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Pasifika Medical Association 2017 Annual Conference

(27-29 September 2017, Noumea)



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Health Impacts of Climate Change

Outline



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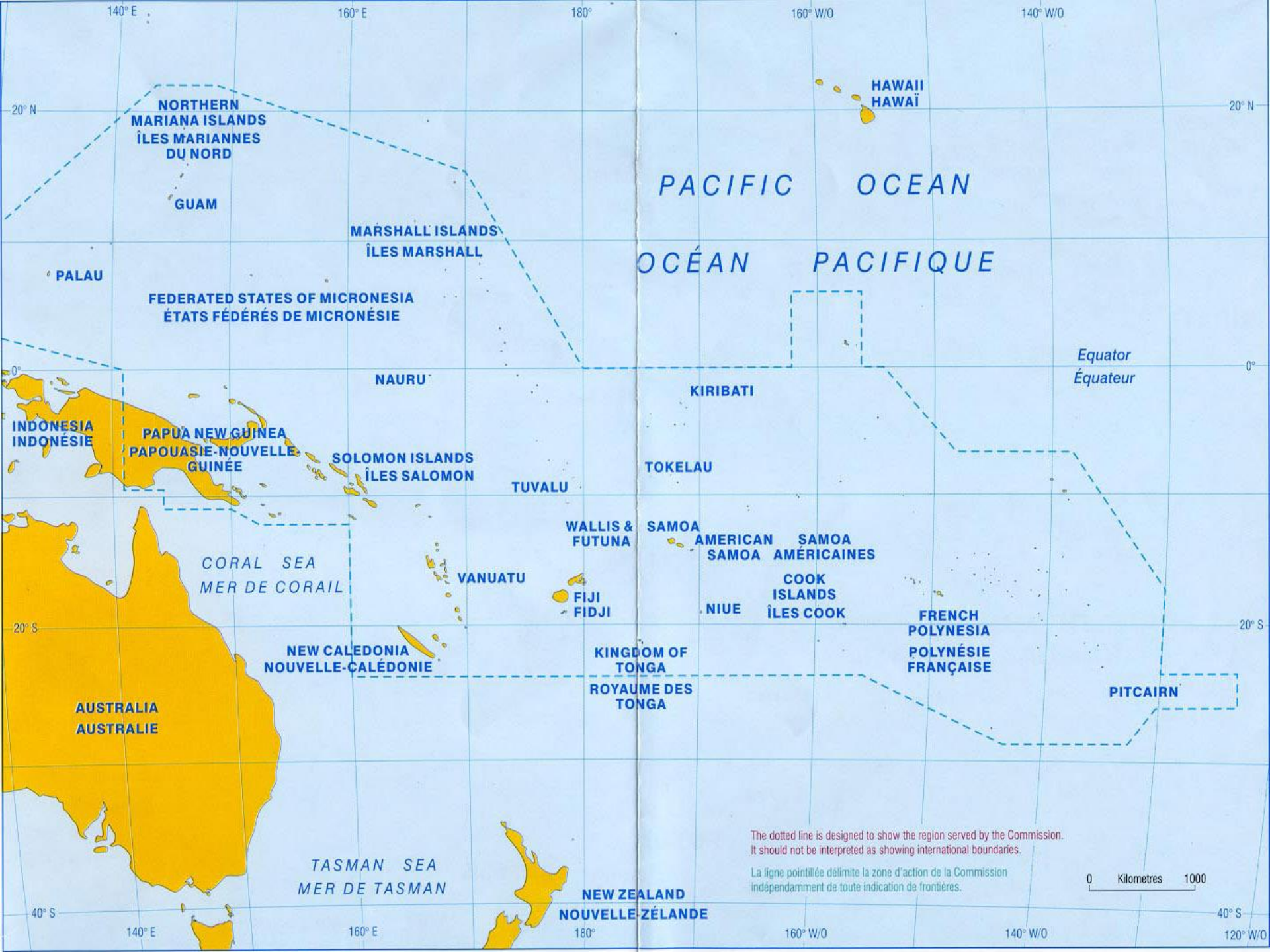
- Background
- Impacts of Climate Change
- Health impacts of Climate Change
- A Popular Movement?
- Summary

