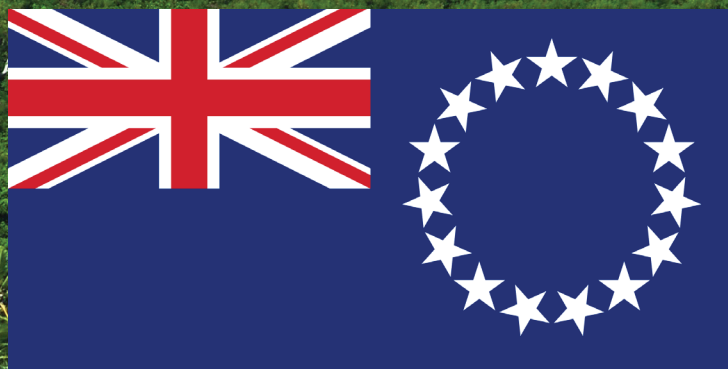


GEF PACIFIC
RIDGE TO REEF PROGRAMME

COOK ISLANDS



NATIONAL R2R PROGRAMME
DOCUMENT



Pacific Community
Communauté
du Pacifique



GEF Pacific RIDGE TO REEF Programme

Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries

FOREWORD

The Heads of States of 13 Pacific SIDS developed and in 1997 endorsed a GEF International Waters Strategic Action Programme (SAP) for Pacific Island Countries. That document identified priority areas for action in the international waters focal area as improved management of ocean and coastal fisheries, integrated watershed and coastal management, and water supply protection. On the basis of the Pacific SAP, the GEF International Waters focal area has subsequently invested in a series of regional initiatives. The first was the UNDP implemented project entitled “Implementation of the Strategic Action Program for the International Waters of the Pacific Small Island Developing States” initiated in 2000 and operated over almost 7 years to 2006.

In light of the critical water resource and sanitation issues facing Pacific SIDS, GEF support in the years following the conclusion of the IWP project has been targeted at improved coordination and planning of water resource and wastewater management to balance overuse and conflicting uses of scarce freshwater resources through the GEF Pacific IWRM Project. The latter was financed by the GEF, implemented by UNDP and UNEP, and executed regionally by the Geoscience Division of the Pacific Community (SPC) in partnership with 14 Pacific Island Countries.

The GEF Pacific IWRM Project built on achievements of previous investments via a focus on national IWRM demonstration projects aimed at providing an opportunity for participating countries to implement, and experiment with, new management models and methods. The practical on-the-ground solutions to water and sanitation issues demonstrated by the national IWRM projects acted to stimulate support at both community and national government levels for policy reform and the mainstreaming of integrated approaches as part of national sustainable development planning.

The experience and local capacity in integrated environmental and natural resource management generated through the GEF Pacific IWRM project has been recognized both regionally and within the 14 participating Pacific Island Countries as an appropriate entry point for the testing of innovative approaches and measures to integrate land, forest, water and coastal management, including climate change adaptation in Pacific SIDS. In this connection, the GEF multi-focal area, multi-GEF agency programme entitled “Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods” (or the GEF Pacific R2R Programme) was developed to provide an opportunity for Pacific SIDS to develop and implement truly integrated approaches for the sustainable development of island economies and communities. Programme activities are organised under the following programme components:

- ✓ National Multi-Focal Area Ridge-to-Reef Demonstrations in all Pacific Island Countries
- ✓ Improved Governance for Integrated, Climate Resilient Land, Water, Forest and Coastal Management
- ✓ Regional and National/Local Ridge-to-Reef Indicators, Monitoring and Evaluation and Knowledge Management
- ✓ Regional Programme Coordination

This National Programme Document summarizes the development of integrated approaches to water resource and coastal management in the Cook Islands to date, including examples of specific results and lessons learned achieved through integrated approaches to environmental and natural resource management. Importantly, this document presents information about the interlinked GEF R2R STAR and GEF International Waters R2R Projects, including programme support activities which focus on science-based planning, human capital development, policy and strategic planning, results-based management, and knowledge sharing.

Marc Wilson

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INTRODUCTION

Given the close inter-connections between land, water and coastal systems in Small Island Developing States (SIDS), the integration of freshwater watershed management with coastal area management is considered essential to foster effective cross-sectoral coordination in the planning and management of land, water and coastal uses. In Pacific SIDS, such integrated approaches to freshwater and coastal area management have been termed 'Ridge to Reef' to emphasise the inter-connections between the natural and social systems from the mountain 'ridges' of volcanic islands, through coastal watersheds and habitats, and across coastal lagoons to the fringing 'reef' environments associated with most Pacific SIDS. Inherent in the approach is the philosophy of cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, balancing coastal livelihoods and biodiversity conservation, hazard risk reduction, and climate variability and change.

Similarly, the integration of communities, stakeholders, and national governments within such a cross-sectoral planning framework is described by Pacific SIDS as a 'Community to Cabinet' approach. The following sections summarize achievements to date in the development of 'Ridge to Reef' and 'Community to Cabinet' approaches to integrated natural resource and environmental management in Cook Islands. An overview of the purpose of the Ridge to Reef Programme, its GEF R2R STAR Projects and GEF International Waters Projects is also provided.



1. RIDGE TO REEF CONTEXT

This section provides a brief background of the geography and environmental threats in the Cook Islands. This information has been used as the basis for the identification of priority activities for the testing of 'Ridge to Reef' approaches to integrated land, water, forest and coastal management in the Cook Islands.



