

GEF PACIFIC
RIDGE TO REEF PROGRAMME

NAURU



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 Nauru 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 Nauru. 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 Nauru. 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 Nauru.



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 Nauru.



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 Nauru 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. NAURU R2R STAR PROJECT

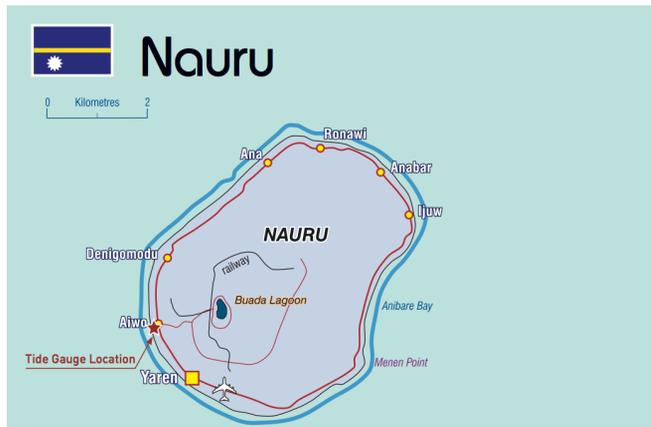
A summary of Nauru's national project to be financed through the GEF System for Transparent Allocation of Resources (STAR) is provided in this section. The planned contribution of this STAR project to the achievement of the targets for the regional Ridge to Reef program is outlined. The management arrangements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



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 Nauru are outlined. A brief strategy for Nauru IW R2R national pilot project is provided along with the logical framework matrix. Key assumptions and risks are summarized to guide planning during the project's inception period.

1. RIDGE TO REEF CONTEXT



Country:	Nauru
Size:	21km ²
Population:	10,000
Population growth:	0.6%
Density:	490/km ²
GDP:	USD 72 million
Growth Rate:	4%
Gross National Income:	USD 6,746

Nauru is the world’s smallest independent republic consisting on one 21km² island. It is an isolated uplifted limestone island located just south of the equator, surrounded by a fringing coral reef some 120 to 300 meters wide.

A narrow coastal plain surrounds a raised coral limestone plateau of pinnacles and outcrops, the latter 70% and 30% of the island land area respectively.

The limestone plateau has been the focus of extensive phosphate mining for the past 80 years which is in the process of being phased out. Other than phosphate few other economic resources exist and investments of phosphate income have been exhausted leaving the government near bankruptcy.

The freshwater resources of Nauru are contained in Buanda lagoon, a landlocked, slightly brackish freshwater lake located in the southwest of the island on the plateau.

Groundwater from the underlying lens is considered extensive, with the result that it has been tapped by several hundred household wells to supplement the main source of potable water supply from desalination.

Beneath the upper layer the water becomes increasingly brackish with depth until it meets salt water at 80 m below sea level.

Replenishment or recharge of the freshwater lens is dependent on rainfall. A first approximation of the average groundwater recharge for Nauru is 800 mm per year

A plant commissioned by the government from the National Phosphate Commission (NPC) provides desalinated water using waste heat generated from its power station. Water is delivered by truck to individual households and commercial storage tanks.

When the plant is not in operation due to maintenance or breakdown, the island faces severe water shortages and an increased reliance on the groundwater sources for supply.

The drought from 1998 to 2001 stretched the water resources on the island and highlighted the urgent need for a sustainable water supply system. The drought resulted in overuse of the lens and a decline in water quality, leading to rising health and environmental issues due to seepage from household sewage pits into the increasingly brackish and contaminated groundwater.

There is no wastewater treatment plant in Nauru and all the sewage and wastewater are either discharged to the sea or disposed at home. Home sanitation disposal facilities are mostly cesspit, allowing the wastewater to infiltrate the porous ground and further the groundwater. Nauru’s access to improved sanitation facilities represents 50% of the population.

