

Disaster Risk Management & Sustainable Development

Sharing experiences & knowledge gained from Pacific community-based adaptation case studies

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The Pacific Community

The Applied Geoscience & Technology (SOPAC) Division of the Secretariat of the Pacific Community

Roadmap towards an Integrated Regional Strategy for Disaster Risk Management and Climate Change in the Pacific by 2015

Executive Summary

Introduction

The Roadmap outlines a process to facilitate the development of an integrated strategy for Disaster Risk Management (DRM) and Climate Change (CC) for the Pacific Islands region by 2015. The new integrated strategy will succeed the existing Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015 (RFA) and the Pacific Islands Framework for Action on Climate Change 2006 – 2015 (PIFACC).

The Roadmap process was developed and endorsed in 2011 by the Pacific Platform for DRM, the Governing Council of the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Committee of Representatives of Governments and Administrations (CRGA) of the Secretariat of the Pacific Community (SPC). The process has been developed in response to DRM/CC integration efforts already ongoing at national and regional levels, in consultation with a broad range of development partners and donors, in addition to DRM and CC stakeholder groups within Pacific Island Countries and Territories (PICTs). It has received widespread support at international, regional and national levels in the Pacific. The Pacific will be leading the way on this process, as it will be the first region in the world to fully integrate Disaster Risk Management and Climate Change into a single overarching policy framework.

PCRAFI

PACIFIC CATASTROPHE RISK ASSESSMENT & FINANCING INITIATIVE

Solomon Islands Building Replacement Cost

Download Metadata

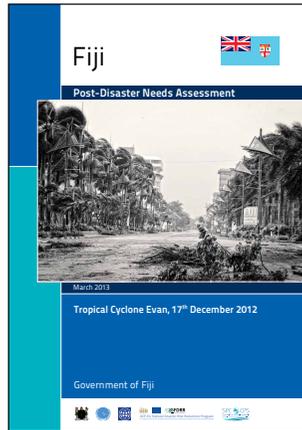
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Tiles Courtesy of MapQuest jayp



SAMOA
Post-disaster Needs Assessment
Cyclone Evan 2012

Government of Samoa
March 2013

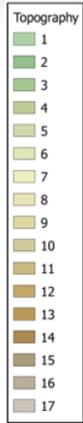


Tropical Cyclone Evan, 17th December 2012

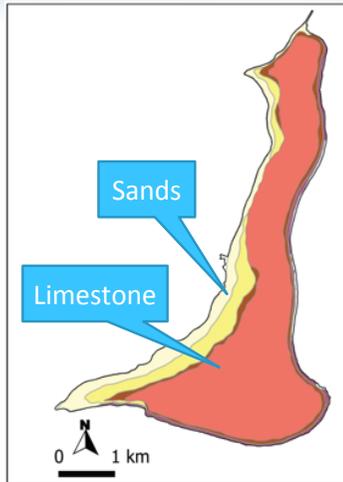
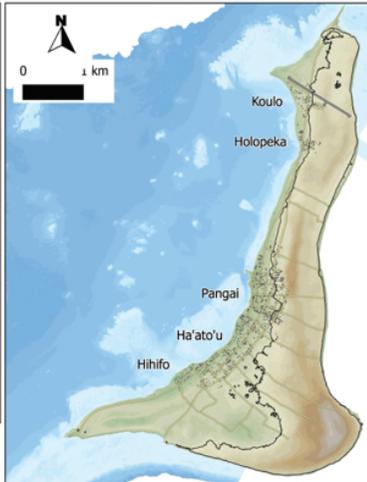
Government of Fiji