2. COMMUNITY TO CABINET APPROACH

Community to Cabinet is a multi-stakeholder approach adopted in the Pacific Small Island Developing States to foster strengthened coordination and stakeholder involvement in the planning of investments in integrated natural resource and environmental management. This section outlines existing mechanisms for 'Community to Cabinet' coordination in the Cook Islands.



3. RIDGE TO REEF RESULTS

Pacific leaders have called for a strengthened emphasis in results-oriented sustainable development planning. This section benchmarks the main results of efforts to develop integrated management approaches in Cook Islands to date.



4. DOING IS SEEING THE NEED

The GEF Pacific Ridge to Reef programme embraces the 'Doing is Seeing the Need' philosophy adopted by the GEF Pacific R2R Programme. A story board of images is presented to provide examples of best practices in integrated natural resource and environmental management.



5. LESSONS FROM INTEGRATION

Human resources are central to the sustainable development of Pacific SIDS. This section presents experiences and lessons learned in integrated management by practitioners and stakeholders. The focus of these lessons is on the capacity built for integrated management and the related results.



6. GEF PACIFIC R2R PROGRAMME

An overview of the "Pacific Islands Ridge-to-Reef National Priorities – Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods" (or GEF Pacific R2R Programme) is provided in this section. Information about the interlinked GEF R2R STAR and GEF International Waters R2R Projects, and Programme Coordination Unit, is also presented.



7. COOK ISLANDS R2R STAR PROJECT

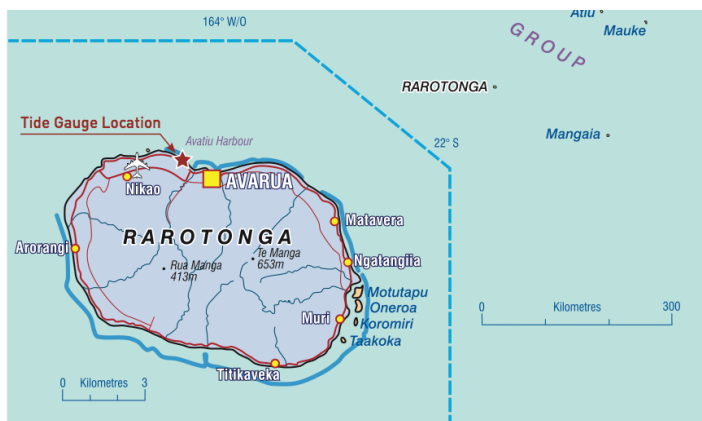
A summary of Cook Islands national project to be financed through the GEF System for Transparent Allocation of Resources (STAR) is provided in this section. The planned contribution of this STAR project to the achievement of the targets for the regional Ridge to Reef program is outlined. The management arrangements for this project are also provided.



8. INTERNATIONAL WATERS R2R PROJECT

Priority actions identified for testing the integration of water, land, forest and coastal management to preserve ecosystem services, store carbon, improve climate resilience and sustain livelihoods in Cook Islands are outlined. A brief strategy for Cook Islands IW R2R national pilot project is provided along with the logical framework matrix. Key assumptions and risks are summarized to guide planning during the project's inception period.

1. RIDGE TO REEF CONTEXT



Country:	Cook Islands
Size:	237 km ²
Population:	15,000
Population growth:	-3.07%
Density:	45.67/km ²
GDP:	USD 275 million
Growth Rate:	3.4%
Gross National Income:	USD 13,478

The Cook Islands are a Polynesian island group comprising of 15 widely dispersed islands, surrounded by an exclusive economic zone of 1.8 million square kilometres. Like many PICs, water supply issues are dominant in the management of water resources, and attention generally has focused on the areas of greater population. In the Cook Islands this is Rarotonga, with a residential population of approximately 10,000. The islands source potable water from two main sources. In the Southern Group of islands which includes the main island of Rarotonga (volcanic origin), surface water is sourced from springs and streams within catchments valleys. In the Northern Group of islands (coral atolls), water is sourced from rainwater and groundwater.

Freshwater lens are present, however, the past practice of manually extracting water from wells have been abandoned. The old steel and galvanised pipes are having problems with corrosion and leakage. Replacement of the old pipes by uPVC and polyethylene pipes is in progress on the respective islands to alleviate these problems. Per capita consumption figures of about 260 litres per capita per day are high for a developing country, and water losses throughout the system are thought to be between 50-70% in Rarotonga. Since water supply issues are dominant in the management of water resources, attention generally has focused on the areas of greater population, namely, the towns and cities. In the Cook Islands, the trend is no different, with the primary focus having been on water supply systems within Rarotonga.

The responsibility for water management including regulation falls under the auspices of Infrastructure Cook Islands (ICI), but other agencies also have a key interest including the National Environment Service, Cook Islands Investment Corporation, Ministry and Finance and Economic Management, and Ministry of Health. The Department of Water Works within ICI is responsible for managing water supply in Rarotonga in consultations with island councils. The major wastewater and sanitation issues in the Cook Islands relate to groundwater and marine water pollution which creates implications to human and environmental health. These issues stem from improper disposal of human and animal sewage. The impacts of this pollution reduces the resilience of the environment to withstand natural disasters, reduces the availability of resources which support the traditional subsistence lifestyle

of Cook Islanders, increases the frequency 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. 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 tourist industry earns the greatest revenue in the Cook Islands and tourists expect a high standard of sanitation service when they come to enjoy healthy, safe and ecologically stable coral lagoon ecosystems for swimming, snorkeling 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 high standard sanitation service. The first sanitary systems used on the islands were pit toilets. These smelt and created health problems so there was a move to pour-flush toilets. These proved unsatisfactory so the Government agencies recommended flush toilets with single, then dual and now three-chamber septic tanks, with most discharges to soak holes. With rapid development on the coastline and deteriorating coral reef health, comes increasing recognition of the impact of on-site sanitation systems on human health and ecological sustainability. While some are hopeful that a simple low cost technological fix is all that is required, 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 wastewater technologies and systems. The above issues have begun to be addressed through the cross-sectoral planning and management initiatives of the GEF Pacific IWRM Project. Needs still exist and have been identified within a Ridge to Reef context. These needs include enhancing community capacity for waste management implementation and environmental protection to enable best practice in coastal waters, land and public health protection.