However, sanitation facilities considered at low risk to the environment are probably significantly less than that. Nauru has one of the highest levels of diarrhoea in the world and yet there are no water quality standards (or guidelines) and very little monitoring of domestic water networks at the household level.

Through consultative Hot Spot analysis stakeholders on Nauru identified water scarcity and institutional arrangements; effects of sanitation practices on water resources; and conservation and environmental issues as the key water resource management issues.

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 on successful waste management systems approaches that were demonstrated in the IWRM Project to safeguard groundwater and lagoon water quality; identifying critical fisheries habitats and threats, local initiatives and strategic partnerships to improve coastal and fisheries management and; building coastal resilience to potential climate change.

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.

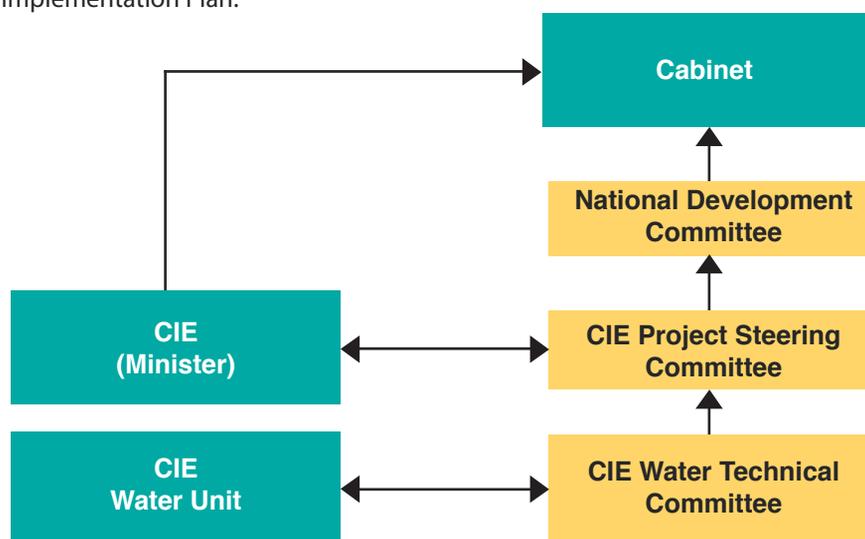
Strengthening Cross-sectoral Coordination and Planning

The Department of Commerce, Industry and Environment (CIE) oversees the Environment Sector policy. This includes water resources protection and water planning, monitoring and evaluation. The agency is also responsible for environmental legislation (including water resources and sanitation). Prior to the IWRM project there were no formal coordination mechanisms within the water, sanitation and environmental division. In 2011 a whole-of-government and community committee, was created and endorsed by Cabinet to act as the APEX Body for environmental concerns in Nauru. This high-level committee, called the CIE Project Steering Committee (PSC) is considered a sub-committee under the National Development Committee (NDC). The PSC is responsible for steering and overseeing Government policy and plan implementation processes in the water and sanitation sectors and reports to Cabinet through the NDC on implementation progress. The PSC reports to the NDC via its Chair.

With integral support from the IWRM Project, the CIE PSC developed The National Water, Sanitation and Hygiene Policy (NWSHP) 2011, and subsequent Implementation Plan which was submitted to Cabinet for endorsement on the 2 September 2013. This fifteen year plan implements the 2011 Policy which sets out the visions, goals and objectives for water and sanitation. The policy and plan development processes involved individual consultations with key stakeholders as well as workshops with the WTC and the PSC. The following key issues were addressed by the Plan:

- Climate variability, change and water resource vulnerability
- Water quality and supply
- Sanitation and the Environment
- Demand
- Governance
- Capacity
- Community Awareness and Engagement

Through the IWRM and PACC project the CIE established a Water Unit to coordinate the implementation of the goals and objectives of the National Water, Sanitation and Hygiene Policy and to carry out and supervise activities in the National Water, Sanitation and Hygiene Policy Implementation Plan.



