



Pacific Cooperation Plan

Preliminary Sector Analysis for Water, Sanitation and Hygiene

1 Executive Summary

Pacific island countries are no different from other countries in that freshwater is essential to human existence and a major requirement in agricultural and other commercial production systems. The economic and social well-being of Pacific island countries are dependent upon the quality and quantity of their water. However, the ability of the island countries to effectively manage the water sector is unique to SIDS, whereby constrained by their small size, fragility, natural vulnerability, and limited human and financial resource base.

The challenges and constraints of sustainable water resources management in Pacific SIDS can be categorized into six broad areas identified at the Third World Water Forum National and regional consultations on Water in Small Island Countries. The **six thematic challenges** that are considered as being key to addressing sustainable water management in the Pacific are:

- 1) Small island countries have uniquely fragile water resources due to their small size, lack of natural storage and competing land use. This requires detailed water resources assessment, monitoring, appropriate methods and technologies for water supply and sanitation, as well as implementation of an integrated approach to **water resources management**.
- 2) Small island countries are extremely vulnerable to natural and anthropogenic hazards, including drought, cyclones and urban pollution. Action is required on enhancing the application of climate information and changing the paradigm for dealing with **island vulnerability** from disaster response to hazard assessment and risk management, particularly in integrated water resources management;
- 3) Participatory frameworks are required to allow for open participation of communities in water and wastewater management. Programmes on **awareness**, sharing information, improved coordination and mainstreaming of water and sanitation education are needed for all levels of society;
- 4) **Water service providers** face challenging constraints to sustaining water and wastewater provision due to the lack of resources including 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;

- 5) 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, which are all interwoven with colonial and 'modern' practices and instruments. These require programmes on advocacy, and political will at community, institution and government levels, as well as the strengthening of **institutional arrangements** to create a framework for integrated water resources management;
- 6) There is a need to create a better and sustainable environment for investment by both the public and private sector, by developing and implementing National, sector and strategic plans which ensure the proper allocation of **financing** for the water sector. Appropriate pricing policies should ensure access for the poor. Financially viable enterprises for water and sanitation should be established and costs should be reduced through improved operational efficiency.

These issues have all been addressed through the development of the Pacific Regional Action Plan on Sustainable Water Management (**Pacific RAP**). The Pacific RAP contains the detailed actions required for each of the six thematic challenges mentioned above.

Endorsed by 18 countries, 16 at Heads of State level, the Pacific RAP not only provides a coordinated and agreed approach, it has also significantly driven water up the national and regional agenda.

At the 3rd World Water Forum, Small Island Developing States recommitted themselves to Agenda 21, the Barbados Programme of Action, and the World Summit for Sustainable Development (WSSD) Plan of Implementation. Further, they reaffirmed their commitment to the Millennium Development Goals and Targets of halving by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation.

The call for improved water resources management has been given prominent attention at the twelfth session of the United Nations Commission on Sustainable Development (CSD-12). During CSD-12 the Pacific Island Countries have been urged to use the CSD process to facilitate prioritization of water in their national sustainable development strategies, if they are to take optimal advantage of the global focus on water during CSD12/13 and the subsequent **Water for Life Decade (2005-2015)**.

However, without **additional financial and human resources**, national and regional activities in this sector cannot be furthered thus endangering achieving the water and sanitation targets by the end of the Water for Life Decade.

It is essential that the Pacific RAP be implemented and linked to National Sustainable Development Plans if **sustainable integrated water resources management** is to be achieved in the Pacific.

At present, the mechanism through which the Pacific RAP is being implemented is the Type II Partnership arrangement, a second major outcome of the WSSD process. The **Pacific Type II Partnership Initiative on Sustainable Water Management** is a voluntary partnership of water and wastewater stakeholders in the Pacific Region, with a common goal of achieving sustainable water and wastewater management in the Pacific Island States. It is essential that the resources required to operate these **strategic partnerships** for the implementation of the Pacific RAP, be secured for the foreseeable future. Without the partnerships, implementation

will be less coordinated, more expensive and less effective. It is in every stakeholders interest to maintain the strategic value of these partnerships

Monitoring programmes contained in the Pacific RAP, need to be developed and implemented in order to adequately indicate success in achieving the MDG targets of truly halving the proportion of people without sustainable access to safe drinking water and drinking water and basic sanitation by 2015 in the Pacific region.

2 Preamble

Pollution and enrichment of fresh water occurs to varying degrees throughout the region. It is difficult to give a precise assessment, as there is inadequate water quality data available. The lack of water resource data in most island countries often means that major development is implemented without knowledge of the practical implications for the environment and on the resource. Provision of expert water quality monitoring and analytical services is expensive and difficult for the widely separated islands of the Pacific.

Access to safe drinking water ranges from 23% in PNG to 100% in countries such as Tuvalu, Tonga, Niue and Tokelau. Despite these facts there continues to be shortages of water supply in many Pacific island countries in extreme events. Expected increases in extreme events from Climate Change, sea-level rise and increasing population pressure on the carrying capacity on limited land masses further exacerbate the challenge of providing access to safe water.

In urban areas, settlements without appropriate water supply and sanitation are the inevitable result of rapid and uncontrolled population growth and lack of government investment in infrastructure investment. Industrial development provides more of a concern with the waste it generates rather than the quantity of water used.

Water and sanitation as foundations of economic growth, social development and in some cases basic survival. The protection and conservation of the supply and quality of water is expected to become an increasingly important issue in the Pacific of the future, especially if global climate change results in increasing rainfall variability in the region. Population growth, urbanisation and damage to water catchments as a result of rampant deforestation, inappropriate agricultural activities and inadequate waste disposal are all likely to have an increasing impact on water supplies throughout the region. Improvements in water resource management is fundamental and will require a coordinated effort across many sectors including: improvements in watershed management; reductions in deforestation rates; raising public awareness of wise water use and management; controls over agricultural activities and improvements in waste disposal, especially sewage disposal facilities.

Although Pacific SIDS acknowledge there has been significant development in the area of freshwater resources, there remains the problems of poor supply and quality of freshwater resources in many PIC's and the limited capacity to deal with these issues. Conservation and management of groundwater and collection and storage of rainwater are critical to sustaining human settlement. The ability to adequately manage freshwater resources is hindered by the lack of technical equipment, trained technicians, logging of catchments and a lack of catchment data, knowledge of freshwater sources and inadequate monitoring of the quality and supply of fresh water resources.

At the National level there are often a multitude of agencies that deal with water and this fragmented management of this resource is compounded with a lack of

overarching policy outdated laws and poor administration capacity for integration. There remains poor data and knowledge of ground water systems in the region, which lead to an inability to properly manage the resource. There is a lack of understanding on how other land use activities affect water resources such as mining, forestry and agriculture and a lack of effective watershed planning and management mechanisms to address this. There are problems with maintaining water supply quality in low and raised atolls, with the threat of poor effluent disposal, use of fertilizers and pesticides, waste dump leaching, activities close to bore holes and possible salt water intrusion during storms or rising sea levels. Further to this there are limited protection methods/frameworks for water reserve areas in small atolls e.g. Bonriki water catchment area in Kiribati. It is imperative that international support is obtained to assist with the limited resources available for long term programmes to address these constraints.

