



 COLUMBIA CLIMATE SCHOOL
Climate, Earth, and Society

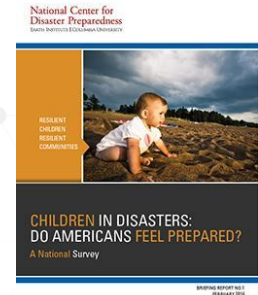
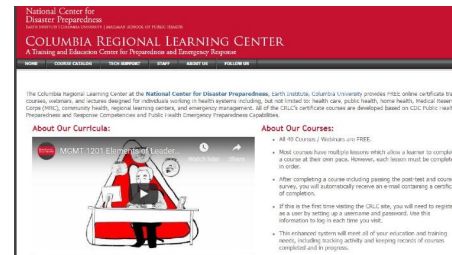
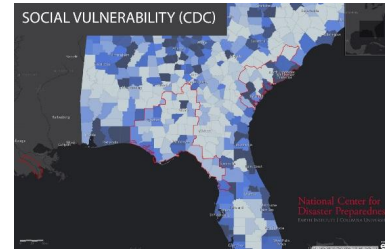
Mapping Complexities and Avoiding Oversimplicity in Climate Adaptation

August 18, 2025



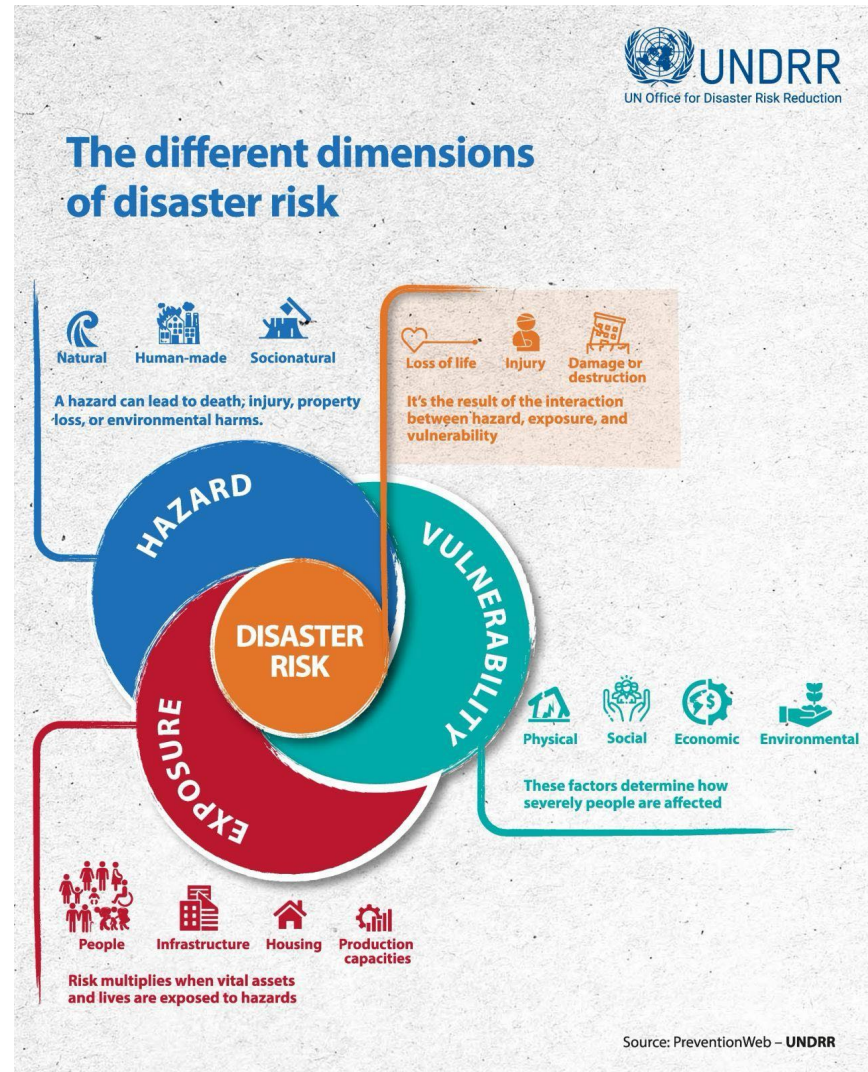
About the National Center for Disaster Preparedness

