POVERTY, CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT

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Warming Of The Climate System Is Now Unequivocal

125,000 years ago…

- The polar regions were significantly warmer than present for an extended period
- … which led to reductions in polar ice volume and sea level rise of 4 to 6 .

Palaeoclimatic information supports the interpretation that the warmth of the last half century is unusual in at least the previous 1,300 years.

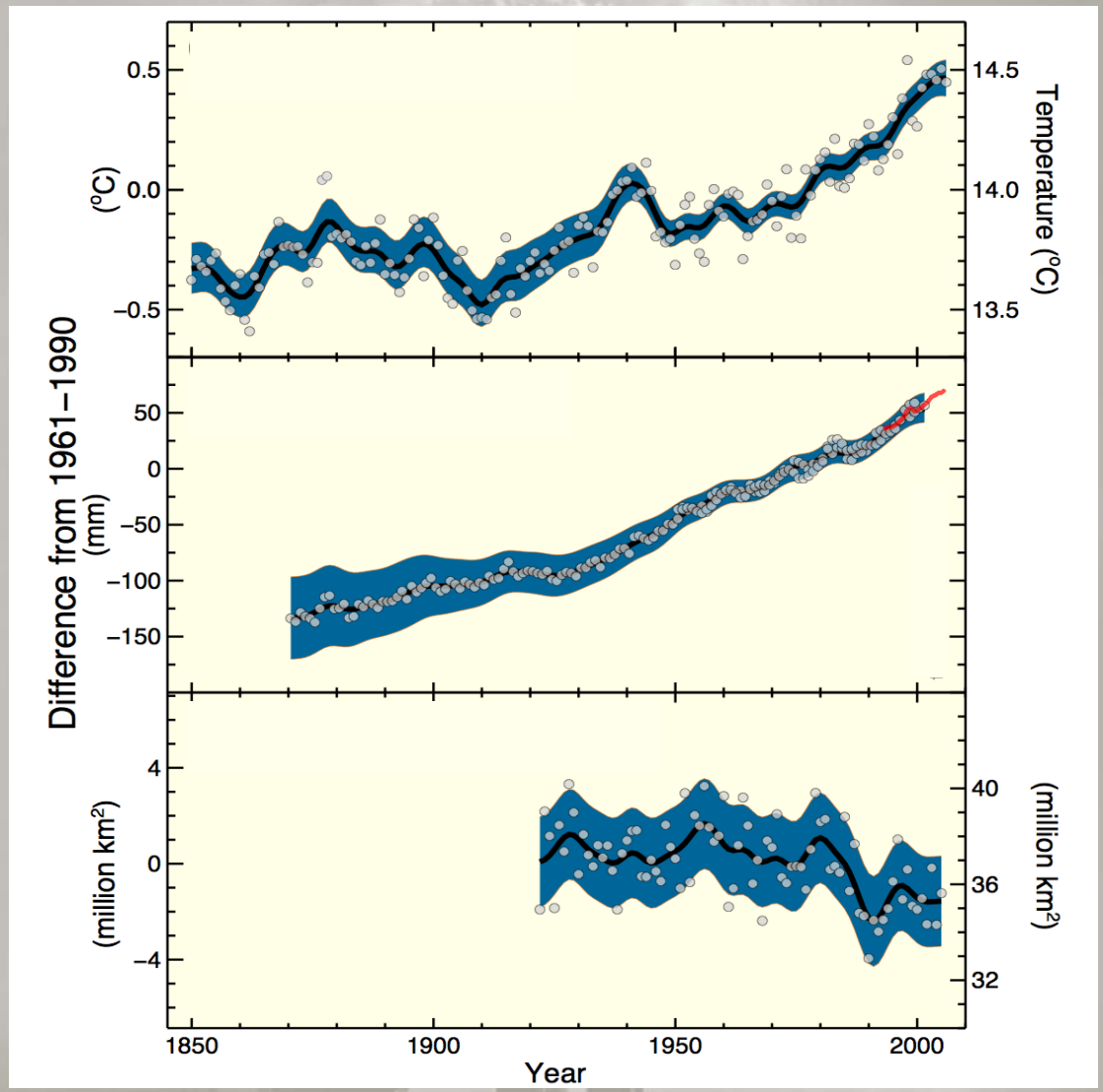
Source : IPCC

Observed Changes

Global average temperature

Global average sea level

