



The Environmental Vulnerability Index EVI 2004



UNEP

SOPAC





Making Visible, 2020

Building Resilience in SIDS: National environmental vulnerability & resilience

Managing vulnerability, and protecting & building
resilience for sustainable development.

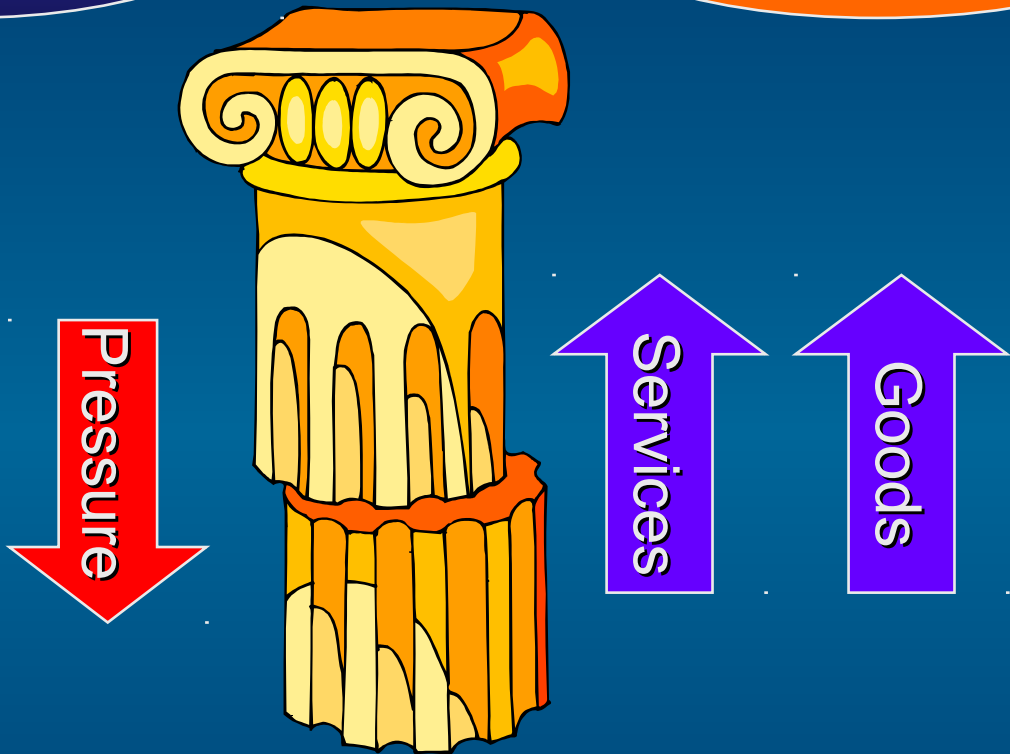




Economy

Society
Culture

We can't have sustainable development without "performance" measures in each of these



Environment





Sustainable development is a trade-off

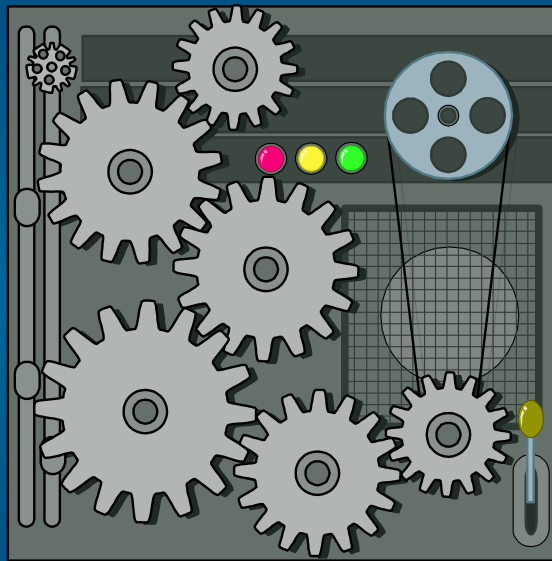
Environmental vulnerability is concerned with *human welfare* & damage to the human life-support system



