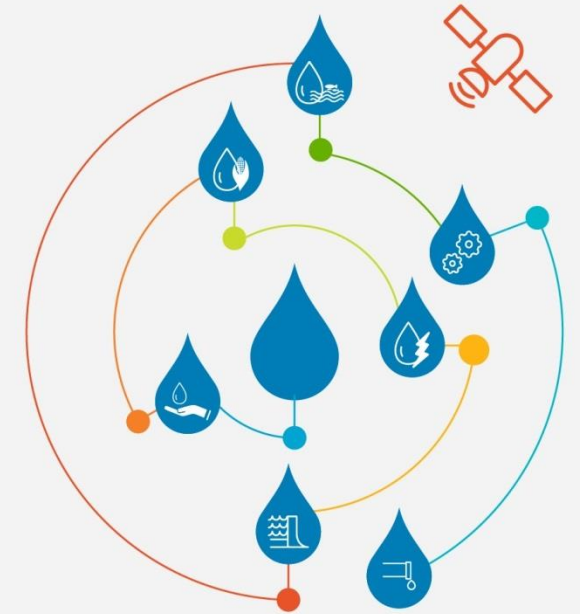


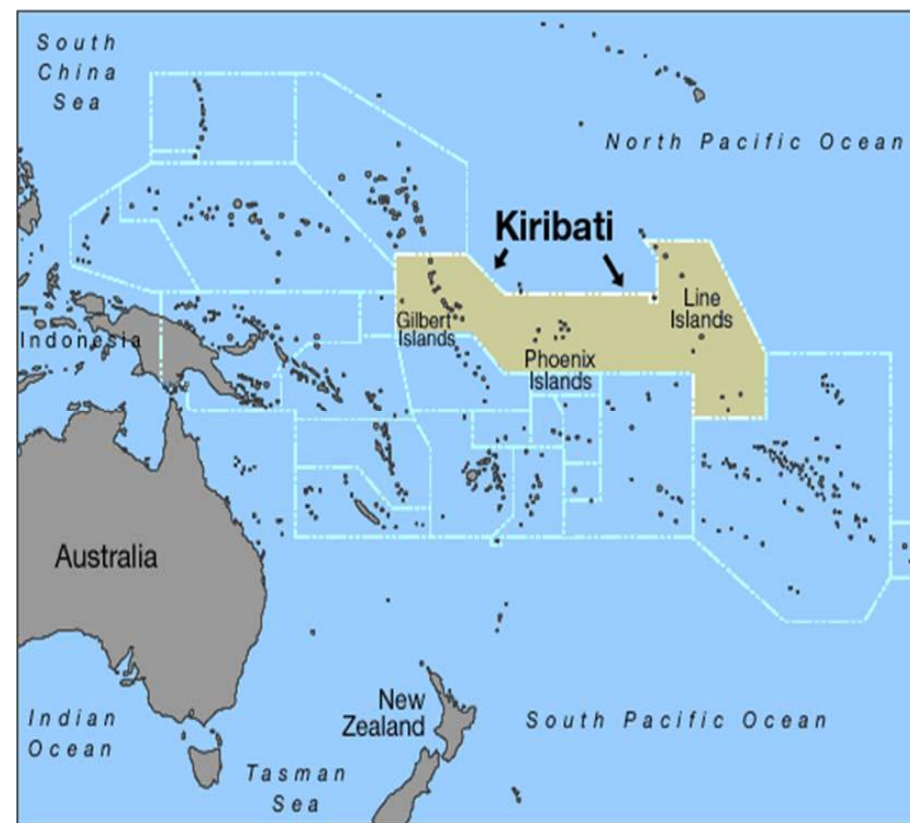
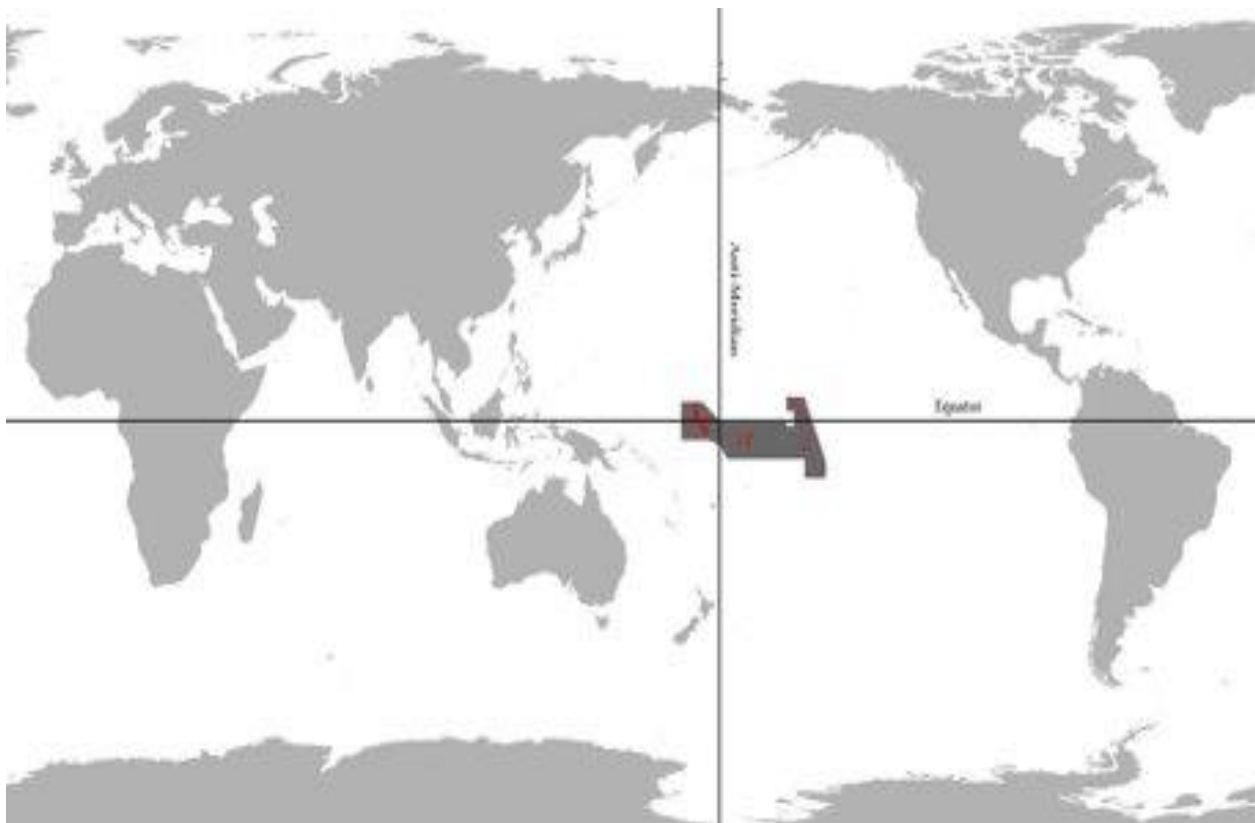
# Building Resilience of Small Island Communities to Climate Change



