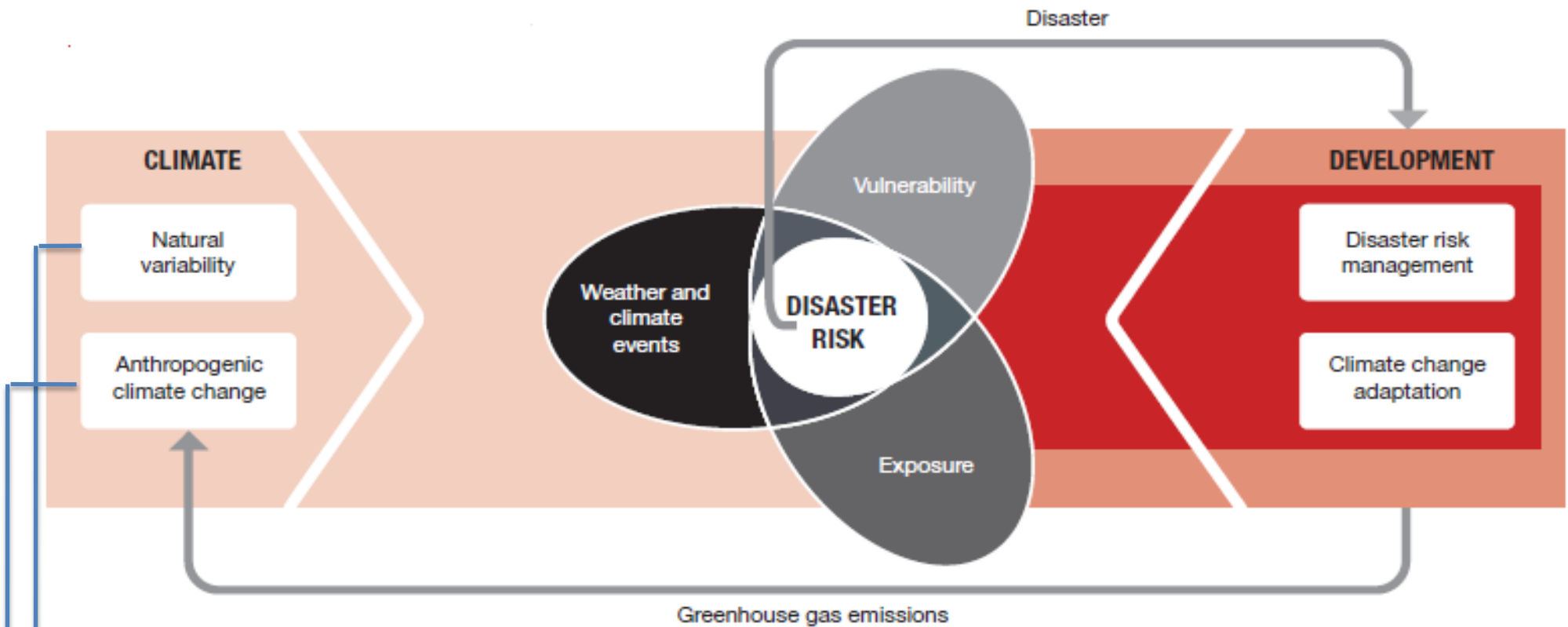




The IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

Inter-linkages of the SREX core concept

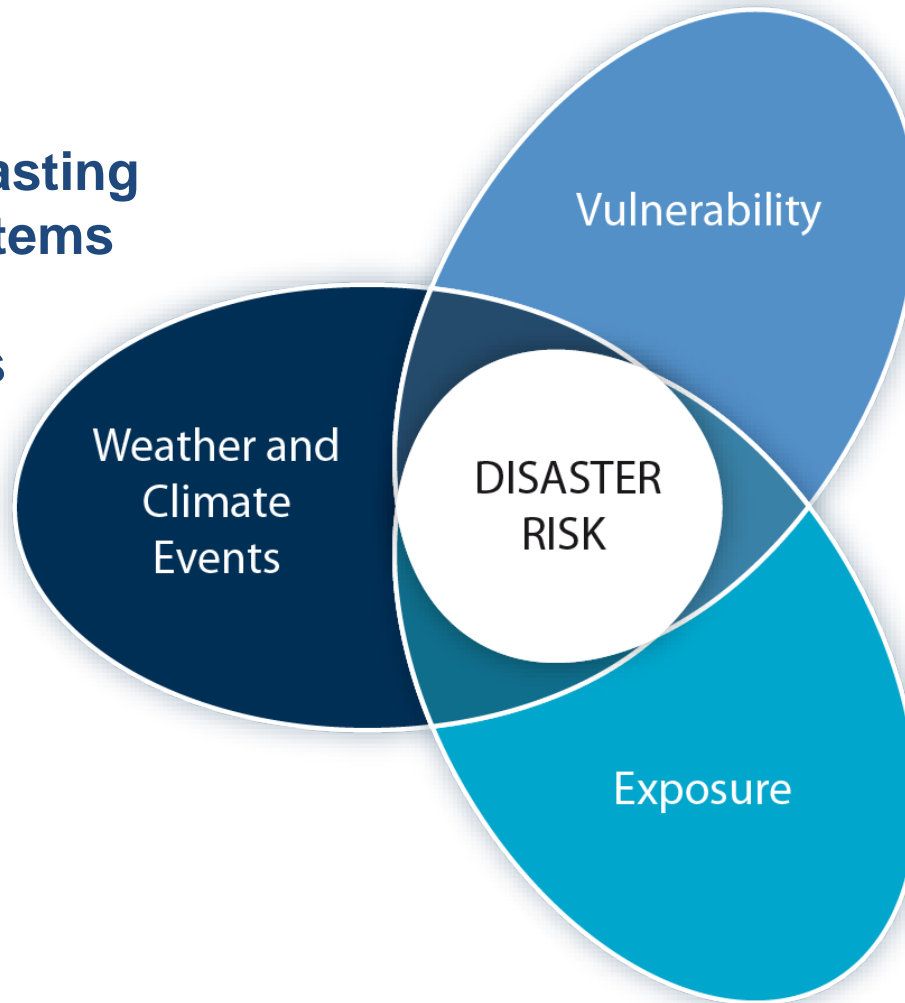


More serious and frequent extremes, such as floods and droughts.....

