



GEF Pacific IWRM Demonstration Project

Enhancing Water Security for Nauru through Better Water Management and Reduced Contamination of Groundwater



Nauru

Final Report

Nauru

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PREFACE

The National Outlook notes that since 2011, Nauru's water sector has been experiencing positive changes. The Department of Commerce, Industry and Environment (CIE) has established a water unit, which will be in charge of regulation and monitoring of the sector. The Water, Sanitation and Hygiene policy framework has been completed and endorsed by the parliament cabinet (February 2012), the Nauru Water, Sanitation and Hygiene Implementation Plan has been completed and was submitted to Cabinet on the 2 September 2013. Cabinet has endorsed the Terms Of Reference for the Water and Waste Management Masterplan and consultants are being engaged.

As part of the process of developing the Policy Framework, CIE established a Project Steering Committee (PSC) for environment projects which provides a platform for discussion and decision making involving heads of various departments interconnected with the sector. The PSC has improved transparency and coordination between government stakeholders. These recent initiatives have strengthened the policy and planning frameworks as well as coordination and decision-making of the water and sanitation sectors. This 'whole of government' approach has gone a long way in improving coordination in Nauru and establishes the framework for taking a more holistic approach to environmental management in the future.

Water is a scarce resource in Nauru as there is no surface water. Groundwater is slightly brackish and broadly polluted with fecal contamination which seriously limits its potential use. Rainwater is therefore the principal source of water with more than 90% of the population having access to rainwater harvesting facilities. However, climate variability is high in Nauru and drought periods are relatively frequent. After approximately a month without any rain, most of the domestic rainwater tanks are nearly empty. Desalinated water is thus vital for Nauru, especially during drought periods.

There are no official water demand figures but estimates consider at 1200 Kilo liter (KI) the daily demand for potable water. During average rainfall, domestic rainwater infrastructures are considered sufficient to meet this need. However, during extended drought periods, the total supply capacity of the island mostly relies on desalinated water. With a maximum water supply capacity nearly four times inferior to the demand (360KI/day) the scarcity of water became high. Thus, developing a drought coping strategy should be a government priority (WHO 2002, Falkland 2009). Maintenance is a general issue on the island. Since the bankruptcy of the state and major reduction in the country GDP, the government hasn't been able to maintain its national water asset and most of the old storage network either suffer from major loss or is out of order. At HH level, domestic income is often not sufficient to enable people to properly maintain their infrastructure.

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. According to the Joint Monitoring Program 2010, Nauru's access to improved sanitation facilities represent 50% of the population. However, sanitation facilities considered at low risk to the environment are probably significantly less than that. It is therefore recommended that sanitation issues and impact on groundwater quality be recognized as a national issue.

Community engagement and awareness is still relatively low on the island toward water protection, water efficiency, water quality and sanitation impact on the environment. There is no monitoring of the impact of sewage discharge on the coastal environment and sanitation is yet to be acknowledged as a major issue by the government. The projected impact of climate change will add complexity in Nauru's management of water and sanitation; droughts could become more frequent and sea level rise may threaten groundwater quality.

Since the National Outlook 2011, Nauru has made significant progress in the areas of policy frameworks for policy making, developing strategic plans and improving agency coordination and integrated decision-making. The IWRM programme has been a critical component of the progress achieved and the pilot project is testing options for addressing septic waste that are already being replicated at the national level. Nauru still faces several institutional challenges in order to continue strengthening management in these sectors.

Mr Elkoga Gadabu
Permanent Secretary for the Commerce, Industry and Environment
Chair of the Project Steering Committee





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

The Republic of Nauru is an isolated, uplifted limestone island located 41 km south of the equator at 0° 32' S latitude and 166° 05' E longitude. The total land area of Nauru is only 22 km² (2,200 ha). Small island nations in the Pacific, such as Nauru, have critical water supply problems. Nauru is a permeable island with very little surface runoff and no rivers or reservoirs. Potable water is collected in rainwater tanks from the roofs of domestic and commercial buildings. Water for non-potable uses is obtained from domestic bores at houses around the island. There are four small desalination plants on the island, of which two are operating and supply Menen Hotel.

Shallow groundwater is the major storage for water between rainy seasons. There is increasing salinity in the groundwater bores around the perimeter of the island, and increasing demand for groundwater water due to development. Groundwater is contaminated by wastewater disposal from houses, shops, and commercial buildings.

For Nauru the key water resource management issues that benefit from an IWRM approach are:

- The lack of a legal and policy framework for water resource ownership and management. Groundwater is owned by the landowners and not the nation. There is no legislative framework for water resources, sanitation and environmental matters.
- Capacity building in the area of integrated management. There is a shortage of capable people for water management and for maintenance of existing facilities.
- Poor wastewater treatment in septic tank systems and cess-pits, seepage of nutrients to groundwater and into the lagoon.
- Climatic vulnerability in water supply, particularly to drought.
- High power demand for desalination.

In May 2007, a number of Nauruan agencies and stakeholders participated in a HotSpot Analysis workshop facilitated by SOPAC's IWRM Programme. This workshop conducted an analysis of the issues of:

- Supply and demand for the supply of drinking water and institutional arrangements;
- Effects of sanitation practices on Nauru water resources; and
- Conservation and environmental issues.

The analysis identified a number of hot spots, which were ranked and assembled into a series of actions, including measures to:

- address water scarcity;
- reduce the demand for water;
- improve local skills and capacity;
- increase knowledge and understanding;
- explore potential groundwater resources; and
- integrate management activities.

The National demonstration project goal was to "Enhance water security for Nauru through better water management and reduced contamination of groundwater". According to the country diagnostic report and the hot spot analysis, there was a clear need to address some critical issues. National level capacity was one issue and the project participated in improving capacity building by increasing local skills and expertise in the water and sanitation sector through providing training and funding for an IWRM coordinator and stakeholder groups.



2. Management of the GEF Pacific IWRM National Demonstration Project in Nauru

The Department of Commerce, Industry and Environment (CIE) is in charge of 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, sanitation and climate change legal acts).

CIE is also coordinating donor aid projects related to water and sanitation such as The Pacific Adaptation to Climate Change (PACC), and Integrated Water Resource Management demonstration project (IWRM) and National Biodiversity Strategy and Action Plan (NBSAP). A significant part of the water sector management is done through the first two projects.

The national development plan recognized by the RoN government is the National Development Sustainable Strategy (NSDS as revised 2009) that provides broad goals for the water and sanitation sector and key performance indicators (3 non quantitative indicators).

Prior to the IWRM project there was a draft water plan developed in 2001 by WHO consultant Ian Wallis but it was not in use. The Water,

Sanitation and Hygiene Policy and the Implementation Plan, which were developed as part of the IWRM project, now provide the overarching framework and action plan for the water and sanitation sector.

Through the PACC and IWRM projects, CIE established a Water Unit in November 2011. The Water Unit is a grouping within the CIE Environment Division and has a budget for 2 permanent staff who were recruited in 2013. The budget for the Environment Division in the 2011/12 budget was A\$150,000. For the 2013/2014 budget, the allocation has increased by \$250,000 to a total of \$400,000, signaling the growing capacity and increasing responsibilities of the Division now that a framework for managing water and sanitation has been established, actions/costs identified and staff en situ.

The National Economic Infrastructure Survey and Implementation Plan was developed in 2011. This Plan highlighted water and sanitation issues and provided more detailed information on water infrastructure and investment planning. However, this document was developed by ADB and has not officially recognized as a RoN government document.

Lead Agency: Department of Commerce, Industry and Environment

Memorandum of Agreement Signed on the 10th July 2009 Signed on behalf of CIE: by Russ Kunn, Former Secretary for the Commerce, Industry and Environment

Signed on behalf of SOPAC by Mr Marc Wilson, IWRM Regional Project Manager

IWRM Focal Point

Mr Elkoga Gadabu

Secretary, Department of Commerce, Industry and Environment



National IWRM Project Manager

Mr Haseldon Buraman

Department of Commerce, Industry and Environment



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

During the inception phase of the IWRM project, national coordination for water and sanitation was driven by the former Aid Management Unit (AMU) and Development Planning and Policy Division (DPPD) (now grouped as Planning and Aid Division) from the Department of Finance. At this time there was no formal coordination within the water and sanitation sector nor the Environment Division.

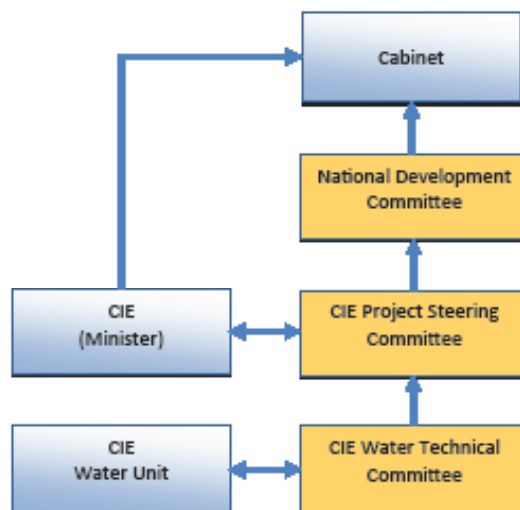
The first step was for AMU and DPPD to initiate the creation of a Water Technical Committee (WTC) in 2009 to start to address coordination processes. The whole-of-government IWRM WTC has representation from all government departments, agencies and State-Owned Enterprises with responsibility for supplying, monitoring, analysing, planning, managing, and reporting on the quality, safety, production, storage, losses, protection and uses of the nation's water resources and sanitation system. Decision-making under the WTC now mostly revolves around project design and implementation of projects such as the Pacific IWRM and the PACC project.

The next step was to develop a whole-of-government and community national environment, water, sanitation, energy, climate change and waste committee, chaired by CIE. This high-level committee is called the CIE Project Steering Committee (PSC) and was considered a sub-committee under the National Development Committee (NDC). PSC membership includes all the agencies involved in the Technical Working Group, but at an executive level. It also includes other relevant sectors such as the Department of Education, Women Affairs, RonPhos, Nauru Private Business Organisation and the Department of Finance. Further, the committee has 5 elected community leaders to represent the 15

Districts in Nauru. Having the community leaders included gives the committee a greater influence and ensures transparency in decision making processes. The PSC is responsible for steering and overseeing Government policy and plan implementation processes in the water and sanitation sectors as well as reporting to Cabinet through the NDC on implementation progress. The PSC reports to the NDC via its Chair. Until August 2013, the NDC was the only committee officially mandated to report to Cabinet. Recently, a new High Level Climate Change Committee was created which also reports to Cabinet. The new High Level Climate Change Committee met for the first time in September 2013.

Cabinet endorsed a Water Unit in order 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. The Unit coordinates monitors, plans and manages Nauru's water resources and their use. Further, the Unit will centralise data storage, analysis and reporting, is currently overseeing the development of a long-term water master plan and developing incentive schemes for increased community participation, improved rainwater harvesting and sanitation systems. The Water Unit works in close cooperation with the Water Technical Committee and its members. A full membership list and ToR for the Water Unit, WTC and PSC are found in Annex 1 and 2.

The diagram below describes the national governance arrangements for the water sector.



4. Planning Stakeholder Participation in the Execution of the Nauru GEF Pacific IWRM Demonstration Project

In order to ensure national and local ownership as well as transparency at all stages of the IWRM project cycle, stakeholder analysis was conducted at the project's inception. The aim was to identify key stakeholders that could influence prominent level decision making and drivers for effecting positive policy/institutional changes using an Integrated approach. A brief summary of the process involved is outlined below:

- Identify and list all stakeholders that would have a vested interest in the water and sanitation sectors.
- Carry out one on one interviews with stakeholders to address their core business function, key interests, available data and specialised expertise.
- Hold a workshop/meeting to listen to presentations from stakeholders on their core business function and define their linkages to the IWRM Project.
- Select and rank the key stakeholders according to their power influence level and prospective inputs towards the project implementation process.
- Detail information about the stakeholder such as their level of support, influence, and how the project could affect the stakeholder.
- Develop an action plan against each stakeholder on what the

project expects to gain from stakeholders, how it will engage with them and a timeline for the engagement.

Further, during the inception period both government and community leaders realised there was no formal communication link between the national and local level. Subsequently, the 14 districts (15 communities) formalised their own plenary called the Nauru Community Based Organisation (NCBO). They elected a Chair and Secretary and have submitted the forum to be endorsed by Cabinet (decision pending). Leaders from each of the Districts are represented on the NCBO and are democratically elected to represent the population of each community. The district councils are very organized and active. The Government of Nauru works in partnership with the NCBO for development projects that require community buy-in and ownership.

Stakeholders are engaged through the TWC, PSC and Community Based Organisation. For example, the TWC develops a plan it is then tabled through the PSC for endorsement as well as being discussed and often implemented through the NCBO. The success of this type of engagement strategy is demonstrated by the fact that the government are taking the same approach for other sectors. For example, they are currently working with the PSC and NCBO over expansion of the Refugee Processing Centre. The full stakeholder and engagement strategy can be found in Annex 3.





4.1 Gender Mainstreaming

Gender mainstreaming is notoriously difficult in the Pacific. While some significant advances have been made to close gender gaps, women continue to be under-represented in formal governance structures and at all levels of decision-making processes in Nauru. While women feature strongly in family and community events, and households and communities cooperate to share achieved goals, understanding of gender and equity issues by both men and women is not strong. The same can be said for other social groups such as children, youth and disabled people. While the older generation's decisions are respected and supported by younger family members, neither the elderly nor youth/children are specifically represented at any governance or decision-making forums in Nauru.

The 2011 Census made significant inroads into collecting gender and age disaggregated data, however, there have not been any dedicated studies on gender or youth relations in Nauru. In 2011, UNDP commissioned a desk review of priority documents to support the UNDAF process entitled United Nations Country Analysis Nauru 2011 which briefly reviewed available information on social demographics. This report has not been endorsed and relied heavily on a UNICEF report from 2005 which was largely no longer relevant. The Department of Women have a Policy and Action Plan for 2012 – 25 which has some clear goals for women's inclusion and empowerment in a variety of areas including Environmental Management. There is no supporting data, rationale, outputs, indicators, budget or designated person/agency for achieving the goals.

Every effort was taken to build women's and children's capacity, develop skills and ensure they had equal access to opportunities at all stages of the IWRM project cycle. Gender disaggregated data was collected in standard quarterly reporting throughout the life of the project. Given the national situation, the IWRM project has endeavoured to mainstream gender and social equity issues in the following ways:

Identification Phase: Analysis of Gender and Social Differences

Gender sensitive situation analysis and action planning was not conducted at the start of the project. The different needs of women and men, youth and elderly was not assessed. No stakeholder analysis to identify 'vulnerable social groups' was conducted.

