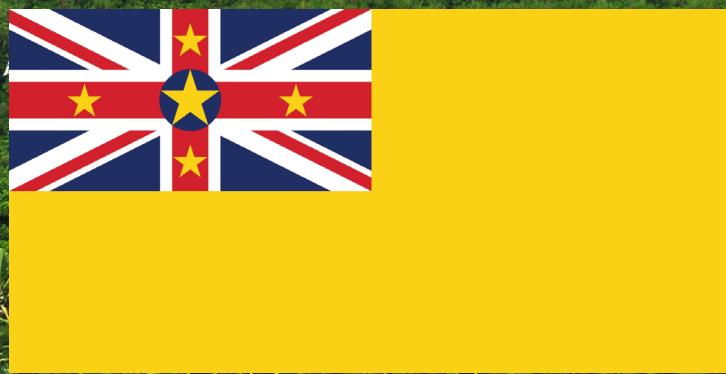


GEF PACIFIC  
RIDGE TO REEF PROGRAMME

# NIUE



NATIONAL R2R PROGRAMME  
DOCUMENT





# 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 Niue 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**

Regional Programme Coordinator  
Pacific Community  
Suva, Fiji Islands

## 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 Niue. 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 Niue. 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 Niue.



## 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 Niue.



## 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 Niue 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.



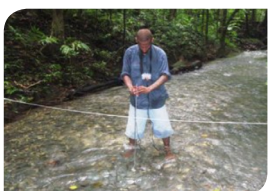
## 6. GEF PACIFIC R2R PROGRAMME

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. NIUE'S R2R STAR PROJECT

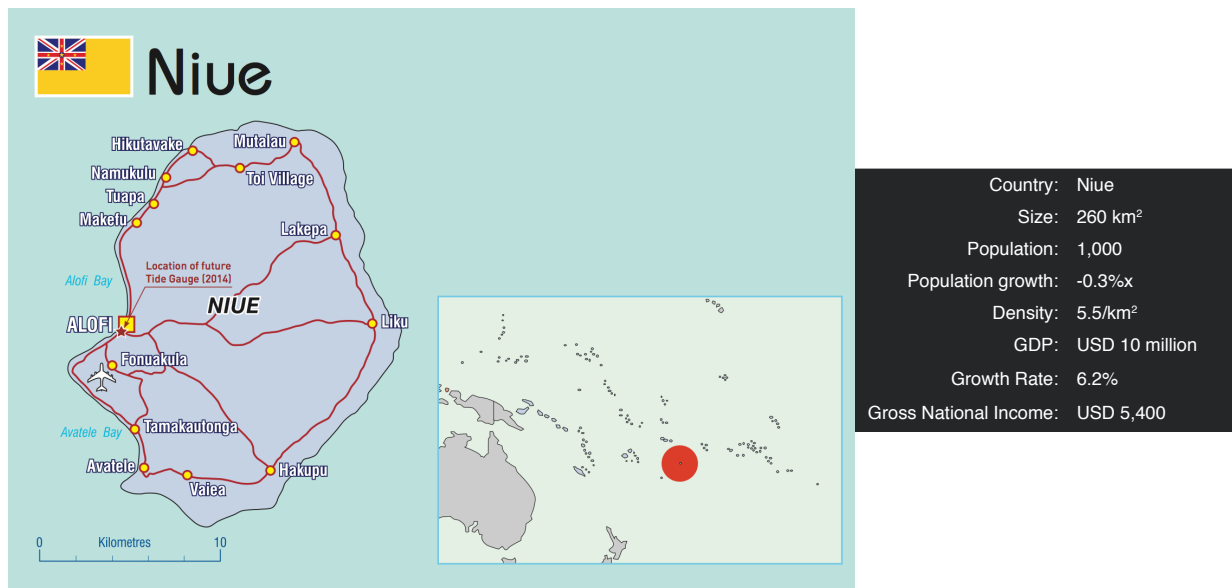
A summary of Niue national project to be financed through the GEF System for Transparent Allocation of Resources (STAR) is provided in this section. The planned contribution of this STAR project to the achievement of the targets for the regional Ridge to Reef program is outlined. The management arrangements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



Niue is a small elevated coral outcrop approximately 2,400km northeast of New Zealand with a fringing coral reef. It consists of two terraces with the upper terrace forming the bulk of the island. It is believed to be the largest coral atoll in the world, with 13 villages spread around the lower coastal terrace. The population is a little over 1,000 persons and the economy suffers from the typical Pacific island problems of geographic isolation, few resources, and a small population.