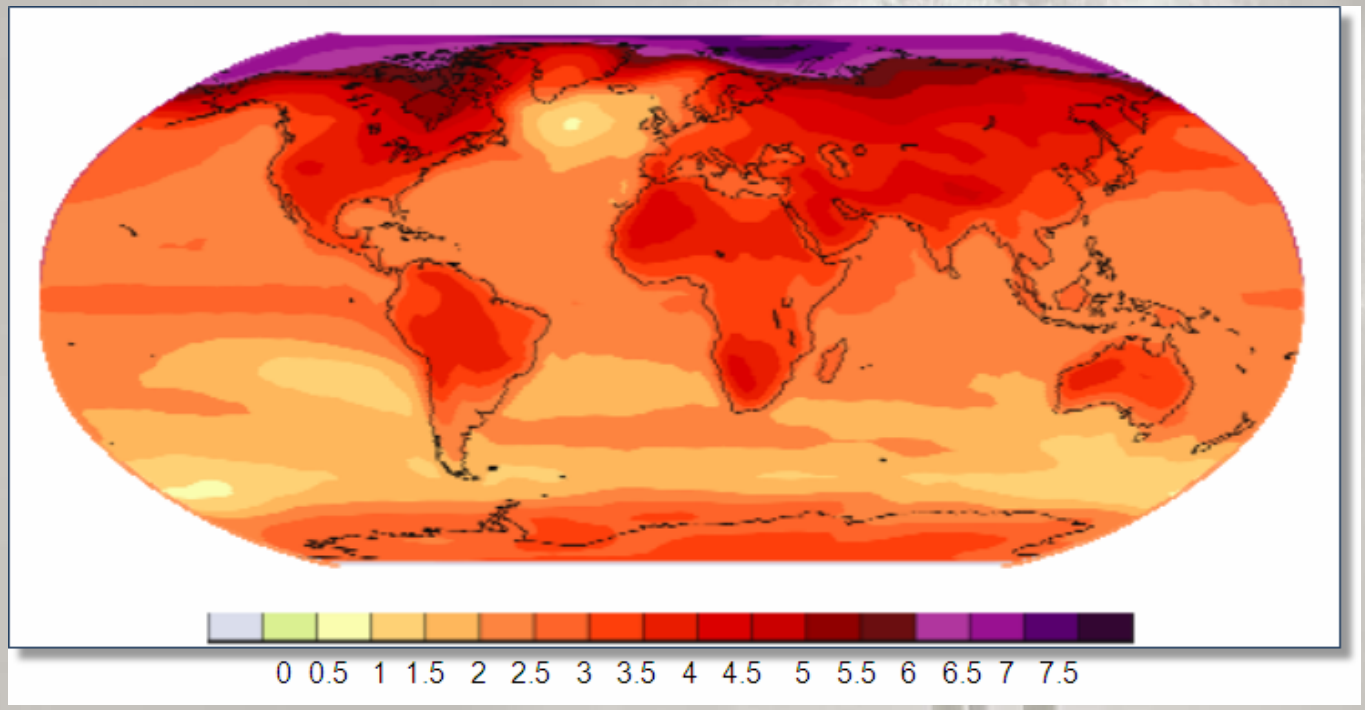
Northern hemisphere snow cover



Source : IPCC

Increase In Global Average Temperatures

2090-2099 relative to 1980-1999



Continued emissions would lead to further warming of 1.1ºC to 6.4ºC over the 21st century (best estimates: 1.8ºC - 4ºC)

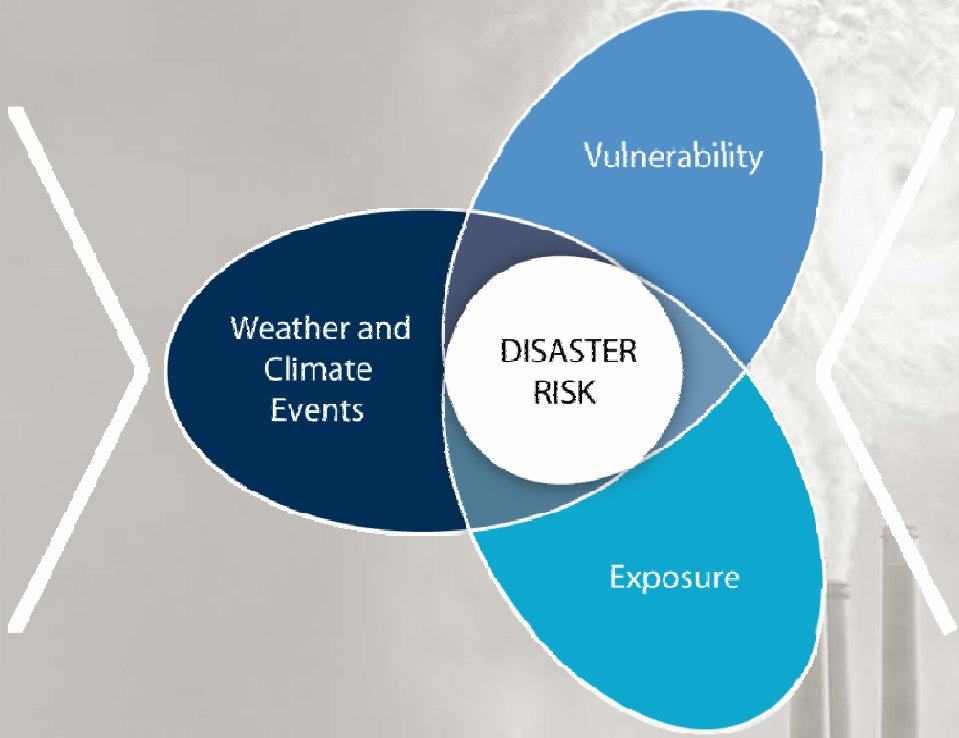
- **Most of the observed Increase since the mid-20th century is very likely due to the observed increase in anthropogenic GHGs.**
- **Discernible human influences now extend to other aspects of climate, including ocean warming, continental-average temperatures, temperature extremes and wind patterns.**