Preparation and Design Phase

Stakeholder consultations were conducted during the preparation and design phases. A whole of community planning approach was taken. Relevant agencies such as Women's Affairs were consulted, however, there are no youth affiliations at either the government or community level in Nauru at this time. Youth was included in the project after implementation when it was recognized there were opportunities to engage this sector via the schools. Consequently, the project objectives and anticipated results are not socially segregated and the technical

design options and logframe did not consider the gender or youth perspectives.

A mainstreaming approach has been taken to gender as this project would not have any impact on access to resource control by men or women. A budget of A\$50,000 was ear-marked for targeted gender projects which could be financed by GEF SGP, however this has not been realized to date during implementation.

Implementation

All decision-making processes include the active participation of women. For example, the whole of community approach means women are included in all dialogue about the project as active members of the community, the NCBO includes women leaders, and the PSC has women government representatives from Women Affairs and Education together with the private sector. Women are also represented on the APEX body through the PSC and Women's Affairs.

Women have not been promoted as IWRM champions and neither have men. This opportunity has not arisen during the IWRM project. Schools and youth, however, are very actively engaged through Ministry of Education sector representation on the PSC and within the demonstration sites (schools were later mainstreamed into the project as demonstration sites for trailing compost toilet systems).

Training and Capacity Building

When schools became part of the project implementation process they were targeted for training and capacity building, which also included use and maintenance of the facilities. Apart from this targeted approach to including youth, training and capacity building has been a whole-of-community approach at organized community forums.

Gender considerations have been discussed with project staff members at national forums and through reporting, but they have not had the benefit of specialized training to assist them to address gender or vulnerable social groups interests within the project.

Monitoring and Evaluation

Reporting on fe/males is collated, however, age disaggregated data does not feature. Reporting requirements don't specifically highlight social groups but information is provided on the activities and impacts of different social groups as is pertinent to project implementation. Project activities, such as including schools as demonstration sites, have been adjusted as relevant to meet the needs of the community.

5. Results Oriented Planning and Implementation of the GEF Pacific IWRM Demonstration Project in Nauru

5.1 Logframe Development

An initial consultation workshop was the first step in taking a results oriented approach to planning and implementation for the Nauru project. A basic logframe was developed from issues raised during this forum and refined in consultation with stakeholders. Discussions were informed by recommendations from the Nauru Diagnostic Report, the Hotspot Analysis and representatives from different stakeholder groups. The logframe was finalised with technical support from RPCU to ensure that priority IWRM & Water Use Efficiency concepts were addressed by demonstration activities. The final logframe was endorsed by the PSC. The Nauru Project logframe is attached in Annex 4.

A results-oriented approach has been instrumental in guiding monitoring and evaluation throughout the life of the project. It has meant that it is possible to make adjustments to activities as the project commenced in order to achieve the intended results.

5.2 Priority Areas of Work and Results

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

Programme Goal: Sustainable Integrated Water and Wastewater Management in Nauru	
Programme Objectives	Priority Activities
Establish adequately resourced governance and management framework to support sustainable water management	IWRM Committee incorporating a range of government, private sector and community stakeholders overseeing implementation of IWRM plan. National water resource management policy and legislation based on IWRM framework implemented and adequately funded
Sound governance to provide confidence	IWRM Steering Committee established with clear roles & responsibilities, transparency and accountability
Stakeholder engagement strategy	Stakeholder engagement strategy in place raising awareness and capacity building supporting a sustainable IWRM plan
Complete targeted scientific and technical studies	A water & sanitation awareness developed to a level that enables stakeholder and community participation in IWRM management
Implement the IWRM Plan	IWRM plan integrated into national policies and legislations
Successfully deliver the Nauru IWRM Plan	IWRM Plan in place and enacted





The following table provides a summary of key results linked to the projects goal and objectives. A comprehensive review of National Results Notes linked to performance indications can be found in Annex 5:

ISSUE	KEY RESULT
Mainstream IWRM into national policies and legislation	National IWRM Water and Sanitation Policy endorsed by Cabinet in February 2012.
Develop an IWRM plan for Nauru	National IWRM Plan developed and submitted to Cabinet for endorsement on the 2 September 2013
Establish an IWRM committee to develop and deliver the IWRM plan	The Project Steering Committee (APEX Body), Water Technical Committee and Water Unit were developed and endorsed by Cabinet in November 2011. The TOR and names of members can be found in Annex 2 and 1 respectively.
Successfully develop awareness around water and sanitation	A National Community Based Organisation (NCBO) comprised of the leaders of the 15 Districts was also developed to aid communication and raise awareness of water and sanitation issues and project results. This coupled with a community outreach programme, placing some of the composting pilots in community facilities (2 schools) and partnering with others working in the sector such as the PACC project, has meant a collaborative approach to advocacy during events such as World Water Day, World Food Day and World Environment Day.
Develop options for better wastewater management to inform the IWRM committee	The project piloted three approaches to provide households with better wastewater management. The prototypes trialed were 1 composting toilet and 2 septic systems. The composting toilet pilot has already resulted in an Cabinet endorsed proposal to upscale the project with support from AusAID. Results from the septic systems outflow are still being gathered. It is expected that once a preferred system is identified that donor-funding will be sought to upscale and replicate the system throughout the country.
Develop strategies for reducing vulnerability to water shortages and drought	The development of the IWRM Plan identified a range of strategies to reduce vulnerabilities including developing a drought strategy, increasing household, district and national water storage facilities (non/potable), additional RO plants and reducing water loss from existing RO water processing and distribution.
Implement and successfully deliver the IWRM plan	The IWRM Project Manager is considered an integral member of the Water Unit and the IWRM project directly implemented activities within Policy goals 3 and 5 of the IWRM Plan. It also contributed to several components of Policy Goal 7. Details are provided in section 6.3.



5.2.1 Co-financing

The project has occurred at a time when a variety of different agencies are working to aid Nauru to address critical water and sanitation issues. The table below shows the additional in-kind and cash co-financing raised during the life of the project:

Direct from Lead Agency (US\$)		Other Government Agency (US\$)		Private Sector Sources (US\$)		Other Funding Sources (US\$)		Description of Co-Financing Raised
Cash	In-Kind	Cash	In-Kind	Cash	In-Kind	Cash	In-Kind	
2,000	1,000	1,000	4,000	4,000	2,000			2013 WWD Celebrations
	2,000		1,000			1.8M		20K litres concrete water tanks for households (AusAid)
	500		500			100,000		Household Septic Tanks (AusAid Global Climate Change Fund)
			600			92,500		Solar Water Purifiers (Japan GGP)
			30,000					Refurbishment of the Location Sewerage Network
	300		1000				251,148	Sustainable Water Supply for Nauru, exploitation of GW resources (Milan, Italy) [exchange rate of 1.32183 or 190,000Euro]
							750,000	PACC Project
							4 Million	New R/O plant (PEC)
						300,000		GEF SGP (core and CBA funding available)
							1 million	DRR EU B Envelop Water Security (0.5 million Euro)
							944,364	Rainwater Harvesting (AusAid)
							31,694	IWRM (AusAID)
							TBA	Rainwater Harvesting (Italy)
							TBA	Water Tankers (JICA)
							700,000	Borehole drilling/Groundwater monitoring (NRCOS)
			76,000			107,000		Census 2011 (Bureau of Statistics/AusAid)
						150,000		HIES Survey (Bureau of Statistics/ ADB/SPC)
2,000	3,800	1,000	37,100	4,000	2,000	2,549,500	TBA	TOTALS



5.2.2 Benefits of co-financing

The types of benefits integrated programming and additional resourcing can bring are highlighted through the example of close coordination with the PACC project which is detailed below.

Mavis Depaune, has been coordinating PACC in Nauru since it began in the same year as the IWRM programme (2009). PACC and IWRM have worked closely together. Being in the same office workspace, the Environment Division of CIE, has certainly contributed to the ease of building their relationship. The PACC and IWRM projects are complementary by nature as they address the two only water sources in Nauru: Potable (PACC) and Non-Potable (IWRM) water. The two programmes together provide a holistic approach to water management for Nauru. Below are the managers for the PACC and IWRM Projects Ms Mavis Depaune and Mr Haseldon Buraman.



Mainstreaming Water Management within Government

One of the key outputs of both the PACC and IWRM programmes was to build sustainability for water management within the Government of Nauru. One of the key deliverables of both projects was to establish the Water Unit within the Environment Division of CIE. They achieved the mainstreaming through the Water Unit being absorbed into the government system and structures. The Water Unit was further mainstreamed through the National Water Policy which was funded by IWRM and supported by PACC. The Water Unit also features as a lead implementing agency with specific responsibilities within the NWS Implementation Plan. This placed the Water Unit in the 'fabric' of water management and regulation in Nauru, and justifies lobbying for the Water Unit to be included for National Budget support in the 2013/4 budget.

Co-Financing and Catalytic Support for Community Outreach

Together, the two programmes have initiated a regular Community Outreach programme for raising awareness of water issues and building technical capacity towards local water management. Activities include the organization of events such as World Water Day and going to the communities for awareness-raising activities and familiarization activities. For example, PACC has brought members of its projects across to the IWRM composting toilet sites in order to demonstrate ways of reduce water use at the household level.

Strengthened Water Governance for Nauru.

One of the key benefits of hosting both programmes is that it resulted in strengthening the governance arrangements for water in the following ways: establishment of the Water Unit in CIE, development of the Water Technical Working Group (as a sub-committee of the PSC), development of the National Water policy, development of the National Water, Health and Sanitation Implementation Plan, and most recently, the development of the TOR for contracting expertise for the Water Master Plan and including water considerations within the Nauru National Budget 2013/14.

Future Collaboration and Cost-Sharing

For future upscaling of the IWRM Demonstration composting toilet prototype, it is possible to further address sanitation issues by the inclusion of facilities for washing hands. This would entail guttering around the roofline of the dwelling, down-pipes, taps and a handbasin with grey water being directed to the existing outflow treatment pipe. Further, this water system can provide additional water sources for families during times of drought. Technical support and co-financing for the upscaled prototype could be sourced through PACC, Japanese or the Community Based Adaptation funding window of the GEF Small Grants Programme.

Sharing Technical Expertise and providing In-Kind support

Treating groundwater with solar purifiers has been a key output of the PACC programme. To purify the water entails removing the salt, hydro-carbons, e-coli and other contaminants that are found in the groundwater lens in Nauru. As IWRM addresses non-potable water, the IWRM Project Coordinator was able to provide guidance to the PACC project on how to manage the contaminated outflow.





5.2.3 Key Awareness Materials and Media Coverage

Awareness raising on the issues and opportunities around water and waste management has been an on-going activity throughout the life of the programme. At the start of the programme, one-on-one meetings were held to sensitise key stakeholders to the issues and raise awareness of the options presented by looking at alternative approaches to managing septic waste, such as composting toilets.

In Nauru, the most effective way to raise awareness is to speak with people at district and community meetings or events. These have continued to be the main way to reach out to local groups. Formalising the NCBO meant there was stronger local governance for community outreach and interest in the outcomes from the non-demonstration communities has grown as the communities of Anetan and Ewa began to provide positive feedback on their experiences of the different systems. Similarly, the formation of the PSC has meant that community now participates formally at a high level and community experience can be shared and issues discussed.

Producing quality materials is a challenge in Nauru as printing and publication services are not available. Local TV, Radio stations, the internet and local newspaper are the key mediums being used for awareness. Initial planning for the project had high quality materials being produced, however this has needed to be adapted and the Project Manager has printed out most awareness materials such as hand outs on the office printer. These materials were not developed specifically for the programme. Hand-outs have been provided from existing sources such as other SOPAC water projects, "IWRM" online materials, Live & Learn tool kits, water conservation techniques and the fundamental principles of protecting the groundwater lens. Materials are distributed to community members during community outreach visits or through information kiosks during national/international events. In Nauru, events such as World Water Day and World Food Day were used as opportunities to showcase the IWRM project and raise awareness of the issues on a national scale. The benefits of this approach were discussed in the previous section.

For printed media in Nauru, there is 1 national newspaper named Muinen Ko (means 'tell us stories' or 'The News' or 'What's Happening') which is printed bi-monthly overseas and shipped back into Nauru. A copy of Muinen Ko which featured the IWRM and PACC projects can be found in Annex 6.

The IWRM project has been referenced and appeared many times in short clips on local news coverage. Awareness raising of the results of the systems trialled under IWRM will be the focus of the programme over the coming months. Several videos have been developed to support these activities.

5.3 Catalytic Impacts

The IWRM project has had a range of catalytic impacts at different stages during project implementation. A summary of key examples where the national demonstration project helped to catalyse change are noted below:

Investment for Upscaling and Replicating Successful Pilot Activities

In August 2013 Cabinet endorsed a proposal for A\$300,000 from AusAID to upscale and replicate the composting toilet prototype. The model will be replicated in the remaining households of Anetan and Ewa who can use these systems as well to other Districts. The model will be upscaled to address hygiene by including water tanks, guttering and handbasin facilities. Further, it can also include solar lighting systems. These elements could be funded through partnerships with GEF SGP and Japanese aid.

Once results are available from the septic trials, CIE has support from PAD to replicate the optimal system throughout Nauru. A New Project Proposal will be developed at this time and funding sought at the Donor Roundtable in December 2013.

Partnering with PACC for Community Outreach and Capacity Building

As outlined in section 5.3.1 above, PACC and IWRM worked together to initiate a regular Community Outreach programme for raising awareness of water issues and building technical capacity towards local water management. There is interest from associated sectors expand this programme to include other important issues for households and families such as health and agricultures.

Behavioural Change and Strengthened Governance at the Community Level

The process of addressing septic issues through trialling different systems has resulted in emerging behavioural changes such as accepting an initially unacceptable system and interest in the compost by-product as a fertiliser for home gardens. It has also brought the school and community together on an important project and demonstrated that it is possible for community members to implement programmes. The development of the NCBO led to a formalised plenary for the Districts which has meant greater transparency. For example, local people know about government and donor initiatives and have the opportunity to provide feedback. It also gives local people a groups a platform bringing issues and sharing experiences at the national level. This forum has led to the greatest national exchange, debate and learning about the IWRM programme – from the two demonstration community representatives to the other 13 Districts.

Broadening the Scope of National Governance Structures

The IWRM and PACC projects facilitated the development of the CIE Project Steering Committee. The PSC has since been endorsed by Cabinet and broadened its membership to move beyond CIE departments to also include 4 community District representatives from the NCBO, some State Owned Enterprises (RonPhos), Department of Women's Affairs, Ministry of Health, Ministry of Finance and the Ministry of Environment. It is likely that the PSC will continue to expand its membership in order to provide a whole-of-government approach to integrated resource management.

Stimulating Planning and Regulation

The IWRM project supported the development of Water and Sanitation Policy development and an Implementation Plan. This has led to a recommendation to take the next step of developing a Water and Sanitation Masterplan to direct planning and economic investment. The IWRM Project Manager has developed the New Project Proposal and Terms of Reference for the Masterplan. The tender will be placed in September 2013 and it is intended the Masterplan will be completed by December 2013.

