

Sea Level Rise and Adaptation in the Pacific

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Secretariat of the Pacific Environment Program (SPREP)

APAN Forum

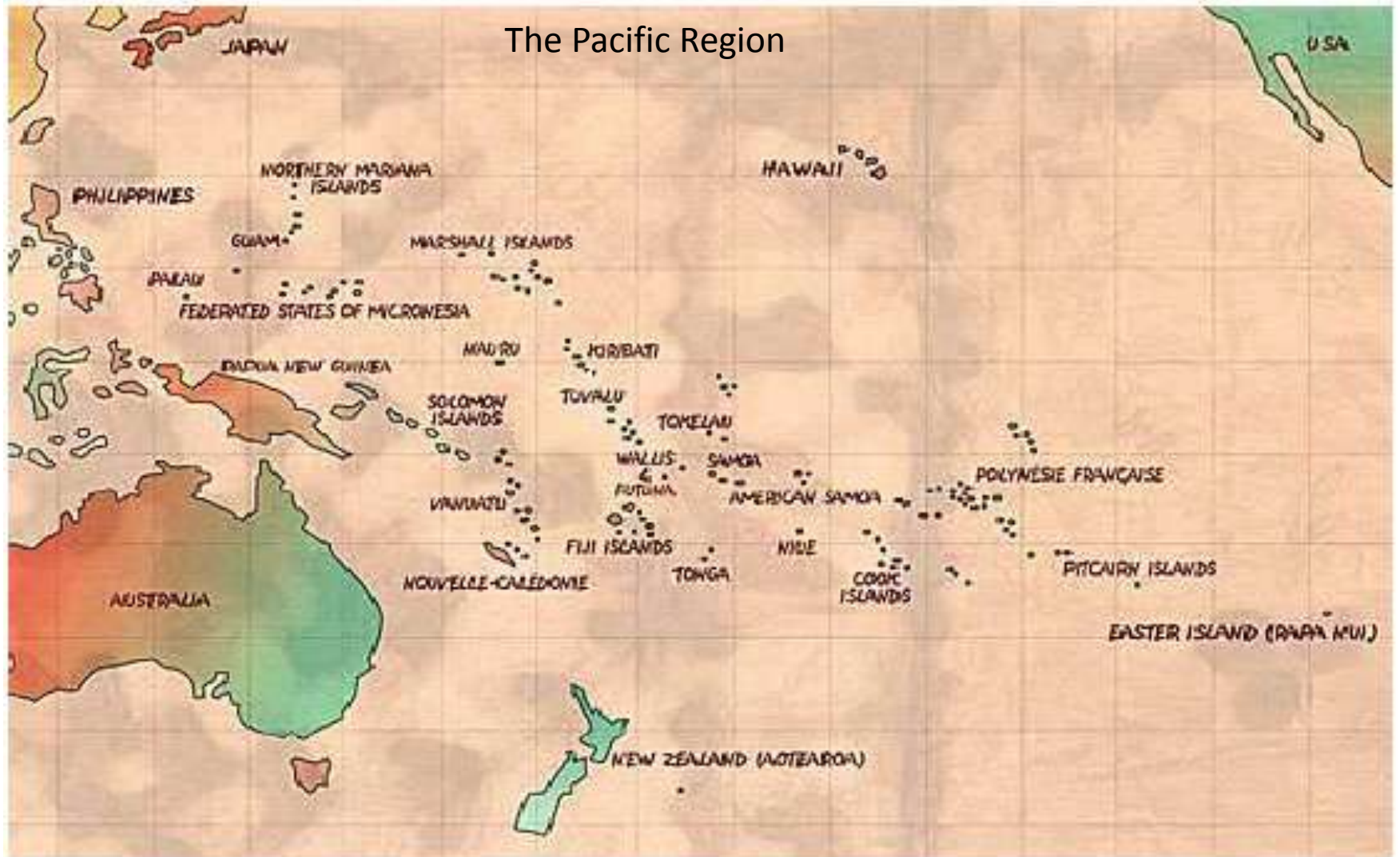
Kuala Lumpur, Malaysia

Introducing Secretariat of the Pacific Regional Environment Programme (SPREP)

