

# ***Building Resilient Industries in a Changing Climate***

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Leader of the Australian Pacific Climate  
Change Action Program

#2018FABF

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# Dr Kate Duggan

## Leader of the Australian Pacific Climate Change Action Program

- PhD Earth Sciences Macquarie University/Australian National University.
- More than 25 years working in international development.
- Specialist in natural resource management and climate change.
- Strategic analysis for climate change investment in the Pacific.
- Currently leading the Australian Pacific Climate Change Action Program.



# Climate Change

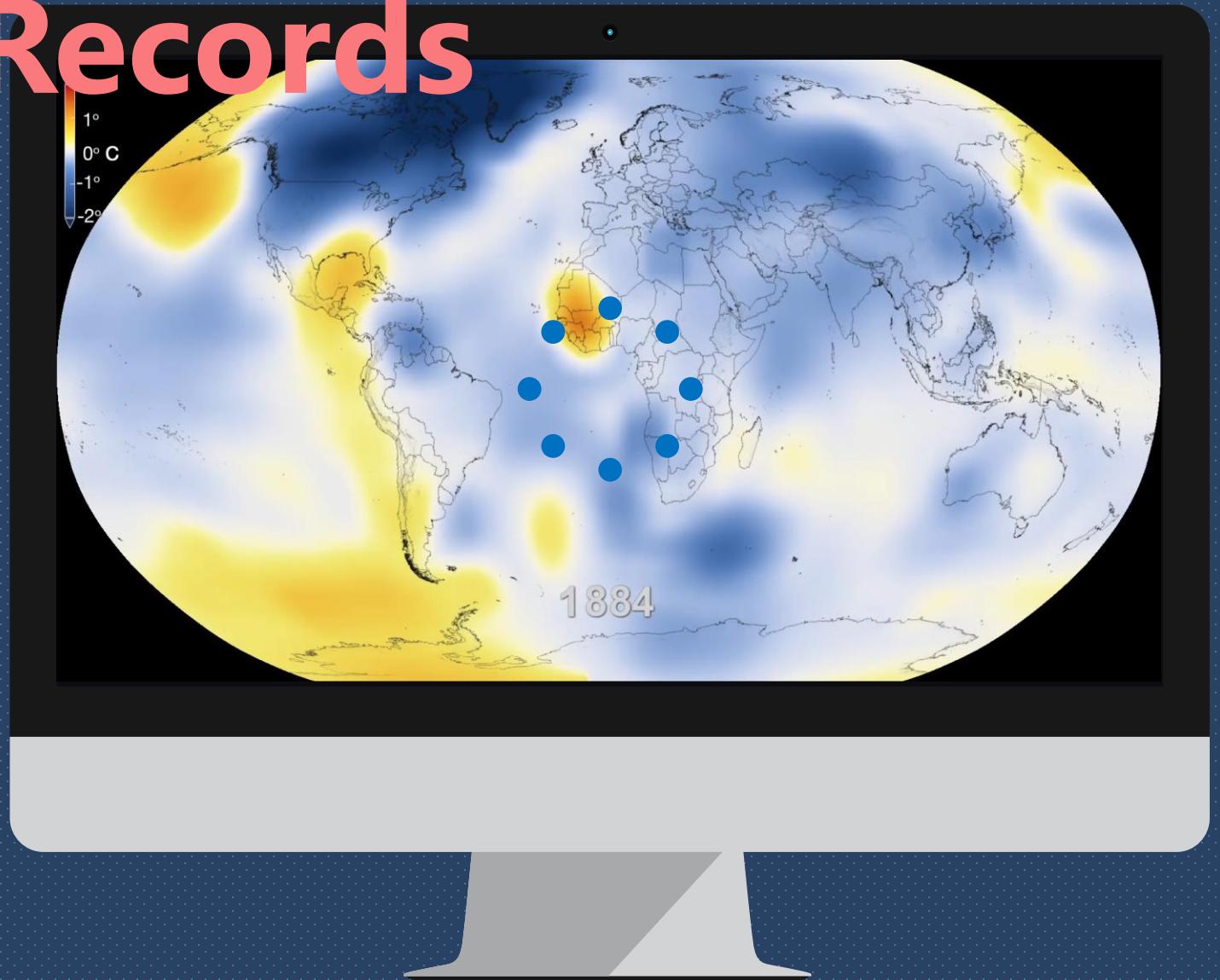
Everyone's business

A large group of people is shown in silhouette against a bright, glowing background. They are gathered around a large, rectangular screen that displays a faint, abstract pattern. The people are in various poses, some with their hands raised, suggesting an active discussion or presentation. The overall scene is dimly lit, with the primary light source being the screen, which creates a strong contrast with the dark silhouettes.

