Framework of green actions in the context of global climate change risk

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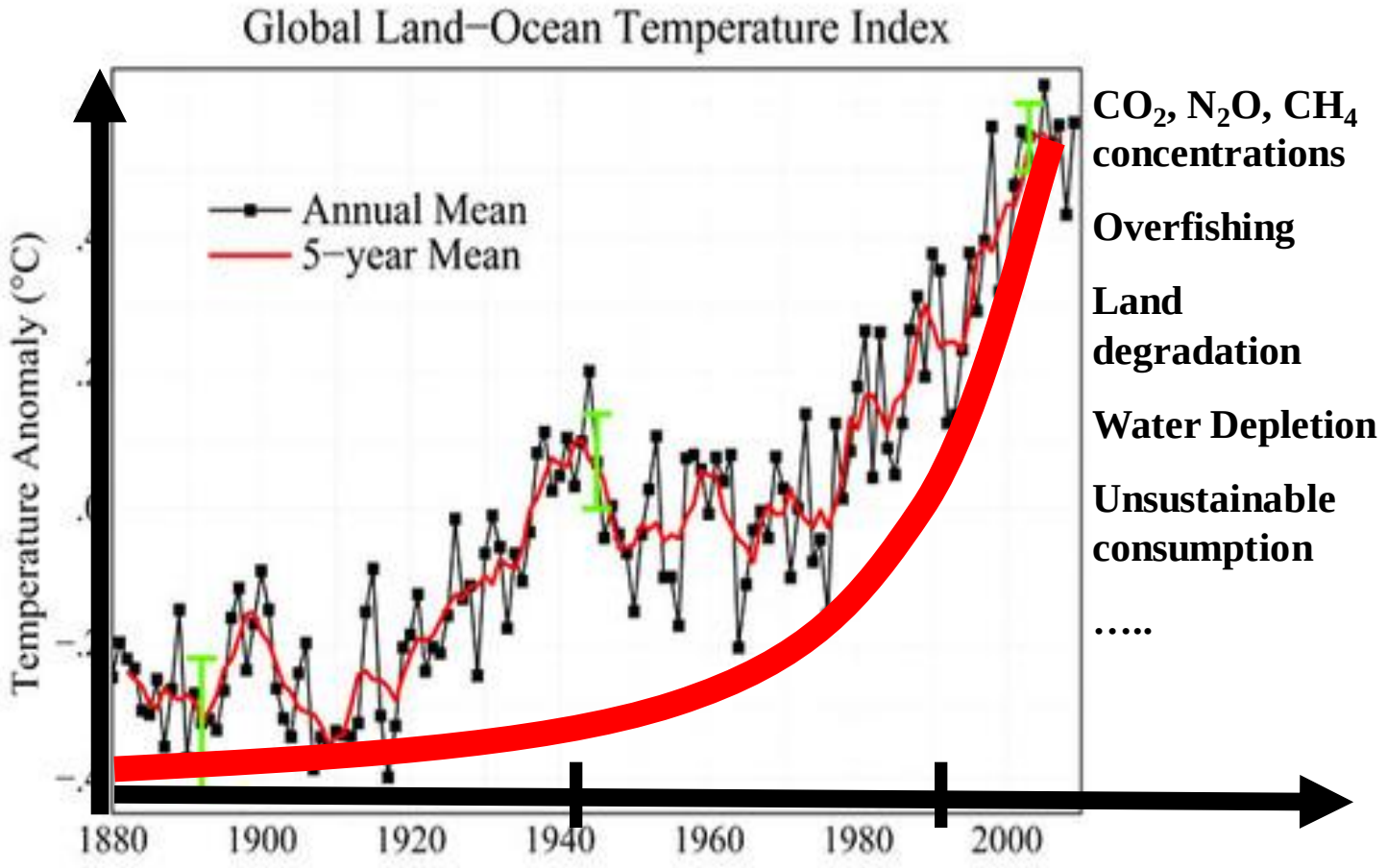
Climate is changing



CO_2, N_2O, CH_4 concentrations

Overfishing

Land degradation

Water Depletion

Unsustainable consumption

…..

(http://data.giss.nasa.gov, 2011)