1. What is the EVI?



50 Indicators



EVI score

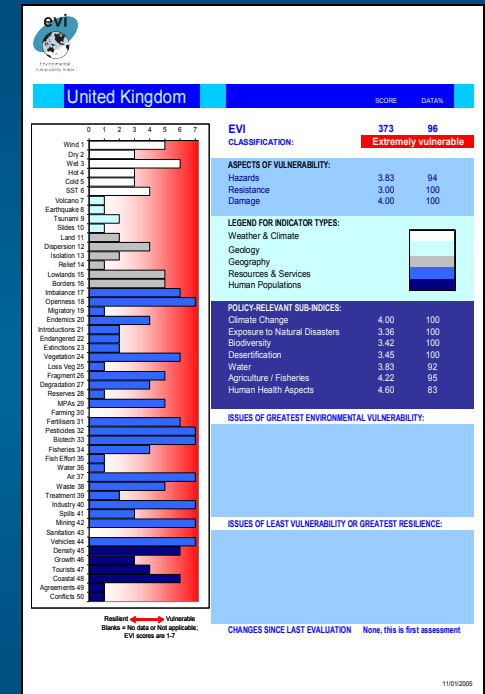
Aspects

Sub-indices

Profiles

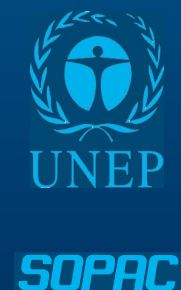
Scaling / thresholds 1-7

Simple processing



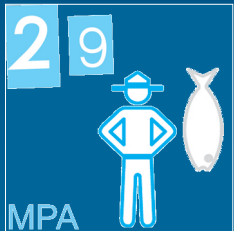
INDICATORS	TYPES	ASPECTS	SUB-INDICES				
1 Wind	W&C	Hazards	CC	D			CCD
2 Dry	W&C	Hazards	CC	D	AF	W	CCD
3 Wet	W&C	Hazards	CC	D	AF	W	CCD
4 Hot	W&C	Hazards	CC	D			CCD
5 Cold	W&C	Hazards		D			CCD
6 SST	W&C	Hazards	CC		AF		CBD
7 Volcano	G	Hazards		D			
8 Earthquake	G	Hazards		D			
9 Tsunami	G	Hazards		D			
10 Slides	G	Hazards		D			
11 Land	Gph	Resistance	CC				CBD
12 Dispersion	Gph	Resistance	CC				CBD
13 Isolation	Gph	Resistance					CBD
14 Relief	Gph	Resistance	CC				CCD
15 Lowlands	Gph	Resistance	CC				CCD
16 Borders	Gph	Resistance					CBD
17 Imbalance	R&S	Damage			AF		CBD
18 Openness	R&S	Hazards			AF		CBD
19 Migratory	R&S	Resistance			AF		CBD
20 Endemics	R&S	Resistance					CBD
21 Introductions	R&S	Damage			AF		CBD
22 Endangered	R&S	Damage					CBD
23 Extinctions	R&S	Damage					CBD
24 Vegetation	R&S	Damage	CC		AF	W	CCD
25 Loss Vegetation	R&S	Hazards			AF	W	CCD
26 Fragmentation	R&S	Damage			AF		CBD
27 Degradation	R&S	Damage			AF	W	CCD
28 Reserves	R&S	Hazards				W	CBD
29 MPAs	R&S	Hazards			AF		CBD
30 Farming	R&S	Hazards			AF		
31 Fertilisers	R&S	Hazards			HH	AF	W
32 Pesticides	R&S	Hazards			HH	AF	W
33 Biotech	R&S	Hazards			AF		
34 Productivity overfishing	R&S	Hazards			AF		
35 Fishing Effort	R&S	Hazards			AF		
36 Water	R&S	Hazards	CC		HH	AF	W
37 Air	R&S	Hazards			HH		
38 Waste	R&S	Hazards					
39 Treatment wastes	R&S	Hazards			HH	W	
40 Industry	R&S	Hazards					
41 Spills	R&S	Hazards					
42 Mining	R&S	Hazards					
43 Sanitation	R&S	Hazards			HH	W	
44 Vehicles	R&S	Hazards					
45 Density	H	Damage	CC	D		W	
46 Growth	H	Hazards				W	
47 Tourists	H	Hazards					
48 Coastal	H	Damage	CC	D			
49 Agreements	H	Hazards					
50 Conflicts	H	Damage					