The need to ensure that adequate regional human resource levels are maintained so as to be able to ensure that technical assistance, training support and, information and technical data is available. In particular the following technical areas are highlighted:

- **Water resource management:** including assessment, development and management (including protection) of rainwater harvesting, surface water catchments (streams, rivers and lakes), groundwater systems (freshwater lenses, volcanic and fluvial terrains) and non-conventional sources (eg desalination), water quality and resource vulnerability, rural community participation, appropriate technologies and drought preparedness.
- **Water demand management:** including system efficiency and conservation through asset inventories, leakage assessment, detection and repair, hydraulic modeling and system improvement, water treatment and water quality monitoring, operation and maintenance issues, drought storage assessments, metering, tariff studies and public conservation awareness programmes.
- **On-site sanitation facilities:** including appropriate sanitation technologies (eg. dry systems, water flush, composting toilets, eco-treatment processes), community level participatory surveys, environmental pollution, public awareness campaigns, sustainable village level operation and maintenance.
- **Off-site sanitation systems:** including urban sewerage collection systems, treatment process works, storm overflows, sea outfalls and river disposal, deep wastewater injection systems, wastewater quality and environmental monitoring, network modeling and catchment management.
- **Hygiene assessment and promotion:** including community participation surveys, socio-cultural assessments, water source protection, water storage and purification practices, washing and cleaning practices, use and maintenance of sanitation systems.

The water sector also suffers from a number of constraints that contribute to the inability of achieving sustainable management of water supply, sanitation and hygiene. The constraints can broadly be divided into three groups: institutional capacity of national agencies; governmental support; and public support.

- **Insufficient institutional capacity:** lack of data and information systems; insufficient or inoperative equipment; poor maintenance of equipment; limited technical expertise; weak institutional bodies; often demoralised and unmotivated staff; insufficient training opportunities; poor staff retention; lack of finances.
- **Insufficient government support:** lack of political will but often too much unwanted political interference; legislation inappropriate or absent; lack of regulation and no capacity for enforcement; often no coherent national policies on integrated water resource management; fragmented multiple government agency involvement resulting in poor regulatory or policy links between the various sectors; often inadequate share of the National annual budget and conflict between public service and sustainable utility.
- **Insufficient public support:** inadequate public awareness; insufficient community participation and involvement; and associated lack of appreciation of socio-cultural issues.

For the Pacific sub-region, six areas of thematic challenges have been identified through national and regional consultation mechanisms and processes to address the issues mentioned above.

The **Pacific Regional Action Plan on Sustainable Water Management** (Pacific RAP) is a strategic approach to achieving sustainable water management in the Pacific. It is the culmination of 9 months of preparatory consultation, 18 national consultations, 6 thematic regional overviews, over 30 case studies, and the involvement of over 165 key regional stakeholders during the Pacific Regional Consultation Meeting on Water In Small Island Countries (held in Fiji in July-August 2002). The Pacific RAP has been endorsed by 18 PICs, 14 at Ministerial level, and subsequently 14 PICs have endorsed the RAP at Heads of State level, as have Australia and New Zealand.

The **Pacific Water Type II Partnership on Sustainable Water Management** is a voluntary partnership arrangement, facilitated by a CROP appointed coordinator, SOPAC, supported by USP. The Water Type II Partnership was advocated and agreed to by the stakeholders involved in the regional consultation meeting and was submitted to WSSD as part of the Pacific Umbrella Type II partnerships.

The objectives of the Pacific Water Type II are, besides the establishing of a network for the Pacific water sector, to implement the Pacific RAP and its sister strategies, the Pacific Wastewater Policy Statement and the Pacific Wastewater Framework for Action, in as coordinated and effective manner possible.

3 Key Historical trends

Freshwater is essential to human and ecological existence and a major requirement in agricultural and other commercial production systems. The management of water resources, its supply to the population and subsequent wastewater disposal, and the institutional framework required to manage these functions, have been major issues for all countries in the Pacific.

Global assessments, such as the Global Water Supply & Sanitation Assessment 2000 Report, continue to be of little value to the region, simply demonstrating the almost complete lack of reported statistical data for the region between 1990 and 2000, its blatant inaccuracy (eg. 100% coverage) and questionable validity (eg identical data for both years). Fortunately recent consultations in preparation for the 3rd World Water Forum have resulted in national water briefing papers being available for most Pacific Island Countries.¹

Many Pacific Islands have no significant supply of surface water and extremely limited and fragile groundwater resources. It follows that the conservation, management and protection of surface water and groundwater and the collection and storage of rainwater are critical to sustaining human settlements in these areas. Recent droughts in the Pacific region (eg. 1997-98) linked to changing climatic patterns and the El Nino phenomena, have highlighted this as a priority in the region.

The management of freshwater resources gives rise to many different problems in the Pacific region. Over the past ten years and leading up to Agenda 21, relatively few areas have enjoyed the investment, management and community support needed for problem-free water supply. Water resources management has received little attention in the region, with only a few exceptions in the last decade.

Most countries now have articulated water supply schemes to their capital towns, although some remain dependent upon antiquated systems constructed long before this review period. However few countries have sewerage systems to remove the increased wastewater production, being reliant almost entirely on on-site sanitation.

With moderate economic growth and development in the last decade there has been an increase in water demand generally, coupled with increasing water wastage (primarily due to aging and therefore leaking supply systems and illegal connections), with only limited attempts to introduce conservation and demand management measures.

A critical lack of human capacity has not been successfully addressed in the region, with a continued stream of skilled labour leaving for Pacific Rim countries.

¹ Although the country briefing papers provided much information on challenges and constraints to water resources management, information and data are continue to be lacking.

Neither has the Pacific come to terms with resolving the issues of under-resourced central government administrations, fragmentation of government functions nor the constraint of strong socio-cultural traditional land and water rights.

In the past, the Pacific countries have called on the United Nations Commission on Sustainable Development for a coordinated approach of aid programmes and project design to assist the region 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 with existing regional organisations in the development of water-related programmes and technologies have been highlighted. These issues have recently been addressed through the development of the Pacific Regional Action Plan on Sustainable Water Management and are discussed briefly in the section below under regional initiatives.

National Examples

An attempt is made to document the status of implementation of water initiatives with regards to sustainable water resources management at the national level for countries in the Pacific region. **Table 1** in the appendix shows that countries in the Pacific sub-region have instituted some sort of measures to address water resources management in their countries. These measures include governance issues of putting in place water legislations (water ordinances and acts), the establishment of institutions such as the establishment of public utilities responsible for water management and supply, and the development of master plans and action plans.

Water Supply & Sanitation

Where investments have been made, these has typically involved the upgrading and/or replacement of existing urban water supply schemes, eg Majuro in the Marshalls (ADB), Port Vila in Vanuatu (UNELCO), South Tarawa in Kiribati (ADB), Nukualofa in Tonga (Japan), Rarotonga in the Cooks (NZ AID), Pohnpei in FSM (ADB), Noumea in New Caledonia (France).