Climate is Changing and affecting everyone on the Earth

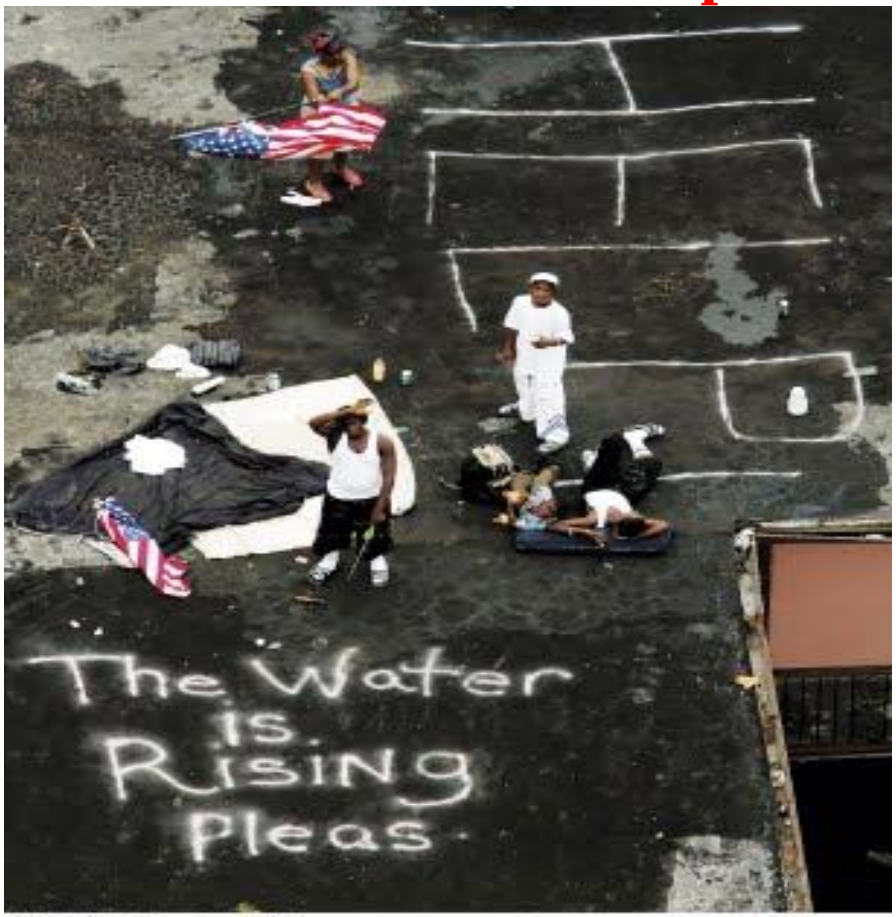
No Matter Rich or Poor Countries

2003 European Heat Wave

2011 African Drought

Climate is Changing and affecting everyone on the Earth

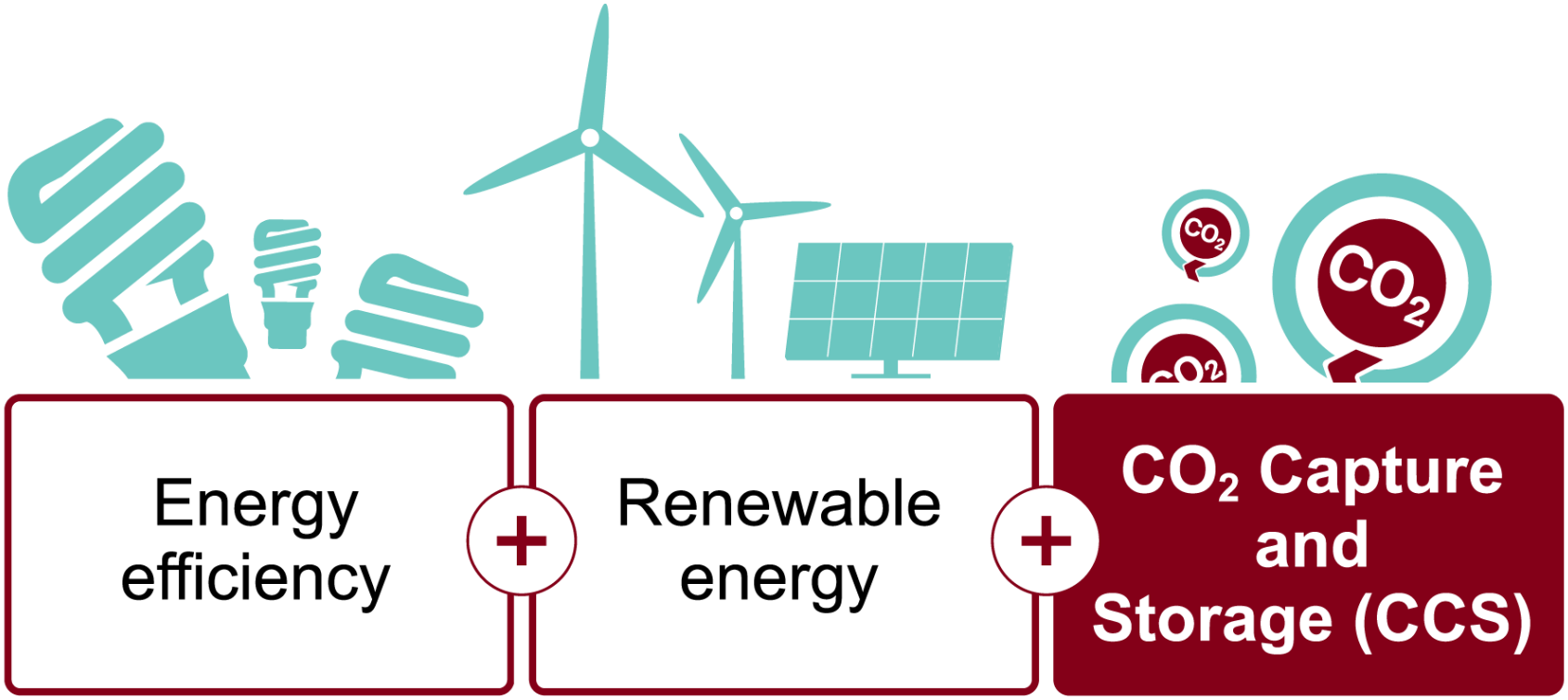
People or Animals



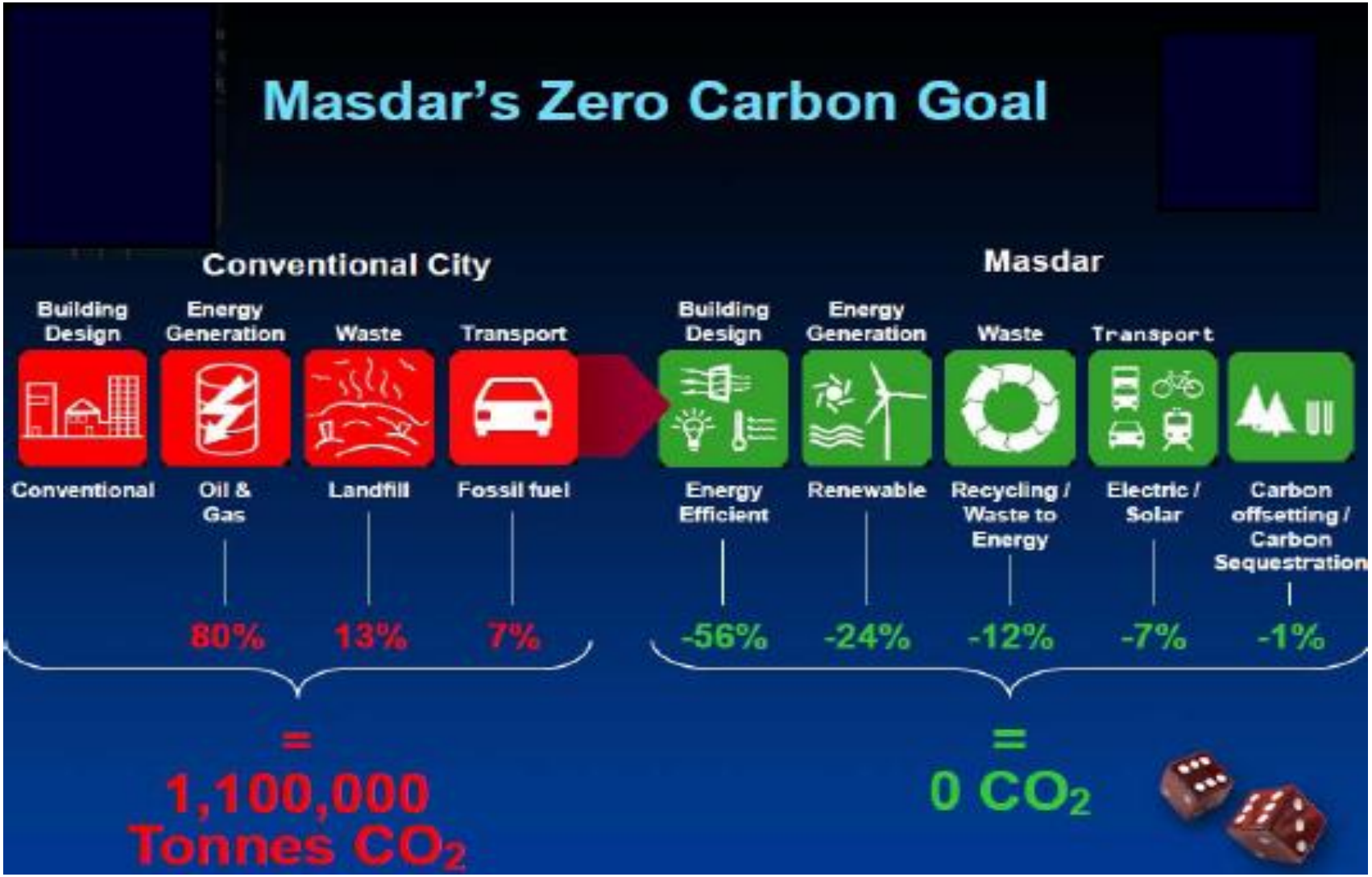
2006 Pulitzer Prize: Smiley Poole
Courtesy: *The Dallas Morning News*

