



Improvement and Sustainable Management of Neiafu, Vava'u's Groundwater Resource

Tonga

Progress Snapshot

Project Objective

Sustainable water resource assessment and protection of the Neiafu Groundwater Resources through mitigation of threats by contaminants, on-the-ground protection and development of a Water Resource Management plan.



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Process

✓ Proportion of community engaged in water related issues

By strongly engaging with the Neiafu community, the project has supported a community with failing sanitation systems and minimal engagement in water and sanitation management, to develop and implement targeted solutions to local water and sanitation challenges.



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✓ Aquifer management council established

The formation and subsequent work of the Neiafu Aquifer Management Committee has been pivotal in the changes seen. With strong commitment to awareness raising and capacity building programs, this committee has raised community awareness and stakeholder engagement.

This represents a 60% increase in community engagement and has enabled targeted strategies to be delivered to improve household water, wastewater management and agricultural practices.

The aquifer management committee was a new concept in Tonga, as is the current development of an aquifer management plan. This has been supported by the first assessment of sustainable groundwater yields from the aquifer and the identification of system leakage. Both of these studies should support important decisions for managing local water resources.

✓ Multi-sector APEX body established

The project has re-invigorated the Tonga APEX body, which had not met for over a year, and is supporting the development of a national indicator framework and IWRM planning.

The APEX Body has subsequently progressed the National Water Bill and National Water Policy and was fundamental in supporting the development of a co-funded AusAID project to extend the GEF IWRM demonstration project to include an integrated water and coastal management (IWCM) project.

Neiafu Aquifer Management Committee
Paula Tatafu
Masina Talakai
Paula Lo'amanu
Emeline Laumanu
Tevita Motumanoa
Waterski Ma'afu
Maloni Havea
Puluno Toke
'Oto'ota Hala'ufia
Tifo Tofu
'Akosita Tu'a
Finau Tupou
Don Blanks
Silika Ngahe
Folau Tano'a
Hainite Maclean
Siunipa Finau
Halafo'ou Otukolo
Talanoa Masunu
Savelio Siasau
'Alavini Vea



Neiafu Aquifer Management Committee members, 2012

Tonga IWRM Demonstration Project Video
<http://www.pacific-iwr.org/Tonga-video.html>

Stress Reduction

✓ Reduction in nitrogen pollution discharged to groundwater in Neiafu

Neiafu relies heavily on groundwater for water supply. However, the sustainability of this resource is threatened by a combination of pollution from septic tanks, agricultural practices and over-pumping to supply water through a system that has significant leakages.

Prior to the project commencement septic tanks were failing across Neiafu due to a lack of pump-out facilities. This challenge has been addressed through the establishment and operation of pump-out facilities, supported by awareness campaigns to support uptake. Further reductions have been achieved through the installation of eleven trial sanitation systems, including a compost toilet.

The pump-out service has already been used by approximately 20% of Neiafu households, representing a 5% reduction in nitrogen and organic pollution of groundwater. It is anticipated that, by project completion, the target of 20% reduction in nitrogen pollution of groundwater will be achieved.

✓ Reduction of water leakage losses across Vava'u

As part of the project an assessment on Neiafu Groundwater and sustainable management has been completed, identifying 70% water losses. This is much higher than anticipated.

The assessment concluded that the majority of water loss was attributable to failing old infrastructure, including leaking pipes and valves. The project is working in partnership with Tonga Water Board to reduce water leakage from the system through a combination of leak detection, targeted on-ground works and system management.

Studies also identified agricultural impacts and training has been provided to farmers to improve land management practices and reduce threats to the groundwater.



Assessing groundwater quality in Neiafu



Leak detection in Neiafu

Water Resource and Environmental Status

✓ Increase in population with access to sustainable sanitation

A project survey identified that over 90% of Neiafu was operating failing sanitation systems. A further small percentage had no access to improved sanitation.

Prior to the project, failing systems meant people had to dig out septic tank sludge and were dealing with leaking and overflowing system. In a hilly community with relatively high rainfall, this resulted in unsanitary conditions across much of the community

Through the project, it has been possible to pilot the rehabilitation of ten failing systems, install two demonstration compost toilets and service the failing systems to ensure access to improved sustainable sanitation.

Household level audits currently being developed will enable the Neiafu communities to ensure that all sanitation systems are functioning sustainably.



Setting up sanitation monitoring



Composting toilet in Fungamisi