



# GEF Pacific IWRM Demonstration Project

## Integrated Freshwater and Coastal Management on Rarotonga



Cook Islands

### Final Report

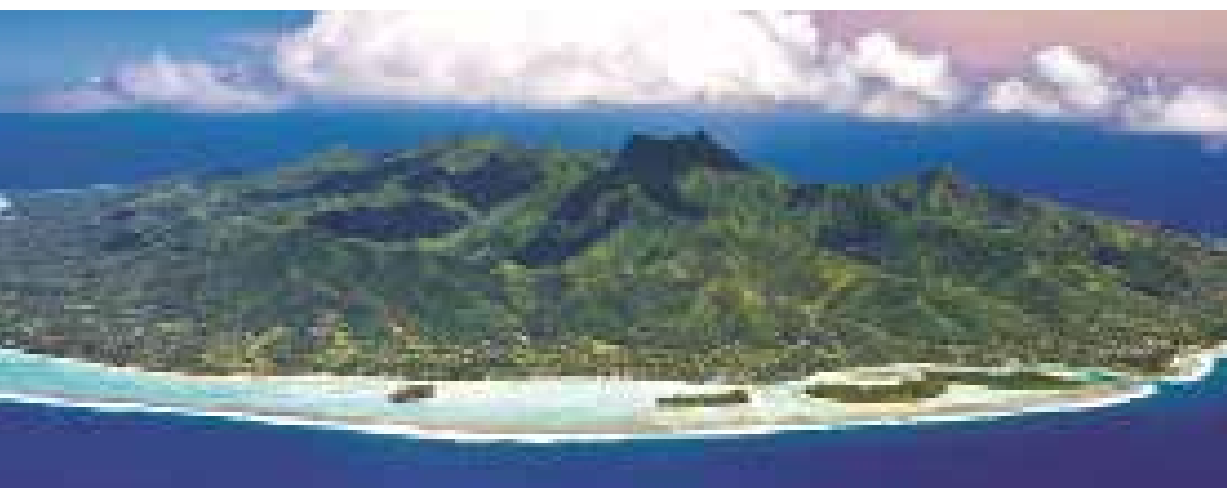
Rarotonga, Cook Islands

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## PREFACE

The Cook Islands comprises 15 islands with a total residential population of almost 15,000, about 10,000 of whom live on the main island of Rarotonga. On Rarotonga nearly all development is on the coast where free draining coral sands overlay a shallow groundwater table that drains into an encircling coral lagoon.

The lagoon, and the streams and groundwater that flow into it, are vitally important to the country - culturally, socially, environmentally and economically. Increasing development, ageing and inadequate infrastructure and the effects of severe weather events have led to increased stress on these natural ecosystems, which in turn affects public health, quality of life and livelihoods.

The tourist industry earns the greatest revenue in the Cook Islands. Tourists expect high standards of water and sanitation and a healthy, safe and ecologically stable lagoon ecosystem for swimming, snorkelling and other activities. For an economy with high costs of living and low salaries, the challenge is to find the right formula to provide the required standard of water and sanitation services.

The major water and sanitation issues in the Cook Islands relate to:

- Unreliable access to occasionally poor quality drinking water. Even on the island of Rarotonga which has the majority of the country's resident and tourist population and where water supply is reticulated to the majority of areas, aged infrastructure has meant that at times there is little or no supply to some homes and businesses, and quality is often compromised, especially after heavy rain.

In 2012, the Government of the Cook Islands formed Te Mato Vai – the Cook Islands Water Partnership – with the Governments of the People's Republic of China and New Zealand. Te Mato Vai will deliver a completely upgraded water supply network with the aim of providing 'potable water, reliably delivered to the boundary of every property connected to the existing network' by 2015/16.

The Government also has a number of separate initiatives, projects and programmes in place to assess and address the issue of drinking water supply on the other Cook Islands

- Groundwater, stream and marine water pollution, which creates implications for human and environmental health. These issues stem predominantly from inadequate or inappropriate treatment and disposal of human and animal waste. The impacts of this pollution reduce the resilience of the environment to withstand natural disasters, reduce the availability of resources that support the traditional subsistence lifestyle of Cook Islanders, increase the risk of waterborne illnesses and diminishes the idyllic South Seas appeal that provides the basis of the tourism industry.
- Apart from one small community sewage treatment system in Rarotonga, all domestic and commercial wastewater in the Cook Islands is managed by on-site systems. With rapid development on the coastline and deteriorating coral reef health, has come increasing recognition of the impact of on-site sanitation systems on human health and ecological sustainability. The Cook Islands Government Agencies, with assistance from development partners are addressing these concerns, through initiatives such as the NZAid/AusAid funded 'Waste Management and Sanitation Improvement (WMI) Programme'.