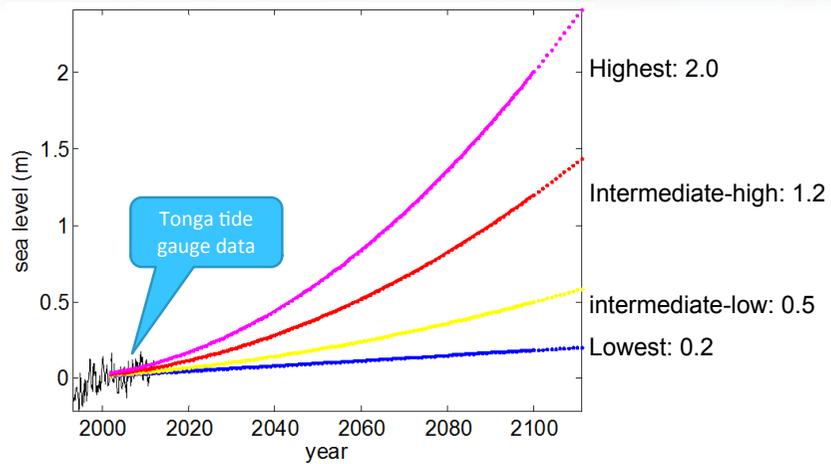
Island of Lifuka



Metres above mean sea level

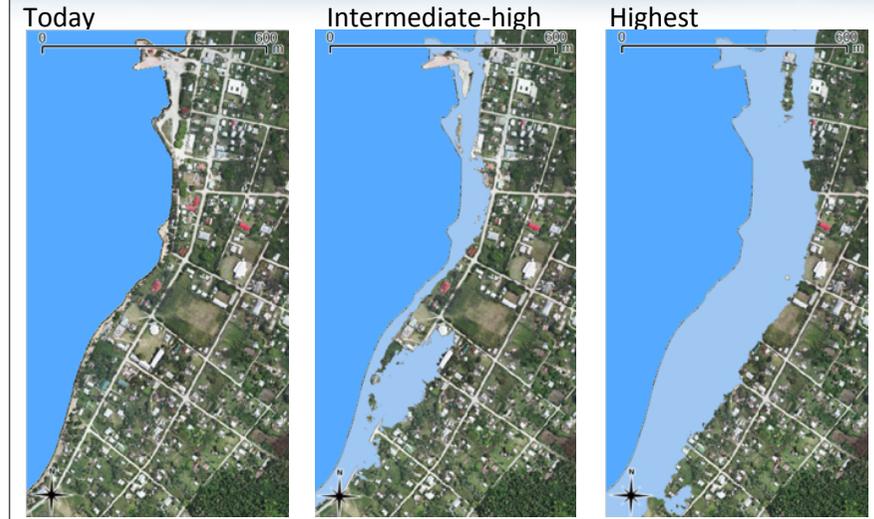


Slow Onset: Global mean sea level rise scenarios



Adapted from NOAA Technical Report OAR CPO-1 (2011)