How do we Meet this Challenge? (from Zep)

some mitigation solutions:



Low Carbon Society
An Example: Zero Emission City



The Reality

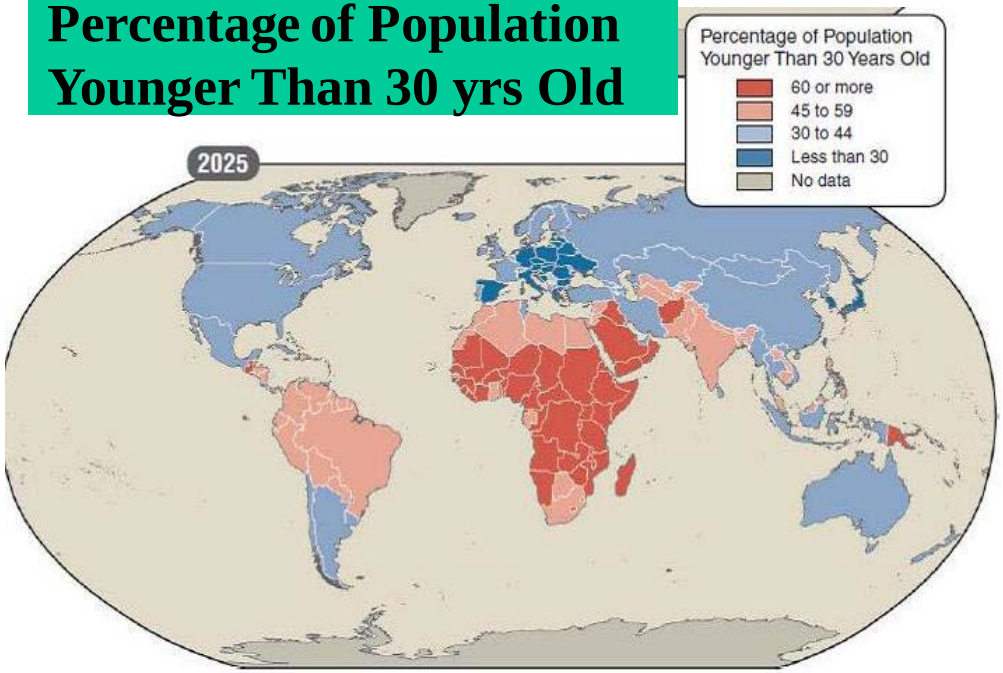
Constraints on developing a low carbon society

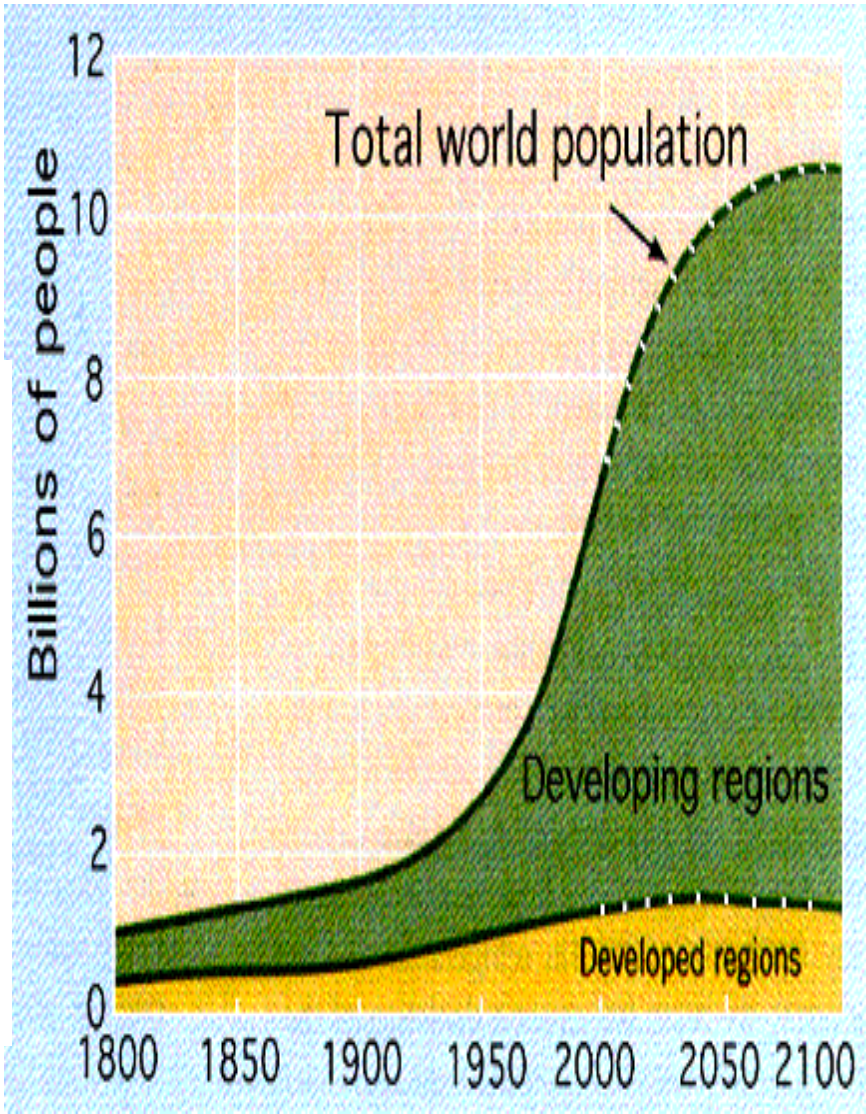
- Political:
  - International (UNFCCC)
  - Domestic (e.g., Whitehouse Effect)
- Economic:
  - Carbon Tax, Emission Trade, CDM, etc.
- Technological and Engineering
  - e.g., Infrastructure “Lock-in Effect”
- Human Nature
  - Behavior change

