Climate Change and Natural Disasters in Small Island Developing States

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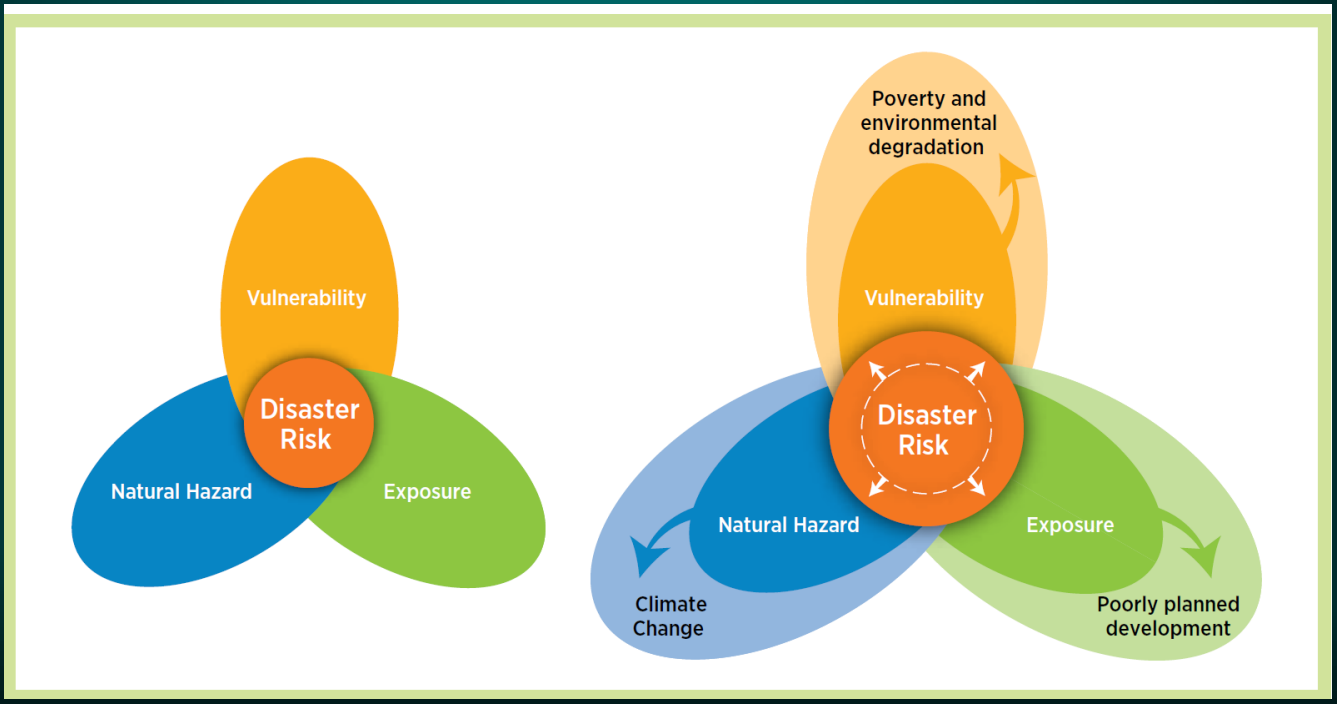
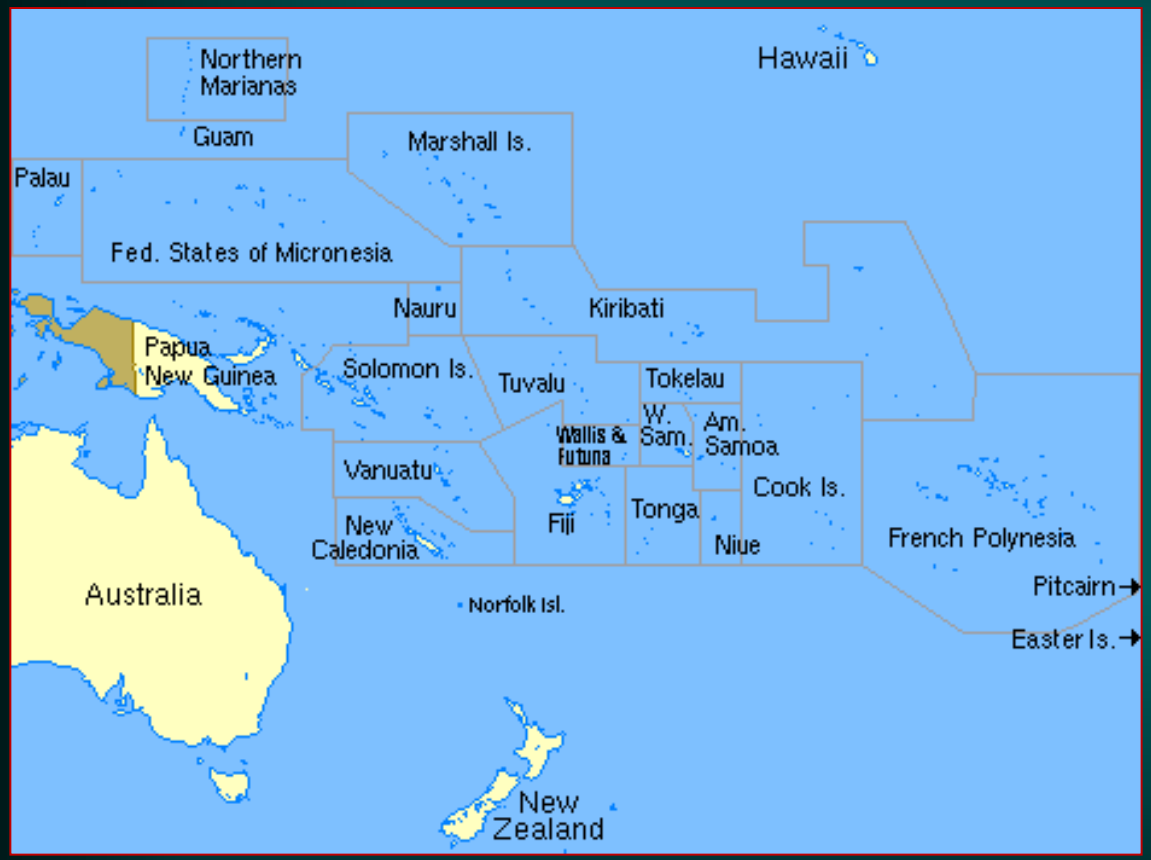
1. The Key Challenges