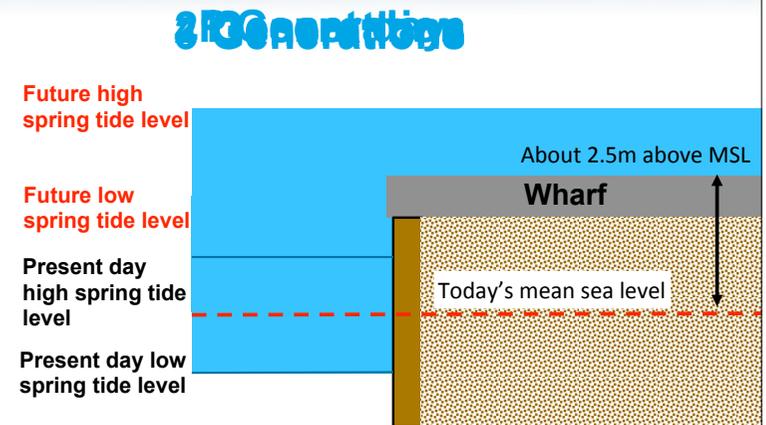
Sea Level Scenarios by 2100



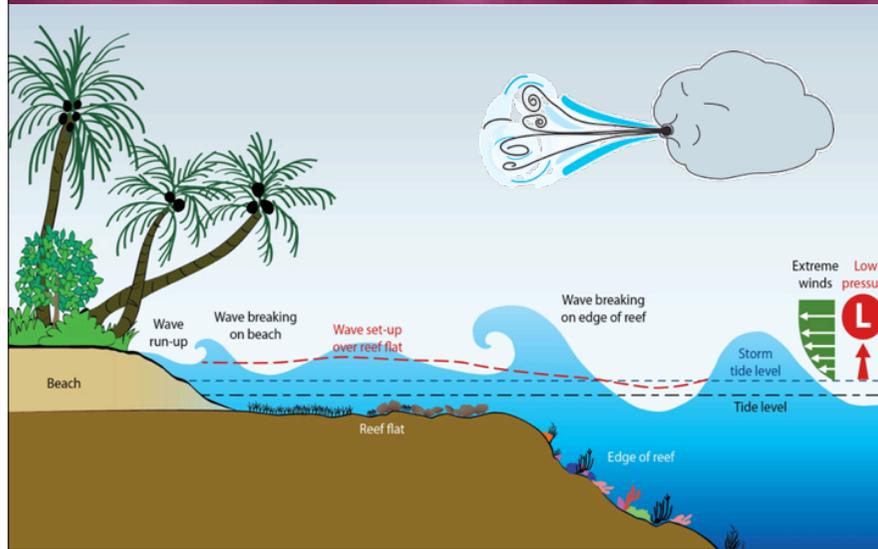
Pangai Wharf



Basic effect of sea-level rise



Rapid Onset - Storm Levels



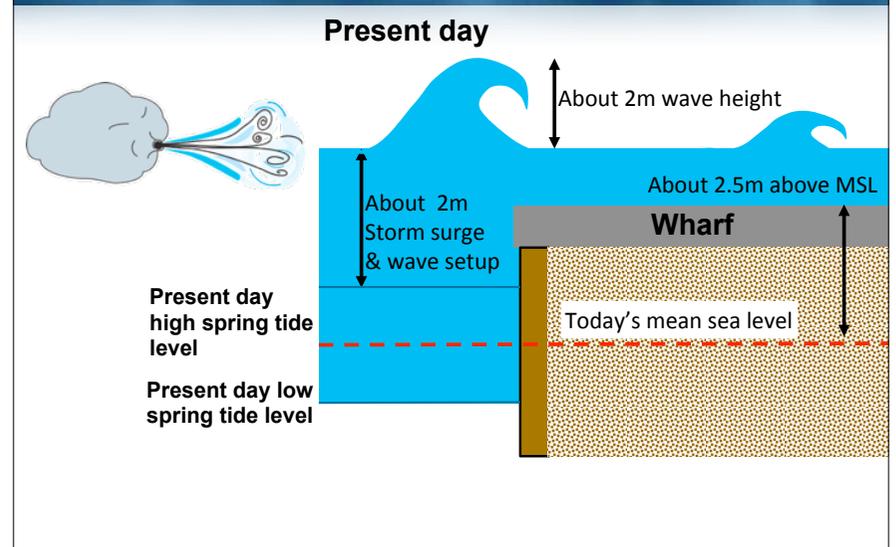
Rapid Onset: Extreme Event Examples



Rapid Onset: Extreme Event Examples

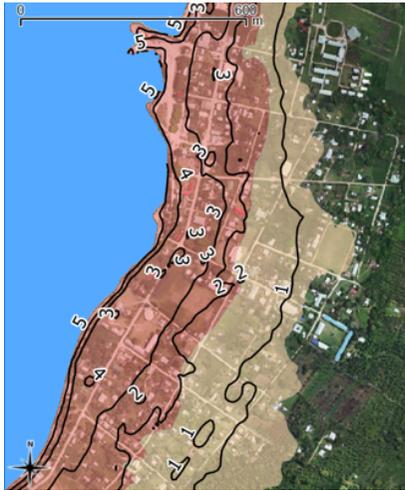


Basic effect of Storm Water Levels



Inundation Scenario: Sea Level Rise and Cyclone by 2100

Pangai



79% of infrastructure in inundation zone

Adaptation Options

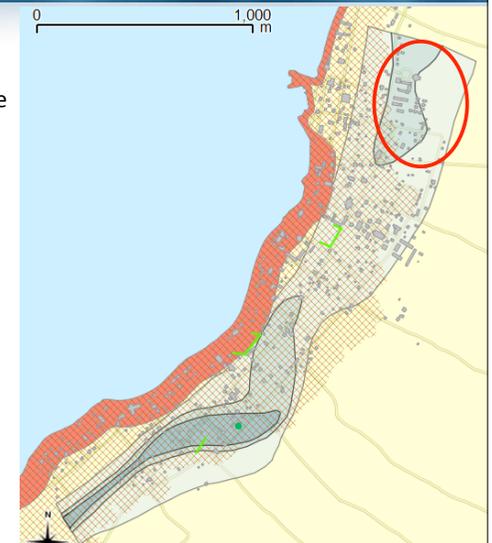
RESULTS	Human health and safety is enhanced	Built environment is less exposed	Ecosystem functions & livelihoods are maintained
OPTIONS			
Hard Option: Revetment	☹️	☹️	☹️
Soft Option: Beach Recharge	☹️	☹️	☹️
Managed Retreat	😊	😊	😊