Society is Changing

- By 2050, global population will rise from 7 to 9 billion people

Percentage of Population Younger Than 30 yrs Old



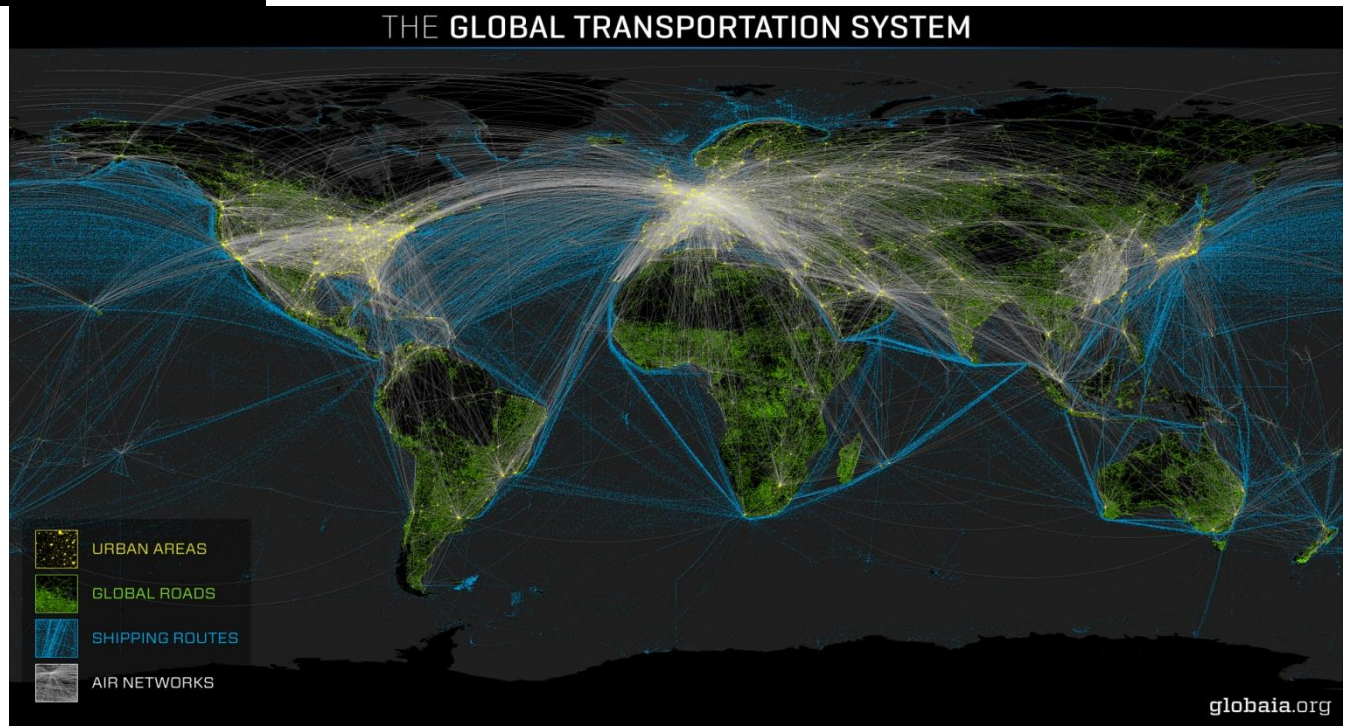


Urban Development

… and will Continue to do so for Decades to Come

Increasing Connectivity

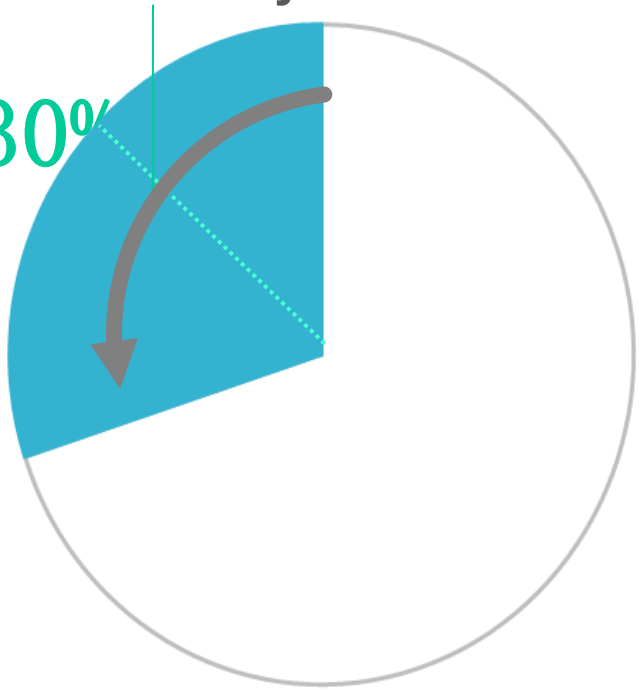
Climate Change Risks spread in various spatial and temporal scales



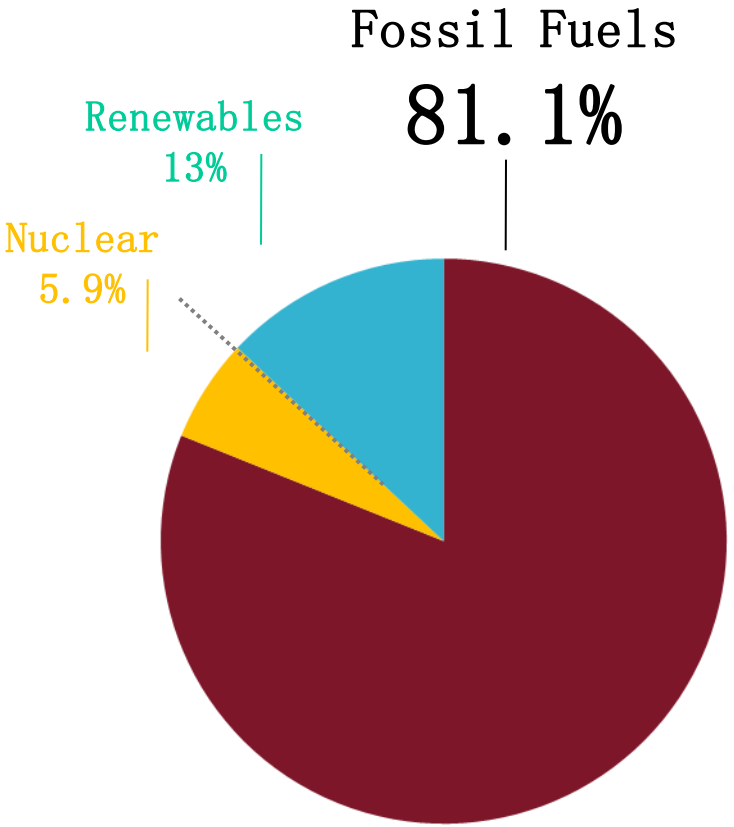
The World Still Rely on Fossil Fuels

World energy demand is expected to increase by 50% over the next 20 years

Estimated share of renewables by 2030



World total primary energy supply (2007)