While in many cases, a simple low cost technological fix is all that is needed to address water and/or sanitation issues, it is increasingly clear that a multi-level integrated approach is required; involving institutional strengthening, training, inter-agency co-operation and effort, and community awareness programmes as well as improved major infrastructure and systems. Such solutions must also be developed to take into account likely future climate effects. The Asian Development Bank (ADB) Infrastructure Master Plan for the Cook Islands (ADB, 2006) highlighted the need for a long-term national climate change adaptation strategy and an integrated infrastructure development plan, which incorporates climate change adaptation concepts





# 1. Water and Sanitation Issues in the Development of the Cook Islands GEF Pacific IWRM National Demonstration Project

The overall aim of the project is to improve groundwater, freshwater and lagoon water quality using an integrated water resource management framework. A secondary aim is to gain information on the availability of groundwater for drought relief.

## Diagnostic Report

Integrated Water Resource Management (IWRM) offers a systematic approach to address the sustainable development, allocation and monitoring of water resources for Pacific Island Countries (PICs). The key concept of IWRM is that it provides a framework to integrate societal, economic and environmental considerations in water resource management. It recognises that all water use is interdependent and therefore should be managed in an integrated manner.

For the Cook Islands the key water resource management issues that would benefit from an

IWRM approach are:

- The lack of a legal and policy framework for water resource management. Under the present system government departments and other organisations are unsure of each other's roles in the area of water resource management and there is possible duplication and/or omission of roles. It also leads to mistrust of the motives behind integration in the management of water resources.
- Capacity building in the area of integrated management. This is not a lack of capability among people currently concerned with water management; the majority are tertiary level trained with an excellent understanding of the key water management issues. The issue is that these people are inundated with projects in many different areas related to water and there are not enough staff to take on new initiatives.
- Poor wastewater treatment in septic tank systems and the subsequent transfer of nutrients to groundwater and then into the lagoon system. Associated with this is the governance of wastewater treatment coming under the Ministry of Health so that it is treated predominantly as public health issue rather than an environmental issue.
- Leakage and wastage of reticulated water are major issues for Rarotonga where water supply is funded directly through government expenditure (i.e. no water charging either by volume or connection). The funding system also makes infrastructure investment vulnerable to change through political and government budgetary constraints.

- Climatic vulnerability of water supply, particularly to drought. The simple nature of the reticulation systems on Rarotonga and Mangaia mean they are less likely to be vulnerable to flooding but they are vulnerable to drought. Water demand management can help lessen the demand but there is still a need to hedge supply sources against extremely low flows in the source streams.
- Land use practices affecting stream water quality, and indirectly the lagoon. This is particularly a problem for piggeries adjacent to streams. There is also a concern over wetland taro cultivation above water supply sources.
- The land use tenure system is detrimental to agricultural investment in water smart irrigation systems and other technology that might lessen agriculture's water impact.

Some of these issues are being addressed through current projects (e.g. water reticulation leakage, water demand management, piggery impact on streams) but there are still many issues that would benefit from IWRM, and there is considerable potential for IWRM to be a reality in the Cook Islands. The country has the advantage of being relatively small, with a moderate to high rainfall and without greatly increasing population pressures. The largest requirement is a political and community will for integration between agencies so that IWRM can lead to achieving sustainable growth in harmony with the Cook Islands' culture and environment.

The constraints and needs of small island developing states (SIDS) to achieve sustainable water management have been articulated in the SIDS Session Statement formulated at the 3rd World Water Forum (3WWF). The statement refers to three priority issues:

1. Inadequate water resources management in climatic extremes due to: the small nature of small island water resources; natural climate variability; and lack of human capacity.
2. Inadequate water and wastewater service providers due to: lack of human capacity; excessive water demand through water wastage and loss; and poor cost recovery.
3. Inadequate water governance and awareness due to: poorly resourced and highly fragmented colonial administration structures coupled with strong traditional governance practices.

The common water resources management and water use efficiency issues throughout the Pacific Island Countries (PICs) can be summarised as follows:

- An increasing demand for water (potable, irrigation and industrial) coupled to a rise in population, increased tourism and/or expanding development.
- Inadequate and inefficient capture, storage and distribution of water resources (small catchments, inadequate rainfall forecasting, poor watershed management, poor infrastructure).
- Pollution and associated reduction in water quality as a result of:
  - Poorly controlled urban and industrial expansion and development
  - Inappropriate domestic waste disposal
  - Inadequate sanitation and drainage infrastructures
  - Inappropriate agricultural practices (erosion of soils, excessive use of agrochemicals, deforestation).