Some of these investments have been accompanied by associated institutional reform and separating of the water provider from the government departments, whether as corporatisation or privatisation. However little progress has been made in developing adequate water resources management, utility regulation or environmental health compliance entities. Indeed the sustainability of the water providers themselves remains questionable. Full cost recovery needs to be achieved by these service providers, but low tariffs and a socio-cultural perception that water is free, have not helped achieve this goal.

Most existing urban service providers have excessively high unaccounted for water (typically 30-50%, but up to 80%). Limited interventions to date have tried to address

this issue (eg SOPAC & PWA), but this remains a priority issue for SIDS, especially given their vulnerability to drought.

It is not only that relatively few areas have enjoyed adequate investment but an almost complete lack of investment has occurred in urban sewerage and storm water management, with less than 10% of the Pacific populace attached to a sewerage system, and of them very few systems working to their operational design².

Rural water and sanitation interventions have occurred in many countries, but the questionable sustainability of many of these projects still results in the majority of the Pacific people still having relatively poor water supply and inadequate sanitation. Examples of rural interventions include the Outer Islands of the Cooks (AusAID), rural Samoa (EU), Kiribati Outer Islands (UNDP & AusAID), rural Vanuatu (NZAID). Most have concentrated on improving water supply, including rainwater harvesting. Government attempts to address rural W&S are frequently thwarted by remote and costly implementation per capita, fragmented implementation and inadequate community participation.

Water Resources Management

However national sustainable water management requires considerably more than a piped water supply to the major town. As noted in the gaps and challenges columns of **Table 1**, they reiterate the lack of implementation of sustainable water resource initiatives at the national level.

This is demonstrated in the consistent failing to ensure adequate freshwater resources management and protection. Few countries, if any, have sufficient knowledge of their water resources to be able to manage them sustainably. Only two freshwater resources in the Pacific can be considered to have adequate management data, these are the groundwater lenses on Bonriki, South Tarawa, Kiribati and on Laura, Majuro Atoll, Marshalls. A basic requirement for any nation, it is of utmost importance to small island countries whose small water resource size and coastal proximity ensure an acute natural vulnerability to climatic and geological hazards, particularly droughts & cyclonic floods, coupled with limited natural resilience to respond to such hazards due to their small populations and economies.³

In the high islands, despite often high levels of rainfall (Pohnpei has been called the wettest capital in the world with 10,000 mm/yr), water is sometimes not available where and when it is needed, with small surface water catchment sizes preventing adequate natural storage to get through dry periods, and little attenuation of flood events either, unless investment is injected into expensive dam schemes.

² Regional reporting had noted that only the Oxidation Ponds on Kosrae have performed to design over the last twenty years. All other municipal sewage treatment works are consistently operating below design.

³ For example, despite the large amount of rainfall in Fiji, there are extreme water shortages when experiencing drought periods.

Balancing the water needs of hydro-electric generation, public water supply and environmental conservation can prove to be very difficult. Localised pollution, sedimentation due to uncontrolled watershed development and water wastage are common problems in the high volcanic countries of the Pacific region.

For the smaller low-lying atolls, they have no surface water at all and very limited groundwater resources. For these countries, rain and groundwater provide the only sources of fresh water and the limited supply is a major constraint and to not just sustainable development but outright survival.

Countries like Kiribati, Tuvalu, Niue and the Marshall Islands have no surface water. Due to rapid infiltration and little natural attenuation, groundwater is highly susceptible to contamination and water borne diseases. In Tuvalu and the Marshall Islands, rainwater provides the main potable resource and groundwater is only used for drinking in times of drought. In Kiribati treated groundwater is used on islands large enough to have a freshwater lens.

Freshwater shortages are primarily due to the small size of the countries, resulting in a lack of natural storage capacity, whether it be surface water or groundwater. Groundwater abstraction is not particularly excessive except in drought periods. On the other hand surface water streams dry up during droughts. Rainwater tanks in most countries have failed during droughts, as they were too small in their capacity to hold enough volume of water for usage. Natural disasters such as droughts tend to have severe consequences for the countries that do not have the natural storage to get through them.

Urban pollution and salination of fresh water is a problem to varying degrees in the Pacific region. It is difficult to give a precise assessment, as there is little water quality data available. The lack of water resource data in most island countries often results in major development being implemented without knowing the daily consequence on the environment. Provision of expert water quality monitoring services will always be expensive and difficult for the widely separated islands in the Pacific. However the increasing pressures associated with urbanization are undoubtedly causing progressive deterioration of surface water and groundwater quality, primarily through inadequate wastewater disposal.

Water Governance and Awareness

Generally restricted attempts to reduce national fragmentation of the water sector, with limited cross-sectoral planning still prevents IWRM from becoming a reality in the immediate term. Whilst 'catchment or watershed management' is recognized as being an appropriate approach to take to manage water resources, existing institutional arrangements mostly constrain inter-ministerial liaison & collaboration. Fledgling national water committees, councils and partnerships are however starting to become more formalized in some countries (eg Fiji, PNG, Vanuatu, Samoa and Kiribati).

Water governance has received notable attention from development agencies in terms of institutional strengthening especially of water service providers (eg Samoa Water Authority, Tonga Water Board), but national integrated water management and catchment scale and community governance have been largely neglected, except recently. Exceptions include the recent municipal governance reforms in Apia, Samoa, for wastewater & stormwater management, and community governance issues for water reserve management in South Tarawa, Kiribati.

A lack of community engagement has also been common over the last decade, with a general focus on creating legislation and regulatory tools rather than improving public awareness and education.⁴ The reality in the Pacific is that most legislation is arguably unenforceable, due to inadequate central administration resources, geographic distance, strong local cultural governance structures and/or existing and traditional land rights. In such an environment only increased public awareness and education will result in effective self-enforcement of communities.

Many countries are embarking on improving water awareness and educational materials, with all countries participating in the regional World Water Day campaigns, and some main streaming water into the school curricula (eg Vanuatu, Fiji, Solomons and PNG). There has also been a noticeable increase in community participation and empowerment in recent years by the development agencies (eg ADB in Kiribati, NZAID in Tonga, AusAID in Cooks).

At the national level, the National Environmental Management Strategies (NEMS) provide an overall strategic approach for water management and its relationship with other aspects of sustainable development.

In many Pacific island countries (for example Pohnpei and Kosrae in the FSM) freshwater management is an integral component of Integrated Coastal Management. In other countries such as Samoa, watershed management and waste control strategies cover the major aspects of fresh water management. Through the assistance by EU and other donors, Samoa has developed a water resource master plan. Donors such as UNESCO has supported water resource management studies in the Pacific region and assistance has also been provided from regional organizations such as the South Pacific Applied Geoscience Commission (SOPAC) in capacity building, training, technical and policy level advice, and awareness and educational support.

A regional programme of improved strategic water resources management was initiated by ESCAP in 2002, focusing on both national integrated water management and institutional strengthening, and is expected to roll out into individual countries from 2004. Fiji has already benefited from national level policy development support.