- *A high exposure to natural disasters….*
- *Compounded by development trends….*
- *And exacerbated by climate change…*



A High Exposure to Natural Hazards

In the Pacific Island Region



US$112 billion

Value of infrastructure, buildings and cash crops at risk from natural disasters

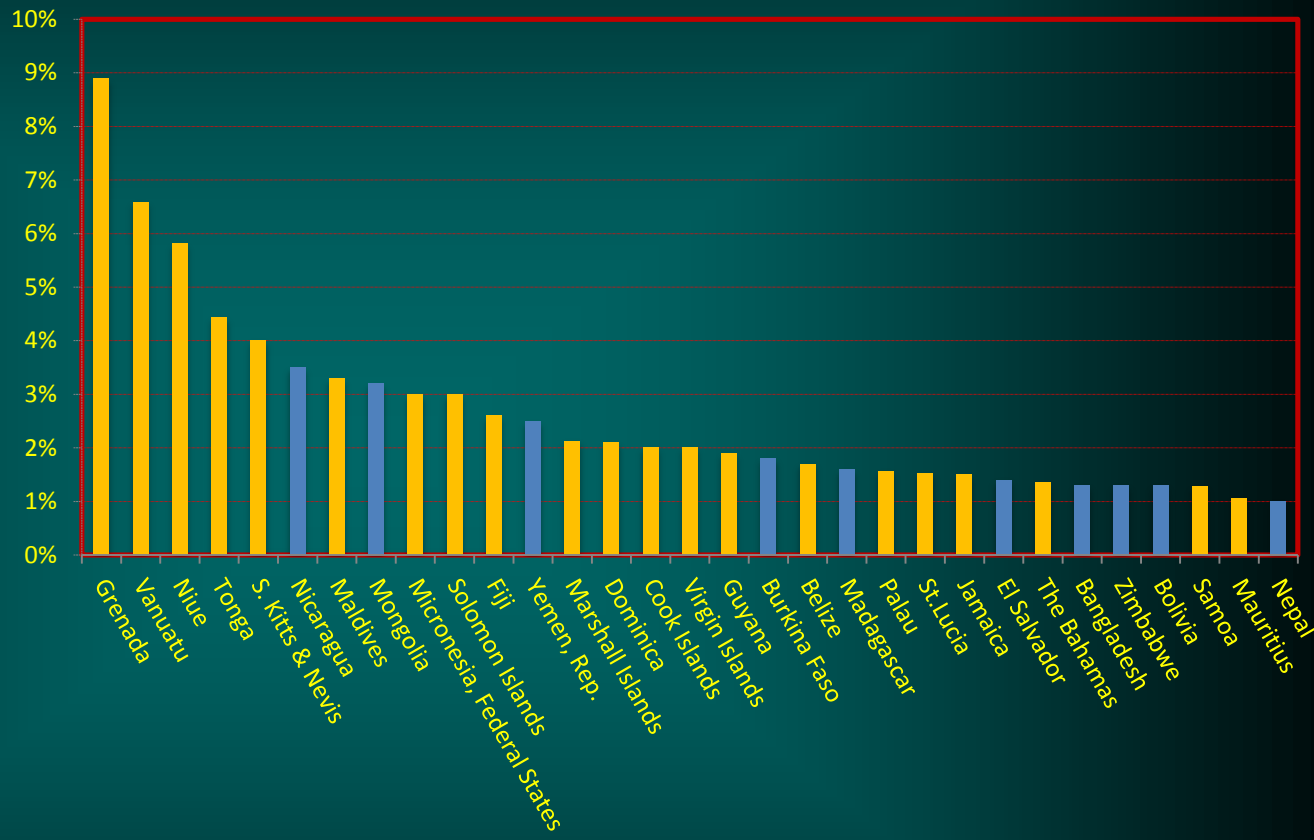
A High Exposure to Natural Hazards

In the Caribbean

Annual ***damages to infrastructure from natural disasters estimated at US$0.5-1 billion/year***

Recurrent disasters contribute to high levels of debt

A High Exposure to Natural Hazards



SIDS account for two thirds of the countries with highest relative annual disaster losses

Compounded by Development Trends

Last Week's Disaster

Current settlement (2010)

Original settlement (1950)

Loss of coastline

Area at risk from sea storms and river flooding

São Tomé and Príncipe

Compounded by Development Trends

Caribbean countries spend about US$1 billion a year on infrastructure maintenance just to keep their 75,000 km road network open

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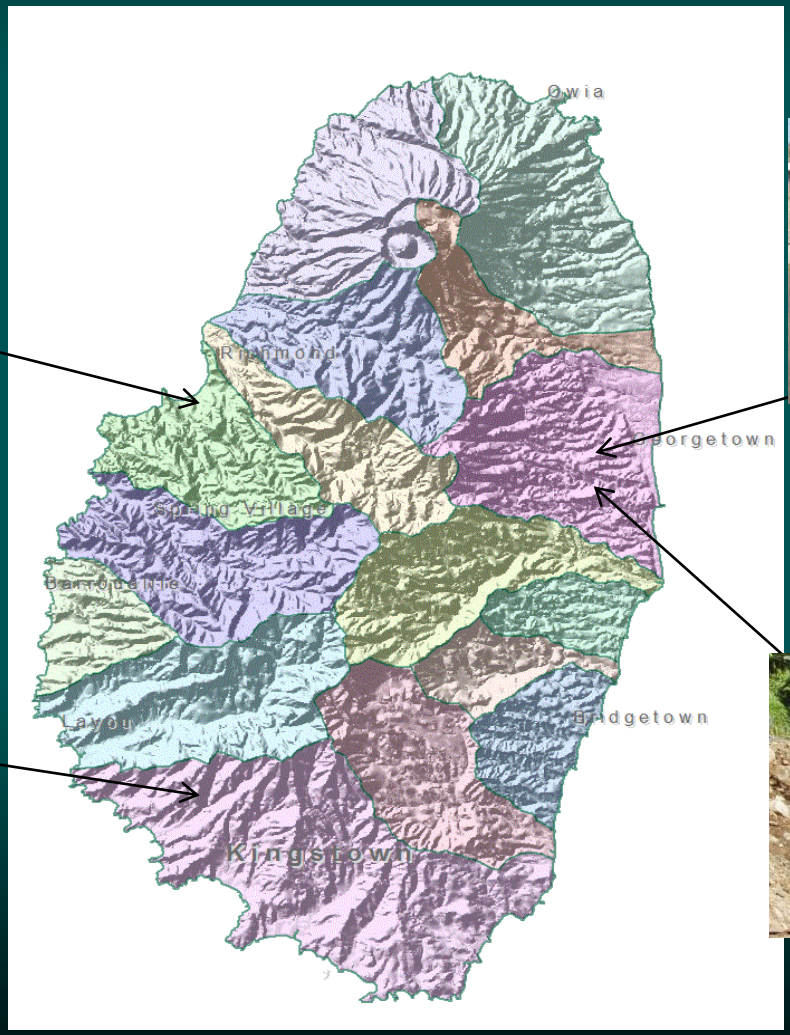
Buccament



