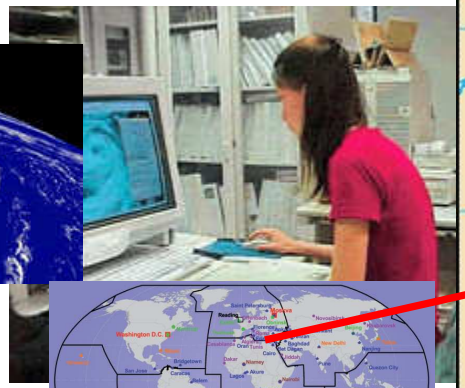
Stories from ten years at the United Nations and Beyond: Building and coordinating an international programs in disaster risk reductions

Dr. Maryam Golnaraghi
Director of Extreme Events and Climate Risks Programme

16 May 2018

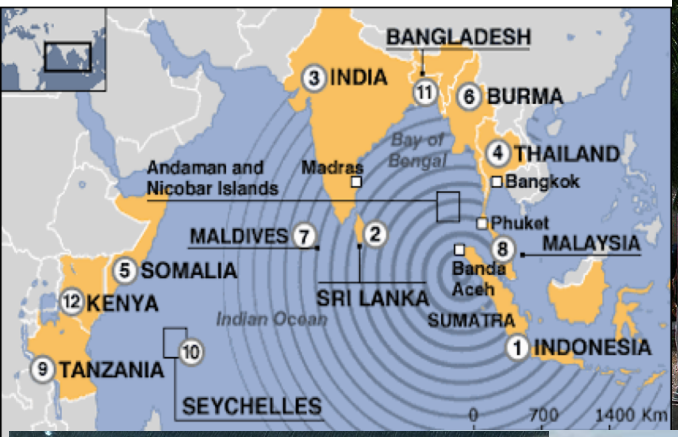
Cyclones in Bangladesh

Bangladesh Cyclone Preparedness Programme



2004 Indian Ocean Tsunami

December 25 2004

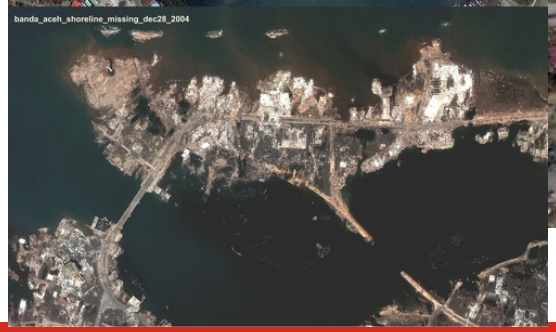


Reported Deaths:

Est. 230,000

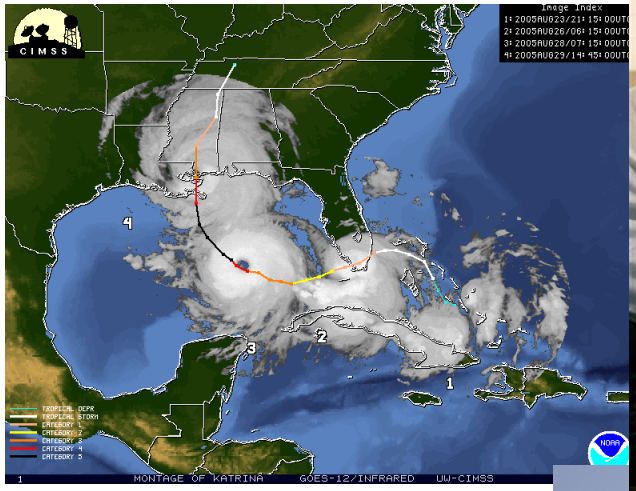
Reported Economic Losses

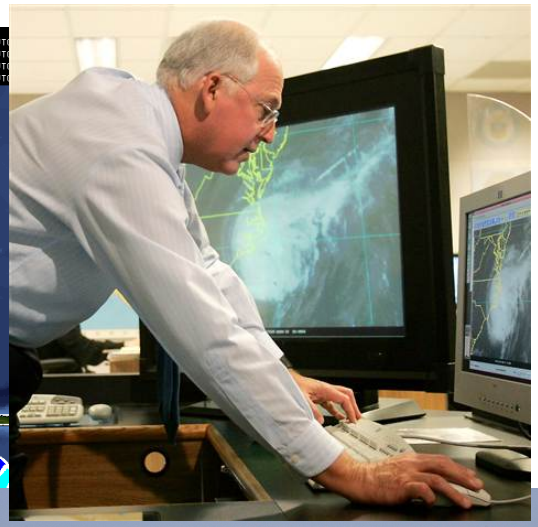
14 Billion (USD)

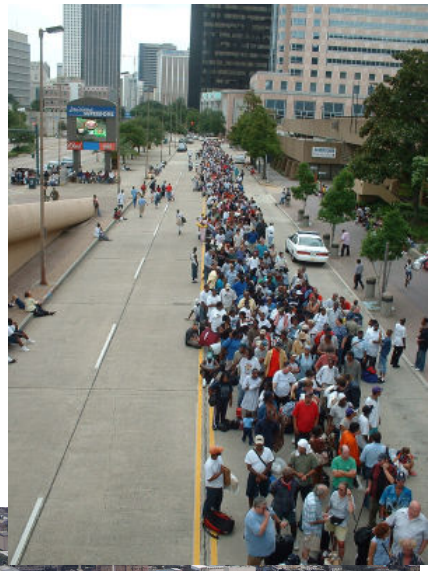


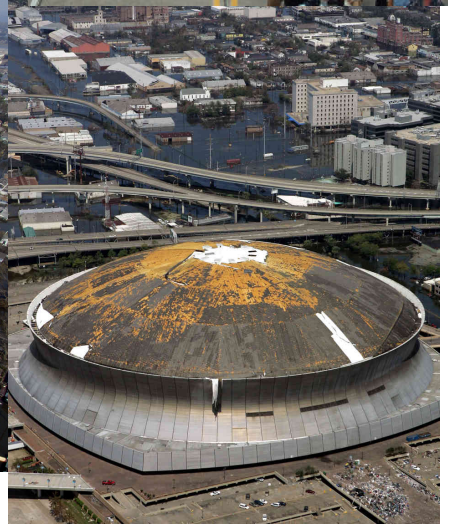
Hurricane Katarina

August 2005 Southern USA









Reported Deaths:

1,833

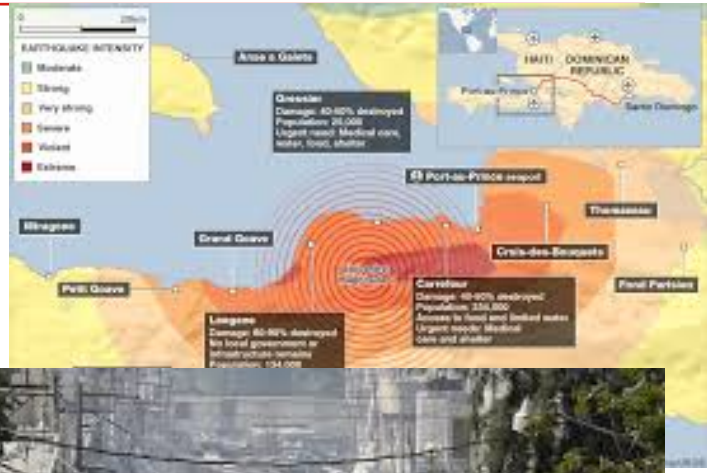
Reported Economic Losses:

146.9 Billion (USD)

Haiti 2010 Earthquake

12 January 2010

- 7.0 Magnitude Quake struck near Port au Prince
- 3,500,000 people affected, 220,000 people dead, 300,000+ people injured
- 1.5m people became homeless
- 4,000 schools were damaged or destroyed
- 25% of civil servants in Port au Prince died
- half million people lived in tents,
- 100,000 at critical risk from storms and flooding
- By July 2011 5,899 had died as a result of Cholera outbreak, and 216,000 were infected



Japan Earthquake/Tsunami/Nuclear Accident

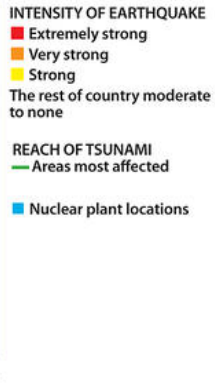
11 March 2011

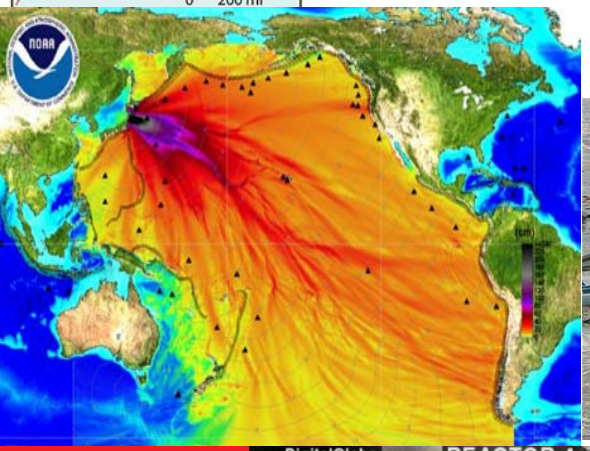
Reported Deaths:

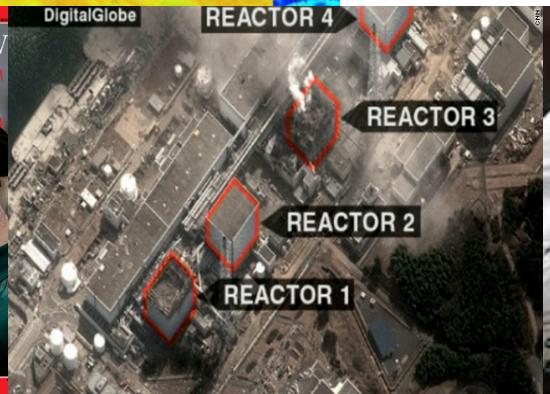
15,833

Reported Economic Losses:

Est. 300 Billion

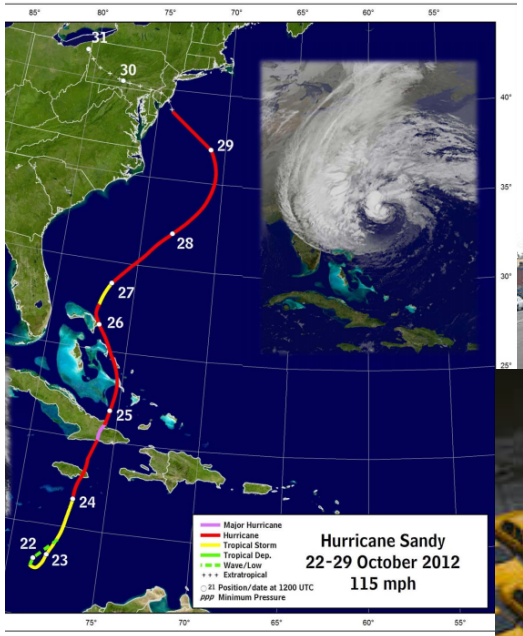






Hurricane Sandy

October 2012 – Jamaica, Cuba, Bahamas & Northeastern/Northern United States & Canada