CC	Climate change
D	Disasters
HH	Human health
AF	Agriculture / Fisheries
W	Water
CCD	Desertification
CBD	Biodiversity

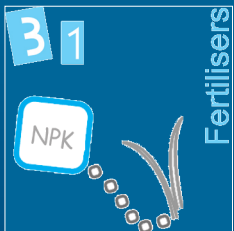




EVI scaling / thresholds



Indicator 29: Marine Reserves (% of continental shelf)



Indicator 31: Fertilisers (kg/km²/yr)



Indicator scores are averaged to create EVI, Aspect and Sub-index values





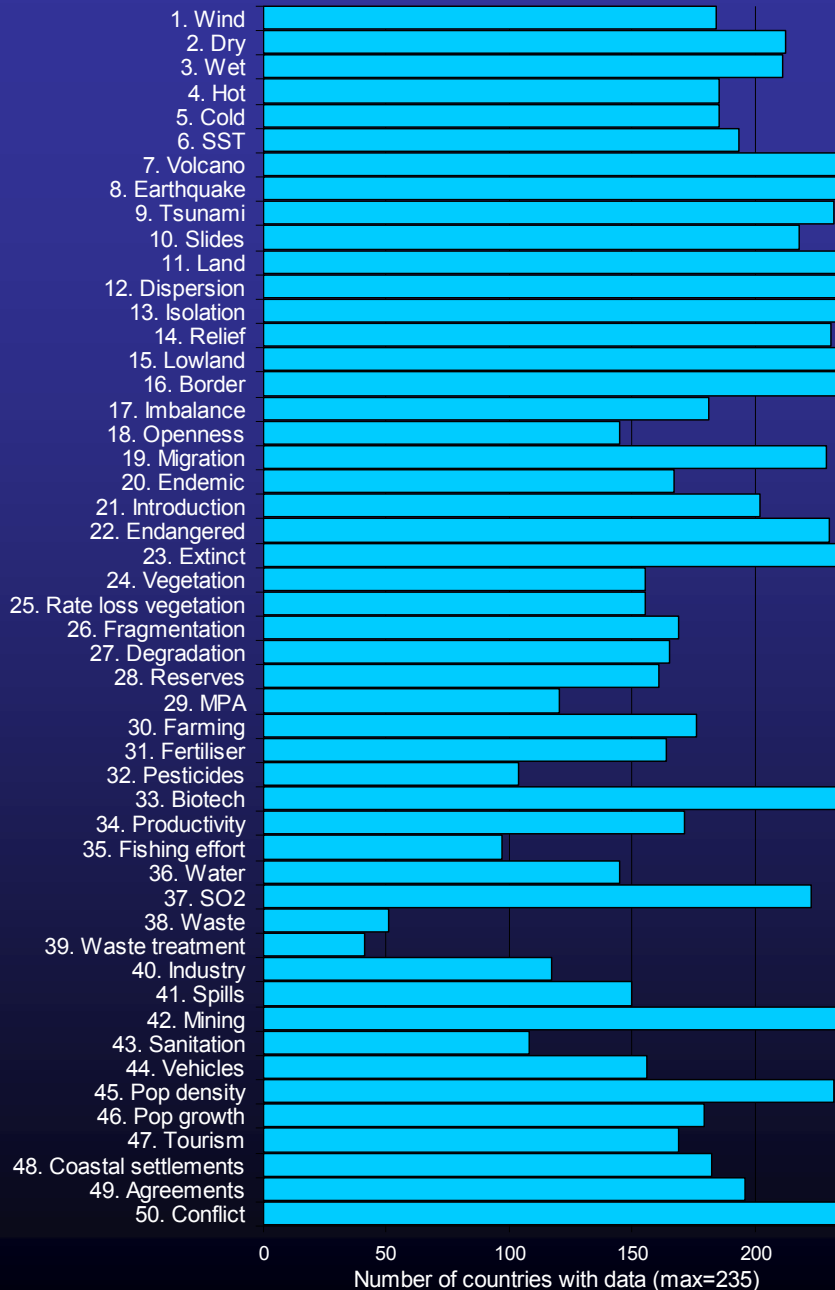
2. Results

(Dec 2004)