Adaptation Options

RESULTS	Human health and safety is enhanced	Built environment is less exposed	Ecosystem functions & livelihoods are maintained	Costs
OPTIONS				
Revetment & Managed Retreat	😊	😊	☹️	\$
Beach Recharge & Managed Retreat	😊	😊	☹️	\$
Managed Retreat	😊	😊	😊	\$

Drinking water impacts

- Erosive shoreline will result in encroachment, lens size will be reduced and in places become more brackish, impact on gallery infrastructure
- Inundation - seawater overlies the freshwater, lens becomes unusable until lens recovers, impacts on water supply infrastructure pumps and galleries
- Investigate other areas for water supply outside the inundation area
- Adaptive operational abstraction based on salinity of the lens
- Protection of infrastructure with bunding



Drinking water - no regret measures

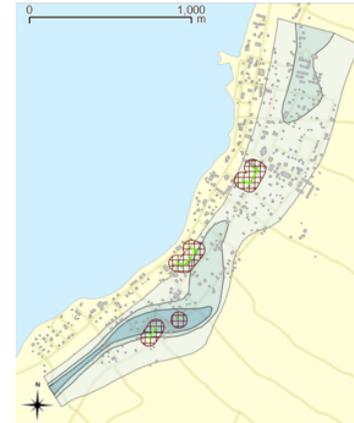


- Rainwater harvesting
 - Guttering maintenance program
 - First flush and screens for improved water quality
 - Targeted tank installation- plastic tanks

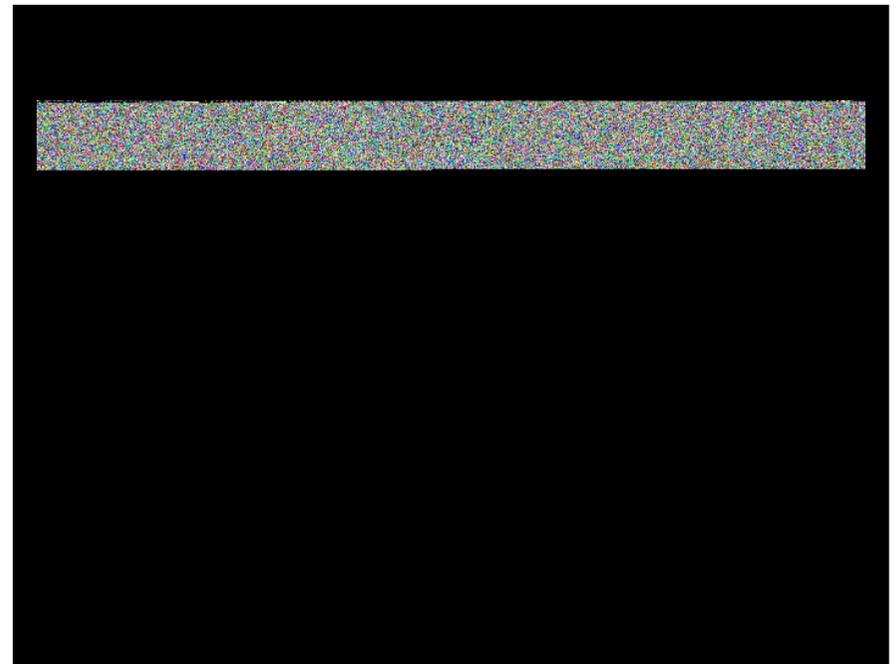


- TWB – reticulation
 - Reduce losses (33%) and unaccounted for water (18%)
 - Abstraction based on salinity in production wells
 - Improved water quality sampling, and response to results