There is no surface runoff in Niue in the form of rivers, streams, and lakes. As such, water for residential and commercial consumption can only be sourced from the underground water lens, supplemented by the collection of rainwater at the village or household level. The water lens is recharged through rainfall which permeates through the predominantly limestone soil profile to recharge the groundwater lens. This means that any discharges whether through human waste, agriculture or industry has great potential to contaminate the water lens if proper measures are not taken to improve management of discharges from land based activities.

The water quality of the lens is potable and it is piped untreated to all villages. The Government meets all costs for pumping and distribution of water. Attempts to introduce a user pay system have up till now been decline by government. Approximately 85% of water that is pumped from the groundwater lens is used for domestic use, 10% for agricultural use and 5 % for commercial and industrial usage. Water pumped from reservoirs to household storages is not treated, with households deciding themselves whether to treat or boil the water.

The groundwater is prone to contamination due to the very porous coral aquifer. Septic tanks are the most common way of treatment for all domestic and tourism wastewater on the island. The exceptions are piggeries and agricultural wastewater. Currently there is no secondary treatment for sludge from emptied septic tanks nor is there any specific waste disposal procedure though there are plans for a main dump to be constructed at the southern end of the island. A study carried out by SOPAC on coastal water quality in 2003, originally initiated due to fish poisoning outbreaks and fish deaths, confirmed high nitrate and phosphate concentrations. This is believed to have been caused by inadequate wastewater treatment primarily from septic tanks draining into the groundwater regime. The survey highlights the vulnerability of the islands water resources to any land activities, and the close link between land and catchment activities and coastal zone impacts.

On-going reconstruction work after Cyclone Heta required movement to the higher terrace known as the watershed. Here several government facilities and private residential housing are constructed, closer to the catchment area. This poses high risks of pollution to the groundwater from domestic and agricultural wastes. With this trend of movement several household activities such as taro plantations and piggeries are also within the vicinity of the houses. Through consultative processes Alofi Town was identified as a high priority site because it is the population centre and associated development in the upper terrace, if poorly managed, could pose a threat to the groundwater supply.

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 include building ecosystem and climate change resilience through national actions to strengthen the enabling environment and monitoring capacity for water systems; enhancing coastal and groundwater protection through targeted reductions in land-based contaminants and; increasing information management and community awareness in support of national Integrated Coastal Management.

## 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.

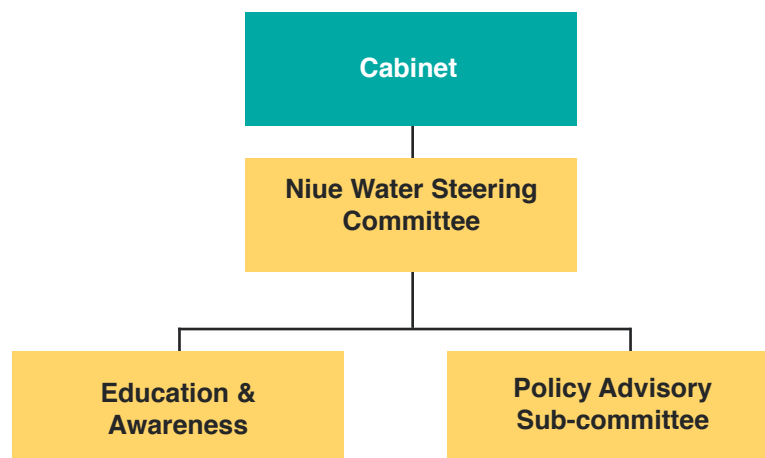
While the Pacific SIDS have largely adopted western-style constitutions and legal systems, such community-based governance and leadership arrangements remain highly influential at all levels. Accordingly, the participation of civil society organizations and community leaders in development planning is 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