Data by indicator



EVI Data holdings for each indicator

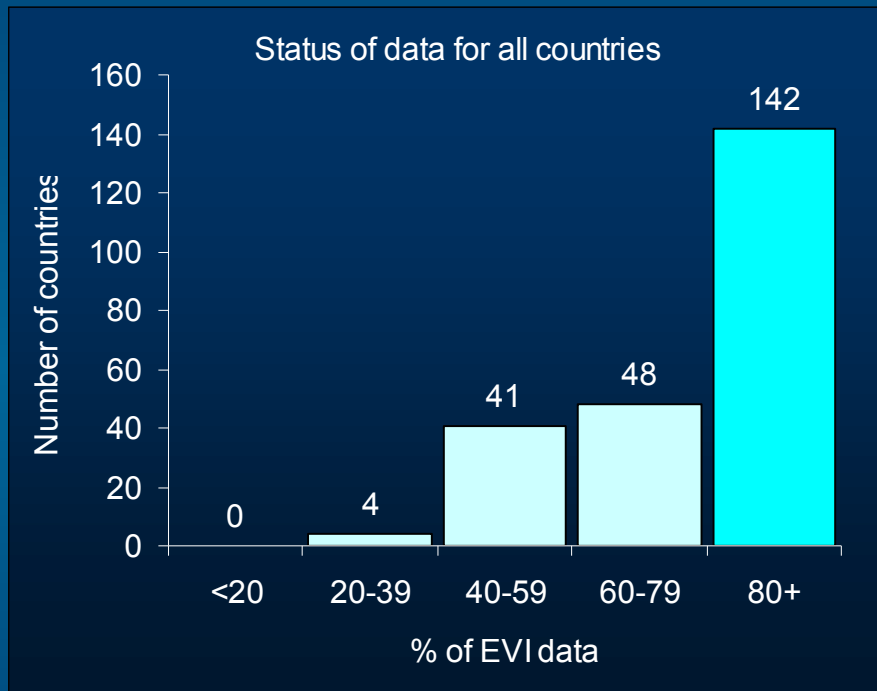


← 41

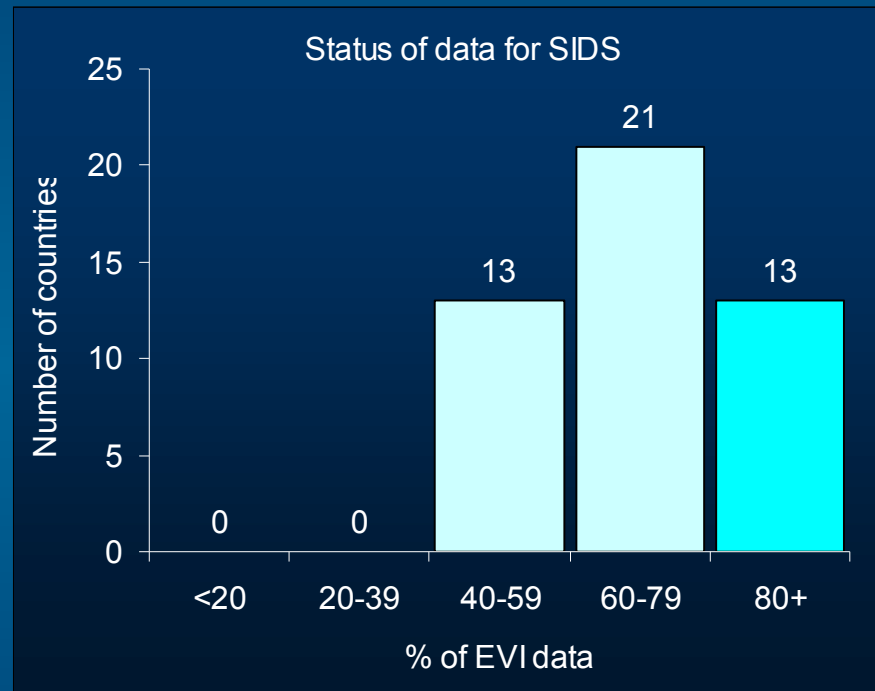




Data by country



All countries

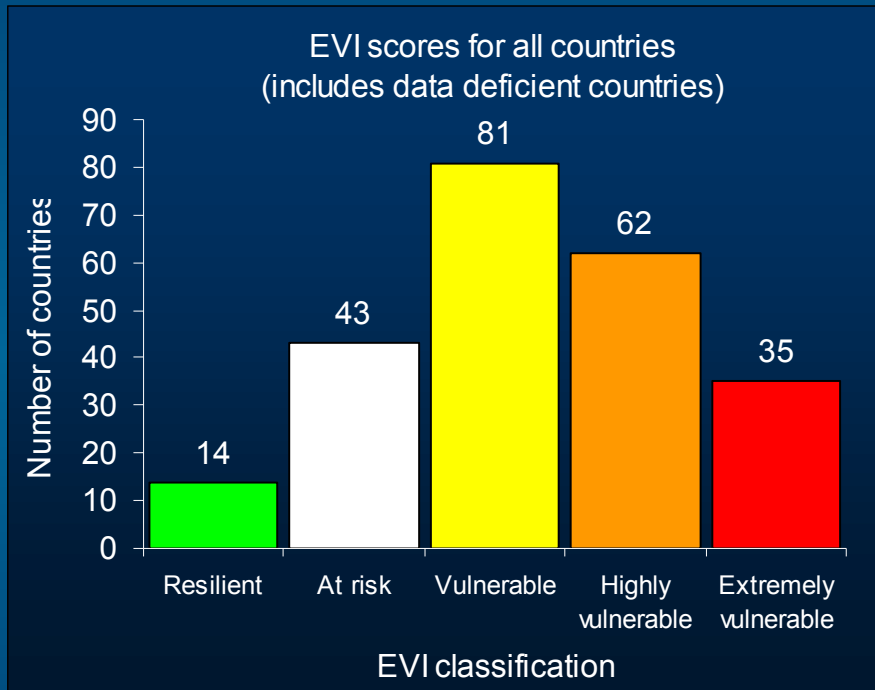


SIDS

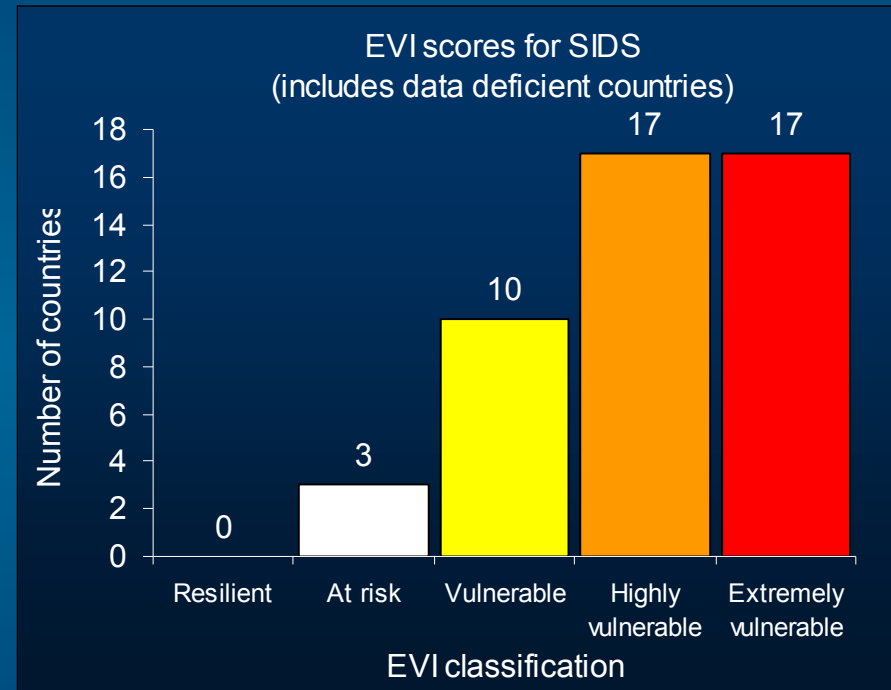




World EVI Results



