

GEF PACIFIC  
RIDGE TO REEF PROGRAMME

# VANUATU



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 Vanuatu 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.

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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 Vanuatu. 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 Vanuatu. 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 Vanuatu.



## 2. 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.



## 3. VANUATU R2R STAR PROJECT

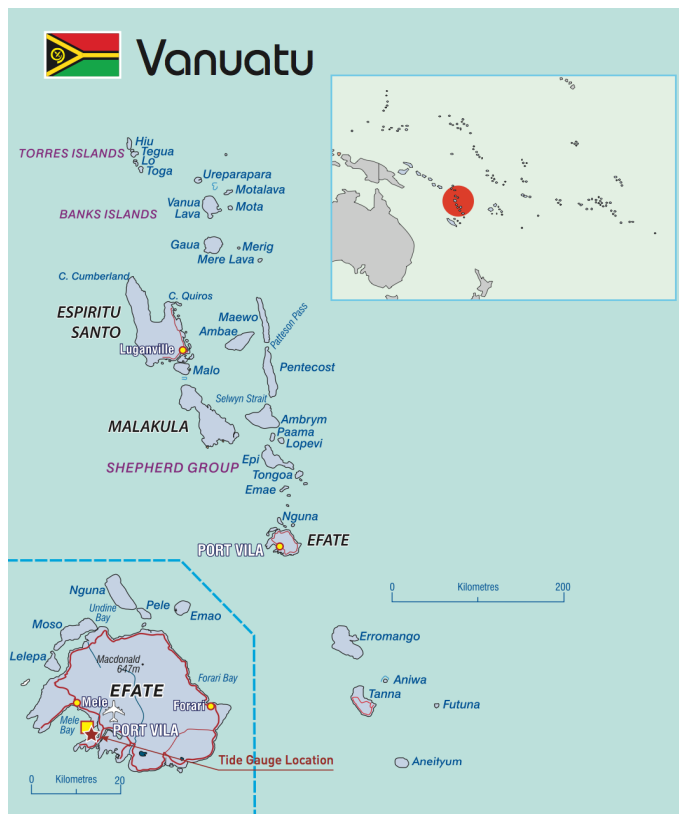
A summary of Vanuatu's national project to be financed through the GEF System for Transparent Allocation of Resources (STAR) is provided in this section. The planned contribution of this STAR project to the achievement of the targets for the regional Ridge to Reef program is outlined. The management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



## 4. 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 Vanuatu are outlined. A brief strategy for Vanuatu 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



a way forward for Vanuatu to enact the principles of IWRM and develop a National IWRM Plan for the water sector. The strategy calls for Provinces to develop IWRM Master Plans appropriate to the local context. At the national level these will be overseen by the National Water Resource Advisory Committee (NWRAC).

|                        |                       |
|------------------------|-----------------------|
| Country:               | Vanuatu               |
| Size:                  | 702 km <sup>2</sup>   |
| Population:            | 12,200                |
| Population growth:     | 2.2%                  |
| Density:               | 19.66/km <sup>2</sup> |
| GDP:                   | USD 778 million       |
| Growth Rate:           | 4.3 %                 |
| Gross National Income: | USD 2,994             |

Land ownership issues and conflict are dominant in the culture and also relate to the ownership of water,

creating difficulties in many areas of water management.

Difficulties lie in gaining access to water for supply, protecting water resources such as catchments, infrastructure maintenance and negotiating national projects such as hydro-power generation.

Vanuatu's IWRM Diagnostic Report highlighted the country's current water situation including existing water sources, vulnerabilities, uses, current management efforts, and existing gaps. In areas of high density use there is a decline in groundwater levels coupled with contamination from septic seepage and agricultural wastes.

The archipelago of Vanuatu has about 74 populated islands. 81% of the population live in rural areas and are mainly occupied in subsistence and small holder farming with the remaining 19% of the population living in the two main urban areas of Port Vila on Efate and Luganville on Santo.

The high urban growth is resulting in the rapid development of fringing settlements not serviced by proper roads, electricity, water and sanitation. Environmental issues include the lack of reliable potable water source, deforestation and sedimentation of coastal waters and fresh watercourses.

Vanuatu has abundant rainfall with numerous rivers and springs, and water from the aquifers is generally of very good quality requiring no treatment for consumption purposes. Water is sourced primarily from surface water in catchments and from groundwater wells and bores, and is chlorinated for safety reasons. The average rainfall varies from 2800mm per annum in the north, to only 1900mm per annum in the southern islands.

