Vanuatu

CURRENT & FUTURE CLIMATE RISKS

Christopher Bartlett - GIZ / Ministry of Climate Change

TRACES…

T – Temperature

R - Rainfall

A – Acidification of the Ocean

C – Cyclone Intensity

E – Extreme Events

S – Sea Level Rise

Temperature in Vanuatu

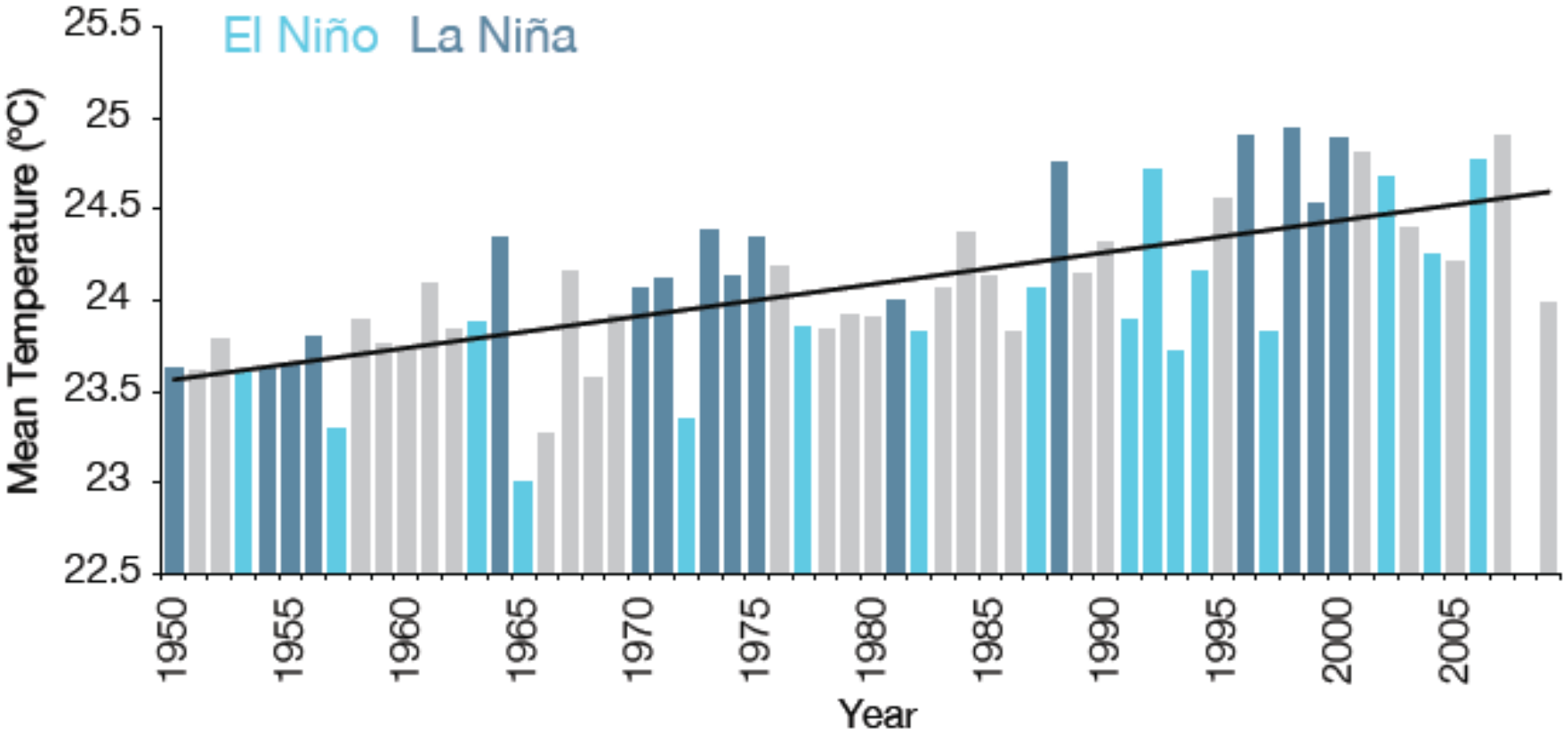

Figure 4: Annual average temperature for Bauerfield Airport, Port Vila. Light blue bars indicate El Niño years, dark blue bars indicate La Niña years and the grey bars indicate neutral years.

Annual maximum and minimum temperatures have increased.

Rate of 0.17°C-0.18°C per decade.

