

**Overview of the state of implementation for the  
thematic areas of water, sanitation and human  
settlements in the Pacific Sub-region**

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# **Overview of the state of implementation for the thematic areas of water, sanitation and human settlements in the Pacific Sub-region**

## *Water and Sanitation*

### **1. Introduction**

Since the inception of Agenda 21 in Rio de Janeiro, Brazil, and its review of Rio+5 and the Johannesburg Plan of Implementation<sup>1</sup> the world's water problems have worsened markedly even as concern about them has risen steadily. Water issues were overshadowed at the Rio meeting by other pressing issues such as climate change, biodiversity, and forests, however fresh water came under a brighter spotlight during the late 1990s and early 2000. A steady stream of global commissions, conferences, and networks drew attention to water's fundamental importance to food production, human health, poverty alleviation, ecosystem protection, and regional peace and stability.

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.<sup>2</sup>

Pacific Island countries are categorized, as Small Island Developing States (SIDS). Whilst some Pacific SIDS are dependent upon limited supplies of surface water compared to other countries, others are completely dependent upon extremely limited and fragile groundwater resources. Some countries have neither of these two options. It follows that the conservation, management and protection of surface water, groundwater and the collection and storage of rainwater are critical to sustaining human settlements in these areas.

Abundant rainfall in the Pacific means that there is little direct irrigation practiced. Almost all crops (forestry, sugar cane, grazing pasture, gardens) are rain fed. Those that are not are usually fed directly from groundwater (dalo, taro, coconut). Land drainage of low-lying areas is an important issue on some of the larger islands (eg Fiji). Sediment mobilization and excessive agrochemical application are the main concerns, but are not being systematically addressed. Consequences for both freshwater and receiving coastal waters can be devastating for fisheries and coral reef ecologies.

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<sup>1</sup> Outcome of the World Summit on Sustainable Development or Rio+10, held in August 2002.

<sup>2</sup> The inclusion of the theme "Water in Small Islands Countries" in the 3<sup>rd</sup> World water Forum held in March 2003 in Kyoto, Japan, signified or demonstrated the acknowledgement of small islands vulnerability by the World Water Council.

In Pacific Island countries where the forest cover is very modest and under threat, or has diminished significantly, protection and management of the forests for the maintenance of water quality and water flow is a priority. Countries such as Samoa, Tonga and Cook Islands have taken necessary steps over the last 3 years to ensure watershed management areas are identified, protected, and the communities are educated and made aware of the importance of such areas. In the Cook Islands, certain parts of the watershed management area had to be reforested because of human intervention in removing and clearing parts of the forest for substance agriculture and materials for other domestic uses.

Recognizing the need to think globally as well as act locally, considerable efforts have put into the implementation of the outcomes of Agenda 21 and the Barbados Plan of Action by countries of the Pacific sub-region. This report provides an overview of that status of implementation for water and sanitation and reviews the major challenges and achievements in these thematic areas.

## **2. Status of implementation of water and sanitation activities**

### **2.1 Background and General Observations**

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 3<sup>rd</sup> World Water Forum have resulted in national water briefing papers being available for most Pacific Island Countries.<sup>3</sup>

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-

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<sup>3</sup> Although the country briefing papers provided much information on challenges and constraints to water resources management, information and data are continue to be lacking.

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.

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.

## **2.2 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** below 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.

### 2.2.1 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 design<sup>4</sup>.

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 (NZ AID). 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.

### 2.2.2 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

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<sup>4</sup> 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.

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.<sup>5</sup>

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.

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

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<sup>5</sup> For example, despite the large amount of rainfall in Fiji, there are extreme water shortages when experiencing drought periods.

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.

### 2.2.3 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.<sup>6</sup> 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

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<sup>6</sup> The linkage between cross sectoral planning such as human settlement is crucial to sustainable water development.

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.

Momentum created by the WSSD and the 3<sup>rd</sup> World Water Forum has resulted in some countries embarking on more holistic initiatives on water resources management. This includes : Kiribati have commence 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 Marshalls 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.

#### 2.2.4 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.

### **2.3 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.

### 2.3.1 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 challenges<sup>7</sup> have been identified through national and regional consultation mechanisms and processes. A detail discussion of these thematic challenges is presented below.

## **3. Best practices of multi-stakeholder involvement and partnerships**

The Pacific national and regional consultations on water in small island countries<sup>8</sup> 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

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<sup>7</sup> 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.