The Niue Water Steering Committee (NWSC) was endorsed by Cabinet on the 16th of June 2009. The NWSC was set up primarily to implement the Integrated Water Resource Management (IWRM) and Pacific Adaptation to Climate Change (PACC) Projects but more importantly it became recognised as the organisation to implement integrated water resource management principles in partnership with National and Local Government, and Non-Government Organisations. The NWSC membership included Village Councils (Local Government) through the Department of Community Affairs and Non-Government Organisations through the Niue Chamber of Commerce and NIUANGO.

Through the support of the GEF Pacific IWRM Project, the enactment of the Niue Water Act was achieved in 2012 and provided the framework for regulations to address concerns relating to water use efficiency, allocation and protection of drinking water resources. Additionally, it provided for the development of the national Water Resource Management Plan and integration of water and sanitation management across government and other stakeholders who administer the Act in an integrated approach across three separate agencies. The Water Act 2012 provided the opportunity for further identification of other tools and activities that are important for national water and sanitation in Niue.

With formulation of the NWSC and other activities the IWRM paved the way for integrated coordination in Niue. There is opportunity to maintain this level of coordination nationally and ensure that all necessary steps are undertaken to protect the welfare and the health of the people of Niue.



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



## Linking Local and National Coordination

The formulation of the Coordination Body for IWRM expanded to include the PACC project that focused on demonstrating climate change adaptation measures with water resource in Rainwater Harvesting. Due to the nature of the two projects, NWSC endorsed a proposal for the formulation of sub-committees under the NWSC body. These sub-committees acted as technical advisors consisting of senior officers of various sectors. Some of the Heads of government agencies were represented in these sub-committees, particularly in the policy advisory group. Their function was to implement activities under the Communication Strategy and liaise and coordinate national water policies and legislation. The sub-committees were Education and Awareness, and Policy Advisory.

Through the IWRM initiated development of Village Water Management Plans, a communication pathway was established between community and cabinet, and provided a mechanism for the community to communicate with the government about their needs and priorities for IWRM planning. Two Village Water Management Plans were developed in the demonstration villages during the second year of the project (2010). The Plans were approved by the Village Councils, endorsed by the NWSC and formally launched at the village level.

## Stakeholder Engagement

Niue'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 Niue 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.



NWSC with the Honourable Minister of Health

## Ridge to Reef stakeholders

- Director for Public Works, Chairperson
- Director for Environment, Vice Chairperson
- Public Health Officer, Water Quality
- Director for Met Office, climate change
- Director for Community Affairs
- Director of DAFF
- Manager Water Supply
- Water Operation Advisor
- President for Chamber of Commerce
- Treasury Donor Projects Officer

### 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 Niue to date.

#### PROCESS

##### Revised legislation for water protection

Before the GEF Pacific IWRM project, there was a lack of regulations supporting water protection and water use efficiency. This meant that there were very limited options for managing the potential impacts on the main drinking water resource in Niue, the groundwater lens. Additionally, the existing legislative framework did not support integration of water resources management in Niue, with individual Ministry responsibilities linked to specific legislation. The project aimed to revise the Niue Water Bill.

The enactment of the Niue Water Act was achieved in 2012 and provided the framework for regulations to address concerns relating to water use efficiency, allocation and protection of drinking water resources.

Additionally, it provides for the development of a national Water Resource Management Plan and integration of water and sanitation management across government and other stakeholders who now administer the Act in an integrated approach across three separate agencies.

The Water Act 2012 provided the opportunity for further identification of other tools and activities that are important for national water and sanitation in Niue. This included helping the implementing agency become a member to the New Zealand Standard in preparation for reviewing the National Building Code.

This is particularly important for regulating septic design and determining national environmental standards for effluent control to mitigate groundwater pollution.