Climatic threats to water supplies (e.g. drought, flooding, storm surge, sea level rise).

### Hot Spot Analysis

In order to identify hotspots in the Cook Islands a meeting of the Cook Islands Water Safety Committee (WSC) was convened on January 26, 2007. As explained in the GEF Diagnostic Report for the Cook Islands (Davie & Parakoti, 2007) it was recommended, in order to minimise duplication of roles, that the WSC formed the IWRM committee used in any GEF project.

The WSC meeting was facilitated by Dr Tim Davie (Landcare Research, NZ) to focus on a hot spot analysis for the Cook Islands. In attendance were members of staff from: the Environment Service (3); Cook Islands Association of Non-Government Organisations (1); Office of the Ministry of Island Administration (1); Ministry of Works (2); Department of Marine Resources (2); the Meteorological Office (1). Minutes of the meeting are attached at the end of this document.

The meeting concentrated on analysing environmental hotspots in the Cook Islands and gaining consensus around possible demonstration projects for a GEF IWRM application. After a brief introduction and background on what IWRM is trying to achieve three steps were used.

1. Issues analysis. Each member of the committee was asked to think of what would help improve water management in the Cook Islands. This was deliberately kept broad and it was explained that this went beyond potable water supply and included all aspects of water in the environment (including the sea). These were then collated into a broad table of issues (see minutes).
2. Hotspot analysis. Each member of the committee was asked to describe a geographic area that fits into the criteria of an environmental hotspot ("conditions are such as to adversely affect human health, threaten ecosystem functioning, reduce biodiversity and/or compromise resource and amenities of economic importance") within the Cook Islands.
3. Combining issues and hotspots. After discussion amongst the group the issues and hotspots were combined to come up with a list of 7 possible projects that fitted into an IWRM framework and could be developed as demonstration projects for the Cook Islands. These were then ranked by the committee (individually) and the top two were recommended as being put forward for the GEF proposal.





The template supplied for assessing hotspots did not fit particularly well with the form of analysis carried out in the Cook Islands. This was due to the template emphasis being on geographic area ahead of issue whereas it was felt more important to do this the other way around. Many of the issues of IWRM concern in the Cook Islands are generic and therefore there are many geographic locations where they can be investigated further. By emphasising geographic location ahead of issue there is a likelihood of some issues not being adequately covered.

The meeting resulted in identification of the following hot spots and sensitive areas:

SELECTED HOT SPOTS			
	Title	Score	Priority Issues
Hot Spot 1	Rarotonga lagoon degradation	71%	Lagoon degradation from land use activity
Hot Spot 2	Water supply for the Northern Cook Islands	51%	Surety of supply of drinking water
Hot Spot 3	Wetland protection	42%	Loss of wetland ecosystem
SELECTED SENSITIVE AREA			
	Title	Score	Priority Issues
Sensitive Area 1	Cook Islands policy direction	82%	Lack of national policy direction and legislation for IWRM
Sensitive Area 2	Water supply catchment protection	79%	Land use management to ensure high water quality in potable supply.

The stakeholder group (Cook Islands National Water Safety Committee) selected Hot Spot 1 and Sensitive Area 2 as the two areas for consideration as demonstration concepts. It was recognized that these could be combined into a single demonstration project to promote integrated management of groundwater, surface water, waste management and the lagoon.

#### Scope Of Demonstration Project

Based on the diagnostic report and hotspot analysis, the project scope incorporated the following key elements:

- Development of a national water policy incorporating IWRM and Water Use Efficiency
- Assessment of sanitation management options for study area (Muri-Avana)
- Targeted water quality assessments
- Assessment of groundwater resource and viability in study area (Nikao-Ruaau)
- Development and implementation of communication and engagement strategies'
- Development of an outcome replication strategy



## 2. Management of the GEF Pacific IWRM National Demonstration Project in Cook Islands

Overall execution for the project lay with Water, Waste and Sanitation (WATSAN) Unit of the Ministry of Infrastructure Cook Islands (ICI) (formerly the Cook Islands Ministry of Infrastructure & Planning – MOIP). ICI is the Ministry responsible for policy, planning, project delivery and management of all infrastructure in the Cook Islands, and therefore has water and sanitation as a major area of its remit. In addition to the IWRM project, ICI also has responsibility for management and delivery in relation to the major water infrastructure upgrade on Rarotonga (Te Mato Vai, referred to above) and for the WMI Programme. The WATSAN Unit was formed in 2011, to be the focal point within ICI for delivery of policy, planning and projects in relation water, wastewater and sanitation, and has now been formalized as a permanent part of the structure of ICI.