Drinking water - no regret measures



- Buffer Zones
 - Nominal 50m for groundwater protection
 - Fencing around well heads
 - Improvements to priority extraction points





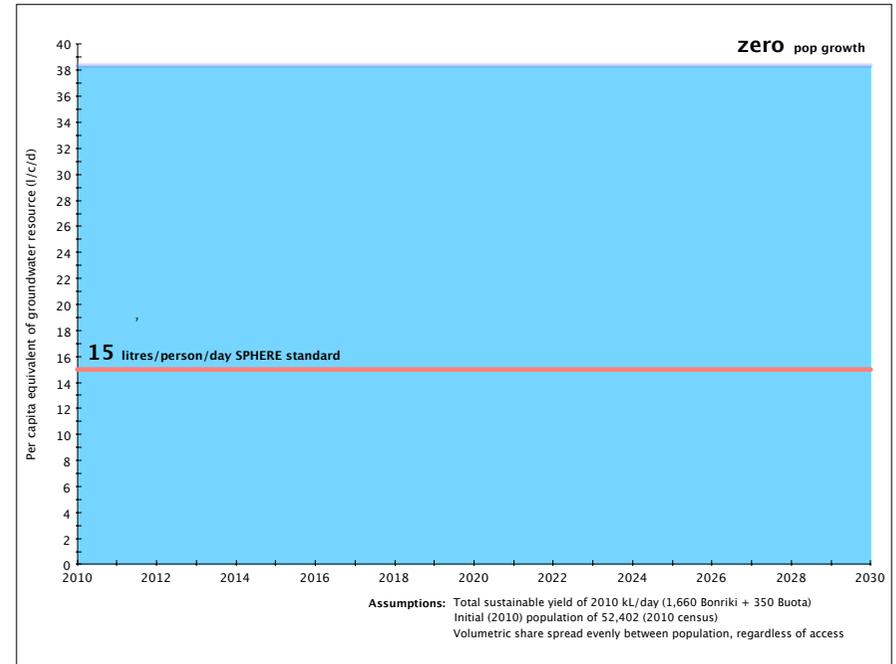