<sup>8</sup> This include the Pacific Regional Consultation on Water in Small Island Countries, held in Sigatoka, Fiji Islands, 29 July – 3 August 2002, and the 3<sup>rd</sup> 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. .

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.

### 3.1 Pacific Regional Thematic Areas and Challenges – A Result of Best Practice Consultations

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)
- 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 3<sup>rd</sup> 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.

### 3.2 The Use of the Pacific Islands Management Model (PIMM)

The use of the Pacific Islands Management Model to assist other Pacific countries in water resources management is considered as a model of best practice where “Islanders help other Islanders”. The Ebeye case study demonstrates the notion of from vision to action towards sustainable water management in the Pacific sub-region. A brief description of this case study is provided in Box 1 below.

This case study is basically about a successful initiative and assistance provided by the American Samoa Power Authority to the people of Ebeye. The successful economic models applicable to large populations were not necessarily successful in the island countries of the Pacific sub-region.

On Ebeye, government intervention was not the answer. Privatization didn’t work either. Private companies contracted to operate island utilities necessarily focused on profit, which was understandable. They also gave up too easily and did not train local employees. On the other hand, the Pacific Islands Management Model defers to the **Mission**, which is determined by the key stakeholders—the governments, communities and aid donors.

PIMM is a hybrid of the two approaches, of government and private sector that follows commercial principles and practices (e.g., sound management, auditable financial statements). PIMM strives to meet government social responsibilities (e.g. to meet the needs of the neglected remote-island citizens).

Institutional strengthening is important for the same reasons that long term planning is important. Critical short and medium-term needs of the operations however, must take precedent over IS. For example a water utility should not be investing its valuable resources preparing glossy customer-service brochures when its water treatment plants are inoperable. The water treatment plants must be fixed first.

### **Box 1: Ebeye Case Study as Best Practice**

The availability of water on Ebeye depends largely on the availability of power. The Kwajalein Atoll Joint Utility Resources (KAJUR) was established to manage power generation and distribution as well as the water supply system of Ebeye. However, due to inadequate maintenance, the power plant and generators deteriorated causing the desalination plant to become inoperable in 1997. Water for drinking and cooking was then ferried twice a week from United States Army Kwajalein Atoll (USAKA) and distributed by water tank truck.

In an attempt to remedy the problem, the government and the US Department of Interior hired a general manager and a power plant engineer from the US to take over the managing of the utility and implement some of the needed major improvements to the power supply. **This did not work.**

As a last effort to remedy this situation, the government, in consultation with and financed by the Asian Development Bank (ADB), in 1999 tendered a contract for management of the KAJUR utility on Ebeye. The contract was awarded to the American Samoa Power Authority (ASPA), which was tasked with managing the KAJUR and improving power and water production and distribution as well as the sewer system. The management paradigm adopted is one in which operations personnel from an island utility in the region (ASPA) provide the right mix of managers, professionals and technicians imbued with a sense of mission to help their Pacific neighbors succeed at utility operation and management.

ASPA, the newly appointed management contractor formed a partnership with ADB and Government to implement the improvements. The Pacific Island Management Model (PMM) contributed to the success of the project in providing power and water to the people of Ebeye.

Ebeye, is a very small island in the Republic of the Marshall Islands (RMI) The island faces a variety of serious challenges. Underlying all of these is the extreme population density and the lack of land for expansion. Ebeye has a complex land-tenure and social setting in which the majority of inhabitants are not from Ebeye and have little political power. Within this context and despite a relatively high-income level, Ebeye suffers from inadequate utilities service, insufficient education, and poor health care.

Because of Ebeye's high population density, environmental concerns are crucial to the well being of the populace. Proper sanitation, adequate supplies of drinking water, and a dependable power supply are all interconnected and are crucial aspects of improving Ebeye's environment and hence the well being of its people. The Asian Development Bank (ADB), the Republic of the Marshall Islands (RMI) government, and the local government have recognized these linkages and have sought to improve the quality of life for Ebeye's people by contracting the management of Ebeye's utilities to an external entity.

### 3.3 Pacific Partnership – the Type 2 Initiative

The Pacific Regional Action Plan on Sustainable Water Management has been incorporated in a partnership arrangement under the so-called Type 2 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. 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.