All countries



SIDS



Cook Islands

SCORE

DATA%

EVI

383

82

CLASSIFICATION:

Extremely vulnerable

ASPECTS OF VULNERABILITY:

Hazards	3.07	84
Resistance	5.50	100
Damage	5.00	60

LEGEND FOR INDICATOR TYPES:

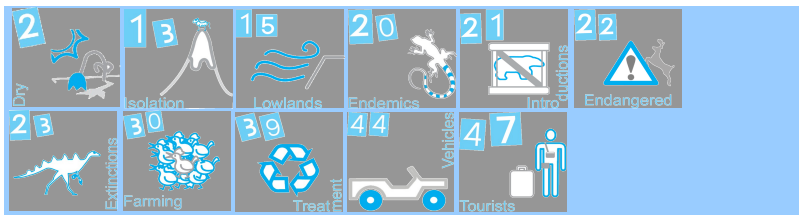
- Weather & Climate
- Geology
- Geography
- Resources & Services
- Human Populations



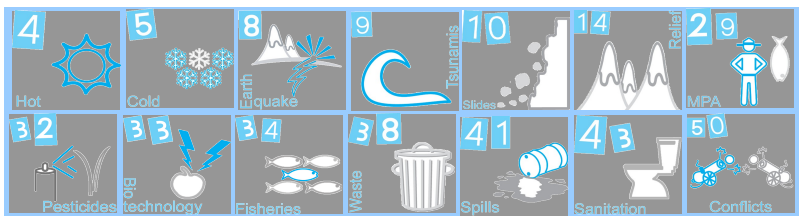
POLICY-RELEVANT SUB-INDICES:

Climate Change	4.36	85
Exposure to Natural Disasters	2.82	100
Biodiversity	5.21	74
Desertification	3.86	64
Water	4.56	69
Agriculture / Fisheries	4.09	58
Human Health Aspects	3.40	83