St. Vincent (2014)

Georgetown

Congo Valley

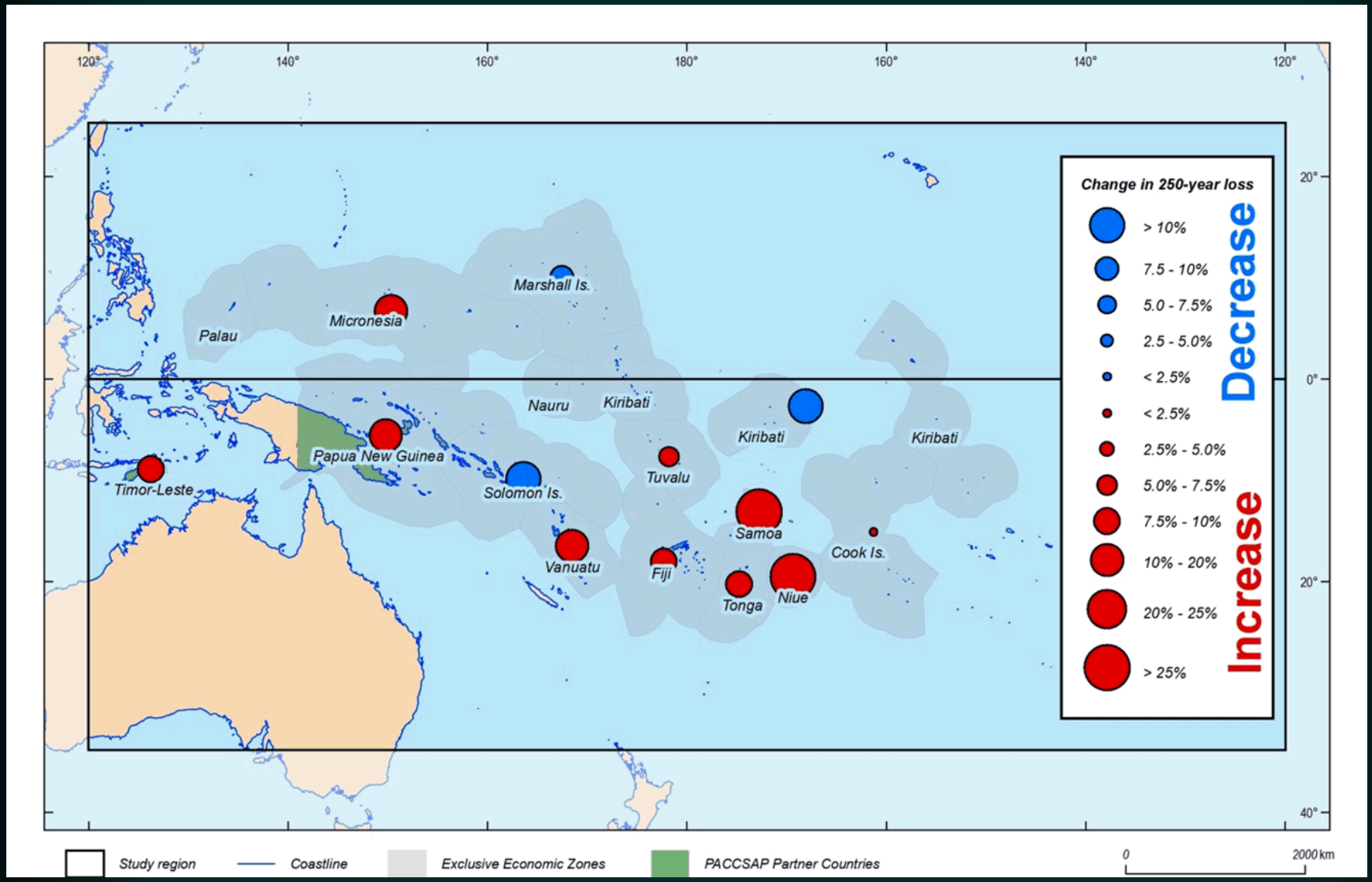
And Exacerbated by Climate Change

Estimated Cost of Climate Change in the Caribbean (in the absence of adaptation) in US$ Billions

	2025	2050	2075	2100
Total Cost	$10.7	$21.9	$33.7	$46.2
% of 2007 GDP	5.0%	10.3%	15.9%	21.7%