A National Water Committee was established in 1994 to provide a forum for information exchange on key issues in the water sector, including national policy issues. The high level committee continues and has been an important conduit to consider major issues and projects such as the Rural Water Supply Master Plan, designation of water protection zones in and adjoining catchments, and draft water resources legislation currently before Parliament.

A National Water Resource Strategy 2008-2018, was created as

Septic tanks in high density areas are also causing a decline in coastal water quality. These point sources of pollution go unchecked as do many of the industrial and commercial producers of waste. These issues are compounded by poorly maintained information on water resources, this being largely held sectorally and not shared among policy makers, managers and users.

In addition to these issues, the islands natural vulnerabilities pose an additional challenge to water management. Vanuatu is the most natural disaster prone country in the South Pacific with disasters including volcanic eruptions, earthquakes, cyclones, and isolated droughts and floods. It is also indicated that climate change will increase water vulnerability over the next several decades.

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 addressing water resources issues in and around the urban center of Port Villa by replicating lessons learned through the IWRM Project in Sarakata Catchment. Issues include strengthening coordination in support of the development an implementation of the Tagabe Catchment R2R Management Plan; Strengthening the capacity for participatory monitoring and evaluation of the Tagabe Catchment R2R Management Plan and; establishing partnerships for sustainable coastal area development.

## 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 National Water Resource Advisory Committee (NWRAC) is Vanuatu's leading cross-sectoral body for water resources. The NWRAC was established by Article 15 of the Water Resource Management Act. It consists of members from different Ministries, Departments, NGO's, and community representatives all stakeholders in water management. In the Act the NWRAC was mandated to:

- Provide advice to the Director on matters relevant to the protection, management and use of water;
- Oversee the proper planning and development of urban and rural water supplies;
- Operate in such a way as to ensure co-ordination of water resource management activities;

One of the guiding documents for water management in Vanuatu is the National Water Strategy 2008 – 2018. In the opening the strategy calls for the need for an IWRM approach in order to meet this and the other six objectives of the strategy. The strategy called for Provinces to develop IWRM Master Plans appropriate to the local context. The IWRM Demonstration Project in Sarakata Watershed was the first chance to put these principles into action.

Existing legislation for the protection of surface water quality is Water Resource Management Act (2002). Under this Act the Government of Vanuatu through the technical support of the IWRM Project compensated 62.5 hectares of land in the Sarakata Catchment for protection of water source and established Water Protection Zones. A further 1000 hectares has been earmarked for protection with 20 hectares identified as priority for forest rehabilitation.



Meeting of Directors for the National Water Resource Advisory Committee

## Linking Local and National Coordination

As a part of World Water Day 2005, the DGMWR established a Luganville Water Advisory Committee (LWAC) to oversee the management of the Luganville Water Supply, under the auspices of the NWAC. In 2008, the LWAC noted a need in the rural areas for someone to oversee water projects and management of drinking water sources. The LWAC decided to expand its scope to include the entire province of Sanma. To reflect this change, the committee changed its name to Sanma Water Advisory Committee (SWAC).

In 2009, at the initiation of the IWRM Demonstration Project, the project management unit identified the SWAC as an already established committee with similar objectives to that of the project and consisting of many of the government departments involved in water management. The project decided to utilize this body as the foundation for the Steering Committee.

Re-establishment and expansion of this committee was effective in:

- (1) opening up communication lines between provincial government and national government for improved management of the Sarakata Basin;
- (2) influencing decision making leaders at the provincial and at the national level as to the importance of support for the Sarakata Basin;
- (3) allowing the relevant government agencies and other important stakeholders dealing with water on a coordinated effort.

### RIDGE TO REEF STAKEHOLDERS

- Department of Meteorology
- Sanma Provincial Government
- Luganville Municipality
- Luganville Water Supply
- Nambauk & Butmas communities
- Department of Geology, Mines and
- Water Resources
- Public Works Department
- Department of Forestry
- Department of Fisheries
- Department of Health
- Department of Education
- Live and Learn Vanuatu
- Department of Agriculture and Livestock
- Department of Water
- Rural Health

## Stakeholder Engagement

Vanuatu'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 Vanuatu 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.