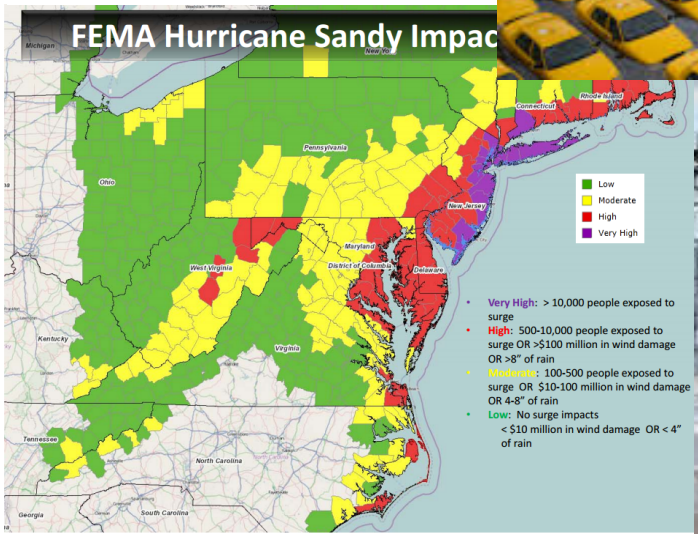


Reported Deaths:

148

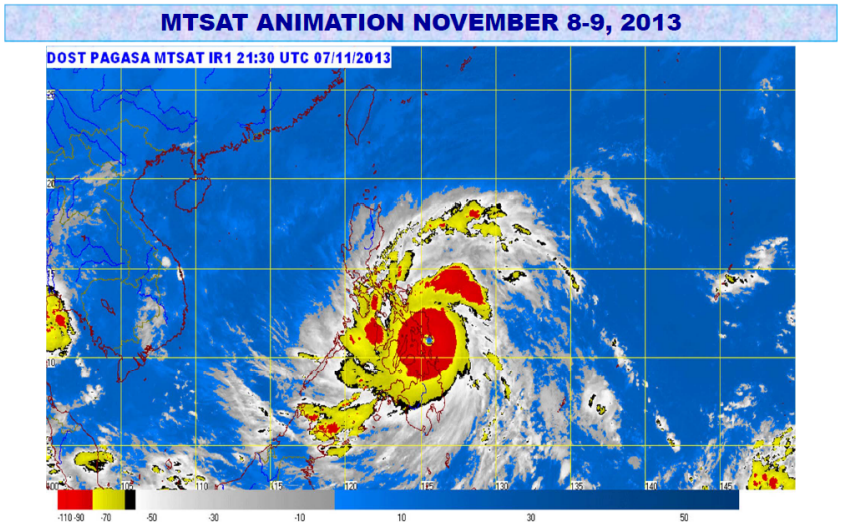
Reported Economic Losses

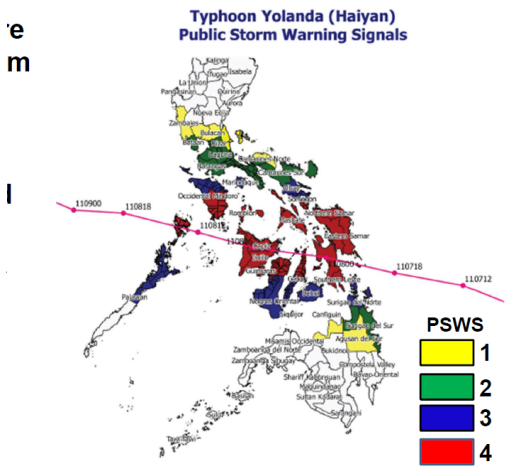
Est. 68 Billion (USD)



Typhoon Haiyan

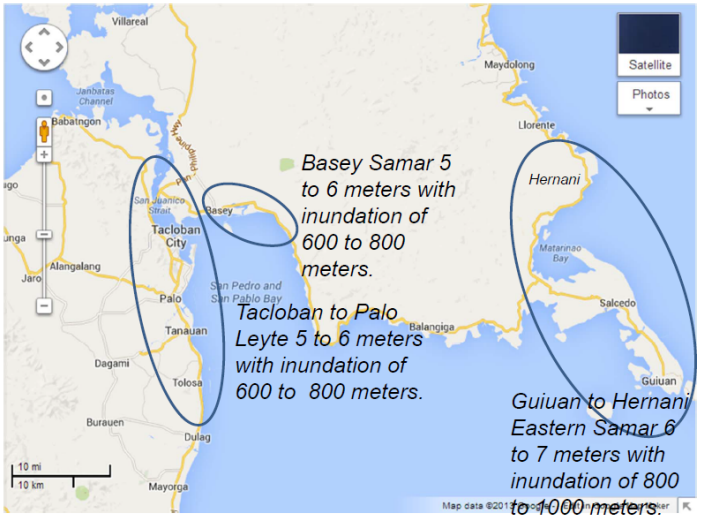
November 2013 - Philippines





Reported Deaths:
6,190
Reported Economic Losses:
Est. 5.8 Billion (USD)

Measured storm surge heights
(STORM CHASER Team)



Sub-Saharan Africa Droughts

Drought (reported deaths)

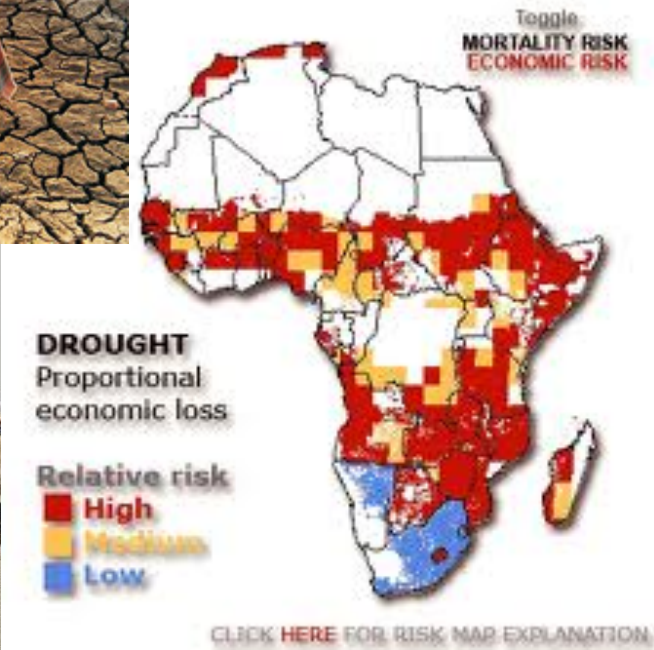
1983 Ethiopia (300,000)