Main Messages



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1. Climate change is here, its real and impacting negatively on the socio economic conditions and cultures, lives and livelihoods of people across the globe, nowhere more acutely than small islands of the Pacific region
2. Moral imperative to act; threats to the Paris Agreement can be overcome by citizen action, NGOs, corporates, philanthropists, professional associations, advocates



Our Sea of Islands



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- Pacific Ocean is the largest ecosystem on the planet; essential for our collective survival, supplies 2/3 world tuna, 80% protein source for Pacific people, 'sink' role
- Covers 1/3 earth surface, 165 million sq.km
- Approximately 10 million people, mostly in Melanesia (PNG, Fiji, Solomons, Vanuatu)
- Our defining feature; we are people of the sea
- Pacific people are custodians but ocean under threat from pollution, over-fishing, climate change, environmental degradation







Climate Change Impacts



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- Extreme weather events (more hot days, extreme rainfall, intense tropical cyclones in South Pacific basin, may decrease in the North) by 2030
- Sea level rise (est. 0.26 – 0.98 metres) by 2100 relative to 1986-2005
- Ocean acidification – Pacific eastern equatorial region; increased frequency and severity of coral bleaching proportional to emissions scenario

Climate Change Impacts



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- Increased risk of weather-related disasters eg coastal erosion, salt water inundation, storm surge, drought, worsening water scarcity, land loss, threats to food security
- Progressive long-term degradation of natural environment, biodiversity, critical ecosystems, (eg coral reefs), social and economic systems, contribute to displacement of people
- Increase vulnerability of island communities

The image is a composite of three underwater photographs of a coral reef, arranged side-by-side to show the progression of coral bleaching. The left panel shows healthy coral with vibrant yellow and orange polyps. The middle panel shows the coral turning white, indicating the loss of their pigments. The right panel shows the coral as dark, skeletal structures, indicating they are dead. The water surface and sunlight are visible in the upper portion of each panel.