Changes in the hydrological cycle and water balance ,SLR, high SST.....

Information on vulnerability, exposure, and changing climate extremes together can inform adaptation and disaster risk management

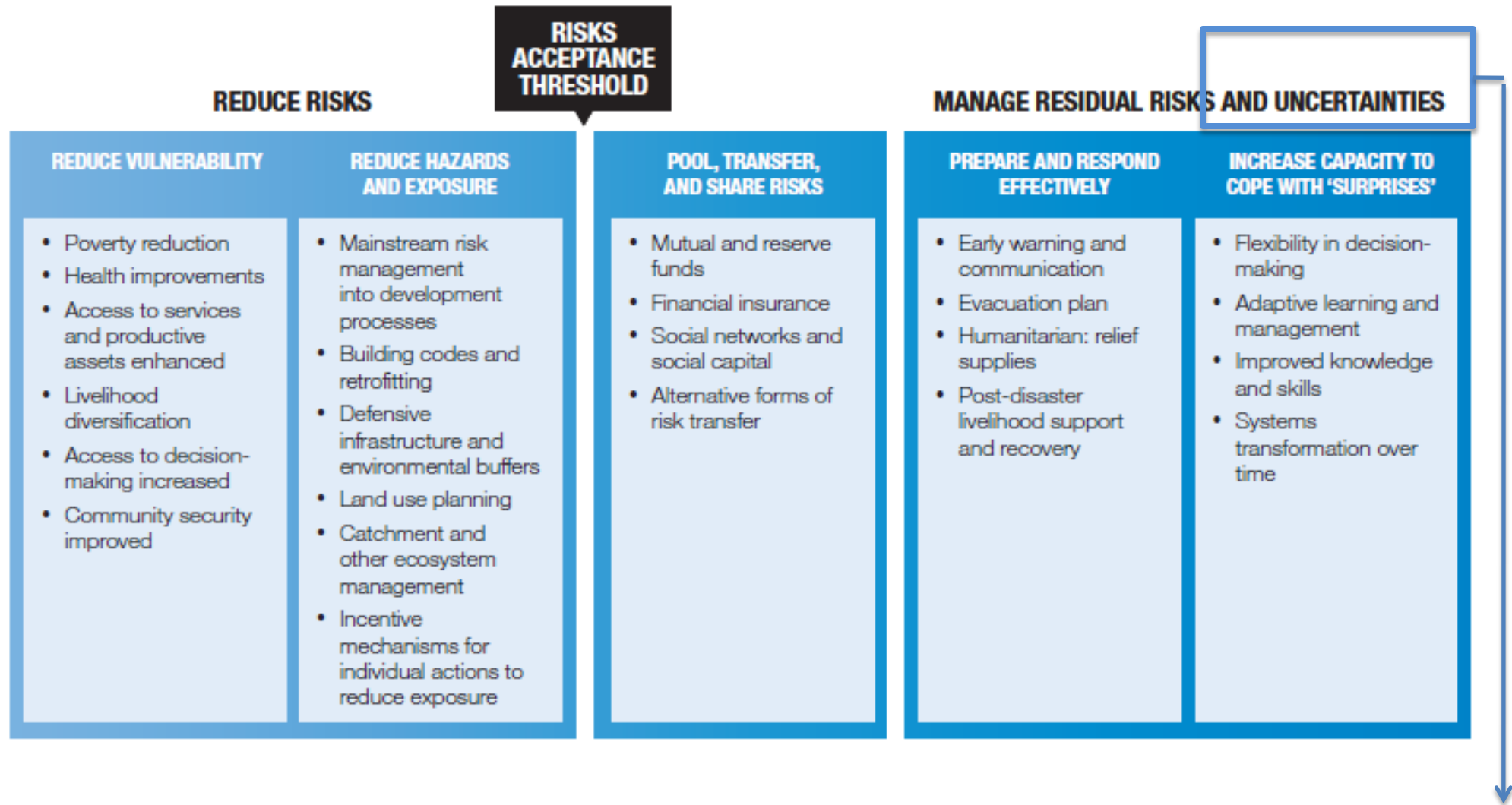
- Improved forecasting for warning systems
- reduction of greenhouse gas emissions