1984 Sudan (154,000)

1975 Ethiopia (100,000)

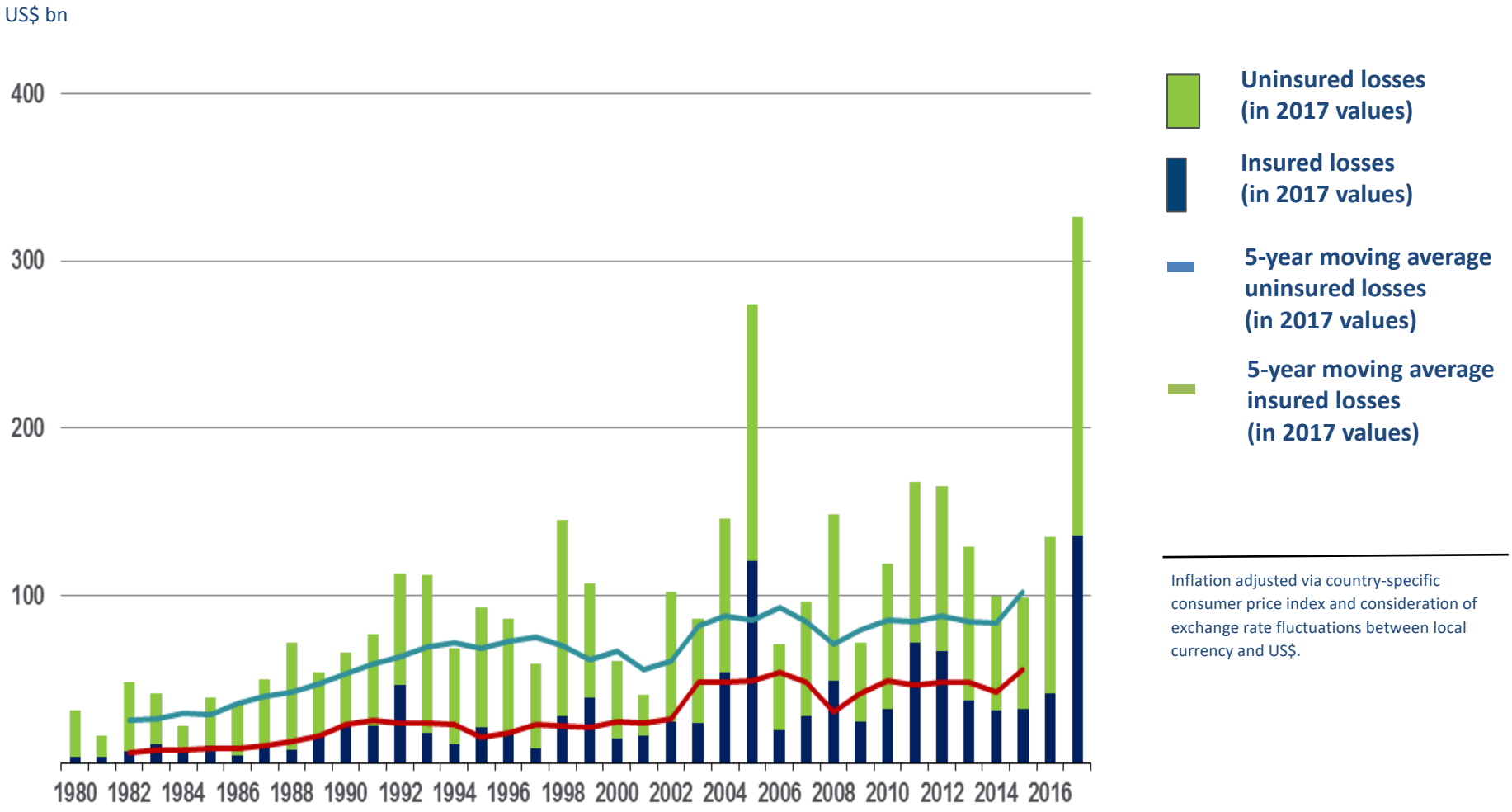
1983 Mozambique (100,000)

1975 Somalia (19,000)



Weather-related loss events worldwide 1980 – 2017

Uninsured and insured losses with 5-year moving average



Inflation adjusted via country-specific consumer price index and consideration of exchange rate fluctuations between local currency and US$.

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Six decades of international negotiations - evolutions of disaster risk management – Three distinct phases

1950 1970 1990 2005 2015 2018

1

Following a sequence of major disasters, several governments requested the UN to coordinate post disaster relief and response support.

Two decades of UN-coordinated relief and response operations. UN General Assembly, stresses prevention and preventive measures and establishes UNISDR.

SENDAI FRAMEWORK FOR DRR

Disaster Risk Reduction

1994: Yokohama

2005: HFA (2005-2015)

A humanitarian issue engaging civil protection agencies

Paradigm shift from a humanitarian to a development issue: ex ante prevention and preparedness to reduce risks; risk financing & transfer: multi-sectoral

2

WMO, UNEP, UNESCO and ICSU established international scientific processes and programmes that enabled globally coordinated data collection, scientific research supporting IPCC assessments to underpin UNFCCC COP discussions (Zillman 2009).

PARIS AGREEMENT (COP21)

Climate Change

1994: UNFCCC
1997: Kyoto

2010: Cancun Adaptation

The anthropogenic climate change dialogue deeply rooted in the science and environmental communities.

Negotiations focus on mitigation.

Negotiations also include adaptation; Loss and Damage Program.

3

UN highlights linkages: development, population growth, environmental degradation, ozone depletion, health, clean water and energy.

A variety of initiatives between 1992 and 2012: UNEP-FI; UNDG, UN Global Impact; UNEP-FI (PRI); UNEP-FI (PSI); WBCSD, etc.