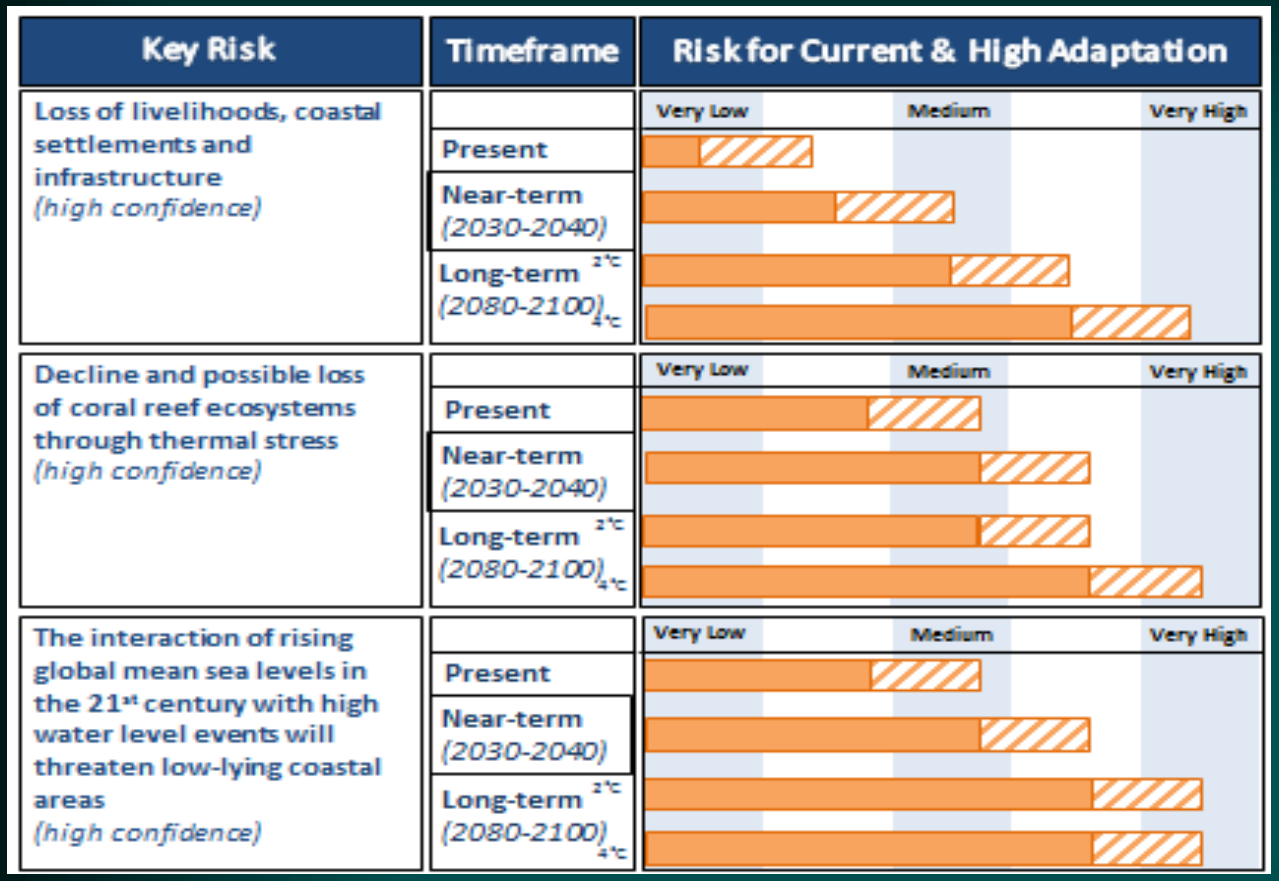
Source: Bueno et al. (2008)

And Exacerbated by Climate Change



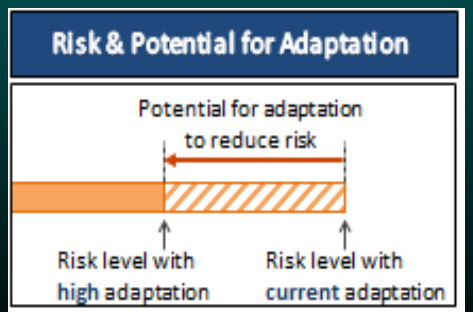
Estimated future increase in probable losses due to climate change, in the Pacific Island Region

Exacerbated by Climate Change



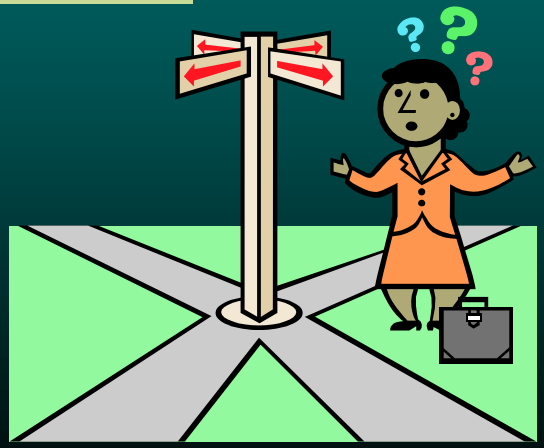
The longer the wait, the less the opportunity for adaptation to reduce risk…