- **Temperatures continue to increase.**
  - **By 2030, under BAU, projected 4–1.0°C.**
  - **Annual mean temperatures and extremely high daily temperatures will rise (very high confidence);**
  - **More very hot days + warm nights and a decline in cooler weather.**

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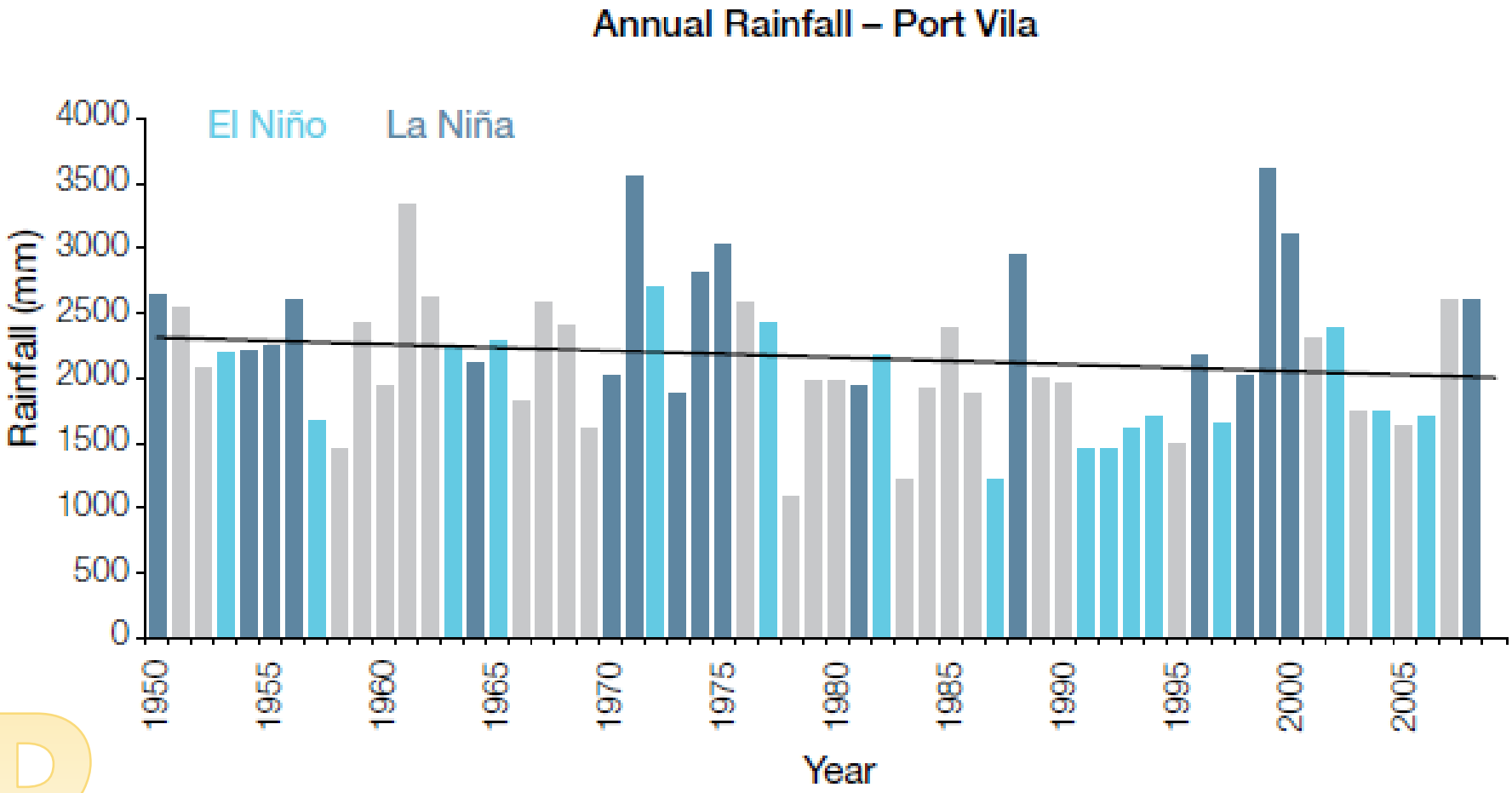
Rainfall in Vanuatu