##### Village Water Management Plans for Alofi north and Alofi south villages implemented

Prior to the GEF Pacific IWRM project, water management in Niue was broadly considered the responsibility of government,

with very little community engagement. Household water use rates were amongst the highest in the world, reflecting a lack of understanding and ownership of water resource management. The project aimed to develop “Community to Cabinet” Village Water Management Plans which be endorsed by Cabinet and audited. Two Village Water Management Plans were developed in the demonstration villages during the second year of the project (2010). The Plans were approved by the Village Councils, endorsed by the NWSC and formally launched at the village level. The Plans assisted with engaging communities in water management, identifying key actions to be taken, strengthened communications on key water issues and helped foster a sense of ownership.

The development of Village Water Management Plans in both Alofi South and Alofi North has also provided a mechanism for the community to communicate with its national partners including the Cabinet Ministers, as well as different groups within village communities. Important processes have been gender mainstreaming and the increased capacity of communities to support the implementation of drinking water safety plans. This in turn contributed to a measured reduction in household water use.

The Village Water Management Plans were well used by the two pilot communities. The villages used the plan to secure extra financial support for implementation. For example, Alofi North secured funding from the Government of Niue (GoN) to complete their new water supply system at Fou relocation village. The Plans were used by the Implementing agency to engage the communities in maintenance of village bore and tank sites.

This provided additional opportunities for financial support to communities activities. In 2013, the Village Water Management planning process was replicated in the three pilot communities of EU USP-GCCA Programme.

##### IWRM National Strategy in place

The Niue National Strategic Plan 2008 - 2013 provided overall guidance for the sector prior to the GEF Pacific IWRM Project. There were many reports guiding the management of the water sector, however, they lacked financing and implementation mechanisms. The project aimed to develop a IWRM Strategic Plan to guide investment in the sector.

The project developed the IWRM Strategy Plan 2012 – 2014 with the aim to: “Maintain.... our community’s access to water of clean quality and appropriate quantities to meet all reasonable health, environmental and economic development needs”. It provided a foundation to build a sustainable water future that meets the economic and social needs while preserving the environment integrity, social stability, and the Niue water culture.

##### National indicator framework implemented

The health department had a water quality management plan, however, there was no comprehensive national plan to ensure the range of country-specific water management issues were being comprehensively addressed. The WHO guidelines were used for drinking water standards. The GEF Pacific IWRM project facilitated the development of the IWRM National Water, Waste and Sanitation Indicator Framework.



This framework was integrated into the IWRM Strategic Plan and is included into the Niue National Waste Strategy and Niue National Strategic Plan. The Framework focus' on: Sanitation and Waste, and Water Quality. It outlines recommendations ranging from water governance to pollution control, ecosystem impacts and community engagement.

#### National communication strategy implemented

Most people in Niue had limited understanding of the water resource status, how water is managed and what are the threats to long-term sustainability. This was reflected in extremely high household water use and new developments siting septic tanks directly over critical drinking water resources. The GEF Pacific IWRM developed a Communication Strategy.

Developing and implementing a National Communication Strategy increased the awareness of people of Niue about the importance of water resource management and in particular, conservation measures that are vital for ensuring that water is safe for consumption and use. The importance of safeguarding natural supplies for future generations and the increasing risks posed by climate change are starting to be recognised.

Annual World Water Day events became important at a national level as a mechanism for bringing people's attention to water resource management issues. Participation rates at these events reached up to 50% of the national population. National Project Coordinators from a range of initiatives coordinated on planning and created successful cross-sectoral events.

#### **National staff across institutions with IWRM knowledge and experience**

There are limited opportunity for government staff to up skill in IWRM on Niue. In the second year of the GEF Pacific IWRM project two of the implementing agency staff attended four weeks IWRM training in Japan under the JICA Bilateral support project. After their training they became more effective in their work and also more involved in implementing IWRM and other project activities.

Over the duration of the project the implementing agency has had three new trainees and two staff gain qualifications under the APTC regional programme. Two staff attended IWRM capacity building training overseas. There have been many community-based awareness and training workshops conducted based on the skills gained from staff training.