Healthy - Dec 2014

Dying - Feb 2015

Dead - Aug 2015









Climate Change Impacts

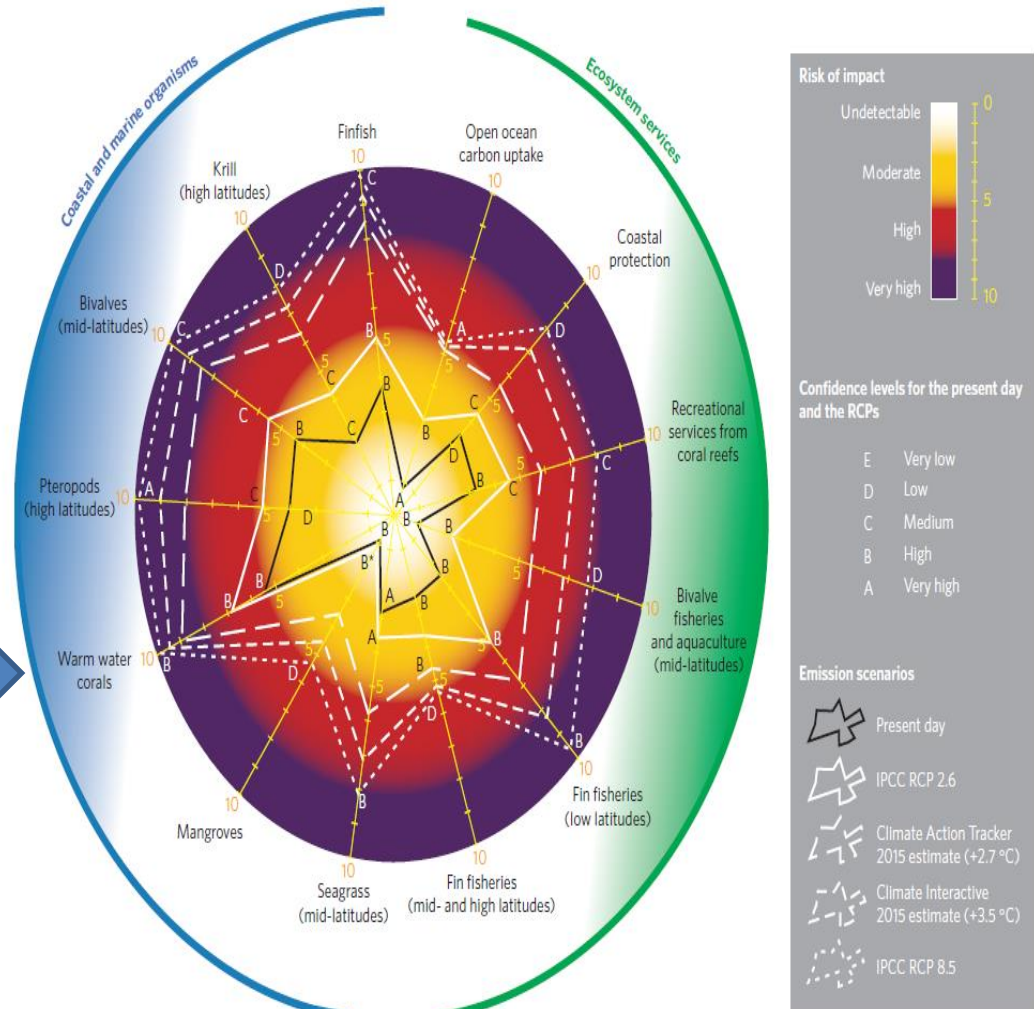


Projected biophysical impacts in the Pacific (IPCC AR5):

+ 1.5 to 4° C by 2090
+ 20 cm to 1 m of sea level rise

x3 more extreme events
 $\Delta\text{pH} = 0.1 - 0.4$

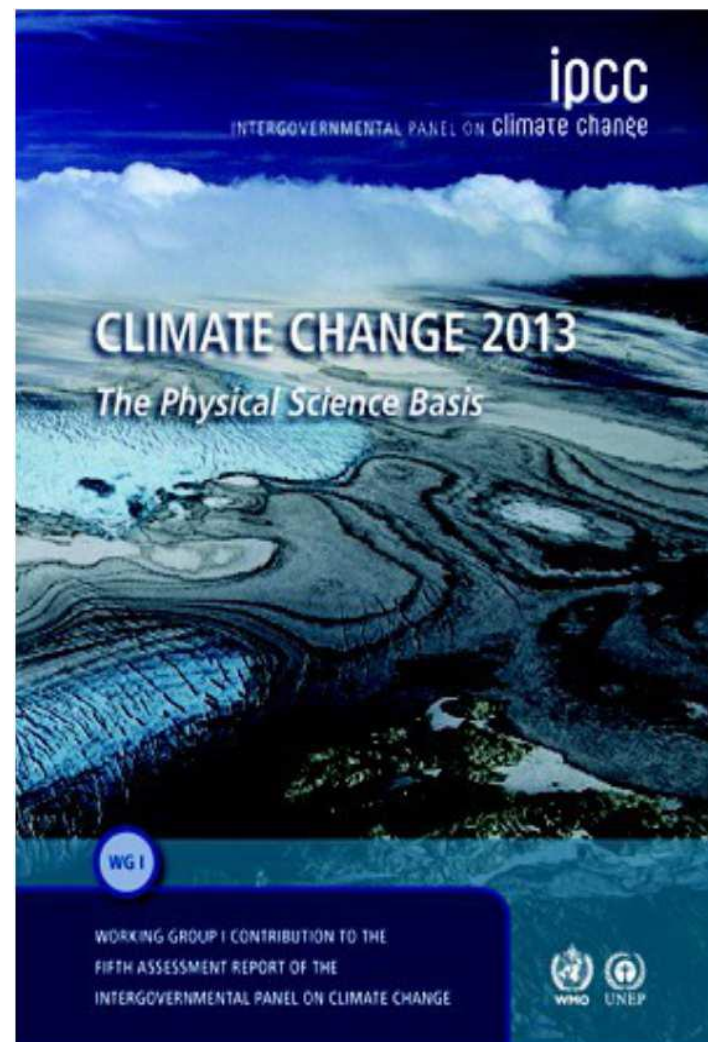
Marine and coastal ecosystems particularly impacted