- Established in 2003, the National Center for Disaster Preparedness works to understand and improve the nation's capacity to **prepare** for, **respond** to and **recover** from disasters.
- Four focus areas:
 - System readiness
 - Disaster recovery
 - Citizen engagement, and
 - Vulnerable populations
- NCDP carries out **research** and **policy analysis** in these areas, and provides **education, training and technical support** to public health workers, local and regional governments, and public health, hospital, and community partners.



Defining Risk

$$\text{RISK} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity to Cope}}$$

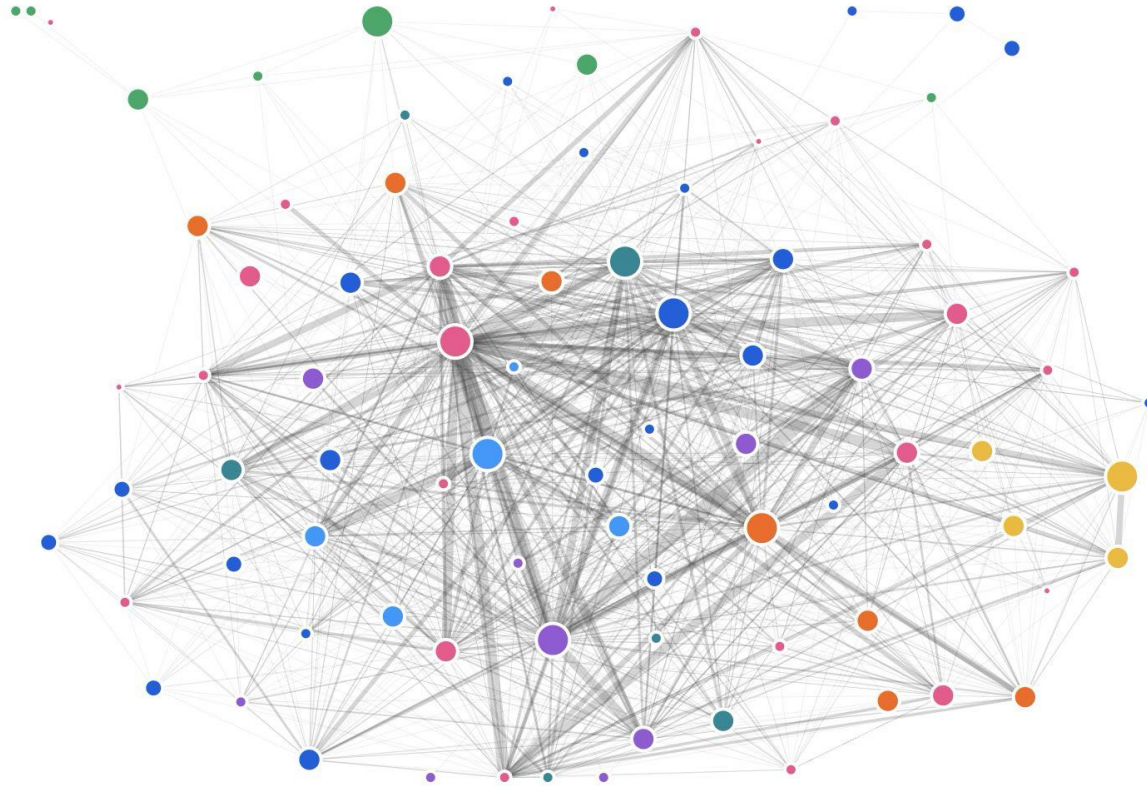


Embracing Complexity

DISASTER GENOME PROJECT (IN DEVELOPMENT)