The main objective of the Type 2 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;
- Implementation of the “**Pacific 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 3<sup>rd</sup> 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.
- Implementation of the “**Pacific Wastewater Policy Statement**” and “**Pacific Wastewater Framework for Action**” , as agreed by representatives of 15 Pacific Island Countries and representatives from civil society and development agencies, as part of the regional consultations to develop strategic approaches to implement the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, held in Majuro, Marshall Islands, October 2001.

The Partnership is coordinated and facilitated by the intergovernmental organization with the legal mandate to support the Pacific Island Countries in water & sanitation. This organization 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.

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

The 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.

#### 3.4 South-South SIDS Partnership – the Joint Caribbean-Pacific Programme for Action on Water & Climate (JPfA)

The JPfA was born from the close collaboration between the Caribbean and Pacific region preparatory work for the 3<sup>rd</sup> World Water Forum. Using the global Dialogue on Water & Climate as a vehicle of opportunity, both regions developed Water & Climate consultations. Technical advisors from both regions attended each others consultations.

The primary conclusion of the advisors was that there was sufficient complementarity between the two regional consultation outcomes that a common programme of action could be agreed upon, comprising of 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. Immediate priority actions were identified as: water resources assessment, water governance, integrated water resources management, water demand management and water quality. The JPfA was formally launched at Kyoto by the delegations from both regions, and a Memorandum of Understanding signed by the respective lead regional agencies for each region.

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 enables transfer of knowledge, expertise, positional statements and personnel between the two regions to the benefit of the 34 countries involved. The JPfA has already strengthened SIDS position at the 3<sup>rd</sup> World Water Forum, WMO Congress and Barbados+10 preparatory meetings.

#### 3.5 The Kyoto Outcomes – Water In Small Island Countries – A SIDS Platform

In the final WISIC session of the 3<sup>rd</sup> World Water Forum, a draft Statement and a Portfolio of Actions on Water in Small Island Countries derived from the Pacific and Caribbean consultations and Dialogue on Water and Climate were presented. A Session Statement and a Portfolio of Water Actions were agreed upon, and the session was further used as a briefing for Ministerial Delegations that attended the Senior Officials Meeting and the Ministerial Conference that were held on 19-20 and 22-23 March, respectively.

The Portfolio of Actions includes six priority actions on: Hydrological Cycle Observation Systems (a water resources management approach for climatic extremes); South-South collaboration; The Pacific Regional Action Plan on Sustainable Water Management; Water Demand Management; Water Quality Monitoring; and Water Governance.

The Ministerial intervention stated:

*“Recognising the uniquely fragile nature of water resources in small island developing states, we support specific programs of collaboration such as the Caribbean Pacific Joint Program for Action on Water and Climate in Small Island Countries”.*

#### **4. Way Forward (Where to and How to from here)**

The Pacific, perhaps more than any other region, has clearly articulated the challenges it has address to to achieve sustainable water management. The region has developed a strategic and holistic approach to overcoming these challenges, as articulated in the Pacific Regional Action Plan on Sustainable Water Management (2002).

It has developed both a regional partnership, the Pacific Type II Partnership on Sustainable Water Management, and an inter-regional SIDS partnership with the Caribbean, the JpFA, designed to implement this strategic approach.

However without additional resources, national and regional activities in this sector cannot continue. The priorities that have been identified through the national and regional consultations are contained in the Pacific Regional Action Plan for Sustainable Water Management, 20 actions of which form the JpFA, common to the Caribbean and Pacific.

Furthermore all SIDS agreed to six priority actions at the 3<sup>rd</sup> World Water Forum. All six priority actions (see section above), are found within the Pacific RAP and the Pacific Type II.

It is essential that the Pacific RAP be implemented if sustainable water management is to be achieved in the Pacific. As a priority the six Portfolio of Water Actions need to be implemented.

Several countries (PNG, Samoa, Tuvalu) have already used the thematic structure, key messages and identified actions to review, amend and develop their national approaches to addressing sustainable water management. Other PICs and SIDS in other regions should be encouraged to consider the value of the Pacific RAP to their national approach to achieving sustainable water management.

It is incumbent upon the donor and development community to maximize the use of the Pacific Regional Action Plan on Sustainable Water Management when considering their interventions in the Pacific Region, and to take advantage of this recently agreed strategic approach (18 countries, 16 at Heads of State level) to address water management in the Pacific during the CSD water focal period of CSD12 and 13.

It is vital for the Pacific, that this period of increased water opportunity, assists the peoples and governments of the Pacific to making progress to achieving sustainable water

management. If this opportunity is missed, it will a further decade or more before such attention is given to this issue again.