Source: IPCC Working Group II, Chapter 29, Small Islands



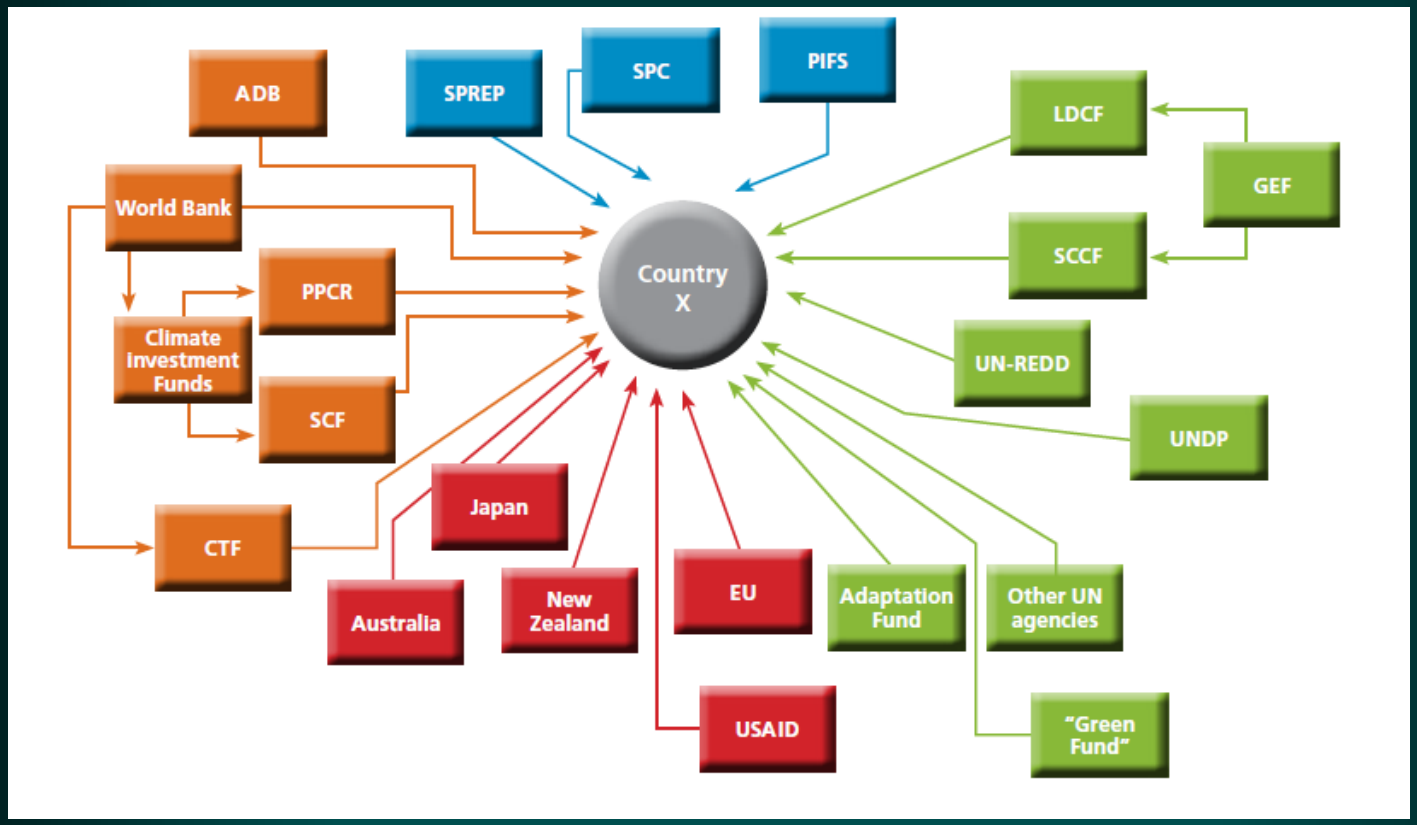
The "Hidden" Challenges – Institutional Incentives

Ministry of
Natural Resources and the
Environment



NATIONAL
OFFICE OF DISASTER SERVICES
PREPAREDNESS
RESPONSE
NODS
MITIGATION
RECOVERY
ANTIGUA & BARBUDA
Managing Disasters Through Risk Reduction

The "Hidden" Challenges - Coordination



Between 2011-2014, Samoa had to manage 12 different projects in disaster risk management and climate change adaptation…

2. The Opportunities

Tabwea Teitiniman in Tarawa

Recognize that Prevention Pays Off…

Climate Proofing Investment	*Costs of Climate Proofing as % of Initial Costs*	*Costs of Reconstruction as % of Initial Costs*
Road (Kosrae)	**27%**	
Buildings (Tonga)	**>10%**	
Deepwater Port (Dominica)	**12%**	**41%**
Law School (Jamaica)	**2%**	**4%**
Bridge (St. Lucia)	**11%**	**17%**
Hotel (St. Thomas)	**0.1%**	**19%**

But it requires upfront investment….

Sector	Building Back Better Factor
Housing	1.10-1.35
Schools	1.10-1.50
Hospitals	1.10-1.50
Agriculture/Livestock and Fisheries Infrastructure	1.10-1.40
Industrial Facilities	1.10-1.40
Commerce and Trade	1.10-1.35
Water and Sanitation	>1.00*
Transport	>1.00*
Electricity	>1.00*
Communications	>1.00*

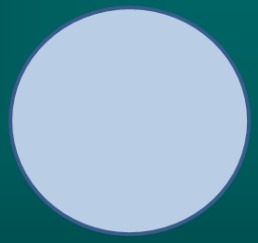
Disaster assessment experience suggests it costs 10-50% more to build back better after a disaster. For infrastructure sectors, building or moving infrastructure to more resilient standards can be even higher

Source: World Bank (2013) Building Resilience: Integrating Climate and Disaster Risk into Development

And more resources towards prevention …

Total ODA Assistance
to Small Island Developing States (1999-2010)
US$ 41.5 billion

Disaster-related global aid
(including relief, reconstruction, prevention, and preparedness)
US$ 3.94 billion



Prevention-related global aid
(Ex-ante disaster prevention and preparedness)
US$ 0.4 billion

Of the total disaster-related global aid to SIDS in 1999-2010, only 10 percent went towards prevention and preparedness…

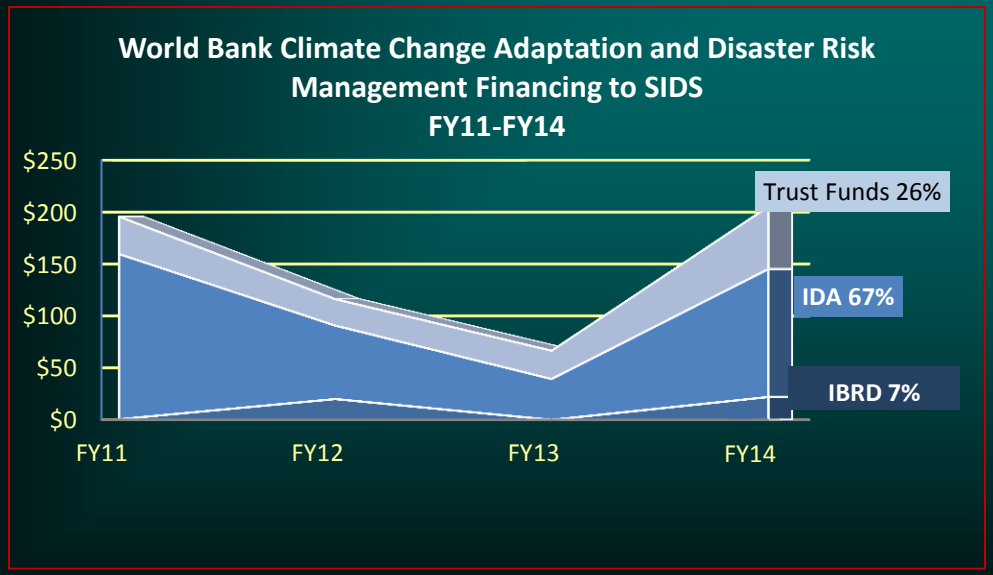
What is the World Bank doing?

