A PACIFIC PERSPECTIVE: WATER SECURITY & CLIMATE CHANGE ADAPTATION



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Pacific Overview

Pacific Reality





Water, water everywhere.....

ASEM

SUSTAINABL DEVELOPMEN



Pacific Development 101

Trends

- Population growth especially Melanesia (9.5m now)
- Population concentration migration from rural areas & outer islands
- More Aid New donors, CGF, AF
- More renewable energy mainly solar PV
- Geopolitical interest

Challenges

Remote islands

challenging logistics increase cost/time

- Small population undermines scale efficiencies & user pays
- Limited capacity/capability undermines regulation (e.g. informal settlement)
- Increasing pollution from urbanisation & intensification
- Low profile of WaSH fisheries, climate change & NCDs dominate





ASEM

Water Security

Water



Supply

Limited freshwater resources

no rivers outside Melanesia, & no lakes in Polynesia & Melanesia limited groundwater on small islands & atolls

Limited infrastructure

tankers rather than pipes reliance on rainwater harvest (residential & communal) treatment only in urban centres

Demand

• Poor infrastructure maintenance inefficient capture, high leakage rates

Growing consumption

increased use of washing machines & showers (due to solar energy)

Waste

Liquid

Cities

septic tanks, sewerage systems & oxidation ponds

Rural

septic tanks & pit latrines, open defecation

Solid

Limited landfill space

consumerism, challenge on small atolls, no burning

• Sea level rise

increased coastal flooding & erosion



Pacific WaSH Status

Source: UNICEF - A Snapshot of Drinking Water & Sanitation in the Pacific







ASEM

Population using at least basic sanitation, national, % (no data for the Federated States of Micronesia)



Future Challenges



Increasing

- Flooding cyclones, rivers, over-wash
- Coastal erosion
 especially low lying atolls
- Drought low lying atolls
- Diarrhoeal disease

Declining

Infrastructure

69% lack access to sanitation 52% lack access to water

• Water availability

• Water quality

groundwater: pathogens, salinity surface water: pathogens, nutrients lagoons: nutrients, temperature



Climate Change Adaptation

An 'At Risk' Region

World Risk Ranking 2017 Negligible Surface Water Tropical cyclone belt ASEM

SUSTAINABLE DEVELOPMENT DIALOGUE



Disaster Impact & Climate Change



Impact of Disasters on GNI (2014)

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Source: Victoria University of Wellington Working Paper - The economic & fiscal burdens of disasters in the Pacific

Climate Change Trends (Marshall Islands) Source: Climate Change in the Pacific (PACSAP 2015)



* Tropical Cyclone Pam caused US\$450m in losses, equivalent to 64% of GDP (& reduced economic growth by 5.5%)

Climate Change Projections

Source: Climate Change & DRR Research Synthesis Report (MFAT)

Oceans

- Accelerating sea level rise
- More frequent over-wash (storm surge)
- Reef deterioration (acidification & bleaching)
- More coastal erosion

Atmosphere

- Longer, more frequent droughts
- More intense rainfall
- Stronger, more frequent cyclones (extending further southward)
- Higher extreme temperatures





Governance Arrangements

Parliament of the Cook Helandes



Key Players & Interactions

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Delivering WaSH & DRR

Interventions for DRR & CC-A



General

- Vulnerability assessment
- Coastal protection
- Rainwater harvesting
- River flood mitigation
- Water conservation
- Cyclone refuge
- Slope stabilisation
- Capacity building
- Build back better

Atolls & Small Islands

- Refuge from over-wash
- Land raising
- Managed retreat
- Saline intrusion control
- Habitability thresholds

Conclusion



Impending Water Security Crisis

- Declining provision
- Growing population
- Climate change
- Political distraction
- Implementation challenges

But there is hope

- We know the answers
- WaSH fits many agendas (& funding sources)

Climate Change adaptation Disaster risk reduction International development Humanitarian response Heath Education

Recommendations



Encouraged

- Focus on Melanesia
- Integrated approach
- Support existing Programmes
- Remember the 'outer islands'
- Collaborate with <u>SPC</u> & donors
- Involve community & NGOs
- Appropriate technology
- Standardisation
- Dancing & singing

Implementation Challenges

- 'Western' designs/models
- 'Fly In Fly Out' delivery
- Relationships take time
- Silence ≠ agreement
- Logistical challenges
- Regulatory challenges
- Capacity building is elusive
- Private sector constraints
- Land access
- User pays?
- Maintenance
- Spares & consumables