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

Linking Local and National Coordination

In 2009 the Water Technical Committee (WTC) was established to provide coordination for the environment sector. The WTC acted as the national APEX Body from 2009 to 2011 before being replaced by the CIE PSC. The WTC committee comprises representation from all government departments, agencies and State-Owned Enterprises with any responsibility for water and its uses. Decision-making under the WTC revolves around project design and implementation of projects such as the Pacific IWRM and the PACC project.

By 2012 the Water Unit had established four working sub-committees that meet fortnightly. The sub-committees were: Water, Governance, Biodiversity and Climate Change. These committees primarily acted as planning, coordination and oversight of activities in these sectors. Efforts were made to take a participatory approach to activities by bringing in other government departments or partners as appropriate or directing pertinent discussions to the PSC or NCBO as relevant. Once activities were formulated and endorsed by the sub-committee they were presented to the PSC for final approval. Additionally the WTC was required to report annually to the CIE PSC on progress of plan activities and outcomes.

Stakeholder Engagement

Nauru'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 Nauru has been based on a consultative process involving national government agencies, community representatives, and civil society organizations. Stakeholder inputs elicited during the preparation phase have been incorporated in the results framework for the pilot project included in the final section of this document.

Ridge to Reef stakeholders

- Department of Commerce, Industry and Environment
- Department of Home Affairs
- Planning Aid Division
- Bureau of Statistics
- Pacific Island Private Sector Association
- Nauru Rehabilitation Corporation
- Nauru Utilities Corporation
- NIANGO
- AusAID
- Community Based Organisation

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 Nauru to date.

PROCESS

Multi-sectoral APEX Body established

At the start of the Pacific IWRM Project there was a complete absence of water-related national coordination or governance mechanisms. The project target was to create an APEX water body to provide the necessary coordination functions and have this forum endorsed by Cabinet by July 2010. The IWRM project facilitated the development of an interim national APEX body, with broad community, private sector and government membership in 2010. The success of this process saw the waste and energy sectors join the same committee which broadens the scope of the Committee's mandate and achieves greater national coordination amongst these key service sectors. The National Water, Energy and Waste APEX Body was endorsed by Cabinet and is known in Nauru as the 'Project Steering Committee' (PSC).

Increased in proportion of the community engaged in water related issues

Prior to the IWRM project inception workshop, there had been very limited community consultation or engagement on water and sanitation issues, despite widespread general public concern over the availability and quality of the water supply. One of the challenges was the lack of a clear government mechanism for engaging communities in planning, conservation, protection and management. The IWRM project aimed to raise awareness and increase community's active engagement in water related issues by 30%.

In the early phases of the project it was realized that in order to increase the understanding and acceptance of the project objectives at community level, the PMU, in partnership with the GEF PACC project team needed to find a way to engage with the 14 Districts and 15 communities of Nauru. Community engagement activities were coordinated through NCBO community leaders. Further, as part of the community engagement process, community leaders were brought

together for the first time for both formal and informal discussions. They also acknowledged the communications gap between government and community and established a National Community Based Organisation (NCBO). The NCBO, while not endorsed by Cabinet, was recognized by them. The 14 District Leaders are represented on the body. The NCBO also facilitated the integration of four of its representatives to become appointed members of the Project Steering Committee to represent civil society interests. Thus, community interests are represented in a Cabinet endorsed national coordinating body in Nauru.

The IWRM project, in partnership with Nauru SNC and the GEF PACC Projects, established an ongoing community outreach program to raise awareness and conduct capacity building activities with local people on climate change, water and sanitation issues.

The activities included celebrating international events (e.g. World Water Day and World Food Day) as a medium for raising awareness and bring together government and non-government over a common endeavour. While this helped strengthen relationships and communication between the two groups, the community outreach programme was also a vehicle for bringing government water and sanitation expertise directly into the community. This aided in familiarizing officers with local issues in each District as well as providing an opportunity for them to address technical sanitation issues.