- poverty reduction
- better education and awareness
- sustainable development

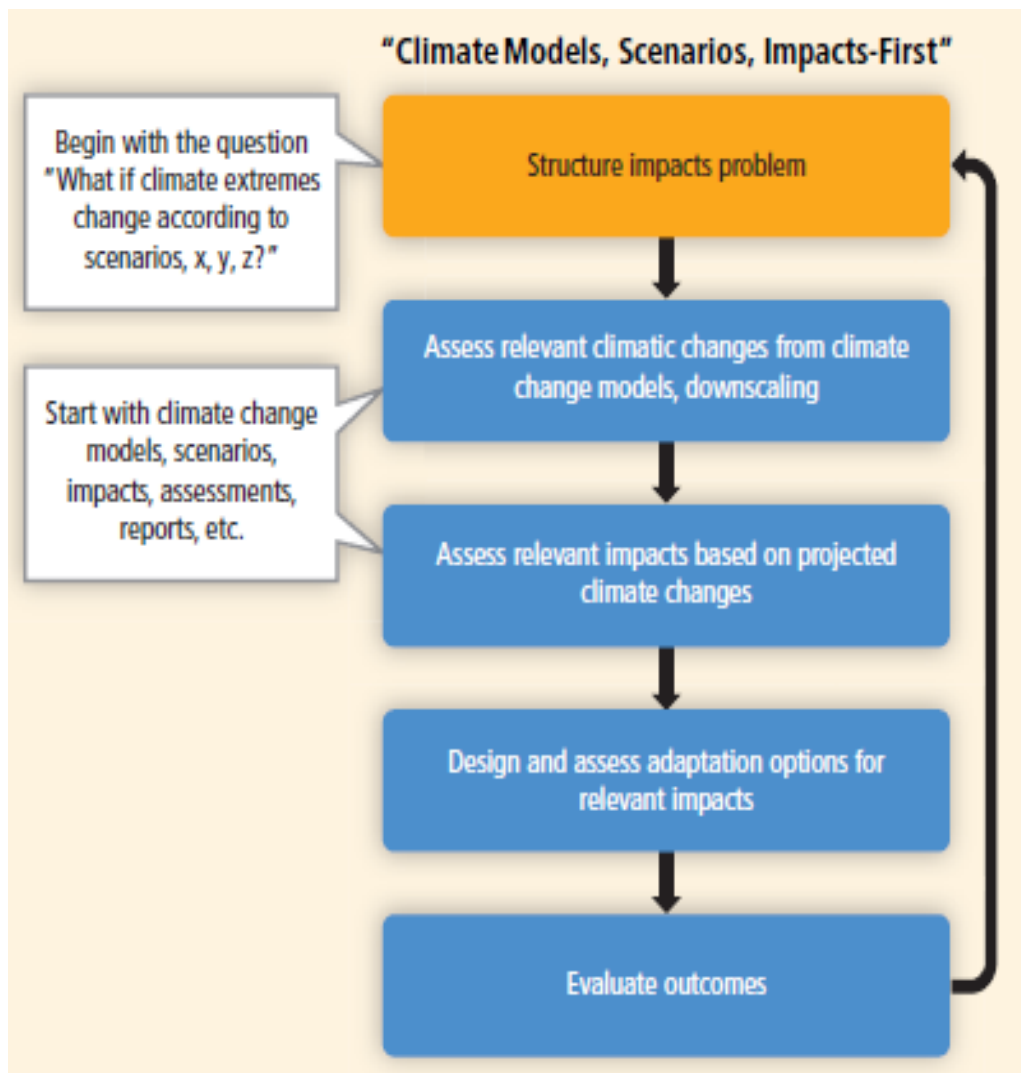
- asset relocation
- weather-proofing assets
- early warning systems