It is also a necessity that the resources that are required to operate the strategic partnerships, 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 the partnerships.

**Table 1: Water and Sanitation – Implementation of activities since inception of Agenda 21, Rio+5 and the Johannesburg Plan of Implementation (By no means exhaustive and are reflected also in the 6 thematic areas under the Pacific Regional Action Plan)**

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</p>	<ul style="list-style-type: none"> <li>• Urgent need to upgrade and develop existing water network, water intakes and construct storage reservoirs</li> <li>• Corporation of water distribution and waste management</li> <li>• Insufficient human resources</li> <li>• Lack of positive policy directive and political support</li> <li>• Lack of technological development. Need to develop appropriate methodology and technology for water resource development schemes</li> <li>• Hair brain decision to invest in OTEC for desalination, an unproved technology</li> <li>• No use of groundwater on Rarotonga.</li> </ul>	<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>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>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"> <li>• Need to use rainwater more elsewhere</li> </ul>	
Fiji	<p>Government’s vision to provide safe, adequate and affordable water and wastewater services in a sustainable manner for its 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</p>	<ul style="list-style-type: none"> <li>• Over 70% of population has access to treated, metered reticulated water supply. Over 90% of urban population is reputed to have access to clean piped water supply.</li> <li>• Coordination between agencies dealing with water in terms of water resources management and development</li> <li>• Outdated sewerage system</li> <li>• Sanitation hopelessly lacking behind</li> </ul>	<p>Review of outdated legislations</p> <p>Need to develop a national policy for water resources 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>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>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>		
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 of water resources management in 2003/2004, funded by ADB, &amp; including SOPAC: institutional; water resources; legislation etc.</p>	<ul style="list-style-type: none"> <li>• Lack of water</li> <li>• Vulnerability to climate change</li> <li>• Lack of community awareness</li> <li>• Usage of appropriate technologies</li> <li>• Setting of an appropriate tariff structure</li> </ul>	<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
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"> <li>• Ensure adequate sanitation for villages, schools, and public buildings</li> <li>• Maintaining safe drinking water standards</li> </ul>	<p>Inadequate water resources legislation, policy, planning and fragmentation of water sector management</p>
Nauru	<p>Formulation of draft Water Plan in 2001</p> <p>Installation of modern desalination plant</p>	<ul style="list-style-type: none"> <li>• Conservation of water</li> <li>• Water shortage due largely to faulty management</li> <li>• Contamination of brackish water</li> </ul>	<p>Finalize draft water action plan</p> <p>Consider installation of a waste and sewerage treatment plant</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	<p>Public awareness through media on water conservation</p> <p>Data collection on water quantity/quality, water use, charges, distribution and other information into 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>	<p>by waste water</p> <ul style="list-style-type: none"> <li>• Pollution of groundwater at topside</li> <li>• Repairing of household water tanks</li> </ul>	<p>Establish water conservation program in schools</p>
Niue	<p>Water Resource Act (1996)</p> <p>Rainwater Catchment Policy (ceased operation)</p>	<ul style="list-style-type: none"> <li>• Improve supply of adequate quality water</li> <li>• Adopt effective measure to address vulnerability of freshwater supply during natural disasters</li> <li>• Profiling</li> </ul>	<p>Need to formulate legislation and revisit the Water Resource Act (1996)</p> <p>Reintroduction of the Rainwater Catchment Policy</p>

