

# Integrating Adaptive Designs into Long-term Resilience Planning in Pacific Atoll Nations

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# Atoll nation challenges

- Characterised by low-lying land over limestone reef flat
- Susceptible to coastal hazards, intensified by climate change
- Small populations concentrated in urban areas
- Low GDPs and limited natural resources



# Long-term adaptation

- Pacific Atoll Countries CCDR (World Bank, 2025)
- Assessed exposure of these nations at an atoll scale
- Assessed options for mitigation
- Developed pathways based on atoll type
- Assessed investment needs
- Challenges are immense

**World Bank Group**  
**COIN TDV**  
**MAJURO | Delap: 0.5m Sea Level Rise + Storm Surge (10 yr. Return Period)**

**Inside the Marshall Islands' life-or-death plan to survive climate change**  
 The Pacific island nation is seeking \$35 billion to protect against sea-level rise and prevent a mass exodus.

**FLOOD LEVELS:**

- 0.1 - 0.25m
- 0.25 - 0.5m
- 0.5 - 1m
- 1 - 1.5m
- 1.5 - 2m
- 2m+

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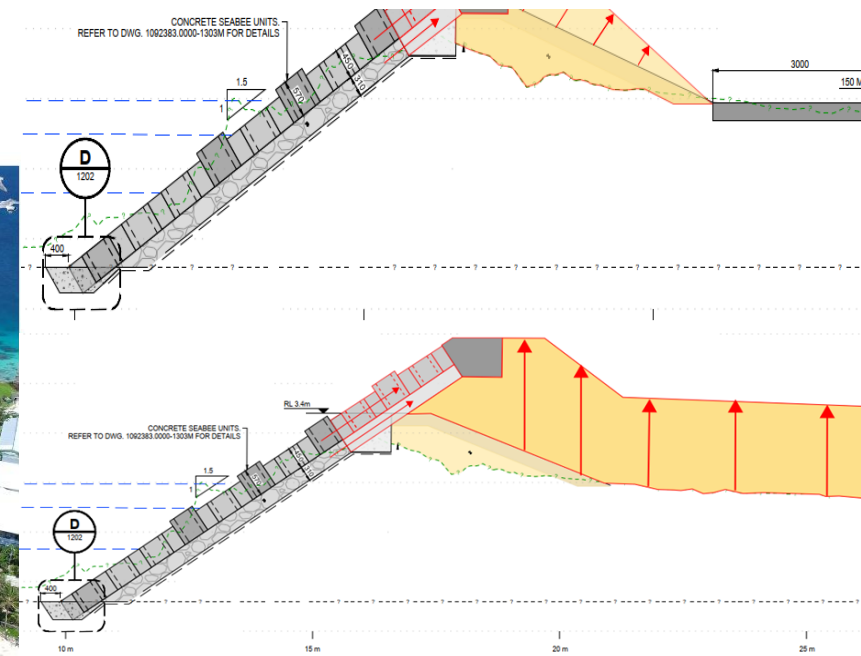
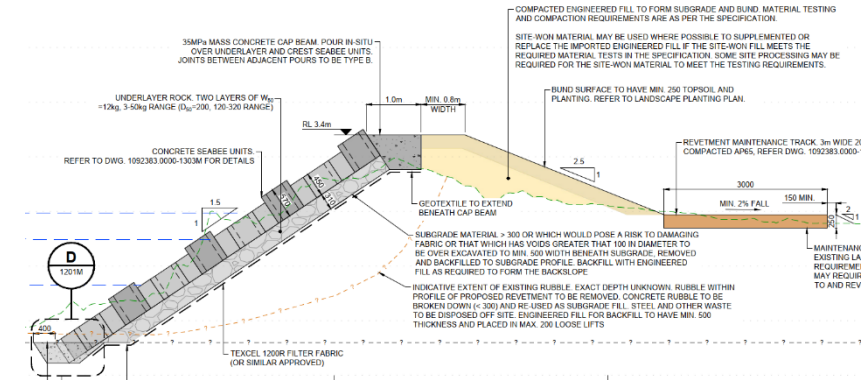
PV COST PER CAPITA

\$0.03 <sup>§</sup>
\$0.10
\$0.09
\$0.04 <sup>§</sup>
\$0.03 <sup>§</sup>
\$0.11
\$0.10
\$0.10

Grist / Getty Images

# Urban Resilience Project

- Designed to improve resilience of key public assets in Majuro, RMI
- Also provide public amenity and ecological outcomes
- Aggregate limitations key consideration
- Design for present day – adaptable for the future



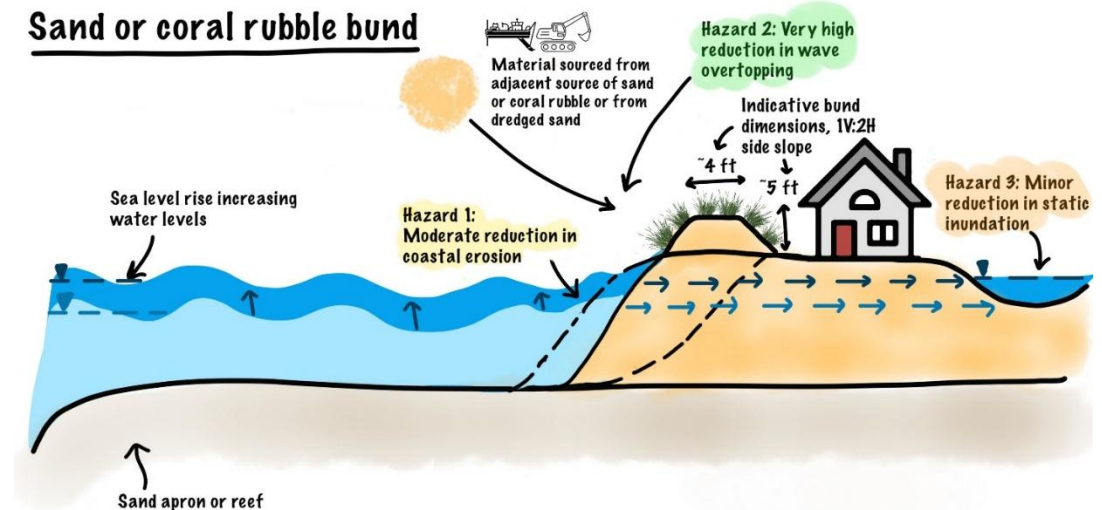
# Nature-based solutions

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- Generally more space, less resources
- Nature-based solutions well suited as a first measure
- Understand the environment and the community



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- Generally more space, less resources
- Nature-based solutions well suited as a first measure
- Understand the environment and the community
- Designed softer NbS - must be appropriate for the environment
- High monitoring and maintenance requirements inc. significant community inputs



## Key messages

- Atoll nations face considerable and unique challenges
- Beware pathway paralysis – must start somewhere
- Have a plan to long-term resilience in manageable chunks
- Both armouring and land raising will be required in the long-term
- Maximise use of local resources
- Don't neglect public amenity, agriculture or ecological outcomes
- There is no one-size fits all solution



*Kommol Tata – thank you very much*

