' agreement for consultation	PNG National Water Consultations	PNG	PNG	2003	2004	DFID	
5.1	Develop national vision	Samoa EDF9 National Water Resource Management Strategy	Samoa	Samoa	2002	2005	EU	
5.1	Promotion, education and community awareness of national vision	Tuvalu Water & Sanitation Master Plan Review	Tuvalu	Tuvalu	2003	2004	Tuvalu	
5.2.1	National water legislation review	Kiribati National Water Resources Assessment and Management	Kiribati	Kiribati	2003	2004	ADB	40 K FJD
5.2.2	National water planning review	Kiribati National Water Resources Assessment and Management	Kiribati	Kiribati	2003	2004	ADB	40K FJD
5.2.2	National water planning review	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2005	2006	EU PfWG	318 K FJD
5.2.2	National water planning review	Samoa EDF9 National Water Resource Management Strategy	Samoa	Samoa	2002	2005	EU	
5.2.2	National water planning review	Tuvalu Water & Sanitation Master Plan Review	Tuvalu	Tuvalu	2003	2004	Tuvalu	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
5.2.2	National water planning review	Marshalls Water Master Plan Review	Marshalls	Marshalls	2002	2002	Marshalls	
5.2.2	National water planning review	Leadership Seminar Disaster Preparedness for Water Managers	EW Centre	Regional	2004	2005	USDOI NZAID	
5.3.1	Appropriate institutional arrangements & reform	ADB Technical Assistance Community Education and Awareness Program (CEAP)	ADB Technical Assistance Team, WSD	Suva-Nausori	2005		ADB	
5.3.1	Appropriate institutional arrangements & reform	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2005	2006	EU PfWG	318K FJD
5.3.1	Appropriate institutional arrangements & reform	Apia Wastewater Restructuring	ADB	Samoa	2002	2004	ADB	
5.4.1	National awareness campaigns	World Water Day 2000/01/02/03 Regional Awareness Campaigns	SOPAC	Regional	2001	2004	Various	31K FJD
5.4.5	Establish multi-stakeholder consultation mechanisms	Papua New Guinea 3WWF follow-up national water consultations	PNG	Papua New Guinea	2003	2004	PNG DFID	
5.4.5	Establish multi-stakeholder consultation mechanisms	Samoa EDF9 National Water Resource Management Strategy	Samoa	Samoa	2002	2005		
5.4.5	Establish multi-stakeholder consultation mechanisms	Fiji Water Strategy Development	Fiji, ESCAP	Fiji	2002	2004	ESCAP	
5.4.5	Establish multi-stakeholder consultation mechanisms	Pacific Programme for Water Governance	SOPAC	Solomon Islands, Fiji, Kiribati	2005	2006	EU PfWG	318 K JD
5.4.5	Establish multi-stakeholder consultation mechanisms	Apia Wastewater Restructuring	ADB	Samoa	2002	2004	ADB	
5.4.7	Promotion of participatory rural management	Guidelines for Community Participation in Water Supply and Sanitation	SOPAC	Regional	2003	2004	DFID	
5.4.8	Promote Gender assessments	Guidelines for Community Participation in Water Supply	SOPAC	Regional	2003	2004	DFID	

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
5.5.1	Needs assessments for institutional strengthening	Strategic Planning Management of Water Resources	ESCAP	Regional	2002	2005	ESCAP	
5.5.2	Develop training programme on good water governance	Strategic Planning Management of Water Resources	ESCAP	Regional	2002	2005	ESCAP	
5.5.5	Improve regional partnerships	Pacific Partnership Initiative on Sustainable Water Management	Pacific Partnership facilitated by SOPAC and USP	Regional	2002	2006	ADB	110K FJD

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
Theme 6: Finance								
6.1.1	Improve regulatory water governance	Strategic Planning Management of Water Resources	ESCAP,	Regional	2002	2005	ESCAP	
6.1.2	Include financing & cost recovery requirements in master plans	Strategic Planning Management of Water Resources	ESCAP,	Regional	2002	2005	ESCAP	
6.1.4	Promote separate uses of potable and non-potable water	Freshwater Augmentation Sourcebook (eg multiple source water uses, Salt water sewerage systems)	SOPAC	Regional	1998	2000	UNEP IETC	
6.1.9	Improve demand management	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
6.2.1	Develop business plans	Strategic Planning Management of Water Resources	ESCAP	Regional	2002	2005	ESCAP	
6.2.2	Improve billing & collection procedures	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
6.2.4	Establish sound asset management	Regional Water Demand Management Programme	PWA	Regional	2005	2007	NZAID	600K FJD
6.2.9	Increase public awareness of need for cost recovery.	World Water Day 2000/01/02/03 Regional Awareness Campaigns	SOPAC	Regional	2001	2004	Various	
6.3.3	Introduce benchmarking	Pacific Region Water Utilities Benchmarking Project	PWA	Regional	2000	2004	ADB	
6.3.3	Introduce benchmarking	Regional Water Demand Management Programme	PWA,	Regional	2005	2007	NZAID	600K FJD
6.3.4	Transparency to all stakeholders							

Key Message Action	Pacific RAP Identification	Action	Implementing Agencies	Location	Start Date	Finish Date	Donor	Funding
6.5.2	Increase funding for rural water and sanitation							
6.5.4	Local Trusts and savings schemes to fund rural water supply							
6.5.1	Formulate policy for rural W&S provision	Kiribati National Water Resources Assessment and Management	Kiribati	Kiribati	2003	2004	ADB	
6.5.3	Strengthen rural water committee O&M self-financing	Guidelines for Community Participation in Water Supply and Sanitation: "Tapping the Connections between Water and People"	SOPAC	Regional	2003	2004	DFID	