Source : IPCC

Socioeconomic development interacts with natural climate variations and human-caused climate change to influence disaster risk

Disaster Risk:

the likelihood of severe alterations in the normal functioning of a community or society due to weather or climate events interacting with vulnerable social conditions

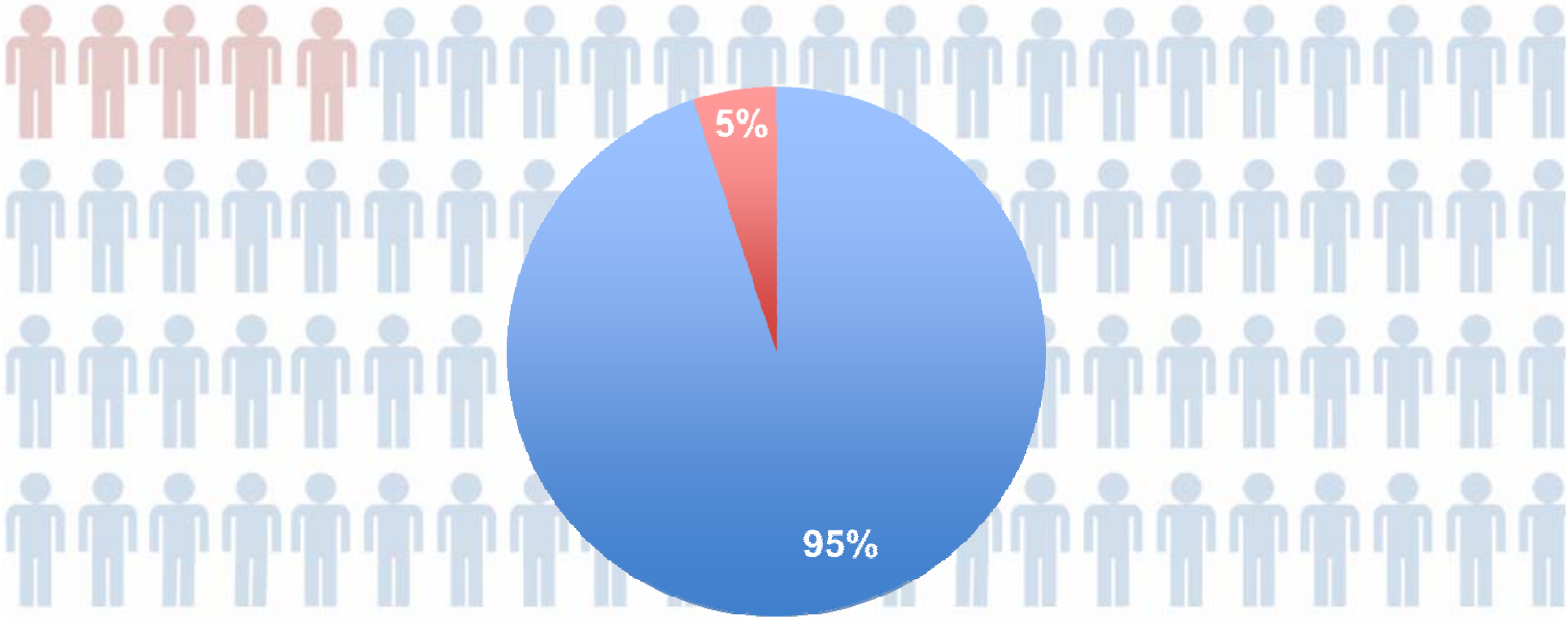


Vulnerability:

The predisposition of a person or group to be adversely affected

Source : IPCC

Fatalities are higher in developing countries



From 1970-2008, over 95% of natural-disaster-related deaths occurred in developing countries

Source : IPCC

Increasing exposure of people and assets has been the major cause of changes in disaster losses

Pakistan floods, 2010. 6 million left homeless

Source : IPCC

A changing climate leads to changes in extreme weather and climate events

Increasing vulnerability, exposure, or severity and frequency of climate events increases disaster risk