SUSTAINABLE DEVELOPMENT GOALS (SDGs) (2015-2030)

Sustainable Development

1994: UN Rio Summit

2000: MDGs

UN brings sustainable development for poverty alleviation to the forefront of international policy dialogue. Focuses funding from international donors, NGOs and philanthropic foundations.

SDG consultations engages climate change and disaster risk reduction issues.

Six decades of international negotiations - evolutions of disaster risk management – Three distinct phases

1950 1970 1990 2005 2015

2018

1

Phase I: Humanitarian response

Phase II: Early warning and Emergency preparedness

Phase III: Risk-based prevention and risk reduction

2

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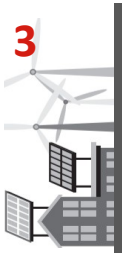

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Building resilience to extreme events – A global movement since 2005

1. Risk Assessment

Modeling
Communication
Risk ownership

2. Risk Reduction and Prevention

- Early Warning Systems and emergency preparedness
- Prevention and Risk Reduction

Policy & regulatory alignment and institutional mechanisms for coordination at national to local levels

3. Risk Financing and risk transfer (Insurance and Alternative Risk Transfer, including insurance)

(Pre-planned financing)

4. Resilience building through smarter reconstruction post event

Sources: Geneva Associations (2016b, 2017) and Geneva Association & IDF (2017)

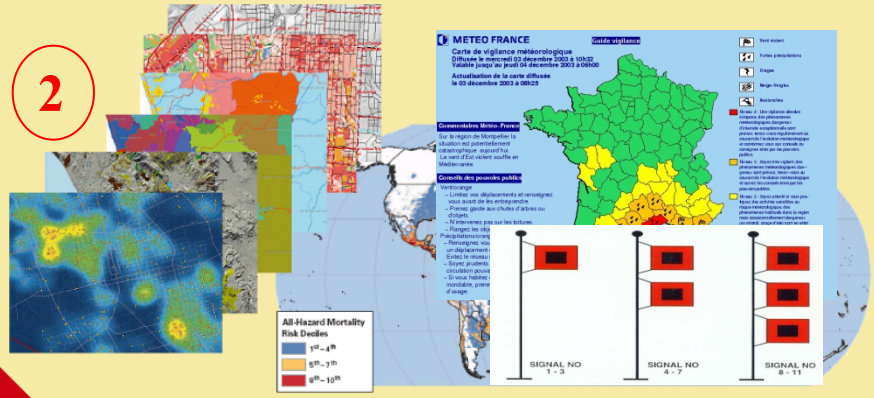
2005 – 2015: Early Warning Systems and Emergency Preparedness

National to local disaster risk reduction plans, legislation and coordination mechanisms

1

Hazard Data and Forecasts

2



Risk Information

Coordination and Collaborations

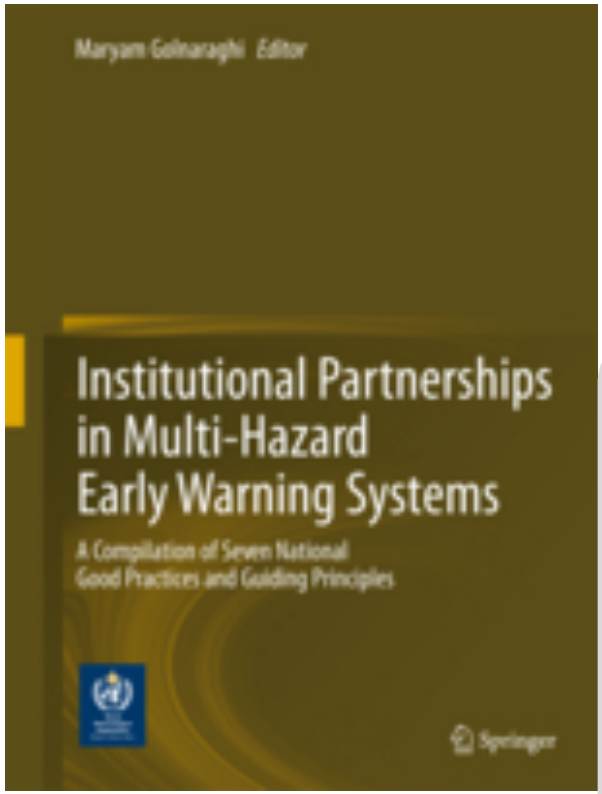
3

Communication and Dissemination Mechanisms

4

Preparedness and Early Response

Source: . Golnaraghi, M. (Ed.) “Institutional Partnerships in Multi-Hazard Early Warning Systems: A compilation of Seven National Good Practices and Guiding Principles,” Springer Verlag (2012)



- Bangladesh - Cyclones
- Cuba - Cyclones
- French Vigilance system – Multi-hazard
- Germany – Multi-hazards
- Japan – Multi-hazards
- Shanghai (Mega City) – Multi - Hazard
- USA – Multu - hazard

10 key principles for successful Early Warning Systems (1/2)

1. **Political recognition of the benefits of EWS along with effective planning, legislation and budgeting**
2. **Effective EWS are built upon four components:**

   (i)) hazard detection, monitoring and forecasting;

   (ii) analyzing risks and incorporation of risk information in emergency planning and warnings;

   (iii) disseminating timely and "authoritative" warnings with clarity on the responsibilities and mandate for issuance of warnings;

   (iv) community emergency planning and preparedness and the ability to activate emergency plans to prepare and respond

3. **Roles and responsibilities of all EWS stakeholders and their collaboration mechanisms clearly defined and documented (SOPs)**
4. **Capacities aligned with resources across national to local levels (sustainability)**

5. Hazard, exposure and vulnerability information are used to carry-out risk assessments at different levels

6. Clear, consistent and actionable hazard warnings, with risk information and issued from a single recognized authoritative source