Short term: Extremes

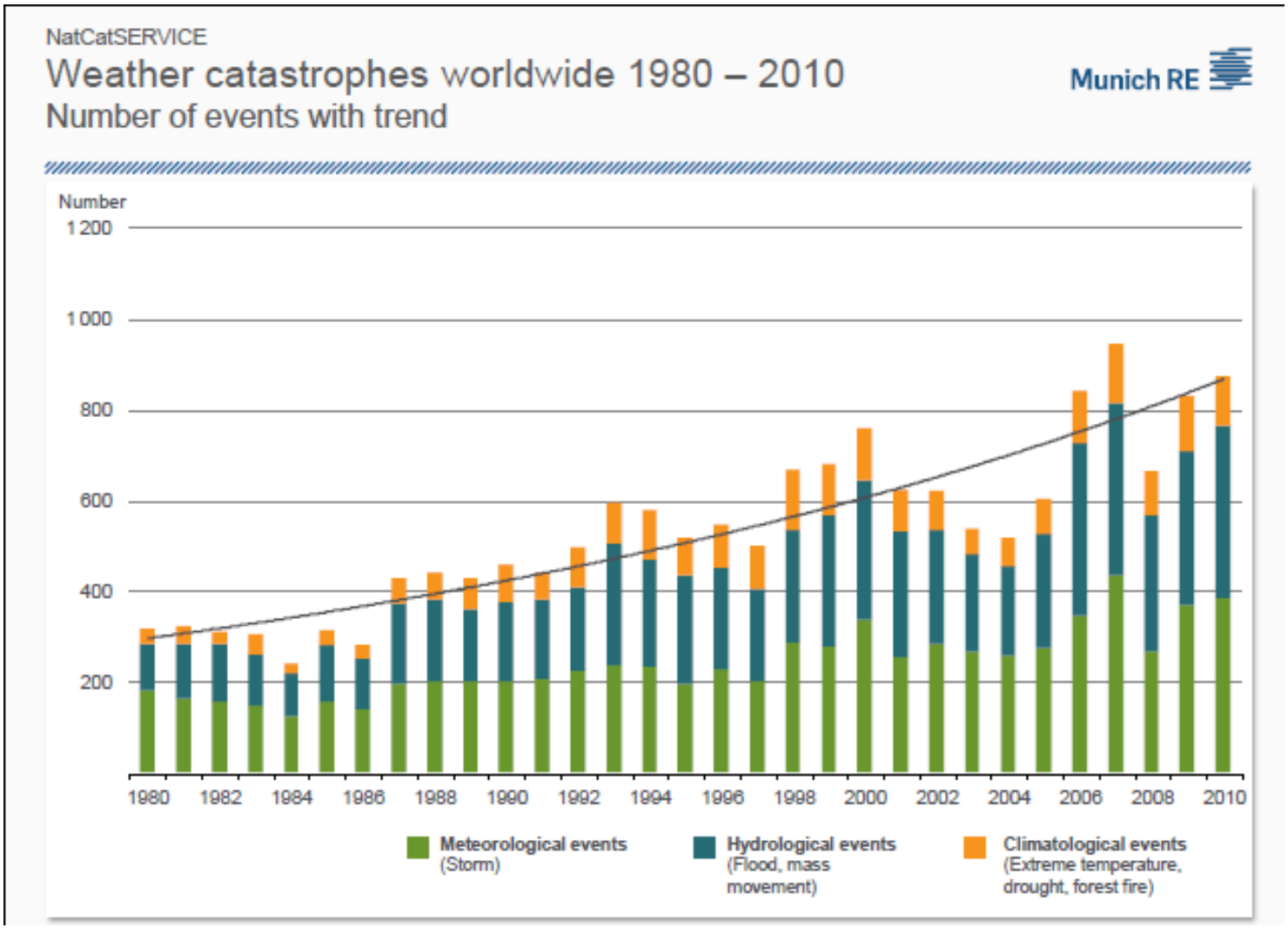
Moscow Heatwave

California Forest Fire

Peru hit by cold

Floods in China

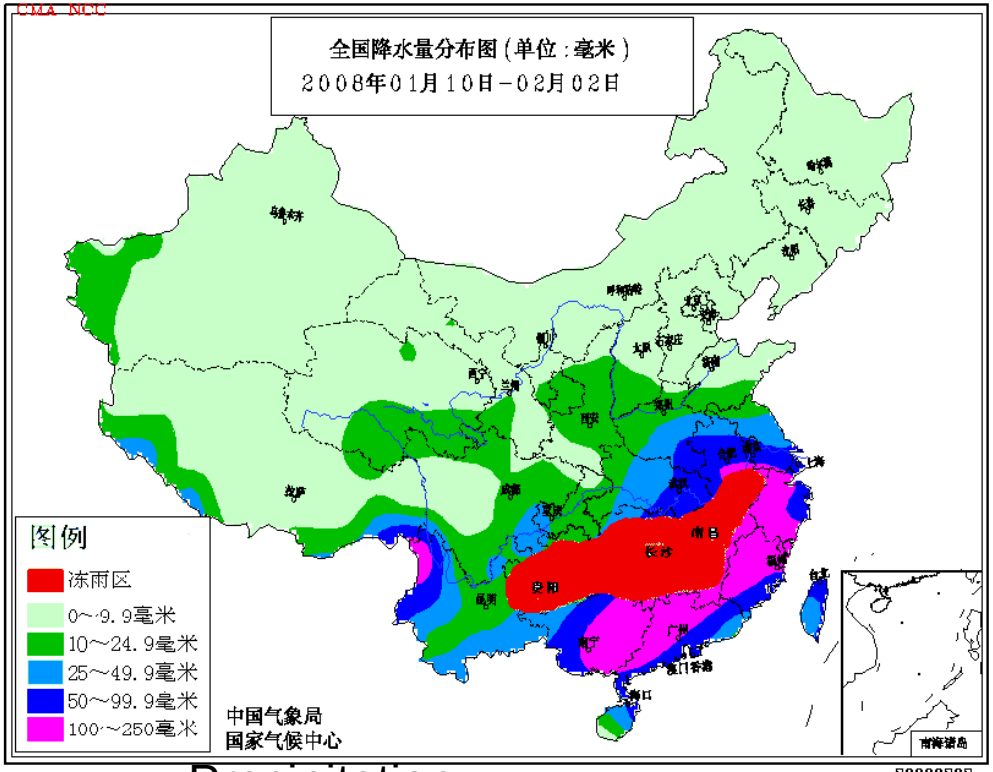
Weather and Climate Related Risks are increasing