⁴ The linkage between cross-sectoral planning such as human settlement is crucial to sustainable water development.

Momentum created by the WSSD and the 3rd World Water Forum has resulted in some countries embarking on more holistic initiatives on water resources management. This includes: Kiribati have commenced work on a Water Resources Management and Protection Plan with assistance provided by the Asian Development Bank; Fiji have formalized their national water committee and are drafting a national water strategy, assisted by ESCAP; PNG has organized national consultations to establish a National Water Policy with the support of DFID. Tuvalu and the Marshall Islands have reviewed their national plans and Samoa will shortly commence further national water policy development, supported by the EU.

The challenge now for Pacific Island Countries is to develop their resources management and utility regulation governance arrangements to compliment and counter the efforts on utility strengthening.

Regional support to national progress

Limited national expertise and capacity has resulted in considerable implementation being carried out at the regional level. The UNDP Water & Sanitation Programme closed down in the region in 1996 and responsibility was taken on by SOPAC.

SOPAC has developed a programme of capacity building, advocacy and awareness, assisting its Member Countries in water resources management, water supply and sanitation advice, environmental hygiene and policy and strategy development.

National Challenges

The major challenges or problems for most of the countries in the Pacific sub-region is the sustainable provision of adequate supplies of non-polluted freshwater and wastewater disposal, requiring improved resources management, efficient service providers and better local and national water governance.

One of the consequences of not having freshwater is one of constraints pose on sustainable development. Other consequences include an increase in waterborne diseases and general hardship, especially for women and children.

The challenges at the national level to improve freshwater management and to achieve the sustainable use of freshwater are summarised below from the national tables (refer to **Table 1**):

- Adequate water resources understanding and management
- Adoption of integrated watershed management
- Increased rainwater harvesting,
- Climate forecasting (rainfall/drought and cyclones)
- Mainstreaming vulnerability assessment and risk management
- A safe and secure supply to all
- Reduction of unaccounted for water (e.g. leaks)

- Cost effective mechanisms that provide incentives for the efficient use of water, with the provision of a basic level of supply at affordable cost to families
- Development and application of low cost, environmentally friendly water recycling and use technologies
- Promotion of technologies appropriate to Pacific SIDS
- Introduction of mechanisms to ensure consistent standards and compatible technologies
- Achieving full cost-recovery of urban water providers
- Adequately trained staff
- Water management institutional reform
- Use of integrated economic and environmental project and policy appraisals
- Adoption of least cost integrated supply and demand side planning for water supply augmentation
- Implementation of environmental regulations to eliminate significant pollution/contamination
- Regulatory arrangements to allow private sector involvement in water supply while protecting consumers from potential market abuse
- Public awareness campaigns and education on water conservation and water resources protection
- Improved community participation and involvement
- Sustained high level political commitment

The challenges for the regional and international levels 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 with existing regional agencies in the development of water sector related programmes and technologies;
- Regional level support of national capacity building, advocacy and awareness.

Summary of Pacific Challenges

In summary, the above list of challenges and constraints of sustainable water resources management could be categorized into three broad thematic areas. These three areas were identified as broad challenges at the Kyoto Consultations for Small Island Developing Countries on Water Resources during the Third World Water Forum. These thematic challenges are considered as being key to addressing sustainable water management in Small Island countries 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 resources including 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, which are all interwoven with colonial and 'modern' practices and instruments. These require programmes such as awareness, advocacy, and political will, at community, institution and government levels to create a framework for integrated water resources management.

For the Pacific sub-region, six areas of thematic challenges⁵ have been identified through national and regional consultation mechanisms and processes. A detailed discussion of these thematic challenges is presented in chapter 4.

Millennium Development Goals and water and sanitation targets

At the 3rd World Water Forum, Small Island Developing States recommitted themselves to Agenda 21, the Barbados Programme of Action, and the World Summit for Sustainable Development (WSSD) Plan of Implementation. Further, they reaffirmed their commitment to the United Nations Millennium Development Goals, and the WSSD target to halve the proportion of people without access to safe and affordable drinking water and basic sanitation by 2015.

As stated above the available information such as in the Global Water Supply & Sanitation Assessment 2000 Report (WSSCC) as well as the Human Development Index 1999 (UNDP) do not provide the accuracy and validity that is needed to monitor the success in achieving the targets on water supply and sanitation.

Additional monitoring programmes need to be developed and implemented in order to adequately indicate success in achieving the Millennium Development Goals. These programmes are part of the Regional Action Plan on Sustainable Development.

4 Anticipated Future Trends

⁵ Thematic challenges include the identification of main thematic areas of importance (such as water resource management, island vulnerability, awareness, technologies, institutional arrangements, financing) and challenges associated with these thematic areas.

The Pacific national and regional consultations on water in small island countries⁶ are a classic example of multi-stakeholder involvement and the development of partnerships. The Pacific sub-region is unique in terms of regional institutional architecture where regional level support is provided to national efforts in the development of regional policies and strategies for sustainable water and wastewater management and sanitation. This is mainly done through the work of the Council of Regional Organizations in the Pacific (CROP), and in particular SOPAC who has the mandate to support its member countries in the areas of water resources, water supply and sanitation.

The regional architecture in the Pacific region is a well-developed feature of the Pacific Islands' development agenda that is recognised as a model for regional or sub-regional cooperation. But it also absorbs significant resources so it is necessary as well to ensure that regional governance structures and processes are the optimal for promoting sustainable development.

The regional needs for both water and sanitation are articulated for the Pacific in the Pacific Regional Action Plan (RAP) on Sustainable Water Management. The product of eight months consultation, the Pacific RAP is a strategic holistic approach to achieving sustainable water management in the Pacific. 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 is very much the evidence provided of late by member countries' initiatives taken on water resource management and the political support given by governments.

Pacific Regional Thematic Areas and Challenges

The Pacific RAP consists of six thematic categories, each containing 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 the responsible parties for implementing the action (e.g. national government, water utilities, regional organizations, donors). In this framework, a comprehensive strategic approach is built up. It is also important to note that the status of implementation by Pacific countries are reflected in **Table 1** and under each of these thematic areas.

The six thematic categories are:

Theme 1: Water Resources Management (fragile vulnerable small, pollution, IWRM)

Theme 2: Island Vulnerability (climatic, geohazard & social)

Theme 3: Awareness (community participation, political will)

⁶ This include the Pacific Regional Consultation on Water in Small Island Countries, held in Sigatoka, Fiji Islands, 29 July – 3 August 2002, and the 3rd World Water Forum Pacific Preparation entitled "water in Small Island Countries". Reference is made to the proceedings edited by Clive Carpenter, Jeffrey Stubbs and Marc Overmars. This Consultation resulted in a Regional Action Plan on water resources management for the Pacific sub-region.