The Disaster Genome - Prototype

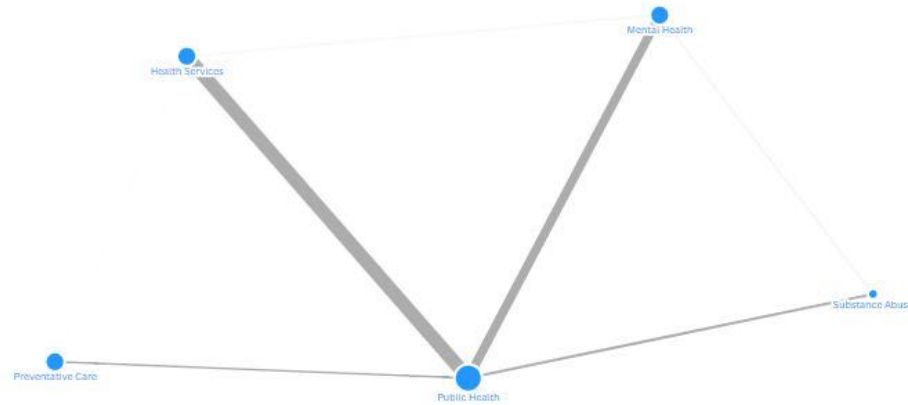
Variable ● Hazard and Exposure ● Social ● Public Health ● Epistemology ● Governance ● Economics
● Disaster Risk Management ● Agrifood Systems