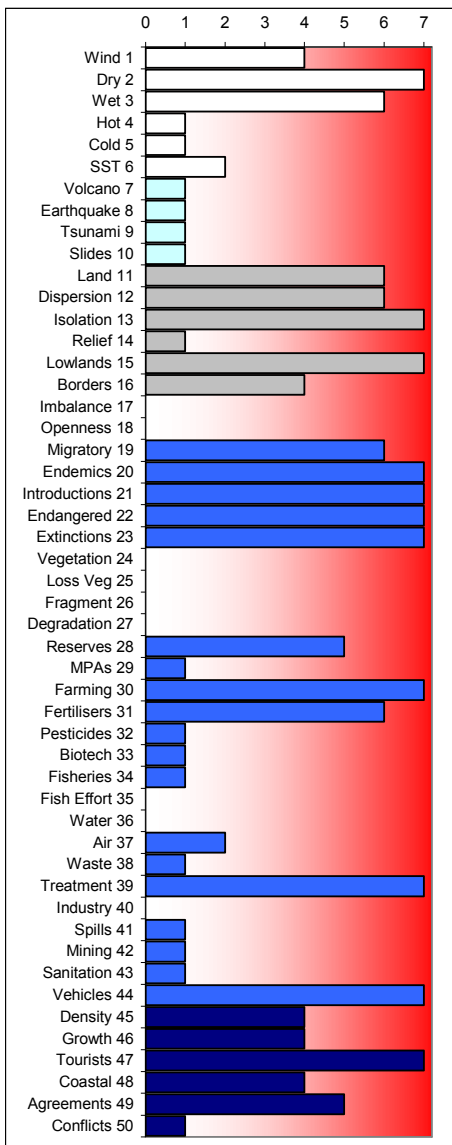
ISSUES OF GREATEST ENVIRONMENTAL VULNERABILITY:



ISSUES OF LEAST VULNERABILITY OR GREATEST RESILIENCE:



CHANGES SINCE LAST EVALUATION None, this is first assessment



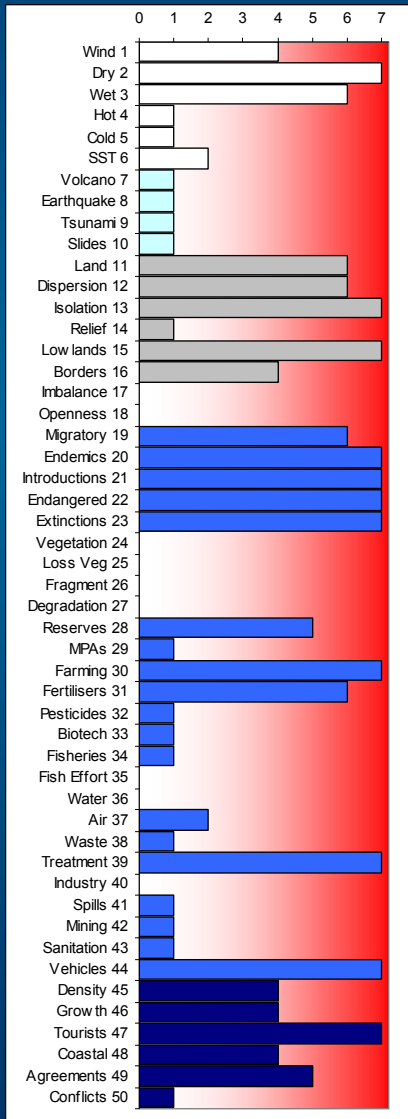
Resilient ← → Vulnerable
Blanks = No data or Not applicable;
EVI scores are 1-7