Increasing knowledge-base and capacity for effective environmental stress reduction measures and integrated catchment management in Muri will strengthen decision making processes and community involvement.

2. COMMUNITY TO CABINET APPROACH

There is a growing recognition in the Pacific region of the need for partnerships, alignment of donor support with national priorities, and country ownership in the development of results-oriented programs and projects. The Pacific leaders recently emphasized these needs noting the well-known challenges Pacific Island communities face in fashioning sustainable futures. These include geographical isolation, high levels of dependence on natural resources for nutritional security and livelihoods, and a highly variable environment characterized by numerous coastal hazards.

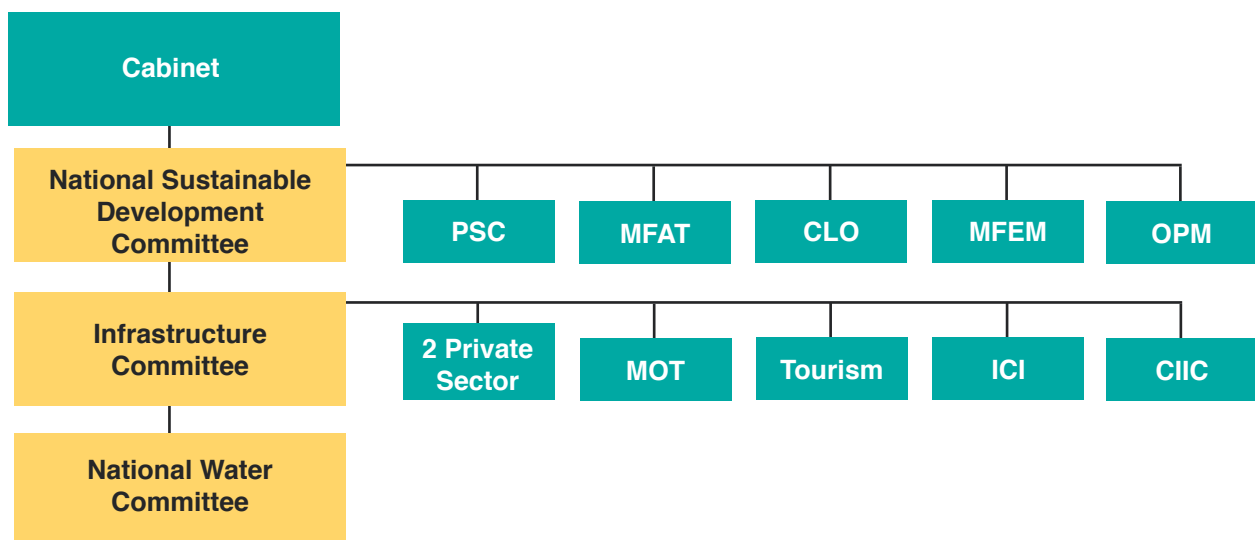
The above combined with considerable variation in island geomorphology, socio-economics and politics make locally-driven solutions to key issues influencing island sustainability and resilience a necessity. Of particular note are the complex land and marine tenure systems and institutional relationships between national and community-based governance structures.

While the Pacific SIDS have largely adopted western-style constitutions and legal systems, such community-based governance and leadership arrangements remain highly influential at all levels. Accordingly, the participation of civil society organizations and community leaders in development planning is essential to increase the local relevance of management actions and their results in SIDS. The following outlines existing cross sectoral coordination arrangements and efforts to engage stakeholders in sustainable development planning.

Strengthening Cross-sectoral Coordination and Planning

Cook Island Water Safety Committee (WSC) was convened in January 2007, with members from the public service, private sector and NGO's. The WSC was formed to develop the Water Safety Plan, which aimed to identify, eliminate and construct solutions to reduce risk to water resources.

At a national level, the IWRM along with the NZ Aid Waste Management Initiative, reports to the Infrastructure Committee (IC) this committee reports directly to Cabinet. The Water Resource Management Act provides a platform for an integrated national water strategy. Included within the Act is the mandate to establish a National Water Committee to 'provide a coordinated approach to decision making on water resource planning, policies and implementation programmes.



National governance arrangements are shown for the water sector.
National committees are highlighted in yellow

Linking Local and National Coordination

Because of the small size of Rarotonga and limited possibility for various committees rather than form or duplicate another Committee which will eventually involve the same group of people, it was agreed that the Water Safety Committee would act also as the IWRM Steering Committee.



The Governor-General, Sir Jerry Mateparae, visited one of the water intakes for Rarotonga's water supply with staff of WATSAN. Pictured from left were: Raututi Taringa; Paul Maoate; Lewis Moeau, the Governor-General's kaumatua; Hon Teariki Heather, Minister for Infrastructure and Planning; Governor-General Sir Jerry Mateparae; Joanna Kempkers, New Zealand High Commissioner; Jaime Short and Kenneth Macdonald.