Theme 4: Technologies (appropriate, capacity building, leakage reduction)

Theme 5: Institutional Arrangements (policies, planning, legislation, regulation, IWRM)

Theme 6: Financing (cost recovery, economic value of water)

The consultation process included the identification of national priority actions as determined by the participating countries on the basis of their national water strategies, national assessments and stakeholder consultations undertaken for the World Summit on Sustainable Development (WSSD) and the 3rd World Water Forum 'Water In Small Island Countries' Theme, and the development of agreed regional actions through a regional consultation meeting process of plenary discussion, working group review and delegation approval.

The actions are structured around six thematic areas with the following key messages:

Theme 1 WATER RESOURCES MANAGEMENT (Water Resources Assessment and Monitoring, Rural Water Supply and Sanitation, Integrated Water Resources and Catchment 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.

Theme 2 ISLAND VULNERABILITY (Disaster Preparedness; Dialogue on Water and Climate)

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.

Theme 3 AWARENESS (Advocacy; Political Will; Community Participation; Environmental Understanding; Gender)

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.

Theme 4 TECHNOLOGY (Appropriate Technologies; Demand Management and Conservation; Human Resources)

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.

Theme 5 INSTITUTIONAL ARRANGEMENTS (Policy, Planning and Legislation; Institutional Strengthening)

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.

Theme 6 FINANCE (Costs and Tariffs, Alternative Models; Role of Donor Organisations and Financing Institutes)

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.

The consultation process also enabled agreement to be reached on how this regional strategy would be implemented.

Millennium Development Goals and water and sanitation targets

It is expected that the Type 2 mechanism will be used by donor, international and regional organizations alike to help implement actions in the Pacific region towards achieving the United Nations Millennium Development Goals, and the WSSD JPOI target to halve the proportion of people without access to safe and affordable drinking water and basic sanitation by 2015.

5 Regional Cooperation: Pacific Type II Partnership Initiative on Sustainable Water Management

Main objectives of the Partnership/Initiative

The main objective of the 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 work in the different fields of water resources management and service delivery in the region, to improve regional coordination and collaboration;
- the implementation of the **Pacific Strategies for Water, Sanitation and Hygiene** that aim to build and increase the capacity in Pacific Island Countries to deliver sustainable management of water and wastewater as a means to contributing to poverty alleviation. Sustainability has to be achieved in the technical, institutional, financial, environmental and social-cultural areas. SOPAC Member Countries have endorsed these strategies during the 30th SOPAC Annual Session (Majuro, October 2001), which are complimentary with the efforts towards the World Summit on Sustainable Development and the 3rd World Water Forum;
- implementation of the “**Regional Action Plan for Sustainable Water Management**”, as agreed upon by Ministers, Heads of Delegation and representatives of civil society groups with responsibilities for water affairs from 16 small island countries in the Pacific, as well as East Timor and the Maldives as part of the regional consultation and preparation for the “Water in Small Island Countries” and “Dialogue on Water & Climate” themes of the 3rd World Water Forum, during the “Pacific Regional Meeting on Water in Small Island Countries”, held in Sigatoka, Fiji from 29 July to 3 August 2002. 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 WSSD and the 3rd World Water Forum, and the development of agreed regional actions through the consultation meeting process of plenary discussion, working group review and delegation approval.

Ministers, Heads of Delegation and representatives of civil society groups with responsibilities for water affairs from 17 small island countries in the Pacific, including East Timor and the Maldives expressed on 3rd August 2002:

- commitment to the water and sanitation components Agenda 21 agreed to ten years ago in Rio de Janeiro, Brazil and the Global Action Plan for Small Island Developing States agreed to in Barbados 1994 and the outcomes of the 5-year reviews undertaken in 1997 and 1999;
- commitment to the outcomes of the meeting on freshwater held in Bonn, Germany, in December 2001 and urge the international community to pursue the achievement of the Millennium Development Goals that target the vital role of water and sanitation in eliminating poverty and securing a livelihood for all people;

- endorsement of the “Regional Action Plan on Sustainable Water Management” to address these key issues for the water sector in the pursuit of sustainable development in our islands;
- support to this Type 2 Partnership/Initiative on water submitted by the Pacific delegations at the WSSD and urged donors and partners to do likewise.

Partners in Type II Initiative on Sustainable Water Management

Governments

Pacific island countries and territories including: American Samoa, Cook Islands, Federated States of Micronesia, Fiji Islands, French Polynesia, Guam, Republic of Kiribati, Republic of the Marshall Islands, Republic of Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.

Intergovernmental Organisations

Pacific Islands Forum Secretariat (PIFS), Secretariat of the Pacific Community (SPC), South Pacific Applied Geoscience Commission (SOPAC), South Pacific Regional Environmental Programme (SPREP).

Potential Major Groups/NGOs

Universities and capacity building institutes:

University of the South Pacific (USP), Fiji Institute of Technology (FIT), Fiji School of Medicine (FSM), United Nations University (UNU), Australia National University (ANU), Australian Centre for International Agricultural Research (ACIAR), National Institute for Water and Atmospheric Research New Zealand (NIWA), Bureau of Meteorology Australia (BOM), University of Hawaii, Water and Energy Research Institute of the Western Pacific (WERI) at the University of Guam.

NGOs: FSP (Foundation for the People of the South Pacific), Greenpeace, Live & Learn, World Wide Fund for Nature South Pacific (WWF).

Associations: Australia Water Association (AWA), New Zealand Water and Wastewater Association (NZWWA), Pacific Water Association (PWA), American Water Works Association (AWWA).

Possible Donors

Asian Development Bank (ADB), AusAID, CSC (Commonwealth Science Council), Department for International Development (DFID), European Union (EU), Global Environment Facility (GEF), JICA, NZAID, United States Department of the Interior (USDOI), the World Bank.

Global Partners

Economic and Social Commission for Asia and the Pacific (ESCAP), GWP (Global Water Partnership), GPA (Global Programme of Action), International Waters, United Nations Development Programme (UNDP), United Nations Environment Programme

(UNEP), United Nations Educational, Scientific and Cultural Organisation (UNESCO), United States Army Corp of Engineers (USACE), United States Environmental Protection Agency (USEPA), United States Geological Survey (USGS), World Health Organisation (WHO), World Meteorological Organisation (WMO), Water Supply and Sanitation Collaborative Council (WSSCC).

Type II Coordination and Implementation Mechanism

The Partnership is coordinated and facilitated by the intergovernmental organisation with the legal mandate to support the Pacific Island Countries in water & sanitation. This organisation is the South Pacific Applied Geoscience Commission, known as SOPAC, based in Fiji. SOPAC is assisted in this task by a deputy facilitator, the University of the South Pacific.

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

It is proposed the Coordinator will be assisted by support staff (admin and IT) to form a Type II Coordination Unit, once funding for the Type II Partnership is secured.

Monitoring Arrangements and Partnership Governance

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

It is anticipated the matrix will be updated annually using feedback and review from the stakeholders within the partnership.

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

A Core Team or Steering Committee, consisting of a group of existing regional partnership focal points (e.g. SOPAC, PWA, WWF, ForSec, WHO, UNESCO etc) has been established to provide bi-annual review of the agreed priority actions and progress on implementation in the last period (Aug 2002-Mar 2004), and to agree upon the implementation priorities for the next two year period. Donor and

development agencies are represented on the Steering Committee by NZAID and ADB.