Integrating DRM and CCA for a changing Climate

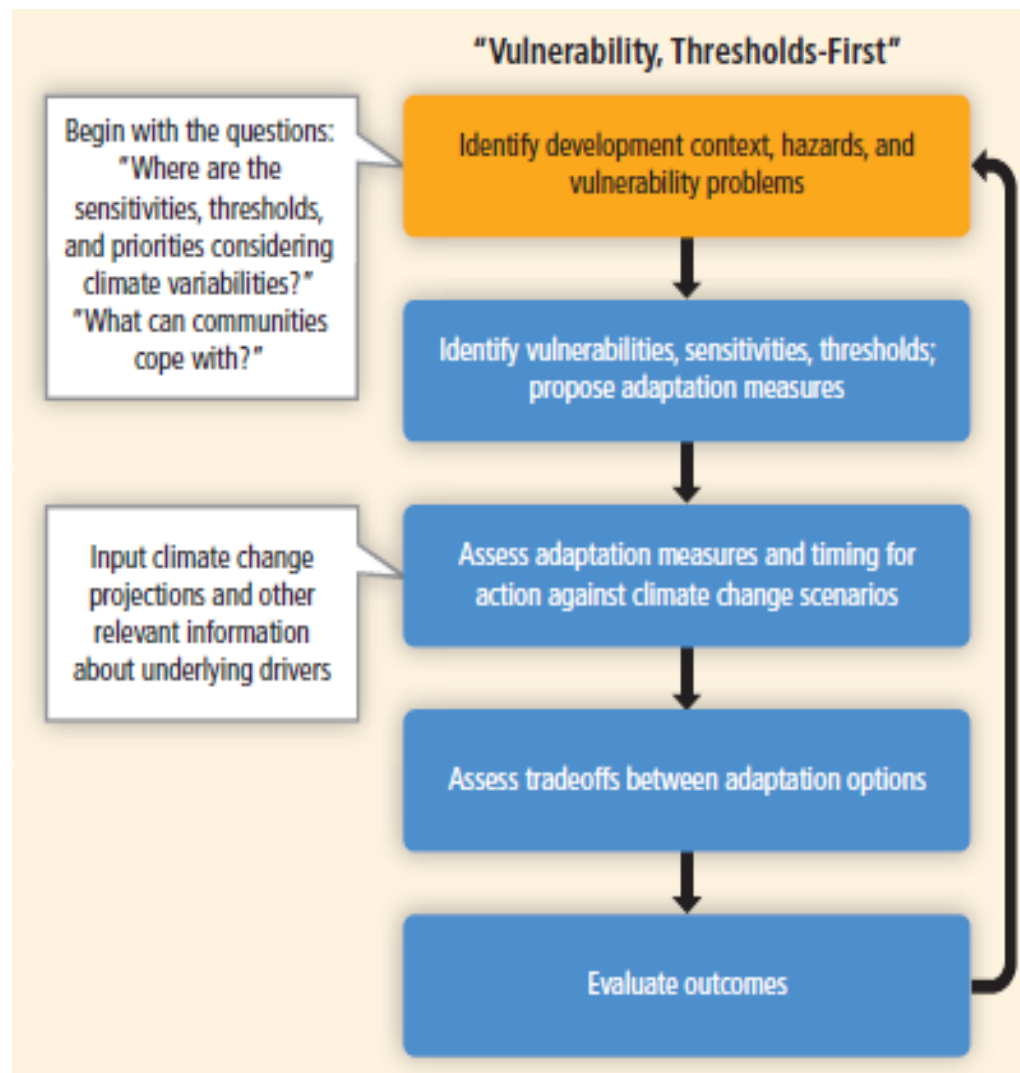


Natural variability, climate model parameters, future emission

Adaptation approaches for minimizing uncertainties



Scenario-based approach



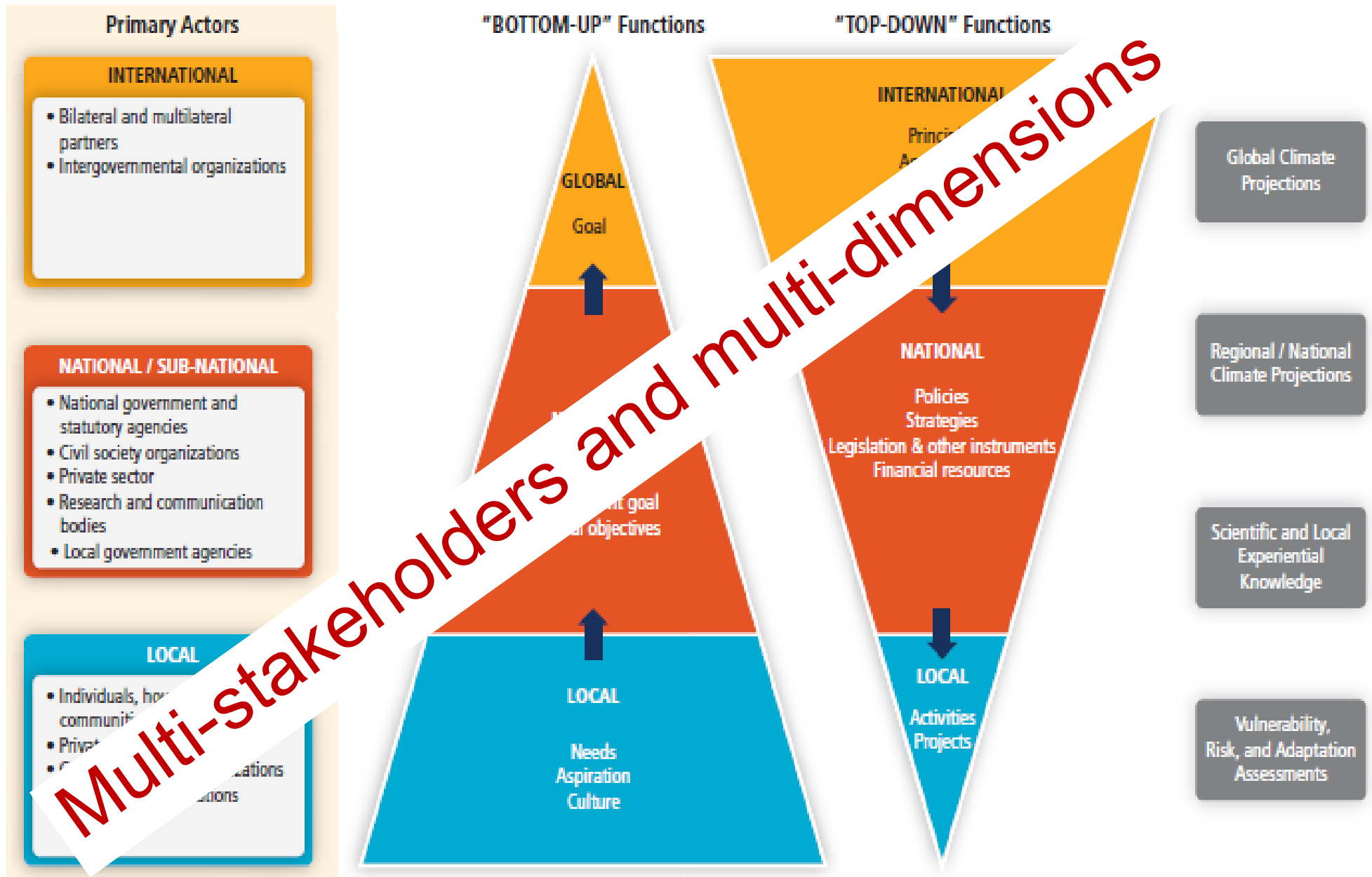
Adaptive-management approach

Effective risk management and adaptation are tailored to **local** and **regional** needs and circumstances

- changes in climate extremes vary across regions
- each region has unique vulnerabilities and exposure to hazards
- effective risk management and adaptation address the factors contributing to exposure and vulnerability



Actors and Scales linkage in DRR and CCA



Coordination across different levels and sectors

Why International level : play significant role in subsidiary, legal obligation, economic , capacity building, financial provider, risk transfer...



Why National level : Actions generated within and managed by communities with supporting government policies are most effective .



Why Local level : First hand disaster experience. Key aspect of action : Identification of social impacts of climate change based on gender, age, disability, ethnicity, geographic, livelihood and migration. → CBA

Coordination across different levels and sectors

(case study : Dam construction)

Benefits

National level :

Large-scale energy needs serve major urban center & industry

Regional level :

Generate energy, assist drought management

Problems

Local level :

Erosion, inundation at delta, family fragmentation

Coordination across different levels and sectors (case study : Cyclone shelter in Bangladesh)



Building, managing, maintenance cyclone shelter in Bangladesh



Good practice in ownership and more sustainable

Coordination across different levels and sectors (case study : Katrina aftermath and Thailand great flood)