Strengthened CIE Water Unit

A project outcome was to establish a Water Unit. The scope of the Unit has grown beyond initial projections of two full-time staff. In 2012/13 the first national budget allocation of A\$150,000 was provided to the Unit. In the 2013/14 budget it has been increased to \$400,000. As the regulatory and monitoring functions of the Unit start to be realised it is expected that both staff numbers and budget allocations will continue to increase.

5.4 Participatory Planning, Monitoring, and Evaluation

There are multiple and varied planning, monitoring and reporting requirements as part of the GEF Pacific IWRM Project. These were discussed and agreed during the project's Inception Workshop in September 2009 and were adopted as part of the operation of Nauru's national IWRM demonstration project. Participatory approaches to appraisal, collection of baseline information, planning frameworks and monitoring has been systematic throughout the life of the project. See Annex 7 for the comprehensive participatory monitoring and evaluation framework.

Participation and engagement of key project stakeholders including community groups and Non-Governmental Organisations, the project coordinating committee (NCBO), national Lead Agency (CIE), Cabinet, national development partners (members of the PSC), and global

donors interests were considered during project planning for the project, including monitoring, evaluation and future reporting.

The key principles used in developing the project planning, monitoring, and reporting approach were to:

- Better inform an "IWRM continuum of transition" in the relevance, effectiveness, efficiency, results, and sustainability of investment in IWRM.
- Facilitate good governance of demonstration project activities, including areas of project finances, coordination, planning, capture of lessons learned, and technical quality assurance.
- Ensure efficient and cost-effective compliance of reporting requirements of the Republic of Nauru, SPC/SOPAC, UNDP, and the GEF.
- Ensure relevance of the information and data collected, and that data on project results can be rolled up and down, from "Community to Cabinet" and from "Country to Global Donor".
- Draw on participatory Most Significant Change (MSC) techniques which act to monitoring and validate reported project impacts on behaviour.

The full participatory planning, monitoring, and reporting framework can be found in Annex 7. Below are brief summaries of the process throughout the life of the project.

Project Planning

The first support for planning was through the CIE Environment Division. Later, the CIE Water Unit and Project Steering Committee have also provided guidance and oversight. The Water Unit and CIE Environment Unit both meet weekly. The PSC meets as required.

By 2012 the Water Unit had established four working sub-committees that meet fortnightly. The sub-committees are: Water, Governance, Biodiversity and Climate Change. These committee primarily act as planning, coordination and oversight of activities in these sector. Efforts are 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 are formulated and endorsed by the sub-committee it is then presented to the PSC for final approval.

Project Monitoring and Reporting

As outlined in the planning process, the CIE Environment Unit and Water Unit meets weekly to discuss progress of the IWRM project and



how activities integrate with other CIE responsibilities and national-level initiatives and commitments. The TWC also reviews progress and ensures activities are aligned with key activities.

The WTC is required to report annually to PSC on progress of plan activities carried out by its member Departments, Agencies and Corporations. District committees and CBOs who also participate in plan activities are able to report progress through CBO members of the PSC. The PSC, in turn, is required to report annually through CIE to NDC on project results. The NDC then transmits approved report summaries to Cabinet.

At the project level, regular monitoring is conducted quarterly and submitted to the RCPU. This information is made available to the CIE Unit and other forums on request. Periodically the project produces reports specifically for certain agencies as a requirement as well as number of agencies / communities to create awareness. In order to keep Cabinet and policy makers informed, the project periodically prepares Cabinet papers and Cabinet briefs for policy and planning purposes.

Participatory monitoring at the project level is conducted at regular intervals. During the construction phase of the septic and composting systems, process was monitored daily in order to trouble-shoot and learn from the process. After the systems were constructed, the first

few months weekly monitoring was conducted. For both the septic and composting systems there were initially functional issues. All issues were able to be addressed as soon as they arose. For the septic systems, water was not flowing through the pipe in the second stage of the baffled system. The system needed to be opened up, aggregate changed and broader pipes installed to enable water to flow through the system. For the composting toilets, there was initially an issue of 'hot air' flowing up through the pedestal. This had a positive effect of causing compensation to form in the bowl which meant the system appeared to be 'self-cleaning'. The negative impact is that it was not pleasant to have the hot air draft. It transpired that the size of the down-pipe was not to spec and when the larger pipe was applied the issue ceased.

This type of 'participatory monitoring' has continued over the subsequent project phases. The success of the approach is demonstrated in that families piloting the composting toilets changed chambers for the first time without insisting the Project Manager be present. Instead, he came and reviewed their changes once they had shifted the pedestal and bolted the top chamber lid.

Since the systems have been functioning, monitoring information has been collected on a monthly basis from the pilot sites. Information collected has been focussed on use, changing behaviours, uptake, maintenance of the systems and lessons for replication.



6. Strengthening National Coordination and IWRM Policy and Planning in Nauru

6.1 Linkages of Demonstration Activities with IWRM Planning

To summarise, the Pacific IWRM demonstration project has contributed to the National IWRM planning process by:

- Raising public awareness on linkages between sanitation practices and groundwater pollution.
- Actively engaging all major stakeholders within the CIE Project Steering Committee and the Technical Working Committee.
- Facilitating the development and implementation of the: National Water, Hygiene and Sanitation Policy framework; National Water, Sanitation and Hygiene Implementation Plan; and Water and Sanitation Masterplan.

The IWRM Project Manager has also been involved as an advisor with numerous other planning processes such as Climate Change Adaptation, Disaster Risk Reduction, Fisheries, Agriculture, Health and NBSAP initiatives.

6.2 Improving National Coordination for IWRM

The IWRM Project has been central in establishing the TWC, the PSC (national APEX body), the Water Unit and the NCBO. The TWC acted as the national apex body from 2009 to 2011. Early in 2011, the CIE Steering Project Committee was created and endorsed by Cabinet. The PSC has since facilitated the following actions:

- Approval of compost toilets demonstration sites in the Anetan Infant and Kayser College schools following an expression of interest from the Secretary for Education in the 3rd committee meeting.
- Decision on the technology chosen for implementation of pilot techniques as part of the Pacific IWRM project.
- Decision on the technology chosen for the implementation of pilot techniques as part of the Pacific Adaptation to Climate Change (PACC).
- Endorsement of the first Water, Sanitation and Climate Outlook, acknowledging issues and emerging challenges in the water and sanitation sector.
- The Water, Sanitation and Hygiene Policy development and Endorsement process (facilitated by Professor Ian White).
- The Water, Sanitation and Hygiene Implementation Plan development and endorsement process.
- The Water and Sanitation Masterplan Terms of Reference Development.

- Endorsement of the first stage of concept development for the International Waters component of the GEF Ridge to Reef programme.

- The committee also endorsed a new ToR to be called the National Committee for Water, Energy and Waste. During the next few months, the committee will develop a work plan to work toward achieving the new policy goals and targets. The Water Unit will be central in assisting the committee to develop its workplan and facilitate its work.

6.3 National IWRM Planning

The National Water, Sanitation and Hygiene Implementation Plan (NWSHIP) was submitted to Cabinet for endorsement on the 2 September 2013 and is a fifteen year plan to implement the Republic of Nauru's 2011 National Water, Sanitation and Hygiene Policy (NWSHP), which sets out the visions, goals and objectives of the Government of the Republic for water and sanitation.

The purpose of the Plan is to:

- 1) Set out activities to implement the Policy's goals and objectives.
- 2) Identify performance indicators for these activities and methods for monitoring performance.
- 3) Assign responsibilities for carrying out activities.
- 4) Mainstream integrated water resource management and climate change, and
- 5) Give a timetable for implementing activities.

The Implementation Plan adopts the vision of the NWSHP which aims to engage the whole community in policy implementation. The 2005-25 Nauru National Sustainable Development Strategy (NSDS), revised in 2009, provides three goals for the water and sanitation, waste and sewerage and environment sectors. The Ministry of Commerce, Industry and Environment's (CIE) Project Steering Committee (CPSC) combined these NSDS goals to produce the vision for the NWSHP which is also the vision for this Implementation Plan:

“Reliable, safe, affordable, secure and sustainable water supplies to meet socio-economic development needs and appropriate sanitation systems for healthy communities and environments.”

The policy and plan development processes involved individual consultations with key stakeholders as well as workshops with the WTC and the PSC. Workshops were used to identify the issues to be addressed, the policy vision, theme, goals, objectives and priorities and the plan to implement the policy goals through selected activities with identified lead agencies and time lines. The process was facilitated by Professor Ian White of the Australian National University, supported



by Louis Bouchet, consultant for SOPAC and PACC together with the IWRM and PACC coordinators Haseldon Buraman and Mavis Depaune respectively. Colleagues from CIE, WTC and the CPSC played a central role in developing the policy and its implementation plan. The process was supported by SOPAC, with funding support from the European Union (EU) through the IWRM project, which provided a strong base for policy and plan development.

The following key issues are 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.

Further, the NWSHP and NWSHIP processes identified the need for a Water and Waste Masterplan Plan that comprehensively assesses:

- available water sources
- current and projected future water demand
- required water production, storage, treatment and delivery systems
- demand management, water tariffs, equity and restrictions in droughts

- safe, sanitation systems, sewage and sludge treatment options
- options for investment, and
- methods for maintaining political and community support for a sustainable strategy.

The IWRM programme directly supported the implementation of NWSHIP:

Policy Goal 3: Sanitation systems introduced which meet appropriate sanitation needs, minimise impacts on the environment and encourage improved hygiene.

Sub-goal 3.2: Sanitation systems and practices introduced to minimise land and groundwater pollution and health impacts, mandatory in new government and public buildings

Sub-goal 3.3: Training programs for maintenance of household sanitation systems introduced

The IWRM programme also directly contributed to all activities of:

Policy Goal 5: Clear, consistent and transparent system of water and sanitation policy, plans and laws established identifying organisations, roles, responsibilities for managing, conserving and protecting water resources

And some components of Policy Goal 7 (within the IWRM pilot communities of Anetan and Ewa):

Policy Goal 7: Community aware of the issues and actively engaged in planning, protection and conservation of water and improvements to household water and sanitation facilities

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

7.1 Lessons Learned

Lessons were learnt throughout the project development and implementation process. The following table captures key lessons and provides guidance when replicating or upscaling activities:

Project Preparation and Design	
Community Consultation	Ensuring buy-in and transparency from the start meant that government and community groups were committed. Establishing and formalising the NCBO was of immeasurable benefit for implementation. For example, during demonstration site selection. It meant that there was agreement and transparency over the two sites selected (located in areas with the best water quality and short surface substrate - up to 2 metres).
Gender and Social Equity and Empowerment	A mainstreaming approach was taken and could be strengthened for future programme implementation by providing additional technical gender-sensitive support during the design and planning phases. Baseline gender and age disaggregated data as well as a gender action plan would improve gender and social equity outcomes.
Agency Coordination / Government Support	This was critical from the onset to ensure government were supportive and understood the approach. Without endorsement of processes and steps within the project at the national level then support would have been lost. This has repercussions for the uptake of the results of the demonstration activities and long-term sustainability. Working through Cabinet endorsed processes is the only way to ensure national integration.
Support from RCPU	Technical support for building capacity, trouble-shooting, planning approaches and facilitating access to regional technical experts (SOPAC and Southern Cross University) was critical for project success.





Implementation	
Establishing the NCBO	Ensuring a gender balance at the community level was important to facilitate equal access to opportunities and ensure women's and men's concerns were addressed. There was no youth representation on the NCBO, or any other committees, despite the school and children being mainstreamed into the project itself through project activities (placing the composting toilets within 2 schools). For the future, engaging youth formally through endorsed committee plenaries would be recommended.
Composting Toilet Design, Construction and Maintenance	<p>Overcoming socio-cultural barriers to composting toilets took support from RCPU, who provided guidance and access to information about other composting toilet systems and experiences in the region (the SOPAC design which was also used in Tuvalu).</p> <p>Finding people who would trial the different systems was a challenge. The PSC decided to keep the trials in the same two districts in order to have greater targeted impact on water quality and build awareness in a 'hub'.</p> <p>Ensuring there is keen interest in an improved septic system is also critical. Households who have had an interest in the system for personal reasons from the start such as wanting the compost by-product for their home garden or liking the prospect of reducing environmental stresses which are a direct result of their activities, or even a large family with a failing flushing system, have been engaged throughout the project, maintain their system and have even changed over chambers without any reminders. They also gladly accommodate testing/monitoring and are keen to improve designs and share their experiences with others.</p> <p>On-going and regular consultation with the families and communities involved in the project was necessary to ensure the end product would be something they would use.</p> <p>It is essential that designers, builders and the person in the household who is maintaining the system: a/ understand the design and b/ the Project staff are on-site daily to guide progress</p> <p>Monitoring of the composting toilets revealed that those that had been given to individual households and a well-run school, rather than one of the poorer schools, has resulted in regular maintenance of the systems. In the future, if toilets are to be placed in other schools or community facilities then strategies to ensure the systems are maintained needs to be addressed as part of the planning phase.</p> <p><u>Toilets need to be close to houses. People do not want to walk too far to get to a toilet, particularly in the dark.</u></p>
Septic Tank Design, Construction and Maintenance	Building on other models to meet the Nauru context was a key lesson. The addition of sand filters and changes to structural dimensions in order to accommodate the Nauru physique made the system more effective, acceptable and contributed to positive behavioural change.
Working with Contractors	Briefing contractors so they understand the purpose and function of the systems they are building – particularly if it is new technology. Being on-site daily to trouble-shoot and provide guidance.
Establishing the Water Unit	A key governance mechanism for coordinating water and sanitation planning and regulation for Nauru. Having other technical project staff such as PACC and NBSAP brings further co-financing and collaborative opportunities. Fostering synergies with other Government programmes and donor-funded projects through the Water Unit is now possible. Having local government officers to support each of the projects further mainstreams the projects within government and ensures local capacity is being built within the Water Unit.
Developing National Policy, Implementation Plans and the impending Water and Sanitation Masterplan	Critical to have the national framework established in order to have a cohesive approach, clear goals, plan for future complementarity and source funding.
Support from RCPU and opportunities to build capacity	On-going technical support to the Project Manager has been critical. Attending regional training has a broad range of capacity building benefits. Ensuring that junior government staff can also be included in these forums would further build capacity and mainstream the IWRM programme at the national level.