Delivery of technical aspects of the project was led by WATSAN working closely with MMR and MoH, and with input from external consulting expertise where required. This included involvement of Southern Cross University (SCU) scientific research staff in sanitation system monitoring, and specialist hydrogeologists in groundwater assessments.

The policy aspect of the project was overseen by the OPM with technical input and review provided by WATSAN, NES, MoH and the PSG.

Capability training, local communications and awareness initiatives were run by local NGOs where possible.

There were several changes of personnel and government reorganizations during the life of the IWRM Project. The table below sets out key personnel involved during the project.

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**Lead Agency:** Ministry of Infrastructure & Planning, Cook Island Government

**Memorandum of Agreement Signed 8th September 2009 by Mr Taukea Rai**

### **National IWRM Focal Point**

Mr Mac Mokoroa

Secretary

Ministry of Infrastructure Cook Islands

### **National IWRM Project Manager**

Mr

WATSAN Unit

Ministry of Infrastructure Cook Islands

### **National IWRM Project Assistant**

Ms Jaime Short

WATSAN Unit

Ministry of Infrastructure Cook Islands



### 3. Establishment of a Coordinating Body for the Operation of the GEF Pacific IWRM Demonstration Project in Cook Islands

At national level, all strategy, planning projects, programmes relating to development in the Cook Islands are overseen by the National Sustainable Development Committee (NSDC), which has responsibility for developing and updating Te Kaveinga Nui - the Cook Islands National Sustainable Development Plan.

The National Infrastructure Committee, which reports directly to Cabinet oversees the work of ICI and provides governance and decision-making in relation to the work of ICI. The ICI comprises representatives from the private sector, the Cook Islands Investment Corporation, and relevant Government Ministries.

For the IWRM Project, WATSAN established a Programme Steering Group (PSG) comprising representatives from the main Ministries, private sector organisations, NGOs and development partners relevant to the area of IWRM, provided overall governance to the project. The PSG was chaired by the Head of ICI, who communicated directly with and reported to the IC. Amongst the partners involved in the PSG were:

- ICI/WATSAN – Chair
- Ministry of Finance and Economic Management (MFEM)
- Ministry of Health (MoH)
- Ministry for Marine Resources (MMR)

- National Environment Service (NES)
- Ministry of Agriculture (MAg)
- Office of the Prime Minister (OPM)
- New Zealand Aid/MFAT
- Cook Islands Red Cross
- Ministry of Education
- Muri Environment Care (Community environment group in study area)
- Koutu Nui and House of Ariki (Traditional Landowners)
- Te Ipukarea Society
- Cook Islands Chamber of Commerce
- Cook Islands Tourism Corporation

A full list of representatives and Terms of Reference for the PSG is attached in Annex 1.

The reporting and governance structure for the IWRM Project was therefore as shown below





## 4. Planning Stakeholder Participation in the Execution of the Cook Islands GEF Pacific IWRM Demonstration Project

The Cook Islands IWRM project was one of several projects, running concurrently, addressing water and sanitation issues in Rarotonga. Consequently, at the beginning of the IWRM Project, there were a number of existing and newly formed committees and liaison groups often with the same members. The Cook Islands Government recognised that there would be benefit in combining all of these stakeholders into one committee, and with the formation of the new WATSAN Unit in 2011 an opportunity was seen, for coordination and rationalisation of stakeholder participation.

A key step undertaken in 2011 was the development of the National Water Outlook, where a workshop held in May presented the opportunity to gauge each stakeholder's views and the level of participation. At that time the majority of the stakeholders present were from government agencies, and it was recognised that there was still more Stakeholder Analysis required with respect to NGOs and community groups.

In forming the PSG for the IWRM Project, WATSAN extended invitations to a number of relevant organisations and individuals with knowledge and experience related to the project. This resulted in formation of a PSG that retained a good balance of government and non-government representation and ensured that a wide range of views, thoughts, ideas and suggestions were tabled and developed.

WATSAN developed a formal communication and engagement plan for IWRM, encompassing a range of initiatives and measures for information dissemination, awareness raising, stakeholder interaction, and involvement in events and initiatives related to the project. This also included WATSAN sponsoring Vaka Eiva – the annual international paddling competition held in Rarotonga – and being present to provide information and advice on water and sanitation issues and to take feedback from participants and the public.