South Tarawa Water resources

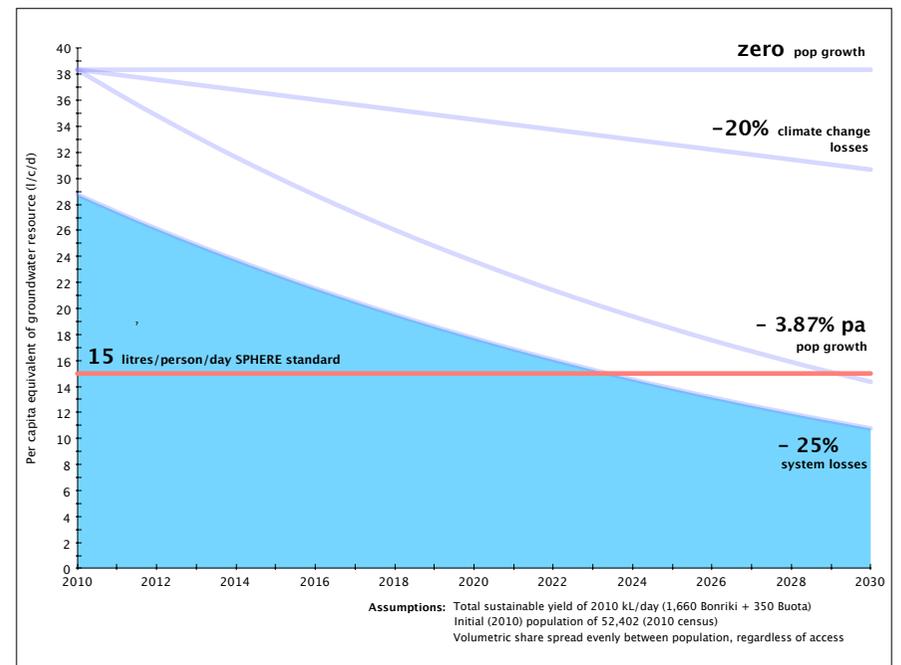
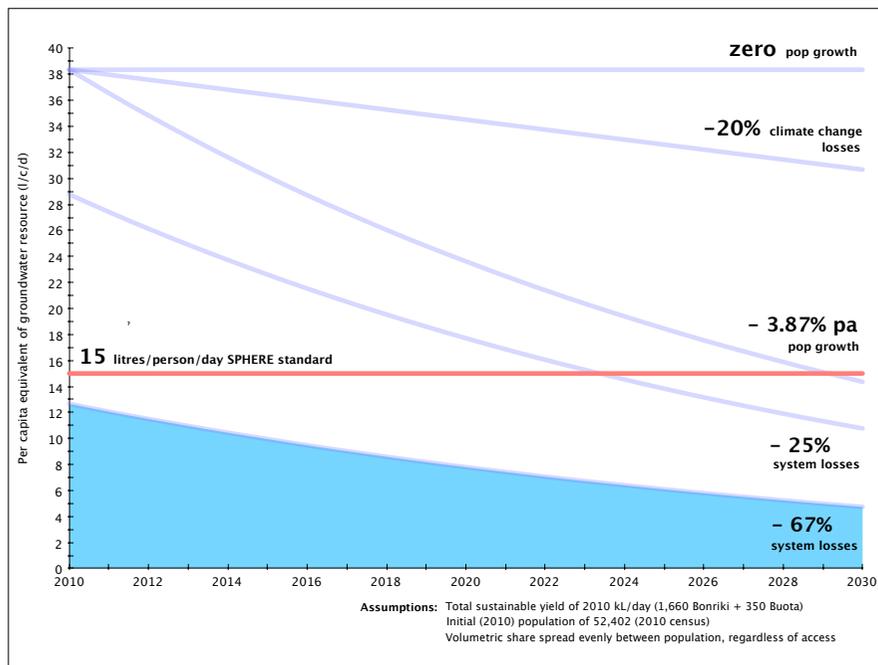
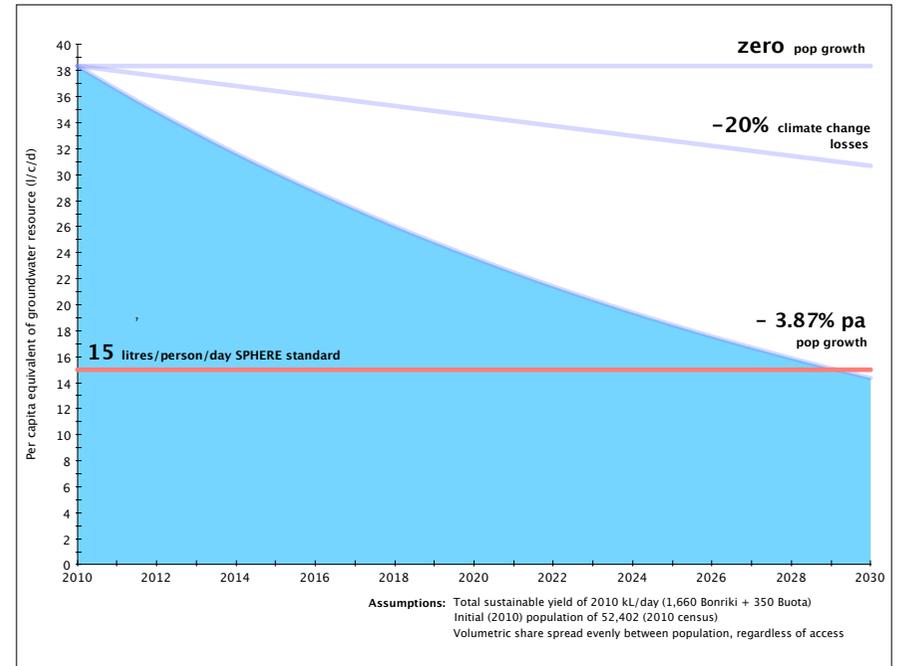
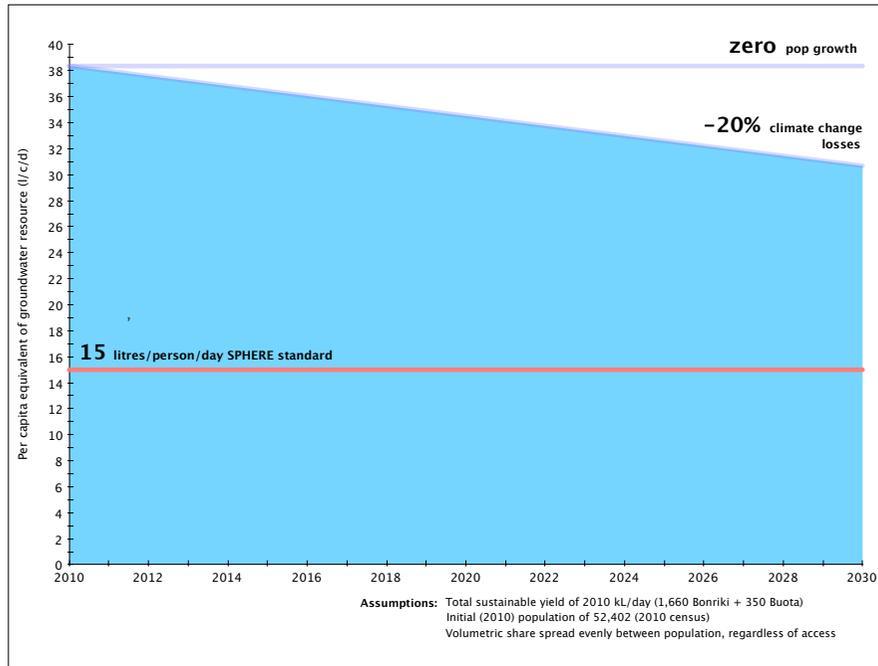
- Limited Groundwater
- Limited Rainwater

