

**Pacific Position Paper  
in preparation of the  
4<sup>th</sup> World Water Forum**

**FINAL REPORT**

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## **Introduction**

The particular vulnerability and specific needs of Small Island Countries was acknowledged by the World Water Council through the inclusion of a “Water in Small Islands Countries” theme at the 3<sup>rd</sup> World Water Forum (3WWF) held in Kyoto 2003.

The regional consultation in preparation for 3WWF resulted in a strategic framework for the region to address small island countries water and sanitation issues, this being the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP), and a Type II Partnership known as the Pacific Partnership Initiative on Sustainable Water Management.

The “Water in Small Islands Countries” session in Kyoto allowed the sharing of issues and strategies with other small island regions of the Caribbean and Indian Ocean, and which resulted in a Water in Small Island Countries Session Statement; the Small Island Countries Portfolio of Water Actions; the Joint Programme for Action on Water and Climate (JPfA); and the Caribbean and Pacific Dialogue on Water and Climate Synthesis Reports.

Regional, national and local action programmes have been developed since 2003 based on the above strategies and partnerships and are in various stages of development and implementation. The Japan Water Forum (JWF) that arose from the Japanese 3WWF Secretariat approached the South Pacific Applied Geoscience Commission (SOPAC) 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 4<sup>th</sup> World Water Forum (4WWF) 16-22 March 2006 in Mexico.

The offer by the JWF 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 Portfolio of Water Actions and in particular the Pacific Regional Action Plan (RAP).

Opportunities to provide input to the Pacific position paper was possible through various regional water and wastewater consultations and meetings leading up to the Mexico Forum.

The Science, Technology and Research network (STAR) Water Working Group meeting on 26<sup>th</sup> September 2005 at the Kitano Hotel in Apia, Samoa held in association with SOPAC’s 34<sup>th</sup> Annual Session, provided a first opportunity for input into a draft Pacific Paper. The consultation was held in collaboration with the JWF and the Pacific Water Association (PWA).

The draft paper was placed on the Japan Water Forum Website [www.waterforum.jp/eng/apsubregions](http://www.waterforum.jp/eng/apsubregions) and circulated through the Pacific Partnership Initiative for further comment.

The position paper covers the basic characteristics and main challenges of the Pacific region, the developed strategies, regional and national actions, lessons learned and future perspectives as well as a reference to key documents.

## **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<sup>2</sup> of land with approximately 7 million inhabitants, speaking in the order of 1,000 different languages, spread across 180 million km<sup>2</sup> 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 3<sup>rd</sup> 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 past 3 years have seen an unprecedented period of strategic water sector development in the Pacific region.

There are three main strategic documents that now drive regional water and sanitation development 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 (RAP)** was completed in 2002, Sigatoka Fiji in preparation for the Water in Small Island Countries session at the 3<sup>rd</sup> World Water Forum in 2003, Kyoto.
- 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 at the WHO facilitated workshop on Water Quality Standards and Monitoring in Pacific Island Countries (Nadi, Fiji, 7-10 February 2005).

### **Pacific Regional Action Plan (RAP)**

The overarching Pacific Regional Action Plan (RAP) on Sustainable Water Management 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 3<sup>rd</sup> 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.

### 3<sup>rd</sup> 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 3<sup>rd</sup> 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 and Island Systems Management (ISM) in the Pacific. 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 3<sup>rd</sup> 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 using the HYCOS model**
- ii) **Water demand management programme**
- iii) **(Drinking) water quality monitoring and capacity building**
- 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 1 Overview of Recent Strategic Regional Water and Sanitation Milestones**

| Event                                                                      | Venue, Year        | Organisers              | Major Outcomes                                                              |
|----------------------------------------------------------------------------|--------------------|-------------------------|-----------------------------------------------------------------------------|
| Pacific Wastewater Consultation                                            | Majuro, 2001       | SOPAC/SPREP/<br>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<br>3 <sup>rd</sup> World Water Forum       | Kyoto, 2003        | ADB/DWC/<br>SOPAC       | Portfolio of Water Actions & Joint Programme of Action on Water and Climate |
| Drinking Water Quality & Health                                            | Nadi, 2005         | WHO                     | Framework for Action                                                        |
| BPOA+10                                                                    | Mauritius, 2005    | United Nations          | Mauritius POI                                                               |
| 3WWF Review                                                                | Apia, 2005         | SOPAC/JWP/<br>PWA       | 4WWF Position Paper                                                         |

### **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 Pacific paper for the 4WWF is focussed on reviewing the implementation and identifying 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 Annex 1.

**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 the 3WWF a number of water resources management regional programmes have been developed. In most cases implementation is in the early stages. The focus 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* |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------|--------------------|
| Hydrological Training - 3 year (2004-2006) programme to train PIC hydrology technicians in data acquisition, analysis and interpretation to improve water resources, catchment management and IWRM.                               | WMO<br>SOPAC<br>NIWA<br>UNESCO | NZAID           | 480K               |
| Water Safety Plans – 2 year (2006-2007) programme to develop and implement a ‘catchment to consumer’ risk-management approach to safe drinking water.                                                                             | WHO<br>IAS<br>SOPAC            | AusAID          | 600K               |
| Virtual Water Learning Centre - USP, on behalf of UNU, deliver a postgraduate level pilot course in IWRM to improve training and education in the water sector.                                                                   | USP<br>UNU<br>SOPAC            | UNDESA          | 140K               |
| Rainwater Harvesting – Pilot project completed in Tonga with results published, disseminated and being promoted region-wide.                                                                                                      | UNEP<br>SOPAC<br>TCDT          | SIDA            |                    |
| Sanitation and Hygiene – Technical advice and assistance                                                                                                                                                                          | GPA<br>SOPAC                   | Taiwan/<br>ROC  | 150K               |
| Water Quality Monitoring (concept approved) – 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<br>IAS<br>SOPAC            | NZAID           | 700K               |

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

**National Action Implementation – Water Resources**

IWRM provides the framework to ensure environmental, social, technical and economic factors are taken into account in managing water resources in the present and for the future. Effective water resources management requires an understanding of the interrelated components of the physical influences on quality and quantity of the resource, the multiple needs of those who wish to use the physical resource, and the political and social contexts that influence people’s actions. Widespread adoption and implementation of IWRM in countries throughout the Pacific has not yet occurred. Some countries are making good progress on some of the components.

National interventions in the management of water resources include the use of GIS in the **Cook Islands** to map the catchment and infrastructure, and a programme in **Niue** to understand the groundwater resource for protection of from agricultural impacts. In **Vanuatu** in addition to carrying water quality and quantity

assessments there has been the development of water legislation. Progress towards implementing IWRM has taken place in **Samoa, Vanuatu** and at a local level in **Fiji**. The USP has developed a virtual IWRM learning centre. In many countries many of the usual problems associated with legislation, skills and the serious lack of capacity still exist. Land ownership issues and the particular matter of dealing with community ownership and customary land still pose a major challenge.

**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.

| Intervention Area                                                                                                                                                        | Partners               | Strategic Donor | Indicative Budget* |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|--------------------|
| Island Climate Update - A multi-disciplinary, multi-national project providing three months regional climate forecasts.                                                  | NIWA<br>SOPAC<br>SPREP | NZAID           | 290K               |
| Pacific Island Climate Prediction Programme - The project aims to develop the seasonal prediction capacity in Pacific Island Countries.                                  | BOM<br>NMS             | AusAID          | 2M                 |
| Capacity Building to Enable Adaptation Measures in Pacific Countries (CBDAMPIC) - The broad aim is to increase the ability to cope with impacts from a changing climate. | SPREP<br>MOE           | CIDA            |                    |
| 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<br>SOPAC          | ADB             | 100K               |

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

National Action Implementation – Island Vulnerability

In small island nations the influence of climate, and extreme weather events on the hydrological cycle are particularly critical to water resource management. A number of countries are developing closer linkages between water resource managers and meteorological services who in turn have started providing climate products. Some countries have the capacity to assess risks posed by extreme climate events. However, in general, suitable long term data sets do not exist in most countries. Saline intrusion into the aquifer as well as managing extreme events such as droughts, floods and hurricanes continues to be a challenge confronting water resource managers dealing with a range of environments from basin scale to entire islands.