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
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 set up in 1991 – main consultation forum on water supply and sanitation</p>	<ul style="list-style-type: none"> <li>• The target of safe drinking water coverage of 50% of the entire population by 2010 through the National Health Plan</li> <li>• Multi-sectoral coordinating body for rural water supply and sanitation at all levels</li> <li>• Establishment and maintenance of water supply and sanitation to be community driven</li> <li>• All high schools, hospitals, and health centers to have drought proof water supply</li> <li>• Safe disposal of human and animal wastes shall be an integral part of water supply</li> <li>• All towns to have safe water supply and sewerage systems</li> <li>• Institutional strengthening with line agencies and partnership building with service providers</li> <li>• Formulating of appropriate regulations and water management policies under the new Environment Act 2000</li> </ul>	<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>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>	<ul style="list-style-type: none"> <li>• Further research and development of water quality models for rivers and catchments</li> <li>• Action plans for integrated water resources management</li> <li>• Securing of donor and bilateral funding to improve existing projects and implement new water action plans for the country.</li> </ul>	
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>	<ul style="list-style-type: none"> <li>• Water management is fragmented</li> <li>• Insufficient finance</li> <li>• Absent of proper legislation</li> <li>• Demand management with regard to competing and conflicting demands for water resources nationwide and excessive demand on water supply</li> <li>• Aims to achieve 100% treated water supply through an extensive demand management plan</li> <li>• More awareness on the need to</li> </ul>	<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
	<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 Resources Management Project commenced 2002.</p> <p>ADB Municipal wastewater plan developed in 2002</p>	<p>protect watersheds</p> <ul style="list-style-type: none"> <li>• Consultation with communities in management of water resources and conserved in partnership with stakeholders</li> </ul>	
Solomon Islands	<p>Established national vision to have abundance of safe and clean water accessible to all and future generations</p> <p>Working group established to coordinate and consult on water resources management (include relevant ministries)</p> <p>Water Act (?? need to check)</p> <p>National Plan of Action (check)</p>	Inadequacy of current policies and legislations	Develop legislations

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
Tonga	<p>Government and stakeholder organizations in place for water resources assessment, development and management</p> <p>Water Master Plan (?check)</p>	<ul style="list-style-type: none"> <li>• Institutional challenges to exploitation development and protection of water resources.</li> <li>• Inadequate sanitation</li> </ul>	
Tuvalu	<p>Water authority under the Department of Public Works</p> <p>10 year master Plan to be legally adopted (adopted???)</p> <p>Water survey done on storage capacity to provide data for better monitoring and management of distribution of water during dry spells.</p>	<ul style="list-style-type: none"> <li>• Review and approve draft Water and Sanitation Plan</li> <li>• Review and approve draft Water Resources and Sanitation Management Bill</li> <li>• Development and implement regulations on water resources management</li> </ul>	<p>GIS technology for water monitoring</p> <p>Rainfall collection system improvements</p> <p>Alternative sanitation methods and demand management and water conservation measures</p>
Vanuatu	<p>Department of Public 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</p>	<p>Lack of resources needed to manage water resources (human, financial etc)</p> <p>No institutional responsibility for sanitation, therefore not been addressed at any level</p>	

Country	Status of Implementation (Governance – Acts and Legislations; Institutional Arrangements, Plans)	Key Issues/Challenges	Gaps
	for water resources legislation, management and quality  Have in place National Rural Water Supply Program		

Source: Pacific Regional Consultation and Country Briefs ?? **Clive is this correct?**

## 5. Human Settlements

### 5.1 Background

The concept of sustainable human settlements is enshrined in Chapter 7 of Agenda 21 where programs areas identified such as providing the integrated provision of environmental infrastructure of water and sanitation, clearly demonstrates the strong linkages between these three thematic areas.

The pattern of human settlements in the Pacific sub-region is rapidly changing with increasing numbers of people moving to live in towns and cities. In this context urbanization is a growing feature of human settlements globally. Of increasing concern and as **Table 2** shows that the populations of the major urban areas in most countries are growing faster than national populations. For example, the rates of urban growth in the Solomon Islands, Marshall Islands and Vanuatu, are in excess of 6 percent per annum, and are among the highest in the world.

**Table 2: Urbanization in the Pacific Forum Island Counties**

Country	National Population (from census)	Population Density (people/km)	Urban Population (%)	Annual National Population Growth (%)	Annual Urban Population Growth (%)	Annual Rural Population Growth (%)
Cook Islands	19,200	80	59	0.4	0.5	0.4
Fed. S. Micronesia	114,000	159	27	2.6	1.3	2.1
Fiji	<b>785,700</b>	43	(43) 46	2.0	2.6	-0.6
Kiribati	85,100	103	(35) 37	2.3	2.2	1.0
Marshall Islands	61,000	331	65	4.2	8.2	-0.6
Nauru	11,500	553	100	2.9	2.9	
Niue	2,100	8	32	-1.3	-0.3	-1.6
Palau	18,500	37	(68) 71	2.6	3.2	1.3
Papua New Guinea	4,412,400	9	15	2.3	4.1	2.0
Samoa	124,800	58	21	0.5	1.2	0.4
Solomon Islands	417,800	14	13	3.4	6.2	3.1
Tonga	98,000	131	(30) 36	0.5	0.7	0.1
Tuvalu	11,000	419	42	1.7	4.8	-0.0
Vanuatu	193,219	15	18	2.8	7.3	2.1

Source: Compiled from: Secretariat of the Pacific Community (see [www.spc.org.nc/demog/pop\\_data](http://www.spc.org.nc/demog/pop_data) 2000, SPC 1998. "Pocket Statistical Summary"; Pacific Community, 1997. *Pacific Island Populations*" Wall Chart. Suva, Fiji; and UNDP 1996

The main drivers of urban change are due to education and life choices, employment opportunities, access to services such as increasing centralization of Government sector services and bureaucracy, modern industrialization, private sector development,

increased communications, have all contributed to the movement and mobility of populations to Pacific Island cities and towns.