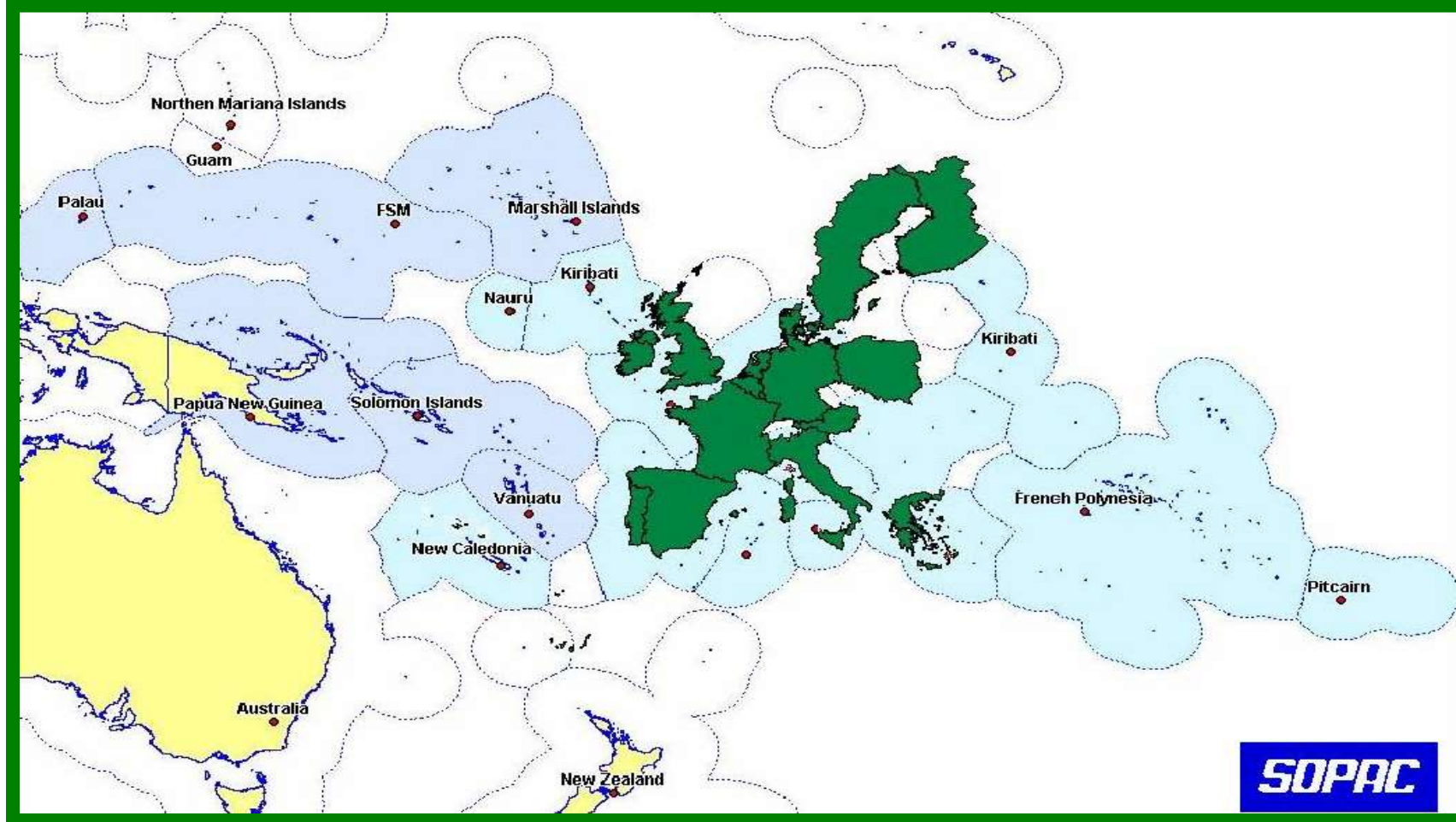


- Working for over **40** years in the Pacific region
- **Inter-governmental organisation**
 - The Pacific regional agency for the environment
 - Recognized as the lead agency on biodiversity, climate change, waste management and environmental monitoring and governance in the Pacific Region
- **26 member countries**
 - 21 Pacific Island countries & territories
 - 5 ‘metropolitan’ states (AU, NZ, FR, USA, UK)SPREP is **fully accountable** to member governments through an annual SPREP Meeting and Ministerial Meeting
- Over 90 staff

The Pacific Region

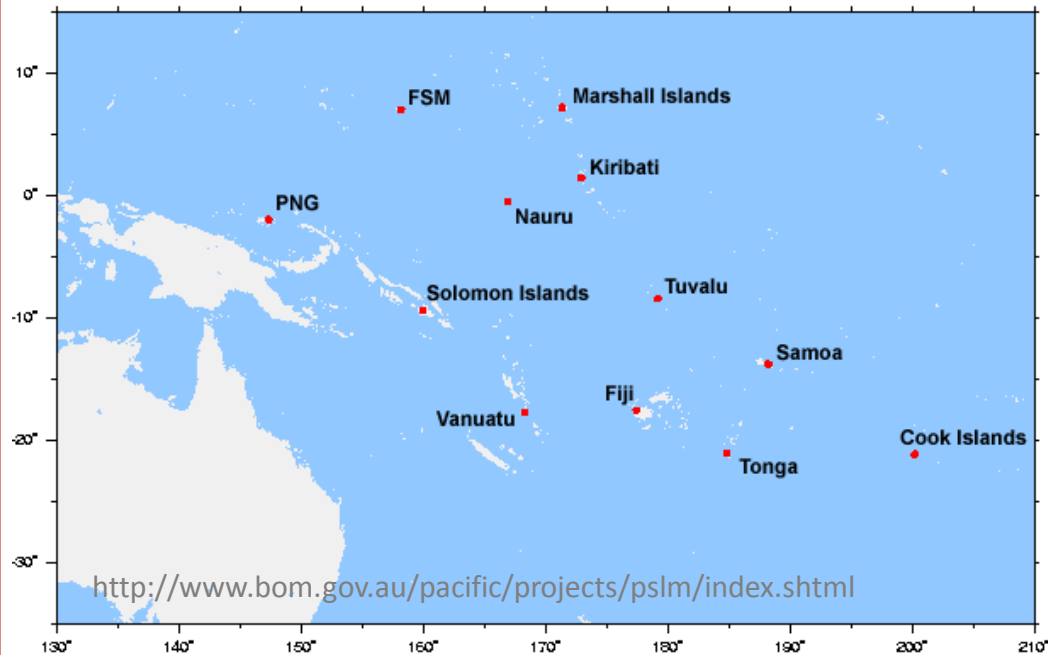


How big is the Pacific region?



U.K. and Western Union superimposed on central Pacific region
encompassing 8 Pacific Island nations

Sea Level Monitoring Stations



- These gauges do not include portable gauges used or those gauges installed by other projects