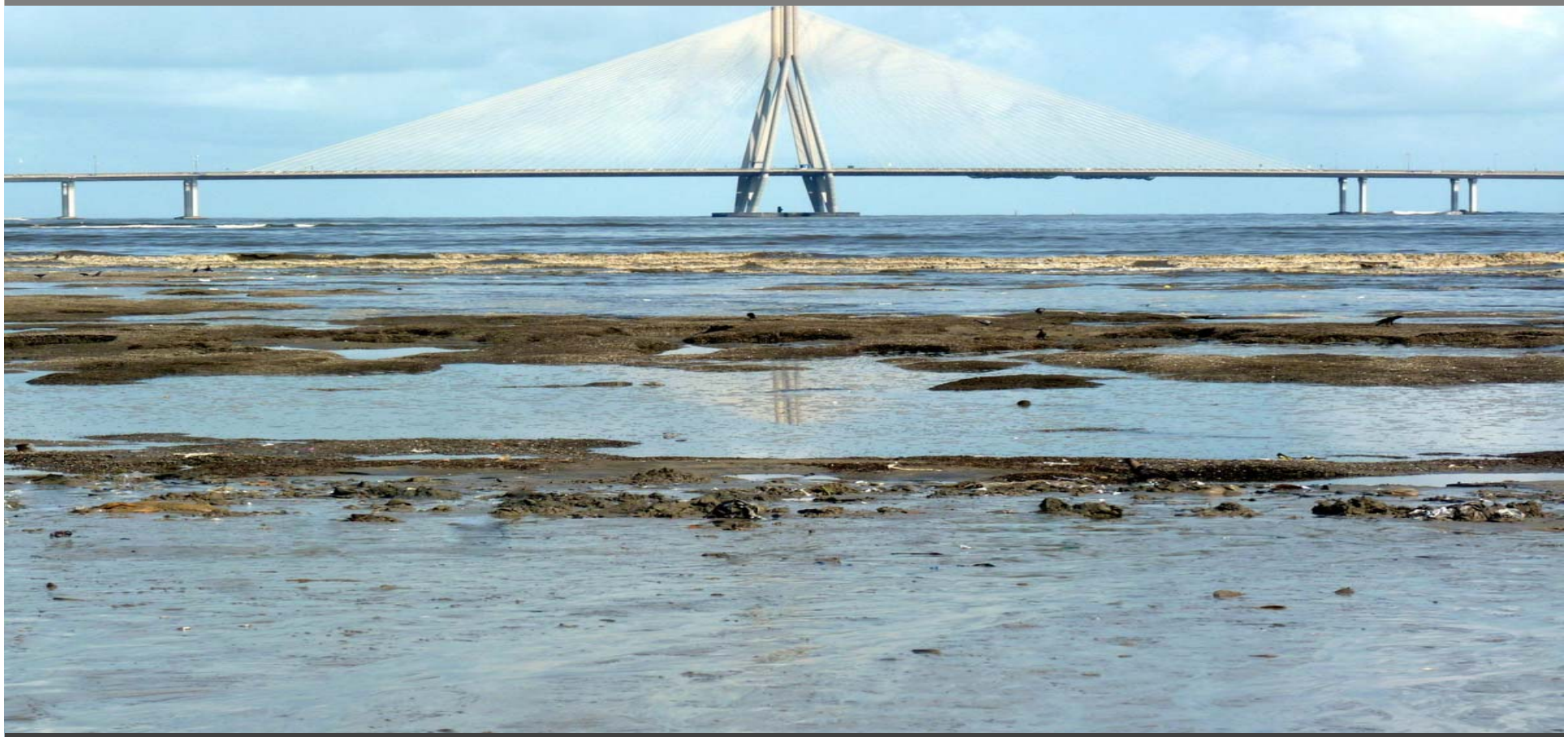
Source : IPCC

Climate models project more frequent hot days throughout the 21st century

In many regions, the time between "20-year" (unusually) warm days will decrease

Source : IPCC

Tipping points

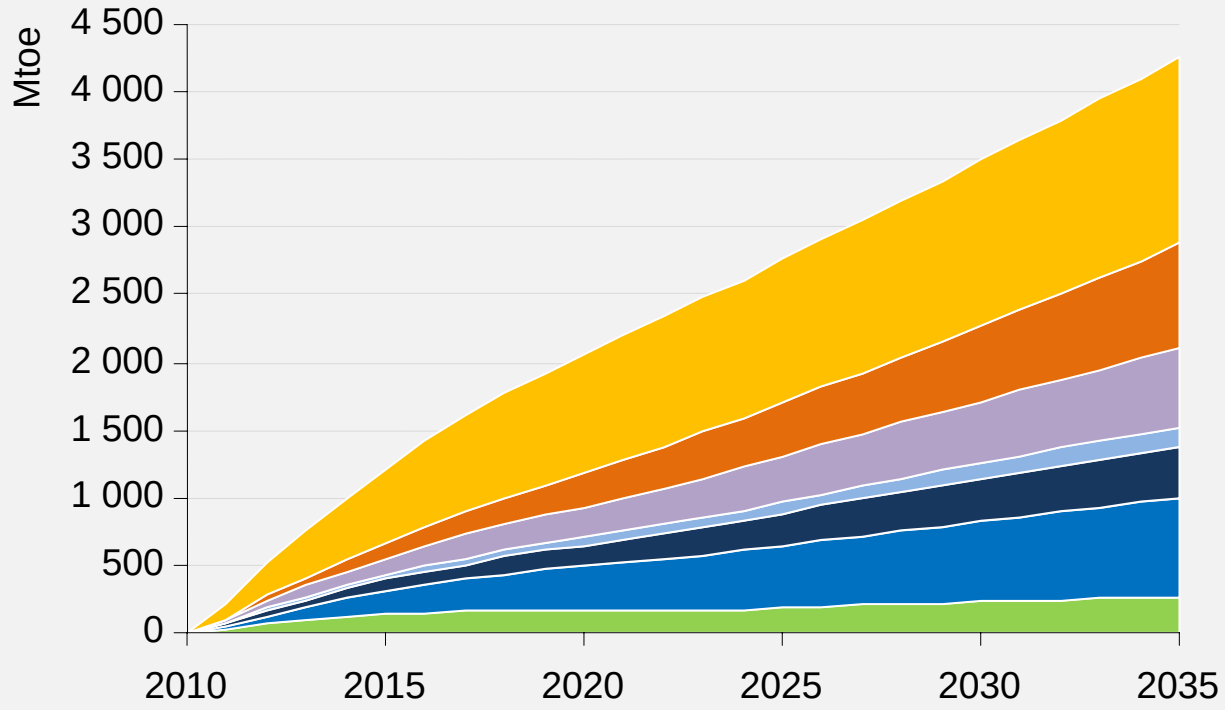


Limits to resilience are faced when thresholds or tipping points associated with social and/or natural systems are exceeded posing severe challenges for adaptation

Source : IPCC

Emerging economies continue to drive global energy demand

Growth in primary energy demand in the New Policies Scenario



Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth

Source: World Energy Outlook, 2011

Vulnerable populations

- Vulnerability in **developing regions and among poor & marginalised communities** is aggravated by low adaptive capacity and non-climate stresses, such as:
  - Dependence on climate-sensitive resources
  - Integrity of key infrastructure
  - Preparedness and planning
  - Sophistication of the public health system
  - Exposure to conflict

Without appropriate measures, climate change will likely exacerbate the poverty situation and continue to slow down economic growth in developing countries

Source : IPCC

Impacts on food fiber and forests

- Consequences for **down-stream agriculture** which relies on glacial melt and rivers for irrigation will be unfavorable in most south Asian countries.
- **Complex and localized impacts of climate change will effect groups with low adaptive capacity such as**
  - Small holders
  - Subsistence farmers
  - Pastoralists
  - Artisanal fisher folk

Source : IPCC

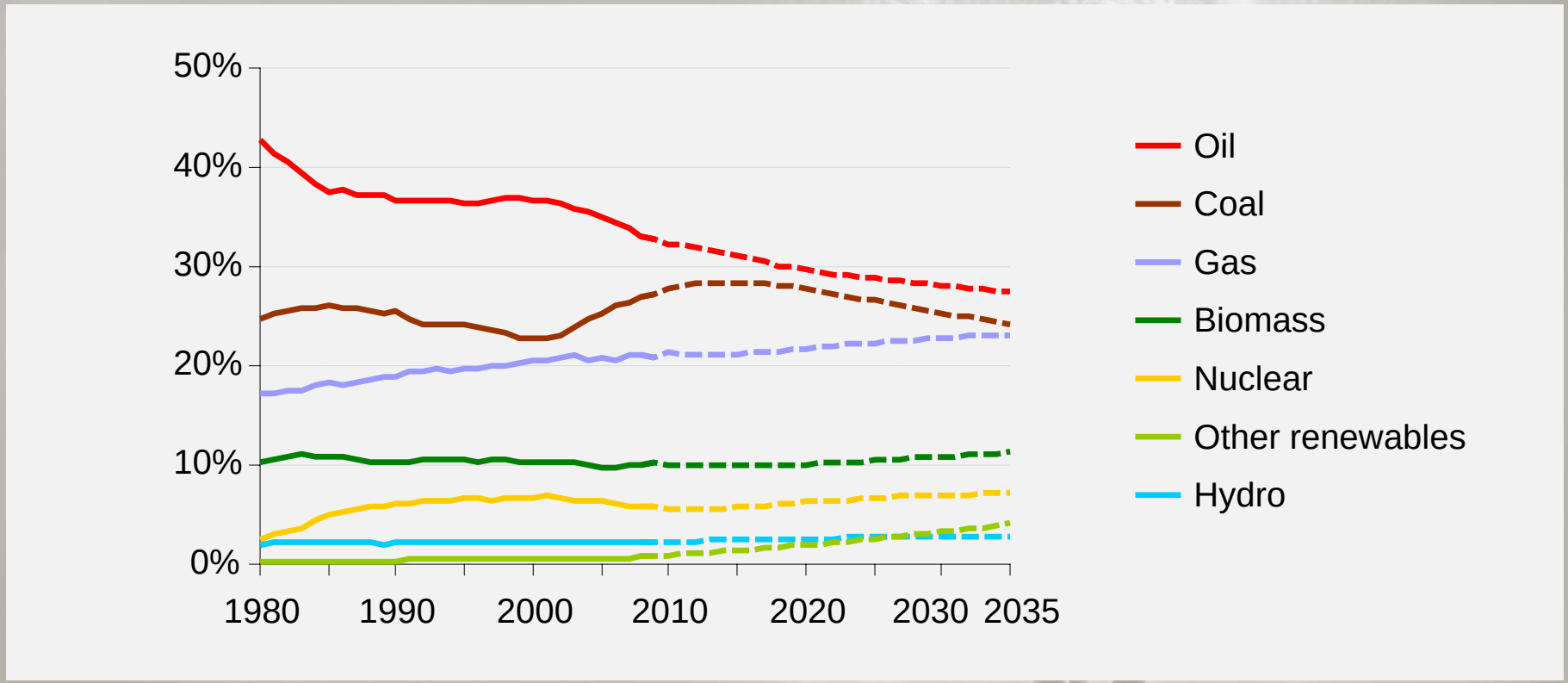
Effective risk management and adaptation are tailored to local and regional needs and circumstances