Non-exhaustive; for illustration purposes only

The Disaster Genome - Prototype

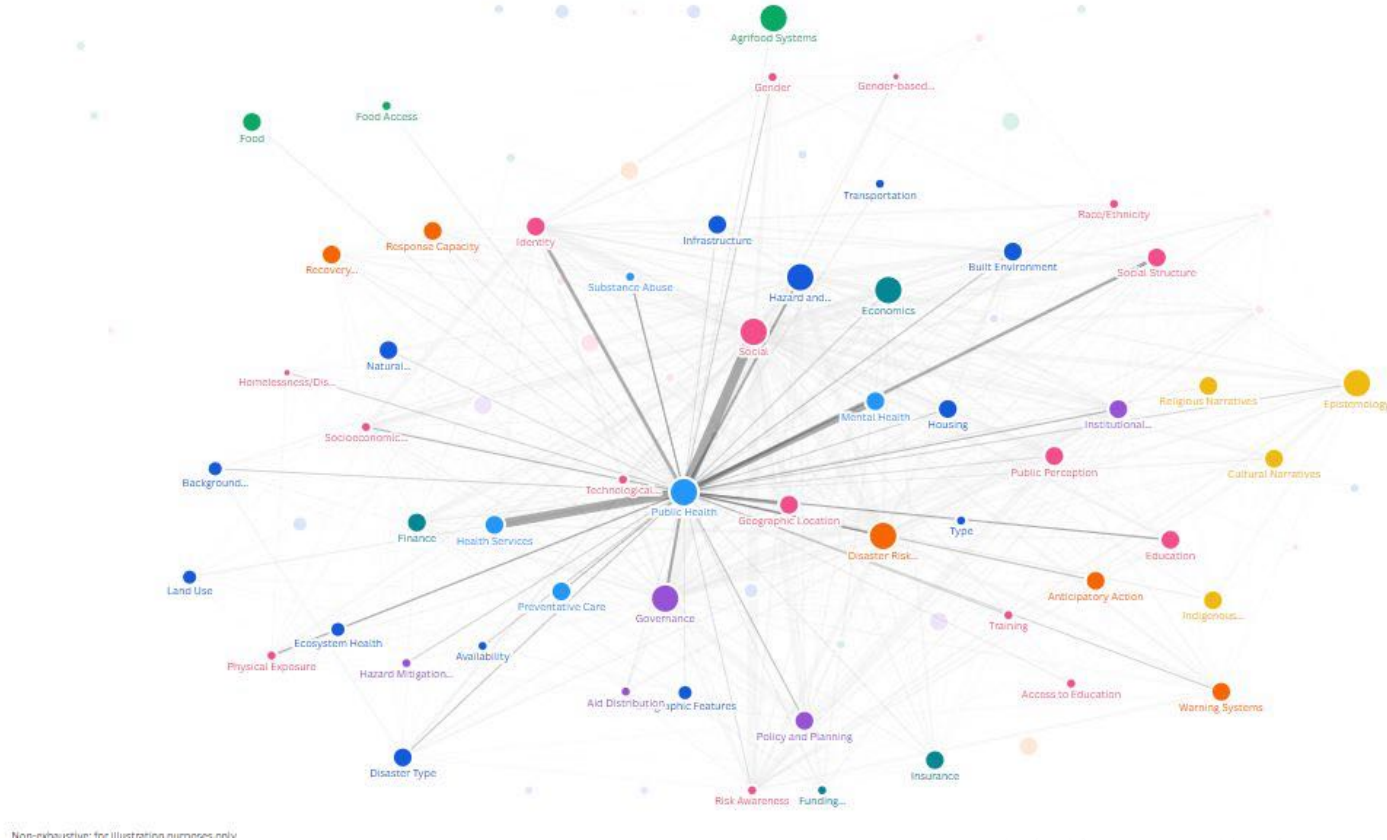
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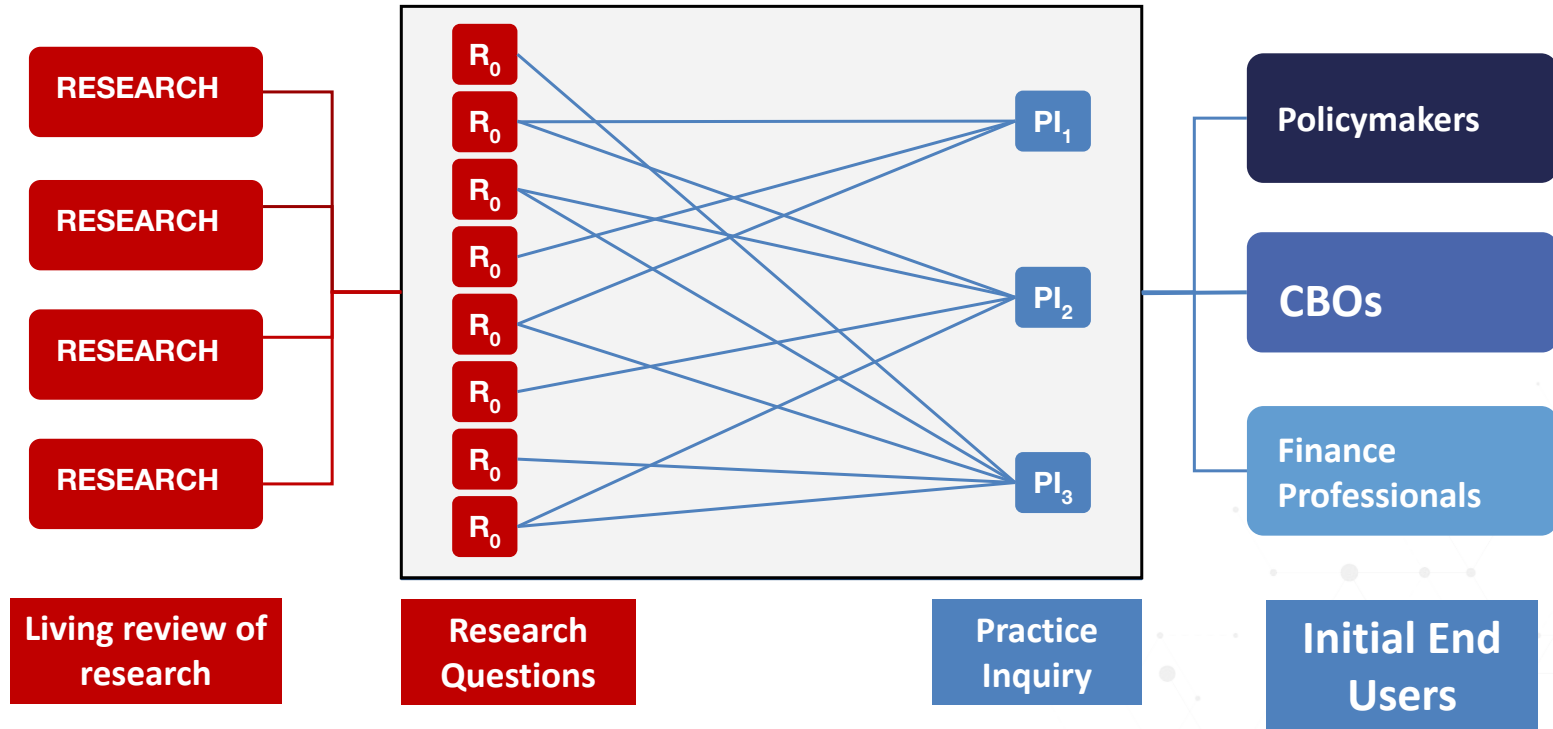
Non-exhaustive; for illustration purposes only