Manus, PNG



Kiribati



Regional Mean Sea Level Rise

Sea level rise 1993-2009

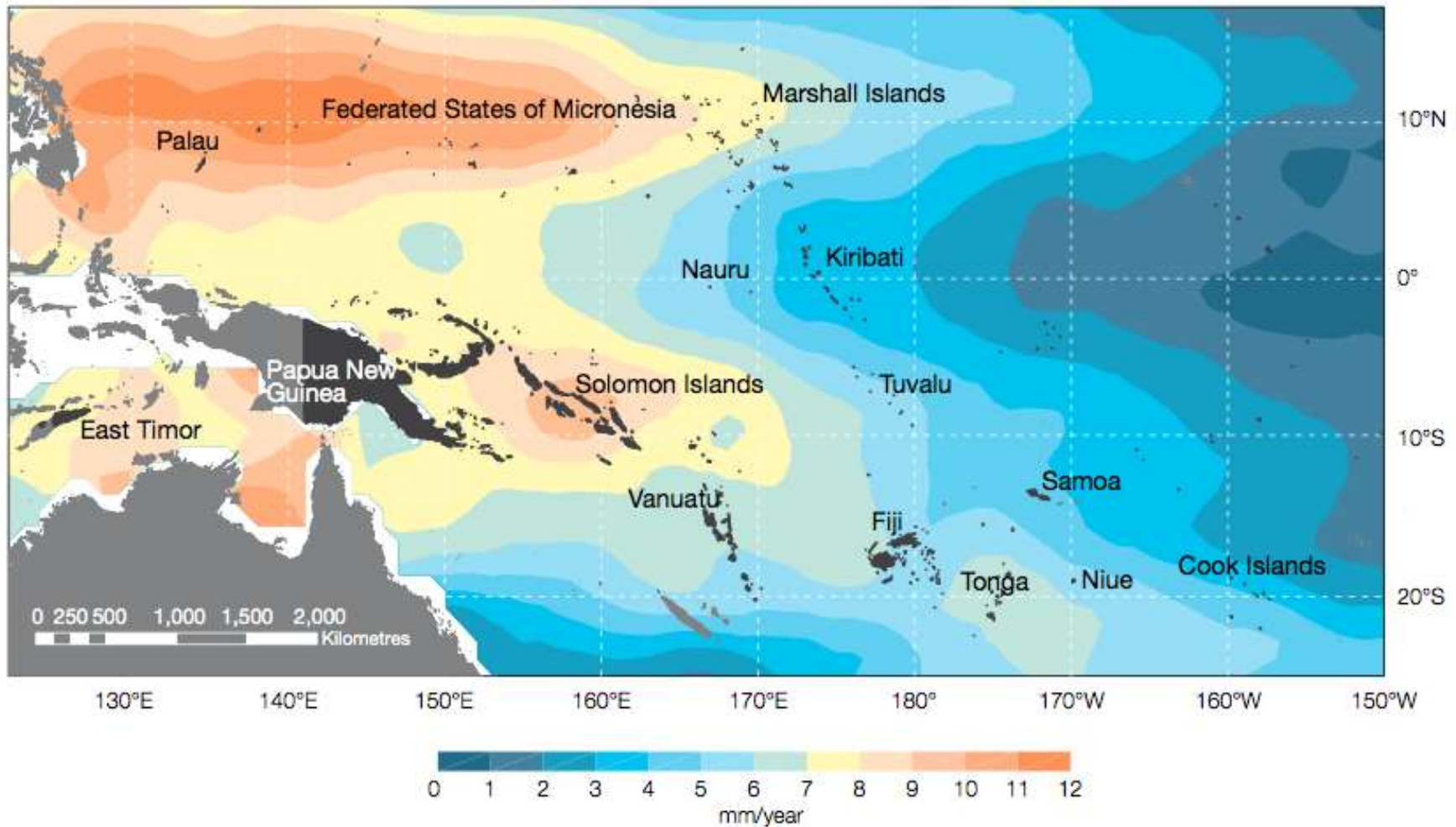
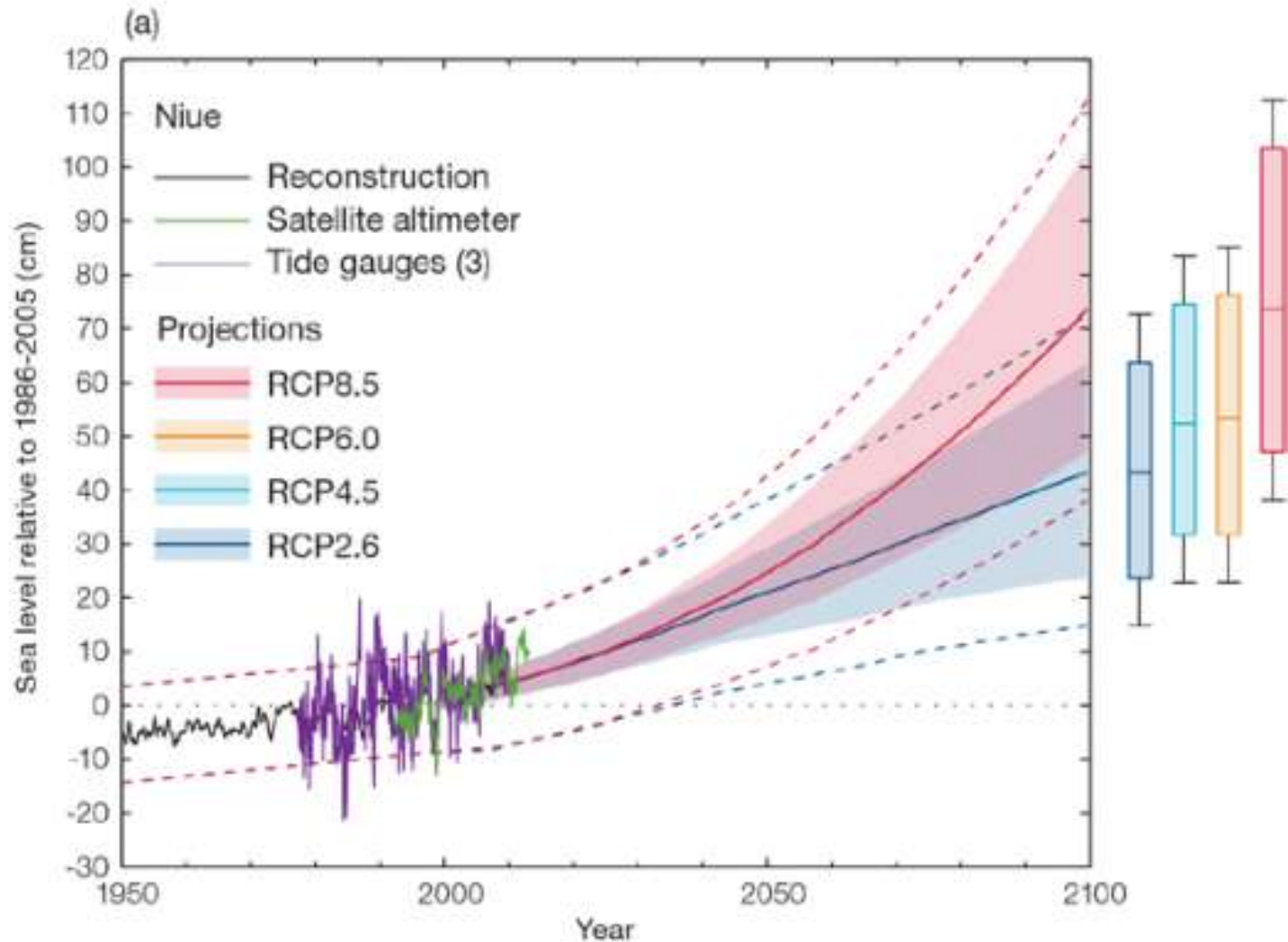
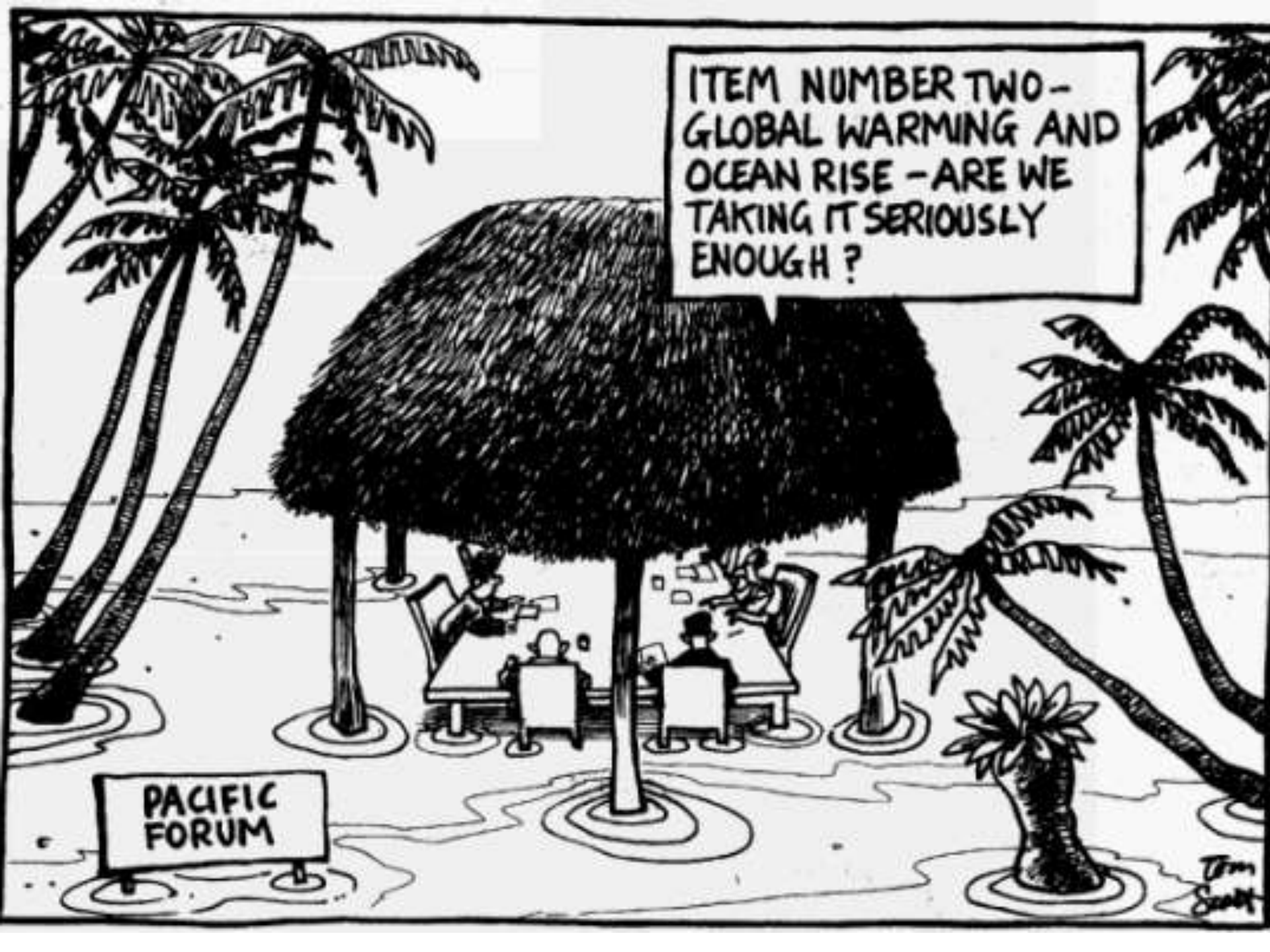