National IWRM strategy in place

At the commencement of the GEF Pacific IWRM project, there was no national water policy or plan for water, sanitation and hygiene management. The IWRM project aimed to develop an integrated water policy by 2012 and an Implementation Plan by 2013 which would be approved by Cabinet. The National Water, Sanitation and Hygiene Policy was endorsed by Cabinet on the 7th February 2012. The National Water, Sanitation and Hygiene Plan was drafted and costed by August 2013. It was submitted to Cabinet for endorsement 2 September 2013.

Discrete budget line in place for IWRM

There was no national budget allocation specifically for IWRM under the Government of Nauru (GoN) Budget before the GEF Pacific IWRM Project. The project aimed to ensure a discrete budget-line is included annually in the GoN Budget. This has happened, and the budget allocation since doubled each year.

National budget allocated to IWRM and WUE

At the commencement of the GEF Pacific IWRM project there was no national budget allocated to IWRM and no dedicated office addressing water, sanitation and hygiene issues. The project aimed to have a 20% increase in the national budget allocation for IWRM and Water Use Efficiency (WUE). The National Water Policy 2012 outlined the need to establish a Water Unit within the Department of CIE. The Water Unit was established in November 2012 with two permanent staff. Budgets were allocated within the Water Unit to pay the 2 staff salaries, transport and WUE activities such as World Water Day in March 2013 (A\$5,000). The target of a 20% increase in national funding was achieved and the allocation increased further in the 2013/2014 budget.

Lessons learned are incorporated into other projects.

Before the GEF Pacific IWRM project commenced there were no composting toilets in Nauru. Further, people's perceptions of what a composting toilet constituted were not clear. For example, they could not understand the difference between a composting or cesspit latrine even during project inception (after initial project sensitization workshops).

This is still the situation today for most people outside of the IWRM demonstration site. The project aimed to test whether composting systems would be suitable in the Nauru context. Through this project, a composting toilet prototype specifically to meet Nauru's environmental conditions and social context was designed and has been successfully trialled.

As the positive impacts of reduced water use and the success of community uptake started to be reported, other projects and GoN started to take a keen interest in composting toilets as a viable option for increasing water use efficiency, reducing environment stress and improved sanitation.

For example, at the end of August 2013 the government endorsed a A\$300,000 composting toilet programme which will be submitted to AusAID at the October 2013 donor round-table (replication and upscaling of the IWRM project). The design for the composting toilets, agency coordination and approach to community engagement was taken directly from the IWRM project and composting toilet prototype.

Increase in proportion of community engaged with national government

At the start of the GEF Pacific IWRM project, there was no formal communication between communities and government. If communities were required for inputs into government plans they were approached on an ad hoc basis. If communities wanted to express needs to government, they would visit their MP or informally communicate their interests through field officers or government department staff.

The project aimed to increase community engagement with national government by 50%. The PMU and PACC projects achieved this target through establishment of the NCBO around water sector issues as well as including community elected representatives (4) on the Cabinet endorsed PSC. Improved governance at the community level saw the NCBO being approached directly by other projects, from government agencies, SPC, STAR, AusAID, Taiwan High Commission and Japan Embassy, as the most effective method of communicating and coordinating with local people. The NCBO became a mechanism for coordinated decision making and information sharing at the national and community level.

Another example of the benefits of this increased dialogue between government and NCBO and community members was the initiation of events such as World Water Day and World Food Day where government, SOEs, community and project staff worked together to celebrate and raise public awareness of water sector issues.

STRESS REDUCTION

Reduction in sewage pollution in Ewa and Anetan communities

Wastewater discharge from failing sanitation systems was heavily contaminating the ground water lens at the beginning of the GEF Pacific IWRM Project. The IWRM project aimed to reduce nutrient and organic loading by 35% from the demonstration site communities.

The IWRM project has resulted in the upgrading of septic systems in 40 households across Ewa and Anetan. These systems included secondary treatment systems (sand filters and baffled reactors) installed to improve effluent prior to irrigation. This approach dramatically reduced the pollution associated with household wastewater disposal to groundwater and ultimately to coastal waters.