R

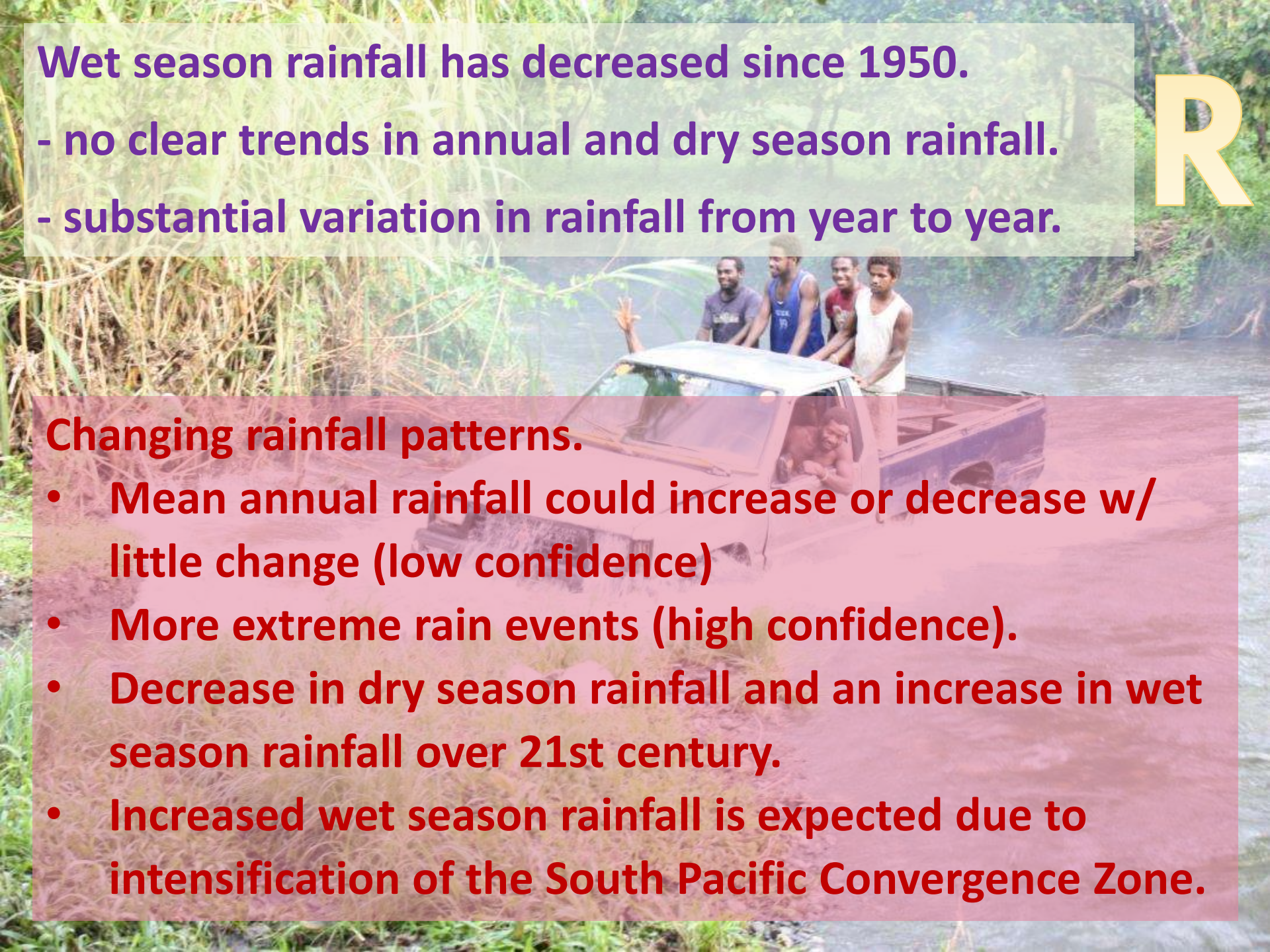
SPC Secretariat of the Pacific Community

giz Partner for the Future. Worldwide.

Wet season rainfall has decreased since 1950.

- no clear trends in annual and dry season rainfall.
- substantial variation in rainfall from year to year.

R



Changing rainfall patterns.

- Mean annual rainfall could increase or decrease w/ little change (low confidence)
- More extreme rain events (high confidence).
- Decrease in dry season rainfall and an increase in wet season rainfall over 21st century.
- Increased wet season rainfall is expected due to intensification of the South Pacific Convergence Zone.

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Ocean acidifying. Since the 18th century the level of ocean acidification has been slowly increasing in Vanuatu's waters.