Figure 3.23: The regional distribution of sea-level rise measured by satellite altimeters from January 1993 through December 2009.

Sea Level Projections

Observed and projected relative sea-level change near Niue



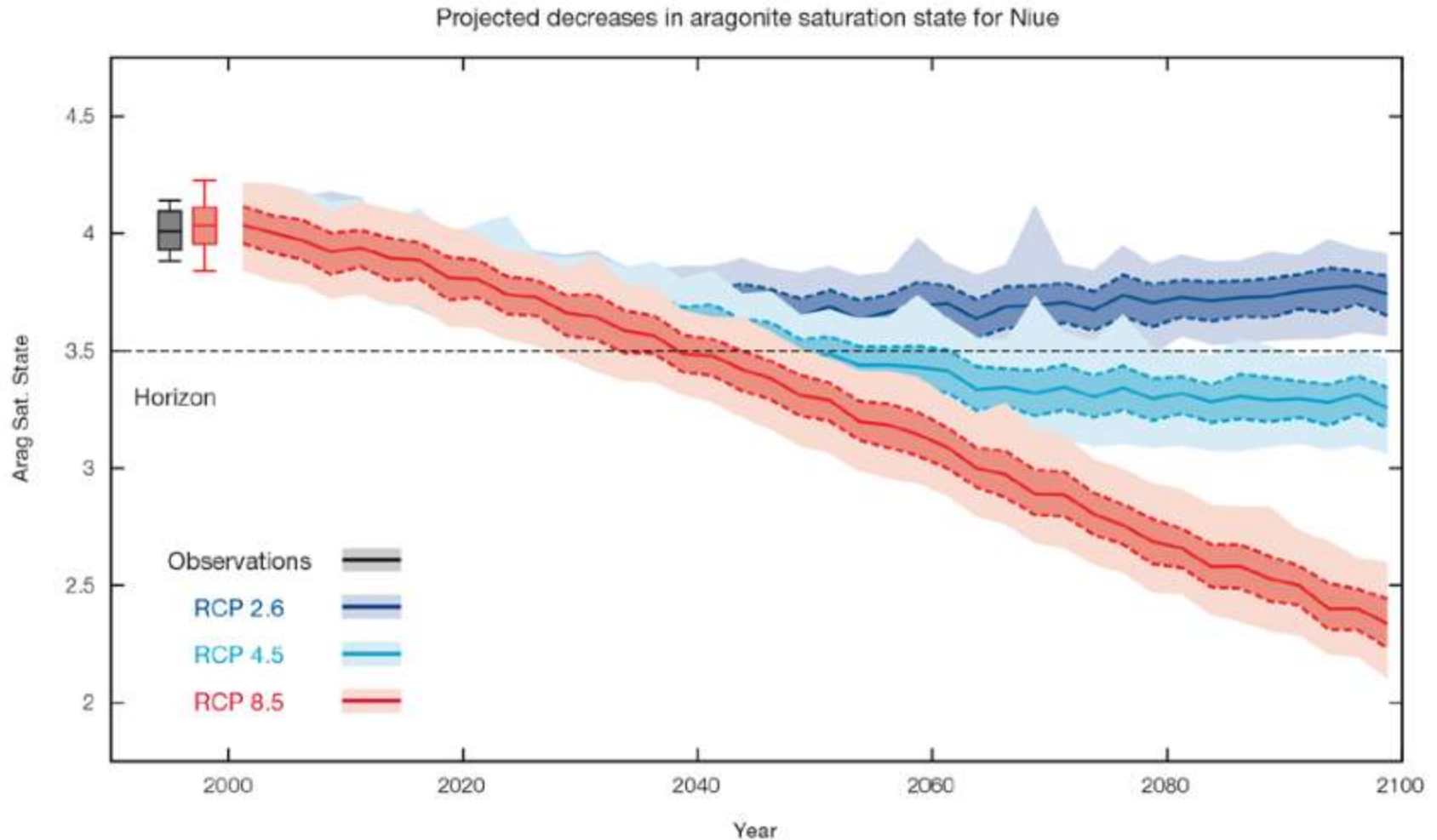


ITEM NUMBER TWO -
GLOBAL WARMING AND
OCEAN RISE - ARE WE
TAKING IT SERIOUSLY
ENOUGH ?