- 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

Source : IPCC

The age of fossil fuels is far from over, but their dominance declines

Shares of energy sources in world primary energy demand in the New Policies Scenario

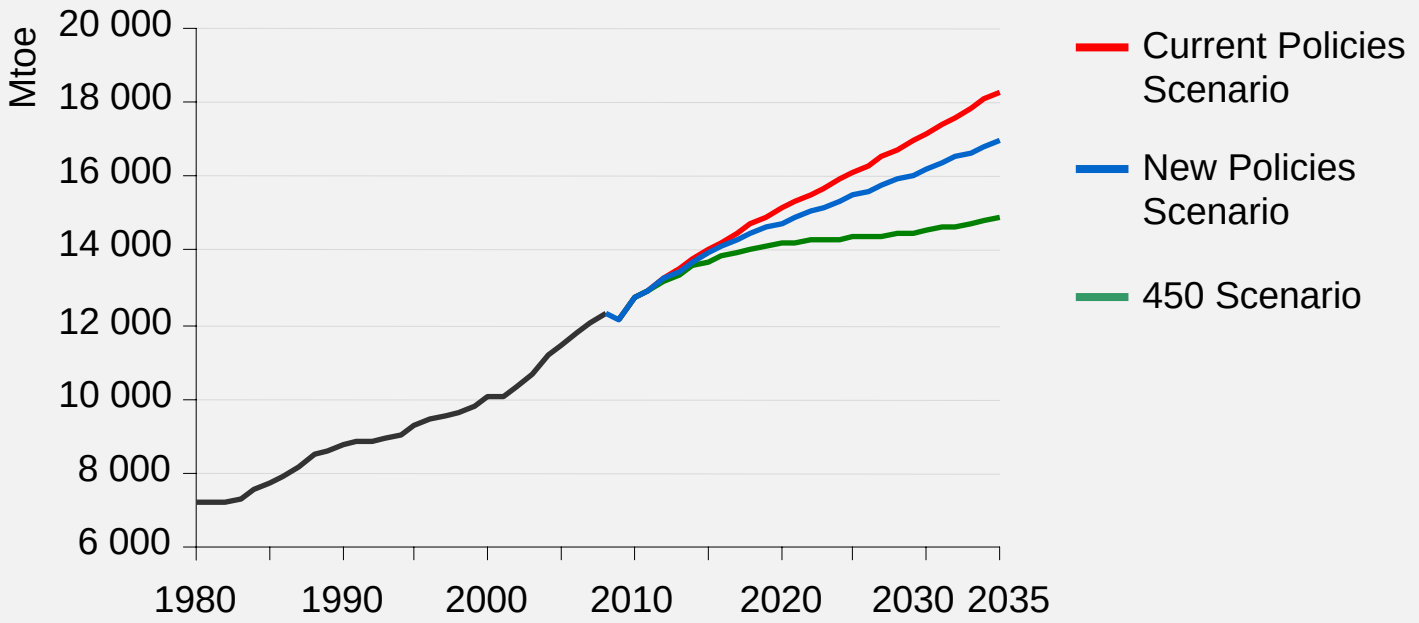


Oil remains the leading fuel though natural gas demand rises the most in absolute terms