Climate Change Related-Risks and Impacts

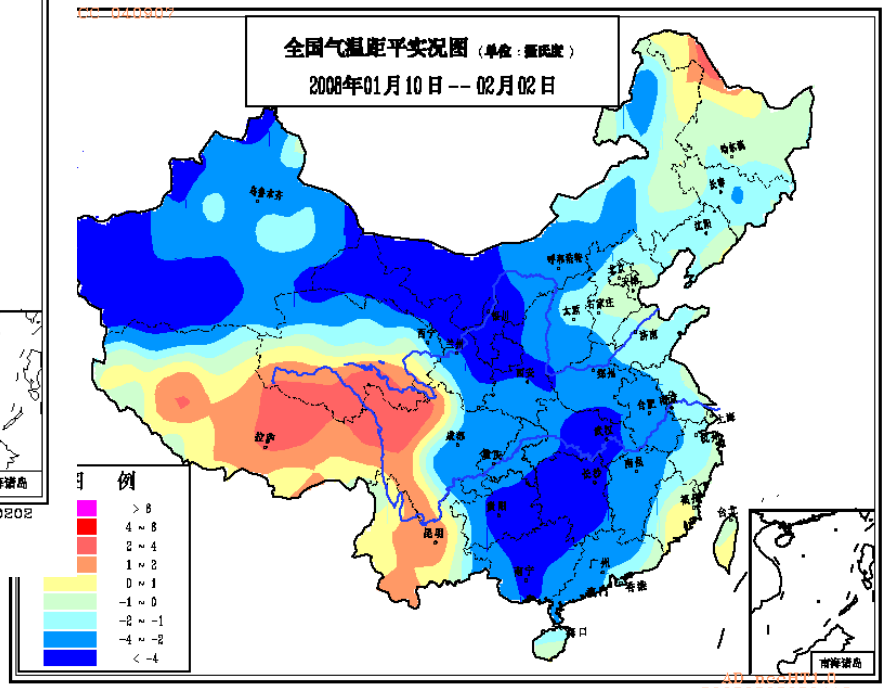
Event Impact Possibility	Known	Unknown
Known	Daily weather (Insurance)	Katrina
Unknown	Extremes	Climate Changes

Disaster Chain- an example
2008 Great Ice Storms in Southern China
(2008/01/10-02/02)

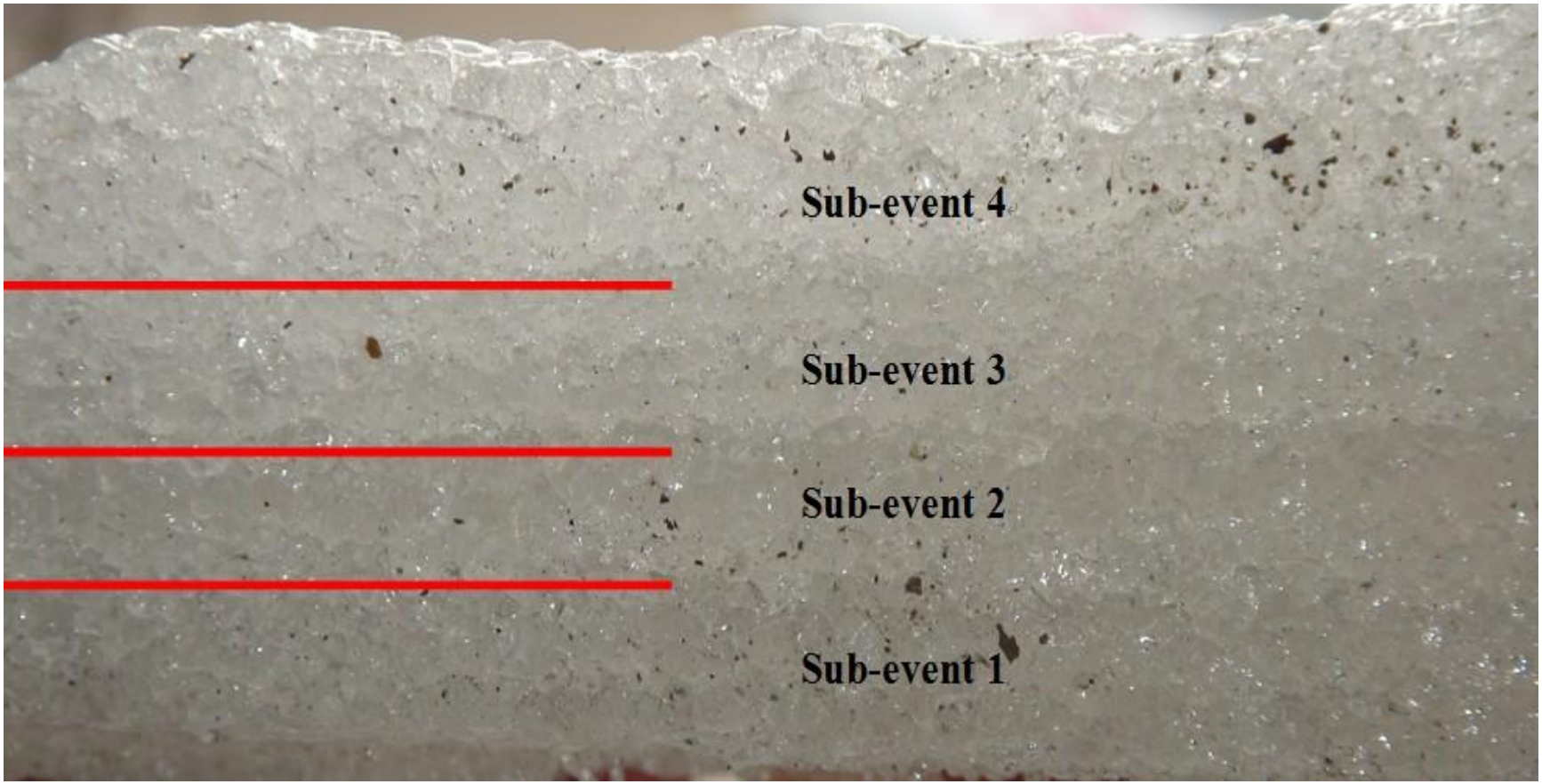


Precipitation

Temperature Anomaly



Extreme Event: 4 Continuous Ice Storms



The four layers of ice accumulated during the four sub-events from January 10 to February 6, 2008 in Hunan Province

