PACCSAP Science Symposium

Honiara

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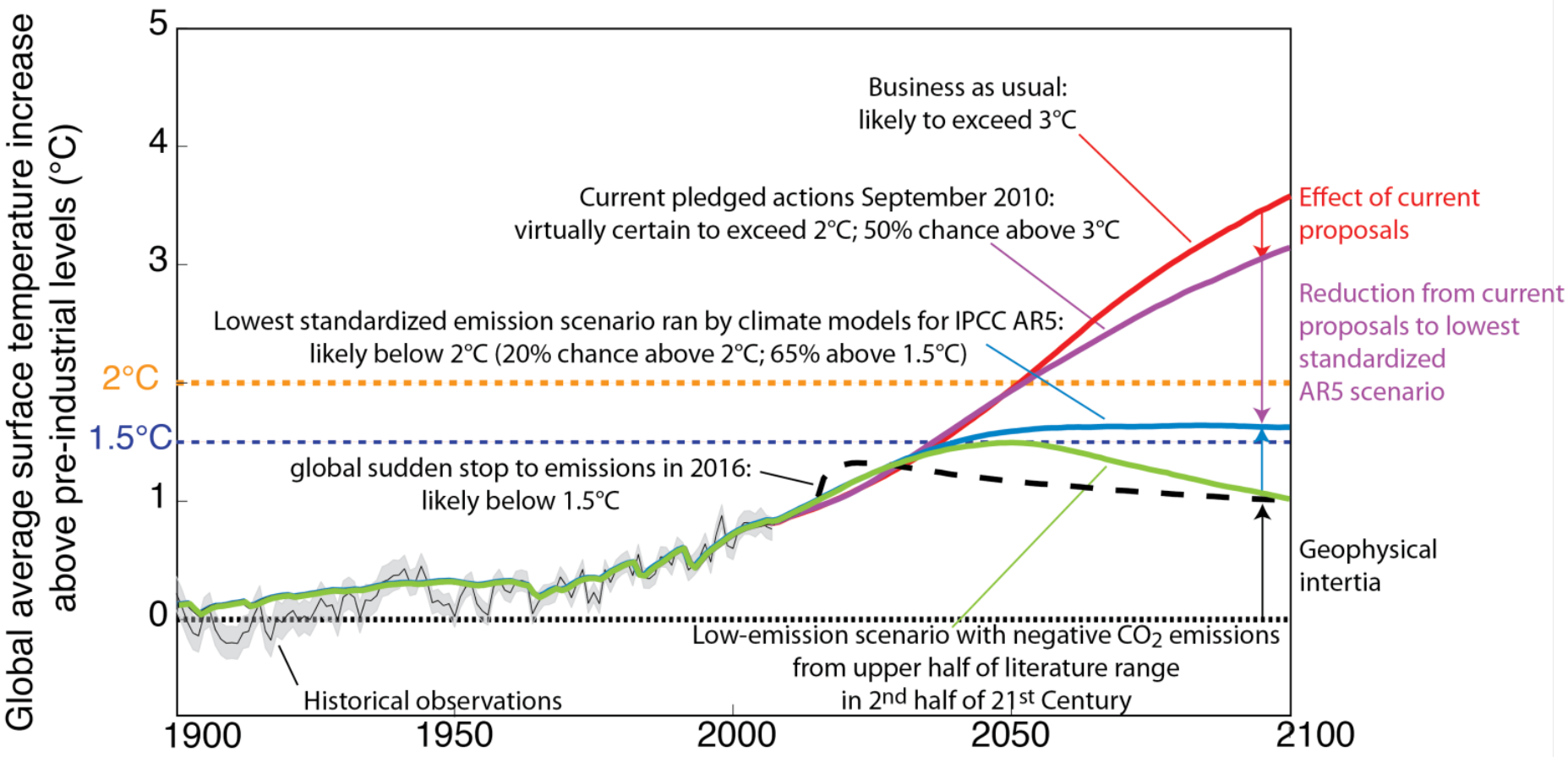
AusAID