PACIFIC
FORUM

Tim
Scott

Ocean Acidification Monitoring









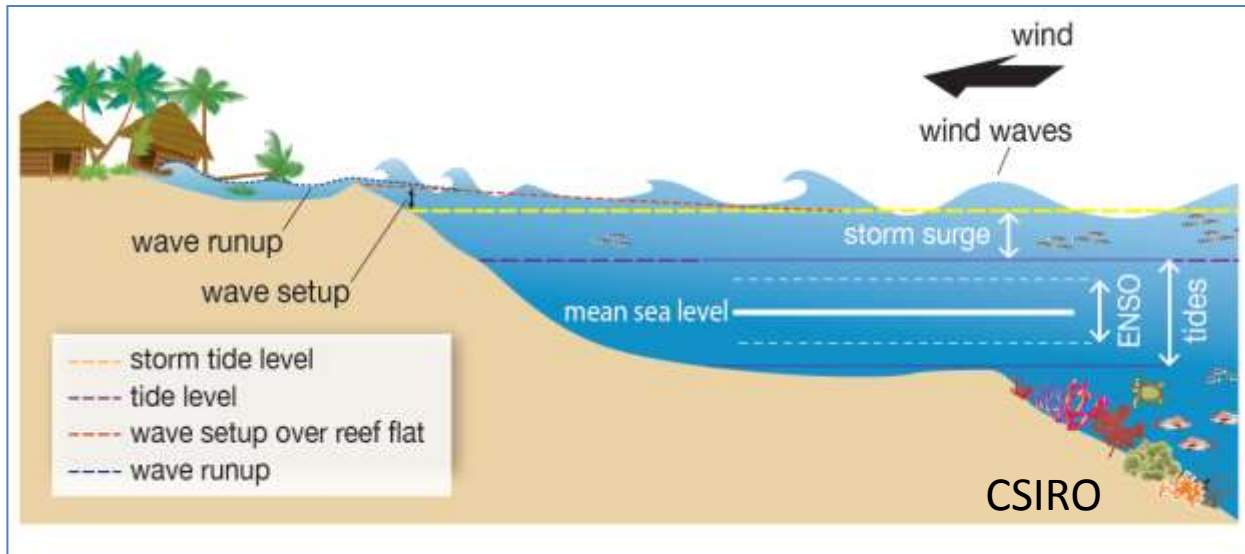




Coastal Adaptation

1. Monitoring (Modeling)
2. Sustainability
3. Legislative frameworks and policies
4. Gender
5. Coordination (Whole Island Approach)
6. Ecosystem based Adaptation
7. Effective Partnership and Coordination in a Whole of Island Approach
8. Beyond Coastal Adaptation

Extreme sea levels - Coastal inundation modelling



Coastal inundation risk depends on complex of factors including prevailing weather, tide, bathymetry and coastal geomorphology; compounded by climate change

- Better understanding of the different sets of physical processes that contribute to extreme sea levels and how they may change in the future
- Investment in Data Collection (Litar, weather, etc) as part of Adaptation
- Information on which to make sound investment decisions

Ownership and sustainability

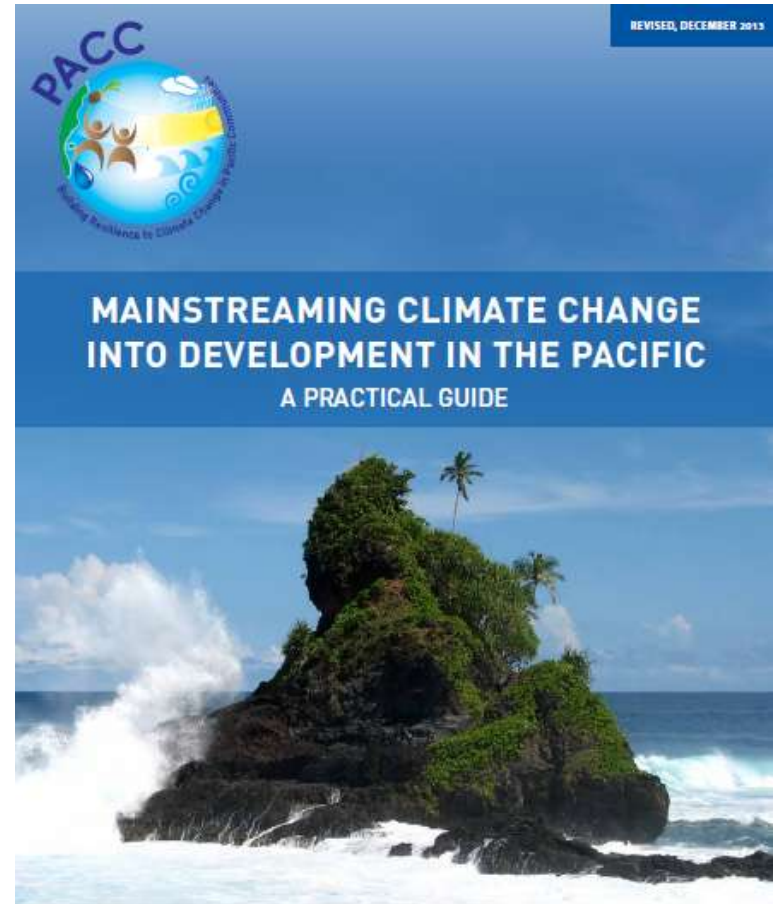
- Consultative and participatory Approach ensuring local ownership