7. Timely, reliable, redundant and sustainable warning dissemination mechanisms

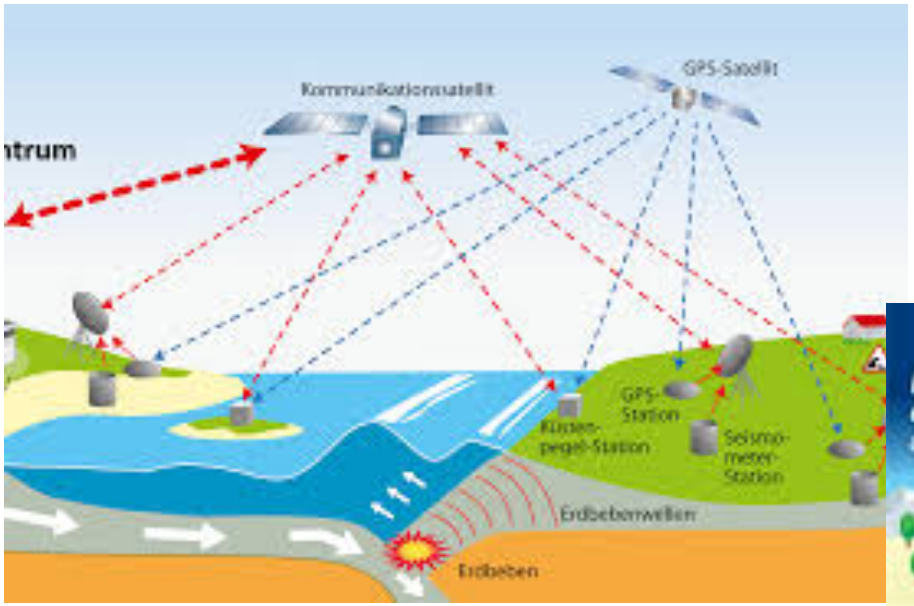
8. Emergency response plans targeted to the individual needs of the vulnerable communities, authorities and emergency responders

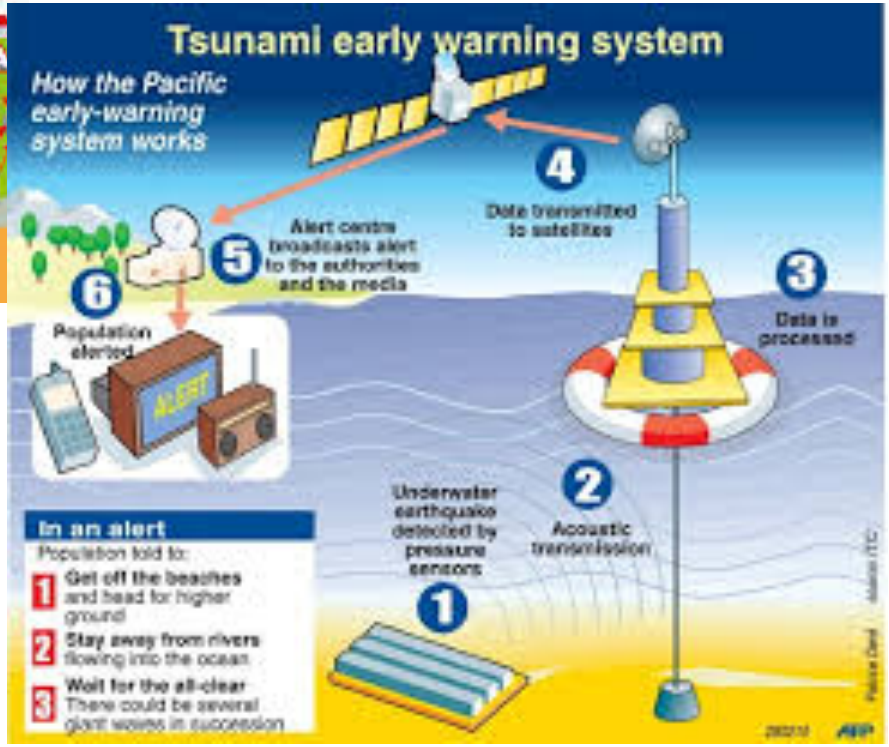
9. Regular training and education programmesin risk awareness and drills emergency preparedness and response actions