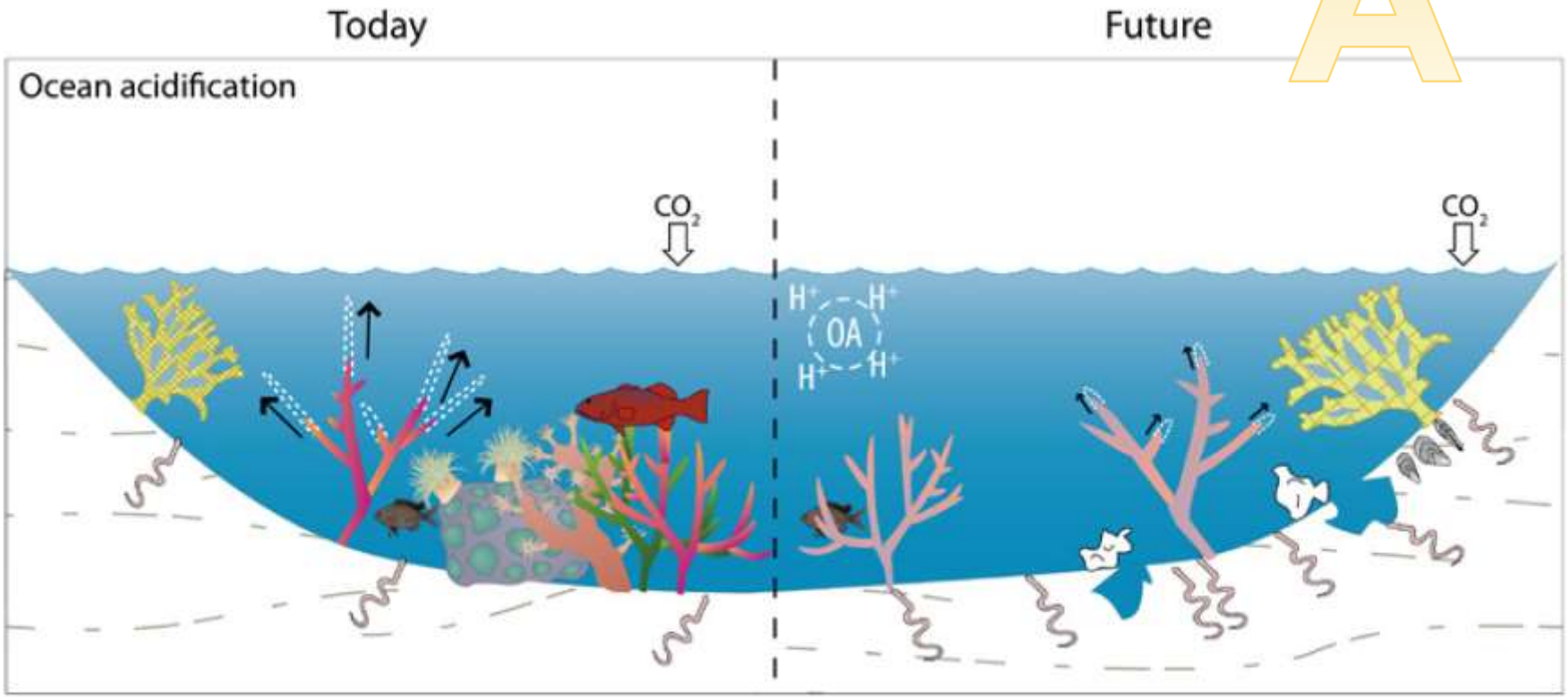
Ocean Acidification

n acidification is expected to continue (very high confidence);

Under all emissions scenarios, the acidity level of sea waters e Vanuatu region will continue to increase over the 21st ury

The impact of acidification on reefs compounded by coral ching, storm damage and fishing pressure

Acidification of the Ocean



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Cyclones in Vanuatu

An average of 24 cyclones per decade developed within or crossed the Vanuatu (EEZ) between the 1969/70 to 2010/11 seasons.

Twenty-nine of the 71 tropical cyclones (41%) between the 1981/82 and 2010/11 seasons were severe events (Category 3 or stronger) in the Vanuatu EEZ.

Less frequent but more intense tropical cyclones.

- increase in the average maximum wind speed of cyclones by between 2% and 11%
- increase in rainfall intensity of ~20% within 100 km of the cyclone centre.
- In Vanuatu region, decrease in the frequency of tropical cyclones by the late 21st century
- increase in the proportion of the more intense storms.