The Disaster Genome - Prototype

Variable ● Hazard and Exposure ● Social ● Public Health ● Epistemology ● Governance ● Economics ● Disaster Risk Management ● Agrifood Systems



Disaster Genome Prototype Tool (under development)

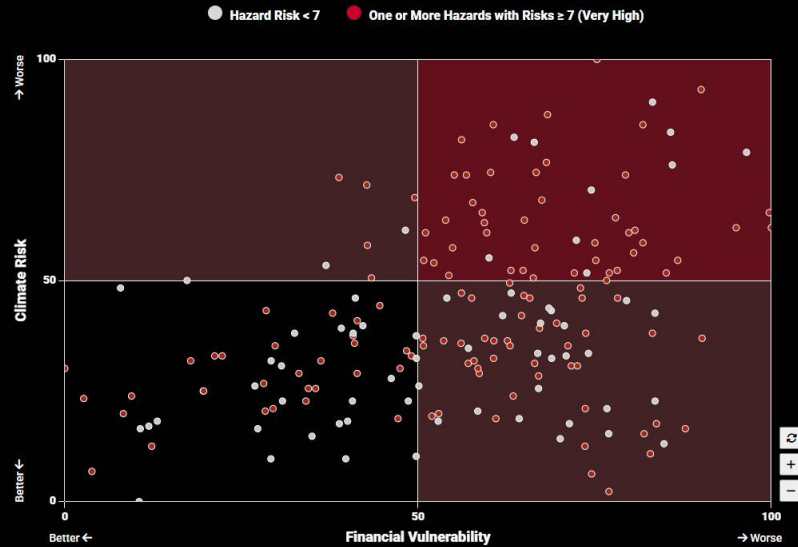


End-users will interface with a “business intelligence system” – we are building the “wiring” for this system by identifying and mapping disaster variables.

Making Smarter Decisions

CLIMATE FINANCE VULNERABILITY INDEX (CLIF-VI)

Scatterplot Map



Rank by Index Score

RANK	COUNTRY	SCORE
188	Guinea-Bissau	91.6
187	Malawi	87.7
186	Angola	87.7
185	Eritrea	86.8
184	Zambia	84.6
183	Burundi	83.5
182	Palestine	82.5
181	Lesotho	81.1
180	Venezuela	81.0
179	Sudan	78.5

What is the state of access to financing for climate adaptation?

What is the risk of impacts (current and future)?

What considerations should there be for financing (e.g. enhanced oversight, technical assistance, etc.)?