Stakeholder Engagement

Cook Islands's national pilot project of the regional R2R IW project will work to: generate local and national support for integrated R2R approaches; establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders of the national GEF System for Transparent Allocation of Resources (STAR) projects planned under the broader Ridge to Reef programme; develop local experience in linking IWRM to coastal area management; and stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries. Given the range of stakeholders identified above, the preparation phase of the regional R2R IW project in Cook Islands has been based on a consultative process involving national government agencies, community representatives, and civil society organizations. Stakeholder inputs elicited during the preparation phase have been incorporated in the results framework for the pilot project included in the final section of this document.

Ridge to Reef stakeholders

- Infrastructure Cook Islands
- Aid Management Division
- Tourism Cook Islands
- Ministry of Marine Resources
- National Environment Services
- NZ High Commission
- Ministry of Health – Public Health Division
- Meteorological Office
- Office of the Prime Minister
- Ministry of Agriculture
- House of Ariki – Traditional Leaders
- Cook Is Red Cross
- Te Ipukarea Society
- Muri Environment Care

3. RIDGE TO REEF RESULTS

The need for results-based approaches to the management of development assistance programmes and projects has received recent high-level recognition. In adopting the Paris Declaration on Aid Effectiveness in 2005, national government Ministers responsible for development from both developed and developing countries joined with Heads of multilateral and bilateral development institutions in committing to “work together in a participatory approach to strengthen country capacities and demand for results-based management”.

This commitment was reaffirmed in the 2008 Accra Agenda for Action which called for accelerated progress on aid effectiveness by better demonstrating the results of development efforts and openly accounting for them.

The Pacific Islands region and its development partners have responded accordingly. For example, in 2012 the Pacific Leaders considered a review of the effectiveness of development efforts in the Pacific and called for strengthened emphasis on results in planning and financing development. The following benchmarks the main results of efforts to develop integrated management approaches in the Cook Islands to date.

PROCESS

National staff across institutions with IWRM knowledge and experience

At the outset of the IWRM project, staff with knowledge or water and water resource management issues was present in the National Environment Service, Ministry of Marine Resources, and Ministry of Health and in the Water Division of ICI (formerly Ministry of Infrastructure and Planning (MOIP)

There was a potential gap in the resources in terms of policy, planning and project delivery related to management of water resources. That gap has now been filled with the formation and development of WATSAN, which included a Unit Manager, a Programme Co-coordinator, a Technical advisor, a Communications Manager, and a Programme Administrator.

All of these staff members are working exclusively on projects and programmes related to water resources management. Between them they have a wide range of skills and educational backgrounds – including civil engineering, environmental science, geology, finance and communications – and many years’ experience.

Lessons learned incorporated into other projects and/or regulations

The IWRM project was highly successful in shaping major ongoing projects in the Cook Islands.

The trials of various on-site wastewater treatment and disposal options at demonstration sites in the Muri-Avana area were instrumental in securing a wider pilot-scale project under the New Zealand and Australian Aid funded Waste Management and Sanitation Improvement (WMI) Initiative.

The pilot involved upgrading sanitation systems at over 200

homes in the Muri-Avana area, ensuring that all domestic sanitation systems in the area met the relevant Regulations and bringing sanitation up to current international standards for on-site treatment and disposal

That work, accompanied by related water quality and system discharge monitoring facilitated further discussion on the long-term strategy for sanitation in the Cook Islands, and identification of a further 1,000 properties across Rarotonga and Aitutaki that require upgraded onsite sanitation systems.

The EU, New Zealand and Australian aid partners have worked with the Government of the Cook Islands to develop and provide funding for a four-year programme of work, with a budget of \$NZ18 million, to upgrade those 1,000 onsite systems and begin assessments and upgrades of sanitation systems in the other outer islands. In many ways, the trigger for this large-scale replication was the installation and monitoring of 10 trial systems under the IWRM project.

Proportion of community engaged in water related issues

Prior to the project, community engagement and awareness-raising activities happened mostly in a reactive manner, responding to issues or requests. The targets for the project were to increase the number of engagement activities and to increase attendance at awareness raising activities.

As part of delivering its programme of work, WATSAN created the role of Communications Advisor, and developed communications strategies and plans. In implementing these, WATSAN held regular meetings with local communities and community groups and provided periodic, targeted updates on project progress and next steps, at open meetings, which have been very well attended.

A diverse range of community stakeholders were represented on the Programme Stakeholder Liaison Group including Muri Environment Care, the Chamber of Commerce, Te Ipukarea Society, Koutu nui (traditional land-owners) and various Government Departments. This group functioned successfully with a high-level of discussion and engagement around water-related issues and provides a strong feed-back mechanism.

In addition to community meetings and events, a wide range of other engagement and awareness activities were undertaken by WATSAN, including regular articles and columns in local media, advertising campaigns around water and lagoon protection issues, sponsorship activities (including high profile sponsorship of the Vaka Eiva international paddling event held in Rarotonga), and information packs for individuals directly involved in WATSAN projects or programmes. All community focused material was produced in both English and Cook Islands Maori.

The WATSAN office is located in Muri – the main area of the unit’s work – and this proved to be a successful engagement tool with many locals dropping in to ask questions or discuss water and lagoon issues. WATSAN also has a website containing information on the IWRM project.

Project design and PM&E plan endorsed by project steering committee

The target of the IWRM Project was to have the project and PM&E plan implemented by August 2011 and a subsequent consultation report endorsed by the Steering Committee.

The WATSAN Programme Steering Group (PSG) endorsed the original project design and plan for the Cook Islands IWRM Project. Following discussion with SOPAC, elements of the original project design were subsequently amended to take into account development of related projects and programmes (for example the New Zealand Aid funded Waste Management and Sanitation Improvement (WMI) Programme) and to ensure that all related projects and programmes aligned and provided for efficient delivery of outcomes. The amended design and plans were endorsed by the Project Steering Group.