**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

It is imperative that water and sanitation education and awareness reach all levels of society. Regional programmes such as the World Water Day campaign and community participation continue to be supported and provide materials to several countries in the region. However improvement in this area requires national and local action. An example of a regional programme to initiate local action is provided by the International Waters Programme (IWP) implemented by SPREP in collaboration with UNDP under Global Environment Facility funding. IWP designed a programme that fosters an improved awareness among communities of the root causes of environmental problems and to develop low-cost self-help solutions. These community-based solutions and management plans can in turn facilitate: strengthened management of water and sanitation issues at the national level.

| Intervention Area                                                                                                                                       | Partners              | Strategic Donor | Indicative Budget* |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------|--------------------|
| Promotion of Community Participation and Gender Equity – Dissemination of materials, advice and assistance                                              | WSSCC<br>GWA<br>SOPAC | Taiwan/<br>ROC  | 150K               |
| World Water Day – Development of awareness and education materials & annual event for schools & public                                                  | LLEE<br>SOPAC         | Taiwan/<br>ROC  | 105K               |
| International Waters Programme (IWP) - Designed to help communities to understand the root causes of environmental problems and develop local solutions | SPREP<br>UNDP         | GEF             | 15M<br>8.7M USD    |

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

### National Action Implementation - Awareness

At the national level many countries have instituted public awareness campaigns on water and environmental issues. Efforts include development of education tools for communities and schools, media campaigns, water conservation education campaigns, consumer confidence reporting by water providers and promotional activities such as art competitions, youth forums and awareness raising days.

Some country examples are:

- **Guam, American Samoa and CNMI** are requiring public water suppliers to submit a consumer confidence report on the quality of their water to all consumers on an annual basis.
- In **Fiji** as part of an ADB funded infrastructure project, a public information programme has been established to consult with consumers and develop information and education materials based on their identified needs. The project aims to establish a permanent customer relations section within the Water and Sewerage Department.
- In **Fiji** and **Tonga** WHO and LLEE have been developing a Community Water Monitoring Toolkit aimed to increase awareness and action towards public health protection at the community level.
- In the **Solomon Islands, PNG** and **Fiji** LLEE also develop and implement programmes for schools and communities in water governance and teacher education.
- **Samoa's** rural water supply project includes a component to promote responsible management and use of water, the importance of conservation and proper water meter maintenance.
- **American Samoa** has an initiative to promote water conservation and improved sanitation in rural areas
- In **Vanuatu**, the Department of Environment collaborated with the private sector to support a sanitation and water-supply workshop which was conducted for 35 indigenous owners of small scale eco-resorts, providing them with technical skills to construct appropriate on-site systems that would improve tourism, enhance family and village livelihood, and protect the local environment.
- In **Fiji** a partnership was established with the Ministry of Health, WHO, and the Fiji School of Medicine to design and construct "Sanitation Park", an interactive training and information centre for environmental health students from the region, and local communities.

Funding continues to be a challenge for all PICs as environmental awareness campaigns are rarely given high priority by government. The region has limited funding resources therefore the problem of funding environmental outreach becomes even more intensified.

Within many countries there is a diverse language and culture base making materials that are developed effective in reaching only a limited population. This also restricts the sharing of materials within and among countries. Translation of materials adds a time and cost burden to awareness campaigns.



Although there has been progress in targeted areas, broader awareness at all levels is critical to achieve ongoing community participation and awareness. More than 80% of the population of PICs use on-site water supply and sanitation systems, therefore management of water resources and pollution control is largely in the hands of local families and communities.

There is a need to build capacity and produce teaching and learning tools to mainstream water and sanitation education into the formal education systems at all levels as well as the establishment of a mechanism for fostering information exchange and sharing on a regional level. In addition in order to foster information exchange, maximize scarce resources and realise mutual benefits to environmental and water awareness campaigns organizations (government, NGOs, CBOs) must form a partnership network within countries. Additionally, there must be more practical training of local organizations and communities on appropriate and practical approaches to water treatment and wastewater management such as composting toilets, grey-water reuse, rainwater harvesting and slow sand filtration. Technology transfer should also encourage local innovation.

**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

Some utilities in the region have started or increased efforts to reduce unaccounted for water in the past few years. To support these efforts progress has been made in developing a regional water demand management programme. 2005 has also seen the start of the implementation of the Global Programme of Action for the protection of the Marine Environment from Land-Based Sources of Pollution (GPA) through the development of a Pacific wastewater management training programme which aims to provide those working in the wastewater field with the tools to select and manage appropriate infrastructure.

| Intervention Area                          | Partners                      | Strategic Donor | Indicative Budget* |
|--------------------------------------------|-------------------------------|-----------------|--------------------|
| Wastewater Management                      | GPA, IAS, UNESCO-IHE<br>SOPAC | USAID           | 150K               |
| Water Demand Management (concept approved) | PWA<br>SOPAC                  | NZAID           | 600K               |

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

National Action Implementation - Technology

Progress towards the reduction of unaccounted for water is evident in **Fiji, PNG and Samoa** through the conduct of leak detection activities. However, results appear to reflect that considerable work is still needed in this area. Some efforts towards metering all customers has been realized, but considerable progress is still necessary in this area. The challenge that remains in implementing metered water is the need to improve the infrastructure such as pipelines and treatment facilities to ensure better water quality. Also, to ensure billing accuracy and effective monitoring, meter calibration bench(es) and equipment must be installed.

Most, if not all, of the member countries must establish clear benchmarking requirements as it is a critical step to improving their performance in the water sector. There are only a few countries that are benefiting from proper sewerage system and sanitation facilities. **Samoa**, however, is now addressing this major issue through a 4 year project concentrating only around the urban area.

The challenges and constraints that remain for sustainable water management technology are insufficient funds to purchase essential equipment for activities such as metering, accuracy testing, river flow gauging, leak

detection and water quality and quantity monitoring. There are also limitations with respect to the proper use and implementation of updated technologies. Several countries lack the technical capacity to fully understand the appropriate use and benefits of advanced equipment, such as GIS. Varying standards being adopted by the different Pacific Island Countries (i.e. some are using WHO guidelines while others are using New Zealand, Australian or United States EPA standards) makes it difficult for countries to exchange information regarding type of equipment and standards.

Over the next 3 – 5 years, there are a number of required actions that must be implemented throughout the region in the area of improvement of sustainable water management technology. Asset management plans must be developed in order to ensure the integrity and sustainability of the water infrastructure. Furthermore, a priority plan to resolve technology related issues over the short and long term is also critical. A mechanism for capacity building on the proper use and maintenance of new technologies must be developed and implemented. A “train the trainers” component is essential to ensure sustainability. In particular it has been identified that GIS/Database training is a priority area. There needs to be training on both the use and maintenance of equipment. Consistent with the ongoing training needs, there should be a means by which trained staff can be retained, such as appropriate compensation/rewards system etc.

**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

Recognising the importance of an institutional framework that enables effective water resource management and service provision, funding has been secured at the regional level to pilot projects in 3 countries to assist in improving water governance.

| Intervention Area                                                                                   | Partners     | Strategic Donor | Indicative Budget* |
|-----------------------------------------------------------------------------------------------------|--------------|-----------------|--------------------|
| Pacific Programme for Water Governance – 18 month (2005 – 2006) in Fiji, Solomon Islands & Kiribati | NWP<br>SOPAC | EU              | 330K               |

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

National Action Implementation – Institutional Arrangements

Progress in the area of water governance has been apparent through more transparent mechanisms being implemented at some national levels such as developing water policies through consultative processes. **Fiji** has created an interim National Water Committee and drafted a cross-sectoral water policy; **Papua New Guinea** have held national consultations on developing a multi-sectoral water policy and national action plan and established a National Water Association; **Tuvalu** has reviewed their national water plan that includes more integrated management approaches; **Samoa** has developed two national water policies (services and resources) one of which is pending Cabinet approval, following comprehensive consultation with all key stakeholders. A draft water sector plan is also awaiting finalisation and provides a synthesis of the goals and strategies reflected in all of the other relevant national policies; **Kiribati** has completed a national water sector

review and developed a sectoral strategy and action programme on national water management policies and practices.

There is also increasing activity in addressing urban water management issues utilizing a more cross-sectoral approach. Wastewater and storm water management are being tackled as inter-departmental issues now in **Port Vila, Vanuatu** and **Apia, Samoa**. In Apia, this has gone as far as institutional restructuring to create a municipal agency including representatives and links to all relevant government departments.

Sustainable water management is what every Pacific Island Country is aspiring to. However, it has been identified that there are challenges and constraints that continue to hinder this move to progress. For example, in Samoa, the presence of independent water schemes in operation around the island present major challenges, particularly because they are managed by village committees, and are not governed by proper regulation. In many countries policy framework stipulating water management responsibilities or guides coordination do not exist. Different languages and variations in terminology within countries and the region also create obstacles in developing and communicating policies related to water and wastewater.

Water rights are often a contentious issue. Negotiating an equitable balance between the competing interests of landowners, farmers, developers, water providers and communities is complex and often reaches a point of impasse.

There is a need to establish sectoral integration to improve water management at the national and regional level as well as increasing transparency and accountability in water governance. National governments need to clearly apportion management and operational responsibilities within the water and wastewater sector.

Improvement in water sector regulation is needed. In some countries this means developing and implementing regulations while in others, regulations exist but are either impractical or not enforced because a lack of political will.

Where national and regional action plans exist there needs to be a mechanism established for ongoing monitoring, review and evaluation of their effectiveness and currency.