A Disaster Chain

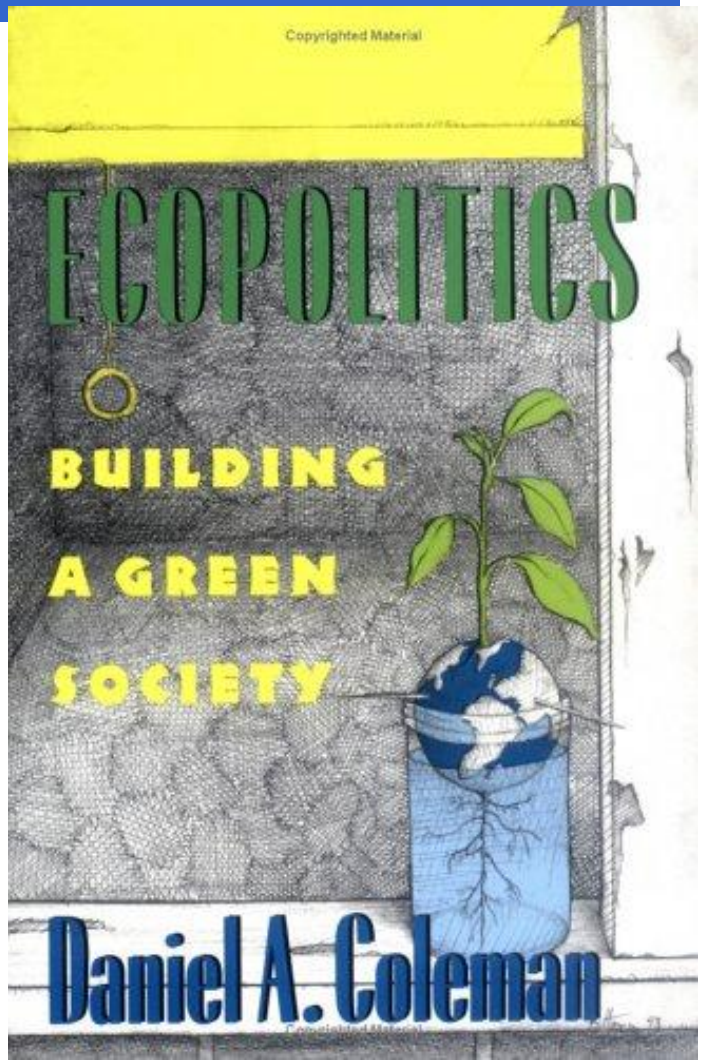
Natural Extreme Event leads to a Social Extreme Event

Green Development (Growth)

A Green Development is the one that can generate growth and improvements in people's lives in ways consistent with sustainable development.

Which must meet the following triple bottom line:

- sustaining and advancing economic,
- environmental well-being
- social well-being.



** WRI www.wri.org/stories/2011/04/qa-what-green-economy

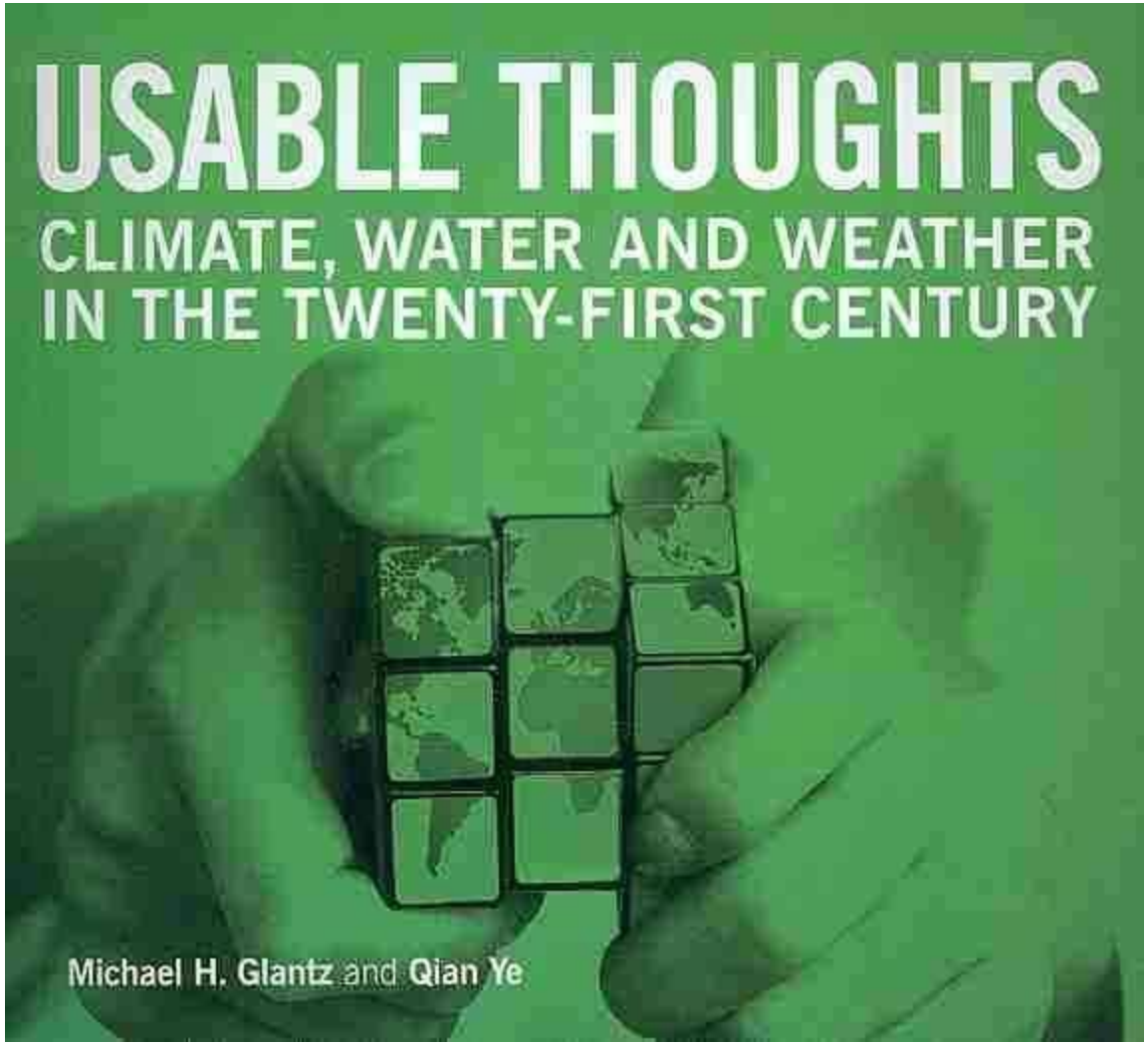
Challenges: Long term

Many climate change related risks are of the creeping kind

BUT No one wants to deal with it

- Air pollution
- Acid Rain, Global warming
- Ozone depletion
- Tropical deforestation
- Soil erosion
- Water quality & quantity
- Glacier retreat
- Sea level rise
- Waste disposal/landfills
- Infectious disease spreading
- Nuclear waste
- Marine pollution, etc.