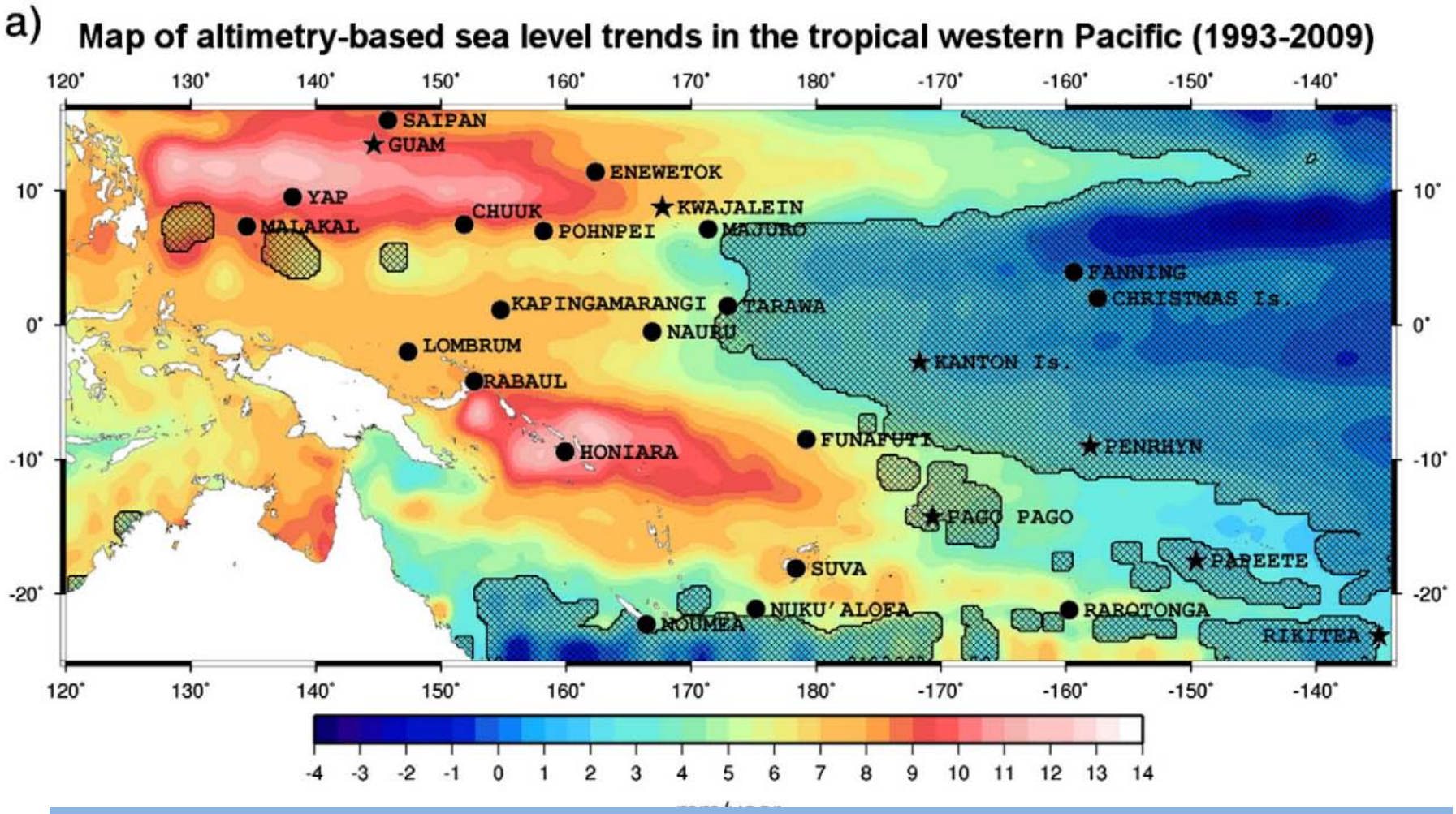
Climate Change Impacts, Adaptation and Emerging Needs in the Pacific

Climate Change Impacts:

Direct Impact of GHG: Global Warming



- Science links emissions to global warming



Funafuti Island, Tuvalu (last 60 years observations):

- **rate of rise up to 3 times larger than the global trend**
- **30 cm rise in total**