Pacific Type II Partnership Steering Committee Meeting

SOPAC, USP and PWA facilitated the review of progress of the Pacific Regional Action Plan on Sustainable Water Management, the associated Type II Water Partnership, and the 3rd World Water Forum “ Water in Small Island Countries “ session outcomes, through the inaugural Steering Committee of the Pacific Water Type II Partnership held on 29-30 January at the SOPAC Secretariat.

The main objectives of the meeting were to review RAP implementation progress since August 2002, determine the future role of the Partnership Facilitators and the Mechanism for the Operation of the Partnership, and agree the implementation priorities for the next two year period. The meeting was timed to contribute to the CSD12 regional reporting submissions.

3rd World Water Forum Follow-up Meeting

The 3rd World Water Forum Secretariat organised an Oceania Progress Report Meeting on 18 and 19 March 2004 in Wellington, New Zealand in collaboration with NZWWA, SOPAC, PWA and AWA and included Australia, New Zealand and Pacific Island Countries stakeholders.

The main outcomes of the meeting included the recommendation that SOPAC as the regional strategic water agency in the Pacific is provided with the resources to assist Pacific island water stakeholders in enhancing their engagement with donors at the National Government level and that the Pacific Partnership Initiative facilitators need to be kept informed of new development projects and activities.

Work Programme

The priority of the Partnership remains the implementation of the priority actions agreed at the 3rd World Water Forum, known as the Pacific Submission to the “Portfolio of Water Actions”, all of which are contained with the Pacific Regional Action Plan, namely:

- i) Water resources management in climatic extremes
- ii) Water demand management
- iii) Water quality capacity building
- iv) Water governance (national, institutional and communal)
- v) Pacific Water Type II Coordination Unit
- vi) Joint Caribbean-Pacific Programme for Action on Water & Climate (IWRM)

Of these six priority actions, the most important is the securing of the Pacific Water Type II Coordination Unit. Once this Unit is in place it can help facilitate the securing of additional government, donor and development agency support.

Links of Partnership/Initiative with on-going sustainable development activities

The activities under this initiative will be established and integrated into ongoing programmes and projects both nationally and regionally where appropriate. Where the opportunity avails itself at the international level the initiatives will be linked to form partnerships so as to enhance the overall impact of the programme. Specific opportunities exist through:

- 3rd World Water Forum Secretariat and World Water Council (WWC)
- Environmentally Sound Technologies (UNEP)
- Global Water Partnership (GWP)
- International Hydrological Programme (UNESCO)
- Pacific Strategic Programme for International Waters (IW)
- Pacific Wastewater Framework for Action (SOPAC/SPREP/GPA)
- Sanitation and Environmental Health (WHO/SPC)
- Virtual Water Learning Centre (UNU/INWEH)
- Working Group on Hydrology (WMO)
- Water Supply and Sanitation Collaborative Council (WSSCC)

Relevant follow-up events for 2003 and 2004 are provided in **Tables 2a and 2b** in the appendices.

6 The Way Forward

The Pacific SIDS need to maximise the opportunities offered through the Commission on Sustainable Development (CSD) process where the focus for 2004 / 2005 (CSD12 & CSD13) will be on the thematic cluster of water, sanitation and human settlements, through collective submission and input during CSD 12.

Assist and support the implementation of the Pacific Regional Action Plan (RAP) on Sustainable Water Management (2002) through:

- Building adequate capacity in the region to provide the necessary technical support and advice in the five technical fields of: water resource management; water demand management; on-site sanitation, off-site sanitation; and hygiene.

- Using the RAP to improve existing policies and develop new water policies where applicable.

To assist and support the implementation of the Pacific Wastewater Policy Statement and Pacific Wastewater Framework for Action (2001) with key action areas: governance, awareness, infrastructure & information, financing and capacity building

Continue to encourage the facilitation of regional consultation and dialogue on national policies and strategies to strengthen existing partnerships and develop new partnerships including the involvement of civil society and NGOs, including the relevant CROP Working Groups.

Work with partners such as ADB, World Bank, EU Commission, AusAID, NZAID, JICA, and UN agencies to identify and design appropriate projects that fit into a longer term programme for addressing some of constraints faced by Pacific SIDS to develop and protect their freshwater resources.

Maximise on inter-regional SIDS partnerships by facilitating joint initiatives and networks that enable a sharing of expertise, innovation and experiences such as the Pacific-Caribbean Joint Programme for Action on Water & Climate (JPfA), and input into the global Dialogue on Water and Climate (DWC) Synthesis Report

Increase and develop human capacity at the national level and improve, through technical training and the provision of assistance, in developing best practice guidelines and technical backstopping.

Support where identified the development of freshwater management plans and national water profiles at the National level and include freshwater in the heads of consideration in current planning tools such as EIA.

Establish a regional database for all water and sanitation information and available training and expertise in the region.

Call on the international community to form capacity-building, for the development and further implementation of freshwater programmes for SIDS, including through the Global Environmental Facility focal areas.

More information:

Website:

www.sopac.org.fj/Secretariat/Programmes/H2O/3rd_world_water_forum/index.html

Table 1: Water and Sanitation – Activities since inception of Agenda 21, Rio+5 and the Johannesburg Plan of Implementation