These drivers can be attributed to push and pull factors for urban-rural migration. The push factors include declining commodity prices, continuing high rates of population growth, lack of employment, limited education opportunities and the need to financially support the wider extended family.

The pull factors include the monetary economy, prospects for employment in towns, education and lifestyles, recreation and social facilities, changing expectations and the existence of family and clan support networks.

## 5.2 Effects of Urbanization

Urbanization has been and remains to be the one of the main problems facing the countries of the Pacific sub-region. The effects are many but an important effect is that the availability of basic services such as water supply, sanitation, waste disposal, housing, schools, health and recreation facilities. This effect is in particular worsening for many poor residents and as such informal and squatter settlements are growing as more migrants come to seek a living in the towns.

In atolls such as Betio in South Tarawa and Ebeye in the Marshall Islands the carrying capacity of the land resource is stretched to the limit. In the larger urban centres such as Port Moresby and Suva poverty, unemployment and crime rates have been rising constantly. Government institutions at the national and local levels as well as the traditional leadership structures have been unable to efficiently manage the transition from village to cities.

## 5.3 Overview of National Actions

As a backdrop, the United Nations Conference on Human Settlements (Habitat II) held in 1996 drew global attention to the growth of cities and their role in national economic, social and physical development and key issues in managing the process of urbanization. Urbanization is a new and recent phenomena in many of the countries in the Pacific sub-region. The faster rate of growth and the transition from living in villages to living in towns is creating unusual and difficult situations for national and local governments.

Attempts have been made to planning and physical development of urban centers by national governments. However, due to lack of planning and investment the physical pattern of urban development has been haphazard. The urban centers are showing similar symptoms of rapid urbanization as those in other developing countries in Asia and the Pacific.

Some countries have in place physical planning and national economic planning. However physical planning has had mixed experience in the Pacific sub-region. Physical planning involves the preparation of plans for the future expansion of an urban area or

rural settlement through a process of public consultation. The Plan depicts in broad terms future land use, densities of development, transportation routes and other infrastructure provisions such as water supply and sanitation. The Plan is accompanied by a set of regulations that controlled development through approvals. An important feature of the planning process is that land owners must seek planning approval for any development, change in land use or the density of occupation.

Fiji, Papua New Guinea and Solomon Islands have used the British model of town and country planning. This includes forward planning, land use zoning schemes, statutory planning, and building and land subdivision bylaws. Fiji is considered by many as the country that is most advanced in planning. Over the last few decades of planning practice in Fiji, the public has seen the benefits of planned improvements in infrastructure and the preservation of sound residential environments. Awareness raising has also resulted through understanding the effects of social, economic and environment factors of the different types of urban development.

Even though some of the countries have put in place town plans, others countries such as Samoa, Tonga, and cities in Micronesia do not have a legally applicable town plan. This means local authorities do not have the authority to prepare a legally binding plan for urban expansion and management. The recent experience of Samoa is a classic example of the commitment given to urban management as a tool to improve urban services.

The Government of Samoa in 2001 responded to the need to provide better urban outcomes especially to urban services by reviewing arrangements for planning and urban management and cross sectors issues. In March 2002 the Samoan Government established a new Planning and Urban Management Agency (PUMA) for both urban Apia and the whole of Samoa.

#### 5.4 Global and Regional Initiatives

At the global level these issues were addressed by UN Conference on Human Settlements (Habitat II) held in 1996, which followed the UN Conferences on the environment, small islands, population, social development and women. Habitat II produced the Habitat Agenda, a Global Plan of Action that focuses on ways and means of ensuring adequate shelter for all and managing sustainable human settlements in an urbanizing world.

At the Asia-Pacific regional level the Ministerial Conference on Urbanization in Asia and the Pacific organized by ESCAP in 1993 formulated a Regional Plan of Action. The broad coverage of these plans of action needs to be supplemented by more specific sub-regional level plans and programs.