### 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 Vanuatu to date.

#### PROCESS

##### **Sanma Water Advisory Committee established**

During the Project Inception phase in 2009 an IWRM Steering Committee was established from the non-functional Sanma Water Advisory Committee (SWAC). The original members were made up of the Sanma Water Advisory Committee and expanded to include other important stakeholders for the IWRM Project. This was done to ensure that the work that the SWAC started would be incorporated into the Project initiative and logframe. The IWRM Steering Committee expanded to include department such as Forestry, Fisheries, Agriculture and Livestock.

##### **Establishment of the Sarakata Basin Integrated Flood Management Plan**

The plan to incorporate early flood warning system to provide at least one hour warning and process for incorporating floodplains into planning regulations was conducted with feasibility studies and Flood Hazard Maps for the Flood Phone areas.

The Sarakata Flood Management Plan went through consultation to the communities likely to be affected by flood. There were consultations to the two authorities, the SANMA Provincial Council, Luganville Municipal Council. The Plan was circulated to the members of the National Water Advisory Committee.

##### **Sectoral engagement in formal multilateral communication on water issues**

The IWRM project demonstrated well the IWRM Principal of sectoral engagement. A Directors meeting was held with all the Directors of Departments involved in the Project implementation & demonstration pilots. During the meeting directors were briefed on the goals and objectives of the project, status of the project and a Memorandum of Agreement was signed between the IWRM Project Focal Point and

each director. The Memorandum of Agreement outlined the responsibilities of each partner inside the project. The meeting ended with a field trip to some of the IWRM demonstration sites within the watershed.

The National Water Resource Advisory Committee (NWAC) was established by Article 15 of the Water Resource Act. It consisted of members from different Ministries, departments, NGOs, and community representing all stakeholders in water management. The Project Management Unit participated in quarterly meeting of the NWAC to present updates of the project to the committee. This helped to gain support from other Departments such as the Department of Meteorology who is not represented on the IWRM steering Committee, hence helping to organize a workshop to mainstream CC into IWRM Planning Processes.

##### **Increased proportion of community engaged in water related issues**

At the project inception, communities were not engaged in the water resources. IWRM focused on different targeted community groups participating in clean-up campaigns, construction of composting toilets, forest replanting, and establishment of agriculture demonstration plots. On World Water Day 2012, a river clean up event on the Sarakata River was a successful day with many community members and school children attending. It also identified some areas being used for dumping rubbish alongside and into the Sarakata River.

On a separate occasion during a Mass Awareness Campaign of the IWRM Steering Committee members, a group of young people were identified to clean up and police the activities along the river mouth of the Sarakata River. The project has subsequently assisted the community by placing Notice boards and rubbish stands around the area for their rubbish.



Mass Awareness Campaigns by the IWRM Steering Committee members in the communities within the catchment proved successful with high numbers of community members attending the events.

Awareness raising was carried out with targeted members of the communities, where individual meetings were held with women groups, with chiefs and elders of the communities. Enhancing Awareness and understanding of the watershed through active engagements such as; Waste Management Trainings, Environment Protection Trainings, Forestry Trainings, Fisheries Reef Check Monitoring and World Water Celebrations. These trainings have benefited youths and communities members with hands on trainings and skills

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

The Water Demand Management Programme for Luganville was an AusAID funded programme, coordinated by the SOPAC office in Suva and working with the Department of Geology, Mines and Water Resources. The project ended last in 2010 with a lot of outstanding work yet to be done for the Luganville water supply system and hence IWRM stepped in to help complete the programme. With limited knowledge of WDM in the country, consultants were brought in from Federated States of Micronesia to help the Public Works Water Team to complete what was left. The activity did help build up capacity of the PWD Water Team. There were both theory and field trainings. The team did hands on training on installation of flow meters and readings of flow meters and installation of Pressure Reducing Valves.

There was a Water Quality Monitoring training with the Department of Public Works Staff. The PWD staff were hard working individuals with plumbing background and very limited knowledge on water quantity and quality monitoring. The importance of having a water quantity and quality monitoring program was identified during the Integrated Water Resources Management (IWRM) demonstration project stakeholders meeting. The importance of these activities was made very clear as a mechanism that can be used for better planning for the delivery of water supply in Luganville and the nearby sub-urban areas. This training has benefited the Department of Public Works staff as they are now able to do leakage monitoring on the Luganville Water Supply System.