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
Cook Islands	<p>1997 national vision encompass the overall goal to facilitate improved and sustained water supply and wastewater management practices.</p> <p>Ministries have been set up for planning and provision and regulation of water supply and waste management (Ministry of works, Department of Water Works – WWD)</p> <p>Waterworks Ordinance 1960</p> <p>Public Health Act 1996 (Ministry of Health) for water quality.</p> <p>Public Health Regulation 1987 for sanitary waste and sewerage system (under review)</p> <p>Relatively recent upgrading of water system. But water resources very prone to drought</p> <p>WWD developed a 5 and a 10 year infrastructure strategic plan for improvement, upgrading and development of water distribution network systems</p>	<ul style="list-style-type: none"> • Urgent need to upgrade and develop existing water network, water intakes and construct storage reservoirs • Corporation of water distribution and waste management • Insufficient human resources • Lack of positive policy directive and political support • Lack of technological development. Need to develop appropriate methodology and technology for water resource development schemes • Hair brain decision to invest in OTEC for desalination, an unproved technology • No use of groundwater on Rarotonga. • Need to use rainwater more elsewhere 	<p>Outdated Rarotonga Waterworks Ordinance 1960 (need reviewing)</p> <p>Appropriate institutional arrangement to ensure water resources development and management occur in the context of national planning</p> <p>Develop water accounting systems (metering) – “user pay” systems</p> <p>Extension of water programs to outer islands (for example – strategic plans)</p>
Fiji	<p>Government’s vision to provide safe, adequate and affordable water and wastewater services in a sustainable manner for its</p>	<ul style="list-style-type: none"> • Over 70% of population has access to treated, metered reticulated water supply. Over 90% of urban population is 	<p>Review of outdated legislations</p> <p>Need to develop a national policy for water resources</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>population.</p> <p>Cabinet decision in 2000 to set up a national water policy</p> <p>ESCAP (2002) supported first drafting of policy and promotion of national water committees</p> <p>Legislation in place but outdated (e.g. Water Supply Act, Rivers and Streams Act, Native Lands Act)</p> <p>Master plans have been developed to improve expansion of water supply systems in urban areas - takes into population increases, industrial development and other demands.</p> <p>Committee has been set up to develop Strategic Water Resources Management Plan (recently)</p>	<p>reputed to have access to clean piped water supply.</p> <ul style="list-style-type: none"> • Coordination between agencies dealing with water in terms of water resources management and development • Outdated sewerage system • Sanitation hopelessly lacking behind 	<p>management.</p> <p>Need for an overarching legislation to water resources management</p> <p>Need develop integrated water resources management (IWRM) - at the catchment level – flood control, irrigation, erosion</p> <p>Update sewerage/sanitation system costing investment activities (TV news – (12 Oct – TV One)</p>
Kiribati	<p>Establishment of the Public Utilities Board (PUB) – 1997 – to coordinate and manage water supply and sewerage disposal in South Tarawa</p> <p>3 main bodies have been established – Water Unit, Environment Health and PUB</p> <p>ADB SAPHE project 2000-2005, upgrading on Tarawa of water supply infrastructure.</p> <p>Complete national review</p>	<ul style="list-style-type: none"> • Lack of water • Vulnerability to climate change • Lack of community awareness • Usage of appropriate technologies • Setting of an appropriate tariff structure 	<p>Improve utility operation</p> <p>Improve coordination of water projects between ministries</p> <p>Better utilization of appropriate technologies and existing water resources</p> <p>Developing additional freshwater resources (catchments)</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	of water resources management in 2003/2004, funded by ADB, & including SOPAC: institutional; water resources; legislation etc.		
Federated States of Micronesia	<p>Draft long term Infrastructure Development Plan (FSM –IDP 2003-2017) also considers future projects for water, wastewater and water resources management</p> <p>Water Supply and Sanitation Project loan from ADB</p> <p>Institutions in place for water supply and sanitation services (Pohnpei – Pohnpei Utilities Corporation; Chuuk Chuuk State Public Utilities Corporation; Yap - Yap State Public Services Corporation; Kosrae – Department of Transportation and Utility</p> <p>ADB loan in 1997-2002 completed, with major upgrade to water supply in all states except Kosrae</p>	<ul style="list-style-type: none"> • Ensure adequate sanitation for villages, schools, and public buildings • Maintaining safe drinking water standards 	Inadequate water resources legislation, policy, planning and fragmentation of water sector management
Nauru	<p>Formulation of draft Water Plan in 2001</p> <p>Installation of modern desalination plant</p> <p>Public awareness through media on water conservation</p> <p>Data collection on water quantity/quality, water use, charges, distribution and other information into</p>	<ul style="list-style-type: none"> • Conservation of water • Water shortage due largely to faulty management • Contamination of brackish water by waste water • Pollution of groundwater at topside • Repairing of household water tanks 	<p>Finalize draft water action plan</p> <p>Consider installation of a waste and sewerage treatment plant</p> <p>Establish water conservation program in schools</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>GIS</p> <p>WHO development of a new Master Plan in 2001.</p> <p>Dependence on desal to be removed through exploitation of groundwater (2003+)</p>		
Niue	<p>Water Resource Act (1996)</p> <p>Rainwater Catchment Policy (ceased operation)</p>	<ul style="list-style-type: none"> • Improve supply of adequate quality water • Adopt effective measure to address vulnerability of freshwater supply during natural disasters • Profiling 	<p>Need to formulate legislation and revisit the Water Resource Act (1996)</p> <p>Reintroduction of the Rainwater Catchment Policy</p>
PNG	<p>Water Resources Act, 1982 (Key Legislation governing water resources management in the country)</p> <p>Environmental Contaminants Act, 1978</p> <p>Environment Act 2000 – provides comprehensive standards for protection of environment and water</p> <p>National Health Plan – 2001-2010</p> <p>National Water Supply and Sewerage Act – manages water supplies and sewerage services</p> <p>Drinking Water Quality Standards (adopted from WHO) – regulated under the Public Health Act</p> <p>National Water Supply and Sanitation Committee</p>	<ul style="list-style-type: none"> • The target of safe drinking water coverage of 50% of the entire population by 2010 through the National Health Plan • Multi-sectoral coordinating body for rural water supply and sanitation at all levels • Establishment and maintenance of water supply and sanitation to be community driven • All high schools, hospitals, and health centers to have drought proof water supply • Safe disposal of human and animal wastes shall be an integral part of water supply • All towns to have safe water supply and sewerage systems • Institutional strengthening with line 	<p>Advocacy at all levels</p> <p>Strong political will needed to ensure water resources management and sanitation is given priority</p> <p>All consumption of water to be metred and charged for usage accordingly</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>set up in 1991 – main consultation forum on water supply and sanitation</p> <p>National visions embodied in various legislations for water management</p> <p>Declaration of providing water for human needs in Organic Law on Provincial Governments and Local Level Governments</p> <p>National Water Seminar held in Aug 2003 setting up a national water council, and the commencement of development of a national water policy</p>	<p>agencies and partnership building with service providers</p> <ul style="list-style-type: none"> • Formulating of appropriate regulations and water management policies under the new Environment Act 2000 • Further research and development of water quality models for rivers and catchments • Action plans for integrated water resources management • Securing of donor and bilateral funding to improve existing projects and implement new water action plans for the country. 	
Samoa	<p>National Water Authority Act 1993/4</p> <p>National Water Authority set up in 1994</p> <p>National Water Resource Policy (NWRP) implementation by Department of Lands, Survey and Environment</p> <p>National Water Plan of Action</p> <p>Government given a great emphasis on promoting good governance in all aspects including water management and implementation of NWRP</p> <p>EU Rural Water Supply project completed in 2002.</p> <p>EU National Water</p>	<ul style="list-style-type: none"> • Water management is fragmented • Insufficient finance • Absent of proper legislation • Demand management with regard to competing and conflicting demands for water resources nationwide and excessive demand on water supply • Aims to achieve 100% treated water supply through an extensive demand management plan • More awareness on the need to protect watersheds • Consultation with communities in management of water resources and conserved in partnership with stakeholders 	<p>Adopt modern technology</p> <p>Strengthening of all aspects of water management (mobilisation of finance, training, improved economic efficiency, improved investments)</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	Resources Management Project commenced 2002. ADB Municipal wastewater plan developed in 2002		
Solomon Islands	Established national vision to have abundance of safe and clean water accessible to all and future generations Working group established to coordinate and consult on water resources management (include relevant ministries) Water Act (?? need to check) National Plan of Action (check)	Inadequacy of current policies and legislations	Develop legislations
Tonga	Government and stakeholder organizations in place for water resources assessment, development and management Water Master Plan (?check)	<ul style="list-style-type: none"> • Institutional challenges to exploitation development and protection of water resources. • Inadequate sanitation 	
Tuvalu	Water authority under the Department of Public Works 10 year master Plan to be legally adopted (adopted???) Water survey done on storage capacity to provide data for better monitoring and management of distribution of water during dry spells.	<ul style="list-style-type: none"> • Review and approve draft Water and Sanitation Plan • Review and approve draft Water Resources and Sanitation Management Bill • Development and implement regulations on water resources management 	GIS technology for water monitoring Rainfall collection system improvements Alternative sanitation methods and demand management and water conservation measures
Vanuatu	Department of Public	Lack of resources needed to	