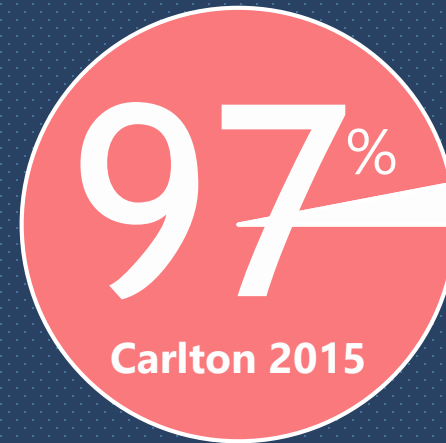
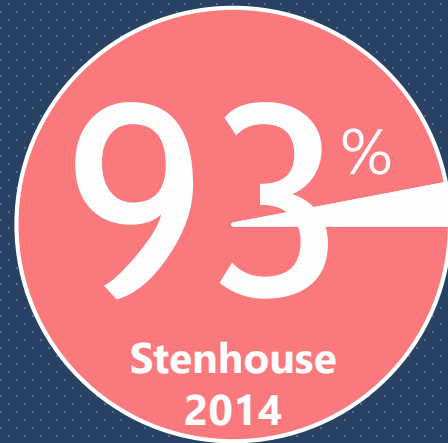
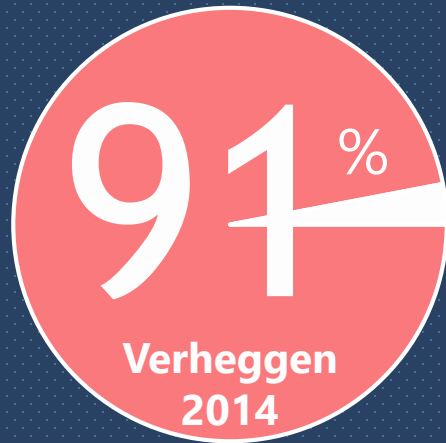
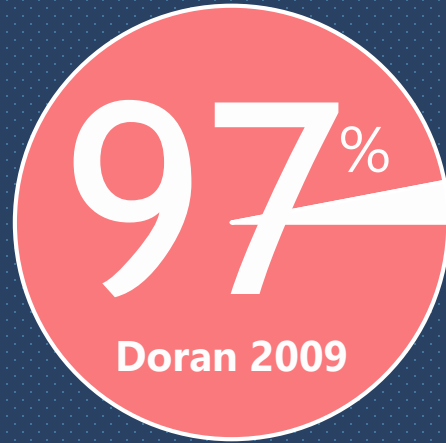
**Everyone has an  
opinion on climate  
change**

# Temperature Records

The five-year average variation of global surface temperatures. Dark blue indicates areas cooler than average. Dark red indicates areas warmer than average.



# Scientific Consensus



# Major disruptions in the Pacific



*'People have already caused major disruptions to rainfall in the Pacific.... We are locked into escalating risks for at least the remainder of the 21<sup>st</sup> century'*

- Bureau of Meteorology 2017

*Category 4 and 5 cyclones are becoming more frequent - Tropical Cyclone Pam (Cat4) affected half the population of Vanuatu in 2015 and caused damages that exceeded 30% of the country's GDP*

- The World Bank 2015

*'Climate change poses the biggest risk to our world in 2018'*

- World Economic Forum 2018





**What's changing?**

*'Sea level rise and storm waves will lead to annual island over-wash and severe flooding in low-lying communities of Pacific atolls by 2050 - for many coastal "retreat" is not an option '*

- Storlazzi et al 2018

*'The habitability of very low-lying islands is being questioned by mid-century rather than end-century.'*