On a day-to-day basis, WATSAN based itself in the community meeting house in the study area, and encouraged locals and passers by to visit the office, ask questions, seek advice and provide feedback. Notices and information boards on the office provided up to date progress details on the project. Regular public meetings were held in the community house throughout the project. In addition, WATSAN provided regular updates in the media.

Critically, the local community environment group (Muri Environment Care), local politicians and community elders, landowners, and environmental NGOs, were all keen to be involved in and engaged with the programme, and much of the success of key aspects of the project was due to regular discussions – formal and informal – between and with those parties, and the wider community.

The table below lists the key stakeholders engaged during the project.

Position	Organization	Description
Lead Agency	Ministry of Infrastructure & Planning	Government
	Aid Management Division	Government
	Tourism Cook Islands	Government
	Ministry of Marine Resources	Government
	National Environment Services	Government
	NZ High Commission	Government
	Ministry of Health – Public Health Division	Government
	Meteorological Office	Government
	Office of the Prime Minister	Government
	Ministry of Agriculture	Government
	House of Ariki – Traditional Leaders	NGO
	Cook Is Red Cross	NGO
	Te Ipukarea Society	NGO
	Muri Environment Care	NGO



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#### 4.1 Gender Mainstreaming

The Cook Islands government recognised that much of the work being undertaken through the various water and sanitation programmes in the Cook Islands was in traditionally male dominated disciplines (engineering, construction, plumbing and drainlaying), while many of the issues being addressed were traditionally experienced with greater impact by women (lack of clean domestic water and poor sanitation).

Consequently, the Government was keen to ensure that as far as possible there was a strong balance of male and female representation in project planning, delivery and governance. This was achieved through building a project team and a Programme Steering Group that had approximately equally numbers of men and women, and by ensuring that the Terms of Reference for project groups and the 'rules' for meetings and engagements set out very clearly the absolute right for respect and equality in all business.

Many of the most active and vocal supporters and advocates for the work that the IWRM project related to, were women from local communities, NGOs and Government Ministries. Those people, individually and collectively – working alongside the project team - ensured that in the wider project delivery sphere, and particularly in the communities that were most likely to be affected by or benefit from the projects, men and women of all ages were aware of the project, were aware of the opportunities that they had to be involved in and informed about the project, and participated to whatever extent they felt interested to be.

The communications plan and specific individual communications initiatives for the project, including TV and radio advertising, were carefully designed and scheduled to ensure that as far as possible, they captured the interest and awareness of people from all genders, age groups and socio-economic groups.



## 5. Results Oriented Planning and Implementation of the GEF Pacific IWRM Demonstration Project in Cook Islands

### 5.1 Logframe Development

The original logframe for the Cook Islands IWRM project was developed by SOPAC and MOIP, following completion of the Diagnostic Report and initial project design 2008/09

The scope of the IWRM project evolved continuously throughout its duration, and the contents of the logframe were updated on a number of occasions due to three factors:

- Some of the original specific objectives set out at outline level in the logframe were found, on further analysis to be unnecessary, undeliverable within timeframes, or to be duplicated in other projects already in place
- The WMI Programme, which was developed subsequent to the IWRM project, introduced a number of objectives and outcomes that overlapped with the IWRM project

- Te Mato Vai – the Cook islands Water Partnership – was developed through 2012-13, and introduced a number of requirements, outcomes and timescales that overlapped with and took precedence over the IWRM objectives (e.g. establishment of a national water sector steering body)

All updates to the logframe were made through dialogue with and the agreement of SOPAC, supported by relevant documentation and information where appropriate.

### 5.2 Priority Areas of Work and Results

The following table summarises the priority objectives and activities of the IWRM project. The full project logframe is included with this report as Annex 4.

Project Objectives	Activity
Goal: To reduce stresses on water resources and the quality of freshwater and coastal waters in Rarotonga	
Outcome 1: Project successfully managed	
Output 1.1 Successfully deliver the Cook Islands IWRM Project	Activity 1.1.1 Establish Project Management Unit (PMU)
	Activity 1.1.2 Develop and Implement Communication Strategy
	Activity 1.1.3 Develop and Implement Engagement Strategy
	Activity 1.1.4 Replicate Project Outcomes
	Activity 1.1.5 Manage budgets, deliverable and timelines
	Activity 1.1.6 Source additional funding to add value to project outcomes