## **STRESS REDUCTION**

### **Reduction in drinking water source pollution**

Waste oil storage has been poorly managed in Niue, with a lack of coordination and budget allocations from national government and private sector in addressing safe handling and disposal of waste oil. An inventory at the start of the GEF Pacific IWRM Project identified approximately 25 kL of waste oil stored in leaking drums and seeping into the ground and ultimately potentially into the groundwater. The project aimed to establish guideline/standards on fuel and oil storage and disposal including waste oil.

The GEF Pacific IWRM project established a national collection and disposal mechanism, and 56% of national waste oil has been collected and stored in safe containers and shipped to New Zealand for recycling and/or safe disposal. The empty containers used to ship fuel to Niue are used to transport the waste oil minimizing transport costs. The project established effective waste oil storage and management around Alofi.

### **Reduction in pollution discharge to drinking water source at the national scale**

The Niue Hospital, which was constructed in 2006 after Cyclone Heta, had no strategy for the safe disposal of medical waste. The GEF Pacific IWRM project aimed to reduce pollution by 30% from waste oil, piggeries, agricultural chemicals and hazardous hospital waste. The IWRM project included the hospital as an NWSC member and supported the Public Health Officer to develop a Hospital Hazardous Waste Management Plan. The Plan identified reduction in toxic cleaning products, reduction in water use, upgrading the incinerator and safe removal of infectious materials.

The IWRM project supported monitoring of water quality at the demonstration project and other national sites, such as the hospital, through procurement of the materials for testing, training of staff and upgrade of the water laboratory sited at the hospital. Further, the IWRM project initiated review of aviation fuel storage sites at the international airport. This review revealed that infrastructure did not meet safety pollution control standards and 'bundling' was required. IWRM facilitated the design for building bunding and sourced co-financing of NZ\$100,000 from NZAID to cover the costs of construction.

### **Water conservation and demand management measures**

Alofi Town's water was supplied by a heavily leaking 325m<sup>3</sup> (456kL) tank. It provided around two days water supply storage for the Alofi community, meaning that the community was particularly vulnerable to groundwater pollution or pump failure. The GEF Pacific IWRM Project supported the replacement of the existing tank with two new 240 m<sup>3</sup> storages, increasing storage by over 45% and significantly increasing supply security by eliminating storage leakage losses.

### **Increased population with access to safe drinking water supply**

The Alofi town water supply was at risk due to seepage of residential sewage from septic tanks; seepage of waste from piggeries, agricultural chemicals, industrial wastes, and seepage from rubbish dump-sites as well as contamination of the storage and distribution systems.

The GEF Pacific IWRM Project implemented parts of the Niue Drinking Water Safety Plan. This included installing two new 90m<sup>3</sup> water reservoirs at Alofi, providing water quality monitoring kits and training to Alofi residents, and facilitating training on water infrastructure maintenance. With these components of the Water Safety Plan implemented, the 450 people living in Alofi have access to reliable and clean drinking water. Further, the development of Village Water Safety Plans strengthened the communities' knowledge about managing the water resources and managing water efficiently.

## 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 interdisciplinary 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.



World Water Day Celebrations, 2011



## 5. LESSONS FROM INTEGRATION

### Protecting Lagoon Water Quality through Improved On-site Sanitation Systems

By Andre Siohane, IWRM Project Manager

Prior to the GEF IWRM project, water management in Niue was broadly considered the responsibility of government, with very little community engagement. Household water use rates were amongst the highest in the world, reflecting a lack of understanding and ownership of water resource management. Alofi town faces issues of water supply management and one of the main problems is due to an aging water reservoir that services the whole town.

To avoid the intermittent water supply situation found in other parts of Niue we embarked on developing “Community to Cabinet” Village Water Management Plans (VWMP) to enable communities to identify and address their critical water resource issues.

During 2010 we initiated the VWMP by engaging the Village Councils and communities. We visited community members and informed them of the project objectives and explained the channels of communication available, such as visiting the office, calling or emailing. Communities began to invite our staff to attend their meetings to present information. In this way we developed understanding about community issues and needs, working together for sustainable solutions. During the annual community village inspections, community members expressed how useful it was to have water and sanitation issues identified, as well explained and options presented.