Becker et al. 2011

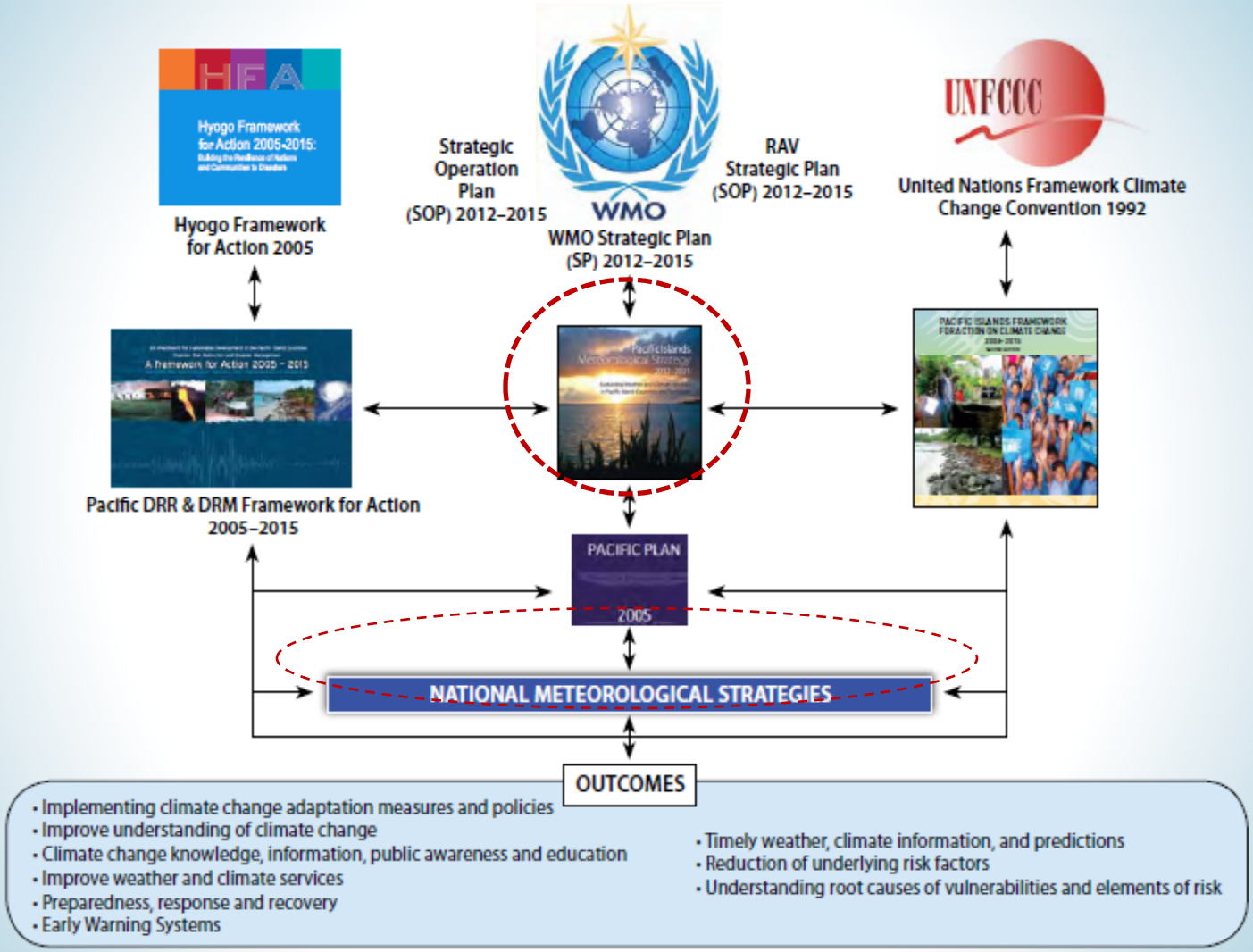
Climate Change Impacts:

Loss of biodiversity

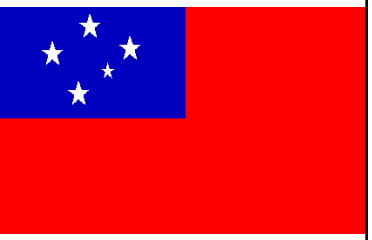
Loss of crops & food supply


Saline intrusion into groundwater – taro decline & potable supplies

Adaptations – Global, Regional and National

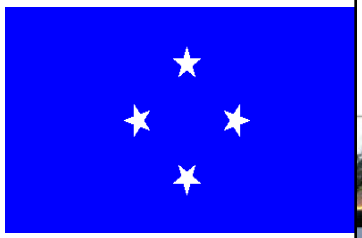


Adaptations – National, Provincial, Outer Islands

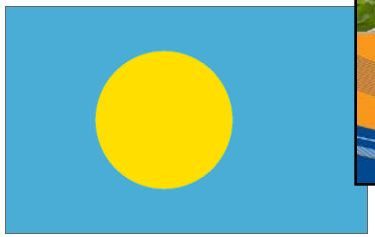


Samoa

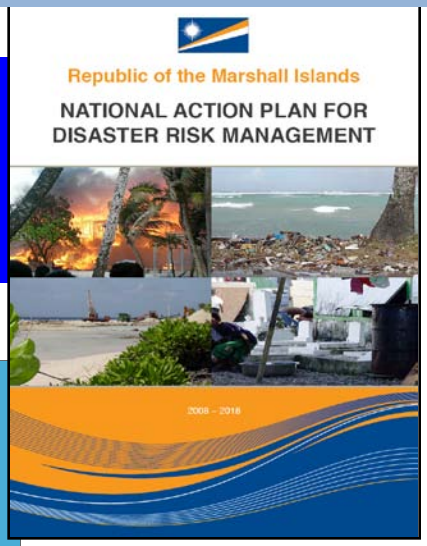
Vanuatu



FSM

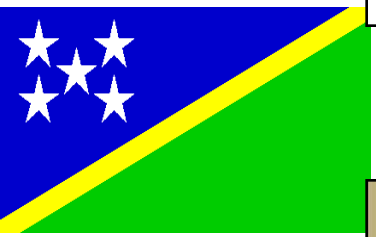


Palau

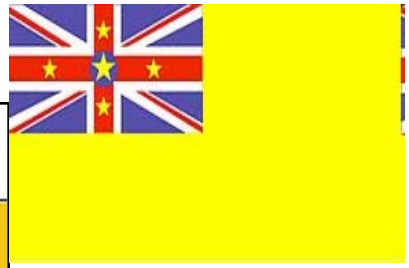


Marshall Islands

PNG

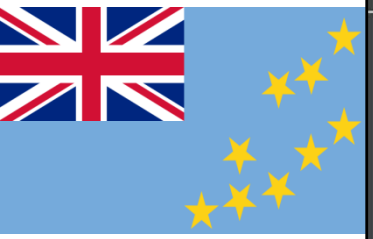


Sol Islands

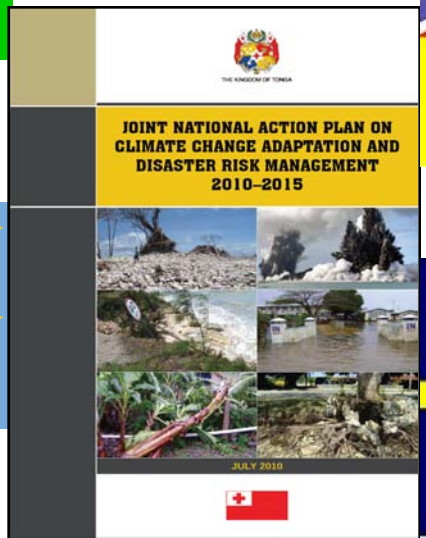


Niue