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# Kiribati



- Population: 115,000
- Capital: South Tarawa
- Spread over 3.5 million km<sup>2</sup> ocean
- 33 atolls, 21 inhabited
- Exports: Fish, Copra





# Capital: South Tarawa



©Google Earth

- ❖ Population: 56,000 on 16km<sup>2</sup>
- ❖ Average height: 2m
- ❖ Average width: 400m
- ❖ Limited water resources



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# Water Resources



- ❖ Water Reticulated System (S. Tarawa)
- ❖ Rainwater
- ❖ Shallow Unconfined Groundwater
- ❖ Small Scale Desalination Plants ( $<100\text{m}^3/\text{d}$ )





# Challenges

- ❖ Sea Level Rise
- ❖ Inundation & Groundwater Contamination
- ❖ Saline Groundwater
- ❖ Prolonged Droughts



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# Bonriki Water Reserve (Water Lens)

North East South West (NESW)			BN1 (m)	BN2 (m)	BN1 28 (m)	BN27 (m)	BN21 (m)	BN26 (m)	
Dry - Dec-10/Jan 11			7.30	6.83	15.78	18.14	19.29	5.09	
May-18			6.90	4.80	15.00	12.80	4.27	6.30	
South East North West (SENW)			BN29 (m)	BN13 (m)	BN24 (m)	BN23 (m)	BN28 (m)	BN27 (m)	BN11 (m)
Dry - Dec-10/Jan 11			9.80	12.40	2.90	6.00	15.80	18.10	12.60
May-18			3.90	N/A	4.50	N/A	15.00	12.80	N/A