Pacific responsibility < 0,03% of GHG emissions

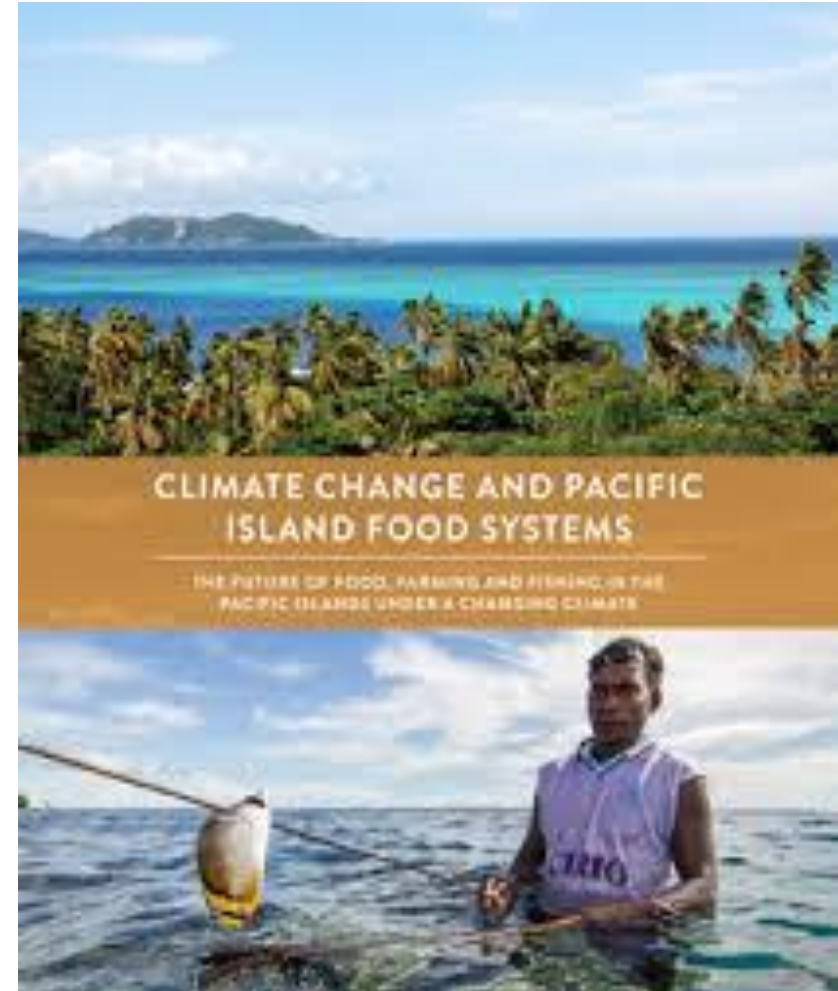
Climate change impacts

- **Food security** (as a result of ocean acidification, increase in ocean temperature, changing rainfall patterns causing drought and flooding events ...)
- **Water security** (as a result of salt intrusion, drought, etc.)
- **Loss of land** (as a result of erosion, sea level rise ..) + issue of migration?
- **Loss of natural and economic base ..** and casualties (as a result of cyclones, flooding and other weather related disasters)
- **Health issues** (as a result of rising temperature, Sea level rise or weather changes)
- **Biodiversity loss** (krill, seagrass, bivalves at sea, etc.)
- **Economies** (altered tuna stock migration affecting industrial fisheries, tourism,)