#### **BOX 1: Samoa's Water for Life Consultation**

Over the past two years, Samoa has been developing a solid foundation to enable water resource development and management to be tackled on a sector-wide basis. The Government and other key stakeholders are convinced that drawing together combined interests and expertise is the best way to achieve national goals and to deliver benefits to its communities in a more effective and sustainable manner.

As part of this process a major 3-day *Water for Life* meeting was held in April 2005. The meeting provided an opportunity to raise awareness of sector-wide approaches, to get feedback on the ***Water for Life: Sector Plan and Framework for Action***, and to strengthen strategies and actions to meet identified priority needs.

The meeting brought together over twenty national, regional and international organisations representing a variety of stakeholder interests to discuss factors essential for successful sector-wide approaches. Means to address identified gaps and weaknesses were proposed including measures related to sector policy and strategy, sector and donor coordination, performance monitoring, medium-term expenditure frameworks and institutional capacity. The outcomes of the meeting included recommendations for immediate action and a commitment to support the continuing process of change.

The European Union (EU) provided support to help facilitate the *Water for Life* process and they will also be a major partner during programme implementation following approval for a 5-year **Water Sector Support Programme (WaSSP)** valued at €19.09 million (~SAT\$ 65 million).

## **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 World Bank are 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.

### National Action Implementation – Finance

To ensure increased investment into regional water sectors, countries including **Samoa, American Samoa** and **Fiji** have made improvements in water governance through the development and implementation of effective regulation and policies covering services and the allocation of resources.

In general, the issue of cost recovery continues to be a major concern due to the high incidence of unaccounted for water and the slow progress in metering. **American Samoa** however indicated that they have put in place a very successful and effective monitoring system, resulting in a 23 % reduction in water loss.

The support provided by some Governments through enforcing Community Service Obligation (CSO) on water utilities is helping to ensure that all citizens receive water. **Samoa**, for example, has implemented a pro-poor tariff which allows domestic customers to receive 500 liters of water per customer per day at no cost to the consumer. Costs associated with amounts used in excess of 500 liters are the responsibility of the customers. The Government is committed to meet that free amount, payable to the state owned Samoa Water Authority.

Notwithstanding the ongoing difficulties in collecting water rates from the rural areas, there has been some improvement in the attitudes of customers towards paying their bills, particularly with the visible improvement in water facilities. The collection of wastewater fees on the other hand remains a struggle.

Some of the financial challenges and constraints that remain in the Pacific region include the strict terms and conditions imposed by financial institutions. Difficulty in complying with such terms limits the ability to procure sufficient funds. Hence, without the availability of funds, affordability a significant stumbling block in purchasing essential equipment.

Another challenge is the need to ensure that effective natural disaster management is implemented given the huge impact that the wide range of natural disasters can have on the already strained budgets of water works.

The often inconsistent or policy deviating decisions on the part of governments is a major constraint as it can cause a dramatic shift in priorities/commitment already made towards specific water-related projects.

Efforts over the next 3 -5 years should focus in the following key areas:

- Establish clear and realistic government policies for financing water projects and ensure strong political will to support such policies once in place;
- Introduce and implement appropriate “User Pays” tariffs to encourage efficient water use and ensure sufficient water availability in the future;
- Develop and enforce financing mechanisms for resource allocation, especially to commercial entities. By saying that, there is also a need to impose effective monitoring of all utilities and water operators in efficient water utilisation;
- Lobby government support and gain their commitment towards meeting social obligations for safe and reliable water;
- Implement and strengthen billing collection procedures and systems for the overall improvement in water recovery costs;
- Include provisions for Operation & Maintenance into donor agencies financed development projects.

### **Over-arching Regional Programmes**

#### **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 Statement” and “Pacific Wastewater Framework for Action”;
- 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.

A Partnership Coordination Unit has also recently been established as an attachment to SOPAC with financial support by the ADB. ADB recognises 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 being produced and is distributed to over 750 members that have joined this network. Hardcopies of the Regional Action Plan have been distributed to all attendees of

Sigatoka and Kyoto. Pacific Water E-mail Focal Groups have been established and a specific website has been developed for the partnership accessible through:

<http://www.sopac.org/tiki/tiki-index.php?page=CLP+Pacific+Partnership>

### Programmes in Integrated Water Resources Management

The development and subsequent endorsement of a proposal to the Global Environment Facility (GEF) for a Programme on Sustainable Integrated Water Resources Management in Pacific Island Countries will see the implementation of a project that will encompass all priority actions of the Pacific RAP by SOPAC in association with UNDP and UNEP.

The European Union's African Caribbean Pacific (ACP) Water Facility aimed at reducing poverty and at promoting sustainable development through the achievement of the water related MDGs and WSSD water and sanitation targets in ACP countries. This effort also provides an excellent opportunity to assist Pacific Island Countries in the implementation of the RAP. On behalf of the Pacific ACP countries, the Pacific Hydrological Cycle Observation System (HYCOS) project as well as a programme on Integrated Water Resources Management and Water Use Efficiency have been submitted by SOPAC to the ACP-EU Water Facility for their consideration. These proposed actions will complement the support currently being provided to the region by the European Union through their Programme on Water Governance developed under the EU Water Initiative.

Collaboration between the two facilities (GEF and ACP-EU WF) would provide an unprecedented opportunity to allow the harmonisation two global funding mechanisms.

| Intervention Area                                                                                                                                                            | Partners             | Strategic Donor | Indicative Budget* |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|--------------------|
| Pacific Partnership Coordination Unit - improving involvement, information exchange and collaboration between stakeholders.                                                  | PWP                  | ADB             | 110K               |
| SOPAC/EU EDF8/9 Reducing Vulnerability of Pacific ACP States                                                                                                                 | Various              | EU              | 7M EURO            |
| IWRM GEF/UNDP (concept approved)                                                                                                                                             | PWP                  | GEF             | 700k USD           |
| Pacific HYCOS (proposal submitted) - Aims to improve the ability to manage water resources, and increase resilience to climatic extremes resulting in droughts and flooding. | WMO<br>UNESCO<br>FMS | ACP-EU<br>WF    | 2.225M<br>Euro     |
| IWRM ACP-EU WI (proposal submitted)                                                                                                                                          | PWP                  | ACP-EU<br>WF    | 2.824M<br>Euro     |

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

### Future Needs and Perspectives

The Pacific Island Countries and territories whilst recording significant progress since the 3WWF acknowledge there are critical areas and issues which continue to impede and often stifle progress in the implementation of the Pacific RAP. By reviewing progress over the past two years and through a process of consultation various perspectives have been recorded and identification of future needs has been made. The record of this process provides a yardstick against which the Pacific might gauge progress whilst at the same time identify at all levels areas for action and opportunities for further intervention.

An overriding universal concern is the selective implementation and adherence to the principles of IWRM in countries throughout the Pacific. The reasons for this are numerous and include amongst others the lack of political will, legal instruments, financial resources and human capacity to make the change. A great many of the needs of the Pacific can be addressed through the implementation of IWRM and will only be achieved through a concerted effort by nations, partners, regional and multilateral agencies.

Many of the small island economies of the Pacific continue to be dependent on external assistance for the survival of the water sector. To effect change, ensure improvements and promote sustainability then true partnership by all parties must prevail. Incentives must be established to ensure the promotion of IWRM, sustainable development plans and implementation strategies. Assistance with establishing appropriate institutions and their enabling instruments of governance must be pursued.

## Regional Focus:

One of the ways of dealing with the limitations of small states is via regional agencies which are both responsive to and driven by the needs of its members. Through this process some of the constraints imposed by isolation, size and limited capacity might be addressed. Significant funding resources have flowed since 3WWF to the Pacific region and with time and effective implementation improvements will be seen at the national and local community levels. Regional organizations must develop the capacity to fulfil their role in the delivery of the RAP activities and likewise the Pacific governments and institutions must help to develop the absorptive capacity to fully utilise such assistance.

A particular regional concern is the ongoing problem of retention of skills, knowledge and capacity. Institutions, utilities and services are often dependent on just one or two individuals and entire services are vulnerable as a result of the loss of an individual often through emigration. One way to alleviate this is for support for a continuing programme of HR development rather than the often ad hoc and one-off training events. Donor agencies, governments and Institutes within the region (e.g. University of Guam, PNG, USP, FIT) have to commit to establish permanent and appropriate training programmes.

Practical ways must be developed to address the issue of economies of scale. The reality of size makes it difficult for investment in capital equipment. Countries need assistance in dealing with operation costs that are higher than can be expected in denser markets, with efficiencies that are hard to realize, and where the cost of doing business is more expensive because of the isolation and distances between individual island and nations. Innovative ways of doing business should be explored and could include the sharing of expensive capital equipment between nations. Another key initiative is the need to revive the regional benchmarking programme as a toll to measure and improve performance.

Monitoring of water borne diseases and disease surveillance in particular is an emerging need and priority throughout the region. It is unwise to select and implement interventions if the disease type, burden and origin are unknown. The PICs have recently developed and endorsed a Pacific Drinking Water Quality and Health Framework for Action. However, new resources and institutions need to be identified to implement the Framework.