The development of VWMP in both Alofi South and Alofi North has provided a mechanism for the community to communicate with its national partners including the Cabinet Ministers, as well as different groups within village communities. During development we included gender-mainstreaming activities to ensure that women, who look after the families, had their concerns heard and met. The process also increased the capacity of communities to support the implementation of drinking water safety plans. This in turn has contributed to a measured reduction in household water use.

From the VWMP the community identified and prioritised the replacement of the water reservoir servicing Alofi that was losing up to 50% of its total supply due to leakage. This loss represents more water than the community as whole uses. These priorities were fed into the National Drinking Water Safety Plan and Niue Infrastructure planning processes.

Actions to reduce water loss were prioritised and it was decided to procure and install new tanks to replace the old leaking ones. The Head of Public Works approached NZAID and GoN on a one-on-one basis to co-finance the procurement phase. Once commitments were made from NZAID and GoN, the Head of Public Works then met with Finance to determine national financial management considerations and finally submitted a Cabinet paper requesting Cabinet approval for the funding.

Once Cabinet approval was gained, IWRM made a call for expressions of interest for supply and construction of the new water reservoirs. Once Niue National Tender Board Committee approved, the tender was awarded and contracted to GoN Public Works. A joint partnership between IWRM Project, NZAid, GoN and AusAid was maintained with regular coordination and planning meetings and enabled the costs of two new reservoir water tanks to be met. The tanks were installed in 2012 and are fully functional, providing a secure and reliable water supply for the people of Alofi town.

The development of VWMP in both Alofi South and Alofi North provides a mechanism for the community to communicate with the government about their needs and priorities. It has proven to be a useful tool for addressing critical water management issues while empowering local people to take responsibility for their environment. It is a process that should be utilised across all development fields in Niue.

I attribute the success of the process to how we built robust relationships from the beginning, inclusive community engagement and open dialogue. I realised through the experience that it is important to foster regular communication between the communities, agencies and government departments so that all stakeholders are aware of issues and opportunities and generate a common understanding.

## 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 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.

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

## 7. NIUE'S NATIONAL R2R STAR PROJECT

| <b>R2R Application of Ridge to Reef Concept for Biodiversity Conservation, and for the Enhancement of Ecosystem Service and Cultural Heritage</b>  |   |
|--|---|
| To strengthen conservation and sustainable use of land, water and marine areas and their biodiversity by building on their cultural heritage values through national and community actions |   |
| <b>Component 1: Catalyzing conservation initiatives at site and landscape / seascape level through Ridge to Reef Approach</b>  |   |
| <b>Outcome 1.1</b>   | <p>New community conservation and national protected areas established at different levels:</p> <ul style="list-style-type: none"> <li>• A single and continuous terrestrial conservation area covering 2,550 ha that links at least 7 traditionally strictly protected sites (Tapu, covering at least 300 ha) and their surrounding landscapes</li> <li>• A national marine protected area covering 4,500 ha (Beveridge Reef)</li> <li>• Community conserved reefs covering at least 112 ha</li> </ul>   |
| <b>Outcome 1.2</b>   | <p>Threats reduced and biodiversity status of conservation areas improved through effective community management, as indicated by:</p> <ul style="list-style-type: none"> <li>• Stabilization of landuse (no major land conversion) and maintenance of forest connectivity in the terrestrial conservation area</li> <li>• Total stop of resource extraction from traditionally strictly protected sites (Tapu) (community monitoring of compliance)</li> <li>• Improved effectiveness of PA management (METT score of at least 70 points by end of project)</li> <li>• Threatened species' populations are stable or increasing by end of project (these may include coconut crab, Pacific imperial pigeon or lupe, flying fox or peka, pekapeka or white-rumped swiftlet, hega or blue-crowned lory, olive small-scaled skinks and native geckos, to be selected during the project document preparation)</li> <li>• Maintenance of water quality of reef areas (reduced pollution from land or marine activities indicated by quality measurements through periodic sampling)</li> </ul> |
| <b>Component 2: Strengthening knowledge, capacities and partnerships for Ridge to Reef concept application outside protected areas</b>   |   |
| <b>Outcome 2.1</b>   | <p>Strengthened cross-sectoral involvement of relevant national government departments to promote effective Ridge to Reef management by mainstreaming environmental concerns into plans and actions, as illustrated by:</p> <ul style="list-style-type: none"> <li>• Increase in the sectoral operational budgets for the R2R relevant actions by 20% by end of project from baseline</li> <li>• Increased awareness on R2R related environmental awareness amongst government staff and school students</li> <li>• Areas around conservation areas effectively managed to mitigate threats to their biodiversity</li> </ul>  |