SOURCE: WSEU, IMISE 2018

- ❖ Dry period 2011 - state of emergency issued
- ❖ In 2018, Bonriki Water Reserve experienced critical thinning
- ❖ Freshwater yield impacted, taking years to recover depending on rainfall recharge



# Building Resilience

## 1. Infrastructure: Proposed South Tarawa Water Supply Project (STWSP)

- Desalination with renewable energy offset
  - Attached visitor/education center
- Rehabilitated water supply network
- Potable water for all communities
- Climate change resilient design



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# Building Resilience

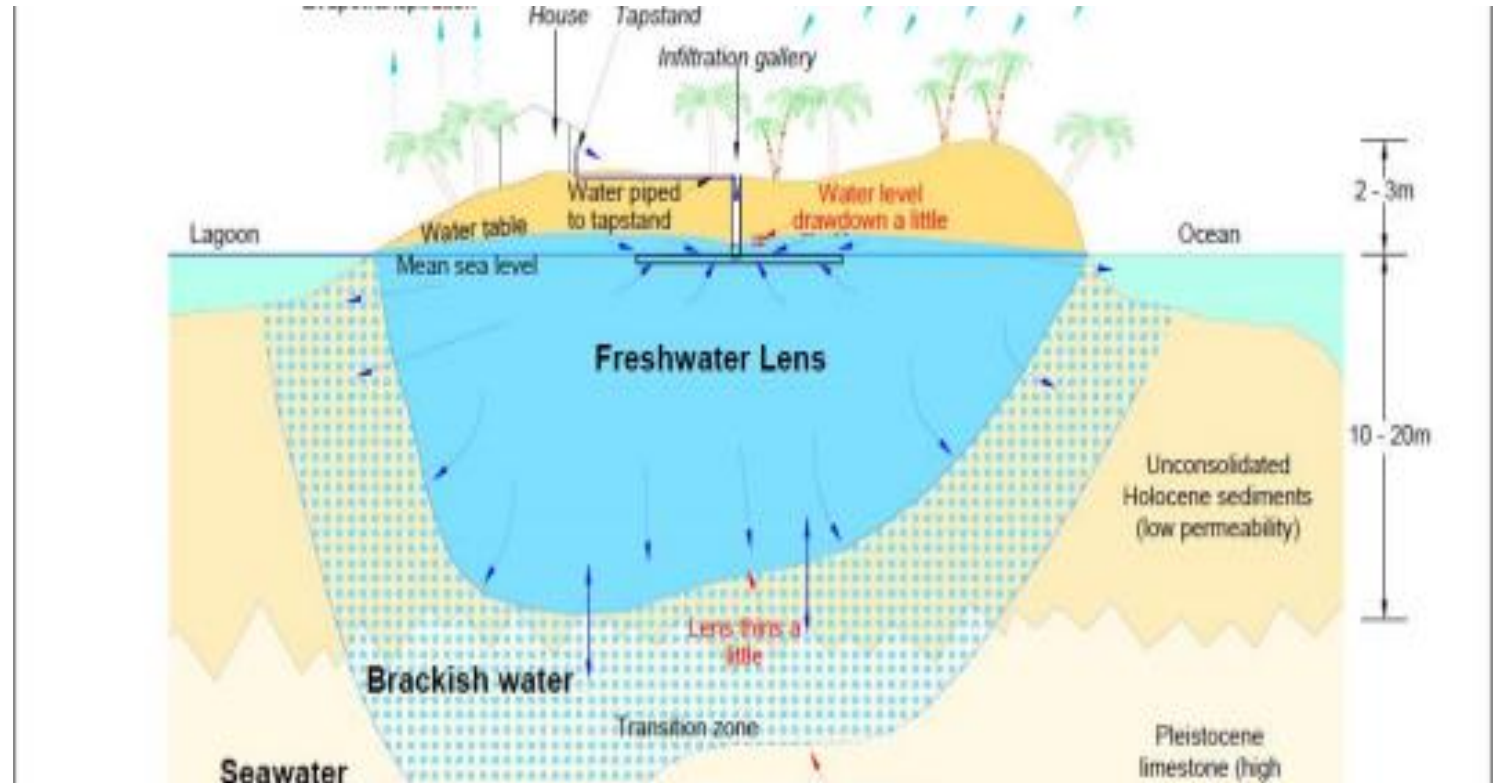
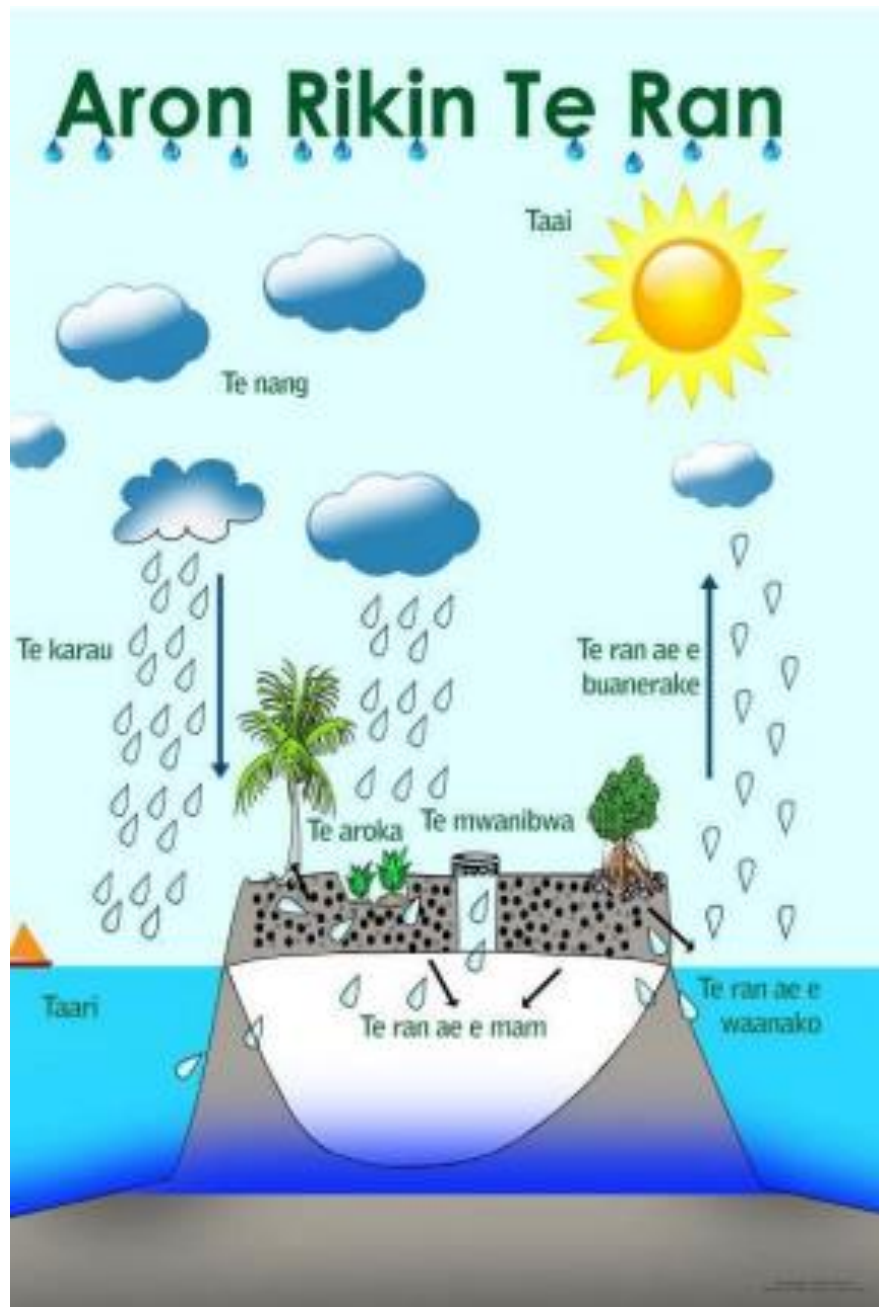


## 2. Capacity Strengthening

- Community engagement
- Water Sanitation and Hygiene (WASH)
- STWSP Visitor/Education Center







STWSP Visitor/Education Center



# Building Resilience

## 3. Governance and Policy

- National Infrastructure Development Steering Committee (NIDSC)
- Drought Committee
- Kiribati National Energy Policy
- Disaster Fund



# Summary

- ❖ Small island states including Kiribati face unique water supply challenges
- ❖ Climate change exacerbates these challenges
- ❖ Infrastructure such as desalination coupled with capacity strengthening and governance and policy play a key role in building community resilience



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