Recovery for whom and recovery to what, rebuilding houses but fail to provide home ? Unequality , prolonged evacuation period, physical and mental health problems, risk communication failure



Balance short-term needs and Long-term goals

UNISDR (Hyogo Framework for Action 2005 – 2015)

1. Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation
2. Identify, assess and monitor disaster risks and reduce vulnerability
3. Use knowledge, innovation, education and communication to build a culture of disaster risk reduction at all levels
4. Reduce disaster risk and vulnerability through education, awareness-raising and capacity building
5. Strengthen disaster preparedness for effective response

Encourage countries to develop and implement systematic DRM approach

UNFCCC Commitments on CCA

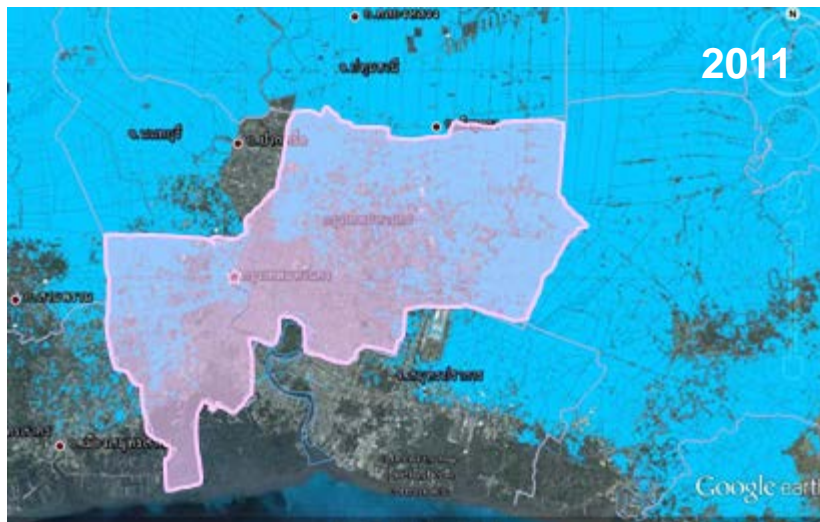
Article 4.1

- b) Formulate, implement, publish, and regularly update, where appropriate, regional programs containing measures to mitigate climate change by addressing anthropogenic sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and **measures to facilitate** adaptation.
- (e) **Cooperate in preparing for** adaptation to the impacts of climate change; develop and elaborate appropriate strategies for coastal zone management, water resources, and drought prevention, for the protection and rehabilitation of areas affected by desertification, and for the protection and rehabilitation of areas affected by drought and desertification, as well as other natural disasters.
- (f) **Take climate change into account**, to the extent feasible, in their relevant environmental policies and actions, and encourage, where appropriate, example impact assessments, formulated and implemented in a view to minimizing adverse effects on the environment, health, and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change.