### **Replication strategy developed and implemented to mainstream lessons learned**

Replication and scaling-up was based on the demonstration activities implemented and lesson learned captured during the project implementation phase and used the framework laid out in the National IWRM Plan to implement. The replication plan was developed by the project unit and endorsed by the IWRM Steering committee. A toolkit was being developed with the implementing partners. The toolkits aimed at capturing best IWRM practices and producing a handbook where it can be use by other communities and catchments. Some of the action areas highlighted were Climate Change Adaptation, Biology & Ecological Conservation to sustain resource use and Strengthening Community & Stakeholders Engagements.

## **STRESS REDUCTION**

### **Reduction in sewage pollution across the Sarakata Watershed**

Most of the households in Sarakata area were using un-improved sanitation systems resulting in 40% amount of sewage pollution reaching the watershed.

Demonstration composting toilets were built on areas with shallow underground water. The Pepsi area and Solway areas within the Watershed were the most prone to sewage pollution due to open pit latrines in shallow ground level areas. Women are the most targeted group involved in this project as they are managers of the house and can change the mindset of their children and husbands on the benefits of composting toilets to the environment and the water quality. There have been ongoing training and community workshops about composting toilets.

### **Sustainable Forest and Land Management practices established and trialled with Land owners and Lease holders.**

Prior to the project land management practices were haphazard and did not consider the impact on watersheds. The target of the project was to increase the amount of land managed, rehabilitated and protected in the Sarakata Watershed, including the establishment of 6 demonstration lots in the GTZ reserve and 4 in communities (Fanafo, Monixhill, Nagar and Mango). The Conservation of reserve areas were agreed by land owners. There are three main conservation areas where Draft Management Plans has been established with the respected communities involved. Nurseries were established with a number of communities within the Watershed, these nursery seedlings were distributed to other communities and schools for planting when ready for transplanting. The nursery sites were identified and selected via an open discussion with the workshop participants

All the trees in the nurseries added up to 7,000 seedlings in total, some of which were distributed to communities and schools for their reforestation program, while some have been distributed to lease holders within the watershed.

### **Increase in population with access to a safe water supply**

At the time of project start-up there was little if any work that concentrated at keeping the quality of water high. Routine monitoring of river water quality was strengthened through the project to ensure safety baselines were met and to inform efforts to remediate pollutant source sites. In addition, increased outreach to areas that were more reliant on rainwater allowed the IWRM team to increase awareness of how to maintain rainwater catchment systems thereby providing a safe drinking water supply. The project established a rainwater catchment system in one of the worst off areas to safe drinking water.

An extension to the water supply at Pump station area was implemented by Public Works Department. The extension served a total population of 800 people (including women & children). The pump station residence extract water from small hand dug wells for over 20 years and has been very happy to access clean portable water to their doorsteps. A water safety plan review was carried out with the Luganville Water Supply staff where new costing were put together for the current pumping station. A water safety audit was also carried out on the Luganville Water Supply system by SOPAC. This had benefited the project by increasing the skills of personals in identifying new risks on their supply system and planning for measures to minimize those risks.

### **Increase in land protected and/or rehabilitated over the catchment**

One of the outputs of the IWRM project was to establish Conservation areas on the upland catchment to minimize the effect of logging on the Sarakata River and to maintain the Quality of the streams & tributaries and the main Sarakata River. It also aimed at conserving the biodiversity and ecology of the Sarakata Catchment. The Department of Environment was the implementing partner for establishing the Conservation areas.

Consultations were carried out with all six main communities within the upper watershed and two communities were interested in giving their land for conservation purposes; Nambauk & Butmas Communities. A series of training was carried out with the two interested communities to put together the Management Plans of the two CAs. The Department of Survey mapped out the areas of the conservation area and the CAs were endorsed by the Council of Ministers.

## **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

**“The new fish farms have become even more successful than our demonstration site and that’s how we share the experience with those that need it”**

### **Securing livelihoods and protecting coastal health with tilapia fish farming**

The Nambuak River is the source of food and income for many villages that lie along it. Through community consultations with three of these villages the IWRM Project discovered that fish stocks had drastically reduced in the area and communities wanted to find a sustainable solution to the overfishing they had been experiencing there.

Through extensive workshops and community engagement activities the IWRM Project in collaboration with the villages, has set up two demonstration tilapia fish farms. One has had its first successful harvest and the other is seeing the growth of fish.

To initiate this process the IWRM Project engaged the services of the Department of Fisheries Aquaculture Officer and ran a series of awareness raising meetings to highlight the impact of overfishing in the area and to discuss options with the villages. Integral to this process was Chief Abraham of the Nambuak Community. Chief Abraham has been involved in the IWRM Project through the conservation areas, being one of the first Chiefs to give up land for the conservation area.