Financial Vulnerability

Climate Change Impacts

Disaster Vulnerability

Governance / Stability

India

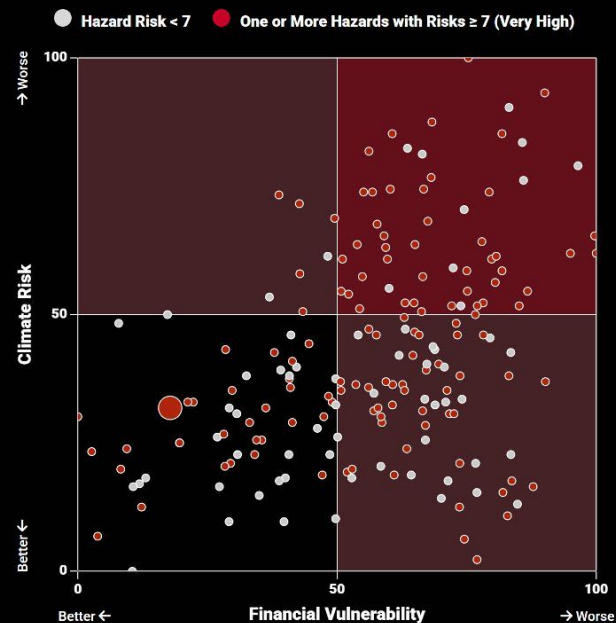
Rank

Financial Vulnerability _____ 17.8

Climate Risk _____ 31.8

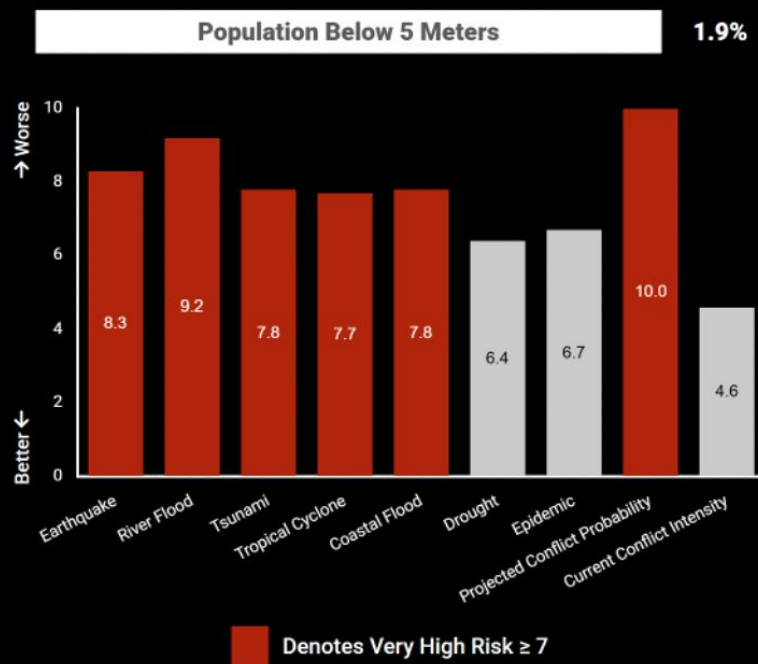
Score _____ 24.8

Rank _____ 17TH

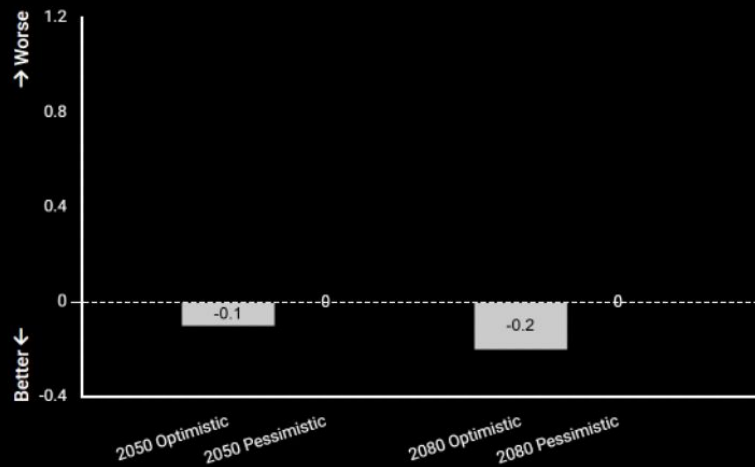


Climate Vulnerability

Hazard and Exposure



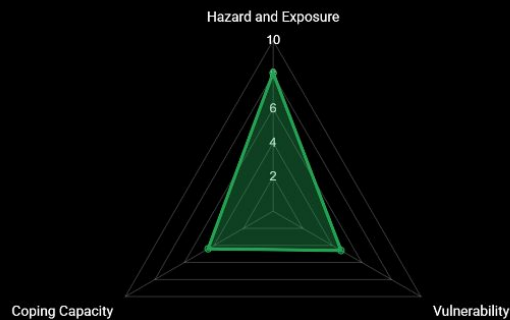