National IWRM communication plan framework implemented

When the Project started the communication plan was to be implemented by July 2012. WATSAN developed a communications strategy and an annual communications plan across its full programme of work, which incorporated the IWRM project. The strategy and the first annual plan were both implemented in the first half of 2012.

The various projects and programmes managed by WATSAN focused on delivering improved water resources management across the Cook Islands, and so the aim in developing a single communications strategy and plan was to ensure full integration in communications across that range of projects and programmes.

The strategy and plan were reviewed and approved by the Project Steering Group and Stakeholder Liaison Group, and their delivery was overseen by WATSAN's Communications Manager.

STRESS REDUCTION

Reduced nitrogen pollution discharged to groundwater and Muri lagoon

There are very few commercial-scale 'piggeries' on the Cook Islands. The majority of pigs are kept in small numbers (<6) at individual households.

Monitoring nitrogen discharges from such situations, and the potential reduction arising from incentives, education and enforcement measures implemented by the Cook Islands government, would be extremely difficult and impractical in terms of resource requirements. Nonetheless it was a target of the project to reduce nitrogen discharged to the lagoon from piggeries by 90% and reduce in nitrogen loads at a household level from household trials by 35%.

WATSAN is running an extensive education and awareness campaign regarding animal waste management and is working closely with the Ministry of Health on enforcement of relevant Regulations, and it is planned that extensive inspections of individual properties where pigs are kept, will

be conducted over the next 1-2 years.

In conjunction with this, WATSAN has worked closely with the Ministry of Marine Resources to ensure that effective monitoring of freshwater, groundwater and the lagoons is being conducted, in order to gather data that facilitates understanding of overall changes in water quality resulting from the full suite of relevant initiatives, projects and programmes in place.

A revised water quality monitoring programme was initiated under the IWRM project during 2013, and the results from this should begin to provide vital data on nutrient loads – and the effects of reduction and management initiatives – over the next 1-2 years.

Reduction in sewage pollution in the Muri community

Monitoring of the trial onsite wastewater treatment and disposal systems installed as part of the IWRM project is ongoing and the target of the project was to achieve a 35% reduction in nutrients and organic loads at a household level from household trials.

Results to date indicate that reduction in organic loads at individual household level is in excess of 50%, compared with the baseline situation at the start of the project, in which most houses were reliant on old, poorly designed and badly maintained septic tanks.

Nutrient reduction across the wastewater treatment and disposal process is largely reliant on the effectiveness of well-designed land application systems. Initial indications from monitoring are that substantial nutrient reduction can be achieved with these systems.

Ongoing monitoring of groundwater over the next 6 – 12 months will give a more comprehensive and reliable indication of the degree to which this is being achieved.

Wastewater from demonstration sites meets National Effluent Standards

Monitoring of onsite wastewater treatment and disposal systems installed as part of the IWRM project is ongoing and the target of the project was for discharges to meet Public Health (Sewage) Regulations 2008 or revised regulations. Indications from the monitoring conducted to date showed that the sanitation systems installed at the IWRM demonstration sites produce wastewater that complies with the relevant Regulations.

Gathering information on environmental water quality and groundwater resource availability

WATSAN worked closely with the Ministry for Marine Resources (MMR) during the project to establish and deliver a water quality monitoring programme that provides robust data regarding environmental water quality, the effects of discharges from land on that water quality, and the effects of improvements made in infrastructure and practice during the project.

MMR and ICI staff, conducted regular sampling at a variety of

locations around Rarotonga, and samples were analysed for critical pollutants and indicators.

In addition, a monitoring buoy was established in Muri Lagoon, monitoring continuously for key indicators of water quality and sending real-time data to a logger in the WATSAN office. WATSAN and MMR commissioned an expert review of the water quality monitoring programme during 2013, which resulted in improvements being made in sampling locations, frequencies and parameters assessed. WATSAN contracted external expertise to conduct a groundwater resources assessment in the Nikao/Arorangi area of Rarotonga. The assessment focused on determining available quantities and quality in an area of Rarotonga that is prone to shortages during extended spells of dry weather.

This aspect of the project was less critical than at the outset of IWRM, in view of the fact that the Government of the Cook Islands has entered into Te Mato Vai; the Cook Islands Water Partnership, with the governments of New Zealand and the People's Republic of China. Te Mato Vai delivered a complete upgrade of Rarotonga's water supply network, providing potable water reliably, to the boundaries of all properties served by the current network, by 2015/16. Nevertheless, there remain benefits in assessment of the availability of groundwater as a supplemental supply source.

4. DOING IS SEEING THE NEED

The GEF Pacific IWRM project acted as a valuable entry point for strengthening integrated approaches to natural resource management in Pacific SIDS. Existing national coordination mechanisms involving operation of inter-linked national APEX bodies for IWRM and local coordinating committees for IWRM demonstration projects have been effective in guiding stress reduction in the water and sanitation sector and driving reform of national IWRM policy and planning.

That project also acted as a valuable entry point for capacity development, helping to foster application of inter-disciplinary skills and local knowledge and integrating this into monitoring and evaluation to ensure that causes of environmental stresses and the results of interventions are understood by stakeholders.

A need exists, however, to scale up the GEF Pacific IWRM approach to strengthen the integration of land, water and coastal management to better accommodate issues associated with biodiversity conservation, to build on synergies between investments in IWRM and sustainable forestry practices, and to strengthen the sustainable management of coastal 'blue forests' from the perspectives of hazard risk reduction, ICM application, and livelihoods.