Another framework which needs implementation is the Global Programme of Action for the protection of the Marine Environment from Land-Based Sources of Pollution. In a truly holistic approach the inter-relationship between land and the sea is a central theme in any sustainable development strategy for small islands.

The achievements of the water-related MDGs have become a key target for countries in the region (i.e. reduce by half the proportion of people without access to safe drinking water and basic sanitation before 2015 and develop National Integrated Water Resources Management Plans). 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](http://www.spc.org.nc/mdgs/MDGReport/Reg_report.htm). Monitoring programmes contained in the Pacific RAP, need to be developed and implemented in order to adequately indicate success in achieving the MDG targets and should be linked to national census data acquisition and analysis.

## National Focus:

With the regional support programmes being well established and funded, there is now an increased need to focus on even greater implementation at the micro-level through a two-pronged approach. First, further improvements in national strategy and planning through the development of national IWRM plans. The second step being an increased focus on water and sanitation improvements in the national sustainable development strategies. Prioritisation 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.

Unless and until countries make the required policy and institutional changes the inefficiencies and problems of the past will persist. There is a need to find a way to implement IWRM in all Pacific Island Countries and territories. The lack of political will and leadership are often claimed to be the major hurdle. It is suggested that there is a need for a single coordinator/facilitator within government to bring departments together. Locating such a person in the office of the Prime Minister or Head of Government could champion cross-department

policy development and promote an integrated approach. A change in the way of doing business is essential and it must therefore be accompanied by the implementation of the required policies, establishment of regulatory instruments and development of appropriate institutions.

A particular concern and a priority is the availability or absence of skills for preventative maintenance and the knowledge and finance for doing it. National action, with some donor assistance is required to find more innovative and sustainable mechanisms to fund operation and maintenance. However, some utilities have been slow in implementing already existing recommendations particularly in regard to running a water utility as a business. An increasing threat to the cost of doing business in the region is the ever escalating cost of imported fuel. Not only assistance but also innovation is required to help countries and particularly the water utilities address the projected high energy costs.

Acceptable unaccounted for water levels are more the exception rather than the rule in most Pacific Island Countries. Certain countries appear to be fighting a losing battle against leak detection and prevention. A few however provide good examples of how unaccounted for water can be reduced to an economic sustainable level. There is a need to set and measure a realistic goal for reducing unaccounted for water and resource activities. It is suggested that assistance be provided to help effect a 25% improvement within 3 years.

Small islands and catchments with pristine water sources is a misconception. The need for monitoring, maintenance and improvement of drinking water quality is a critical need. Protecting communities from water-borne disease is not just monitoring the quantum of the problem but also the degree of success and appropriateness of treatment. Access to qualified water quality testing laboratories is extremely limited in all but a handful of countries. The issue of piggeries and their location is of mounting concern in the generation water resource contamination and degradation. Special attention is required on highly permeable limestone and young volcanic islands as they are particularly vulnerable groundwater contamination. Assistance with improving disease surveillance is a priority need.

The Pacific is a region of the world that is impacted by climate variability and the result of extreme events have a disproportional impact on small economies, infrastructure and livelihoods. Water resources on islands with limited storage are likewise affected and controlled by climatic influences. Better climate and weather forecasting and information also lead to better water management. Particular problem in small islands is limited storage. There is a need for integration of meteorological and hydrological services with water management so that the appropriate products are produced and delivered for better informed decision making and planning.

Salinisation of water lenses is an inherent problem with small islands. Particular assistance is needed to monitor groundwater lenses and provide data for the use of better predictive models to enable sustainable use of these fragile water resources.



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## **LIST OF ACRONYMS**

|           |                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------|
| 3WWF      | Third 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)                                                                                   |
| CPWC      | Collaborative Programme on Water and Climate                                                                        |
| CROP      | Council of Regional Organisations in the Pacific                                                                    |
| CSD       | UN Commission for Sustainable Development                                                                           |
| DWC       | Dialogue on Water and Climate                                                                                       |
| EU        | European Union                                                                                                      |
| GEF       | Global Environment Facility                                                                                         |
| 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)                                                                                 |
| ISM       | Island Systems Management                                                                                           |
| IWCAM     | Integrated Watershed and Coastal Area Management                                                                    |
| IWRM      | Integrated Water Resources Management                                                                               |
| JICA      | Japan International Cooperation Agency                                                                              |
| JPfA      | Joint Caribbean-Pacific Programme for Action on Water & Climate                                                     |
| JWF       | Japan Water Forum                                                                                                   |
| LLEE      | Live & Learn Environmental Education                                                                                |
| MDG       | Millennium Development Goal                                                                                         |
| NIWA      | National Institute for Water and Atmospheric Research (New Zealand)                                                 |
| NWP       | National Water Partnership                                                                                          |
| NZAID     | New Zealand Agency for International Development                                                                    |
| PWA       | Pacific Water Association                                                                                           |
| RAP       | Regional Action Plan on Sustainable Water Management                                                                |
| ROC       | Republic of China (Taiwan)                                                                                          |
| SAT       | Samoa Tala (currency of Samoa)                                                                                      |
| SIDS      | Small Island Developing States                                                                                      |
| SOPAC     | South Pacific Applied Geoscience Commission                                                                         |
| STAR      | Science Technology and Resources Network                                                                            |
| UNDESA    | United Nations Department of Economic and Social Affairs                                                            |
| UNESCO    | United Nations Education Scientific and Cultural Organisation                                                       |
| UNU       | United Nations University                                                                                           |
| USP       | University of the South Pacific                                                                                     |
| WaSSP     | Water Sector Support Programme                                                                                      |
| WHO       | World Health Organization                                                                                           |
| WMO       | World Meteorological Organisation                                                                                   |
| WSSCC     | Water Supply and Sanitation Collaborative Council                                                                   |
| WSSD      | World Summit on Sustainable Development                                                                             |
| IWP       | International Waters Project                                                                                        |
| SPREP     | South Pacific Regional Environment Programme                                                                        |
| UNDP      | United Nations Development Programme                                                                                |
| UNEP      | United Nations Environment Programme                                                                                |
| CEHI      | Caribbean Environmental Health Institute                                                                            |
| NMS       | Caribbean Environmental Health Institute                                                                            |
| EPA       | Environmental Protection Agency                                                                                     |
| NGOs      | Non-governmental Organizations                                                                                      |
| SIDA      | Swedish International Development Agency                                                                            |
| TCDT      | Tonga Community Development Trust                                                                                   |
| NWP       | National Water Partnership                                                                                          |
| CSO       | Community Service Obligation                                                                                        |
| GIS       | Geographical Information Systems                                                                                    |
| BPOA+10   | Barbados Programme of Action +10                                                                                    |
| CIDA      | Canadian International Development Agency                                                                           |
| USAID     | United States Agency for International Development                                                                  |
| 4WWF      | Fourth World Water Forum                                                                                            |

## ANNEX 1 Pacific Partnership Matrix of Actions

| Theme Key Message Action                   | Pacific RAP Identification              | Action                                                                            | Implementing Agencies                            | Location                        | Start Date | Finish Date | Funding Status   | Donor(s)  |
|--------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------|------------|-------------|------------------|-----------|
| <b>Theme 1: Water Resources Management</b> |                                         |                                                                                   |                                                  |                                 |            |             |                  |           |
| 1.1.1                                      | Strengthen National Capacity            | Pacific HYCOS                                                                     | SOPAC, WMO, UNESCO, FMS                          | Regional                        | 2004       | 2008        | Proposal         | ACP-EU WF |
| 1.1.2                                      | Hydrological Training                   | WMO/UNESCO/SOPAC/NIWA regional training proposal                                  | SOPAC, NIWA, WMO, UNESCO                         | Regional                        | 2003       | 2006        | On-going Project | NZAID     |
| 1.1.3                                      | Research                                | Catchment & Communities                                                           | DGMWR, UNESCO, SOPAC                             | Vanuatu                         | 2002       | 2005        | Completed        | UNESCO    |
| 1.1.3                                      | Research                                | Hydrology for Life, Environment and Policy (HELP)                                 | DGMWR, UNESCO, SOPAC                             | Vanuatu and Regional            | 2005       | 2007        | On-going Project | UNESCO    |
| 1.1.3                                      | Research                                | Groundwater Recharge & Agricultural pollution                                     | CRES-ANU, CIRAD, SOPAC, PUB, MEW, MLSNR          | Kiribati, Tonga                 | 2003       | 2005        | On-going Project | ACIAR     |
| 1.1.3                                      | Research                                | Rainwater Harvesting                                                              | SOPAC, TCDT, WHO, MLSNR, MoH                     | Tonga                           | 2002       | 2004        | Completed        | UNEP      |
| 1.1.3                                      | Research                                | CROPPRO Surface Water Pollution from Agricultural activities                      | USP (Samoa), EU Universities, Min of Agriculture | Fiji, Samoa, Tonga              | 2001       | 2004        | Completed        | EU        |
| 1.1.5                                      | Community Water Quality                 | Catchment & Communities                                                           | DGMWR, UNESCO, SOPAC                             | Vanuatu                         | 2002       | 2005        | Completed        | UNESCO    |
| 1.1.5                                      | Community Water Quality                 | River Care                                                                        | Live & Learn                                     | Fiji                            | 2002       | 2004        | Completed        | NZAID     |
| 1.1.5                                      | Community Water Quality                 | International Waters Project (Freshwater Component)                               | SPREP, UNDP                                      | Samoa, Cook Islands             | 2000       | 2006        | On-going Project | UNDP/GEF  |
| 1.1.6                                      | Water Quality Capacity Building         | Water Quality Monitoring Capacity Building Programme for Pacific Island Countries | SOPAC, USP, WHO                                  | Regional                        | 2006       | 2008        | Concept approved | NZAID     |
| 1.1.7                                      | Communication Exchange NMS/NHS          | Dialogue on Water & Climate                                                       | SOPAC                                            | Regional                        | 2002       | 2003        | On-going Project | ISDWC     |
| 1.1.7                                      | Communication Exchange NMS/NHS/ WQ      | Pacific HYCOS                                                                     | SOPAC, WMO, UNESCO, FMS                          | Regional                        | 2004       | 2008        | Proposal         | ?         |
| 1.1.8                                      | Career development & enhanced education | Scholarships/training workshops, staff twinning/interchange                       |                                                  |                                 |            |             |                  |           |
| 1.2.1                                      | WRM Planning                            | Pacific Programme for Water Governance                                            | SOPAC                                            | Solomon Islands, Fiji, Kiribati | 2005       | 2006        | On-going Project | EU PFWG   |