Reduction in the use of freshwater for sanitation purposes due to compost toilet installation

All toilets in Nauru used a flushing system that relied on water from a range of sources (groundwater and tanks) before the GEF Pacific IWRM Project started. This had critical implications for communities who must use potable water when flushing. It can mean they must purchase water in times of drought which is costly and may not be available. The project initially aimed to reduce the amount of freshwater used by schools by 30%. After implementation progressed, the initial indicator was modified due to the pressing need caused by droughts in 2011.

This broadened the scope of the target indicator to also include the household level. Composting toilets were then installed in two schools, as pilots, (1 toilet for boys and 1 for girls) which dramatically reduced school water use in the Anetan Infant School and Kayser College. This provided sustainable sanitation to schoolchildren, and also enabled schools to remain open during the drought periods. Schools in Nauru must close if they do not have water and electricity.

Two composting toilets were installed in two households, one in Anetan and one in Ewa. With the average Nauru family being 6 people (2011 Nauru Census), and each person on average flushing the toilet twice a day (10 litres of water used in each flush), the introduction of the composting toilets can reduce water use annually in one household by an estimated: 43,800 litres a year (120 litres a day).

Increased population with access to improved sanitation

The flushing sanitation systems across the Ewa and Anetan districts were failing when the GEF Pacific IWRM project began. This could have been for a number of reasons including collapsed cesspit walls, blockages and full tanks which were over-flowing. This situation was resulting in cases of diarrhea, rheumatic fever and other diseases which can be fatal to vulnerable groups such as young children and the ill or elderly. In many cases, households had constructed rudimentary cesspits and many households were sharing

facilities. The project aimed to improve sanitation in the two districts by 10% (2011 Nauru Census Anetan has 373 people and Ewa has 461 people = 834 people).

The IWRM project piloted several sanitation options including composting toilets and septic systems. The project rehabilitated and upgraded sanitation in 40 households across Ewa and Anetan, including the provision of secondary treatment systems (sand filters and baffled reactors) to improve effluent prior to irrigation. Initially 20 systems were introduced and through mobilizing additional funding with AusAID, an additional 20 systems were built. This was a total of 40 households or ~28% of the population with access to improved sanitation.

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.

5. LESSONS FROM INTEGRATION

Childhood education helps raise awareness of water related issues

By Haseldon Buraman, IWRM Project Manager



Construction of a household compost toilet. These were made bigger and lower than those in Tuvalu to accommodate the needs of families in Nauru.

Before the implementation of the IWRM project there was nothing about water at the community level and there was nothing about water in the education curriculum. School children never learned about water, its importance, the role of water in the environment or how humans can impact on its quality and quantity.

The project sought to change this because of the newness of the IWRM concept at a national level and at the community level. We thought we may not be able to change the mindset of older generations but we can teach these concepts at schools and allow children to see things differently and learn new information. Through education we hope to provide this information as a platform and let the children act as the carriers of new ideas, taking it to their families and communities.

In the beginning we engaged schools by utilising the international event of World Water Day (WWD) to get the information out and see how effective it would be at reaching the community. The knowledge of water and IWRM is being transferred at the local level using a creative method to deliver and understand this message.

The IWRM Team meets with the Education Department and teachers before each WWD where we direct them to web pages that have good resources for children, introduce them to concepts and provide assistance with understanding the role of water. Mrs Sibila Ika from the infant school said "It is important that our children understand the role of water in our lives and environment, through the WWD events and awareness raising that IWRM does, we can see that they are really starting to learn more about this."

We engaged the infant schools, prep to grade one, and wanted to see how they would interpret this new information and how effective it would be. Initially we gave out themes

and had the children make up plays about this theme as part of a competition.

In the first year we were surprised at the amount of information they were able to interpret. As the project has evolved, the activities of WWD is left up to the schools discretion but some activities include song and short story writing, poster designs, plays and community walks. The students and teachers alike now look forward to WWD as a community event, as one said, "We really look forward to WWD and using the different themes to interpret the role of water".