The Pacific Ridge to Reef programme embraces the 'doing is seeing the need' philosophy adopted by the IWRM project via the promotion of pilot activities aimed at generating local and national support for integrated Ridge to Reef and Community to Cabinet approaches and to establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders.

Pilot activities will also develop local experience in linking IWRM to coastal area management and will stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries.

The related and linked national STAR projects will deliver the targets of the overall programme relating to strategic objectives of the GEF biodiversity, climate change mitigation and adaptation, land degradation, and sustainable forestry management focal areas.

5. LESSONS FROM INTEGRATION

Through early awareness activities and involvement of key local leaders, connecting with the local community was well-supported and led to the eager participation of households.

Protecting Lagoon Water Quality through Improved On-site Sanitation Systems

By Jamie Short, IWRM Project Manager

The Cook Islands Integrated Water Resources Management Project began in 2011 and was successfully established within the community of Avana and Muri, Rarotonga. Direct contact and involvement with the community both in awareness and physical work activities resulted in a positive community response and acceptance of the project and has aided in the establishment of further similar work in the project area.

Concern about the health of the lagoon began following an eye irritant syndrome outbreak from a substance believed to have blown in from the lagoon and frequent algal blooms. Subsequent to this human health instance, the Ministry of Marine Resources began conducting regular water quality monitoring which found comparably high levels of bacteria and

nutrients in lagoon water. These high levels were mostly attributed to inadequate onsite sanitation systems and animal waste that leach contaminants through the porous ground into the lagoon.

A large part of the IWRM work programme has been the installation of trial onsite sanitation systems that replaced the older systems already in the villages of Muri and Avana. This area was chosen as there had been already considerable attention drawn to the area for improving lagoon water quality especially since Muri is heavily populated with tourist accommodation and is a main tourist hub of the Cook Islands.

Prior to IWRM, the Muri Environment Care (MEC) Group, a local environmental NGO, had been spearheading environmental awareness similar to the IWRM Project. The Muri village traditional mayor, the local MP and a senior tribal leader are members of the MEC. A close relationship with MEC was established early on and therefore through early awareness activities and involvement of key local leaders, reaching and connecting with the local community about this issue was well-supported and led to the eager participation of households.

The purpose of this work was to trial different combinations of onsite treatment systems and Land Applications Systems (LAS) for treated wastewater disposal, to assess which combinations work best in the particular setting of the Cook Islands.

The new systems were installed at nine homes, seven in what is known as the 'Lagoon Protection Zone' which requires higher levels of treatment due to the more porous, sandy soil type and three in inland areas that do not require such a high degree of treatment. One of the seven systems installed in the Lagoon Protection Zone was installed at a community building. The aim of this was to trial how well the model installed would work with occasional heavy loadings.

The systems have been operating successfully during the time following their installation and this has paved the way for a new separate project for a larger scale upgrade of onsite domestic sanitation systems for the rest of the project area. This project has seen the almost complete replacement of 200+ outdated sanitation systems in the project area.

In turn, the success of this pilot project has resulted in a proposal, and funding commitment from development partners, for upgrade of over 1,000 onsite sanitation systems across the islands of Rarotonga and Aitutaki, over a 4-5 year period. It is likely that a similar approach will be used across the remainder of the Cook Islands. The original idea for, and the subsequent success of the IWRM trial project has therefore paved the way for a major investment across the Cook Islands which will lead to substantial benefits for the health of the people and the ecosystems of the islands, and therefore to the ongoing economic development and security of the country.

6. THE GEF PACIFIC RIDGE TO REEF PROGRAMME

The GEF Pacific Ridge to Reef (R2R) Programme was developed to guide the strategic investment of GEF grant and national funding in actions aimed at achieving the sustainable development of Pacific SIDS within a truly integrated environmental and natural resource management framework.

A GEF Multi-Focal Area Approach

Initiatives of the R2R programme aim to deliver tangible and quantifiable global environmental benefits by focusing on a more cross-cutting approach to water, land and coastal management that captures the complementarities among the following GEF focal areas



A Multi-GEF Agency Approach

The GEF Pacific Ridge to Reef Programme is a multi-agency initiative involving the United Nations Development Programme (UNDP), the United Nations Food and Agriculture Organization (FAO), and the United Nations Environment Programme (UNEP) as GEF implementing agencies. Coordination support is provided by the Pacific Community (SPC), a regional intergovernmental organisation that works with Pacific Nations across a wide range of areas relevant to programme implementation, including water resource management, geoscience for development, public health, forestry, fisheries, disaster management, youth, gender and culture.

R2R Programme Goal and Components

The goal of the GEF R2R programme is “to maintain and enhance Pacific Island countries’ ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal management that contribute to poverty reduction, sustainable livelihoods and climate resilience”. Programme activities are organised under the following components:



GEF R2R STAR Projects

Significantly, the programme involves the execution of 13 GEF R2R STAR¹ projects which address national priorities and development needs while delivering global environmental benefits in line with the abovementioned GEF focal area strategies.

These UNDP, UNEP and FAO implemented projects are executed nationally on a bilateral basis in partnership with local stakeholders. To ensure cohesion, complementarity and efficiency of GEF investments under the R2R programme, each GEF R2R STAR project has been provided US\$175,000 of International Waters (IW) funding in addition to their national STAR allocations.

The intent of this IW funding increment is to enable effective linkages with the GEF International Waters R2R project, the adoption of integrated approaches aimed at addressing critical water-related issues, and intra-regional capacity building and knowledge sharing.