| Theme Key Message Action | Pacific RAP Identification                                     | Action                                                                                   | Implementing Agencies        | Location         | Start Date | Finish Date | Funding Status    | Donor(s)       |
|--------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------|------------------|------------|-------------|-------------------|----------------|
| 1.2.1                    | WRM Planning                                                   | Regional & National Water Strategy Development Project                                   | SOPAC                        | Regional         | 2001       | 2004        | Completed         | DFID           |
| 1.2.1                    | WRM Planning                                                   | Strategic Planning Management of Water Resources                                         | ESCAP, SOPAC                 | Regional         | 2002       | 2004        | Completed         | UNESCAP        |
| 1.2.1                    | WRM Planning                                                   | Integrated River Basin Management (Nadi Basin Pilot)                                     | ESCAP, MRD Fiji              | Fiji             | 2003       | 2004        | ??                | UNESCAP        |
| 1.2.1                    | WRM Planning                                                   | WRA Outer Islands                                                                        | MOID                         | Cook Islands     | 2003       | 2006        | On-going Project  | AusAID         |
| 1.2.1                    | WRM Planning                                                   | Leadership Seminar Water and Wastewater Managers                                         | East West Centre             | Regional         | 2004       | 2004        | Completed         | EW Centre USDO |
| 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        | Completed         | UNEP, IETC     |
| 1.2.2                    | Water Supply & Sanitation Technology Information Dissemination | Solid & Liquid Waste Disposal Directory                                                  | UNEP, IETC, OPUS, SOPAC, PWA | Regional         | 1999       | 2003        | Completed         | UNEP, IETC     |
| 1.2.2                    | Water Supply & Sanitation Technology Information Dissemination | Sanitation Park Demonstration Facility                                                   | SOPAC, WHO, FSchM, MoH Fiji  | Regional         | 2003       | 2004        | Completed         | NZAID WHO      |
| 1.2.3                    | Rainwater Harvesting Programmes                                | Rainwater Harvesting Best Practice & Research                                            | SOPAC, TCDT, WHO, MLSNR, MoH | Tonga            | 2002       | 2004        | On-going Project  | UNEP           |
| 1.2.4                    | Abstraction Pilot Studies (SW, GW, Solar)                      | Scavenger Wells                                                                          | MWSC                         | Marshall Islands | 2002       | 2003?       | On-going Project? | UNDESA         |
| 1.2.4                    | Abstraction Pilot Studies (SW, GW, Solar)                      | Gallery designs                                                                          | WEU                          | Kiribati         | 2004       | 2004        | Completed         | WEU            |
| 1.2.5                    | Renewable energy (solar pumping)                               | SPC/SOPAC Regional Renewable Energy Projects                                             | SPC, SOPAC, SPREP?           | Regional         | ?          | 2003        | Completed Project | ?              |
| 1.2.7                    | Demand Management & Conservation                               | Regional Water Demand Management Programme                                               | PWA, SOPAC                   | Regional         | 2005       | 2007        | Concept approved  | NZAID          |
| 1.2.7                    | Demand Management & Conservation                               | Regional Awareness & Education Programmes – World Water Day                              | SOPAC, SPREP, Live & Learn,  | Regional         | Annual     | Annual      | On-going Project  | Taiwan ROC     |
| 1.2.8                    | National guidelines for drinking water quality                 | Programme for Water Safety Plans in Pacific Island Countries                             | WHO, SOPAC                   | Regional         | 2005       | 2007        | Concept approved  | AUSAID         |
| 1.2.8                    | National guidelines for drinking water quality                 | Water Quality Monitoring Capacity Building Programme for Pacific Island Countries        | SOPAC, USP, WHO              | Regional         | 2006       | 2008        | Concept approved  | NZAID          |
| 1.2.9                    | WQ Monitoring & Mitigation Standards                           | Water Quality Monitoring Capacity Building Programme for Pacific Island Countries        | SOPAC, USP, WHO              | Regional         | 2006       | 2008        | Concept approved  | NZAID          |
| 1.2.10                   | Pollution prevention through better sanitation                 | Sanitation Park Demonstration Facility                                                   | SOPAC, WHO, FSchM, MoH Fiji  | Regional         | 2003       | 2004        | Completed         | NZAID WHO      |

| Theme Key Message Action | Pacific RAP Identification                     | Action                                                                                     | Implementing Agencies       | Location                        | Start Date | Finish Date | Funding Status         | Donor(s)                   |
|--------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|------------|-------------|------------------------|----------------------------|
| 1.2.10                   | Pollution prevention through better sanitation | Groundwater protection zones                                                               | ?                           | ?                               | ?          | ?           | ?                      | ?                          |
| 1.2.10                   | Pollution prevention through better sanitation | International Waters Programme (Coastal Component)                                         | SPREP                       | Tuvalu, Kiribati, Fiji          | 2000       | 2006        | On-going Project       | GEF/UNDP                   |
| 1.2.11                   | Water Sector Community participation           | Healthy Islands Programme                                                                  | WHO                         | Regional                        | ?          | ?           | On-going Project       | WHO                        |
| 1.2.11                   | Water Sector Community participation           | Rural Sanitation Demonstration Facility & Community Participation Project                  | SOPAC, WHO, FSchM, MoH Fiji | Regional                        | 2003       | 2004        | Completed              | NZAID WHO                  |
| 1.2.11                   | Water Sector Community participation           | Regional Awareness & Education Programmes – World Water Day                                | SOPAC, SPREP, Live & Learn, | Regional                        | Annual     | Annual      | On-going Project       | NZHC, BHC, DFID            |
| 1.3.1                    | Implement IWRM principles & practices          | Strategic Planning Management of Water Resources                                           | ESCAP, SOPAC                | Regional                        | 2002       | 2005        | On-going Project       | UNESCAP                    |
| 1.3.1                    | Implement IWRM principles & practices          | Island Systems Management programme                                                        | SOPAC                       | Regional                        | 2002       | 2007        | On-going Project       | EU EDF 8 & 9               |
| 1.3.1                    | Implement IWRM principles & practices          | Sustainable Integrated Water Resources Management in Pacific Island Countries              | Pacific Partnership         | Regional                        | 2004       | 2005        | Completed              | GEF PDF-A UNDP/UNEP        |
| 1.3.1                    | Implement IWRM principles & practices          | Sustainable Integrated Water Resources Management in Pacific Island Countries              | Pacific Partnership         | Regional                        | 2005       | 2006        | Funding approved       | GEF PDF-B UNDP/UNEP        |
| 1.3.1                    | Implement IWRM principles & practices          | Sustainable Integrated Water Resources Management in Pacific Island Countries              | Pacific Partnership         | Regional                        | 2007       | 2012        | Pipeline entry in 2005 | GEF Full Project UNDP/UNEP |
| 1.3.1                    | Implement IWRM principles & practices          | Integrated Water Resources Management and Water Use Efficiency in Pacific Island Countries | Pacific Partnership         | Regional                        | 2004       | 2005        | Proposal               | ACP-EU WF                  |
| 1.3.1                    | Implement IWRM principles & practices          | Pacific Programme for Water Governance                                                     | SOPAC                       | Regional                        | 2005       | 2006        | On-going Project       | EU PFWG                    |
| 1.3.1                    | Implement IWRM principles & practices          | Virtual Water Learning Centre for IWRM                                                     | SOPAC, USP, UNU, UNDESA     | Regional                        | 2005       | 2006        | On-going Project       | UNDESA                     |
| 1.3.2                    | Appropriate national legislation & planning    | Strategic Planning Management of Water Resources                                           | ESCAP, SOPAC                | Regional                        | 2002       | 2005        | Completed              | UNESCAP                    |
| 1.3.2                    | Appropriate national legislation & planning    | Pacific Programme for Water Governance                                                     | SOPAC                       | Solomon Islands, Fiji, Kiribati | 2003       | 2005        | On-going Project       | EU PFWG                    |
| 1.3.2                    | Appropriate national legislation & planning    | Regional & National Water Strategy Development Project                                     | SOPAC                       | Regional                        | 2001       | 2004        | Completed              | DFID                       |
| 1.3.2                    | Appropriate national legislation & planning    | IWRM Overview                                                                              | SOPAC                       | Regional                        | 2004       | 2004        | Completed              | GWP                        |

