



GEF PACIFIC IWRM PROJECT RESULTS NOTE

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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

Haseldon Buraman
haseldon.buraman@naurugov.nr
Department of Commerce, Industry & Environment

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 Dowyogo 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.

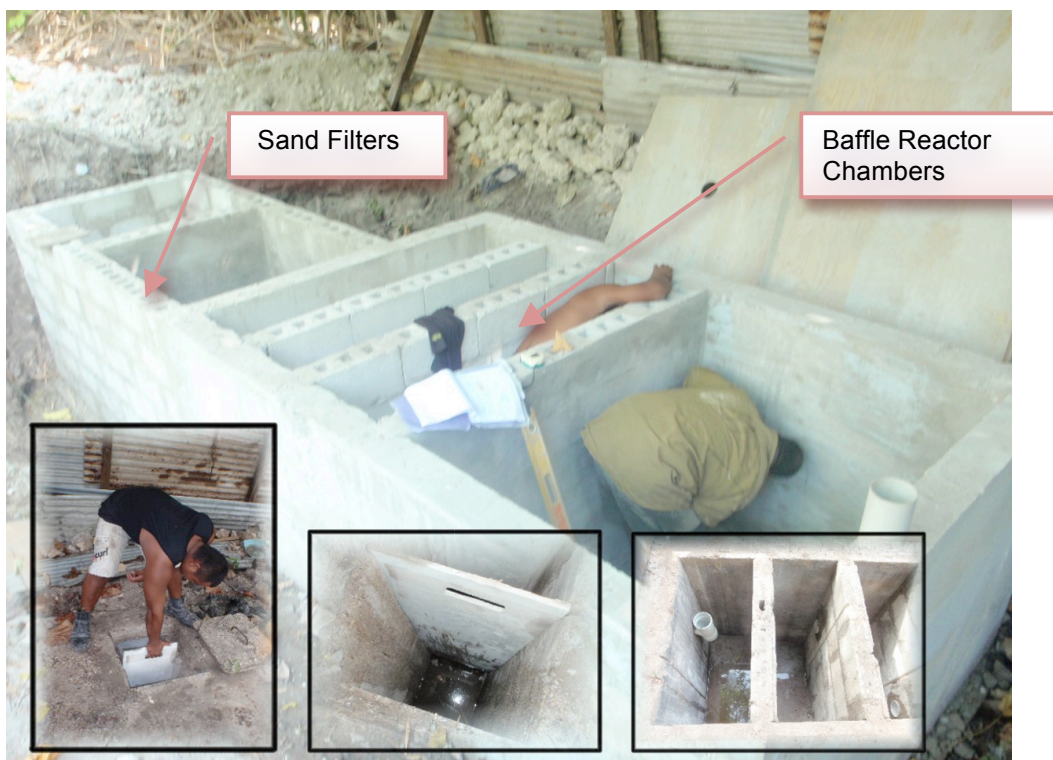


Figure 8 Prototype #2: Improved Septic Tank (Anaerobic Baffled Reactors) with Sand Filter as secondary treatment to improve the wastewater effluent prior Irrigation.

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.