Climate Change Impacts

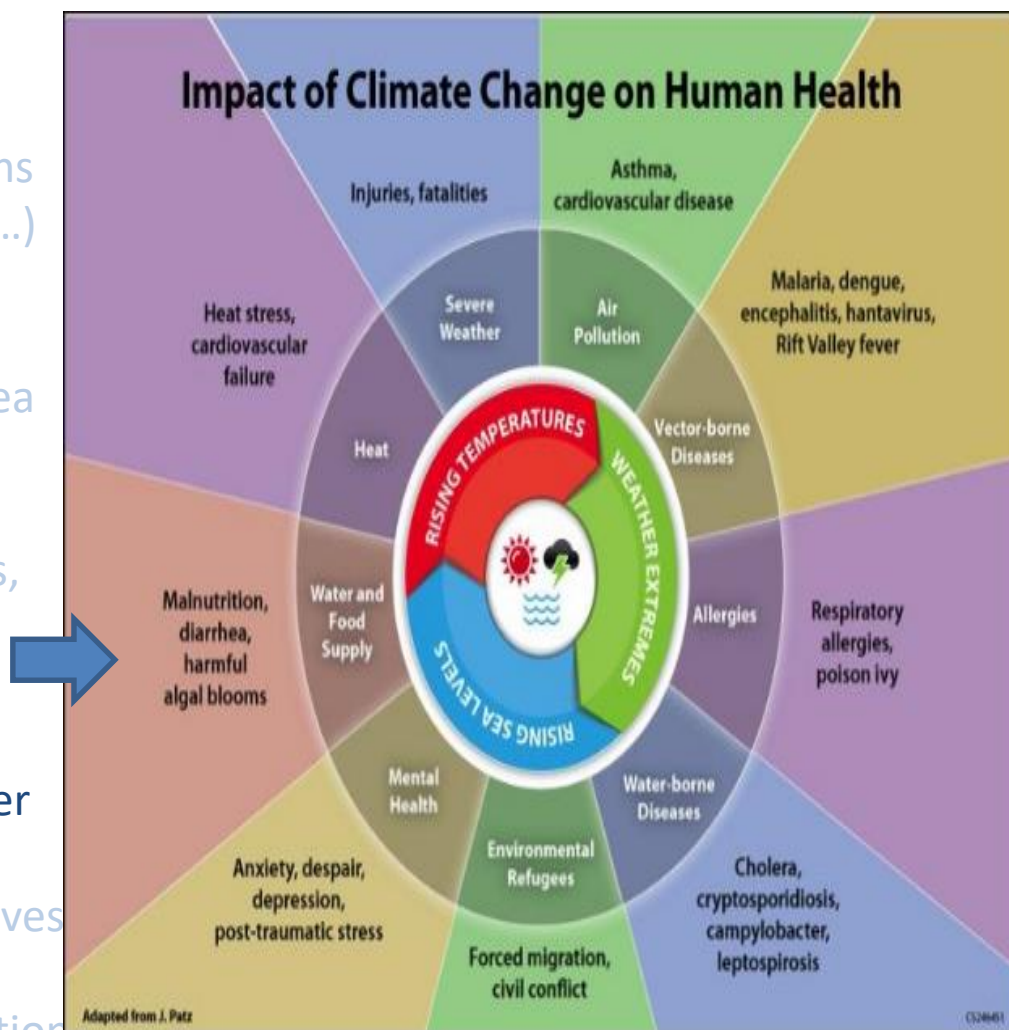
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Climate change and Pacific Island food systems
Bell J, Taylor M, Amos M, Andrew N. 2016