Bali Action Plan (2008), Copenhagen accord (2009), Cancun agreement (2010)

- 1) International cooperation to support urgent implementation of adaptation actions, including through vulnerability assessments, prioritization of actions, financial needs assessments, risk management, building, and response strategies, and integration of adaptation actions into sectoral and national planning
 - 2) Risk management and risk reduction, including through insurance and transfer mechanisms such as reinsurance and derivatives
 - 3) Disaster reduction strategies, including through early warning systems, and damage and loss assessment, and support to vulnerable countries and communities
 - 4) Support to vulnerable countries and communities, including through capacity building and technical assistance
 - 5) Support to vulnerable countries and communities, including through capacity building and technical assistance
- Equal priority to mitigation (Energy)
& Adaptation (Water)
Increasing linkage betw. DRM & CCA

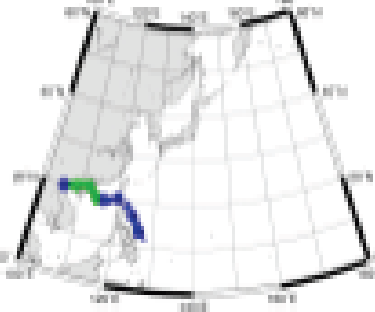
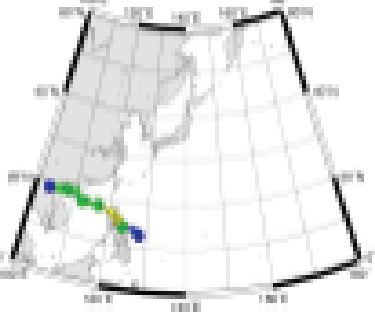
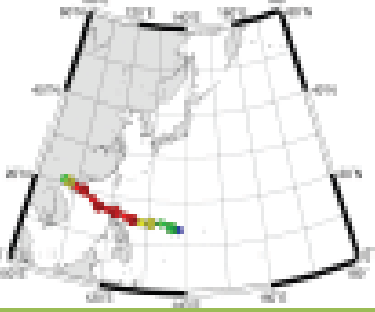
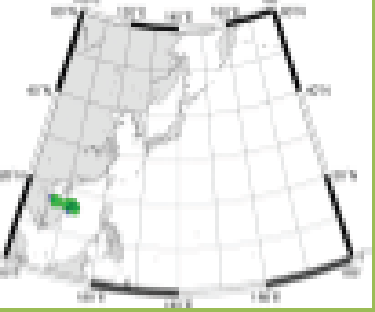
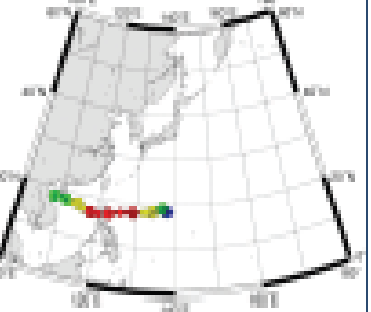
Thailand great flood 2011 : Key findings and how SREX can be applied



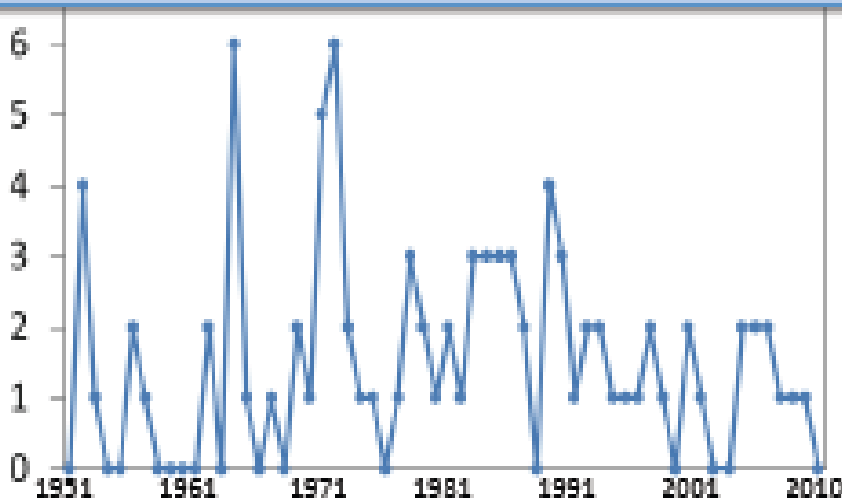
High vulnerable and exposure are the outcome of “Skewed development”

- **Environmental mismanagement**
- **Rapid unplanned urbanisation**
- **Demographic change**
- **Failed governance**
- **Scarcity of livelihood**

Storms affected Thailand great flood 2011 (JICA)