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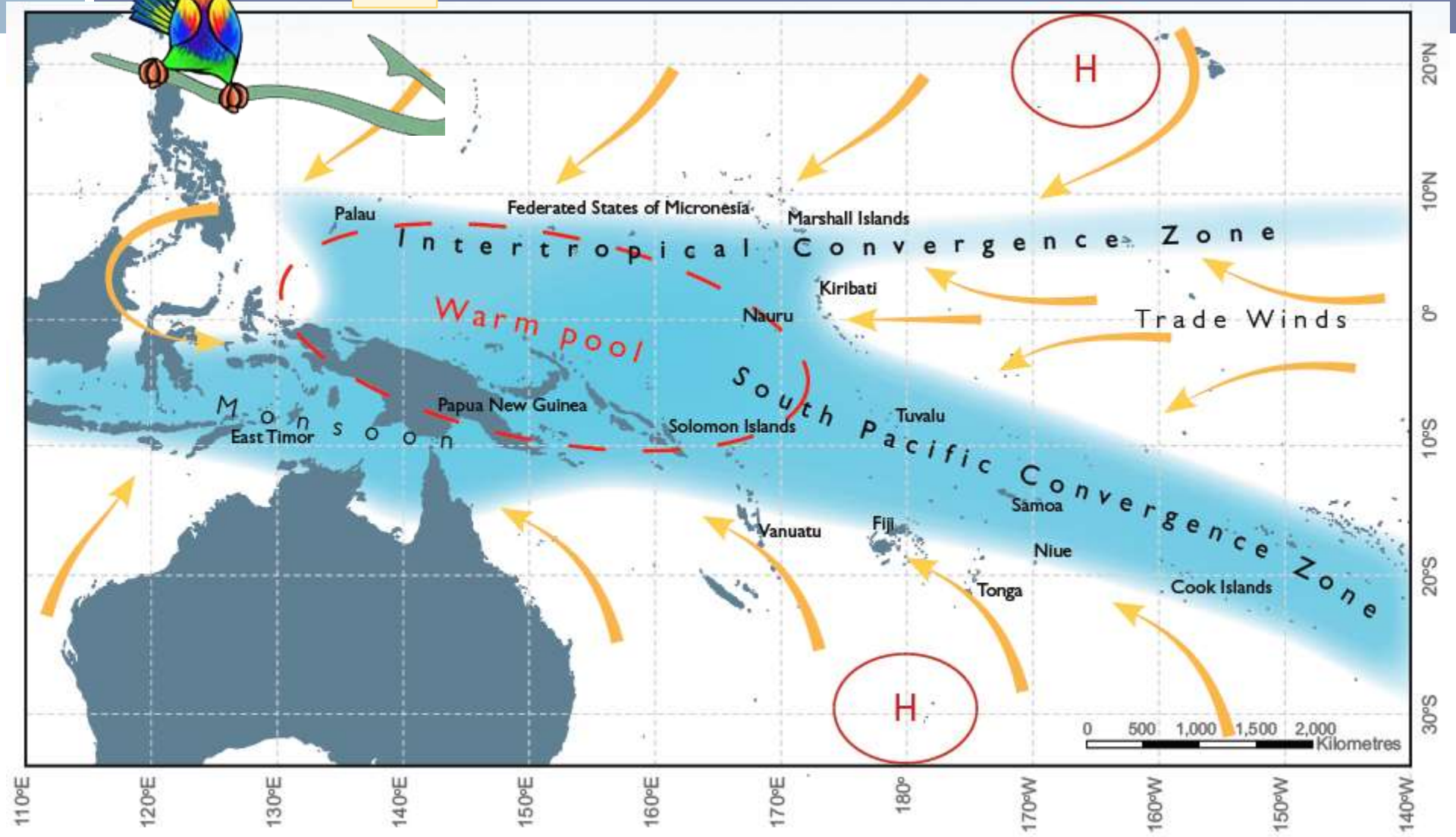
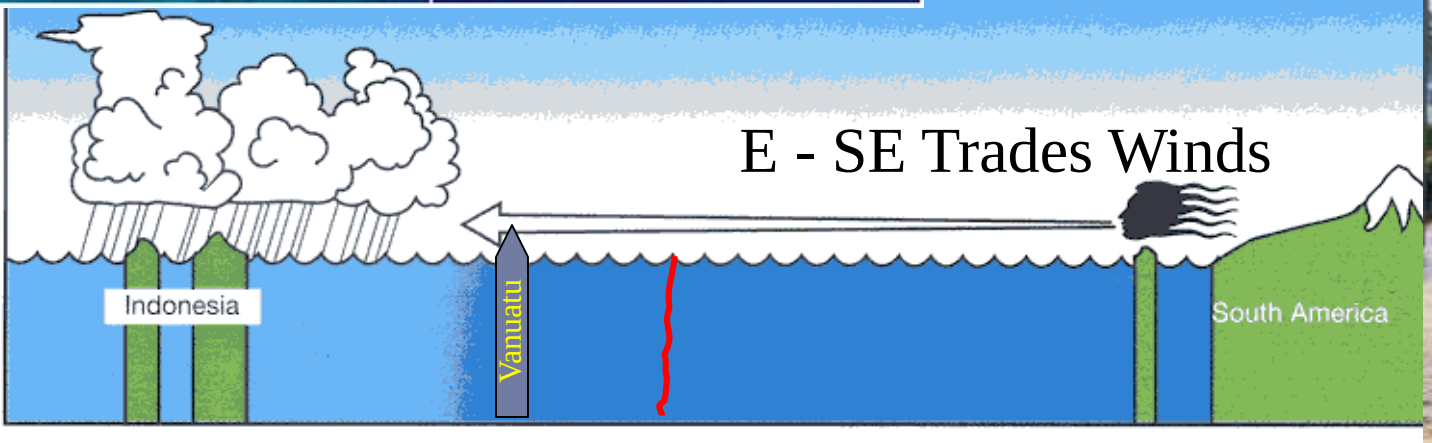
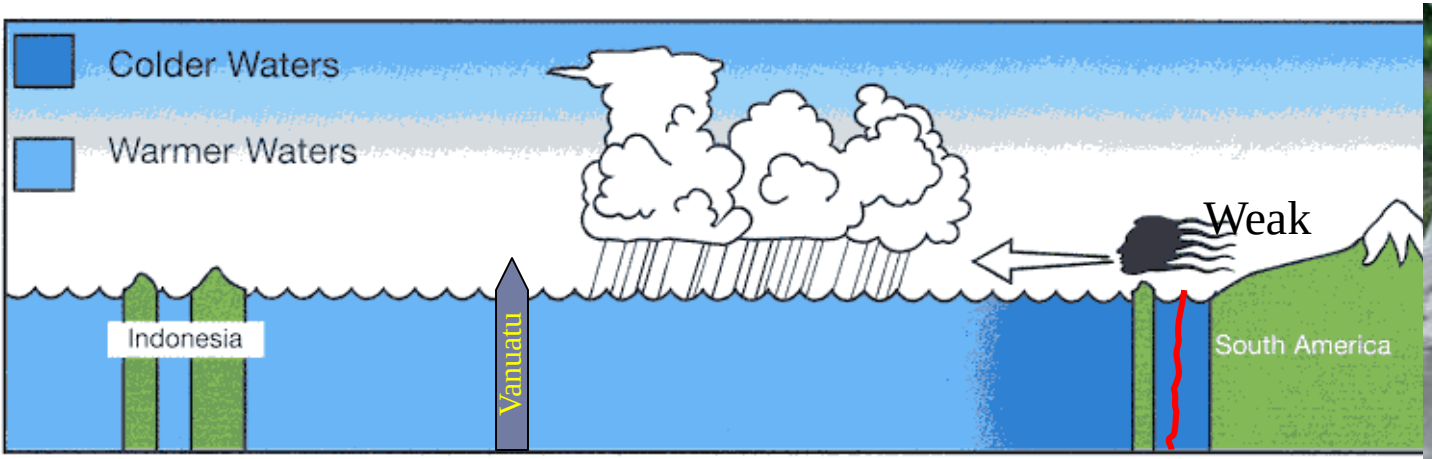
Wanem I mekem Climate?



El Niño and La Niña events will continue to occur in the future (very high confidence)

- little consensus on whether these events will change in intensity or frequency


E - SE Trades Winds
Indonesia
Vanuatu
South America


Colder Waters
Warmer Waters
Weak
Indonesia
Vanuatu
South America

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Sea level has risen.

Satellite data: 6 mm per year since 1993 (larger than the global average of 2.8–3.6 mm per year).

Sea level will continue to rise (very high confidence)

By 2030, under BAU, 3-17 cm.

- **SLR combined with natural year-to-year changes will increase the impact of storm surges and coastal flooding.**
- **Wet season wave heights and periods are projected to decrease slightly (low confidence)**


S

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