Summary (1)

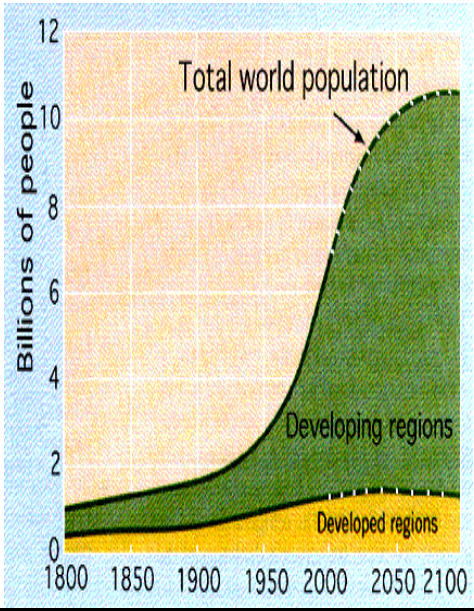


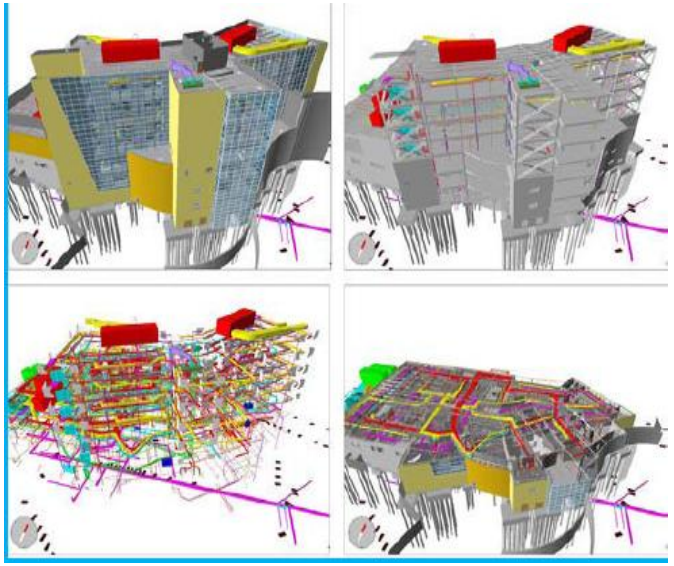
• **Climate is always changing and impacts of climate change are an extremely complex issue – a Rubik's Cube**

•Dealing with climate risks requires a multi-disciplinary, multi-dimensional and precautionary-based resilient adaptation approach

Summary (2)

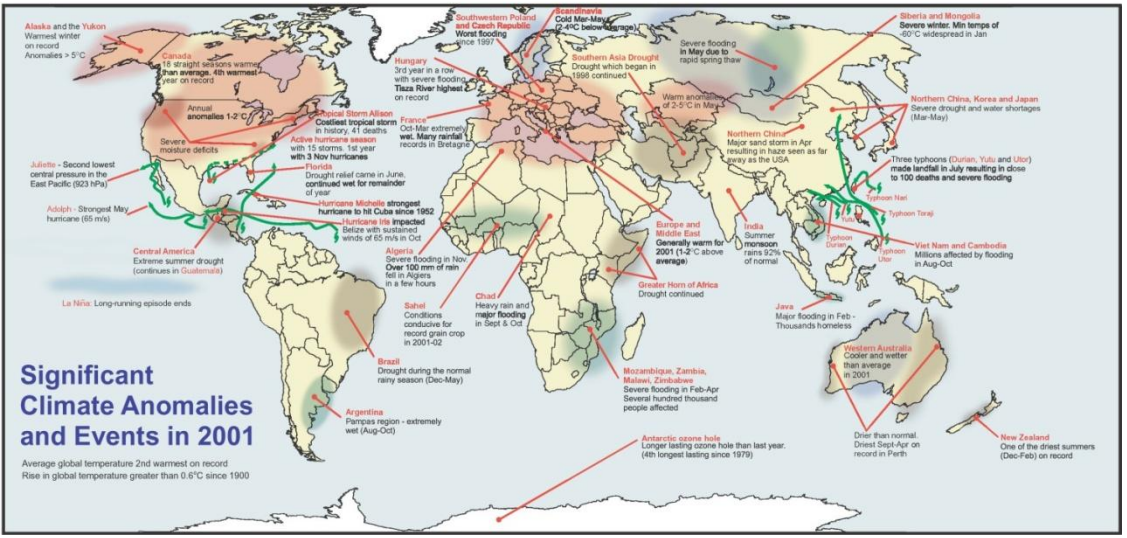
- **Society is not only changing with an exponential rate but also increasing complexity and connectivity**





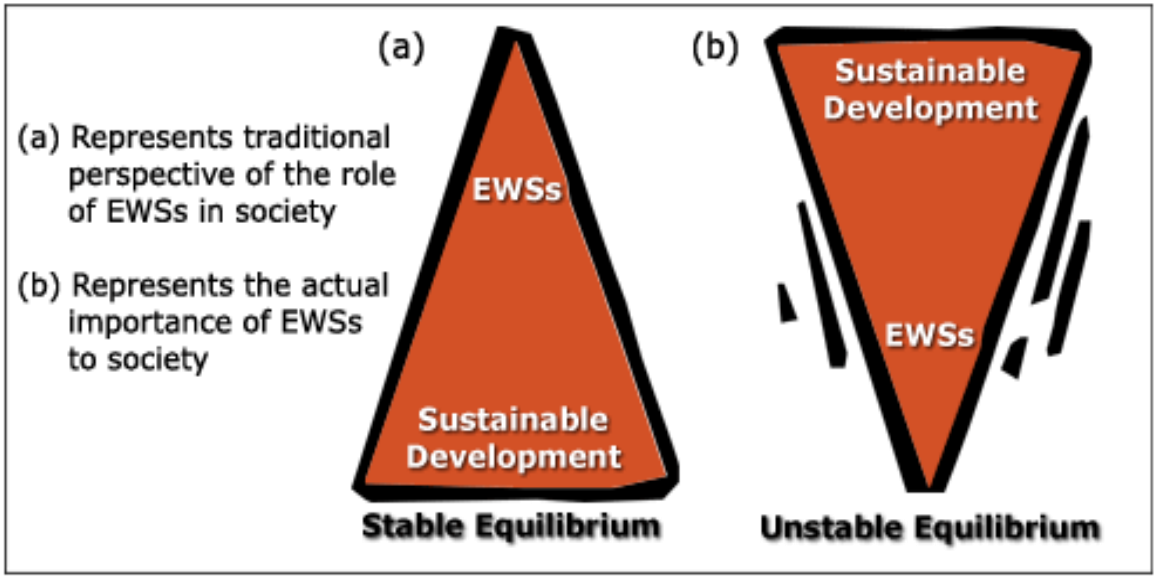
Summary (3)

Graph 2



• **Abnormal is now becoming normal! The world is entering the era of so called Risk Society**

Green growth should be designed and constantly adjusted in the context of global climate change risks



Summary (4)

Crisis (危机）=

Threat （危险） +

Opportunity (机会）

Low Carbon Society (Fairness)

Green Growth (Challenges)

Climate Change Risks (opportunities)= Green Climate Fund?