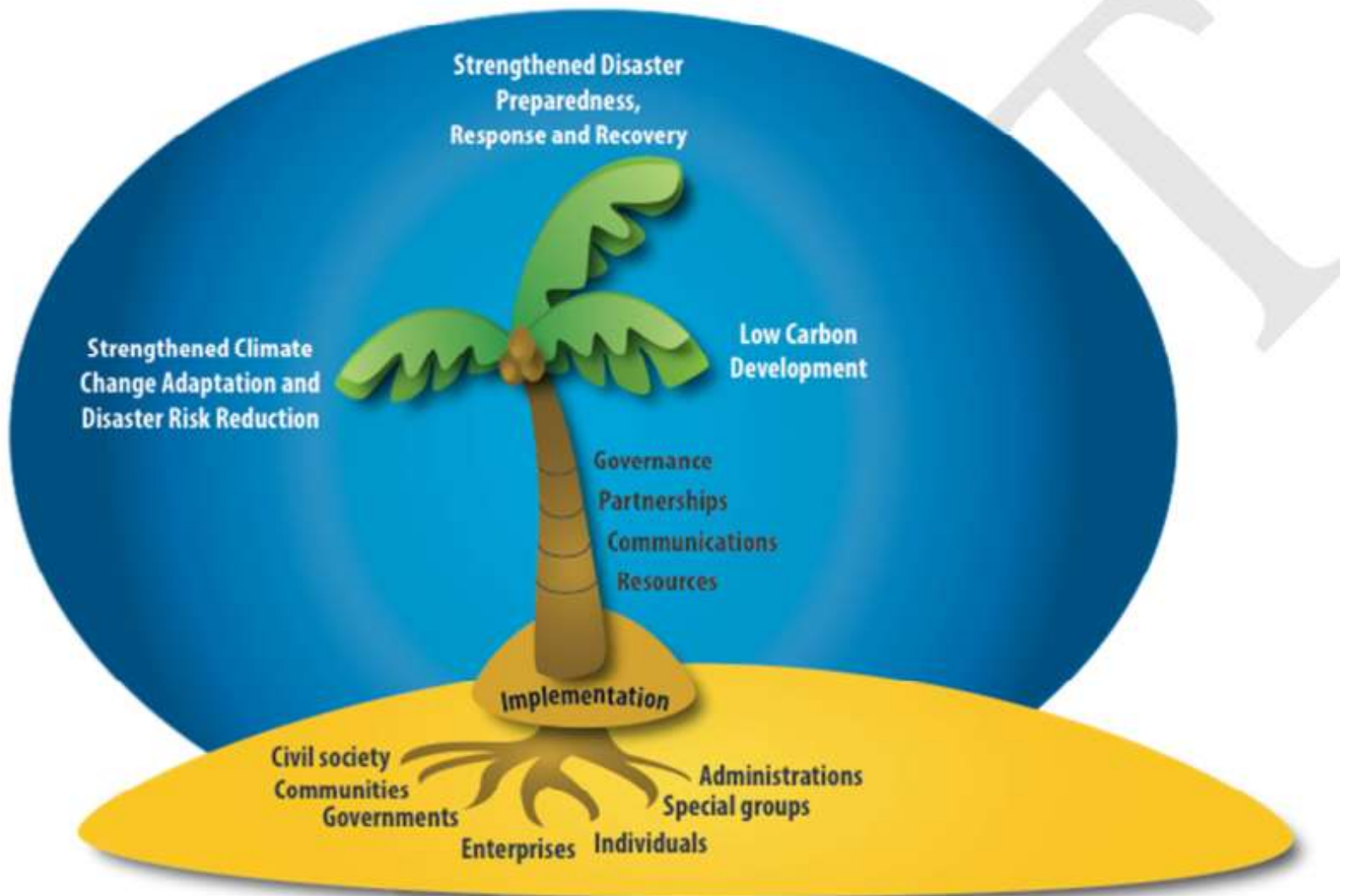
Legislative Frameworks

Policy mainstreaming:

- to strengthen the ability of institutional frameworks, policies and plans to take climate change risks into consideration
- to improve the capacity of key national government and community decision-makers to integrate adaptation measures in key decisions.

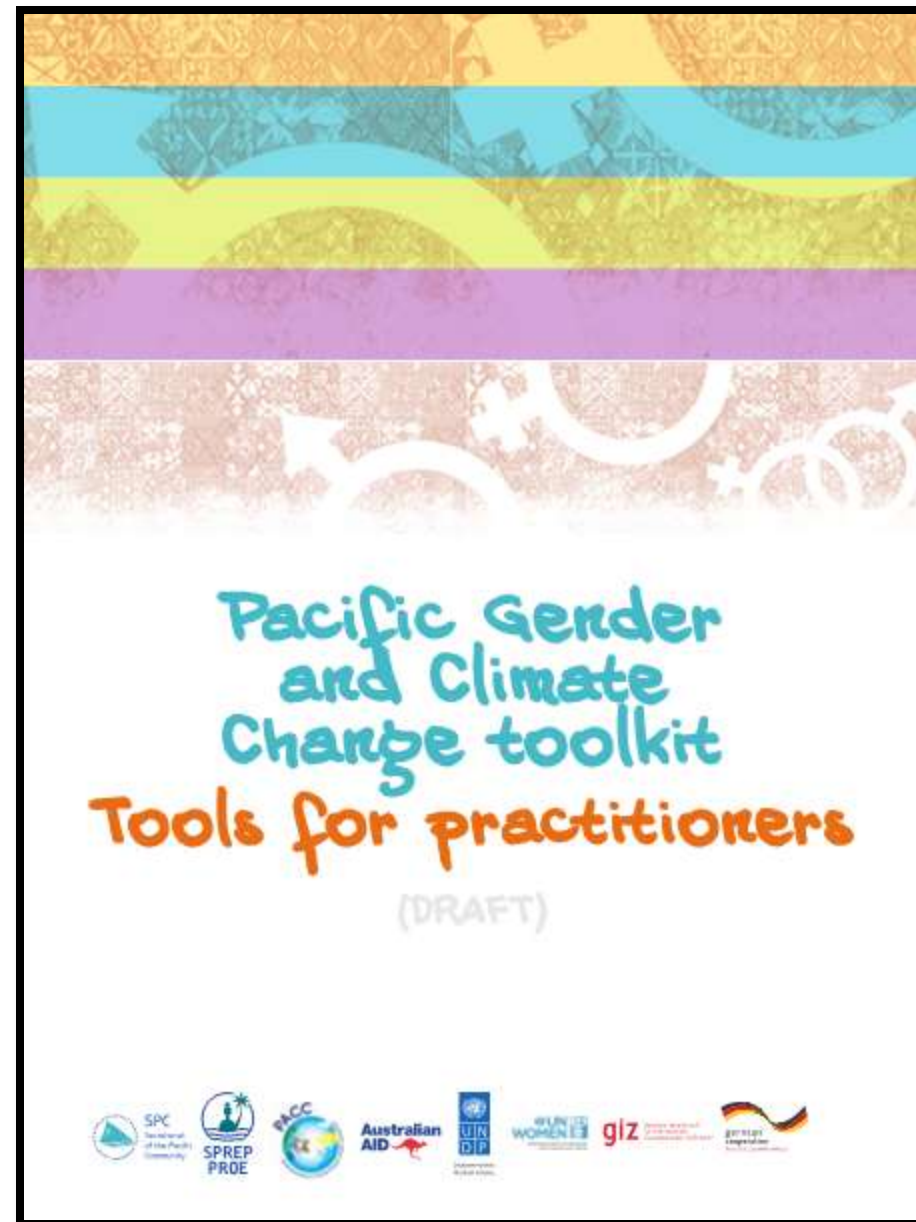


JNAP's to SRDP



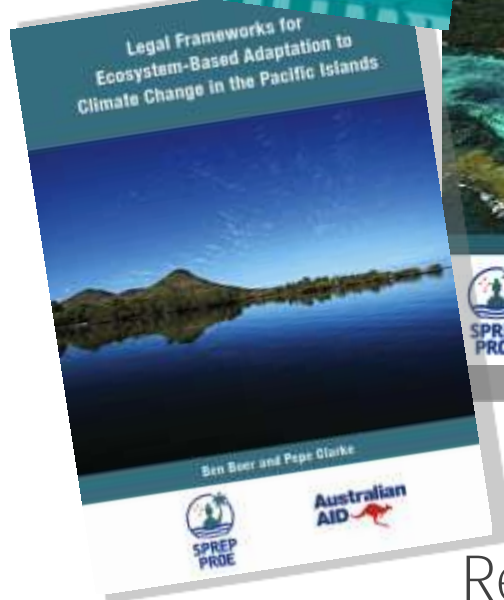
Gender Integration

- Gender integration to adaptation is important
- Sharing of lessons learned is important
- Pacific Gender and Climate Change Toolkit – Tools for Practitioners