10. Effective feedback mechanisms throughout levels of the EWS for system improvement over time

Global Tsunami Early Warning System – built on the four key components

All Countries have access to warnings under 5 minutes

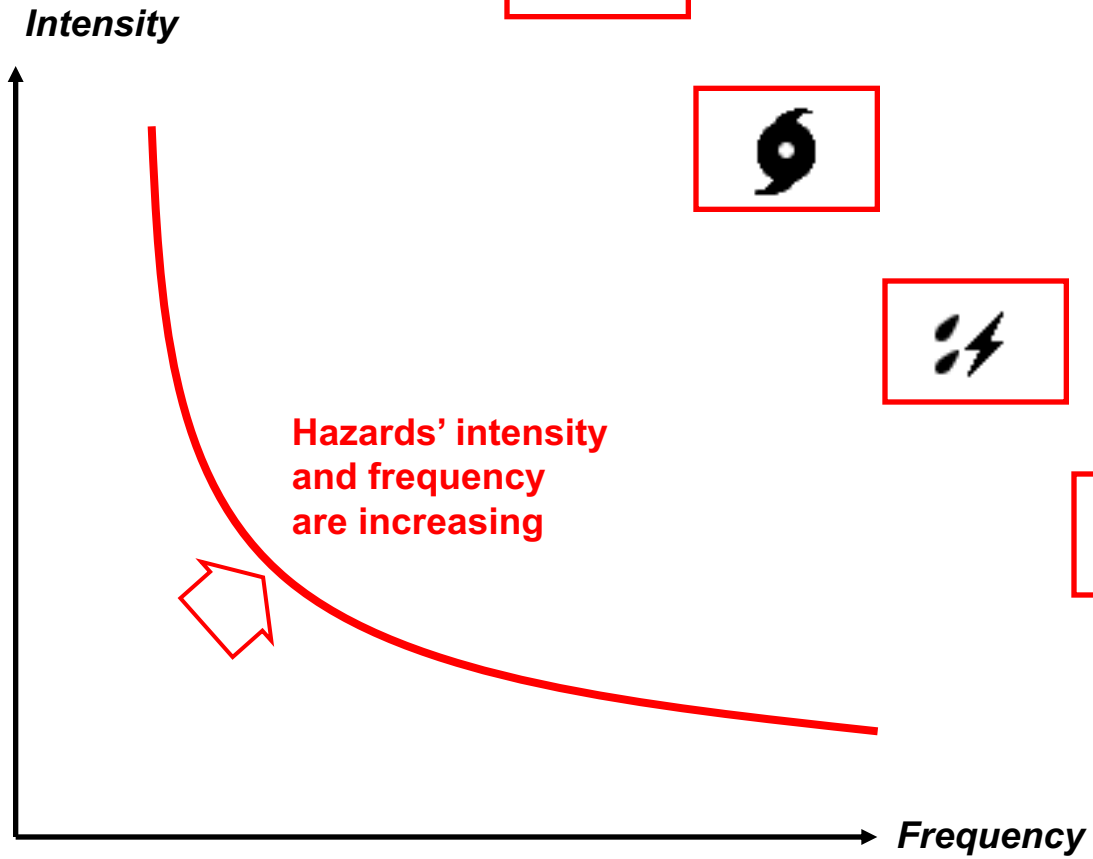




2015 – onwards: Stress on Risk-informed decision-making

Building on experiences of the insurance industry

Disasters impacts many sectors!



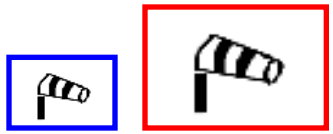
Hazards' intensity and frequency are increasing

Vulnerability and Exposure on the rise !

Need for risk-based decision-making

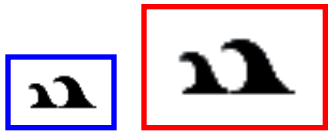
2015 – onwards: Stress on Risk-informed decision-making

Building on experiences of the insurance industry



Strong Wind

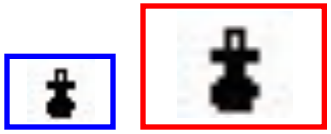
Disasters impacts many sectors!