At the schools that have compost toilets we have undertaken a lot of awareness about the toilet itself and how to maintain but this is really a conduit to have the discussion about water conservation and how everyone's behaviour can affect the water systems in Nauru. Because the toilet at the infant school is well maintained the children are not fazed at all that it is a new system of sanitation, it has just become the toilet they use and they see no difference with the flushing toilet.

"When the IWRM project came to school to talk about the compost toilets we were wondering what this toilet was and how it could be helping with the water in our community. But now that we have a toilet we are learning how our waste can impact on the water", said students from the infant school. To the kids there is no big deal about using and having a compost toilet, it is the same as any other toilet.

I realised that changing the mindset of older generations is difficult, but sharing new knowledge to the younger generation is a great way of building capacity in the community. I have learned that through well planned and ongoing engagement at the schools, we are able to raise the visibility of water issues amongst the whole community.

Tackling sanitation challenges through community engagement and appropriate technology

By Haseldon Buraman, IWRM Project Manager

Prior to the 1970's, Nauru toilets were pit-latrines, then a government housing scheme introduced fiber-glass septic tanks with septic overflow into the ground. The tanks need annual servicing from a sludge truck, which households had to pay for. Over time people were not regularly de-sludging the tanks and untreated sludge was being pumped out onto the reef and the de-sludging truck went out of service. In the 1990's issues of faulty toilets led to un-lined cesspits being dug for septic overflow.

To tackle this issue the IWRM project trialled two community-based toilet systems, improved septic systems and composting toilets. The greatest challenge was how to overcome negative local perceptions of composting toilets. Without interest in adoption from the community they were not a possible solution for Nauru and so began a targeted communications program to introduce the new technology.

After initial consultations with the communities, it became clear that local people had very limited knowledge about composting toilets. I realised that it was going to be very difficult to gain support for them and so began to approach the problem differently. I went back to reviewing the systems and considered what might help the community to better accept the concept. I identified a design used by the IWRM Project in Tuvalu where they had encountered similar challenges with community acceptance.

This revealed that household designs were more acceptable to people than a community one and similar to communities in Tuvalu, Nauruans did not want shared community facilities. They want individual household toilet systems. This resulted in a change to the original project design and one family and one school in Anetan and Ewa were identified to trial the composting toilets.

This was the first trial of composting toilets in Nauru and so we set out to test them. Firstly we placed a burning coconut husk in the chamber of the toilet to see if the ventilation pipe would draw the smoke up and out of the structure. We saw the smoke rising from the pipe and the inside of the toilet free from any smoke. Secondly I placed a container with fish in the chamber and came back the following day to find that there was barely a smell in the toilet cubicle, and this soon dissipated as soon as the lid was opened. I was impressed and convinced that the system works.

As the positive impacts of reduced water use and the success of community uptake began to be reported, other members of the Anetan and Ewa communities have become interested in these systems and are requesting one for their households. Other donors, projects and government departments have started to take a keen interest in composting toilets as a viable option for increasing water use efficiency, reducing environmental stress and improving sanitation

The initial project planning phase is critical for ensuring sustainability. We recommend taking the time to explain the system and let people become familiar with the new concept. On-going consultation during the design and construction of the systems allowed for modifications. These consultations built community confidence and understanding on how the systems functioned and instilled community ownership of the final designs.

I have learned that there are many key aspects to making the introduction of new and controversial technology a success. First is finding interested people to host the demonstration and building them in neighbouring districts so as to create a 'hub' for awareness raising. Several things we found were essential to success are regular, on-going consultation with the families to ensure the end product would be something they would use and that after installation there is on-going monitoring of the toilets to ensure they are being used correctly.

In the future we would like to see additions to the design such as small water storage tanks for hand-washing, solar panels that provide for lighting and lower cost options for fittings and construction.

Being involved with the IWRM project has helped me realise my own interest and passion in reducing contaminants on Nauru's scarce water lens. It also makes me feel happy to provide an alternative to families who have problems with water supply and restricted land space for septic systems.