Monitoring and Evaluation	
Conducting sampling and analysing results	Systems need to be working before bringing outside expertise in to perform testing. The project needs to have the equipment, training and preferably laboratory facilities in Nauru to avoid unnecessary consultancy fees and delays in getting results. Analysis could take place overseas if the raw data could be provided from Nauru.
Developing strategies and regular monitoring	Documenting monitoring and reporting on outcomes is critical for capturing processes and sharing lessons with national and regional stakeholders. It is important for future replication. Further, if regular monitoring is not conducted it can result in delays to timelines and important information/lessons in areas of interest to government and potential donors can be lost. Areas of interest include gender and social equity and empowerment, stakeholder engagement and participatory monitoring strategies.
Replication and Upscaling	Working closely with Government helps facilitate future replication and upscaling. Government need to understand how projects support national goals, reduce environmental stress on scarce water sources and could bring environmental, sanitation and hygiene benefits in the long-term. Because government was engaged since the very beginning of the project, suggestions to upscale the composting toilet system has been met with unanimous support by other government departments and the PSC. The IWRM Project Manager was asked to prepare a New Project Proposal for A\$300,000 to replicate the programme. The initial design could also be upscaled to include water tanks, handbasins, guttering and solar panels for improved hygiene through hand-washing and improved energy efficiency when powering the lights. Other options for donor support are being explored (SGP and Japan).
Addressing all stages of the waste management cycle	Due to financial constraints the demonstration project did not address all stages of sanitation management. It addressed primary and secondary treatment but not disposal and treatment of septic sludge. This compromises the function of the system but also means contaminated sludge is leaching into the groundwater table and continuing to be dumped onto the reef. Thus, the demonstration project addressed part of the problem. The NWSHIP and Masterplan also outline for the later stages of the waste management cycle to be addressed as critical issues.





7.2 Replication and Scaling Up

Replication and upscaling activities have been engaged since mid-2013. This has been possible due to the awareness raised and positive outcomes being expressed by the people directly involved with trialling the systems. The NCBO, PSC and regular departmental meetings have been of great benefit for engaging opportunities for replication. Three different approaches are being taken to this last component of the project. There is strong interest in replicating the septic toilet systems, replicating and upscaling the composting systems, and continued support for upscaling policy and planning by providing on-going support for the Water and Sanitation Masterplan. These are discussed more below with more information on this aspect of the project being found in the Replication and Scaling Up Strategy in Annex 8.

Composting Toilets

At the start of the project, community uptake for the concept of composting systems was thought to be constrained by a lack of interest, understanding and acceptance in this type of technology (Kasanga 2010). At the end of the IWRM project, community uptake has steadily increased, although it must be noted that a composting system will never have 100% acceptance in Nauru. The trials, however, have been well-received, community members are asking to have the systems, and government believes they could be suitable for community facilities (schools) and as additional household toilets. The reason for this

outcome, despite initial reluctance to consider composting, is due to several key steps undertaken by the IWRM Project Manager including:

1. Investigating options and impacts
2. Consulting with National Level Governing Structures
3. Consulting with the Communities
4. Identifying challenges, mitigating risks and investigating local needs/context
5. System Design
6. Testing the Design

These steps are explained in detail below:

Step 1: The Project Manager initially focussed on identifying socially acceptable septic designs that could be adapted for the Nauru context. However, after investigations, it became clear to him that they still used a high volume of water to function and he was not convinced that the sand filters could adequately improve water quality. This led him back to reviewing the composting systems and considering what might help local people to better understand the system and even want one. After extensive research on composting systems, he identified a design used



by SOPAC in Vanuatu which could be a viable prototype. Subsequently, the RCPU Technical Advisor, David Duncan, shared the IWRM experience in Tuvalu of designing and installing composting toilets. Tuvalu had a similar community-based approach and their design-phase revealed that household composting systems, rather than community-shared systems, was more acceptable to local people. The reason for this was that no-one takes responsibility for community systems unless they are part of a community facility such as a school or church.

Step 2: The IWRM Project Manager presented the option of including a trial for composting toilets in Nauru to:

- CIE Environment Division
- The Technical Water Committee
- The Project Steering Committee

They endorsed trialling of a compost system despite the risks identified by Kasanga.

Step 3: Finally, the Project Manager presented the idea to the communities of Anetan and Ewa. Consultations with both groups revealed that for Nauru, extended families who lived next to each other might share a system. Similar to communities in Tuvalu, Nauruans did not want shared community facilities. They wanted individual household toilet systems. This resulted in a change to the original project design and one family and one school (1 toilet for girls and another for boys) in Anetan and Ewa were identified to trial the composting toilets.

Step 4: Another key component of challenging local people's perceptions of composting toilets was developing a desirable design for the Nauru socio-cultural context. The Project Manager identified that the design needed to be:

- Durable in harsh environmental and coastal conditions (salt/wind/rain)
- Designed for people from small children to larger adults
- Easily and affordably constructed on-island
- Constructed from locally-sourced materials and local labour
- Presented in a way that was pleasing to use and could be personalised based on a families needs
- Cost-effective

- Sustainably maintained with parts sourced locally.
- Relatively quick to construct (one week)

Step 5: To design a system to meet the needs of the Anetan and Ewa communities, the Project Manager sourced a local draughtsman. The Project Manager also needed to familiarise the draughtsman with the concept and function of composting toilets as he was not familiar with them. The draughtsman designed a prototype, cost construction and accompanied the Project Manager on another phase of community consultation in order to refine the final design. The final prototype cost A\$5,000 per unit. Sourcing materials was the next step. Materials needed to meet the same key factors as outlined in Step 3 above and were included as part of the construction tender. Again, as this was the first time that composting toilets had been built in Nauru it was important to ensure the builders/drain-layers understood how the system functioned.

Step 6: Once the toilets were in place, the next step was to test them before they were used. The Project Manager designed a simple yet effective method where he placed a burning coconut husk (smoking) into one corner of the active side of the chamber. He locked the chamber up, waited and watched the ventilation chimney to see if the husk was continuing to burn. When smoke was coming out of the pipe, he went into the toilet and lifted the lid. There was no smell of smoke whatsoever from within the toilet cubicle or coming up through the pedestal.

He then placed another coconut husk directly under the pedestal chute. Again, there was no smoke coming up through the pedestal or in the toilet cubicle itself. The science behind this outcome is that cold air is pushing down faster than the hot air is rising. This meant smoke was circulating around in the chamber and exiting via the ventilation pipe.

Not content with just one test, the Project Manager did the same thing with a bucket of fish guts. He put a container of fish-guts in the chamber at 10.30am on a Saturday. At the same time the following day he went into the toilet cubicle and there was barely a fraction of fish-smell when he lifted the seat lid. The smell dissipated as soon as the lid was opened. He then opened the chamber, which was reeking, and the bucket of fish remains was seething with maggots. The Project Manager returned to check the chamber at 2pm the following day. The bucket was empty with minimal smell, clean bones and no maggots. He was impressed.

The Next Steps: As the positive impacts of reduced water use and the success of community uptake has started to be reported, other members of the Anetan and Ewa communities are becoming interested in these systems and wanting them for themselves. The chambers need



to function for a year and then settle for a year before the compost by-product can be used. This 2 year period concludes towards the end of 2013 and coincides with World Food Day in October 2013 where the Project Manager will be showcasing the results.

Other donors, projects and government officers have 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, the IWRM Project Manager was asked to write a New Project Proposal in August 2013 which the government endorsed for a A\$300,000 composting toilet programme. Further, discussions on upscaling the approach have been taking place to also address hygiene and sustainability issues. These discussions concluded with the options of also including water tanks, guttering and handbasin facilities, as well as solar lighting, to further add value. Potential donor support for these additional components could be sourced from GEF SGP or Japanese Aid. The design for the composting toilets, agency coordination and approach to community engagement will be taken directly from the IWRM project and based on the composting toilet prototype. Thus,

building on the success, key results and lessons from the IWRM project.

Septic Systems

Results from the septic systems outflow are still being gathered. It is expected that once a preferred system is identified that donor-funding will be sought to upscale and replicate the system throughout the country.

Developing the Terms of Reference and implementing the Water and Waste Masterplan

The IWRM project supported the development of Water and Sanitation Policy development and an Implementation Plan. This has led to a recommendation to take the next step of developing a Water and Sanitation Masterplan to direct planning and economic investment. The Masterplan will include clear goals for replicating and upscaling both compost and septic systems. The IWRM Project Manager has developed the New Project Proposal and Terms of Reference for the Masterplan. The tender was placed in September 2013 and it is intended the Masterplan will be completed by December 2013.



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

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

The priority actions for IWRM in Nauru are to endorse the Masterplan and identify budget sources for implementation leading up to the Donor Roundtable in December 2013. In the meantime, the priority actions for the IWRM Demonstration project are for the IWRM Project Manager to collect the final results from the septic trials, continue to raise awareness raising through community outreach, ongoing monitoring and public forums such as international events, as well as continue working with CIE Environment Unit and PAD to replicate and upscale the demonstration activities.

The transition to a Ridge to Reef approach has been discussed with CIE, the Water unit and the PSC. The concept has been embraced as a conduit to Nauru's national goals of taking a more integrated approach to natural resource management through integrating management of groundwater and coastal pollution. The NSDS, NWSHP, NWSHIP and Masterplan all clearly make this link. The next steps are to broaden governance structures, through focussed technical working groups or plenary's such as the PSC. Embracing a holistic approach has already started within CIE who now host climate change, biodiversity, water and sanitation, and sustainable land management programmes.

With sanitation being a critical element in both using scarce water supplies and in the contamination of groundwater and coastal waters, It was considered essential that sanitation issues be addressed in the Masterplan. The R2R approach also embraces this approach, and given that other donors are now better placed to take the results of the IWRM

Demonstration Project and execute larger-scale infrastructure projects of this nature, the suggestion for the next phase is for the IW concept to move beyond piloting sustainable options for household sanitation. It moves to the next step of the waste treatment process, which is disposing and treating outflow. The focus will change to what happens after the sewerage is pumped out of the septic tank. It increases the scope of the first Demonstration to also include broader coastal, marine health and waste disposal issues on Nauru.

The approach further expands the IW scope from households and schools, to also include waste from government buildings, restaurants, hotels, the Refugee Processing Centre (RPC) and other private sector businesses. This proposal adds value by recycling water for irrigation and creating compost that can be used for increased food security.

There is also the opportunity to broaden the waste management scope of this project by reviewing pollutants from dumping of waste at the two dumps on Nauru (one for RPC and one for local disposal of waste). Both dumps are unlined and toxins leach into the ground water table. The dumps need to be reviewed, rationalised, lined and ponds created for tertiary treatment. The same pond could also be used for the disposal of septic waste.

In close collaboration with the Ministry of Fisheries, Health, land management and biodiversity programmes, a programme of desk reviews and field studies can establish baselines, identify technology options, system design, awareness raising, capacity building, regulatory frameworks, construction, distribution and on-going monitoring for establishing a feasible national waste management system for Nauru. For more details on the proposed concept see the logframe in Annex 9.



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Annex 1: CIE Project Steering Committee member list



Annex 2: National Water, Energy and Waste APEX Body ToR



Republic of Nauru

National Water, Energy and Waste APEX Body

-Terms of Reference -

DRAFT FOR COMMENT

I. BACKGROUND

I.A. Apex bodies: Definition

According to the Asian Development Bank (ADB), a national water APEX body (or overarching body) is a national organization that guides the water sector in reforms for both water services and resource management. It is ideally a consortium of representatives from nearly every relevant sector and stakeholder group. Considering Nauru's limited number of stakeholders, past reports have mentioned the possibility to form a larger scope committee, which will also encompass energy and waste management.

The National Water, energy and waste APEX Body is thus a platform to facilitate decision making between the various sectors and stakeholders. Its role is to first ensure that national strategy toward water and sanitation, energy and waste is contextually relevant, achievable and up to date and secondly to ensure that each individual effort successfully achieve national objectives for water and sanitation, energy and waste.

I.B. History and Context

Water is a scarce and precious resource in Nauru. Its management has been for a long time left to the former Nauru Phosphate Corporation (NPC), mainly because of its financial capacity to provide with production and delivery of large volume of desalinated water. Since the de-commission of the Multi-effect Distillation (MED) in 2006, NUA is now operating 3 RO plants with a much smaller capacity. Nowadays, most of the water is collected at a domestic level using rainwater as a primary source. Extremes drought event such as the one of 1998 to 2000 or more recently in 2010-2011, outbreak of water-borne diseases, brackish and contaminated groundwater are reminder of the need to improve national water and sanitation management.

Responsibilities for Water quality, availability and reliability are shared between the community and various government agencies. Recognizing this contextual situation and acknowledging the efficiency

of having a whole of government approach toward water and sanitation management, the CIE Environment division decided to form the Steering Project Committee as a high level steering committee in early 2011. As of the 24 of August 2011, the CIE Project Steering Committee has hosted 4 meetings, allowing important decisions in the sector such as:

- Implementation of Compost toilets in Anetan and Kayser College schools following expression of interest from the Secretary for Education in 3rd committee meeting
- Decision on the technology chosen for implementation of pilot techniques as part of the Pacific IWRM project
- Decision on the technology chosen for the implementation of pilot techniques as part of the Pacific Adaptation to Climate Change (PACC)
- Endorsement of the first water, sanitation and climate outlook, acknowledging issues and emerging challenges in the water and sanitation sector
- Beginning of the water, sanitation and hygiene policy development process facilitated by Professor Ian White

With the National Water Sanitation and Hygiene currently developed, it is urgent to appoint the steering committee as the official National Water, energy and waste APEX body. That will support the policy development process and strengthen the capacity of the committee.

Water, waste and energy are 3 interdependent sectors. Water production is one of the main consumers of power and waste management can have a great impact on environment and groundwater resources. Acknowledging this strong relationship, past reports identified that a committee for water, energy and waste will be a powerful platform to integrate this 3 components together.

I.C. Rationale: The strategic importance of a National Water, Energy and Waste APEX Body (NAB)

The advantages of a whole-of-government and community coordination committee on water waste and energy are²:

- Coordination of government agencies with responsibilities in the water, waste and energy sectors;
- Facilitation of the development of broadly-based policy on water and sanitation, waste and energy which is consistent across sectors and with other related government policies;
- Identification of mutually-agreed priorities and processes;
- Provision of broadly-based advice to government on water and sanitation, waste and energy;
- Improvement in administration efficiency because advice and proposals have been thoroughly discussed and vetted before they go to Cabinet via the National Development committee;
- Increased multi-sectoral understanding of the condition of the nation's freshwater resources, water supplies, sanitation services, energy supplies and capacity and waste services and disposal through coordinated monitoring and assessment;
- Increased understanding and the opportunity for community participation in water and sanitation waste and energy;
- Provides a single forum for interaction and information dissemination between agencies, NGOs and the community;
- Produces coordinated and thoroughly reviewed water and sanitation, waste and energy proposals for the Government of Nauru and for donor and investment organisations;
- Increases confidence of donor and investment organizations in the sector.