GEF International Waters R2R Project

The operation of the R2R programme is supported in areas of science-based planning, human capital development, policy and strategic planning, results-based management, and knowledge sharing through the International Waters R2R project which is executed regionally by the Pacific Community. R2R pilot projects, to be implemented through the R2R IW project, are designed to strengthen R2R integration by establishing synergies among the work of the various sector agencies and the GEF R2R STAR Projects, between governments and communities, and civil society and the private sector.

Programme Coordinating Unit

The Programme Coordinating Unit (PCU), hosted by the Pacific Community's Geoscience Division (GSD) in the Fiji Islands, is tasked with the provision of technical, operational, reporting and monitoring support as requested by the participating Pacific Island Countries.

The PCU also facilitates the consolidation and sharing of sectoral knowledge and expertise to support the uptake of best-practice management approaches in policy-making and planning. Led by the Regional Programme Coordinator, the PCU possesses multidisciplinary expertise, including administration and financial management officers, to support programme coordination.

¹ The Global Environment Facility's System for the Transparent Allocation of Resources (STAR)

7. COOK ISLAND'S NATIONAL R2R STAR PROJECT

Conserving biodiversity and enhancing ecosystem functions through a "Ridge to Reef" approach in the Cook Islands

To preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority watersheds in the two main islands of the Cook Islands.

Component 1: Strengthening national system of protected areas

Outcome 1.1	Operationalization of management in the 1.1 million square km Cook Islands Marine Park: National agencies responsible for marine and terrestrial PA management (currently by the Ministry of Marine Resources and the National Environment Service respectively) are effectively delivering PA management functions across the Marine Protected Area, including Community Conservation Areas (planning; financing; monitoring, enforcement) (capacities tracked by Capacity Score Card and PA management using the METT)
Outcome 1.2	Effective community conservation of key biodiversity areas covering 11700 ha of coastal/ marine areas and 11200 ha of terrestrial areas (tracked by METT for community conservation areas, with average score of at least 60 by end of project)
Outcome 1.3	Stable or increased populations of critically endangered species such as Green Turtle and Giant Wrasse (baseline to be established during PPG stage); as well as globally vulnerable endemic bird species such as Atiu swiftlet (<i>Collocalia sawtelli</i>), Rarotonga starling (<i>Aplonis cinerascens</i>), and Mangaian kingfisher (<i>Todiramphus ruficollis</i>)

Component 2: Effective mainstreaming of biodiversity in key sectors to mitigate threats to protected areas from production landscapes

Outcome 2.1	Threats to marine and terrestrial protected areas mitigated from agriculture and tourism sectors: <ul style="list-style-type: none"> Improved water quality in lagoons (through measures to control agrochemical related water pollution) in at least 10 sites Avoidance of habitat loss from farming on 300 farms covering 6,000 ha of agro ecosystems At least 20 tourism businesses near CCAs accredited and regularly monitored for biodiversity management performance using environmental guidelines developed through project support and included in national accreditation process Tourism related infrastructure development in or around CCAs undergo clear EIA and adapted to conserved biodiversity as necessary
Outcome 2.2	Increase in contribution and support from tourism entrepreneurs reported by CCAs in and around CCAs for biodiversity conservation (tracked by their resource investment / contribution in relevant actions)

INFORMATION BOX

GEF Agency: UNDP
 National Lead Agency: National Environment Service
 Ministry of Marine Resources
 Ministry of Agriculture
 Cook Islands Tourism Corporation
 Funding Source: GEF Trust Fund
 GEF Focal Area: Multi-Focal Area (BD & IW)
 Indicative Grant Amount: USD 4,267,431
 Indicative Co-financing: 14,293,673
 Approval Date: 2013

8. GEF PACIFIC INTERNATIONAL WATERS R2R PROJECT

This regional project will support 14 Pacific Island Countries in the development of “Ridge to Reef” and “Community to Cabinet” approaches designed to guide the integration of water, land, forest and coastal management required to fashion sustainable futures for island communities.

The project also aims to address the recent high-level recognition and calls for results-based approaches to the management of development assistance programmes and projects, and will provide support in areas of coordination, capacity building, technical assistance, and monitoring and evaluation for the operation of the GEF Pacific Ridge to Reef Programme. Components and outcomes of this programme are:

<p>Component 1: National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability</p> <ul style="list-style-type: none"> • Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation • National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments • Community leader roundtable networks established for strengthened ‘community to cabinet’ ICM/IWRM
<p>Component 2: Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for R2R ICM/IWRM approaches</p> <ul style="list-style-type: none"> • National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation • PIC knowledge on climate variability, coastal area planning in DRM, integrating ‘blue forest’ and coastal livelihoods consolidated and shared to support evidence-based coastal and marine spatial planning • Incentive structures for retention of local ‘Ridge to Reef’ expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated
<p>Component 3: Mainstreaming of R2R ICM/IWRM Approaches into National Development Planning</p> <ul style="list-style-type: none"> • National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally • Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs • Physical, natural, human and social capital built to strengthen island resilience to current and emerging anthropogenic threats and climate extremes
<p>Component 4: Regional and National ‘Ridge to Reef’ Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management</p> <ul style="list-style-type: none"> • National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal area projects • National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established
<p>Component 5 - Ridge-to-Reef Regional and National Coordination</p> <ul style="list-style-type: none"> • 5.1 Effective program coordination of national and regional R2R projects

R2R pilot projects, to be implemented through the R2R IW project, are designed to strengthen R2R integration by establishing synergies among the work of the various sector agencies, between governments and communities, and civil society and the private sector. The following pages present the results framework for Cook Island’s IW pilot project.

