



USP

THE UNIVERSITY OF THE
SOUTH PACIFIC

Law, Climate Change and Biodiversity in the Pacific Island Region

Justin Rose

Outline

- Pacific Island Biodiversity
- Pacific Island Law & Society
- Pacific Law and Biodiversity
- Impacts of Climate Change on Pacific Islands Biodiversity
- Legal Responses to Climate-Induced Biodiversity Degradation in the Pacific

Pacific Biodiversity

- 22 countries and territories, 3 sub-regions
- 38 million square km, *only 2 per cent is land*
- More rare, endangered and threatened species per capita than anywhere else.





Scale: 1:76,000,000 at 30°S
 Mercator Projection
 100 Kilometers
 100 Miles

MARINE



World's most extensive and diverse coral reefs, largest tuna fishery, deepest oceanic trenches, healthiest populations of key marine species such as dugong, whales and turtles.

TERRESTRIAL

- High islands have extraordinary tropical forests, including world's 2nd largest in New Guinea.
- Many islands have exceptionally high levels of species endemism (up to 80%).



An Example: Pohnpei, Micronesia



- Over 1000 fish and 300 coral species on Pohnpei's reefs.
- Unique mangrove forests in almost pristine condition
- Endemics in Pohnpei's rainforests include 110 plant species, 13 bird species, 27 tree snails, three fish and one skink
- Unique freshwater swamps with endemic tree species
- World's lowest dwarf cloud forest.
- Highly complex traditional agricultural systems with extraordinary cultivar diversity - 130 species used in Pohnpeian agroforestry incl. 179 yam cultivars, 130 breadfruit and 50 banana cultivars

Threats to Pacific Biodiversity

- Climate change
- Population growth
- Habitat destruction from mining, logging, agriculture, waste disposal
- Over-harvesting fish and wildlife
- Invasive species
- Illegal bio-prospecting

Plural Legal Landscapes

STATE

CUSTOM



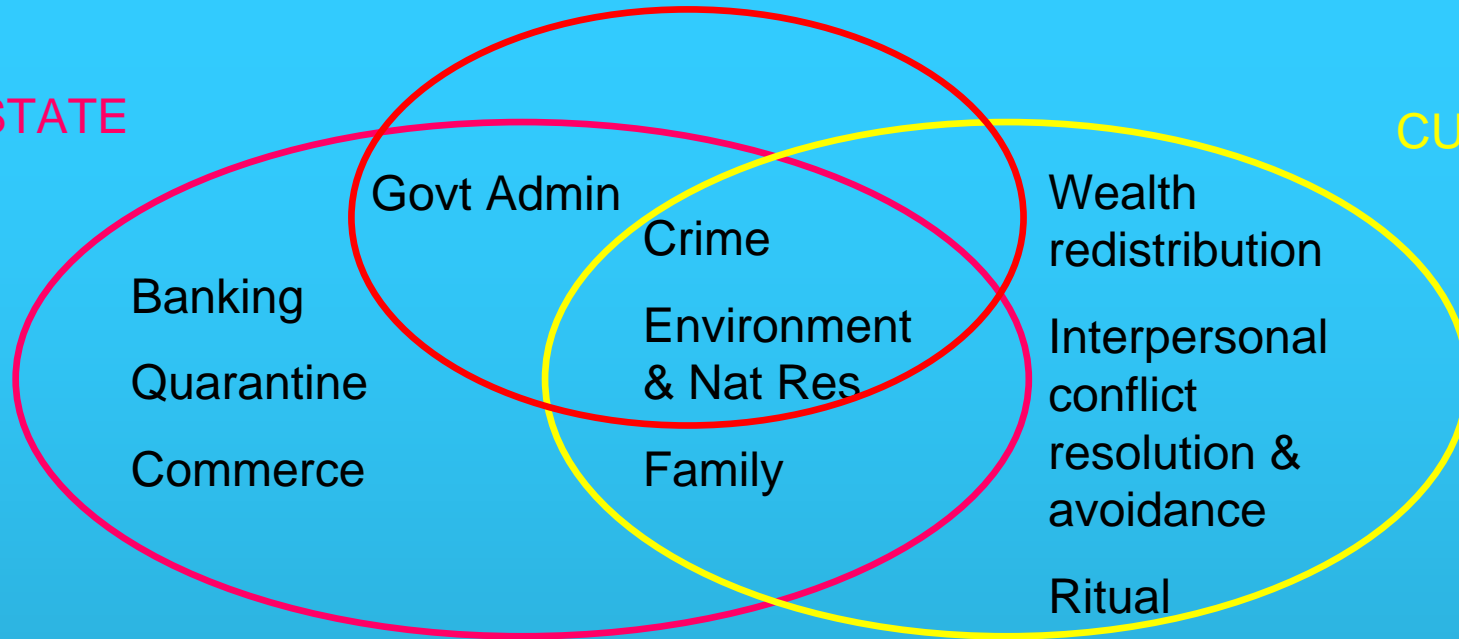
- In most Pacific island jurisdictions separate spheres of legal authority co-exist
- Different beliefs, roles, expectations
- Different *mythos* – different *logos*