At the regional level in the Pacific sub-regional, a possible Pacific Habitat Agenda has been considered. In 1999 Pacific Forum Economic Ministers recognized the important socio-economic dimensions of urbanization. The Forum Economic Meeting held in Apia, July 1999 recommended the development and implementation of a Pacific Habitat Agenda. The Pacific Habitat Agenda will address at the regional level the challenges of

infrastructure, land and housing, urban management, and regional cooperation.

The Pacific Agenda would be consistent with the Istanbul Declaration of the Second United Nations Conference on Human Settlements (Habitats II)<sup>9</sup> and a related ESCAP ministerial meeting, held in 1993, both of which recommended coordinated action to improve urban environments.

Many countries in the Pacific have common features and problems in the area of urbanization. For most, urbanization is a modern phenomenon, which is being managed through a mixture of western and traditional socio-cultural systems. All are attempting to resolve the constraints on the development of customary lands. There is insufficient information flow on current progress being made in the region and there are limited opportunities to learn from the decades-long valuable experience in the planning, development and management of urban settlements in the region.

There is need for regional cooperation to improving the response to urban growth, particularly infrastructure, housing, land supply and urban management through the adoption of sound urban governance practices best suited to the socio-economic and cultural systems common in the South Pacific.

### 5.5 Challenges and Constraints

The following challenges and constraints prevail in most the countries in the Pacific sub-region:

- The main challenge is managing urbanization in the countries of the Pacific sub-region. This include land shortage and land ownership resulting in conflicts ( customary tenure ranges from 40% to 90%).
- The absence of planning legislation and the necessary institutional framework;
- Lack of institutional and human capacity for implementation.

As Guild indicated that in general terms, formal strategic and spatial planning for urban development and growth is not well provided for in either central or local government administrations in the Pacific.<sup>10</sup> In the Pacific sub-region countries do not have specific or integrating legislation that provides for national oversight or direction on matters of urban infrastructure, housing, policy and/or poverty, and national policy on these matters is indicative only.

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<sup>9</sup> The Habitat Agenda, United Nations in 1996 specifically stated “*The quality of life of all people depends, among other economic, social, environmental, and cultural factors, on the physical conditions and spatial characteristics of our villages, towns, and cities. City layout and aesthetics, land-use patterns, population and building densities, transportation and ease of access for all to basic goods, services, and public amenities have a crucial bearing on the liveability of settlements.*”

<sup>10</sup> Refer to Robert Guild “An Urban Pacific: Oxymoron or Good Planning?”, Sustainable Urban Services, Paris: PUCA-METLTM for PECC Sustainable Cities Task Force, 2003.

## 5.6 Common Issues of Urban Management

In a report by Naiker for the Forum Economic Ministers Meeting, several major issues common to countries in the Pacific sub-region in urban management were identified and options for action at the national and regional levels.<sup>11</sup> These common areas for improving the response to urban growth are:

- The need for a positive approach to urbanization in national development planning. Governments will need to consider urbanization as a crucial part of national economic development and sustainable development in general and adopt a positive and proactive approach to urban growth. Taking measures that enable towns and cities to grow in an orderly fashion could do this. An example of a national initiative is the National Plan of Action on Urbanization by Papua New Guinea that was submitted to the UN Habitat II Conference.
- The need for effective urban governance based on western models or locally developed ones.
- Urban planning to coordinate and integrate development proposals. Physical planning needs to be integrated or at least coordinated with economic and social development planning. It has been suggested that this could best be done through the development of national sustainable development strategies where the three pillars of economic, social and environment, including physical planning.
- Implementation mechanisms for infrastructure, housing and land supply.
- Public participation and human resources.

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<sup>11</sup> It must be recognized that Pacific countries are varied and are at different stages in national and urban development.

**Terms of Reference**

The consultant is required to undertake the following assignments for ESCAP secretariat:

- (a) Prepare a sub-regional overview of the state of implementation of Agenda 21, Rio +5 and the Johannesburg Plan of Implementation in the Pacific region of ESCAP for the thematic areas of water, sanitation and human settlements;
- (b) The overview will include the status of national implementation in these thematic areas in selected countries in the Pacific sub-region;
- (c) A review of the major challenges and achievements in the thematic areas;
- (d) Identify examples and best practices of multi-stakeholder involvement and partnerships;