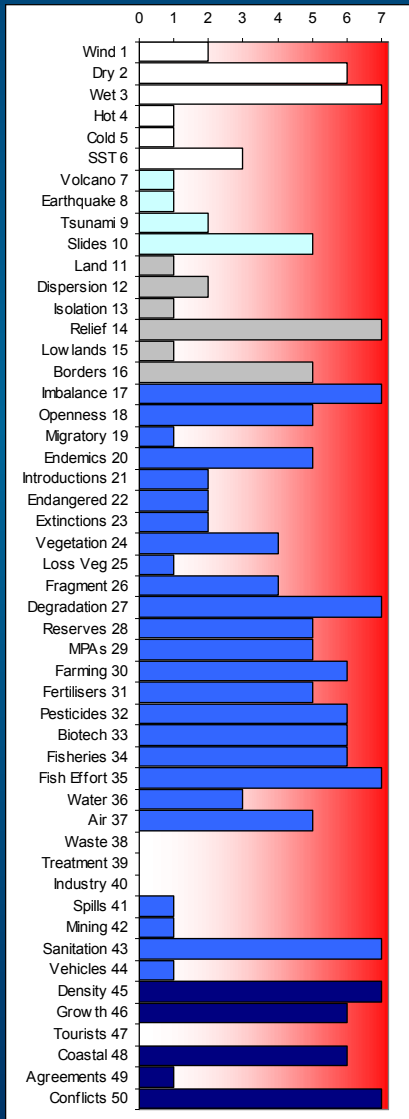
Cook Islands

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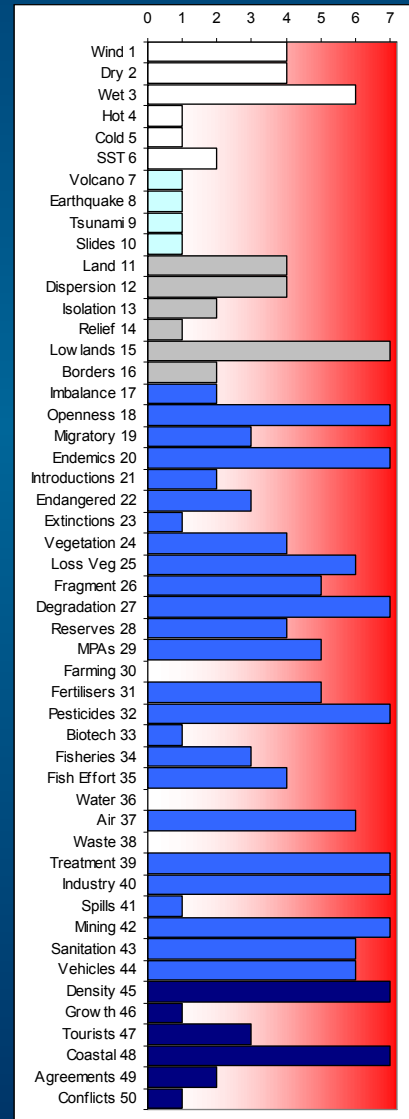
India

Hazards	3.79	88
Resistance	2.88	100
Damage	4.80	100



Trinidad & Tobago

Hazards	3.79	91
Resistance	3.75	100
Damage	3.90	100





3. Conclusions, protecting resilience & reducing vulnerability

- ◆ Global range EVI: 174 – 436
- ◆ 142 countries with valid EVI (80%+ data) (of 235)
- ◆ Countries have very different types of vulnerability challenges:
 - **Challenge 1:** Natural hazards, low natural resilience
 - **Challenge 2:** Creeping human impacts
 - **Challenge 3:** Globalisation (high intensity) impacts
 - **Challenge 4:** Global Climate Change
 - **Challenge 5:** Acquired vulnerability – losing resilience through past damage
- ◆ Results are policy-relevant because they identify issues and opportunities





Focus on SIDS

- ◆ SIDs environments are especially vulnerable to natural and human hazards that affect all countries on earth
- ◆ Not because they get more SHOCKS, but the RESPONSE is different. Damage sustained is greater in SIDS... why?
- ◆ SIDS are scaled-down in size, hazards are not
- ◆ Human / natural environments - limited capacity to absorb shocks: □ Small □ Larger proportion of the country affected □ Less differentiated / diversified □ Fewer refuges





Moving forward: Framework for protecting & building resilience

- ◆ Protect existing resilience
- ◆ For some vulnerabilities, increasing *general* resilience is the only option – we cannot stop cyclones, but we can make systems more resistant to them
- ◆ Types of vulnerability challenges are approachable in different ways: need to identify the best approaches to suit each challenge
- ◆ EVI used to create targets and to monitor