### INFORMATION BOX

GEF Agency: UNDP  
 National Lead Agency: Department of Environment  
 Funding Source: GEF Trust Fund  
 GEF Focal Area: Multi-Focal Area  
 Indicative Grant Amount: USD 4,194,862  
 Indicative Co-financing: USD 12,430,000  
 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><b>Component 1: National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability</b></p> <ul style="list-style-type: none"> <li>• Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation</li> <li>• National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments</li> <li>• Community leader roundtable networks established for strengthened ‘community to cabinet’ ICM/IWRM</li> </ul>  |
| <p><b>Component 2: Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for R2R ICM/IWRM approaches</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• Incentive structures for retention of local ‘Ridge to Reef’ expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated</li> </ul> |
| <p><b>Component 3: Mainstreaming of R2R ICM/IWRM Approaches into National Development Planning</b></p> <ul style="list-style-type: none"> <li>• National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally</li> <li>• Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs</li> <li>• Physical, natural, human and social capital built to strengthen island resilience to current and emerging anthropogenic threats and climate extremes</li> </ul>   |
| <p><b>Component 4: Regional and National ‘Ridge to Reef’ Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management</b></p> <ul style="list-style-type: none"> <li>• National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal area projects</li> <li>• National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established</li> </ul>   |
| <p><b>Component 5 - Ridge-to-Reef Regional and National Coordination</b></p> <ul style="list-style-type: none"> <li>• 5.1 Effective program coordination of national and regional R2R projects</li> </ul>  |

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 Niue’s IW pilot project.

| INFORMATION BOX            |                      |
|----------------------------|----------------------|
| GEF Agency:                | UNDP                 |
| Regional Executing Agency: | SPC - GSD            |
| National Lead Agency:      | Dept. of Environment |
| 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. Building ecosystem and climate change resilience via national actions to strengthen the enabling environment and monitoring capacity for water systems in Niue | 1.1 Nationally endorsed planning and policy framework for water use efficiency including a cost recovery and system installations strategy | Status of endorsement of National Water Use Efficiency Policy, Cost Recovery Strategy and Implementation Plan | Lack of national Water Use Efficiency Policy and technical efficiency solutions     | National planning and policy frameworks for improving water use efficiency and cost recovery assessed and required reforms endorsed including selection and installation of appropriate water use efficiency equipment | National report on legal and institutional aspects of policy development, consultation meeting reports<br><br>Endorsed policy, implementation plan and cost recovery strategy          | National government prepared to reform<br><br>Public prepared to reform and pay for water services   |
|   | 1.2 Ecological health status of natural water systems are characterised to strengthen and support water resource management                | Status of database and number of datasets contained within  | Scientific information regarding status of natural water systems in Niue is lacking | National Water Quality and Marine Health database developed and populated with data collected through participatory water and coastal monitoring programme   | National Water Quality and Marine Health database available online, monitoring and assessment reports, training workshop documents including attendees, minutes and completion reports | Government staff are available for training in and implementation of monitoring programme<br><br>Consistent use of standardised data collection methods and procedures |
|   | 1.3 Enhanced culture of water resource protection in Niue stimulated through targeted community awareness and training                     | Percent increase in target population with active understanding of water quality and use                      | Community understanding of the impacts of poor water quality and misuse is limited  | Proportion of target community members with awareness of the impacts of water quality and technical skills to successfully practice water use efficiency increased by 50% through innovative participatory techniques  | Consultation meeting and activity reports, training workshop outputs including details of trainers, attendees, participatory interviews and developed learning materials               | Awareness and capacity building materials are sufficiently well designed to engage community members and resource users  |