| <b>Theme Key Message Action</b> | <b>Pacific RAP Identification</b>        | <b>Action</b>                                                | <b>Implementing Agencies</b>                     | <b>Location</b>    | <b>Start Date</b> | <b>Finish Date</b> | <b>Funding Status</b> | <b>Donor(s)</b> |
|---------------------------------|------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|--------------------|-------------------|--------------------|-----------------------|-----------------|
| 1.3.3                           | Implement catchment management practices | Hydrology for Life, Environment and Policy (HELP) Symposium  | UNESCO, SOPAC, LandCare, NIWA                    | Regional           | 2005              | 2005               | On-going Project      | UNESCO          |
| 1.3.3                           | Implement catchment management practices | Water Governance Programme                                   | SOPAC                                            | Regional           | 2005              | 2006               | On-going Project      | EU PFWG         |
| 1.3.3                           | implement catchment management practices | Catchment & Communities                                      | DGMWR, UNESCO, SOPAC                             | Vanuatu            | 2002              | 2004               | Completed             | UNESCO          |
| 1.3.3                           | Implement catchment management practices | Hydrology for Life, Environment and Policy (HELP)            | DGMWR, UNESCO, SOPAC                             | Vanuatu            | 2005              | 2006               | On-going Project      | UNESCO          |
| 1.3.3                           | Implement catchment management practices | Pohnpei Forestry Conservation Project                        | ?                                                | FSM                | 2005              | 2006               | On-going Project      | JFIT<br>UNESCO  |
| 1.3.3                           | Implement catchment management practices | CROPPRO Surface Water Pollution from Agricultural activities | USP (Samoa), EU Universities, Min of Agriculture | Fiji, Samoa, Tonga | 2001              | 2005               | On-going Project      | EU              |

| Theme Key Message Action             | Pacific RAP Identification                                 | Action                                                                | Implementing Agencies        | Location                            | Start Date | Finish Date | Funding Status   | Donor(s)       |
|--------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------|-------------------------------------|------------|-------------|------------------|----------------|
| <b>Theme 2: Island Vulnerability</b> |                                                            |                                                                       |                              |                                     |            |             |                  |                |
| 2.1.1                                | Enhanced application of climate information                | Pacific HYCOS                                                         | SOPAC, WMO, UNESCO, FMS      | Regional                            | 2005       | 2008        | Proposal         | ACP-EU WF      |
| 2.1.1                                | Enhanced application of climate information                | WMO/UNESCO/SOPAC/NIWA regional training proposal                      | SOPAC, NIWA                  | Regional                            | 2003       | 2006        | On-going Project | NZAID          |
| 2.1.1                                | Enhanced application of climate information                | Pacific Island Climate Prediction Programme                           | BOM NMS                      | Regional                            | 2004       | 2006        | On-going Project | AUSAID         |
| 2.1.2                                | Drought Prediction Schemes                                 | Pacific HYCOS                                                         | SOPAC, WMO, UNESCO, FMS      | Regional                            | 2004       | 2008        | Proposal         | ACP-EU WF      |
| 2.1.2                                | Drought Prediction Schemes                                 | Pacific regional hydrological training programme                      | SOPAC, WMO, UNESCO           | Regional                            | 2003       | 2006        | On-going Project | NZAID          |
| 2.1.3                                | Climate Information & Prediction Water Sector Applications | PI Training Institute for Climate Extremes                            | NIWA, NOAA, PEAC, USP - PACE | Regional                            | 2003       | 2006        | On-going Project | NOAA           |
| 2.1.3                                | Climate Information & Prediction Water Sector Applications | Pacific Island Climate Prediction Programme                           | BOM NMS                      | Regional, Solomon Islands, Kiribati | 2004       | 2006        | On-going Project | AUSAID         |
| 2.1.3                                | Climate Information & Prediction Water Sector Applications | US-NZ Climate Accord Partnership Programme                            | NIWA, BOM, NOAA, PEAC, NWS   | Regional                            | 2003       | 2006        | On-going Project | NOAA           |
| 2.2.1                                | Increased Hazard & Risk Management                         | Comprehensive Hazard And Risk Management (CHARM) Project              | SOPAC, NDMOs                 | Regional                            | 2000       | 2005        | On-going Project | AusAID         |
| 2.2.2                                | Increased Hazard & Risk Management                         | EW Centre Leadership Seminar Disaster Preparedness for Water Managers | SOPAC                        | Sub-regional                        | 2004       | 2005        | On-going Project | USDOJ<br>NZAID |
| 2.2.3                                | Increased Hazard & Risk Management                         | Island Systems Management programme                                   | SOPAC                        | Regional                            | 2002       | 2007        | On-going Project | EU EDF 8 & 9   |
| 2.2.3                                | Climate Analysis (Risk of climatic extremes)               | Pacific Island Climate Prediction Programme                           | BOM NMS                      | Regional                            | 2004       | 2006        | On-going Project | AUSAID         |
| 2.2.4                                | Standards for Vulnerability assessments                    | EVI?                                                                  | SOPAC                        | Regional                            | ?          | ?           | Completed        | ?              |
| 2.2.5                                | Climate forecasting based risk reduction                   | Pacific Island Climate Prediction Programme                           | BOM NMS                      | Regional                            | 2004       | 2006        | On-going Project | AUSAID         |
| 2.2.5                                | Climate forecasting based risk reduction                   | Pacific HYCOS                                                         | SOPAC, WMO, UNESCO, FMS      | Regional                            | 2004       | 2008        | Proposal         | ACP-EU WF      |
| 2.2.5                                | Climate forecasting based risk reduction                   | Pacific regional hydrological training programme                      | SOPAC, WMO, UNESCO           | Regional                            | 2003       | 2006        | On-going Project | NZAID          |

| Theme<br>Key<br>Message<br>Action | Pacific RAP Identification               | Action                                     | Implementing<br>Agencies      | Location | Start<br>Date | Finish<br>Date | Funding<br>Status           | Donor(s) |
|-----------------------------------|------------------------------------------|--------------------------------------------|-------------------------------|----------|---------------|----------------|-----------------------------|----------|
|                                   |                                          |                                            |                               |          |               |                |                             |          |
| 2.2.5                             | Climate forecasting based risk reduction | US-NZ Climate Accord Partnership Programme | NIWA, BOM, NOAA, PEAC,<br>NWS | Regional | 2003          | 2006           | Proposals in<br>Development | NOAA     |
| 2.2.5                             | Climate forecasting based risk reduction | Climate Prediction Tools                   | NIWA, SPREP                   | Regional | 2005          | 2007           | Proposals in<br>Development | NZAID    |