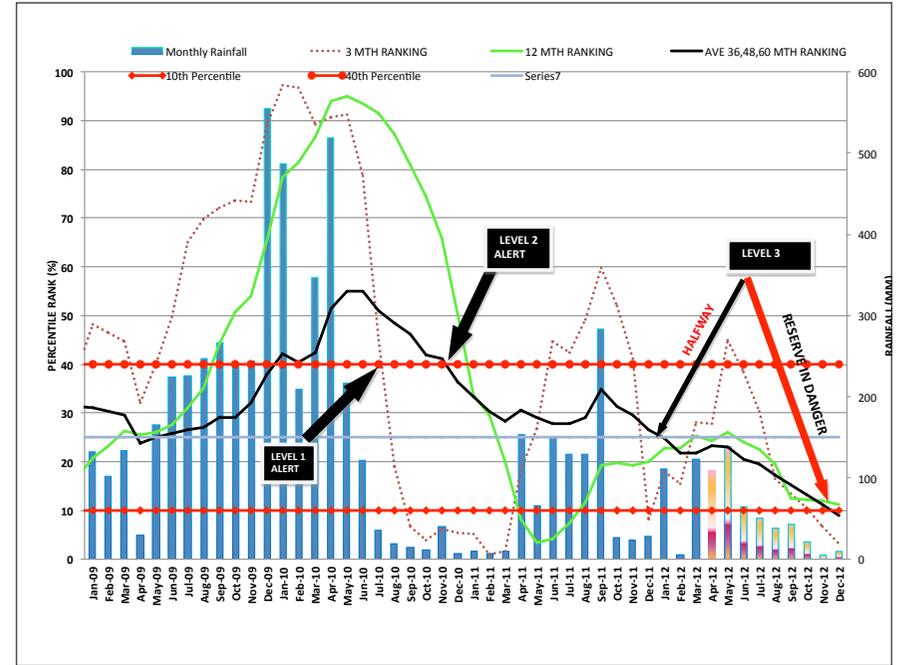
Typical village water use on South Tarawa

The diagram illustrates the water cycle and usage in a village. It shows a freshwater lens contaminated by animal and human waste. Water sources include intermittent PUB supply, contaminated shallow wells, rainwater harvesting, and pit toilets. Activities shown include boiling water before drinking, bathing, and defecation.