Plural Legal Landscapes

AID
PROJECTS

STATE

CUSTOM



- Pacific countries are heavily reliant on foreign aid, and so 'project law' is a third type of normative system that co-exists with custom and the formal legal system.
- Donors purchase power and influence such that they can create binding rules separate to both formal law and custom, hence 'Project Law' comes into being

Connectivity between Environment and People in Pacific Islands

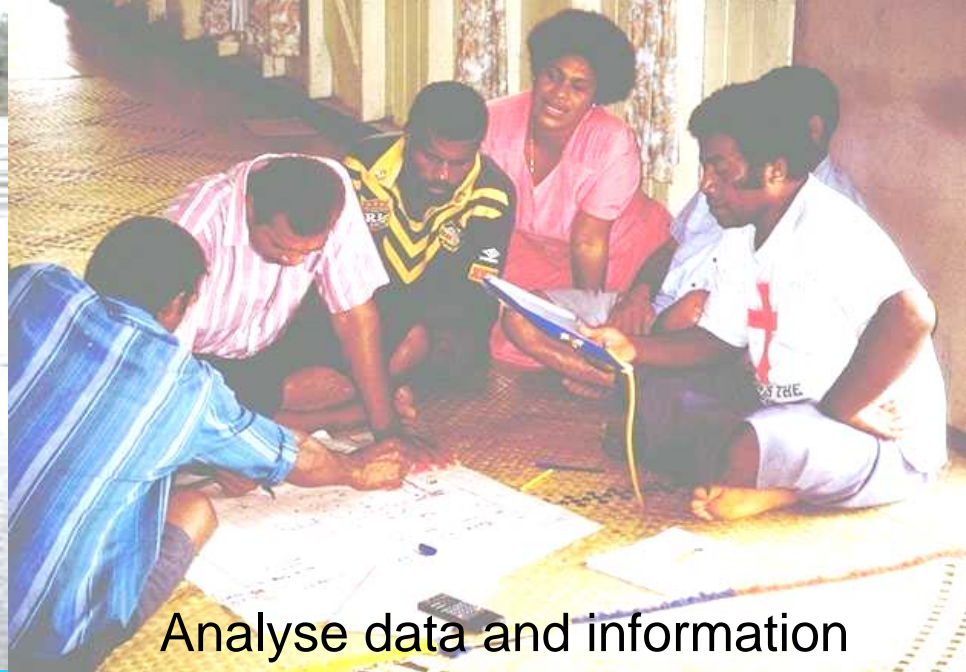
- Land and environment is central to Pacific island societies.
- Customary connections to land remain strong with most land still held under some form of traditional (communal) tenure.
- Islander's speak of their connections to their land being formative of their social and spiritual identity. *Land owns people.*
- **High levels of subsistence reliance means and use and access are vital for food security and poverty avoidance.**

Law and Biodiversity in the Pacific

- Typified by partnerships between local communities, civil society, and governments
- Custom remains central in most localities
- Donors and NGOs are very influential
- Co-management is also common
- A locality-specific mixture of customary law, government law and project law
- In some places it works well, in other places it fails miserably