World Bank Disaster Risk Management and Adaptation Portfolio in Small Island States (FY11-FY14) in US$ Million

	Total	Africa	Pacific	Caribbean	Maldives
Total No. of Projects	71	5	35	30	1
Total Commitments (US$ Million) *	582.7	14.9	169.8	394.2	3.8
Annual Commitments (US$ Million)	145.6	3.7	42.5	98.6	1
No. of SIDS Engaged**	26	3	11	11	1

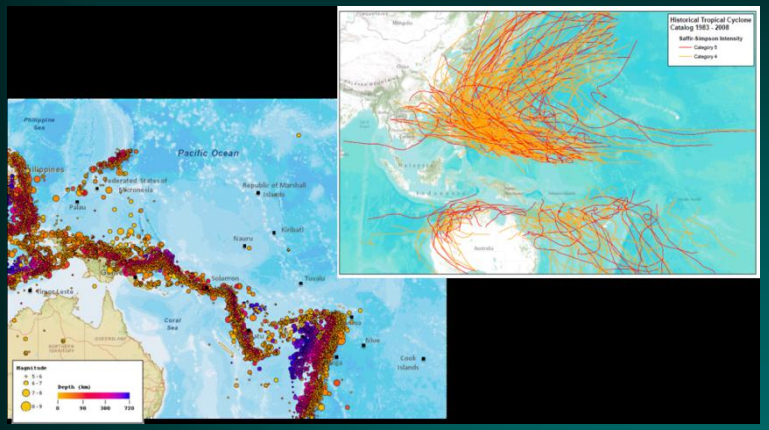
** Reflects commitments which are considered DRM and adaptation co-benefits*

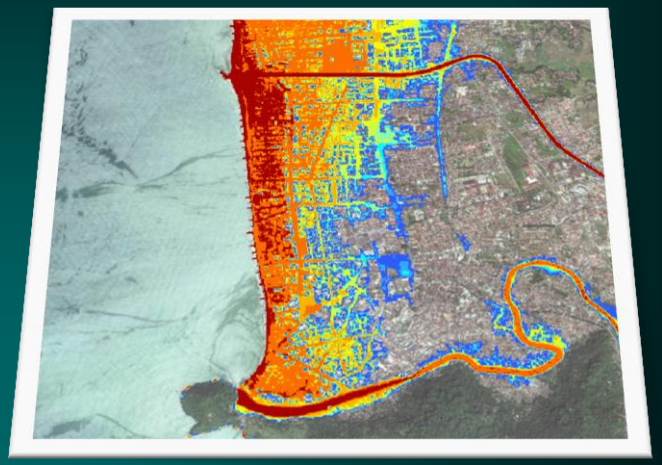
*** Does not include regional initiatives or British Virgin Islands*



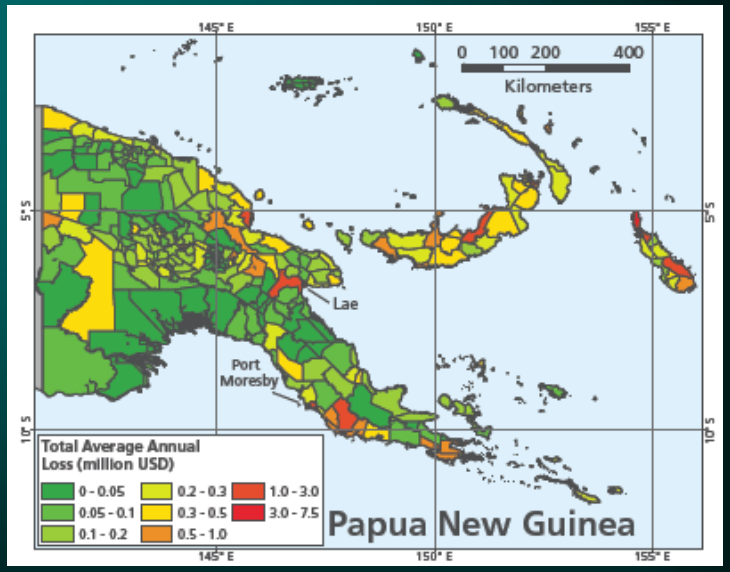
- ***The World Bank now allocates US$145 million per year to disaster risk management and climate adaptation – 22 percent of its total funding to SIDS.***

Assessing Risks





***Example:** the Pacific Catastrophe Risk Assessment and Financing Initiative (PICRAFI) mapped more than 2 million buildings.*



Being small is a key advantage, as progress can be monitored in SIDS – e.g. decrease in % of population and km of roads at high risk

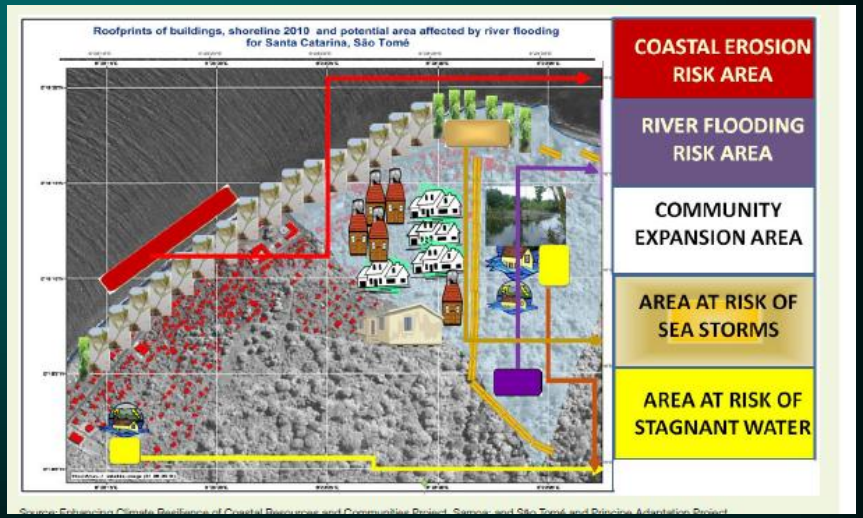
Reducing the Risk

1. **Diminish vulnerability of key assets**

Examples: ***Jamaica, Belize, St. Lucia, Dominica are all starting resilience programs to incorporate climate resilience into key infrastructure…***
A similar program is starting in the Pacific