He was also involved in the reforestation efforts that the project has undertaken in the catchment and was part of setting up the nursery in the community as well as the establishment of the semi-aerobic solid waste treatment facility. This energetic man says of his involvement, “I am really excited to be carrying on the environmental work my brother, started and being a part of all the work the IWRM project is undertaking”.

With Chief Abraham on board the project ran a week long workshop involving the communities to establish the farm. This involved digging the pond, lining and filling it up with water which had to be left for one week to settle. The community members collected manure to fertilise the pond and then this was left for two weeks during which time fingerlings were sourced from other communities.

After two weeks about 400 fingerlings were transferred into the pond. There is a four month cycle from fingerling to full grown fish. The community is completely responsible for the upkeep and maintenance of the fish farm and receive all proceeds from the harvest.

From the first trial 28 kilos were harvested. After paying respect to the chief and the pond keeper, 20 kilos were sold at the market with a value of 500vatu/kilo. The community made 24,000vatu on the first harvest, which was put into a community bank account for the maintenance of the pond.

The community were very excited as they could again eat decent sized fish and that also they could make money through the tilapia harvesting. Mrs Estella says “I was so happy that the fish farm worked so well, and we can now have fish without going to the coast and to the rivers”. A common concern among inland communities is that without fish from the river they have no access to the coast to fish there for themselves.

The success of the demonstration fish farm was such that the Nambuak School and two private farmers have both established fish farms, at their own cost. “These new fish farms have become even more successful than our demonstration site and that is how we share the experience to others that need it”, says Chief Abraham who along with the Nambuak community provided support and knowledge along the way.

In addition to the private fish farms that have been established following the IWRM initiated demonstration site, the Sarakata IWRM Steering Committee agreed to set up another demonstration site in Fanafo on the other side of the catchment where a similar scenario of overfishing is occurring.

A group of community members from Fanafo and 2 other villages were invited to attend a workshop and awareness raising at the Nambuak site to display the operations of the fish farm. As of November 2013 the fingerlings had just been added to the pond in Fanafo and now it is just a matter of time before the fish are fully grown and the community can experience the benefits of this sustainable food source.

## Exploring Innovative options for Catchment management

By Rossette Kalmut, IWRM Project Manager

The Sarakata IWRM Demonstration project seeks to improve the ground water quality, sanitation-hygiene practices and health of the communities residing within the Sarakata Catchment area. The most affected areas are in the lower catchment and flood plain.

The Sarakata Flood plain is home to five large communities with a population of over 3,000. This large population puts a high demand on the natural resources and contributes to the high levels of groundwater contamination through the use of unsuitable sanitation systems.

To increase community awareness around sanitation issues we ran a series of workshops to demonstrate the important links between unsuitable sanitation systems and ground water contamination. We wanted to raise awareness amongst the communities about alternative toilet facilities, improving sanitation standards and minimising sanitation-related illnesses. The workshops also tied in construction training for compost toilets in the communities. Those interested people formed a Sanitation Enterprise Group who assisted the construction of the composting toilets for Pepsi, Solway and Butmas Community.

We hoped to reach a wide audience that included a lot of women as they are at the forefront of sanitation issues, raising children and managing the household. By gaining new skills, building and gaining confidence in their knowledge, women would be able to communicate with family and friends about sanitation issues and solutions, spreading knowledge throughout the communities.

On Sunday afternoons after church services we engaged with the community to inform them of the workshops. The aim was to reach as many people as possible. A lot of questions were raised and a lot of positive comments were made. Chief Nako from Pepsi said, "It is a great opportunity for the entire group to build on their skills and knowledge by building the composting toilets".

A week long workshop was conducted covering theory and construction. The number of people increased as they heard of the workshop and the good things the project is bringing to their community. It became clear during the week that theory alone is not enough and that interactive activities boost learning further. For example, the hands-on construction of the composting toilet by the Sanitation Enterprise Group combined with the workshop and training was a successful way for people to learn and engage.

Ms Lynne Mesek, the Secretary of the Sanitation Enterprise Group said "I have noticed how women especially have improved through theory learning but most of all through the practical learning". Community members even offered comments on how to make the workshops better, what times and who to invite to make it a greater success.