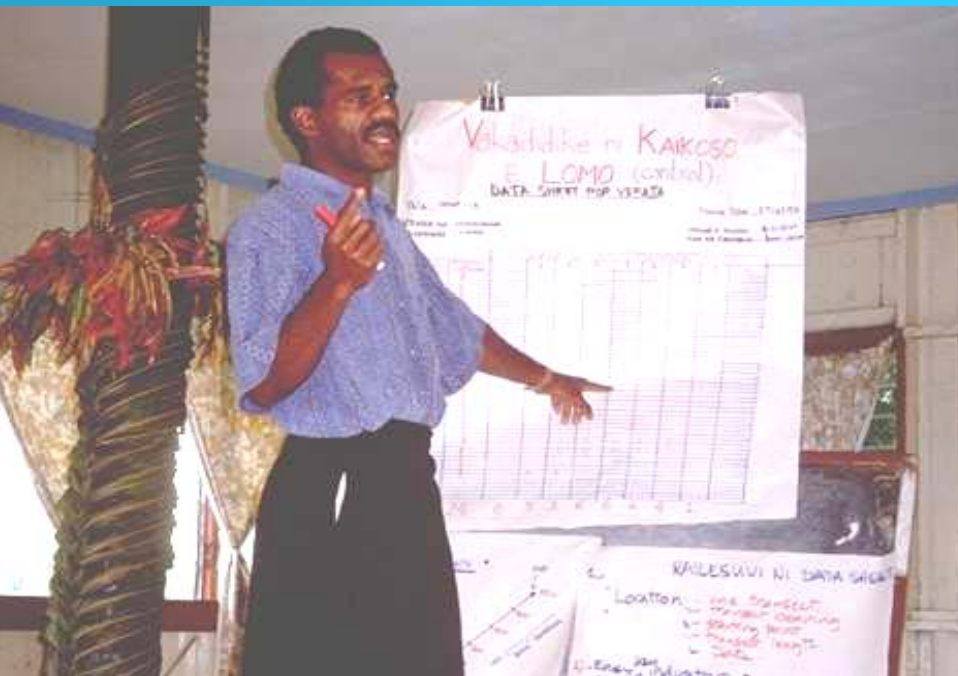


Collect data –
community monitoring



Analyse data and information

Present results



Present results

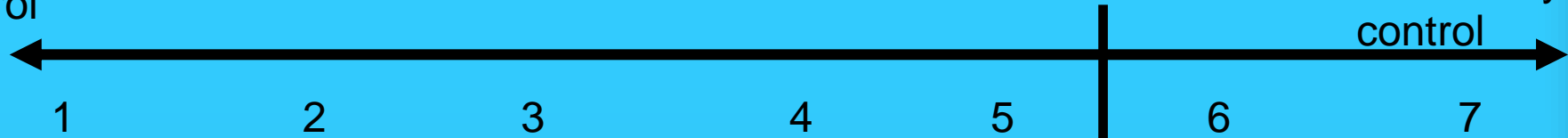


Socialize information

Participation Continuum

Exclusive
state
control

Exclusive
community
control



1. **Passive participation** – public receives information about state management
2. **Information-giving** – public receives and provides information
3. **Consultation** - state consults but defines problems and solutions
4. **Participation for material incentives** – e.g. paid research informants, economic incentives for conservation
5. **Functional participation** - by forming groups to meet pre-determined objectives. Occurs after major decisions already made
6. **Interactive participation** - joint analysis, joint planning, significant degrees of local decision-making
7. **Self-mobilisation** – natural resource governance independent of external institutions

Impacts of Climate Change on Pacific Biodiversity

- Threats to Pacific biodiversity are also threats to Pacific livelihoods, cultures and food security
- In some cases, whole countries will be rendered uninhabitable, perhaps drowned
- Climate change will degrade all Pacific environments.
- The most predictable and acute issue is coral death through rises in sea temperature