| Theme Key Message Action  | Pacific RAP Identification                                        | Action                                                                                                                    | Implementing Agencies                          | Location               | Start Date | Finish Date | Funding Status   | Donor(s)           |
|---------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------|------------|-------------|------------------|--------------------|
| <b>Theme 3: Awareness</b> |                                                                   |                                                                                                                           |                                                |                        |            |             |                  |                    |
| 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        | Completed        | DFID               |
| 3.1.3                     | Ensure quality Community Participation                            | Guidelines for Community Participation in Rainwater Harvesting: "Harvesting the Heavens"                                  | SOPAC, TCDT                                    | Regional               | 2001       | 2005        | Completed        | 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        | On-going Project | DOE                |
| 3.2.1                     | Toolboxes for water education for all society                     | Sanitation Park facility for training EHO's on rural sanitation CP                                                        | SOPAC, Fiji School of Medicine, WHO, Fiji MoH  | Regional               | 2003       | 2004        | On-going Project | NZAID (NZPIE)      |
| 3.2.1                     | Toolboxes for water education for all society                     | Water Education Toolkit                                                                                                   | SPREP, SOPAC                                   | Regional               | 2002       | 2003        | Completed        | ??                 |
| 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        | On-going Project | NZAID (NZPIE)      |
| 3.2.1                     | Support Theatre and Media Groups use                              | Water and Youth Water Awareness Programme                                                                                 | Live & Learn, SOPAC                            | Regional               | 2003       | 2004        | Concept approved | DFID               |
| 3.2.2                     | Increased capacity for information dissemination (govn, NGO, CBO) | Regional NGO workshops on Theme 3 Awareness Implementation                                                                | WWF, L&L, ANU, national NGOs, AusAID, Wateraid | Regional               | 2003       | 2003        | On-going Project | 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       |             | On-going Project | ADB                |
| 3.3.1                     | Water Education in the national curriculum                        | World Water Day Campaigns                                                                                                 | SOPAC, Live & Learn                            | Regional               | 2002       | 2004        | On-going Project | DFID, BHC, NZHC    |
| 3.3.2                     | Curriculum developers and teachers trained                        | World Water Day Campaigns                                                                                                 | SOPAC, Live & Learn                            | Regional               | 2002       | 2004        | On-going Project | DFID, BHC, NZHC    |
| 3.3.2                     | Curriculum developers and teachers trained                        | Pacific Freshwater Education and Awareness Kit                                                                            | SOPAC, SPREP                                   | Regional               | 2001       | 2003        | Completed        | DFID, NZHC, UNESCO |
| 3.4.1<br>3.4.2            | National stakeholder consultation                                 | PNG Roll-Out of the Pacific RAP                                                                                           | PNG Govn, PNG WB                               | Papua New Guinea       | 2003       | 2004        | On-going Project | PNG, DFID SOPAC    |
| 3.4.1<br>3.4.2            | National stakeholder consultation                                 | Samoa Water for Life Consultation                                                                                         | Samoa Govn, SWA                                | Samoa                  | 2002       | 2005        | On-going Project | EU                 |
| 3.4.1<br>3.4.2            | National stakeholder consultation                                 | Fiji National High level water strategy consultations                                                                     | Fiji Govn, MRD                                 | Fiji                   | 2002       | 2004        | On-going Project | ESCAP              |

| Theme Key Message Action | Pacific RAP Identification                        | Action                                                                             | Implementing Agencies                  | Location | Start Date | Finish Date | Funding Status   | Donor(s) |
|--------------------------|---------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------|----------|------------|-------------|------------------|----------|
| 3.4.1<br>3.4.2           | National stakeholder consultation                 | Fiji Water Governance Programme                                                    | Live & Learn, Fiji Provincial Councils | Fiji     | 2003       | 2005        | On-going Project | EU       |
| 3.4.1<br>3.4.2           | National stakeholder consultation                 | Tuvalu Water Master Plan Review                                                    | Tuvalu Govn,                           | Tuvalu   | 2003       | 2003        | On-going Project | Tuvalu   |
| 3.4.3                    | Improved community policy & legislation awareness | Education for Sustainable River and Water Conservation                             | Live & Learn                           | Vanuatu  | 2003       | 2005        | Concept approved | ADB      |
| 3.4.3                    | Improved community policy & legislation awareness | Community Participation components of Kiribati National Water Resources Assessment | Kiribati Govn, Consultants,            | Kiribati | 2003       | 2004        | On-going Project | ADB      |

| Theme Key Message Action     | Pacific RAP Identification                  | Action                                                                    | Implementing Agencies    | Location          | Start Date | Finish Date | Funding Status          | Donor(s)       |
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| <b>Theme 4: Technologies</b> |                                             |                                                                           |                          |                   |            |             |                         |                |
| 4.1.3                        | Asset management capacity building/planning | Regional Water Demand Management Programme                                | PWA, SOPAC               | Regional          | 2005       | 2007        | Concept approved        | NZAID          |
| 4.1.3                        | Asset Management Wise Practice              | Pacific Utilities Benchmarking                                            | PWA, ADB, SOPAC          | Regional          | 2001       | 2005        | Project                 | ADB            |
| 4.1.4<br>4.2.1               | Appropriate Technology Selection            | Source Book for Freshwater Augmentation                                   | SOPAC, UNEP, IETC        | Regional          | 1996       | 1998        | Completed               | UNEP           |
| 4.1.4<br>4.2.1               | Appropriate Technology Selection            | Rainwater Harvesting Guidelines: "Harvesting the Heavens"                 | SOPAC, TCDDT             | Regional          | 2001       | 2005        | Completed               | UNEP           |
| 4.1.4<br>4.2.1               | Appropriate Technology Selection            | Directory of Environmentally Sound Technologies for Wastewater Management | SPREP, SOPAC, UNEP       | Regional          | 1998       | 2002        | Completed               | UNEP           |
| 4.1.5                        | Monitoring of Water Resources               | Hydrological Training Programme                                           | SOPAC, NIWA, WMO, UNESCO | Regional          | 2003       | 2004        | On-going Project        | NZAID          |
| 4.1.5                        | Monitoring of Water Resources               | Hydrological Support Programme                                            | SOPAC, NIWA              | Regional          | 2005       | 2007        | Proposal in development | NZAID          |
| 4.1.6                        | Disaster preparedness for W&S assets        | Disaster preparedness Guidelines for Water Utilities                      | SOPAC                    | Regional          | 2001       | 2002        | Completed               | WSSCC          |
| 4.1.6                        | Disaster preparedness for W&S assets        | Leadership Seminar Disaster Preparedness for Water Managers               | EW Centre, SOPAC, PWA    | Regional          | 2004       | 2005        | Ongoing                 | USDOJ<br>NZAID |
| 4.2.1                        | Reduce Unaccounted for Water                | Regional Water Demand Management Programme                                | PWA, SOPAC               | Regional          | 2005       | 2007        | Concept approved        | NZAID          |
| 4.2.2<br>4.3.4               | Training Programmes for UFW                 | Regional Water Demand Management Programme                                | PWA, SOPAC               | Regional          | 2005       | 2007        | Concept approved        | NZAID          |
| 4.2.4                        | Water conservation devices, awareness etc   | Regional Water Demand Management Programme                                | PWA, SOPAC               | Regional          | 2005       | 2007        | Concept approved        | NZAID          |
| 4.2.4                        | Water conservation devices, awareness etc   | Water and Youth Water Conservation Project                                | Live & Learn, SOPAC      | Vanuatu, Solomons | 2003       | 2004        | Completed               | DFID           |
| 4.2.4                        | Water conservation devices, awareness etc   | World Water Day 2000/01/02/03 Regional Awareness Campaigns                | SOPAC, Live & Learn      | Regional          | 2001       | 2004        | Completed               | Various        |
| 4.2.4                        | Water conservation devices, awareness etc   | Pacific Freshwater Education & Awareness Kit                              | SOPAC, SPREP             | Regional          | 2001       | 2003        | Completed               | NZAID, UNESCO  |
| 4.3.1                        | Human resources development planning.       | Regional Water Demand Management Programme                                | PWA, SOPAC               | Regional          | 2005       | 2007        | Concept approved        | NZAID          |

| <b>Theme Key Message Action</b> | <b>Pacific RAP Identification</b> | <b>Action</b>                                              | <b>Implementing Agencies</b> | <b>Location</b>          | <b>Start Date</b>    | <b>Finish Date</b>   | <b>Funding Status</b>            | <b>Donor(s)</b>       |
|---------------------------------|-----------------------------------|------------------------------------------------------------|------------------------------|--------------------------|----------------------|----------------------|----------------------------------|-----------------------|
| 4.3.2                           | Training Needs Analyses           | Wastewater Training in the Pacific region                  | UNEP/GPA, SOPAC/IAS          | Regional                 | 2005                 | 2007                 | Ongoing                          | UNEP/GPA              |
| 4.3.2                           | Training Needs Analyses           | See paper Skeet A PWA                                      | PWA Skeet Arasmith?          | Northern Pacific         | 2003                 | 2005                 | Ongoing                          | USDOI                 |
| 4.3.2                           | Training Needs Analyses           | <a href="#">Regional Water Demand Management Programme</a> | <a href="#">PWA, SOPAC</a>   | <a href="#">Regional</a> | <a href="#">2005</a> | <a href="#">2007</a> | <a href="#">Concept approved</a> | <a href="#">NZAID</a> |