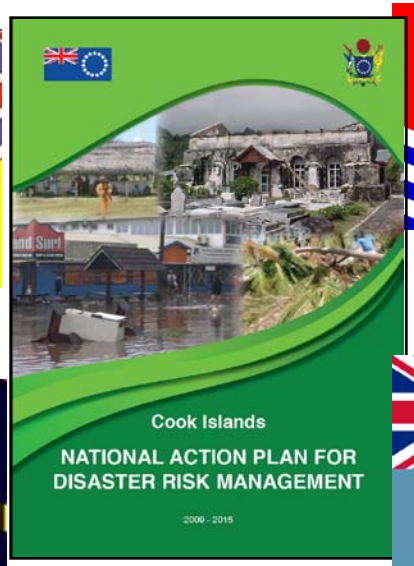
Kiribati



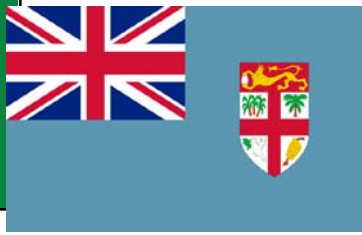
Tuvalu



Nauru

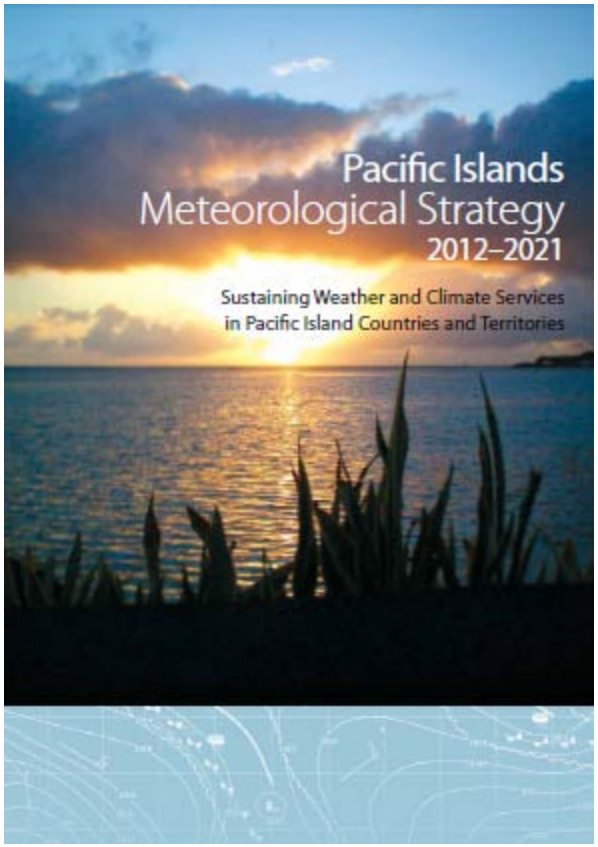


Cook Islands



Fiji

Pacific Islands Meteorological Strategy 2012-2021



- the role of meteorology and scientist and the Science is a key linkage in the strengthening of community resilience in the region
- emphasizes that science is needed to inform decision making
- The PIMS2012-2021 provides a roadmap for improving key areas in NMS and Science information to support sectors

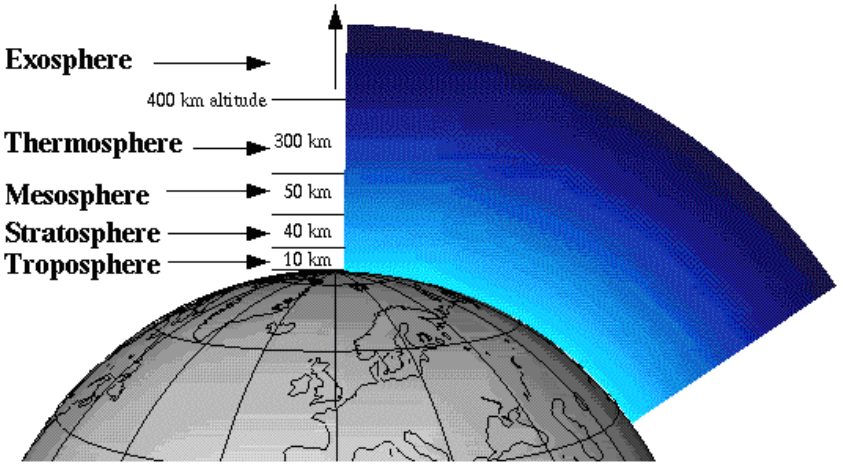
Ongoing and Emerging Needs in the Pacific

Why is the Ocean so Important?