- CSIRO 2018

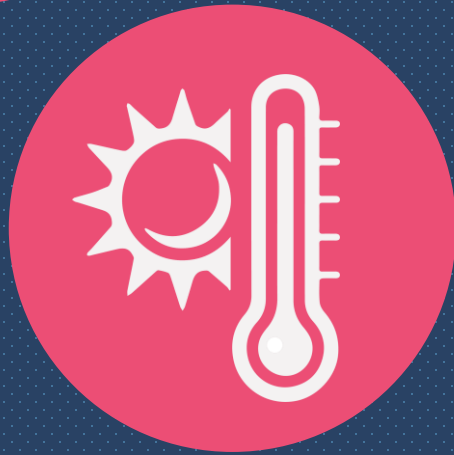
*'Mass migration of people and mass extinction of species and ecosystems by 2100; at 5 degrees human habitation of much of the planet will be marginal - at 6 degrees likely to be impossible'*

- IPCC 2017



# Impacts

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# Tourism

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- Less predictable water supply
- Cabins and facilities damaged
- Roads and transport routes cut
- Ports and airports closed
- Water supplies unreliable



# Agriculture and fisheries

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- Direct damage to crops and storage facilities
- Transport network and supply chain disruptions
- Long term hits to productivity



# Energy

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- Direct costly damage to critical infrastructure and networks
- Transport network and supply chain disruptions
- Opportunity - including market pressure towards renewables

# Aviation and transport

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- Direct costly damage and closures of critical infrastructure and networks
- Disrupted communications and radar coverage
- Transport network and supply chain disruptions

**What can we do?**

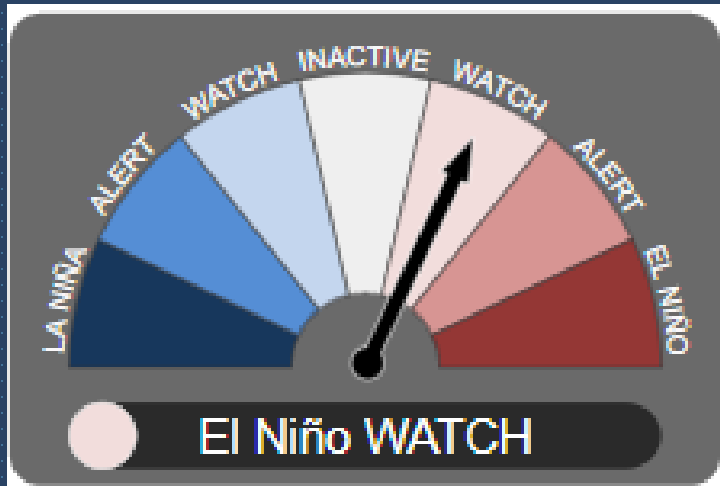
# The integration agenda

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Impacts affect the way we do development across all the major sectors:

- Infrastructure - critical assets - design to withstand extreme events
- Food and water security - weather dependent systems tourism, agriculture and fisheries
- Education - long term skills development
- Health - health systems for vector and water borne disease, and disasters
- Good Governance - legal and institutional architecture
- Community - livelihoods, assets protection and service delivery

# Agriculture



- Climate informed diversified agriculture
- Met services provide seasonal outlooks to agribusiness
- Producers adjust planting, agronomic practice, water storage, produce storage and marketing practices



# Energy

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- Climate informed management of hydro power stations
- Met services provide forecasts to operators
- Operators manage water storage based on seasonal and three day forecasts

# Tourism

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- Photo - water scarcity scale
- Climate informed water management by tourism operators
- Samoa met services issues warnings to operators
- They use a scale warning system to alert guests about water conservation
- And have added additional rainwater storage capacity in some cases

# What success looks like



## **Gizo Markets**

Providing secure facilities for women to sell their market produce helps to empower women, enabling them to engage in the formal economy and improve the livelihoods and health of their families.

# What success looks like



## Vanuatu Skills Partnership Tina River Hydro

The Vanuatu Skills Partnership, with support from Australia, is helping the Ministry of Education and Training build the commitment for skills in Vanuatu need to adapt to climate change, provide clean, secure and move towards clean, affordable low carbon power to Honiara, and reduce pollution and growth in tourism, dependence on costly, agribusiness, handicraft and construction sectors. volatile diesel generation.

# Steps you can take

- Get organized - industry associations
- Get informed - access accurate information
- Collectively go to the Met Services with requests for information
- Approach SPREP and SPC for information
- Talk to climate change agencies about accessing finance
- Get involved with donor projects