Source: World Energy Outlook, 2011

Policies could radically alter the long-term energy outlook

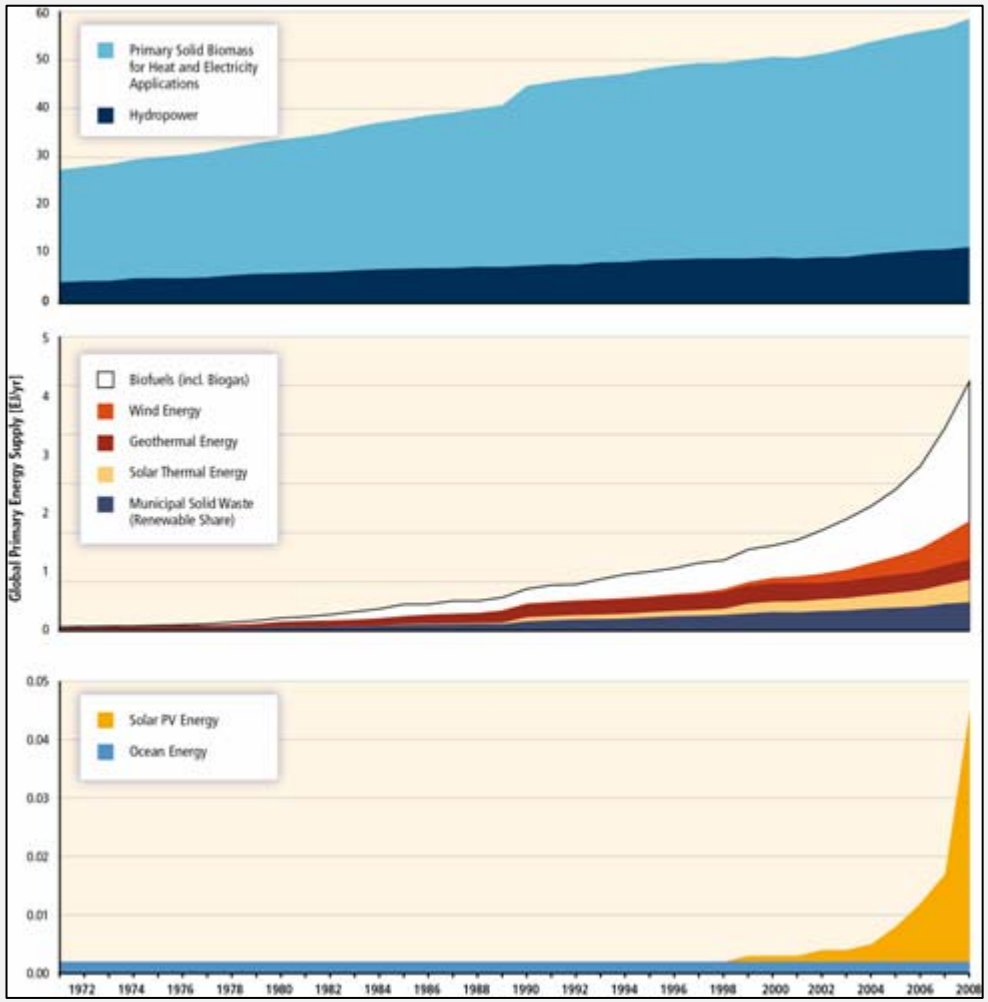
World primary energy demand by scenario



In the New Policies Scenario, demand increases by 40% between 2009 & 2035

Source: World Energy Outlook, 2011

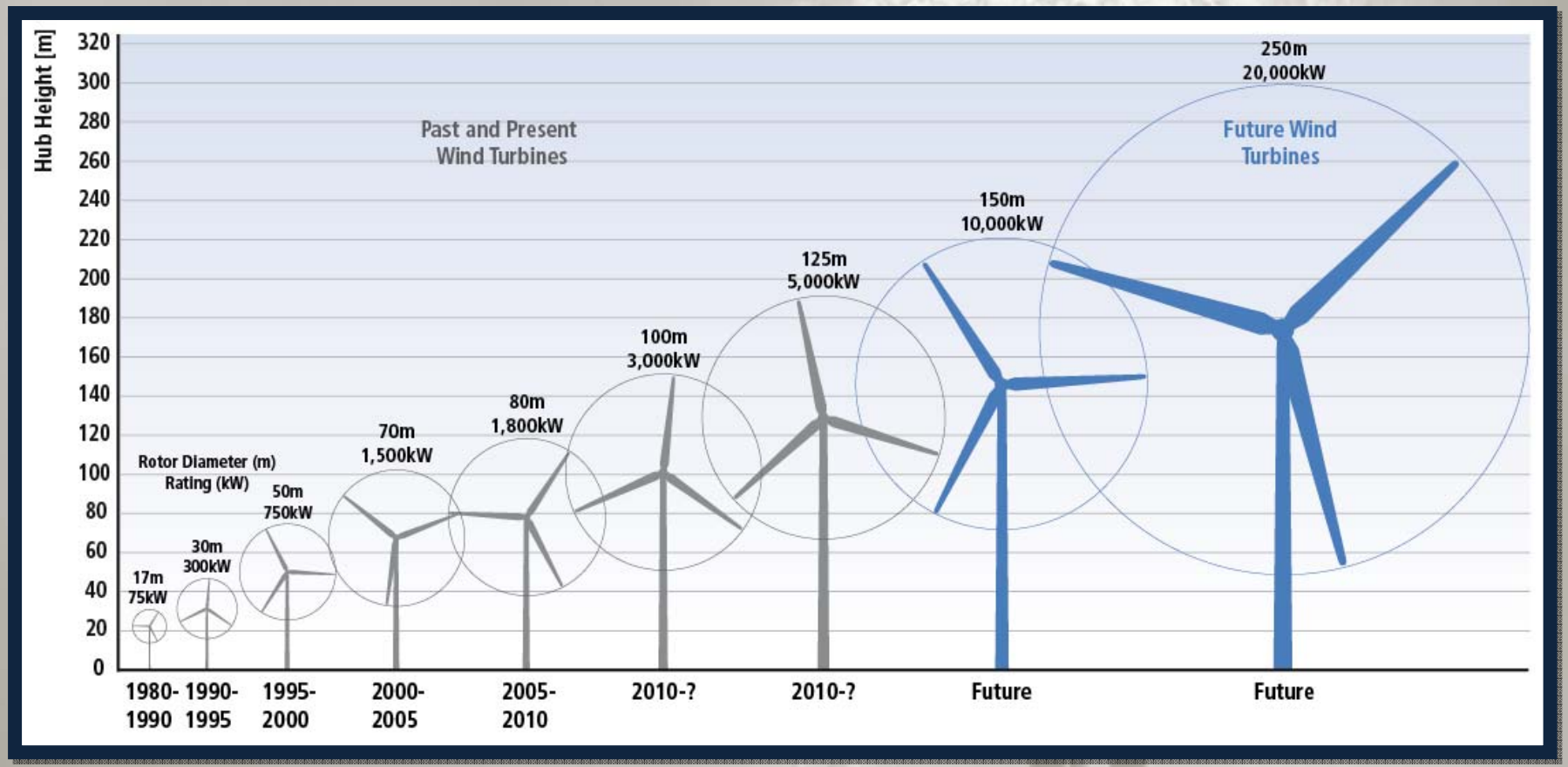
RE growth has been increasing rapidly in recent years