It takes the same energy to heat

The Whole Atmosphere

as



The top 3m of the ocean

If we want to monitor climate change,
we need to monitor the ocean.

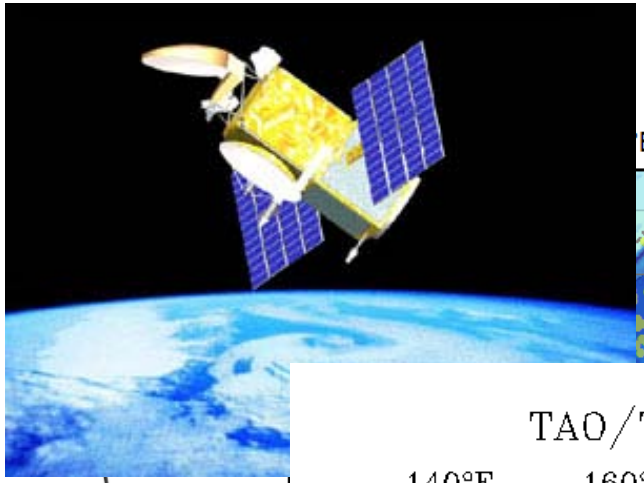
The Ocean Controls Island Climate

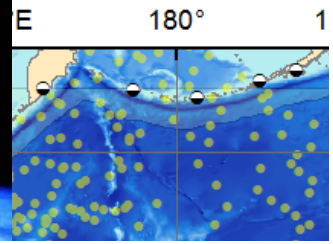
- The Air Temperature is usually
  the Ocean temperature ± 5°

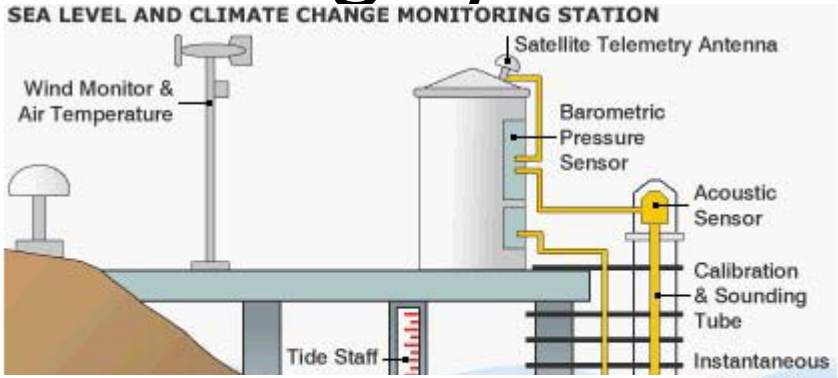
- Cool Sea Surface Temperature
  → Less Rainfall.

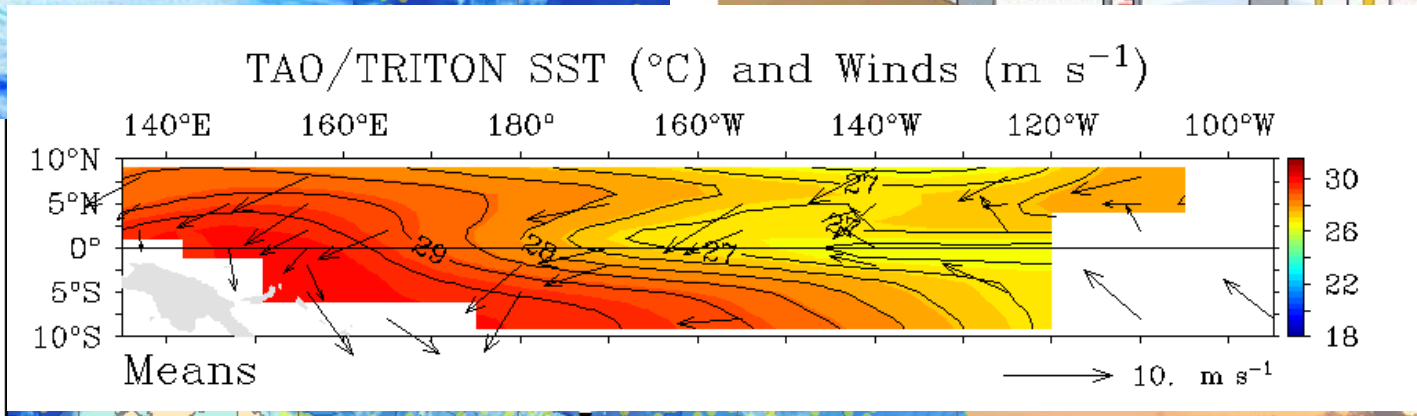
- Warm Sea Surface Temperature
  → More Rainfall