<b>Outcome 2:</b> Demonstration measures to reduce stresses on fresh and coastal waters	
Out put 2.1 Prepare and develop water quality management concepts to integrate into the IWRM-CI program	Activity 2.1.1 Collect and collate existing water quality information on fresh and coastal waters
	Activity 2.1.2 Undertake targeted water quality assessments
	Activity 2.1.3 Collect and collate existing water resource information in Nikao/Arorangi
	Activity 2.1.4 Mapping current wastewater disposal systems and soil infiltration characteristics
	Activity 2.1.5 Undertake groundwater resource assessment of Nikao/Arorangi aquifer units
	Activity 2.1.6 Assess sanitation management options for study area to identify potential studies
	Out put 2.2 Demonstrate the integration of water quality management concept
Activity 2.2.2 Undertake demonstration project	
<b>Outcome 3:</b> Stakeholder capacity, knowledge base and access to information is increased	
Output 3.1 Water portal completed and made accessible to all stakeholders	Activity 3.1.1 Scope water portal requirements
	Activity 3.1.2 Identify secure ongoing funding, roles and responsibilities
	Activity 3.1.3 Construct and populate water portal
	Activity 3.1.5 Expansion of portal to include Outer Island data
Output 3.2 Workshop/ training to communicate and convert IWRM-CI findings into actions	Activity 3.2.1 Assessment of training needs, including community capacity development
	Activity 3.2.1 Development of capacity development and training tools
Output 3.3 Implement community-based IWRM project	Activity 3.3.1 Scope community-based project
	Activity 3.3.3 Community lead delivery of community-based project
	Activity 3.3.4 Provide facilitative, technical and reporting support to project
<b>Outcome 4:</b> A policy framework and a long-term sustainable governance body	
Out put 4.1 Long-term sustainable governance body	Activity 4.1.1 Establish Project Steering Committee
	Activity 4.1.2 Develop model for long-term governance body
	Activity 4.1.3 Establish long-term governance body
Output 4.2 National policy incorporating IWRM and water use efficiency	Action 4.2.1 Assess policy needs to manage water and wastewater in an IWRM framework
	Activity 4.2.2 Revise Draft National Water Policy
	Activity 4.2.3 Consult on Draft National Water Policy
	Activity 4.2.4 Complete Draft National Water Policy for tabling in Cabinet
	Activity 4.2.5 Develop and implement strategy to support Water Policy through Cabinet

The following table provides a summary of key results linked to the project's goal and objectives. Progress towards the projects objectives can be found in Annex 5 and a comprehensive Results Note linked to performance indications can be found in Annex 6.

Key Results
1. Successful demonstration project to trial and monitoring onsite household sanitation systems, which has contributed to development of a programme to upgrade systems at 1,200 homes.
2. Establishment of a well-resourced WATSAN team, now established as a permanent part of the ICI structure, to lead all water and sanitation related policy, planning and project delivery
3. Preparation of an Integrated Water Resources Management Policy, endorsed by Cabinet, which is an essential component of the strategic framework for future management and protection of water resources.
4. Strengthened engagement with and involvement of communities, leading to significantly increased awareness of the issue of water resources management.
5. Identification of a groundwater resource in Nikao/Ruaau, which is potentially viable as a source of water for drought relief and/or supplementing regular supply.







### 5.2.1 Co-financing

The following tables highlight the co-financing that was realised and the additional funding that was leveraged from success of the project activities.

Source	Amount (USD)	Cash or In-kind	Description
Government	51,642	Cash	Cash co-financing for energy costs
Government	37,615	Cash	Cash co-financing for communications
Government	3,762	Cash	Cash co-financing for Inter Agency IWRM Meetings
Government	97,790	Cash	Mainstreaming policy support as part of policy and legislative review
Government	18,808	Cash	Awareness activities as part of communications strategy
Government	22,569	In-kind	In-kind co-financing for vehicles
Government	67,707	In-kind	In-kind co-financing for GIS Mapping – field survey, data capture, download
Government	36,111	In-kind	In-kind co-financing for drilling borehole transects
Government	40,624	In-kind	Mainstreaming policy support as part of policy and legislative review
Government	3,762	In-kind	IWRM training workshops
Government	9,028	In-kind	Water quality monitoring
EU-SOPAC IWRM	20,000	Cash	Cash co-financing for Project Manager
EU-SOPAC IWRM	47,019	Cash	Cash co-financing for Project Assistant
EU-SOPAC IWRM	21,623	Cash	Resource support for policy and legislative review
EU-SOPAC IWRM	21,623	Cash	Inter-agency consultation process as part of policy and legislative review
EU-SOPAC IWRM	31,623	Cash	Public consultation as part of policy and legislative review
EU-SOPAC HYCOS	56,754	Cash	Groundwater pumping and testing
NZAID-SOPACWQM	75,230	Cash	Programme set up (lab assessment etc)
NZAID-SOPACWQM	30,010	Cash	Computer tool for knowledge transfer between agencies
SOPAC Water Safety	207,341	Cash	Strategy development as part of communications strategy
SOPAC Reducing Vulnerabilities	56,793	Cash	Build on existing server to cater for capacity
ADB	700,000	Cash	Groundwork policy as part of policy and legislative review
New Zealand Aid/AusAid	200,000	Cash	Trial sanitation systems installation, research, monitoring and assessment as part of the pilot area work to identify optimal long-term onsite sanitation solutions
	1,854,434		



