

TUVALU

PACC Country Brief

Pacific Adaptation to Climate Change



Climate proofing water management plans for Lofeagai Community

The Pacific Adaptation to Climate Change (PACC) project is supporting the integration of climate change risks into policy frameworks and the implementation of community-based adaptation measures in 14 countries throughout the Pacific. These actions are intended to increase resilience in three key development sectors: water resource management, coastal zone management, and food production and food security.

In Tuvalu, a very small atoll nation of eight inhabited islands, the PACC project focuses on water resource management. PACC Tuvalu supports the improvement of water infrastructure to enable people to better cope with current and anticipated climatic changes.

Issues

Water is a critical issue in Tuvalu. With no surface water, Tuvalu depends on rainwater, collected from the roofs of houses and stored in water tanks, as a key water source. This reliance on rainwater means that Tuvalu is highly vulnerable to changes in rainfall patterns, sea level, and associated extreme weather events that affect the quality and quantity of accessible, potable water.

Availability of water resources is an ongoing challenge that is exacerbated by climate change; water shortages are frequent. Most recently, in October 2011, severe water shortages drove Tuvalu into a declared state of emergency in which residents were rationed 20 litres of water a day per household.

On Funafuti Island, the most densely populated area in Tuvalu, the Lofeagai Community depends heavily on rainfall to supply all its water needs. A period of two to three weeks of no rainfall on this island can cause serious water shortages, halving water levels in its water tanks and adversely affecting village livelihoods and agricultural production.



Children from Lofeagai swim in a 'borrow pit'.
Photo: PACC

Rain-sourced water supply is usually adequate on the island, however; it's a lack of sufficient water storage facilities that has been the main problem. Current water management infrastructure

and design are deficient for rainfall storage, distribution and sustainable use. This has serious implications for the people of Tuvalu and their community, as it affects the availability of water for consumption, agricultural production and industry, as well as village livelihoods. This challenge becomes particularly problematic in the face of extreme events such as droughts, tropical storms, wave overtopping and associated storm surges. In order to meet urgent public water demand, the Tuvalu Government has imported desalination plants.

Actions

Policy mainstreaming:

The first of the PACC outcomes is devoted to mainstreaming. The PACC approach to mainstreaming has a dual purpose: 1) to strengthen the ability of institutional frameworks, policies and plans to take climate change risks into consideration and 2) to improve the capacity of key national government and community decision-makers to integrate adaptation measures in key decisions. Initiatives that promote water conservation and moderate usage are key to maintaining long-term water supply.

Previously there has been limited integration of climate change adaptation into sectoral development planning and budgeting processes in Tuvalu. This lack of integration is particularly noticeable with water resource management since there are reverberating public health and livelihood effects when water is not managed well. Although there are challenges in incorporating climate change considerations into water resource management plans and policies, there has been progress. Recently Tuvalu endorsed its Climate Change Policy, a policy that was initiated by PACC Tuvalu. Additionally, Tuvalu has a draft Water Policy that is still under review.

Community-based adaptation:

The second PACC outcome is to design and demonstrate innovative decision systems, approaches, technologies and practical measures to improve climate-resilience. At the community

Country Summary

Country: Tuvalu

Thematic Sector:
Water Resource Management

Project Funding Source:
GEF-Special Climate Change Fund

National budget allocation:
GEF-SCCF: \$750,000

Co-financing:
\$1,500,000

Programme Period:
2009-2014

Target area:
Lofeagai Community, Funafuti

National Implementing Agent: Ministry of Works, Water & Energy, Government of Tuvalu

National Implementing Partner: Public Works Department, Ministry of Natural Resources & Environment

Regional Implementing Partner: SPREP

Implementing Agency:
UNDP



level, PACC Tuvalu is supporting a number of adaptation efforts to build capacity and improve water resource management. These efforts include enhancing water supply management, diversifying water supply, and conserving water, particularly through raising awareness. Improving rainwater tanks, both in carrying capacity and quality is an important step to expanding rainwater storage capacity and reducing the vulnerability of communities in times of water shortage. Maintaining water quality and supply through water catchment is also vital. This would minimise the impacts of climate change on water resources, while maintaining environmental quality and providing immediate benefits in areas that already suffer from seasonal shortages. In addition, better management and maintenance of water supply networks will reduce wastage and increase water supply.



Due to poor groundwater quality in Funafuti, many Tuvaluans depend heavily on rainwater for consumption and other use, making them highly vulnerable to changes in rainfall regimes. A period of two to three weeks of drought can cause serious water shortages and reduce water tanks levels by 50%.

Beyond improving existing water supply approaches, increasing supply is a crucial part of the improved water management equation. Tuvalu needs to diversify its water supply so that it is not entirely dependent on variable and unreliable rainfall catchment. Without diversification, Tuvalu will be unable to solve the chronic problem of water mismanagement.

PACC Tuvalu plans to support adaptation measures to improve water supply and management on Funafuti Island:

- **Land use planning and water reserves:** PACC Tuvalu is creating a water reservoir by the Lofeagai chapel; the water collected will be provided to the Lofeagai community.
- **Expansion of rainwater collection schemes:** PACC Tuvalu has added rainwater guttering on the Lofeagai chapel (which has a large roof with rain previously going uncollected).
- **Installing of First Flush Systems:** First Flush systems will be installed in all households in Lofeagai to ensure they get the best quality of water.
- **Supporting dry sanitation systems:** PACC Tuvalu is supporting dry sanitation systems include composting toilets. This can be used which does not require water for flushing, transport or treatment, saving considerable amount of water.

Community education and raising awareness of the adverse effects of climate change is important to enhance and promote water preservation in communities, as well as to prevent mismanagement of water resources. Community participation—



Schematic of the water reservoir by the Lofeagai chapel
Photo: PACC

enhanced, for example, through public meetings, school presentations, and radio broadcasts—will enable small atolls to reduce water wastage and move towards sustainable development of their freshwater resources.

Impacts

Work in Tuvalu will have a meaningful impact for its residents by strengthening the institutional framework, policies and plans, and the capacity of key national government and community decision makers to integrate climate change risks into sustainable development programmes. With coordinated government involvement and community participation in water conservation, planning and management, Tuvalu can preserve freshwater for future generations. Through this project, PACC will develop specific guidelines in water resources management on how climate change assessments and demonstrations can be undertaken. The results and lessons will be shared regionally and globally, and bring together new knowledge generated through the project as the basis for a strategic and regional approach to climate change adaptation among Pacific Island states.

Contact Information:

Loia Tausi, PACC National Coordinator, Public Works Department
loia_tausi@yahoo.com

Taito Nakalevu, PACC Regional Project Manager
taiton@sprep.org

Marta Moneo, UNDP Environment Programme Officer
marta.moneo@undp.org

Gabor Vereczi, UNDP Regional Technical Advisor
gabor.vereczi@undp.org

www.sprep.org/pacc-home

<http://www.sprep.org/PACC-Countries/pacc-tuvalu>



WITH SUPPORT FROM UNITAR C3D+ PROGRAMME