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. NAURU'S NATIONAL R2R STAR PROJECT

Implementing a "Ridge to Reef" approach to protecting biodiversity and ecosystem functions in Nauru	
To preserve biodiversity, ecosystem services, improve climate resilience and sustain livelihoods in Nauru using a ridge-to-reef approach	
Component 1: Conservation of Marine Biodiversity	
Outcome 1.1	Improved management effectiveness of new marine conservation areas
Component 2: Sustainable Land and Water Management	
Outcome 2.1	Integrated landscape management practices adopted by local communities living within the 'bottomside', and applicable 'ridge', and 'topside' areas not covered by mining
Component 3: Governance and Institutions	
Outcome 3.1	Biodiversity conservation and SLM mainstreamed in policy and regulatory frameworks
Component 4: Knowledge Management	
Outcome 4.1	Improved data and information systems on biodiversity and land management best practices

INFORMATION BOX

GEF Agency: UNDP
 National Lead Agency: Ministry of Commerce, Industry and Environment
 Funding Source: GEF Trust Fund
 GEF Focal Area: Multi-Focal Area
 Indicative Grant Amount: USD 2,644,358
 Indicative Co-financing: USD 6,353,000
 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>Component 1: National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability</p> <ul style="list-style-type: none"> • Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation • National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments • Community leader roundtable networks established for strengthened ‘community to cabinet’ ICM/IWRM
<p>Component 2: Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for R2R ICM/IWRM approaches</p> <ul style="list-style-type: none"> • National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation • PIC knowledge on climate variability, coastal area planning in DRM, integrating ‘blue forest’ and coastal livelihoods consolidated and shared to support evidence-based coastal and marine spatial planning • Incentive structures for retention of local ‘Ridge to Reef’ expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated
<p>Component 3: Mainstreaming of R2R ICM/IWRM Approaches into National Development Planning</p> <ul style="list-style-type: none"> • National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally • Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs • Physical, natural, human and social capital built to strengthen island resilience to current and emerging anthropogenic threats and climate extremes
<p>Component 4: Regional and National ‘Ridge to Reef’ Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management</p> <ul style="list-style-type: none"> • National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal area projects • National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established
<p>Component 5 - Ridge-to-Reef Regional and National Coordination</p> <ul style="list-style-type: none"> • 5.1 Effective program coordination of national and regional R2R projects

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

INFORMATION BOX

GEF Agency: UNDP
 Regional Executing Agency: SPC - GSD
 National Lead Agency: Dept of Commerce, Industry and 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 on successful waste management systems approaches demonstrated in IWRM Project to safeguard groundwater and lagoon water quality	1.1 Improved municipal solid waste operations catalysed through demonstration of appropriate leachate management to reduce groundwater contamination on Nauru	Status of lining of Municipal Tip Volume reduction in leachate entering receiving environment	Municipal Tip is unlined and releasing all contaminants into the receiving environment	Controlled municipal leachate management system demonstrated through liner installation at the Municipal Tip, reducing release of contaminants into receiving environment by 50%	Consultation meeting reports, including agreements on design, construction agreements, site selection and roles of stakeholders Report on assessment of the operational status [Yr 3]	Resources available for the construction of liners at the tip Commitment to on-going operation of converted tip site
	1.2 Improved municipal wastewater operations catalysed via demonstration of appropriate and effective methods for wastewater treatment to reduce groundwater and lagoon contamination on Nauru	Status of construction of wetland treatment system Volume reduction in nutrient and pathogens entering receiving environment	There is currently no treatment for wastewater and is discharged directly to the receiving environment	Sustainable wastewater treatment demonstrated through installation of a constructed wetland treatment system, reducing nutrient and pathogen loads from wastewater discharging directly into the receiving environment by 30%	Consultation meeting reports, including agreements on design, construction agreements, site selection and roles of stakeholders Report on assessment of the operational status [Yr 3]	Resources available for the constructing wetland treatment systems Commitment to on-going maintenance of wetland treatment system
	1.3 Improved options for sustainable on-site waste management of domestic pig pens	Level of pig management options identified	Limited data available on pig management systems in Nauru	Review and assessment of current pig management systems, identification of potential improvements and level of community awareness on alternative systems	Data collection reports, consultation meeting documents, assessment report Final report [Yr 2]	Residents willing to participate in data collection Resource available for data collection and analysis