I.C. Mission Statement

1. To coordinate, facilitate and enhance government and community activities and actions for the water and sanitation sector in order to ensure that the population has access to:

² Adapted from White 2006, The national water and sanitation committee, Strengths, Proposed Mission, Aims, Terms of Reference, Coordination, Reporting and Composition, Republic of Kiribati



- A reliable, safe, affordable, secure and sustainable water supply to meet socio-economic development needs and appropriate sanitation facilities for healthy communities and environment (National policy vision for water and sanitation)

2. To coordinate, facilitate and enhance government and community activities and actions for the waste and energy sector in order to ensure that the population has access to:

- A reliable, safe, affordable, secure and sustainable energy supply to meet socio-economic development needs (NSDS goal for energy)
- An effective management of waste and pollution that minimizes negative impacts on public health and environment (NSDS goal for waste and sewerage)

I.D. Aims and Objectives³

Aims:

1. Promote:
 - the sustainable management, conservation and use of water and related land resources
 - the sustainable management and use of energy with emphasis on renewable, clean and cost efficient energies
 - the sustainable management, disposal and treatment of waste and sewerageby implementing Government policy and by coordinating and enhancing Government and community activities and involvement.
2. Facilitate and enhance initiatives to raise the quality of life by improving the quality and availability of safe water and decreasing illness and infant mortality rates due to water-borne diseases.
3. Facilitate and enhance initiatives to raise the quality of life by improving the quality (i.e. reliability and capacity) of energy supply and waste management (i.e. cleaner environment, reduction in levels of pollution for land and natural resources)
4. Coordinate and facilitate information gathering and assessment, policy and instrument development and review, and identification of other needs for the water and sanitation, energy and waste sectors in Nauru.
5. Provide broadly-based strategic advice to the Government of Nauru, the community, non-government and donor organizations on the nation's water resources and sanitation /energy and waste priorities, services, their management and use.

Objectives:

1. Coordinate and enhance the strategic activities of Government Ministries in the water and sanitation, waste and energy sectors to ensure sustainable management.
2. Facilitate and coordinate the review and assessment of water and sanitation/waste/energy-related policies, regulations, plans, instruments and standards and make recommendations to Government on policy development, program implementation and potential improvements.
3. Provide the Government with broadly-based, coordinated, strategic advice on priorities for water and sanitation, waste and energy and on related development opportunities.
4. Provide a national forum for the discussion of water, waste and energy-related issues.
5. Every first year, coordinate and facilitate a ***national assessment report*** on the quality and quantity of water resources, water consumption, rainwater harvesting and demand for water and encourage strategic systematic monitoring (format for the report will have to be defined in the working plan along with a monitoring framework for water services)

³ Adapted from White 2006, The national water and sanitation committee, Strengths, Proposed Mission, Aims, Terms of Reference, Coordination, Reporting and Composition, Republic of Kiribati

6. Every second year, coordinate and facilitate an **outlook on water and sanitation, waste and energy** (format for the report will have to be decided in the work plan).
7. Coordinate and facilitate assessments of risks in the water and sanitation, energy and waste sector and possible adaptation strategies in relation to global change and extreme events (in coordination with DRM)
8. Enhance and coordinate strategies to improve community understanding of and participation in water and sanitation use and planning and in furthering water conservation and protection.
9. Enhance and coordinate strategies to improve community understanding of and participation in energy savings, environmental protection and domestic waste management (i.e. disposal and recycling)
10. Coordinate the review and assessment of, and prioritise and make recommendations on proposals for water and sanitation /waste/energy-related projects.

II. MANDATE

II.A. Role

The National Committee for Water, Energy and Waste is mandated by the RoN government to be the national overarching body for water, energy and waste. The committee should be used as the forum for **ALL** water and sanitation, waste and energy- related issues, investment planning and policy development/review processes.

II.B. Powers

Under its mandate, the NAB can:

- Request information from government institutions on policy processes and related documents pertinent to water, sanitation, energy or waste management
- Make recommendations on water, sanitation, waste and energy related:
 - National strategy
 - National plans
 - policy frameworks
 - project proposals
 - investment planning
 - issues
- Give directions to project coordinators and international aid actors on project design and implementation

II.C. Responsibilities

The NAB as the responsibility to

- Inform the communities on outcomes of its meetings. This should be achieved using the CIE online Center and Facebook page
- Coordinate and facilitate annual assessments of performance toward national objectives in water and sanitation, waste and energy sectors. (national assessment report and outlook)
- Annually report to the parliament cabinet on outcomes of meetings and national assessments
- Special report to the parliament cabinet when necessary

II.D. Core values

- Sustainable management
- Environmental protection
- Transparency



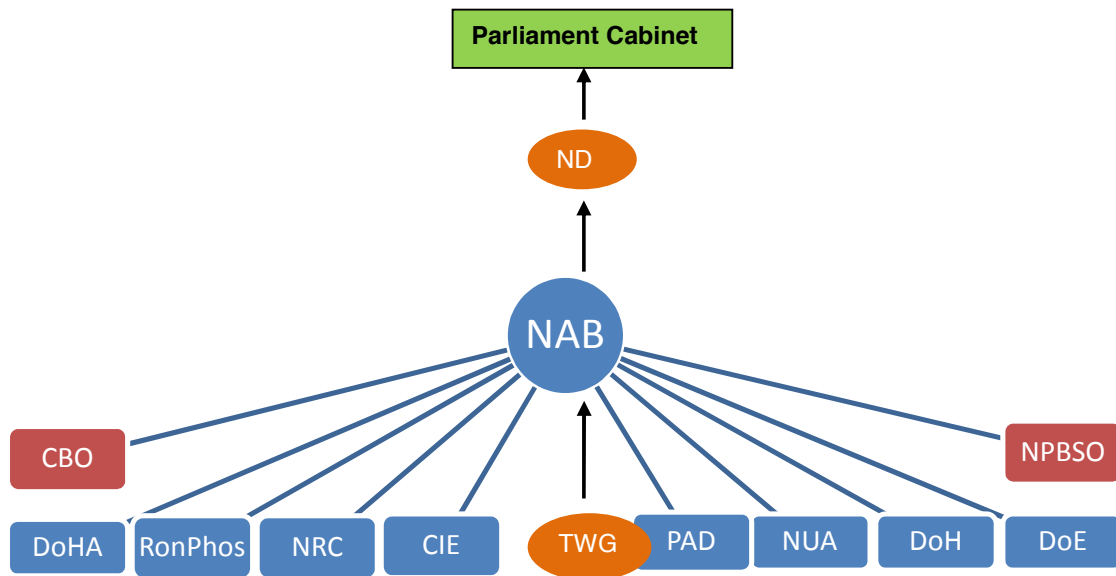
- Accountability
- Social and gender equity
- Cost-effectiveness

III. WORKING ARRANGEMENTS

III.A. Structure

Note: According to ADB, it is vital for the national APEX body to separate from a ministry of water or environment to ensure impartiality in decision making. However, in the Nauru context, as the NDC is the only committee reporting to the parliament cabinet, the NAB could report to the NDC via its chair according to the following arrangement (graph 1).

Graph 1: The National Apex body and its actors in the decision making process



III.B. Membership

Membership in black is the current CIE Project Steering Committee membership. In red are addition suggested for the NWAB. In case one of the following member cannot attend a meeting, they are requested to appoint the most senior of their staff.

1. Secretary for CIE [**Chairperson**]
2. Director for Project, [**Vice Chairperson**]
3. Mavis Depaune (PACC Co-ordinator) [**Secretary**]
4. Haseldon Buraman (I.W.R.M Co-ordinator)
5. Lockley Denuga (Nauru Private Business Sector Organisation)
6. Terangi Adam (Ronphos)
7. Fiona Laeo (CBO Representative Ubenide)
8. Mark Hiram (Nauru Utilities)
9. Dempsey Detenamo (CBO Representative Boe/Aida)
10. David Dowiyogo (CBO Representative Ubenide)
11. Taiatu Ataata (Deputy director PAD, AMU Finance)

12. Samuel Grundler (Director PAD, AMU Finance)
13. Godwyn Debao (CBO Representative Yaren)
14. Charmaine Scotty (Secretary for Home Affairs)
15. Elda Harris (Treasury Finance)
16. Nerida-Anne Hubert (CBO Representative Blues)
17. Sunia Sokai (Secretary for Health and medical services)
18. Vinci Clodumar (CEO NRC)
19. Monte Depaune, Acting CEO for Fisheries

III.C. Administrative functions

- The Chair as responsibility to pass on information, recommendations, documents and request to the NDC.
- The Vice Chair is taking the chair functions if the chair is not able to attend a meeting.
- The secretary as responsibility for taking minutes during each meeting and to publish them on the CIE online resource center.
- The secretary is responsible for preparing documents to be reviewed by the committee and to circulate them among all members of the committee.
- Temporary secretaries can be named for a short period of time (e.g. during a national assessment). Responsibilities for each temporary secretary will be then clearly recorded in the related minutes.

III.D. Work planning - M&E

Annually, the NAB should engage in an assessment of water, sanitation, waste and energy services and management. This is proposed to be achieved in two times:

- **Every first year:** *A National assessment report.* A short report focusing mainly on water management including: Quality and quantity of water resources, water consumption versus demand, rainwater harvesting capacity, Ro capacity and monthly production, waste management capacity, energy supply reliability
- **Every second year:** *A National outlook on water, sanitation, energy and waste.* This could involve empowering a local consultant looking at the performance of defined indicators for each sector. The outlook will also look at major issues and emerging threats with emphasis on the core values of the NAB (Sustainable management, environmental protection, cost effectiveness, transparency, accountability and gender and social equity)

To start this process, the NAB should first engage in the water, sanitation and hygiene policy development process (2011) and set up a work plan. Indicators will need to be setup to monitor progress toward national strategy. A monitoring framework would need to be set up to enable efficient and relevant national assessment.

III.F. Reporting obligations

The NAB has an obligation of reporting:

- To the community, other government agencies and supporting international agencies via the CIE Environment website
- To the parliament cabinet via the National Development Committee (The NAB's Chair should be representing the NAB interest within the NDC)

Reporting documents are:

- Meeting minutes
- Work plan
- Policy documents
- Outlooks



- Annual assessment reports

III.G. Meetings

- Meeting are held at the Parliament conference room
- Meeting are to be announced at least 4 days in advance
- Documents to be reviewed during committee meeting are to be distributed to the members via email at least 3 days prior to meeting
- Meeting minutes from the Technical group are to be forwarded to the committee prior meeting (i.e. If a technical meeting has been held previously)
- All members can contribute to the development of a document using Google doc for CIE environment

III.H. Communications and Information Management

Reporting obligations and archives for the NAB:

- Meeting minutes are to be published on the CIE Environment resource center within a week after every meeting
- Meeting minutes are to be stored in CIE shared Harddrive under "Steering Committee" folder
- Any official document produce by or under supervision of the steering committee (such as policies, national assessment and outlooks) should also be store in the CIE Library and published online

Available resources on water, sanitation and climate in Nauru, Regional and Global context:

- A selection of up-to-date and relevant resources are available online on the CIE Environment library (<http://nauruenv.appspot.com/library>)
- SPREP library on Nauru: http://www.sprep.org/publication/pein_nauru.asp
- SOPAC Library: <http://www.sopac.org/index.php/virtual-library>
- Meeting minutes from past Steering committee meeting are available online at: <http://nauruenv.appspot.com/psc>

III.I. Resources and financial administration

Currently funded through PACC and IWRM project

Annex 3: Stakeholder Analysis and Engagement Action Plan



Annex 4: IWRM Logframe

Nauru Project Logframe

Enhancing Water Security for Nauru through better Water Management and reduced contamination of Groundwater

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	<p>Goal: Sustainable Integrated Water and Wastewater Management in Nauru</p> <p>Purpose: Position Nauru to manage its wastewater and water resources in a sustainable manner, incorporating climate change adaptation</p>	<p>National Water & Sanitation Plan in place and implemented to support Nauru in reducing numbers of water related disease and public demands of water from utilities decreased, increasing national reserves of potable water and groundwater being cleaner & safer for all uses</p>	<p>Initially, tabling of Plan in Parliament. Longer-term: -Health reports -Utilities monthly water despatch reports -Health & Community monthly records on sanitation systems & water monitoring program -NRC bore monitoring monthly reports</p>	<p>Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel</p>	
	<p>Component 1. Establish an adequately resourced governance and management framework to support sustainable water management</p>	<p>IWRM Committee incorporating a range of government, private sector and community stakeholders overseeing implementation of IWRM plan. National water resource management policy and legislation based on IWRM framework implemented and adequately funded</p>	<p>Cabinet submission, Government Gazette declaration of IWRM Committee members and relevant roles and responsibilities.</p>	<p>Assumption – Government commitment to implementing IWRM nationally and specifically, to cede IWRM decision-making to committee.</p>	
	<p>Output 1.1 Mainstream IWRM into national policies and legislation</p>	<p>IWRM options for mainstreaming into the national policies and/or legislation</p>	<p>Cabinet Submission final report.</p>	<p>National IWRM Plan implemented through lack of political will or change in enabling environment. Delay in delivery causes loss of political/community momentum.</p>	
Activity 1.1.1	<p>Review legislative requirements for mainstreaming IWRM into national policies and legislation</p>	<p>Report recommending strategies for mainstreaming IWRM into national legislation and/or policies</p>	<p>Final report submitted for Cabinet Endorsement</p>	<p>Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel</p>	
Activity 1.1.2	<p>Develop National IWRM Plan</p>	<p>National Plan submitted for Cabinet endorsement</p>	<p>Copy of the plan published in the Government Gazette</p>	<p>do</p>	
Activity 1.1.3	<p>Develop draft legislation and/or policies as required to improve water & wastewater</p>	<p>Draft legislation/policies completed and submitted to Cabinet for endorsement.</p>	<p>Legislation/Policies being Published in Government Gazette</p>	<p>do</p>	

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	management				
Activity 1.1.4	Develop and implement strategy to develop political support for mainstreaming IWRM into legislation and national policy	Supporting strategy provide to Cabinet for consideration	Enactment of policies and progressive reports	do	
Activity 1.1.5	A Water Sanitation and Hygiene Policy Draft	Water sanitation & Hygiene Policy submitted to government to be adopted	Cabinet Submission & Government Gazette.	do	
	Output 1.2 Review government arrangements to provide enabling environment for IWRM	Clear roles and responsibilities in water resource management across government	Cabinet endorsing the roles and responsibility and Publishing it in the Government Gazette	Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
Activity 1.2.1	Review institutional arrangements for IWRM to provide enabling environment for IWRM	Report outlining opportunities and barriers for IWRM implementation in Nauru and government agency roles and responsibilities	Cabinet recognition of the responsible agency and its roles	do	
Activity 1.2.2	Make recommendations to the Government of Nauru on the institutional arrangements for IWRM and possible management agencies	Recommendations submitted to the Government of options and Managing Agency identified	Steering committee Minute with Cabinet Submission	do	
	Output 1.3 Develop IWRM Plan for Nauru Develop through community engagement, based on sound scientific data, management strategies based on a ridge to reef approach and strategies to increase technical and institutional capacity	IWRM Plan management in placed with strong support from the communities and relevant stakeholders	Endorsement from the National Steering Committee	Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
Activity 1.3.1	Synergise technical, community and economic studies	Report to form component of the Draft IWRM Plan consultation package.	Plan endorsed by Cabinet	Recruitment/retention of suitably skilled personnel; risks to various individual components do not compromise the value of the information	
Activity 1.3.2	Define level of acceptable risk in cost-benefit framework	Acceptable level of risk clearly defined in the IWRM management plan	Steering committee endorsement of the Draft for Cabinet Submission	Risks to various individual components do not compromise the value of the information; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation	



ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
Activity 1.3.3	Develop Draft IWRM Plan	IWRM Plan drafted for consultation	Steering committee endorsement of the Draft for Cabinet Submission	Recruitment/retention of suitably skilled personnel; risks to various individual components do not compromise the value of the information	
Activity 1.3.4	Undertake stakeholder consultation	Stakeholders consulted and agreed on the Plan	Stakeholders meeting Minute	Risks to various individual components do not compromise the value of the information; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation	
Activity 1.3.5	Complete Nauru IWRM plan	Nauru IWRM Plan implemented and endorsed by Cabinet	Cabinet Submission, Government Gazette	Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
Activity 1.3.6	Development and endorsement of national IWRM indicators	Indicators endorsed by APEX body and reported nationally	APEX body minutes Presence of indicators in national level reports	Capacity to influence political process; political commitment	
	Output 1.4 Capacity developed Nationally and resources allocated to implement policy	20% increase in national budget for IWRM activities by 2012	Endorsement by Cabinet	Co-funded Component subject to co-funding partner's priorities, resources and timeframes; Political will	
Activity 1.4.1	Support development of sustainable funding for implementation of Policy	20% increase in national budget for IWRM activities by 2012	Endorsement by Cabinet	Co-funded Component subject to co-funding partner's priorities, resources and timeframes; Political will	
Activity 1.4.2	Develop national participatory indicator framework to support IWRM implementation	National participatory M&E Framework established APEX body using Most Significant Change (MSC) and reflection and learning techniques Relevant national staff trained in participatory M&E methods	Endorsement by Cabinet Annual indicator reporting to Cabinet APEX Body Minutes Training Records Records of PM&E Consultation	Political will	
Activity 1.4.3	Support the development of a national Strategic IWRM communication plan	National Strategic IWRM Communication Plan	Endorsement by APEX body	Co-funded Component subject to co-funding partner's priorities, resources and timeframes; Political will	
	Component 2. Sound governance to provide confidence in the transparency, accountability and credibility of decisions	IWRM Steering Committee established with clear roles & responsibilities, transparency and accountability	Ministerial Endorsement, Cabinet Submission	Capacity to influence political process; Significant changes in enabling environment, including but not limited to	

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
				political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
	Output 2.1 Establish IWRM Committee to develop and deliver the IWRM Plan	Multi-sectoral IWRM Steering Committee established with at least 33% female membership	Ministerial Endorsement, Cabinet Submission	Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
Activity 2.1.1	Develop governance framework for IWRM Committee, including Terms of Reference, roles and responsibilities and legislative and institutional links	Terms of Reference, Roles and Responsibilities identified, including Agency roles and responsibilities Authority formally embedded in legislation	Cabinet Submission & Government Gazette	do	
Activity 2.1.2	Develop support structure for IWRM Committee, including an executive capacity	Executive support appointed and finance in place	do	do	
Activity 2.1.3	Establish IWRM Committee	Appointment of IWRM Committee members, Cabinet Signoff on IWRM Committee	Committee Meeting Minute, Cabinet Submission	do	
Activity 2.1.4	Identify options for sustainable financing (and institutional home) of IWRM Committee, IWRM Plan and other Project Outputs	Budget provision identified and in place to sustain the IWRM Project	Government Budget report	do	
	Component 3. A stakeholder engagement strategy that raises awareness, increases participation, particularly of marginalised sectors, and builds stakeholder capacity to support a sustainable IWRM plan	Stakeholder engagement strategy in place raising awareness and capacity building supporting a sustainable IWRM plan	Stakeholder engagement strategy	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities)	
	Output 3.1 A Communication Strategy that facilitates increased engagement, identifying mechanisms for communicating issues, outputs and outcomes to key stakeholders and incorporates approaches targeting communication of issues, engagement opportunities and capacity building strategies to marginalised stakeholders	Communication strategy developed that facilitates increased engagement opportunities for communicating issues	PSC endorsement, Minute	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities)	
Activity 3.1.1	Develop communication strategy in consultation with key stakeholders to raise	Communication strategy in place that accounts IWRM awareness	PSC endorsement	do	



ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	awareness and understanding of water issues and uptake of tools				
Activity 3.1.2	Develop range of communication tools to support the communication strategy	Range of Communication tools identified for the communication strategy	Clearly defined list of options on communication strategy endorsed by PSC	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities)	
Activity 3.1.3	Compile data on relationship issues between human health and integrity of the ecosystem and environment for public awareness	Public information Data compiled clearly identifying issues and gaps between human health, environment and ecosystem	Awareness program, campaign and workshop	do	
	Output 3.2 Participation Strategy to increase stakeholder engagement in identifying problems and options, decision making and implementing solutions	Stakeholder Engagement Plan with Communication strategy in place	PSC endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities); Capacity to retain upskilled personnel; Individual mindset being negative about the project; Stakeholders continues segregating their activities linking to waste & water management	
Activity 3.2.1	Develop strategy to increase stakeholder engagement in water and wastewater management, including strategies to engage and empower vulnerable stakeholders	Stakeholder engagement Plan in Water Use & Wastewater Management clearly identifying governance	Community awareness workshop records PSC endorsement of Stakeholder Engagement Plan	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities); Capacity to retain upskilled personnel	
	Output 3.3 Capacity Building to provide community awareness of the importance of sanitation and waste management and water conservation, leading to enhanced water hygiene and sanitary practices; Agency and community representatives knowledge and skills adequate to lead the community and local water officers and key stakeholders skilled in water and wastewater management	Capacity building and commitment Involvement of stakeholders in the communication and awareness programme of water & sanitation management and WUE 30% increase in gender balanced community and wider stakeholder engagement in water related issues 50% increase of community engagement with government	Awareness Workshop reports, media coverage & PSC endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities); Capacity to retain upskilled personnel	
Activity 3.3.1	Undertake capacity needs assessment for	Completion of technical, governance,	Capacity Assessment Report endorsed by	Assume that assessment is able to be	

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	stakeholders, governance, technical and institutional needs, identifying long-term needs and priority areas for capacity building	institutional, community and managerial capacity needs assessment	PSC with defined capacity areas to be addressed and prioritisation of capacity areas	representative of broad stakeholder interests; changing political and stakeholder focus may date the strategy rapidly.	
Activity 3.3.2	Develop capacity building strategy, incorporating awareness, partnerships and education, linked to engagement and communication strategies	Capacity building strategy, identifying strategies to address priority and long-term capacity needs, as well as strategies to maintain and build on existing capacity Numbers of qualified local people available in & championing water sustainability by end of project	Capacity building strategy tabled and accepted Workshop reports & community activities kept by District Water Champions	Assume that assessment is able to be representative of broad stakeholder interests; changing political and stakeholder focus may date the assessment rapidly	
Activity 3.3.3	Develop capacity building toolkit	Develop tools identified in capacity building strategy, with a focus on priority needs	PSC endorsement of toolkit	Capacity building tools prepared in absence of initial assessment on the existing capacity and the priority needs. Capacity Tool cannot be tailored to suit each community	
Activity 3.3.4	Conduct Workshops on water conservation awareness in community centres, TV talk shows and radio announcements	30% of Household family member attending workshop on management of priorities of environment sustainability	Awareness workshop reports from organiser & Community Water Representatives endorsed by PSC	Frequent promotional events & activities conducted by respective agencies. Media supporting and approving airing of promotional programs Strong support from the Government & State owned Enterprises	
Activity 3.3.5	Increase targeted water and wastewater management skills through local training workshop (Train-the-trainer), implementing targeted training programs and providing scholarships for development of water officers	Two key stakeholder members trained in Water & Sanitation Management, providing training sessions Increase in national staff (both men and women) across institutions with IWRM knowledge and experience by end of project	Records from Training Officer, Education Department endorsed by PSC	Trained & qualified personnel taking the lead in water conservation and waste management activities, reducing the need of overseas consultants	
Activity 3.3.6	Conduct public education program on sanitation and water efficiency awareness	2 representatives from each communities taking the lead in educating & training their own community groups on Sanitation, & Water related issues.	Awareness workshop report endorsed by PSC	Frequent promotional events & activities conducted by respective agencies. Media supporting and approving airing of promotional programs Strong support from the Government & State owned Enterprises	
Activity 3.3.7	Conduct media promotion on personal hygiene & water usage	Weekly Educational Radio and TV programs produced and aired nationally. (3-5 mins short video presentation, 30 mins radio talkshow)	Broadcasting station (TV/Radio) programs	Frequent promotional events & activities conducted by respective agencies. Public Communication medium promoting waste management, water conservation and local environment sustainability Media supporting and approving airing of promotional programs Strong support from the Government & State owned Enterprises	
Activity 3.3.8	Implement other activities in capacity building strategy through awareness raising campaigns, targeted workshops, partnerships, broad consultation,	Annual reporting identifying reduced needs for lower capacity development and increasingly complex capacity development needs	Awareness programs, workshop reports, school activities Annual progress reports endorsed by PSC	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial	



ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	recruitment, education and use of booklets			stability, political commitment and natural disasters (which might increase support but delay activities); Capacity to retain upskilled personnel	
Activity 3.3.9	Develop animated/Documentation video on how DCT works and the impacts to the environment. Project awareness on water related issues in country	Public knowledge on DCT, knowledge of IWRM approach to address water resources issues in Nauru.	Copy of DVDs, endorsement by PSC for broadcasting on local tv and distribution to the public	Reliant on out source expert and availability of suitable equipment for production, quality of production	
	Component 4. Complete targeted scientific and technical studies to inform water and wastewater management	A water & sanitation awareness developed to a level that enables stakeholder and community participation in the development of integrated water & wastewater management plan.	Water & Wastewater management plan endorsed by Cabinet	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results	
	Output 4.1 Develop options for better wastewater management to inform the IWRM Committee	Best practices on water use efficiency & wastewater management identified with recommendation for PS Committee 20% reduction in groundwater pollution from sewage and manure over site	PSC Minute/endorsement Groundwater monitoring program results endorsed by Steering Committee	New Sanitation Policy enforced Sewerage removal services reliable Communities providing labour assistance to the projects	
Activity 4.1.1	Conduct feasibility studies on the rehabilitation of the NPC system using sea water or other water source for flushing of toilets.	Consultant(s) full evaluation report submitted for PSC & Government consideration & endorsement	Cabinet submission	Communities willing to accept the proposed system, landowner failing to cooperate, reliant on co-funding activities, capacity to influence political support	
Activity 4.1.2	Conduct inventory on districts HH Rainwater Harvesting & Sanitation systems	Inventory on HH Water Harvesting & Sanitation systems, identifying types and status.	Inventory report endorsed by Technical Committee	Communities not cooperating, lack of manpower/will power to collect data.	
Activity 4.1.3	Identify and recommend most suitable methodology/prototypes to upgrade and improve the existing HH sanitation and wastewater systems to reduce contamination to the underground water	Options and appropriate prototype systems identified for PSC consideration	Cabinet submission on preferred method/system for demo	Mismatch of systems failing to take into consideration of relevant issues due to financial limitations, high cost of system and lack of after sale support. Restriction of area space for the new system. Not accepted by communities.	
Activity 4.1.4	Identify suppliers and procure required prototype sanitation systems. MoA on warranty, technical support and installation/maintenance/user training programs.	Suppliers identified & Quotation with after market support agreement provided for PSC consideration	PSC endorsement to proceed with procurement	Communities not cooperating, target area/household not secured as a result of demand, system being damaged or parts pilfered during transit, system failure in performance, lack of qualified people to install and maintain	
Activity 4.1.5	Identify suppliers and procure grey	Suppliers identified & Quotation with after	PSC endorsement to proceed with	Communities not cooperating, target	

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	wastewater treatment systems. MoA on warranty, technical support and installation/maintenance/user training programs.	market support agreement provided for PSC consideration	procurement	area/household not secured as a result of demand, system being damaged or parts pilfered during transit, system failure in performance, lack of qualified people to install and maintain	
Activity 4.1.6	Procure constructional services to install the prototype systems	Constructional service engaged in installing the prototype systems	Endorsed Contract/ToR	Insufficient fundings, inadequate equipment, tools and skilled manpower	
Activity 4.1.7	Identify household or community areas where prototype systems to be installed	Targeted HH or area being identified, proposal submitted for PSC consideration	PSC endorsing of proposed location for the prototype.	Communities lack of will power to volunteer, size of work involved being underestimated, proper equipment and basic tools not available. Communities not willing to cooperate	
Activity 4.1.8	Install prototype (Sanitation and greywater) treatment system in targeted household or in selected areas	Prototype treatment system installed into targeted HH or area for trial and monitoring on feedbacks	System performance assessment reports replication strategy	Insufficient fundings, system mismatch, underground water test negative contamination	
	Output 4.2 Develop strategies for reducing vulnerability to water shortages and drought	Water Use Efficiency strategies developed and in place.	PSC endorsement & Cabinet Submission	Assumptions: National potable water supply is sustainable	
Activity 4.2.1	Increase coverage of suitable rainwater tanks (sustainable for 30-40 years) through procurement	Majority of dwellings have suitable tank harvesting rain water by end of project	AMU, DPPD & ECW Statistic records on numbers of dwellings with suitable water tank(s) & recently installed tanks	Sourcing of alternative non-portable water source to Location not supported by government/Additional tanks not provided Household roofing, gutters and downpipes in poor conditions or damaged not harvesting rain Communities perception on water & waste management being negative	
Activity 4.2.2	Review potential groundwater options for water supply under day-to-day and emergency response conditions, outlining limitations, threats, capacity and mechanisms for development	Report produced with recommendations.	PSC endorsement and Cabinet Submission	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results	
Activity 4.2.3	Develop Replication Strategy aligned with recommended institutional changes for replicating the study learnings and outcomes locally, nationally and regionally	A plan identifying water and wastewater management needs at a national level, identifying mechanisms for transferring learnings and tools and key policy and financial enabling factors Replication Toolkit, National scaling-up by June 2013, including inclusion of lessons in national project activities	PM progressive reports	Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation	
Activity 4.2.4	Community awareness on climate change	Communities now more conservative and	Workshop report endorsed by PSC &	Changes in stakeholder roles,	



ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
	proofing measures ensuring resilience to water shortages and droughts	prepared to the climate change impact	promotional & educational materials on water conservation and best practices	responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters (which might increase support but delay activities); non-existence of contingency plan	
	Component 5. Implement the IWRM Plan	IWRM plan integrated into national policies and legislations	Cabinet Submission & Government Gazette	Reliant on donors providing support to strengthen the program, with associated funding, commitment, integration, resources and timing concerns; Assumed that sufficient information is obtainable to provide confidence in decisions, adequate resources available, adequately skilled people can be attracted and retained	
	Output 5.1 Appropriate monitoring to assess potential changes to groundwater	Monitoring program implemented	Results assessed and annual reports tabled to PSC & Cabinet	Monitoring & Evaluation programs not practiced; Contamination induced from other sources other than anthropogenic	
Activity 5.1.1	Monitoring pollution from anthropogenic sources to show improving quality of underground water	All ground water sources & Sanitation systems, inspected & monitored	Results assessed and annual reports tabled to Cabinet	do	
Activity 5.1.2	Treatment of shallow wells & boreholes close proximity of sewerage systems	Shallowwells & boreholes in critical location being inspected more regularly and treated	health officers inspection report	do	
Activity 5.1.3	Monitor the prototype systems and any activity changes to its environment/community feedback	Trial systems including its environs being closely monitored and user feedback recorded	Feedback/evaluation reports	do	
Activity 5.1.4	Develop water/sanitation audit toolkit for community uses and self evaluation at household level	User friendly Water/Sanitation evaluation toolkit developed and available to communities	Availability of the Toolkit	Toolkit not available, insufficient funding to sustain production of toolkit, communities not the benefit of the assessment	
	Output 5.2 Executive and secretariat support for IWRM Committee as identified in IWRM Plan	Establishment of support staff	Ministerial approval and information being Gazetted	Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation	
Activity 5.2.1	Identify PSC support requirements, roles and responsibilities and funding mechanisms	ToR and guidelines on roles and responsibilities with funding mechanisms	ToR with clear funding mechanism	Lack of political will to support sustainable funding mechanisms	
Activity 5.2.2	Establish executive support unit	Water Unit established	Focal Point endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political and financial	

ACTIVITIES	DESCRIPTIONS	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS/RISK	Responsible Agency
				stability, political commitment and natural disasters (which might increase support but delay activities); Capacity to retain upskilled personnel	
	Component 6. Successfully deliver the Nauru IWRM Plan	IWRM Plan in place and enacted	Stakeholders progressive reports	Reliant on donors providing support to strengthen the program, with associated funding, commitment, integration, resources and timing concerns; Assumed that sufficient information is obtainable to provide confidence in decisions, adequate resources available, adequately skilled people can be attracted and retained	
	Output 6.1 Successfully managed project				
Activity 6.1.1	Establish Project Management Unit	Establishment of PMU Office including staff recruited	Signed Contracts, Office location.	Assumed that adequately skilled people can be attracted and retained	
Activity 6.1.2	Identify stakeholders, including co-funding donors and clarify roles, expectations and responsibilities	key stakeholders, co-funding donors identified with clear roles & responsibilities	Stakeholders workshop & MoA	Changes to stakeholders throughout the project have the potential to change project focus	
Activity 6.1.3	Manage budgets, deliverable and timelines	Budget & AWP in place	PSC endorsement	Further changes to GEF budgets or co-funding may compromise all three components. Risks identified above also likely to impact on budgets, deliverables or timelines	
Activity 6.1.4	Develop and implement project participatory M&E programme	Participatory M&E programme Project Reporting incorporating M&E Results	Endorsement of Steering Committee	Stakeholder cooperation	



Annex 5: National IWRM Results Note

Implementing Sustainable Water Resource and Wastewater Management in Pacific Island Countries



GEF PACIFIC IWRM PROJECT RESULTS NOTE

<http://www.pacific-iwrn.org/results>

RSC 5 2013

Enhancing water security for Nauru through better water management and reduced groundwater contamination



Top 3 Project Results

1. Establishment of a cross-sectoral APEX body (PSC) with broad commerce, community and government membership, supported by a sub-committee known as the Water Technical Working Group. To ensure transparency an community based plenary was also formalized called the NCBO. All of these groups were national firsts, and these committees are now being used by multiple sectors for national coordination
2. Upgrading sanitation at 40 household locations and several schools to provide safe access to improved, environmentally sustainable sanitation
3. Establishment of a National Water, Sanitation and Hygiene Policy and Implementation Plan, with planned core national budget support and which mainstreamed IWRM water and sanitation solutions that have been demonstrated through this project

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1. PROJECT OBJECTIVE

Sustainable Integrated Water and Wastewater Management in Nauru

2. RESULTS: PROCESS

Prior to the project commencement there was no policy or governance framework within Nauru for water resource management. Communities were not engaged in water governance or management, and there was minimal commitment or coordination across government on water and sanitation management. In partnership with the Nauru GEF PACC project, the GEF IWRM project has initiated a national water APEX body, and a supporting community leader forum. These mechanisms have been so successful that the waste and energy sector are now using the same bodies to coordinate nationally. The body has been formalized by Cabinet and the National Water and Sanitation Policy was endorsed by Cabinet in February 2012.

Communities have been directly engaged in awareness campaigns, with ongoing direct support. Communities and CSOs are represented on the APEX body and have an increasingly direct say in how Nauruan water resources and sanitation are managed.

2(a) INDICATOR#1: NATIONAL IWRM STRATEGY IN PLACE

At the commencement of the 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.

2(b) INDICATOR#2: DISCRETE BUDGET LINE FOR IWRM

At the commencement of the project, there was no national budget allocation specifically for IWRM under the Government of Nauru (GoN) Budget. The project aimed to ensure a discrete budget-line is included annually in the GoN Budget. This has happened, and the budget allocation has since doubled each year. For this year, there has been a delay in approving the budget due to Nauru government elections and change-over. With Budget consultations completed, and the draft showing another increase for IWRM, it is expected that the Nauru National Budget will be endorsed before Parliament by the fourth quarter of 2013.

2(c) INDICATOR#3: NATIONAL BUDGET ALLOCATED TO IWRM and WUE

At the commencement of the 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 have been 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 well-achieved and the allocation will increase further in the 2013/2014 budget (figure to be confirmed).



Figure 1 Development of the National Water, Sanitation and Hygiene Policy: Prof Ian White Consulting the Project Steering Committee (Health, Education, Finance, PAD, NCBO, Private Business, RonPhos & CIE Projects) CIE Environment Office 20/04/2011.

2(d) INDICATOR#4: MULTI-SECTOR APEX BODY ESTABLISHED

At the start of the 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 has seen the waste and energy sectors also 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 has been endorsed by Cabinet and is known in Nauru as the ‘Project Steering Committee’ (PSC).



Figure 2 Development of the National Water, Sanitation & Hygiene Policy (Final Draft): Prof Ian White & Jnr Professional (Louis Bouchet) Consultation with Water Technical Committee, PAD (Finance), CIE Staff and international Observers from Regional PACC Coordinators, SPREP and GIZ. Chief Secretary’s Conference Room, 08/11/2011

2(e) INDICATOR#5: PROPORTION OF 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 are 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, is recognized by them and is currently being consulted over planning for the Regional Processing Centre. The NCBO has a TOR (still to be endorsed by Cabinet). 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 now represented in a Cabinet endorsed national coordinating body in Nauru (first time for this to occur).

The IWRM project, in partnership with Nauru SNC and the GEF PACC Projects, has also established an ongoing community outreach program (visiting every community) to raise awareness and conduct capacity building activities with local people on climate change, water and sanitation issues. The activities have 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 helps 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 can aid in familiarizing officers with local issues in each District as well as providing an opportunity for them to address technical sanitation issues.



Figure 3 Students, Teachers and friends from Anetan Infant School commemorating WWD 2011 supporting the National IWRM Demonstration Project.



Figure 4 H.E. Acting President Hon Valdon Dowiyogo M.P. and the Minister for CIE, Hon Rykers Solomon M.P. with other VIPs enjoying the School Dramas during the World Water Day 2012 Celebration, NCC Centennial Hall

Direct engagement has extended to the works contractor engaged in the IWRM project (as their policy and by mutual agreement), who recruited extra workers from the two demonstration communities as a capacity building scheme to embed people with the knowledge of the systems within the community.

2(f) INDICATOR#6: PROPORTION OF COMMUNITY ENGAGED WITH NATIONAL GOVERNMENT

At the start of the 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. The process is explained in detail in 2(c) above.

Improved governance at the community level has seen 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 has now become 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 has been the initiation of events such as World Water Day and World Food Day where government, SOEs, community and project staff work together to celebrate and raise public awareness of water sector issues. These events are also described in more detail in 2(c) above.

3. RESULTS: STRESS REDUCTION

Nauru is dependent largely upon household septic tanks and cesspits for sanitation. As a result of no central management responsibility and no ongoing investment, a combination of failing septic tanks, cesspits and wastewater discharge have heavily contaminated the shallow ground and coastal waters. This project seeks to provide alternatives to the current systems that provide little in the way of treatment and use significant scarce water resources for flushing. Upgrading 40 household systems and providing secondary treatment processes and irrigation systems is dramatically reducing groundwater and coastal water pollution and increasing access to safe, improved sanitation for two communities.

The reliance on pumped groundwater, supplemented by rainwater and expensive desalinated water to flush toilets in schools meant that schools were unable to provide sanitation during droughts and power outages. Additionally, as schools are located on the coastal strip, septic tank discharges rapidly polluted the coastal lagoon. Installing composting toilets has ensured year-round sustainable sanitation available to schoolchildren, whilst reducing a significant use of limited water resources.

3(a) INDICATOR#1: REDUCTION IN SEWAGE POLLUTION IN EWA AND ANETAN COMMUNITIES

Before the project, wastewater discharge from ailing sanitation systems was heavily contaminating the ground water lens. 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 has dramatically reduced the pollution associated with household wastewater disposal to groundwater and ultimately to coastal waters. Currently studies are underway to confirm the actual pollution reduction.



Figure 5 Contractor positioning the conventional Septic Tank mold at the demonstration community in Ewa. 22/02/2011.



3(b) INDICATOR#2: REDUCTION IN THE USE OF FRESHWATER FOR SANITATION PURPOSES DUE TO COMPOSTING TOILET INSTALLATION

Before the project all toilets used a flushing system that relied on water from a range of sources (groundwater and tanks). This has 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. The next set of monitoring on the composting process will be conducted in October 2013.

Two composting toilets were also 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).



Figure 6 Prototype #3: Composting Toilets introduced to Schools at Kayser College and Anetan Infant School. The looks, odour (less), low maintenance, water saving and environment friendly are Communities key concerns.

4. RESULTS: WATER RESOURCE AND ENVIRONMENTAL STATUS

Communities in Nauru are generally reliant on sanitation systems installed 30-40 years ago, many of which are now failing. Additionally, these systems were often discharging immediately adjacent to shallow, open groundwater wells providing washing, cooking and even drinking water. This project has provided 280 people with access to improved sanitation through the installation of household sanitation systems and cluster systems serving several houses from an extended family, as well as protecting precious groundwater resources.

Further, the installation of composting toilets in two schools (Kayser College & Anetan Infant School) has meant that children have year-round access to improved sanitation in their schools where previously schools had to operate in unsanitary conditions or close. In a small island developing state, the developmental value of providing safe sustainable sanitation in schools will have long-term benefits beyond the short-term sanitation and health gains.

4(a) INDICATOR#1: POPULATION WITH ACCESS TO IMPROVED SANITATION

Prior to the project commencement, the flushing sanitation systems across the Ewa and Anetan districts were failing. 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 could be built. This was a total of 40 households or ~28% of the population with access to improved sanitation.



Figure 7 Prototype #1: A Conventional Septic Tank “Twin Chamber” added with two stages Sand Filters as Secondary Treatment to improve the waste water effluent prior being discharge via irrigation.

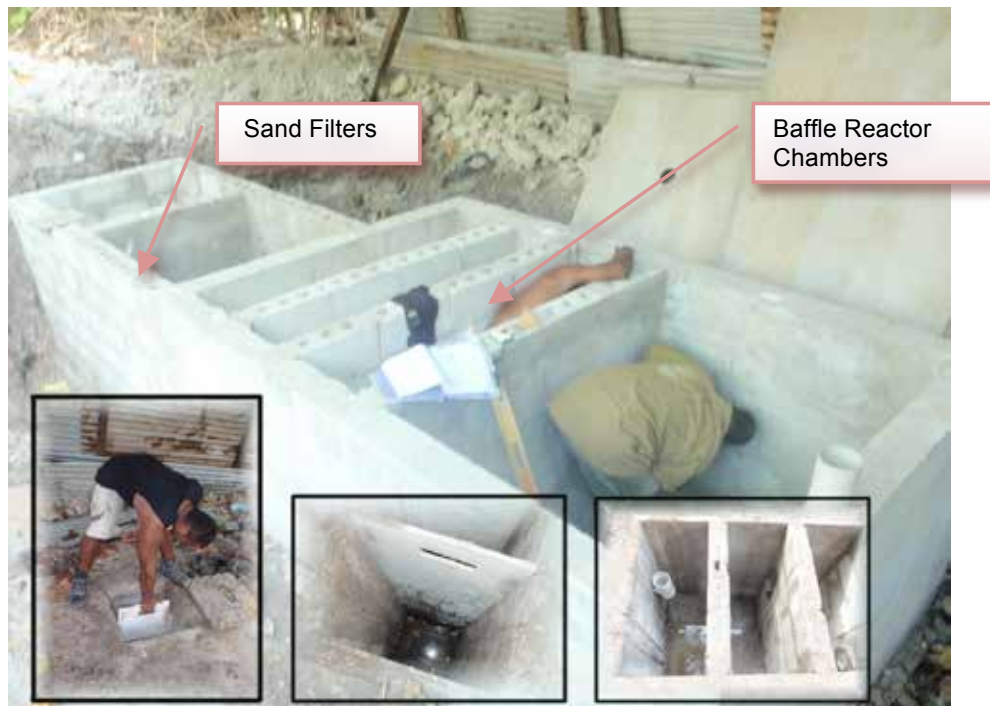


Figure 8 Prototype #2: Improved Septic Tank (Anaerobic Baffled Reactors) with Sand Filter as secondary treatment to improve the wastewater effluent prior Irrigation.



4(b) INDICATOR #2: LESSONS LEARNED INCORPORATED INTO OTHER PROJECTS AND/OR REGULATIONS

Before the 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 trialed. The prototype needed to be:

- Durable in coastal conditions
- Designed for people from small children to larger adults
- Easily and affordably constructed on-island
- Constructed from locally-sourced materials and local labour
- Presented in a way that was pleasing to use
- Cost-effective
- Sustainably maintained with parts sourced locally.

As the positive impacts of reduced water use and the success of community uptake has started to be reported, other projects and GoN have 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 will be taken directly from the IWRM project and composting toilet prototype.