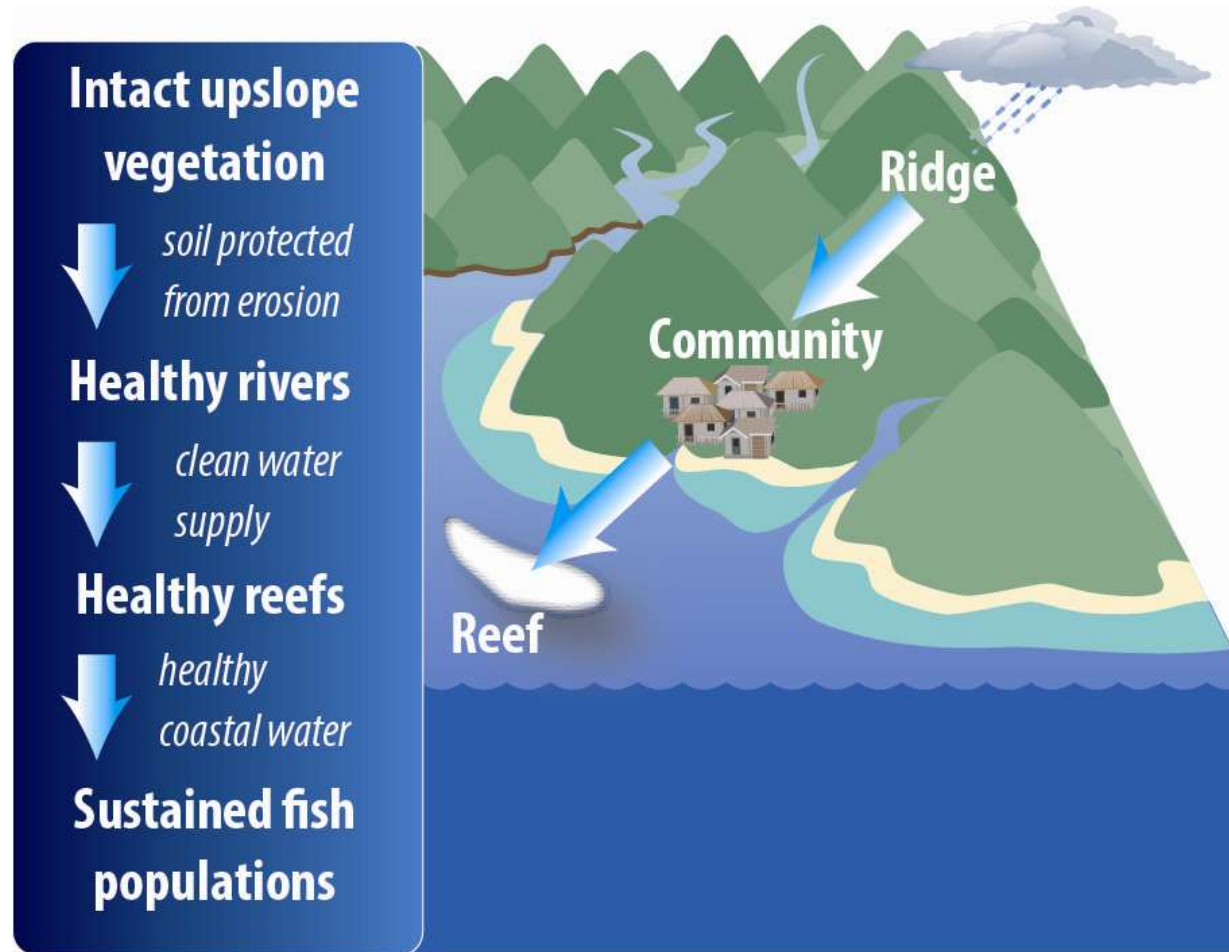
Ecosystem based Adaptation: Tools and Publications

- EbA toolbox & supporting information for Pacific Islands.
- Legal framework for EbA in the Pacific.
- Choiseul Province – full length vulnerability assessment.
- Coastal EbA projects with Samoa, Vanuatu and Kiribati. USAID water sector EbA work in Kiribati.
- Increasing interest from many countries across the Pacific.