### 5.2.2 Benefits of Co-financing

The following box presents an example of how co-financing and additional funding have helped to benefit the project objectives.

#### On-site Domestic Sanitation Systems trials and research

**Type:** Cash

**Agency:** New Zealand Aid/Aus Aid

**Amount:** 200,000 USD

**Activities and benefits:** The funding related to an area of cross-over between the NZAid/AusAid funded WMI Programme and the IWRM Project, involving trials of various types of onsite domestic sanitation system. The work, involving installing different types and combinations of sanitation systems and land application systems; sampling discharges from the systems and groundwater, and assessing the relative performances of the various combinations, was conducted by research staff from Southern Cross University, under contract to WATSAN. The work was critical in demonstrating the effectiveness of onsite sanitation systems in reducing contaminants significantly, and in demonstrating that there was no single 'best' combination of sanitation and land application systems, but that a site-by-site decision was required based on individual location parameters. These findings were essential in replicating IWRM project outcomes, through leading to development the SUP, which will involve providing onsite domestic sanitation systems at up to a further 1,000 homes around Rarotonga and Aitutaki, between 2014 and 2018.





### 5.2.3 Key Awareness Materials and Media Coverage

Key awareness materials for the project included:

- Information Board on the local community based WATSAN project office, showing progress and upcoming activities
- TV information film campaign 'Healthy Land, Healthy Water, Healthy People' regarding management of animals and prevention of water pollution
- Fortnightly 'Watson WATSAN' column in the Cook Islands News
- Leaflets in English and Cook Islands Maori, regarding the project, objectives, aims and what communities and individuals could do to support the project and manage water resources and sanitation more effectively and efficiently
- Leaflets in English and Cook Islands Maori on correct operation of septic tanks and sanitation systems
- Sponsorship of and presence at Vaka Eiva international paddling competitions annually, connected with promoting lagoon health and environmental protection
- Regular media releases (print and radio) regarding project activities and milestones
- Regular community meetings to update and advise on project progress, and to take questions and address concerns

Copies and photos of some of the key awareness materials developed and media coverage are included as Annex 6)

### 5.3 Catalytic Impacts

Four key areas in which the IWRM project has helped catalyse change are:

- The development of a Project/Programme Steering Group as part of the governance and management of the project has enable WATSAN to demonstrate that this approach to delivery, involving key stakeholders in the overall governance of the project via a formal structure and focal point, is an efficient and effective way of delivering project outcomes in the Cook Islands. This model is now being used on various other projects and programmes that begun subsequent to the start of the IWRM project
- The involvement of communities and community groups in identifying priority issues and then working with the formal project team to deliver outcomes, liaise within and across communities and communicate project initiatives and progress, has been a highly successful approach, which is being replicated across other programmes in the Cook Islands
- The trial sanitation system work carried out under the IWRM project in the Muri-Avana area has led to a refinement in the approach to infrastructure delivery, and was also directly responsible for initiating changes to relevant sanitation legislation, to introduce updated standards, codes of practice and guidelines that reflect the position reached through knowledge gained from the IWRM project
- The IWRM Policy prepared through the project has acted as a reference point and catalyst for development of a new, holistic ridge-to-reef- water policy, currently in development for the Cook islands

### 5.4 Participatory Planning, Monitoring, and Evaluation

All critical planning for the project was conducted through and approved by the PSG, and the Head of ICI (previously Head of MOIP). WATSAN prepared regular update reports for the PSG and the Head of ICI, using the IWRM Project Plan and Logframe as reference points to monitor and track and monitor progress against time, cost and quality of required activities and outcomes.