Mrs Isabelle from Pepsi said "Being involved in the constructions help women to improve their skills and knowledge, they have learned a lot and it becomes a challenge for them" She said "Women who are involved in the construction now have the experience to improve their sanitation issues within their own families and communities in Santo and their original home islands".

The project team made great effort to make the workshop a success. As project manager I learned the importance of giving communities plenty of notice about workshops and liaising with key community leaders to gain their support of the workshop. Through their influence we can hope to see a greater number and variety of people attend the workshops.

We also realized during the workshops that it is beneficial to have a greater number of youth attending, this is their world and they would gain a lot by learning new skills and ideas at a young age, taking it with them as they grow.

As a result of the workshop and training events people are more aware of their sanitation issues and the need to improve them. Women especially are more educated in their sanitation issues, can communicate openly with men and are making efforts to identify their sanitation needs.

Mrs Mary Wilson said "What I have learned and been involved with in the last few weeks has encouraged me, I now have new skills to build my own toilet and improve sanitation practices in my own home". Women are now asking for more similar trainings and are eager to be active participants in the project and their own development.

## 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 STAR<sup>1</sup> 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.

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

## 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.

## 7. VANUATU'S NATIONAL STAR PROJECT

| <b>R2R: Integrated Sustainable Land and Coastal Management</b>   |   |
|--|---|
| To test and implement sustainable and integrated management of forest, land and marine resources to achieve effective ridge-to-reef conservation in selected priority watersheds in Vanuatu. |   |
| <b>Component 1: Strengthening of the protected area network</b>  |   |
| <b>Outcome 1.1</b>   | Improved management effectiveness of existing and new protected areas   |
| <b>Outcome 1.2</b>   | Terrestrial and marine (coastal) protected area network expanded to fill ecosystem gaps   |
| <b>Outcome 1.3</b>   | Increased revenue for protected area systems to meet total expenditures required for management   |
| <b>Component 2: Sustainable management of production landscapes</b>  |   |
| <b>Outcome 2.1</b>   | Integrated landscape management practices adopted by communities  |
| <b>Outcome 2.2</b>   | Sustainability of fish harvests improved  |
| <b>Outcome 2.3</b>   | Improved forest harvesting practices adopted by local communities   |
| <b>Component 3: Landscape restoration and reduced forest degradation</b>   |   |
| <b>Outcome 3.1</b>   | Restoration and enhancement of carbon stocks in forests and non-forest lands  |
| <b>Component 4: Capacity building for integrated and sustainable natural resource management</b>   |   |
| <b>Outcome 4.1</b>   | Capacity building for improved decision-making and landscape management in support of ridge to reef conservation                                  |
| <b>Component 5: Dissemination of best practices and lessons learned, monitoring and evaluation</b>   |   |
| <b>Outcome 5.1</b>   | Project implementation based on results-based management and application of project findings and lessons learned in future operations facilitated |

### INFORMATION BOX

|                          |                                       |
|--------------------------|---------------------------------------|
| GEF Agency:              | FAO                                   |
| National Lead Agency:    | Ministry of Lands & Natural Resources |
| Funding Source:          | GEF Trust Fund                        |
| GEF Focal Area:          | Multi Focal Area                      |
| Indicative Grant Amount: | USD 4,605,680                         |
| Indicative Co-financing: | USD 14,000,000                        |
| 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 the Vanuatu IW pilot project.

| INFORMATION BOX            |  |
|----------------------------|--|
| GEF Agency:                | UNDP   |
| Regional Executing Agency: | SPC  |
| National Lead Agency:      | Dept. Of Environmental Protection & Conservation |
| Funding Source:            | GEF Trust Fund                                   |
| GEF Focal Area             | International Waters                             |