INFORMATION BOX	
GEF Agency:	UNDP
Regional Executing Agency:	SPC - GSD
National Lead Agency:	National Environment Service
Funding Source:	GEF Trust Fund
GEF Focal Area	International Waters

R2R IW RESULTS FRAMEWORK

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
1. Local capacity for waste management implementation and environmental protection built to enable best practice in coastal waters, land and public health protection	1.1 Enabled Muri Community Motivation	Muri Community awareness resulting in engagement water, land and coastal management	Awareness and knowledge level if integrated management restricted	Informed and knowledgeable community motivated to participate in water, land and coastal management	Quarterly reports on capacity building and participation in community led management	Communities willing to engage over the life of the project
	1.2 Community action for sustainable integrated coastal management catalysed at Muri Beach	Status and effectiveness of the management board and volunteer networks	Muri Environment Care active although need exists to refine scope of work to support integrated coastal management	Networks of catchment management boards and community-based coastal management volunteers for integrated coastal management activities established at Muri Lagoon	Quarterly reports of network meetings and activities (including list of participants and results of work)	Community leaders maintain their motivation and commitment to the cause.
	1.3 National uptake of sustainable pig waste management methods stimulated through community awareness and training	Percent increase in target population with applied understanding of sustainable pig waste management	Limited awareness of alternative sustainable pig waste management methods	Proportion of target community members with awareness of and technical skills to successfully implement sustainable pig-waste management methods increased to 30% through innovative participatory techniques	Consultation meeting and activity reports, training workshop outputs including details of trained builders and trainers, participatory interviews, workshop surveys	Awareness and capacity building materials are sufficiently well designed to engage community members and resource users Continuity of participation of target audience in awareness raising events Costs and benefits of dry litter approaches appropriate to stimulate independent uptake

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
2. Establishing public-private partnerships for tourism sector investment in ICM in Muri	2.1 Cross-sectoral coordination established to explore the feasibility of public-private partnerships for tourism sector investment in ICM in Muri	Continuity of member participation in the Environmental Investment Board Uptake of feasibility findings of tourism sector investment in ICM	No cross-sectoral mechanism for assessing tourism sector investment options for ICM	Environmental Investment Board established with representation from Muri community and tourism sector and national government departments; functional and assessing feasibility and potentials for tourism sector investment in ICM in Muri	EIB Terms of Reference and membership lists, meeting reports, feasibility studies, desk-top reviews	Willingness of cross-sectoral members to engage in joint planning through EIB
	2.2 Nationally endorsed guidelines for public-private partnerships for the tourism sector in ICM	Status of endorsed national guidelines	No national guidelines for the development of public-private partnerships for tourism sector investment in ICM	National guidelines on establishing public-private partnerships for integrating protection of natural resources and tourism participation developed and endorsed by the Environmental Investment Board	Published national guidelines on establishing public-private partnerships for tourism sector investment in ICM	Willingness of the government sector to agree on guidelines
	2.3 Public-private partnerships for tourism sector investment in ICM established for enhanced environmental protection in Muri	Number of identified opportunities for tourism sector investment in ICM and partnerships established	Lack of tourism sector investment in ICM in Muri	Public-private partnerships opportunities identified and operational to increase tourism sector investment and responsible involvement in ICM in Muri	Tourism sector and community consultation documents, PPP agreements and plans	Existence of plausible potential tourism sector opportunities

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
3. Increasing knowledge-base and capacity for effective environmental stress reduction measures and integrated catchment management in Muri	3.1 Ecological health of Muri Lagoon characterised and land-based contamination processes established for key ICM planning and investment	Status of data collection at Muri Lagoon and catchment area Extent of the uptake of recommendations in ICM Planning	Lack of scientific evidence for causal links between land-based contaminants and lagoon degradation	Partnership with NES and Dept. of Fisheries to establish an ecosystem health and coastal habitat monitoring programme in Muri Lagoon to identify threats from land-based contaminants to coastal waters; establish causal links of degradation and; ecosystem health status of catchment and lagoon	Monitoring results, analysis and research reports, comparative studies and final evaluation report [Yr 3] Coastal Health Summary for Policy & Planning [Yr 3] Published scientific paper [Yr 3]	Land based activities are negatively affecting coastal water quality Resources are sufficiently available for reliable analysis and evaluation of coastal process to produce scientific results
	3.2 Increased local community and agency capacity for environmental monitoring in the Muri area	Percent increase of target population actively involved in environmental monitoring	Low levels of community and agency involvement in terrestrial environmental monitoring	Proportion of target population monitoring environmental impacts increased to 50% through established agency and community awareness and outreach program including activities to monitor coastal habitats, riparian health, land use, and biodiversity indicators	Training materials published and available, reports of awareness and outreach program including demographic data Monitoring results, analysis and research reports	Target population are willing and have capacity to partake in sustainable terrestrial monitoring Awareness and capacity building materials are sufficiently well designed to engage community members and resource users
	3.3 Improved integrated catchment management via monitoring and evaluation of existing stress reduction measures	Extent and continuity of the data collected through PM&E Plan Extent of uptake of PM&E recommendations in ICM Planning	Lack of replicable PM&E at Muri sites	PM&E plan developed and operational for the Muri area featuring measures for monitoring inter alia sediment load and water quality, status of invasive species, lagoon and riparian biodiversity and ecosystem health, and site-level social impacts	Published PM&E plan, monitoring results, annual implementation reports, analysis and comparative studies, watershed management plans	Available resources to undertake monitoring of plan impacts Willingness to incorporate PM&E findings in ICM Planning



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www.thegef.org



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www.spc.int



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