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
2. Integrating identification of critical fisheries habitats and threats, local initiatives and strategic partnerships to improve coastal and fisheries management	2.1 Strengthened information base for planning, monitoring and evaluation of priority coastal management areas in Nauru	Status of data collection programmes for 3 priority sites Uptake of scientific recommendations	Little data is available on the status of near shore fisheries habitats	Fisheries and habitat data collection programme operational to identify critical areas of fisheries habitats on Nauru	Monitoring results, analysis and research reports, comparative studies and final evaluation report [Yr 3] Nauru Fisheries Habitats document [Yr3]	Consistent use of standardised data collection methods and procedures
	2.2 Enhanced knowledge of linkage between land based pollutants and the status of coastal fisheries habitats	Status of data collection programmes for 3 priority sites Degree to which scientific evidence demonstrates linkages to coastal ecological health	Little data available on coastal habitats, links between land-based contaminants and coastal water degradation and coastal habitat status	Ecosystem processes and coastal health data collection programmes operational to identify nutrient dynamics, threats from land-based contaminants to coastal waters and impacts on fisheries habitats at 3 priority sites on Nauru	Monitoring results, analysis and research reports, comparative studies and final evaluation report [Yr 3] Coastal Health Summary for Policy & Planning [Yr 3]	Untreated effluent disposal is negatively affecting coastal water quality Resources are sufficiently available for reliable analysis and evaluation of contaminant dynamics to produce scientific results
	2.3 Strengthened cross-sectoral coordination in the planning of coastal and fisheries management areas to support sustainable use of in shore fisheries	Continuity of government agency participation in NCLC meetings Status of management plans	Lack of cross-sectoral involvement in management of critical coastal areas and fisheries habitats	National Coastal Livelihoods Committee (NCLC) established and functional to oversee the development of coastal and fisheries management plans; identifying links to food security and sustainable livelihoods	NCLC terms of reference, membership lists and meeting reports, joint planning and management decisions	Willingness of environment, fisheries and public health sectors to engage in joint decision making and planning
	2.4 Improved private sector collaboration to generate information relating to the sustainable potentials of aquaculture	Volume of information generated and shared	Limited understanding of aquaculture implications or sharing of information	Partnerships with local aquaculture initiatives established to investigate environmental impacts and food security benefits of aquaculture	MoA, assessment and findings report	Collaborative arrangements can be established between agencies Resources available to undertake research

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
3. Incorporating ICM strategies into national coastal infrastructure planning and regulations	3.1 Identifying priority areas of action in coastal infrastructure planning and regulations	Volume of information compiled and synthesised Uptake of recommendations into policy guidelines	Lack of an integrated review on coastal infrastructure mechanisms	Review and synthesise existing local and national mechanisms for planning and regulation of coastal infrastructure; harbour blasting guidelines and coastal zoning laws; identify gaps in policy and regulation	Report on regulations and zoning, published review document,	Data on coastal infrastructure regulations and planning is freely available
	3.2 Enhanced policy guidance for improved management of coastal infrastructure impacts on coastal habitats	Status of guidelines	Environmental and social impacts of coastal infrastructure is not reflected in related national regulations	Coastal Infrastructure Development guidelines developed and agreed to through community and agency consultation; with a focus on adverse impacts of infrastructure development to coastal habitats	Community consultation meeting reports, agency meeting reports Coastal Infrastructure Development Guideline published [Yr 3]	Infrastructure sector is willing to engage with environmental and social issues



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



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www.spc.int



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