## 6. Strengthening National Coordination and IWRM Policy and Planning in Cook Islands

### 6.1 Linkages of Demonstration Activities with IWRM Planning

The IWRM demonstration project was one of a number of projects running concurrently in the fields of water, sanitation, waste management and water resources management. While many similar previous initiatives and projects had been delivered in the Cook Islands, there had been a notable absence of sustainable, effective and co-ordinated planning, management and delivery of related outcomes. With the Te Kaveinga Nui – the Cook Islands Sustainable Development Plan - as a focal point, and using the IWRM project, WMI Programme (and more recently Te Mato Vai) as lead projects in the field, the Cook islands Government, through ICI/WATSAN brought together all of the key stakeholders in the form of the Programme Steering Group and Stakeholder Liaison Group. This mean that for the first time, planning, implementation and monitoring in the area of IWRM planning was effectively co-ordinated and communicated, resulting in significant and ongoing progress across

### 6.2 Improving National Coordination for IWRM

The NSDC continues in its role as the national body for all development and environmental matters in the Cook Islands, including IWRM. This situation may change once Te Mato Vai – the major water infrastructure upgrade project on Rarotonga is complete. At that time, responsibility for policy, planning, operation, and projects related to all aspects of water resources might be passed to a single entity – potentially a State Owned Enterprise with a Board and appropriate governance mechanisms, or a Government Ministry, with a relevant Committee established.

### 6.3 National IWRM Planning

National IWRM planning in the Cook Islands is still at an early stage of development. The NSDC, NES, MMR, MoH, ICI and other stakeholders all have critical roles to play in this. The demonstration project and other related projects have created a strong platform for and focus on developing a more robust, integrated, co-ordinated and sustainable approach. Upcoming Ridge to Reef and Pacific IWRM projects will create opportunities to and a need for further development of that approach.





## 7. Capturing Lessons Learned for Replication and Scaling-up of IWRM Best Practice in Cook Islands

### 7.1 Lessons Learned

Key lessons learned through the demonstration project are:

- It is essential that the people and organisations that will have responsibility for delivery of project outcomes and activities are involved in the diagnostic and planning stages of the project. For a number of reasons, this was not done in the case of the Cook Islands demonstration project, which meant that a number of the initial outcomes and activities were – by the time the project commenced – either not fully understood or not entirely achievable. In turn this required a number of ongoing changes to the Logframe and action plan.
- It is absolutely essential that project documentation be created in clear, simple language that is easily understood and as free as possible from ambiguities and complexities. Many of the project documents received as part of the official requirements for the demonstration project were very difficult to understand in places, leading to uncertainty and confusion at the point of delivery.
- Effective project management requires the involvement of an individual or individuals – ideally for the duration of the project – who have (i) a required level of training and experience in formal project management techniques; (ii) empathetic and available understanding and support from the point of project co-ordination; (iii) a similar level of understanding, experience and approach to project management as colleagues running similar projects elsewhere in the overall programme and (iv) a desire to be a project manager and an interest in developing as a project manager. In the absence of a person (or people) possessing at least most of these attributes, project management can by default become the task of a person or people who would prefer not to be managing projects, and this can lead to difficulties.

- Community engagement and working with stakeholders as an extended project team, can be a highly effective, productive and sustainable way of delivering project outcomes that have long-term benefits that are not constrained to the stated deliverables for the project

### 7.2 Replication and Scaling-up

The main replication strategy in place arising from the demonstration project relates to the use of onsite domestic sanitation systems in Rarotonga and Aitutaki. The IWRM project involved running trials of 10 combinations of wastewater treatment system and land application system to ascertain (i) whether such systems were capable of reducing contaminants to levels that were appropriate for discharge to land and/or groundwater and (ii) whether any particular combination of treatment system and land application system was better than others.

Following on from this trial of 10 systems, the NZAid/AusAid funded WMI Programme involved upgrading over 200 onsite sanitation systems in the trial area, using treatment systems and land application systems trialled through the IWRM project. Joint IWRM/WMI monitoring of sanitation system performance and water quality continued throughout the duration of the IWRM project and the results led to development of the SUP – a major project to implement similar upgrades at up to 1,000 additional homes in Rarotonga and Aitutaki. This programme, with a budget of \$NZ18M will run for four years from 2014, implemented by the WATSAN team that was established and developed through the IWRM project and WMI programme. Communications, stakeholder engagement and project governance mechanisms will all be based on the approach developed through IWRM. In addition, assessments of sanitation on the other outer islands of the Cook Islands will commence under the SUP, formally addressing issues of water resources management and sanitation on many of those islands for the first time.



## 8. Planning the Transition from IWRM to the Regional Ridge to Reef Initiative

### 8.1 Scaling-Up to broader Integrated Land, Water and Coastal Management



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