2. **Integrate risk in spatial planning**

Examples: ***Sao Tome and Principe and Samoa communities have both identified safer "expansion areas" for future settlement expansion***

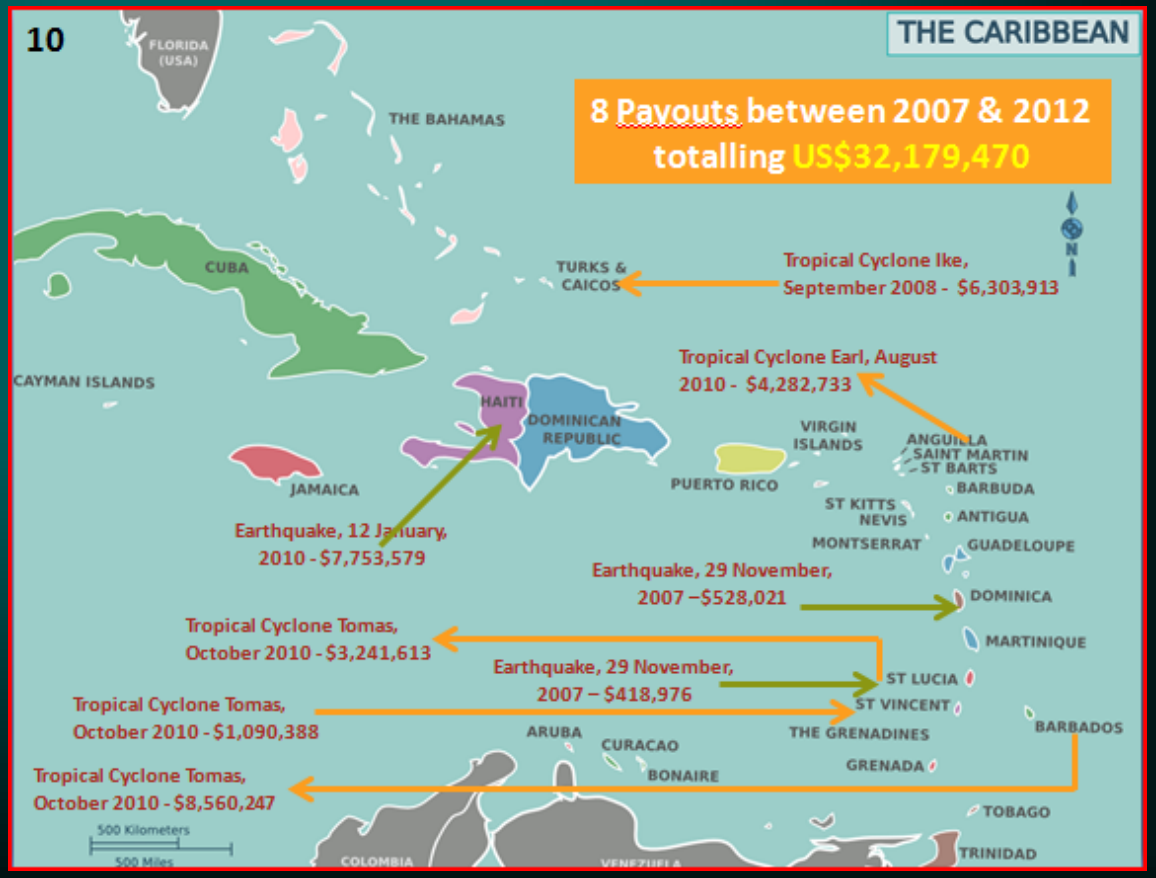


3. **Enabling policies**

Transfering the Risk

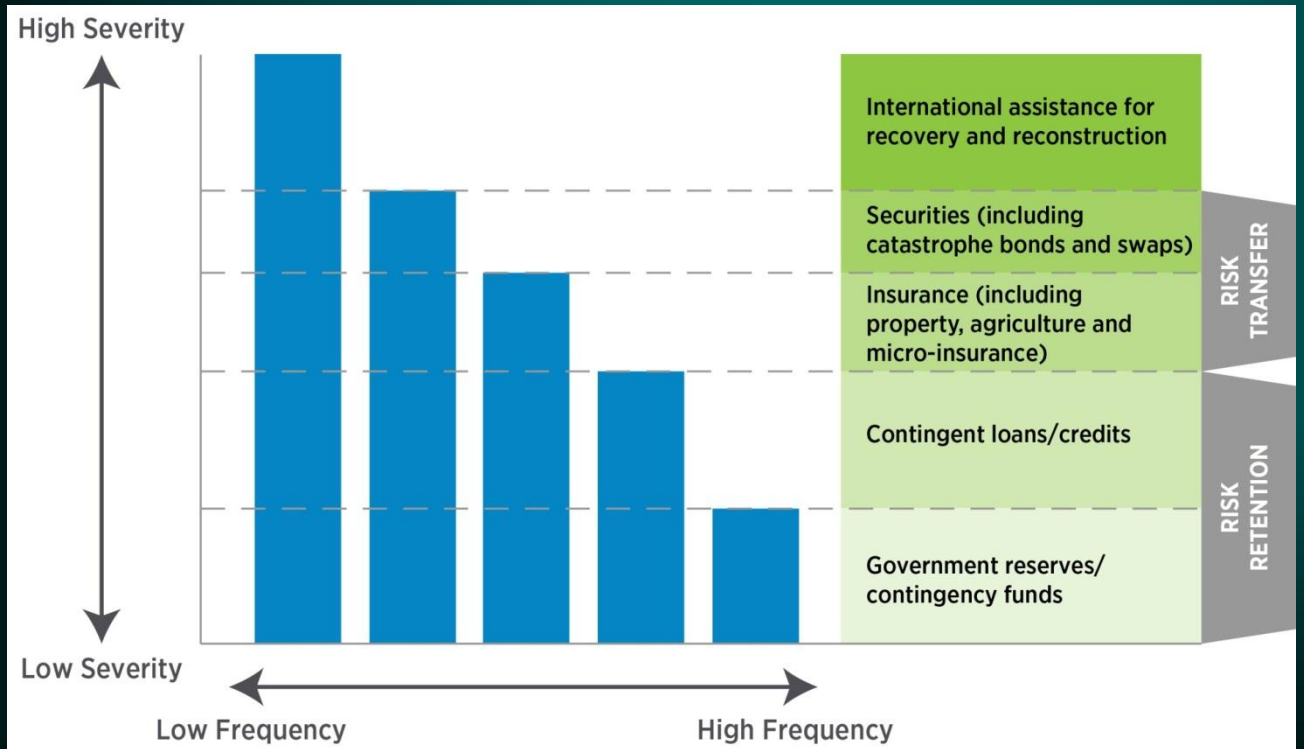
The model of the Caribbean Catastrophe Insurance Facility (CCRIFI), is being replicated in the Pacific and Indian Ocean Island Regions. By pooling the risk across multiple countries, premiums can be lowered . The World Bank and GFDRR have supported these initiatives through Technical Assistance and intermediation with reinsurance markets