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>Works responsible for water supply for designated urban areas.</p> <p>For Port Vila, water supply by UNELCO, a private company</p> <p>Department of Geology, Mines and Rural Water Supply – responsible for water resources legislation, management and quality</p> <p>Have in place National Rural Water Supply Program</p>	<p>manage water resources (human, financial etc)</p> <p>No institutional responsibility for sanitation, therefore not been addressed at any level</p>	

Table 2a: Water In Small Island Countries Follow Up Events for 2003

Timeline	Event	Purpose	Discussion Points & Actions Required
March 2003	WSSD Regional Stakeholder Consultation on Type II's, Fiji	Reporting of regional type II initiatives submitted to CSD	Presentation of proposals and initiatives. Advocacy of Pacific RAP, Pacific Type II on Water, and Joint Caribbean-Pacific Programme on Water and Climate
April/May 2003	CSD 11, New York	UN agreement on sector programmes for 2004-2009	AOSIS briefed on Pacific and Kyoto SIDS outcomes on water, and lobbied for strong SIDS support. Water approved as first thematic area.
May 2003	High Level Consultation on Climate Adaptation, Fiji	Dialogue on Water and Climate Follow up	Preparation of follow up activities and lobbying for support of CC/CV and island vulnerability related activities for water management
June 2003	USEPA north Pacific water & climate conferences, Hawaii	Sustainable development & Pacific Rim collaboration	Further engagement of US agencies in Pacific RAP and partnerships, specifically including the opportunities of US-NZ Climate Accord
August 2003	Pacific Forum Leaders Summit, Auckland	Heads of State regional policy summit meeting	Endorsement of Pacific Regional Action Plan on Sustainable Water Management, Pacific Type II Water Partnership and SIDS 3WWF position
August 2003	Stockholm Water Week, Sweden	GWP AGM and Dialogue on Water & Climate follow-up	Promote Pacific proposals within future DWC work programme (Theme 1 & 2) and engage with GWP on future IWRM in the Pacific (Theme 1 and 5).
September 2003	Pacific Water Association Annual General Meeting, Auckland	Reporting of regional and global outcomes to the Pacific water utilities	Review of Actions undertaken <ul style="list-style-type: none"> - Theme IV "Technology" - Theme VI "Financing" Collaboration with NZWWA stakeholders
September 2003	SOPAC 32 nd Annual Session, Niue	SOPAC work programme approval	- all themes integrated into work programme - advocacy of Pacific Type II initiative on Water - reporting of 3WWF SIDS outcomes - National level feedback
October 2003	11 th Regional Steering Committee SE Asia & Pacific of UNESCO IHP, Fiji	International Hydrological Programme review and approval for Asia-Pacific	Review of Actions undertaken <ul style="list-style-type: none"> - Pacific - Indian Ocean Exchange of information on themes 1 and 2
October 2003	Asia-Pacific CSD12 Regional Implementation Meeting, Bangkok	Asia-Pacific Region preparation and reporting for CSD12	Review and reporting of progress to date on Water, Sanitation & Human Settlements. Pacific reporting and position for CSD12, and specific invitation for Pacific Water Type II presentation.
December 2003	GWP Steering Committee Meeting, Madrid	GWP IWRM strategy and work programme approval	Advocacy of the specific SIDS issues referring to IWRM, including small catchment sizes and need for integration with coastal & ocean management
December 2003	WSSCC Steering Committee Meeting, Geneva	WSSCC strategy and work programme approval	Formalising of WSSCC and Pacific SIDS relationship on regional node and WASH partnership for awareness raising (Theme 3).
December 2003	ISDWC Collaborative Programme planning meeting, Holland	Improving global DWC network and work programme approval	Promoting Pacific SIDS, and Caribbean-Pacific SIDS priorities for water & climate adaptation support.

Table 2b: Water In Small Island Countries Follow Up Events for 2004

Timeline	Event	Purpose	Discussion Points & Actions Required
January 2004	ADB Water Week, Manila	Water for Poor programming focus	Pacific SIDS lobby for support of Pacific RAP & Type II, DWC/CPWC reporting and approach to ADB
January 2004	Pacific Water Type II Steering Committee Meeting, Suva	Review of Pacific RAP Implementation and Type II operation	Pacific SIDS Preparation Meeting for the Oceania Meeting provides opportunity for the de facto Type II Steering Committee to meet and review RAP progress and Type II governance issues
February 2004	Pacific Ocean Forum, Suva	Establishment of a regional ocean policy	Water & climate issues are forecasted from ocean observations of the ENSO. IWRM critical to controlling watershed fluxes to marine environment, and links to the UNEP/GPA.
March 2004	Oceania Region 3WWF follow-up meeting, Auckland	Impact Review of Oceania region progress post Kyoto	Pacific Type II Steering Committee Review of the Implementation of the Pacific Regional Action Plan on Sustainable Water Management will be reported to 3WWF Secretariat
April 2004	CSD12, New York	Water and Sanitation Review of CSD	Reporting of Pacific region implementation of the WSSD JPOI and promotion of the Pacific Type II, the Pacific RAP and the Caribbean-Pacific JPfA
May 2004	H2O Conference, Cairns	GPA regional review and promotion of IWRM	Pacific SIDS to link IWRM to ICM through the Pacific Ocean Policy and promote wastewater management as part of the GPA
June 2004	USEPA Pacific Islands Environment Conference	Engagement of US affiliated territories on Pacific RAP & Type II	Reporting of 3WWF, CSD12 and Pacific RAP review to north Pacific stakeholders.
August 2004	UN Sustainable Development for SIDS, Barbados +10 Mauritius	10 year Review of progress on the plan for SIDS sustainable development	Review of Actions undertaken - Caribbean - Pacific - Indian Ocean Review of Pacific Water Type II Partnership
September 2004	PWA AGM, Nadi	Reporting of Pacific RAP implementation to regional water utilities	Reporting on Pacific RAP review meeting, CSD12 and Barbados + 10, and implications for water utilities for regional support.
September 2004	33 rd SOPAC Annual Session, Nadi	SOPAC Work Programme Review and Approval	Reporting to Member States on Pacific RAP review meeting, CSD12 and Barbados + 10, and implications for regional and national support.
December 2004	WSSCC 1 st WASH Global Forum, Senegal	Small Island Developing States session	Review of Actions undertaken (themes 3 and 5) - Caribbean - Pacific & Asia - Indian Ocean