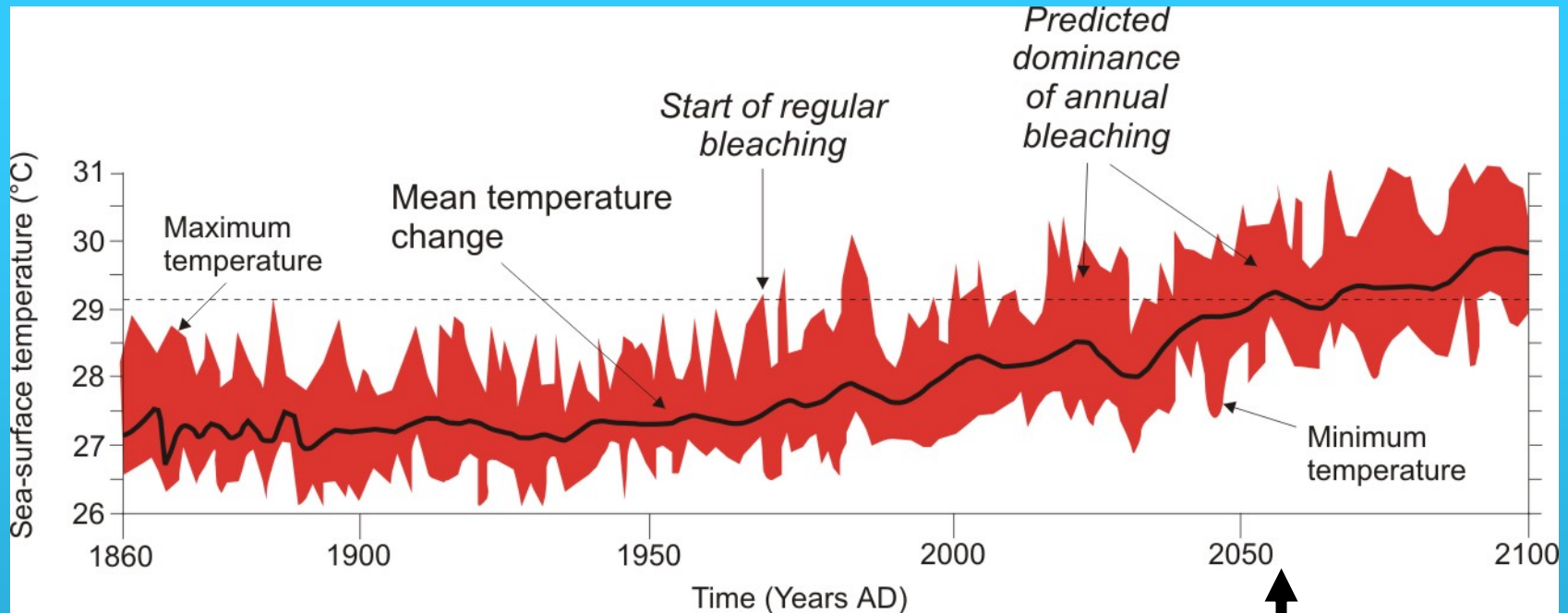


TUVALUAN KIDS HANG OUT AS EXTRA-HIGH TIDE FLOODS NEIGHBORHOOD.





Climate Induced Coral Death



Bleaching becomes an annual event about the year 2025.

By 2055 all corals die, reefs become bare or covered with algae, available food resources are significantly depleted.









What Effective Adaptive Responses are Possible?

- Healthy, biodiverse ecosystems will be more resilient to the impacts of climate change.
- The challenge therefore is to improve the performance of local and co-managed conservation initiatives.
- This entails improving existing programs of cooperation between local communities, NGOs and government agencies.
- It also entails effective dissemination of successful initiatives and approaches.

Example: Pele Villages and the Crown of Thorns Starfish



- In 2003, 4 villages established a network of marine protected areas on the neighbouring islands of Nguna and Pele
- Now the MPA network includes 16 villages and has been recognised for the conservation success with international awards

Example: Pele Villages and the Crown of Thorns Starfish

- COT starfish devastate coral reefs by eating coral polyps.
- COT starfish numbers have rapidly increased in some localities, probably as a result of climate change.
- Such an outbreak is occurring in the Pele MPA



Example: Pele Villages and the Crown of Thorns Starfish

- Drawing on a successful experiment in Kiribati, climate change officers of the Vanuatu Government partnered with Pele villagers to collect COT starfish.
- Almost 7000 collected in 2 days



Example: Pele Villages and the Crown of Thorns Starfish



- Pele is also suffering from shoreline erosion due to sea level rise.
- The communities have established a forestry nursery to cultivate plants to protect the shoreline.
- They lack enough good soil for the nursery, so the COT were composted to make fertiliser.

Conclusions

- Pacific island biodiversity is being devastated by climate change.
- This in turn means that Pacific island societies will be devastated also.
- The only **local** law and governance response that holds any hope is to maintain ecosystems in as healthy condition as possible.
- This means continuing and improving upon the successful collaborative initiatives such as the locally-managed protected areas and innovative adaptive responses such as the Pele COT eradication project.

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