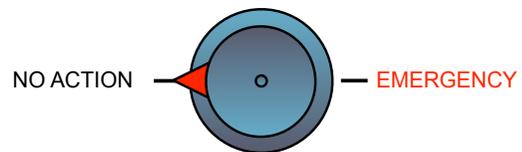
SOPAC 2010



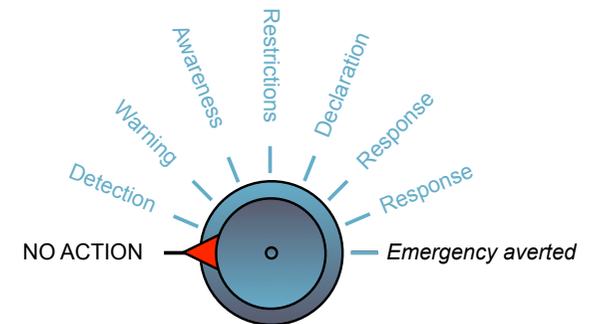




The drought response switch...



The drought response switch...





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South Pacific islands running out of water

By **Hilary Whiteman**, CNN
October 4, 2011 — Updated 0936 GMT (1736 HKT)

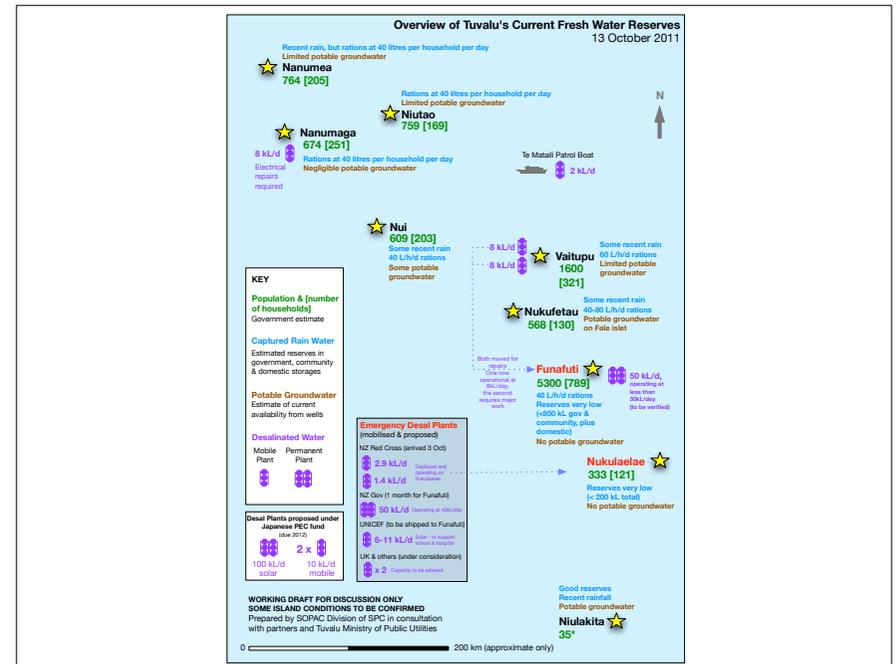
Recommend 7 people recommend this. Be the first of your friends.

Locals helping with the transfer of emergency water supplies by the Government of Tuvalu and the Tuvalu Red Cross.

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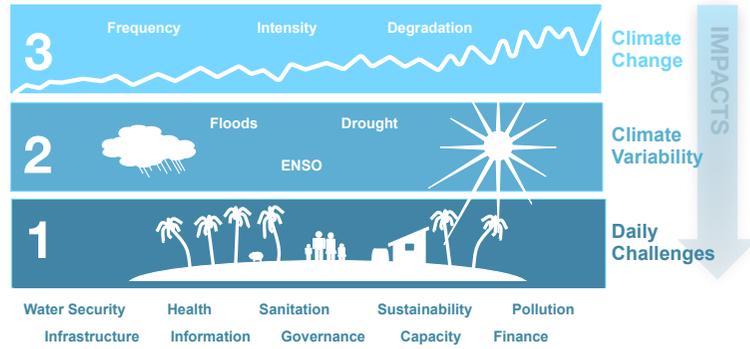


Conserving water & protecting groundwater in Funafuti



- Composting toilets reducing household water use by around 30%
- Equivalent to 8-10 rainwater tanks per household per year (10kL tanks)
- Unlike flush toilets, fully functional during drought
- provide a highly valuable source of organic soil conditioner in a country with virtually no soil
- **Prevent seepage of highly polluted wastewater into groundwater and ultimately the lagoon**

Mounting Impacts



Drivers