- Anguilla
- Antigua and Barbuda
- The Bahamas
- Barbados
- Belize
- Bermuda
- Cayman Islands
- Dominica
- Grenada
- Haiti
- Jamaica
- Saint Kitts and Nevis
- Saint Lucia
- Saint Vincent and the Grenadines
- Trinidad and Tobago
- Turks and Caicos



Managing Residual Risks

- *Tonga, St. Lucia and St. Vincent received emergency funds from the Crisis Response Window in 2014.*
- *Seychelles is considering a Catastrophic Deferred Drawdown Option (CAT-DDO)*
- *Managing residual risk can also involve better contingency and operation and maintenance funds.*



Building Institutional Capacity

1. **Strengthening fiduciary capacity of a central unit**

Central coordinating unit (at Ministries of Finance/Planning or Office of President) prepared for direct access to global funds

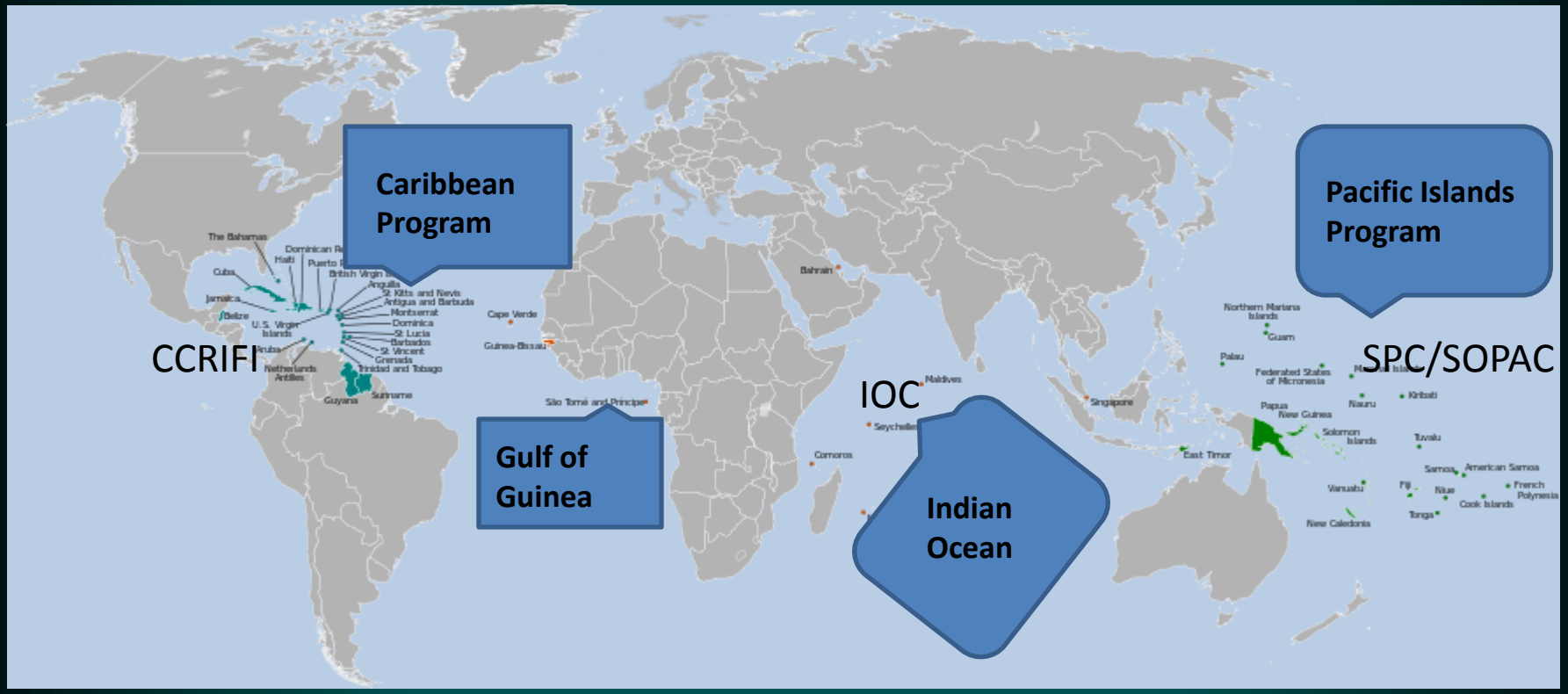
2. **Using resilience as an integrator for island-wide development**

National Adaptation Plans as a process rather than a stand-alone document

3. **Learning by doing**

Combining capacity building with investments

Scaling up



- ***Since IDA allocations are limited, we are exploring potential interest from partners to scale up this initiative…***

To conclude…

1. *SIDS economies are highly vulnerable to natural disasters*
2. *The longer the wait, the harder it will be to reduce risk*
3. *Prevention is more effective than response…*
4. *There are already programs that combine investment with capacity building*
5. *And allow for progress to be measured..*
6. *But they need to be scaled up*
7. *To prevent fragmentation of capacity…*
8. *And place resilience at the core of SIDS development*

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