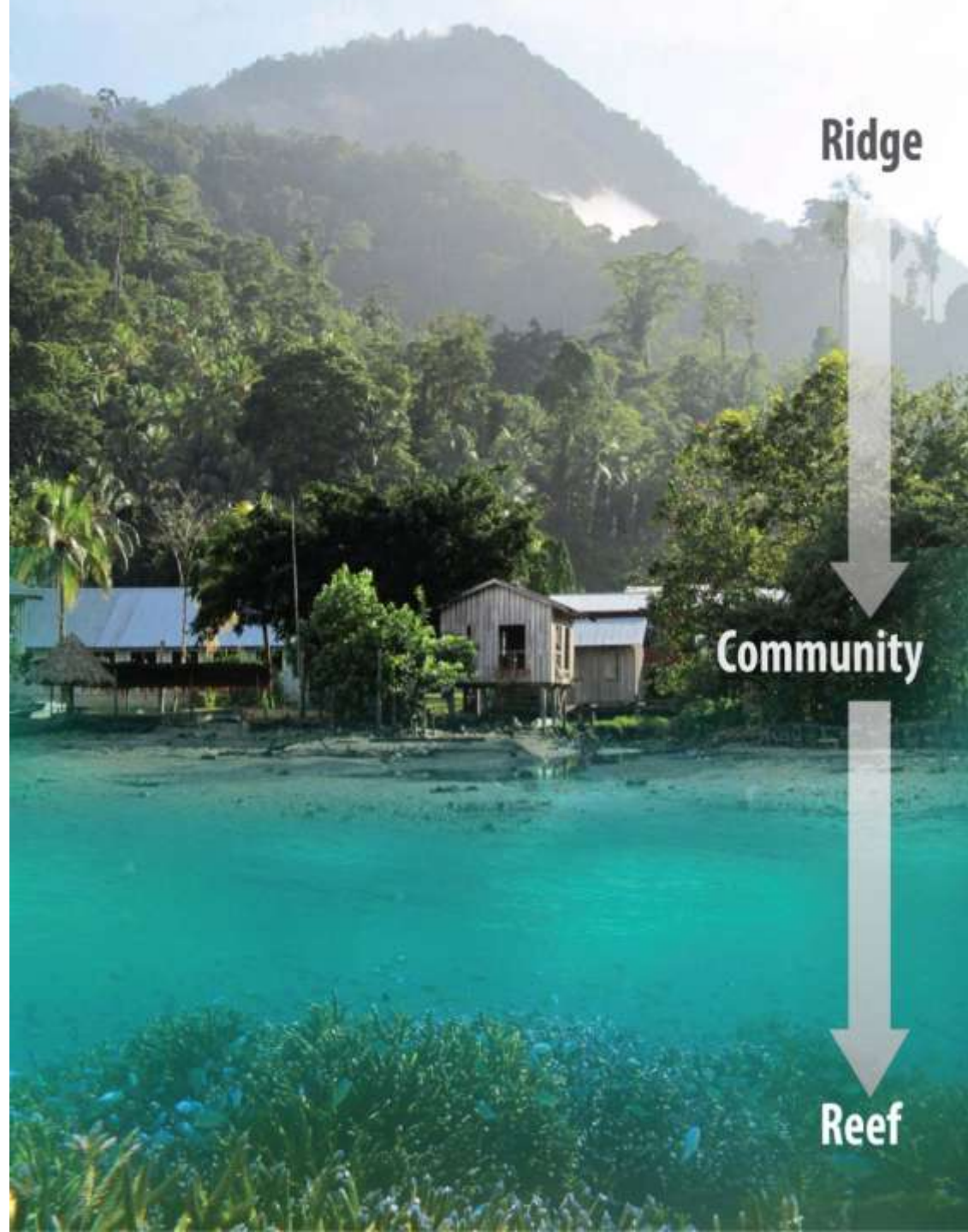


Reports and more information at: www.sprep.org

Ridge-Community-Reef



- Almost all Pacific communities are coastal. The terrestrial, freshwater and marine ecosystems they depend on are closely linked by the relatively small catchment areas that connect the mountains, coastline and reefs.
- Ridge to reef planning integrates multiple sectors including agriculture, environment, forestry and fisheries in order to protect community livelihoods.
- Tribal leaders of Choiseul have already decided to work towards a network of protected areas by agreeing to the Ridge to Reef Protected Area Network plan.



Effective Partnership and Coordination in a Whole of Island Approach





Abayang Whole of Island Approach

Integrated Vulnerability and Adaptation Assessment

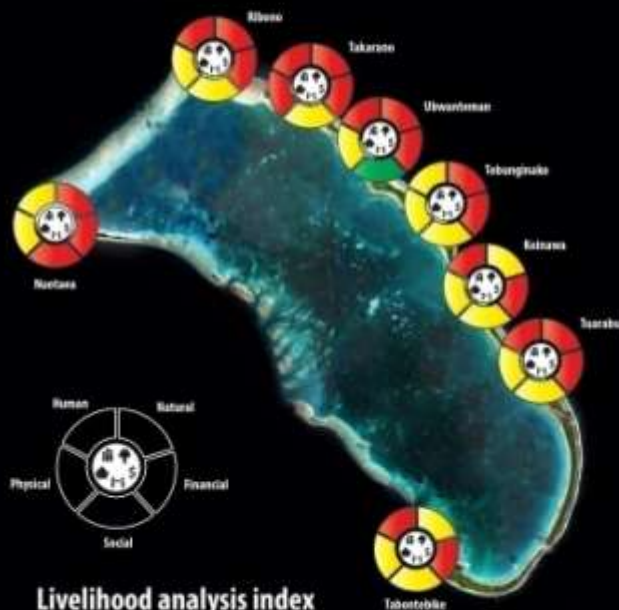
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Is Abaiang ready to adapt to climate change?

To assess community perceptions of livelihoods and governance, Participatory Rural Appraisals (PRA) were conducted in 8 villages through workshops facilitated by Government of Kiribati staff, in each of the selected villages, a minimum of 30 community members attended. They were divided into three groups (men, women and youth) and the Sustainable Livelihood Analysis (SLA) index was used to assess adaptive capacity. In addition, household surveys were conducted in 17 villages (representing 50% of all residents in Abaiang). Overall results were mostly consistent between the villages assessed.



Photos: PRA group work (left) and household survey staff (right).



Livelihood analysis index

- High** - Adaptive capacity to climate change projections is considered adequate
- Moderate** - Adaptive capacity to climate change projections is considered partially adequate
- Low** - Adaptive capacity to climate change projections is considered low
- Insufficient** - Adaptive capacity to climate change projections is considered insufficient

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Human Capital: Due to a lack of employment opportunities, migration to South Tawara and overseas is reducing the active working population in Abaiang. 41% are either unemployed or not in the labour force. Personal productivity on Abaiang is also affected by ongoing health issues. 51% of the population reported suffering a waterborne disease within the last year. This is exacerbated by the limited medical services available. There are 8 clinics staffed by nursing officers, but no resident doctor.



Social Capital: The traditional governance system, centred in the 'Mwanosha' (meeting house) located in every village, is highly regarded on Abaiang. 81% of the population surveyed value this traditional practice of collective action and cooperation. A similar number felt that they themselves can also shape decision-making in their community within this system. Despite strong traditions, progressive solutions can be embraced in Abaiang; 78% surveyed felt that new ways of solving problems are always accepted by the community.



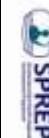
Natural Capital: The need to protect and manage natural resources to avoid increasing their vulnerability to climate change was felt strongly by communities. Households surveyed identified drinking water supply (23%), increased temperature (21%), coastal erosion (19%) and changes to land and marine resources (8%) as the most significant natural resource issues they expect to face. Although 20% stated that they had not heard of, or come across information about climate change before.



Physical Capital: Infrastructure for transport, communication and water supply is limited on Abaiang. The main road is unsealed and in poor condition. Imported fuel and food shortages are common. Mobile phone communication has recently improved through the construction of a new tower. The vast majority of shelter and housing is constructed from traditional materials. 84% of the 926 house roofs are made from coconut fronds or pandanus, greatly limiting the potential for rain water harvesting.



Financial Capital: Average household income was reported to be approximately SAUD 100 per month. Copra sold through a cooperative system is the most common source of cash income in Abaiang, though production has been decreasing since a peak of 357 tonnes produced in 2006. Incomes for copra can vary greatly due to factors such as market prices and low production caused by drought. Domestic credit opportunities are limited and household incomes can be supplemented from overseas remittances. Rising prices for imported food and fuel are highly likely to increase affordability issues in Abaiang.



Beyond Coastal Adaptation





Thank you