Annex 6: Awareness Materials Developed and Media Coverage



Annex 7: Participatory Monitoring and Evaluation Plan

Year	2010				2011				2012				2013			
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Community Groups [Nauru Community Based Organisation]																
Participation in regular review of project outputs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inputs to preparation of quarterly work plans and budget	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reflective review of project outcomes - workshops			X				X				X				X	
Annual review and inputs to lessons learned							X				X				X	
Annual review and planning of use of traditional knowledge/governance in project planning							X				X				X	
Planning for Community Outreach (World Water Day)							X				X				X	
National Coordinating Committee [Project Steering Committee]																
Quarterly inputs to progress, financial, and lessons learned reports prepared by PMU/community groups	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quarterly review/endorsement of work plans and budget	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Identification of quarterly needs for technical supports and preparation of recommendations based on known benefits and costs of options	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Annual review of replication and scaling-up plans							X				X				X	
Annual review of quarterly reports and preparation of advice/guidance for community groups			X				X				X				X	
Annual endorsement of Project Implementation and Review						X				X					X	

Annex 8: Replication and Scaling-up Plan

Lesson	Audience(s)	Scale	Applicability of Lesson	Replication Tool(s)	Timeframes	Cost
Stakeholder Engagement Linking the Community Based Organisation (CBO) as part of IWRM support governance – members inducted into the PSC	Community Leaders & NGO's (Nauru Community Based Organisation) Project Mangers (IWRM, PACC and STAR PMs) National Government & SOE's (Utilities, Nauru Rehabilitation Cooperation, All Government Ministries represented) International Donor Partners (None – bilateral dialogue)	National Regional	During the initial stages of project implementation it became clear that a community-specific CBO would not be appropriate for the IWRM demonstration forum/NGO at the national level, which brought together leaders from each District was agreed to be required to bridge the gap between the community, government and the project. The resulting forum was the NCBO. The IWRM project laised with the community leaders from Awo and Anetan through the NCBO. Throughout the life of the project, capacity building for the NCBO and ongoing strengthening through engagement with a range of projects has resulted in the NCBO being formally recognised by the CIE and Government (Cabinet level). This has strengthened local engagement and governance as well as facilitated the uptake of technologies and processes that were initially unpopular to local people. For example, composting toilets and hesitance to engage with government and project staff as previous experiences had not delivered on commitments. The benefits of the NCBO included:	Step 1: In order to replicate the IWRM model in other communities in Nauru, it is necessary to continue working through the NCBO – where all the district leaders are members. This forum facilitates replication as leaders share information and experiences. It also serves as a forum to coordinate donor and other initiatives in their District which supports co-financing to meet District needs. Step 2: Direct actions with new Districts which can support replication including: 1. Twinning visits (most effective) 2. Direct community outreach (presentation of the concept and consultation) 3. Establish the CIE Office as a national information hub with resources such as a 'resource package' of key Nauru water and sanitation management documents, posters 4. Continued public outreach through International Events such as World Water Day, World Food Day, and World Biodiversity Day. 5. Information from the internet via Facebook and other social media 6. Regional information sources such GEF IWRM website 7. Attending conference/RSC presentations 8. Invitations to PSC / WTG discussions and presentations	On-Going	Step 1: Meeting (A\$250 per meeting) Step 2: 1. In-Kind 2. A\$250 3. In-Kind from CIE 4. A\$2,000 + co-financing from private sector (prizes) / government agencies / embassies 5. In-Kind from CIE 6. N/A 7. In-Kind 8. In-Kind
			<ul style="list-style-type: none"> • Good local governance (accountability and transparency – a focal point to convey issues and feed up to national planning level) • Improved and sustained Community engagement • Improvement in 			

		<p>improvement, communication and coordination between stakeholders</p> <ul style="list-style-type: none"> Local people informed and part of decision-making process 				<p>Project Management</p> <p>Established a Water Unit with permanent staff to coordinate implementation of the goals and objectives of the IWRM concept well beyond the project life</p>	<p>Implementing Agencies Project Manager Government and SOE's International Donor Lead Agency PSC</p>	<p>The Water Unit is now established within the Environment Division of CIE. The next step is to increase staffing and strengthen capacity. Currently there are 2 permanent staffing (national funding), 1 IWRM AusAID funded Environment Advisor. The goal is to expand the Unit to include STAR PMU and Global Climate Change Alliance (EU). The Water Unit has facilitated smooth project inception, ongoing management, and accountability and sustainability. It means there is a range of technical expertise available as well as good linkages with other programmes. Also performs an agency coordination function with other government sectors.</p>	<p>1. Water Unit outputs such as Water Policy and Masterplan enable activities and budgets to be identified in order to fund replication/upscaling by the national Budget / donors. Other components that can support replication include: and presentations</p> <p>3. On-going capacity building of Water Unit Staff twinning visits with O/S National government agencies, Bachelor and Masters level on-the-job training opportunities, attending regional/inter/national workshops and conferences, JICA water-related training programmes and agency/roundtable meetings.</p>	<p>1. Already secured some funding and completed key national documents. National Budget end of 2013. GEF budgeting cycle</p> <p>2. Meet once a quarter</p> <p>3. Dependant on the agency and academic institution.</p>	<p>1. Budgets secured for staff salaries (national / external)</p> <p>2. In-Kind scholarships and project capacity building budgets.</p>				
Capacity / Performance								<p>Strengthen capacity to analyse water quality extracted from different sources (fresh water tanks and groundwater) and establish testing facilities (Mini-Lab) within the Water Unit.</p>	<p>Implementing Agencies Project Manager Government and SOE's International Donor Water Technical Committee PSC Environment Projects Lead Agency</p>	<p>National</p>	<p>The IWRM project trialled several septic systems. Southern Cross University were employed to train CIE staff and other stakeholders on how to use testing equipment in order to assess water quality outflow. They also conducted ground water quality testing. Some of this equipment remains at CIE and could be used to test household fresh and ground water quality. The</p>	<p>1. Water quality testing processes and equipment.</p> <p>2. Training of CIE staff to undertake regular testing and monitoring.</p>	<p>1. 3rd Quarter 2013.</p> <p>2. 4th Quarter of 2013 (reliant on Southern Cross University's availability)</p>	<p>1. TBA</p> <p>2. TBA</p> <p>The Nauru NC is contacting Southern Cross University to look at the costs of an additional mission to Nauru which will include procurement of equipment and training</p>	

Lesson	Audience(s)	Scale	Applicability of Lesson	Replication Tool(s)	Timeframes	Cost
	(CIE)		<p>purpose of the laboratory was to identify individual pollutants such as e-coli, nitrogens, total chloriform etc. The laboratory testing facilities will be particularly useful when water quality standards are nationalised as per the Water Masterplan.</p> <p>The lesson is that there is a great need to be able to test water quality at the household and national level and this function will be designated to the Water Unit as regulators under the Masterplan.</p> <p>Having a Mini-Lab will enable monitoring of ground and rain water quality for M&E purposes as well as regulation of water quality reporting from the private sector (water bottling) and Utilities (RO plants) when national testing becomes mandatory as per the Masterplan¹.</p>			
Coordination/Integration						
Incorporating multi sectoral stakeholders in the Technical Group and PSC	Government and SOE's Water Technical Committee PSC Environment Projects NGO's Project Manager Lead Agency	National/Regional	Initially, the PSC did not have NGOs or civil society members. These groups were included after the establishment of the NCBO. The lesson for replication in the future is to engage the inclusion of additional memberships onto the PSC as a first step in the project (before the inception workshop). Other lessons include providing training to new members and ongoing capacity building opportunities. This establishes ownership and communication linkages amongst the member groups from the onset. For the next phase there	1. Engage multi-sectoral stakeholders before the project begins (feasibility stage) to gauge interest, establish programming synergies including opportunities to co-finance, and tailor the final project document for all groups. 2. Establish new stakeholders membership on the PSC before launching the project. 3. Ensure sufficient training and opportunities to dialogue on the project in order to have ownership and help lead the inception phases.	On-going and targeted until June 2014. At this time new stakeholders should be formal members of the PSC and have a good level of understanding of their role and future project planning/outcomes.	In-Kind



<p>is a need to bring in Fisheries, EIGIGU Civil Works (who now remove the sludge from tanks). Generally instructive to facilitating smooth project inception and ongoing management, accountability and sustainability. Specifically applicable to initiatives for good governance and ensuring different sectors are executing their obligations.</p>					
<p>Technical</p> <p>When engaging contractors: ensure they understand what the project is about and why the work needs to be done in accordance to the specifications provided</p>	<p>Contractors/Private Sector Government and SOE's Water Technical Committee PSC Environment Projects NGO's Project Manager Lead Agency</p>	<p>National/Regional</p>	<p>To facilitate smooth implementation of works with precision to minimise unnecessary expenditures, delays and system malfunctioning. Specifically applicable to those not familiar with the system, its objective and project's goal</p>	<p>1. Once contractors are identified, host a workshop on the project, its objectives, background, timelines and why the specification has been designed to meet the required outcome. 2. Present a clear and agreed process for making changes once the contract commences. This should be written into the contract. 3. Regular oversight/monitoring of contract by IWRM PM (daily site visits). 4. Retain a % of final payment as security until the contract is satisfactorily completed. 5. Include an extension clause.</p>	<p>Engaging contractor and during contracting delivery.</p> <p>1. Responsibility of PM. Workshop budget A\$100. 2. Onwards – No cost as part of contracting process.</p>
<p>Political</p> <p>Establish multi-sectoral governance framework (CIE PSC and TWG) to support and coordinate the Plan as well as keeping others informed directly involved and informed on progress</p>	<p>Contractors/private sector Government and SOE's Water Technical Committee PSC Environment Projects NGO's</p>	<p>National/Regional</p>	<p>For Nauru, the PSC, TWG and NDC perform the project governance functions. The NCBO is also a vehicle for keeping community stakeholders informed on progress. These governance functions facilitate smooth project inception and ongoing management.</p>	<p>With the broader Ridge to Reef approach to governance, the CIE PSC and TWG may need to be expanded to include sectors with responsibility for Biodiversity Conservation, Land Degradation and Climate Change. The lessons from IWRM support: 1. Early engagement with Ministry staff responsible for these sectors.</p>	<p>On-going and targeted until June 2014. At this time new stakeholders should be formal members of the PSC and have a good level of understanding of their role and</p> <p>In-Kind</p>



Lesson	Audience(s)	Scale	Applicability of Lesson	Replication Tool(s)	Timeframes	Cost
	Project Manager Lead Agency		accountability and sustainability. Specifically applicable to initiatives for good governance and ensuring sectors executing their obligation. Also provides good lobbying support for final Cabinet endorsement.	2. Present the needs of future governance arrangements to the current PSC and TWG (TOR addresses the process for expanding to include other sectors when required).	future project planning/outcomes.	
Socio – Cultural Building good relationship with Stakeholders by keeping them informed on latest progress. Take into consideration community values and issues that may become a risk.	Government and SOE's Water Technical Committee PSC Environment Projects NGO's Project Manager Lead Agency Contractor/Private Sector	National	The NCBO was the main vehicle for bringing issues and decisions to be made to the communities. The NCBO members are elected by the community members and have their own committees etc. They had responsibility for passing on information and advising IWRM project staff of their needs and any issues. This was culturally appropriate as it meant strong project ownership, where the NCBO directed their own implementing processes and would invite IWRM staff in as the NCBO or community required. When IWRM staff needed community inputs, the IWRM team could invite the community representatives or NCBO into CIE, as appropriate.	1. Maintain Minutes and document discussions from NCBO and community meetings (transparency is paramount for example site selection, choice of contractors etc.). 2. Regular community and school meetings (3x a year). Also performs an M&E function. 3. Coordinate with other projects such as PACC, GCCA and STAR projects in order to explain how the different sectors and issues are linked nationally and within the community.	1. On-going. 2. Once a quarter 3. Twice a year	1. In-Kind 2. A\$200 / In-Kind 3. A\$200 / In-Kind
			for direct consultation. The lesson was that having this coordinating NCBO body resulted in generally facilitating smooth project inception and ongoing management, accountability and sustainability. Also, regular community outreach is one way to strengthen relationships and keep people informed. In 2012 the IWRM and PACC did community outreach as a coordinated			

	<p>approach. The private sector (related sanitation and water-tank infrastructure), youth and other services have also expressed an interest in supporting future outreach.</p>				
<p>Communications</p>					
<p>Continuously raise community/stakeholder awareness of the project goals and importance of sanitation, waste management and water conservation.</p>	<p>Government and SOE's Water Technical Committee PSC Environment Projects NGOs's Project Manager Lead Agency Contractor/Private Sector</p>	<p>National</p>	<p>Continuous multi-faceted and culturally appropriate communication with stakeholders at the governance and civil society levels. A Communications Strategy developed at the start of the project would have aided communication transfer. National media services reaches a wide audience. Need to invite them to meetings, provide incentives to attend functions or provide them with the necessary information on a case by case basis. Video is a useful tool with all target audiences. Develop short videos on project implementation and results, particularly showing linkages with other sectors and Ridge to Reef approaches, for government (5 minutes) and the general public (20 minutes). Engaging with schools for one-off one-day events is a very successful way of reaching the community. General instructions to facilitating smooth project inception and ongoing management, accountability, transparency and sustainability. Specifically applicable to initiatives for good governance and ensuring sectors executing their obligation, maintaining community trust.</p>	<p>1. Develop a Communications Strategy taking a multi-stakeholder approach at the early phase of the project. 2. Implementation of the Strategy.</p>	<p>1. First quarter of project implementation. 2. On-going</p>
				<p>1. Regional technical assistance required to develop the strategy. Costs TBA 2. TBA</p>	

Annex 9: IW Pilot Project Logframe

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 un-lined 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	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	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	Report on assessment of the operational status [Yr 3] Data collection reports, consultation meeting documents, assessment report	Report on assessment of the operational status [Yr 3] 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]	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]	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	Infrastructure sector is willing to engage with environmental and social issues
					Coastal Infrastructure Development Guideline published [Yr 3]	

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
4. Building coastal resilience to potential impacts of climate change around Nauru	4.1 Improved understanding of the vulnerability of Nauru's coastline to erosion and sea level rise	Status and number of datasets collected for Beach Profiling Program	Beach Profiling Program data exists for limited sites around Nauru	Beach Profiling Program expanded to include whole coastline of Nauru and established online database of findings	Monitoring results, online database populated with datasets	Available resources to extend Beach Profiling Program
	4.2 Coastal resilience to changes in sea level and erosion built through participatory re-vegetation program	Status of 10 re-vegetated areas Extent of area re-vegetated	Limited vegetated areas around vulnerable coastline areas	Coastal re-vegetation programme of salt and drought tolerant trees (Pacific Almond, Coconuts, Pandanus & Salt Bush trees) developed and implemented at 10 critical coastal sites around Nauru	Community consultation reports, site selection documents, Programme Implementation Plan and activity reports	Internet availability for regular database updating Willingness of community to host and be involved in re-vegetation program Resources available to re-vegetate critical areas
					Programme evaluation report	