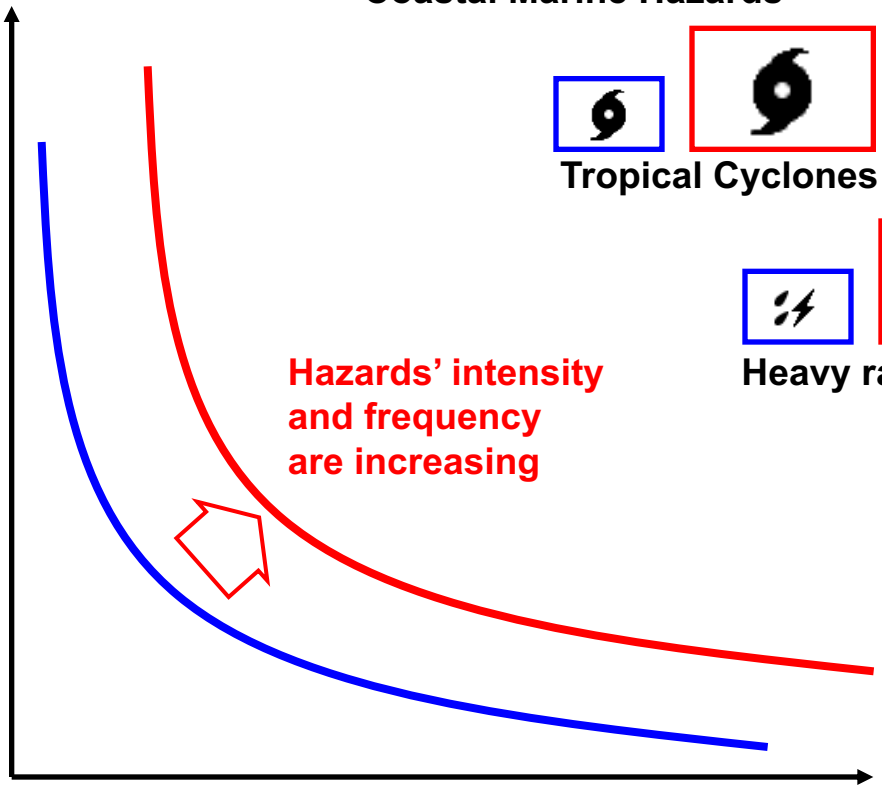
Coastal Marine Hazards

Tropical Cyclones

Heavy rainfall / Flood



Heatwaves

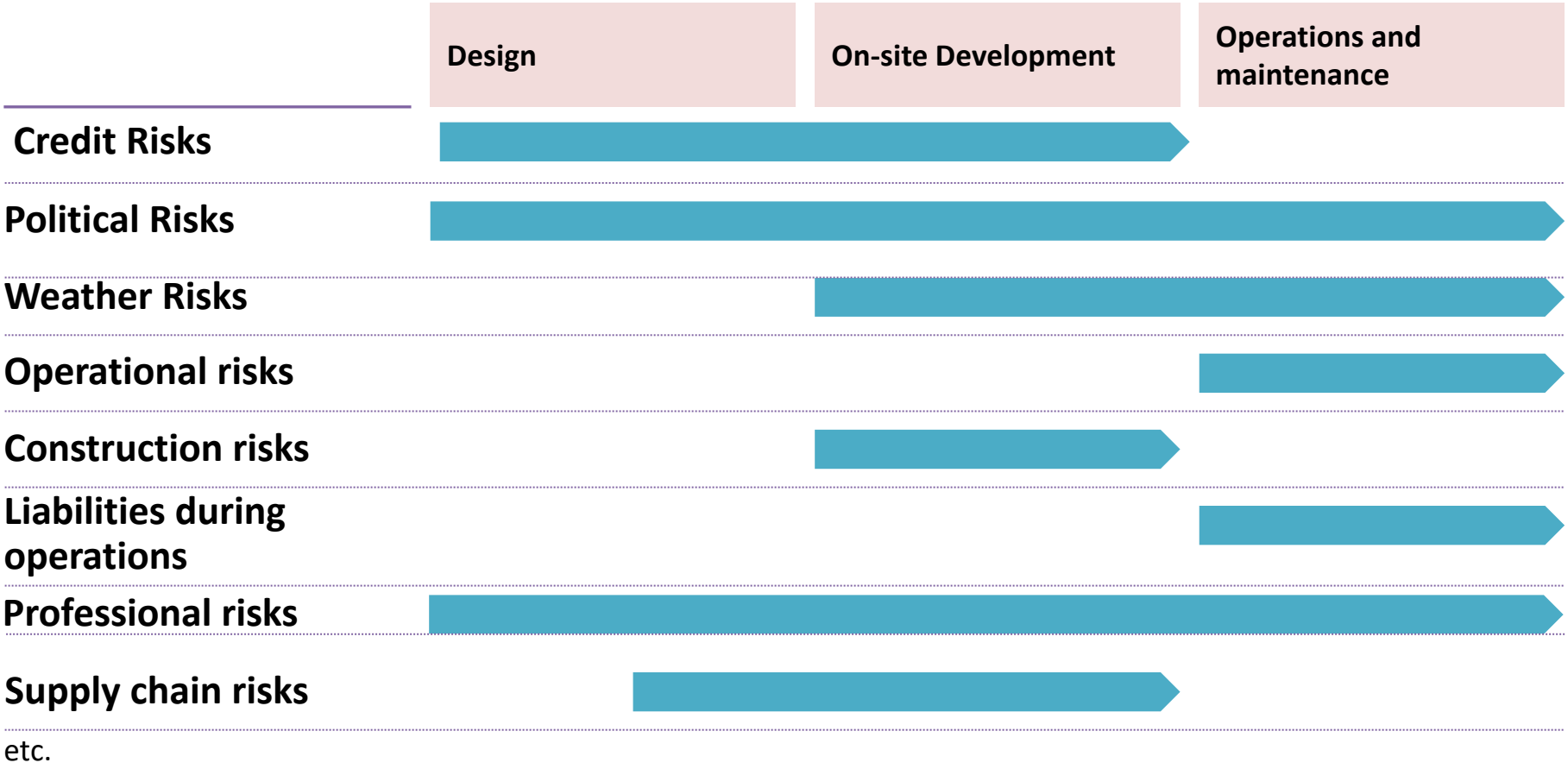


Hazards' intensity and frequency are increasing

Vulnerability and Exposure on the rise !

Need for risk-based decision-making

Towards a comprehensive approach to managing risks through out the project life cycle - Need for data for the life cycle to assess risk …



etc.

Source: Swiss Re Corporate Solutions

Making critical infrastruture insurable for climate risks

Engaging with the re/insurers on both non-life and life sides from early stages:

- Non-life insurance and reinsurance companies – Risk modeling, pricing, underwriting expertise
- Life insurers as investors

Improving risk assessment and information to support risk management and investment decisions

- Systematic data collection

Factoring climate risks into risk assessment and investment decisions (public/private)

- Catastrophe and climate risk modeling/ scenario analysis

Enabling infrastructure resilience through sound policies and regulations that incentivize infrastructure owners/operators to take action

All investments in new infrastructure should consider both decarbonization and climate resilience

Climate risk disclosure for all stages, need for common approaches and participation

The Geneva Association 2018 Extreme Event and Climate Risk Forum will examine these issues in more details:

Pathways to Climate Resilient and decarbonized Critical Infrastructure in the 21st Century

A High-Level Dialogue on the Role of the Insurance Industry and Public-Private Partnerships

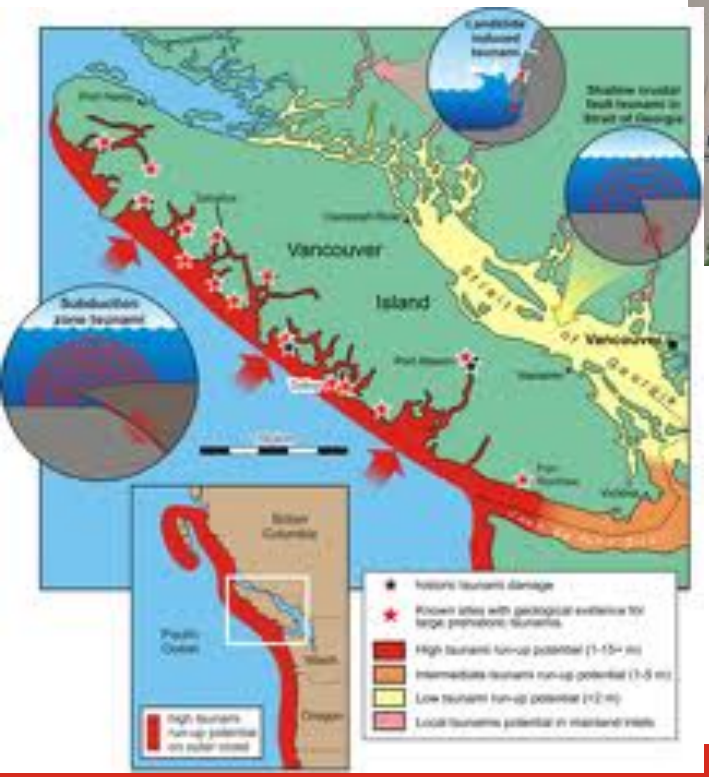
(Co-hosted by Intact Financial Corporation and Sun Life Financial)

Date: Tuesday 18 September 2018

And Canada?

CANADA

Many developments underway: Opportunities for cooperation and coordination



Need for an all-of-the-society approach to building resilience to extreme events.

Thank You

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