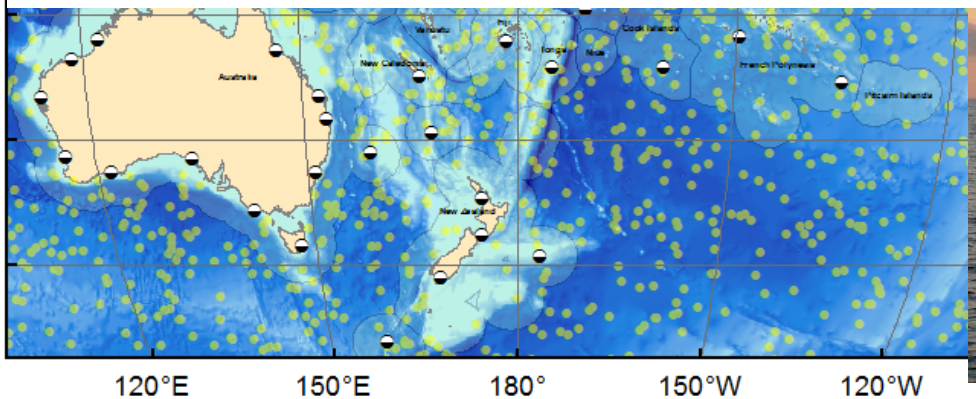
The Pacific Ocean Observing System

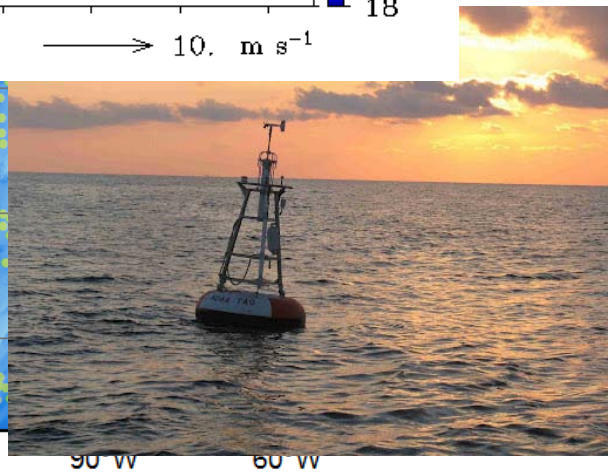












From Science to Management

Where do from here!

FROM BoM CSIRO

- Update climate futures based on new IPCC AR5
- Understanding of processes/science behind climate change (e.g. SPCZ, West Pacific Warm Pool and associated rainfall)
- Updated Cyclone Projections

Where do from here!

WITH SPREP SUPPORT

- Continued and increased research opportunities for Pacific Islanders
- Sustainability of PACCSAP outputs
- Ongoing effective communication of science outputs
- Tools for communication to specific sectors (e.g. FINPAC)
- Continued support for Climate Databases (e.g. CliDE)
- GCOS – Global Climate Observing System
- GOOS – Global Ocean Observing System,
  - Increased understanding and use of GOOS data
  - Ocean Acidification monitoring and understanding

From Science to Management

What are the Challenges?

- Sustainability
- Science informing Decision Making
- Role of scientist working with NMS
- Role of science working with sectors with the increasing convergence of managing climate change, disaster risk and environmental impacts in the Pacific

Challenges

- Lack of Infrastructure for to support quality monitoring and data that form an important foundation for weather and climate analysis to inform decisions (national and community level)