| Components  | Outcomes  | Indicator  | Baseline   | Targets End of Project  | Source of Verification   | Risks and Assumptions   |
|---|---|--|--|---|--|---|
| 2. Coastal and groundwater protection enhanced via targeted reductions in land-based contaminants | 2.1 Reduced environmental stressors on marine and terrestrial ecosystems via piloting of waste collection systems                               | Volume reduction in illegal waste dumping<br>Status of Waste Management Plans and implementation | High levels of illegal waste dumping contributes to ground and coastal water pollution               | Volume of illegal dumping of domestic and commercial solid waste, wastewater and septic sludge reduced by 30% through a developed Transfer Station, appropriate Waste Management Plans and sludge treatment options | Endorsed Transfer Station design and construction plans, endorsed Waste Management Plans and approved sludge treatment system<br>Documents of assessment and monitoring results    | Design and operation of Transfer Station and sludge treatment systems is effective in reducing volume of illegal waste dumping  |
|   | 2.2 Environmental and public health safeguarded via targeted reductions in nutrient and pathogen contamination of groundwater and coastal areas | Volume reduction in untreated effluent discharged into receiving environment                     | (90%) of septic systems at Alofi North and Alofi South are ineffective at reducing contaminant loads | Nutrient and pathogen loads from ineffective septic systems discharging into the receiving environment reduced by 50% through system upgrades at Alofi North and Alofi South  | Comparative studies on nutrient release and reductions of septic systems, documents of assessments and monitoring results<br>Report on assessment of the operational status [Yr 3] | Design and operation of septic systems is effective in reducing untreated effluent entering the environment<br>Sufficient resources available to upgrade required number of systems |



| Components   | Outcomes   | Indicator  | Baseline   | Targets End of Project  | Source of Verification   | Risks and Assumptions  |
|--|--|--|--|---|--|--|
| 3. Information management and community awareness increased in support of national Integrated Coastal Management | 3.1 Improved access to information and understanding of ICM in target communities  | Extent and continuity of community attendance at awareness raising events  | Limited community understanding of ICM                                     | Community awareness programme for integrated coastal management implemented at 5 target communities through targeted education and monitoring programme, STAR project exchange and participatory coastal health assessments | Educational films and documentaries, radio/audio talks, project exchange reports, database of coastal health assessments   | Sufficiently well-designed education materials to improve community understanding<br><br>Capacity exists to undertake basic coastal health assessments<br><br>Adequate sources of funding for STAR project exchanges |
|  | 3.2 National uptake of ICM planning and investment strengthened through the development of village level ICM plans   | Status of the ICM plans and uptake of recommended management strategies  | No existing ICM plans in Niue  | Village level ICM plans developed through community management networks at 2 priority sites in Niue   | Community consultation meetings, ICM Plans for 2 priority sites, implementation plans and activities   | Communities will sufficiently engaged and educated to develop ICM plans<br><br>Adequate planning support is available  |
|  | 3.3 National capacity for environmental assessment and water quality analysis increased to identify threats from land-based contaminants to coastal waters | Number and continuity of people trained in data collection techniques<br><br>Status of data collection programmes for 2 priority sites | Limited existing knowledge and skill base in environmental data collection | Ecological health of coastal waters of Niue characterised and land-based contamination processes established through participatory ecosystem and coastal habitat data collection programme at 2 priority sites              | Training workshop reports including number of people and level of training achieved<br><br>Monitoring results, analysis and research reports, comparative studies and final evaluation report [Yr 3] | Willingness of national level staff to be involved in data collection and training<br><br>Resources are sufficiently available for reliable analysis and evaluation of coastal process to produce scientific results |



The GEF unites 182 countries in partnership with international institutions, non-governmental organizations (NGOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives.

[www.thegef.org](http://www.thegef.org)



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[www.spc.int](http://www.spc.int)



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