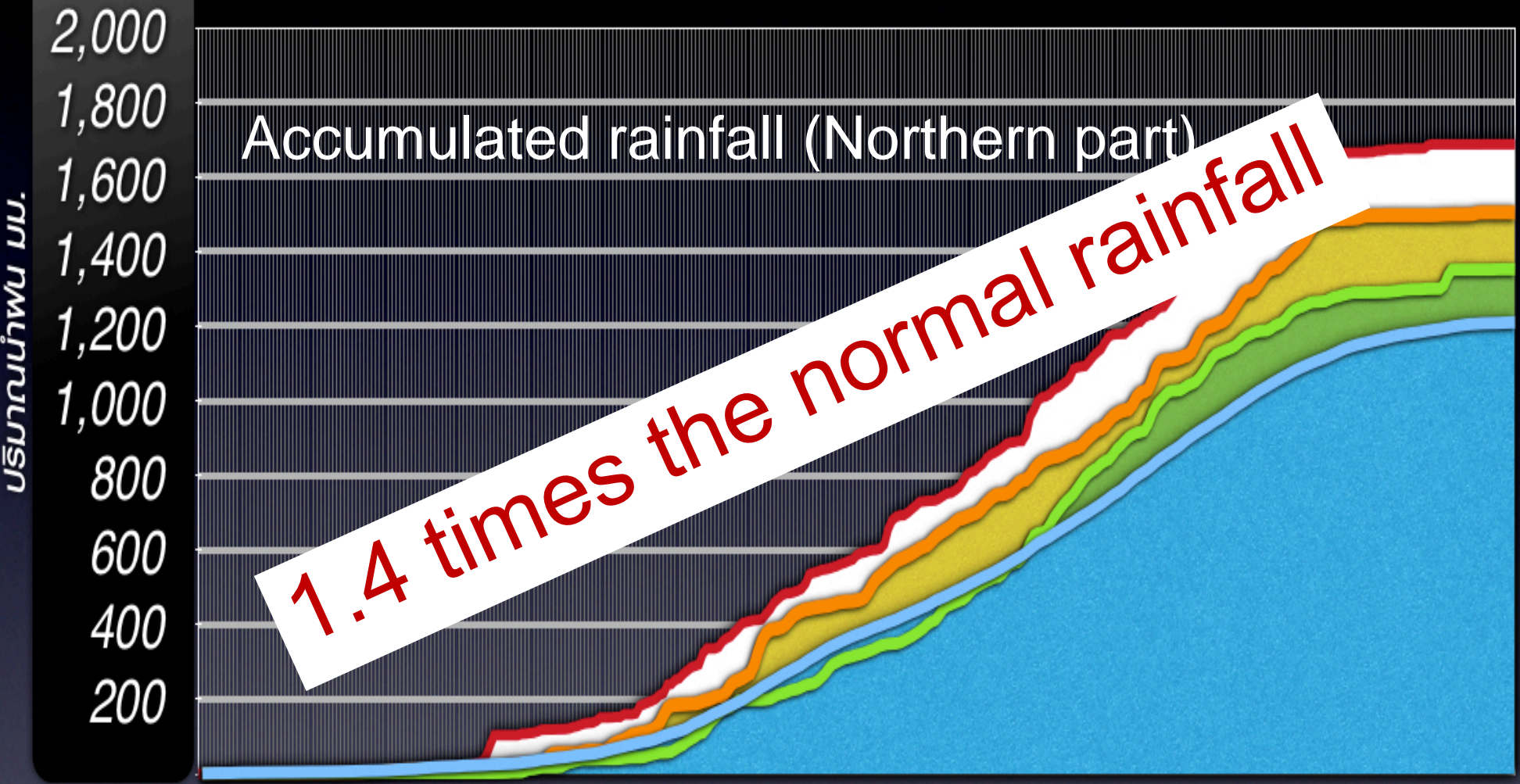
4: HAIMA	8: NOCK-TEN	17: NESAT	18: HAITANG	19: NALGAE
				
6/21 - 6/25	7/26 - 7/31	9/24 - 9/30	9/25 - 9/27	9/27 - 10/05
985 hPa	984 hPa	950 hPa	996 hPa	935 hPa
40 knots	50 knots	80 knots	35 knots	95 knots

The number of landfall in Thailand



- yearly average is **1.5**
- only 3 years (1964, 1971, 1972)
- more than 5 landfalls
- 1964, 1971 is La Nina year

■ Normal
 ■ 1995
 ■ 2006
 ■ 2011



มกราคม กุมภาพันธ์ มีนาคม เมษายน พฤษภาคม มิถุนายน กรกฎาคม สิงหาคม กันยายน ตุลาคม พฤศจิกายน

Climate change & Climate variability are happening !