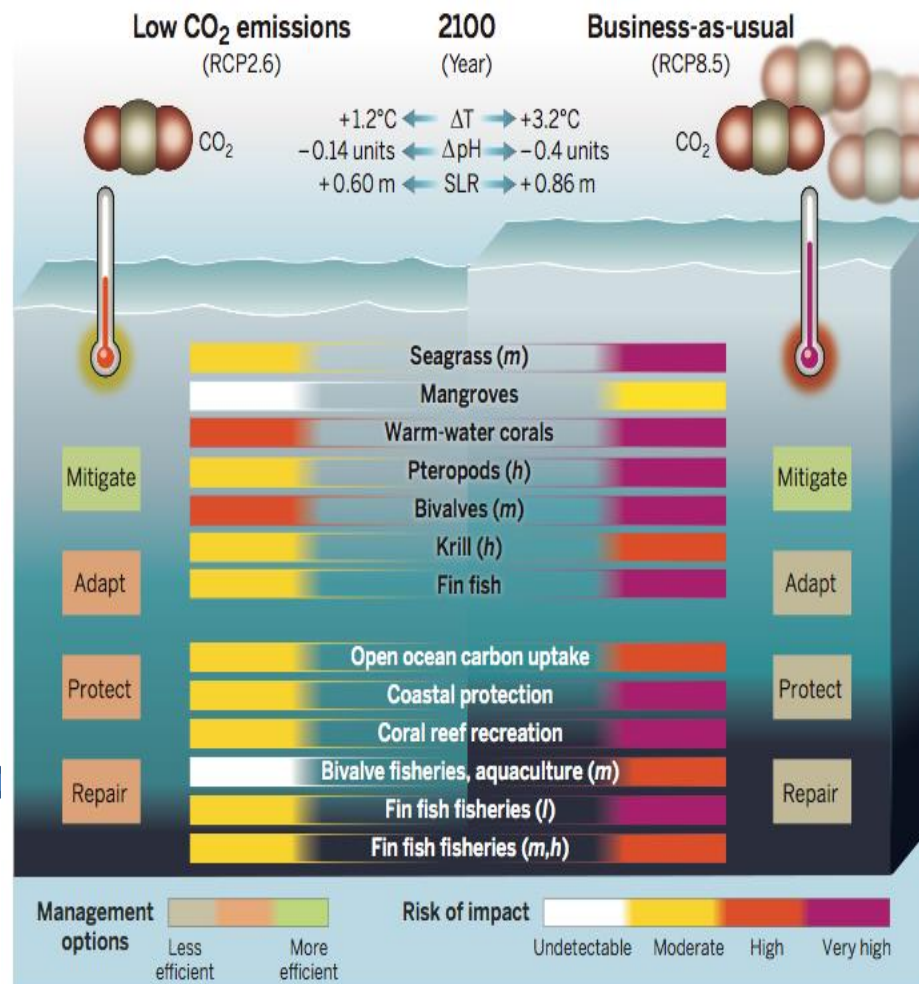
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Tuna Fishery		Year and SRES Scenario		
		2035	2100	
		B1/A2	B1	A2
Skipjack tuna	Western fishery	+ 11%	-0.2%	-21%
	Eastern fishery	+37%	+43%	+27%
Bigeye tuna	Western fishery	-2%	-12%	-24%
	Eastern fishery	+3%	-4%	-18%
Skipjack tuna	Total	+19%	+12%	-7%
Bigeye tuna	Total	+0.3%	-9%	-27%
Total Change to Government Revenue (%)	Federated States of Micronesia	0.8 to 1.7%	-0.9 to -1.9%	
	Solomon Islands	0.01 to 0.16%	-0.03 to 0.77%	
	Kiribati	+11 to 18.4%	+7.2 to 12.0%	
	Tuvalu	+3.7 to 9.2%	+2.5 to 6.2%	

Summary of projected percentage changes in tropical Pacific tuna catches by 2036 and 2100 relative to 1980-2000 and the estimated resulting percentage change to government revenue (after Bell et al., SPC 2011).



- **3-13 % of regional GDP** (/cost of adaptation in the Pacific: 150 – 450 Million Euros / yr until 2050)

A Vulnerable Region



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- Pacific region is highly vulnerable to disasters
- Contributes <0.03% to GHG but suffers most from adverse effects of Climate Change
- PNG, Fiji, Solomons, Vanuatu, Tonga among top 15 high risk countries for floods, drought, TCs, earthquakes, tsunamis
- Top 30 includes Vanuatu, Niue, Tonga, FSM, Solomon Isl, Fiji, Cook Isl, Palau, Samoa
- Cyclone Heta Niue 2004