| Theme Key Message Action                   | Pacific RAP Identification                                    | Action                                                                    | Implementing Agencies              | Location                        | Start Date           | Finish Date          | Funding Status            | Donor(s)                  |
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| <b>Theme 5: Institutional Arrangements</b> |                                                               |                                                                           |                                    |                                 |                      |                      |                           |                           |
| 5.1                                        | National sustainable water vision development                 | Papua New Guinea 3WWF follow-up national water consultations              | PNG, SOPAC                         | Papua New Guinea                | 2003                 | 2004                 | On-going Project          | PNG, DFID                 |
| 5.1                                        | <a href="#">National sustainable water vision development</a> | Pacific Programme for Water Governance                                    | SOPAC                              | Solomon Islands, Fiji, Kiribati | 2005                 | 2006                 | On-going Project          | EU PFWG                   |
| 5.1                                        | National sustainable water vision development                 | Fiji Water Strategy Development                                           | Fiji, ESCAP, SOPAC                 | Fiji                            | 2002                 | 2004                 | On-going Project          | ESCAP                     |
| 5.1                                        | National sustainable water vision development                 | PNG National Water Consultations                                          | PNG, SOPAC                         | PNG                             | 2003                 | 2004                 | On-going Project          | DFID                      |
| 5.1                                        | National sustainable water vision development                 | Samoa EDF9 National Water Resource Management Strategy                    | Samoa, EU                          | Samoa                           | 2002                 | 2005                 | On-going Project          | EU                        |
| 5.1                                        | National sustainable water vision development                 | Tuvalu Water & Sanitation Master Plan Review                              | Tuvalu                             | Tuvalu                          | 2003                 | 2004                 | On-going Project          | Tuvalu                    |
| 5.2.1                                      | National water legislation review                             | Kiribati National Water Resources Assessment and Management               | GOK, ADB, SOPAC,                   | Kiribati                        | 2003                 | 2004                 | On-going Project          | ADB                       |
| 5.2.2                                      | National water planning review                                | Kiribati National Water Resources Assessment and Management               | GOK, ADB, SOPAC,                   | Kiribati                        | 2003                 | 2004                 | On-going Project          | ADB                       |
| 5.2.2                                      | National water planning review                                | Pacific Programme for Water Governance                                    | SOPAC                              | Solomon Islands, Fiji, Kiribati | 2005                 | 2006                 | On-going Project          | EU PFWG                   |
| 5.2.2                                      | National water planning review                                | Fiji Water Strategy Development                                           | Fiji, ESCAP, SOPAC                 | Fiji                            | 2002                 | 2004                 | On-going Project          | ESCAP                     |
| 5.2.2                                      | National water planning review                                | Samoa EDF9 National Water Resource Management Strategy                    | Samoa, EU                          | Samoa                           | 2002                 | 2005                 | On-going Project          | EU                        |
| 5.2.2                                      | National water planning review                                | Tuvalu Water & Sanitation Master Plan Review                              | Tuvalu                             | Tuvalu                          | 2003                 | 2004                 | On-going Project          | Tuvalu                    |
| 5.2.2                                      | <a href="#">National water planning review</a>                | <a href="#">Marshalls Water Master Plan Review</a>                        | <a href="#">Marshalls</a>          | <a href="#">Marshalls</a>       | <a href="#">2002</a> | <a href="#">2002</a> | <a href="#">Completed</a> | <a href="#">Marshalls</a> |
| 5.2.2                                      | National water planning review                                | Leadership Seminar Disaster Preparedness for Water Managers               | EW Centre, SOPAC, PWA              | Regional                        | 2004                 | 2005                 | On-going Project          | 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                 |                      | On-going                  | ADB                       |
| 5.3.1                                      | Appropriate institutional arrangements & reform               | Pacific Programme for Water Governance                                    | SOPAC                              | Solomon Islands, Fiji, Kiribati | 2005                 | 2006                 | On-going Project          | EU PFWG                   |

| Theme Key Message Action | Pacific RAP Identification                          | Action                                                                                                                    | Implementing Agencies                            | Location                        | Start Date | Finish Date | Funding Status       | Donor(s)  |
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| 5.3.1                    | Appropriate institutional arrangements & reform     | Apia Wastewater Restructuring                                                                                             | ADB                                              | Samoa                           | 2002       | 2004        | Project              | ADB       |
| 5.4.1                    | National awareness campaigns                        | World Water Day 2000/01/02/03 Regional Awareness Campaigns                                                                | SOPAC, Live & Learn                              | Regional                        | 2001       | 2004        | Annual campaigns     | Various   |
| 5.4.5                    | Establish multi-stakeholder consultation mechanisms | Papua New Guinea 3WWF follow-up national water consultations                                                              | PNG, SOPAC                                       | Papua New Guinea                | 2003       | 2004        | On-going Project     | PNG, DFID |
| 5.4.5                    | Establish multi-stakeholder consultation mechanisms | Samoa EDF9 National Water Resource Management Strategy                                                                    | Samoa, EU                                        | Samoa                           | 2002       | 2005        | On-going Project     |           |
| 5.4.5                    | Establish multi-stakeholder consultation mechanisms | Fiji Water Strategy Development                                                                                           | Fiji, ESCAP, SOPAC                               | Fiji                            | 2002       | 2004        | On-going Project     | ESCAP     |
| 5.4.5                    | Establish multi-stakeholder consultation mechanisms | Pacific Programme for Water Governance                                                                                    | SOPAC                                            | Solomon Islands, Fiji, Kiribati | 2005       | 2006        | On-going Project     | EU PFWG   |
| 5.4.5                    | Establish multi-stakeholder consultation mechanisms | Apia Wastewater Restructuring                                                                                             | ADB                                              | Samoa                           | 2002       | 2004        | Project              | ADB       |
| 5.4.7                    | Promotion of participatory rural management         | Guidelines for Community Participation in Water Supply and Sanitation: "Tapping the Connections between Water and People" | SOPAC                                            | Regional                        | 2003       | 2004        | Completed            | DFID      |
| 5.4.8                    | Promote Gender assessments                          | Guidelines for Community Participation in Water Supply and Sanitation: "Tapping the Connections between Water and People" | SOPAC                                            | Regional                        | 2003       | 2004        | Completed            | DFID      |
| 5.5.1                    | Needs assessments for institutional strengthening   | Strategic Planning Management of Water Resources                                                                          | ESCAP, SOPAC                                     | Regional                        | 2002       | 2005        | On-going Project     | UNESCAP   |
| 5.5.2                    | Develop training programme on good water governance | Strategic Planning Management of Water Resources                                                                          | ESCAP, SOPAC                                     | Regional                        | 2002       | 2005        | On-going Project     | UNESCAP   |
| 5.5.5                    | Improve regional partnerships                       | Pacific Partnership Initiative on Sustainable Water Management                                                            | Pacific Partnership facilitated by SOPAC and USP | Regional                        | 2002       | 2006        | On-going Partnership | ADB       |

| Theme Key Message Action | Pacific RAP Identification                                     | Action                                                                                                                    | Implementing Agencies    | Location | Start Date | Finish Date | Funding Status        | Donor(s)   |
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| <b>Theme 6: Finance</b>  |                                                                |                                                                                                                           |                          |          |            |             |                       |            |
| 6.1.1                    | Improve regulatory water governance                            | Strategic Planning Management of Water Resources                                                                          | ESCAP, SOPAC             | Regional | 2002       | 2005        | On-going Project      | UNESCAP    |
| 6.1.2                    | Include financing & cost recovery requirements in master plans | Strategic Planning Management of Water Resources                                                                          | ESCAP, SOPAC             | Regional | 2002       | 2005        | On-going Project      | UNESCAP    |
| 6.1.4                    | Promote separate uses of potable and non-potable water         | Freshwater Augmentation Sourcebook (eg multiple source water uses, Salt water sewerage systems)                           | UNEP, IETC, ACTEW, SOPAC | Regional | 1998       | 2000        | Completed Project     | UNEP, IETC |
| 6.1.9                    | Improve demand management                                      | <a href="#">Regional Water Demand Management Programme</a>                                                                | PWA, SOPAC               | Regional | 2005       | 2007        | Concept approved      | NZAID      |
| 6.2.1                    | Develop business plans                                         | Strategic Planning Management of Water Resources                                                                          | ESCAP, SOPAC             | Regional | 2002       | 2005        | On-going Project      | UNESCAP    |
| 6.2.2                    | Improve billing & collection procedures                        | <a href="#">Regional Water Demand Management Programme</a>                                                                | PWA, SOPAC               | Regional | 2005       | 2007        | Concept approved      | NZAID      |
| 6.2.4                    | Establish sound asset management                               | <a href="#">Regional Water Demand Management Programme</a>                                                                | PWA, SOPAC               | Regional | 2005       | 2007        | Concept approved      | NZAID      |
| 6.2.9                    | Increase public awareness of need for cost recovery.           | World Water Day 2000/01/02/03 Regional Awareness Campaigns                                                                | SOPAC, Live & Learn      | Regional | 2001       | 2004        | Completed             | Various    |
| 6.3.3                    | Introduce benchmarking                                         | Pacific Region Water Utilities Benchmarking Project                                                                       | PWA, ADB                 | Regional | 2000       | 2004        | First Phase completed | ADB        |
| 6.3.3                    | Introduce benchmarking                                         | <a href="#">Regional Water Demand Management Programme</a>                                                                | PWA, SOPAC               | Regional | 2005       | 2007        | Concept approved      | NZAID      |
| 6.5.1                    | Formulate policy for rural W&S provision                       | Kiribati National Water Resources Assessment and Management                                                               | GOK, ADB, SOPAC,         | Kiribati | 2003       | 2004        | On-going Project      | 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        | Completed             | DFID       |