Change in Climate Risk



Climate Vulnerability (Cont.)

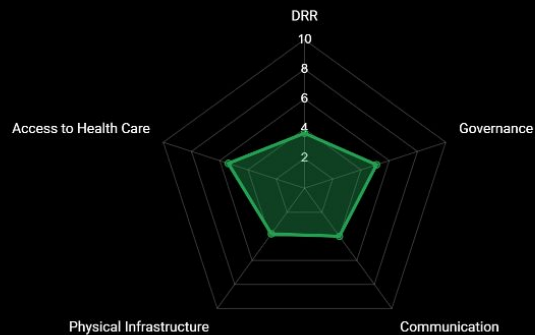
Current Risk

Higher values denote greater vulnerability



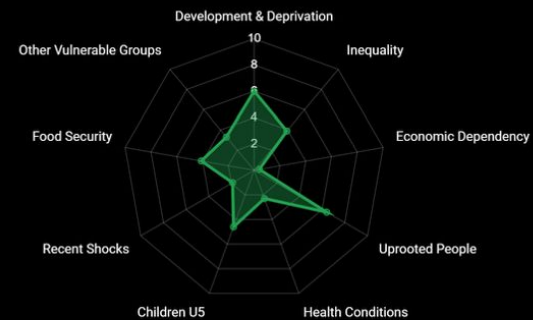
Coping Capacity

Higher values denote greater vulnerability



Vulnerability Dimensions

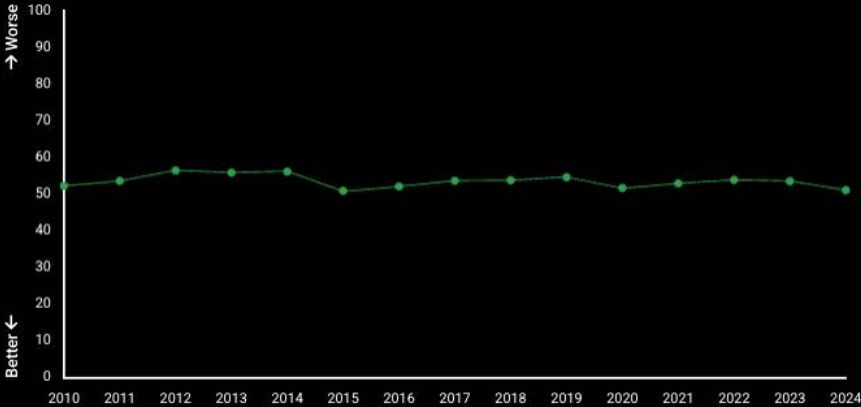
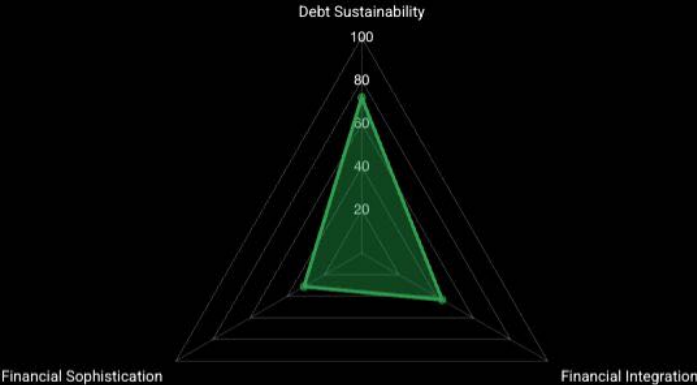
Higher values denote greater vulnerability