Recent Disasters & Estimated Costs*



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Disaster	Disaster Effects USD Million	%GDP
2009 TSU Samoa	124	22
2012 TC Evan Fiji	108	2.6
2013 TC Evan Samoa	203	29
2014 TC Ian		
2014 Floods SB	107	9.2
2015 TC Pam Vanuatu	449	64
2016 TC Winston Fiji	900	20
2017 Drought RMI	5	3.4

Health Impacts of Climate Change



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- Climate change has major **impact on social and environmental determinants of health; clean air, safe water, sufficient food, secure shelter**
- WHO estimates 250k additional deaths annually between 2030-2050
- Estimated direct damage costs to health USD 2-4 billion/year by 2030
- Developing countries with weak health infrastructure most at risk, but entire planet affected
- Priority is to implement Paris Agreement

Health Impacts of Climate Change



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- Limited localised positive impacts eg fewer winter deaths, better food production
- Overwhelmingly negative from extreme heat, extreme weather events, rising sea levels, more droughts, floods, increased prevalence of water-borne, vector-borne diseases
- Coastal communities, Small Island communities most at risk; least able

Health Impacts of Climate Change



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- Displacement of people - LSE estimates 1.7 million of 10 million displaced by 2050; Fiji plans to relocate 63 villages, first one Vunidogoloa in 2012

Health Impacts of Climate Change



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- Considerable anxiety for affected communities – their future, their lives and livelihoods, burial grounds, food security, water supply, uncertainty about the future,
- Immediate effects of trauma and shock, loss, grief and long term PTSD
- Poorly understood mental health; impact on children, elderly in Pacific

Paris Agreement under Threat?



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- Pacific nations made impressive contribution to Paris Agreement; PA now under threat
- Pacific Leaders commitments to renewable energy targets (Majuro Declaration 2013)
- Framework for Resilient Development in the Pacific integrating CC and disaster risk
- Fiji Co-hosting UN Oceans Conference June, increasing focus on ocean health

Pacific leading the actions



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- **Leadership and strong advocacy:**
Pacific small islands loud voices
- **Effective and integrated policies:**
FRDP, JNAP and NDC, overall
mainstreaming in national policies
- **Risk assessment and continuous
monitoring** (incl. economic revenue
at risk, vulnerable communities and
systems)
- **Risk preparedness**
- **Taking actions:** GCF submissions and
projects, insurance initiative, coastal
protection and ecosystem-based
initiatives