Floodplain flow caused severe damages

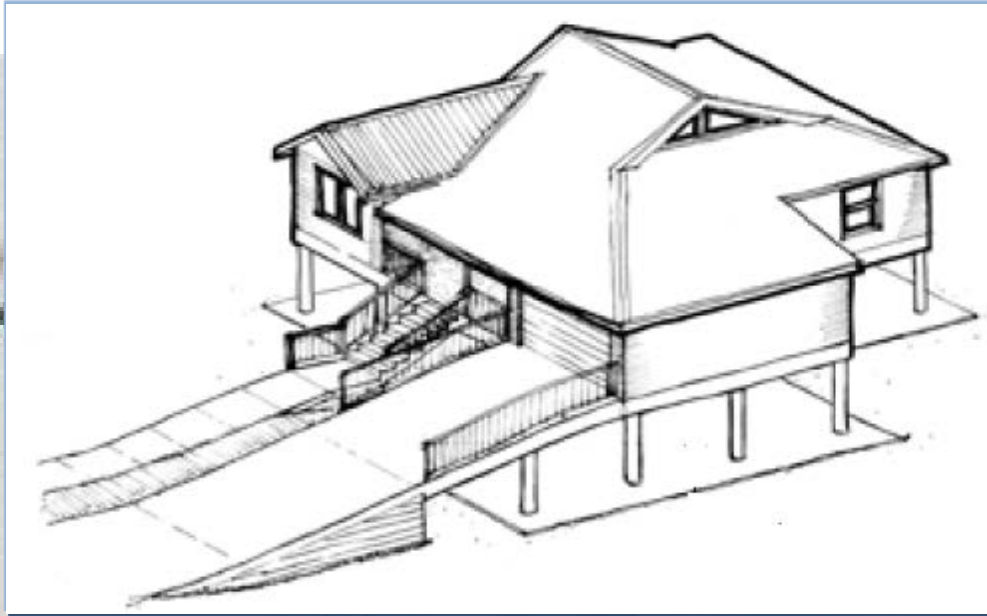


- 
- Settlement in hazard prone area
 - Unsafe dwellings
 - Slum, scattered districts
 - Poverty
 - Lack of awareness risk
 - Lack of effective risk communication

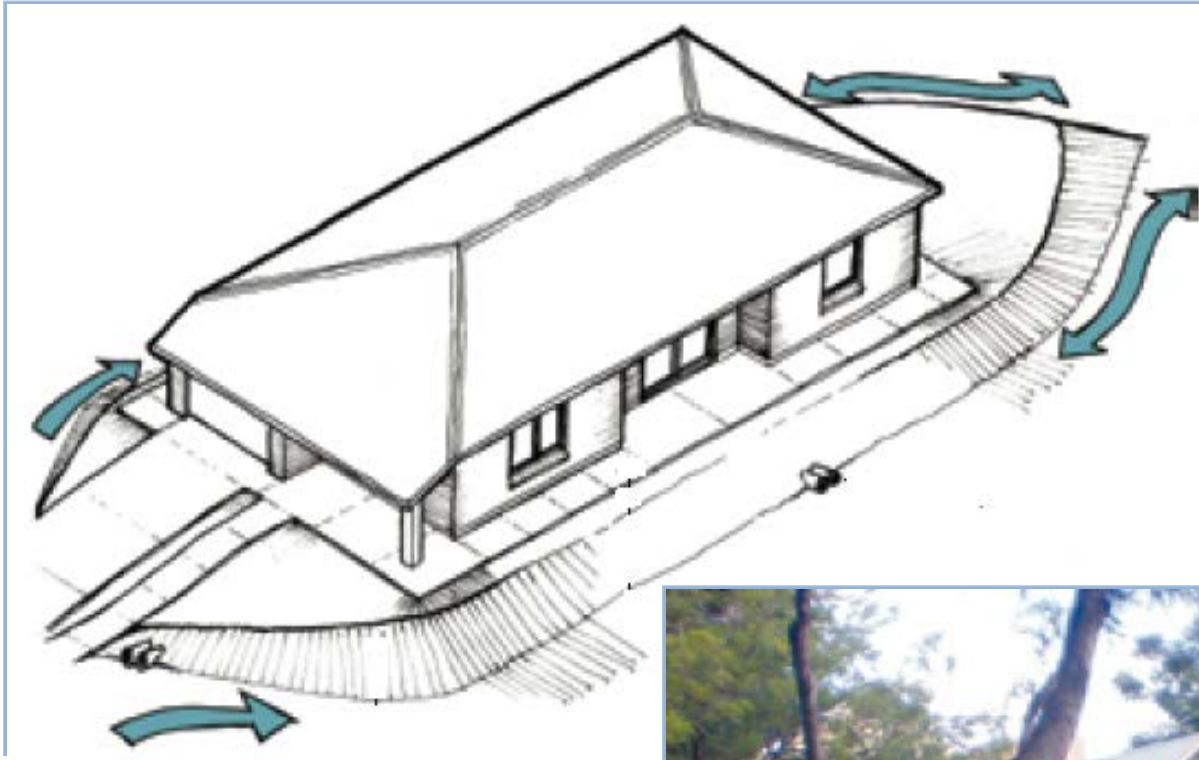


More smart development
(No or Low-regret measure)

Flood resilient



Flood avoidance



Flood resistant



Conclusions

- DRM and CCA should be integral components of development planning and implementation to increase resilience & sustainability
- Not all disaster risk can be managed, so act to manage residual risk
- Coordination of DRM and CCA across different scales and sectors is necessary
- Disruption caused by disaster event often reveal development failure
- From skewed to smart development by considering “no or low regret measures” for adaptation