Financial Vulnerability

Financial Vulnerability Indicator

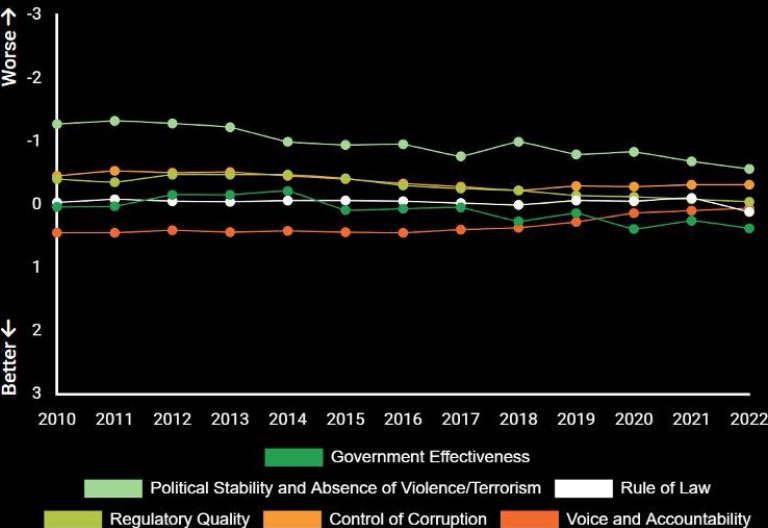
Higher values denote greater vulnerability



Governance Considerations

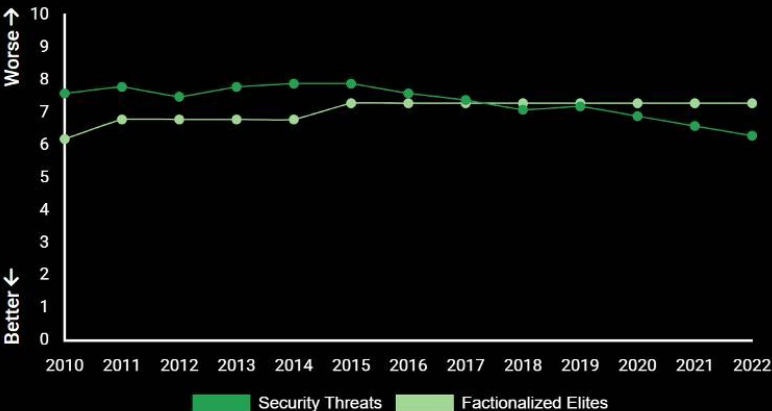
Data from Worldwide Governance Indicators

Select and deselect a dataset for the chart by clicking on the legend



Data from Fragile States Index

Select and deselect a dataset for the chart by clicking on the legend



Thank you!

RETHINKING READINESS

A BRIEF GUIDE TO
TWENTY-FIRST-CENTURY
MEGADISASTERS



JEFF SCHLEGELMILCH
FOREWORD BY IRWIN REDLENER

Catastrophic Incentives

WHY OUR APPROACHES TO
DISASTERS KEEP FALLING SHORT



JEFF SCHLEGELMILCH
and **ELLEN CARLIN**

Jeff Schlegelmilch, MPH, MBA

Associate Professor of Professional Practice of Climate
Director, National Center for Disaster Preparedness
Director, Executive Education and Non-Degree Programs
Columbia Climate School, Columbia University
Phone: 212-853-7651
Email: js4645@columbia.edu