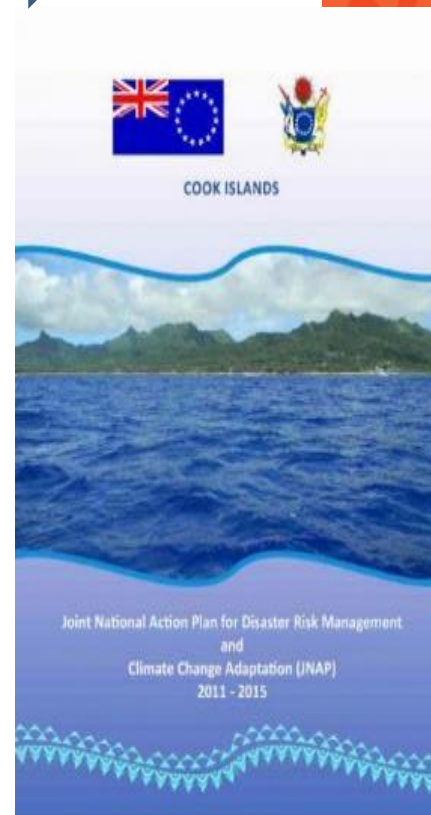
Pacific leading action

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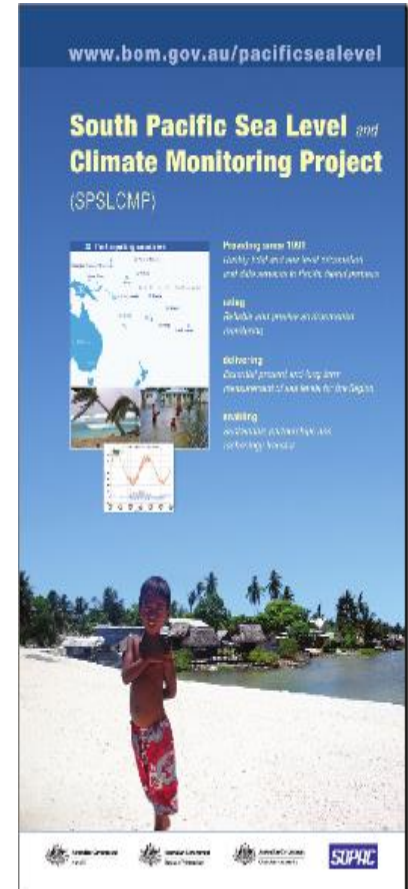
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Pacific Risk Information System
OpenDRI repository for the Pacific Region providing premier risk-related geospatial data sets.
Information for Smarter Investments

Assessing vulnerability and adaptation to sea-level rise: Lifuka Island
Ha'apai, Tonga

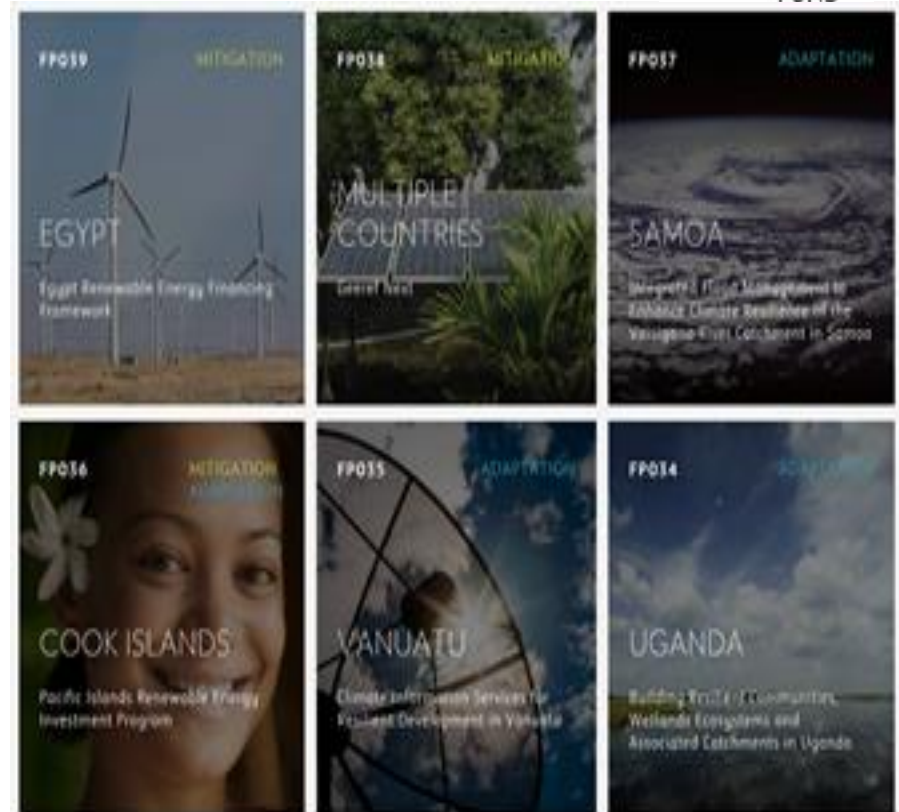
C. Vulnerability and hazard assessment
4.0: Preliminary economic analysis of adaptation strategies to coastal erosion and inundation
Volume 2 - Cost benefit analysis



Pacific leading action



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<http://www.greenclimate.fund/what-we-do/projects-programmes>

Summary



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- In view of changing global political situation regarding climate change, what more could we do collectively? Individually?
- Is it possible to replace government inaction with citizen and organised group action?
- Long standing PMA and other professional association roles in advocacy for health; are you able to do the same with climate change?
need is now even more urgent