## R2R IW PILOT RESULTS FRAMEWORK

| Components   | Outcomes  | Indicator   | Baseline   | Targets End of Project  | Source of Verification                                 | Risks and Assumptions  |
|--|---|---|--|---|--|--|
| 1. Strengthening coordination in support of the development and implementation of the Tagabe Catchment R2R Management Plan | 1.1 Enhanced performance and accountability of the Tagabe River Management Committee (TRMC)   | Tagabe Catchment surface and groundwater Water quality improved to meet National Standards  | Surface and groundwater Water quality does not meet national standards | Tagabe Catchment surface and groundwater Water quality complies with National Standards   | Annual Report of the Tagabe River Management Committee | Stakeholders particularly peri-urban communities participate in environmentally sustainable land and water use                           |
|  | 1.2 Replication of Best Practices & Lessons Learned from IWRM Sarakata Catchment Demo Project | Buffer areas established and re-vegetated.<br>% Increase in protected and re-vegetated area | Limited vegetated buffer areas   | Buffer and protected use areas established and adhered to.  | Annual Report of the Tagabe River Management Committee | Stakeholders particularly peri-urban communities accept role of buffer areas<br><br>Adequate availability of resources to maintain areas |
|  | 1.3 Improved inter-agency partnership in sustainable coastal area monitoring                  | Extent and continuity of data generated through inter-agency partnership                    | Limited coordination between agencies for monitoring coastal area      | Partnership between the UNELCO, CBOs and local government established, functional and generating effective data for evaluating the stress reduction initiatives | Annual Report of the Tagabe River Management Committee | Willingness of partners to engage in joint monitoring and data collection  |



| Components   | Outcomes   | Indicator   | Baseline   | Targets End of Project  | Source of Verification  | Risks and Assumptions  |
|--|--|---|--|---|---|--|
| 2. Strengthening the capacity for participatory monitoring and evaluation of the Tagabe Catchment R2R Management Plan to strengthen the enabling environment for coastal area management | 2.1 Improved data collection for the development and implementation of the Tagabe Catchment R2R Management Plan            | Extent and continuity of the data collected through PM&E Plan<br><br>Uptake of scientific and technical recommendations | Limited operation of sustainable PM&E for the Tagabe Catchment                                       | PM&E plan developed and operational for the Tagabe Catchment<br>R2R Management Plan monitors sediment load and water quality, status of invasive species, impacts on near coastal and riparian biodiversity and ecosystem health, and site-level social impacts | Tagabe River Management Committee Published PM&E plan, and annual report including monitoring results.  | Available resources to undertake monitoring of stress reduction initiatives  |
|  | 2.2 Increased local community, business and government agency capacity for environmental monitoring of Tagabe coastal area | Percent increase of target population actively involved in coastal area environmental monitoring                        | Low levels of community, private and agency involvement in coastal area environmental monitoring     | Proportion of target population monitoring coastal area impacts increased to 25% through established agency and community awareness programmes  | Training materials published and available, reports of awareness programme included in Annual Report of the Tagabe River Management Committee | Target population are willing and have capacity to partake in coastal area monitoring<br><br>Stakeholders particularly peri-urban communities willing to participate |
|  | 2.3 Endorsed PM&E Plan for catchment management for replication to other STAR R2R coastal areas                            | Status of endorsement of PM&E Plan and incorporation into STAR Project  | Low levels of assurance in natural resource management strategies due to limited or ineffective PM&E | Tagabe Catchment R2R PM&E Plan agreed to and endorsed by local and national government heads and incorporated into National STAR Project  | Endorsed PM&E Plan for catchment management, revised STAR Project PM&E document   | PM&E sufficiently well designed for incorporation into national STAR Project<br><br>Heads of national government departments agree on PM&E Plan details              |

| Components  | Outcomes  | Indicator   | Baseline  | Targets End of Project  | Source of Verification                             | Risks and Assumptions  |
|---|---|---|---|---|--|--|
| 3. Establishing partnerships for sustainable coastal area development | 3.1 A multi-sectoral partnership that developed and maintains the National Botanical Garden providing economic and environmental benefits to the Tagabe | National Botanical Garden with % of rare endemic species. | No living repository of rare and endangered endemic flora | National Botanical Garden preserving Vanuatu's floral biodiversity and operating as a self sustaining entity through Tourism revenue.                       | Publications and Press reports.<br>Research Papers | Willingness of stakeholders to form and maintain Partnership.<br><br>Availability of establishment resources |
|   | 3.2 Community local government partnerships for sustainable land and surface water use preserving livelihoods.  | % Area classified as sustainable use area.                | No partnerships for sustainable or coordinated use        | Best practice for Community local government partnerships for sustainable land and surface water use reported and replicated through National STAR Projects | Published best practice report                     | Willingness of community an local government to sustain participation  |
|   | 3.3 Public-private partnerships for coastal area use preserving ecosystem services and community resilience   | Number of partnerships established                        | No existing partnerships                                  | Public-private partnerships established and functioning preserving coastal ecosystems   | Publications and Press reports.<br>Research Papers | Willingness of stakeholders to form and maintain Partnership.<br><br>Availability of establishment resources |



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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