- 140 GW of new RE power plant capacity was built in 2008-2009.
- This equals 47% of all power plants built during that period.

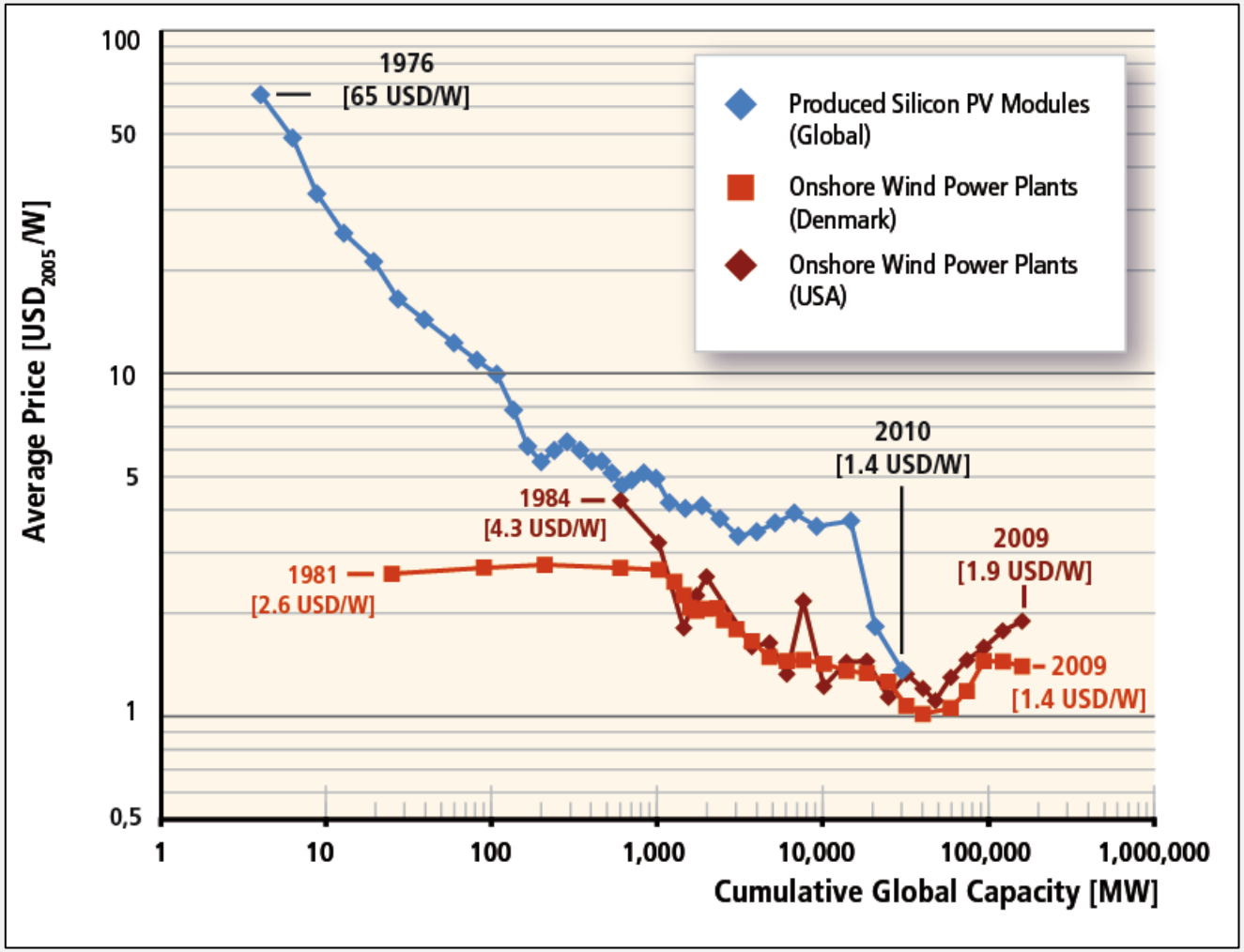
Source: IPCC SRREN

Technical Advancements: For instance growth in size of typical commercial wind turbines.



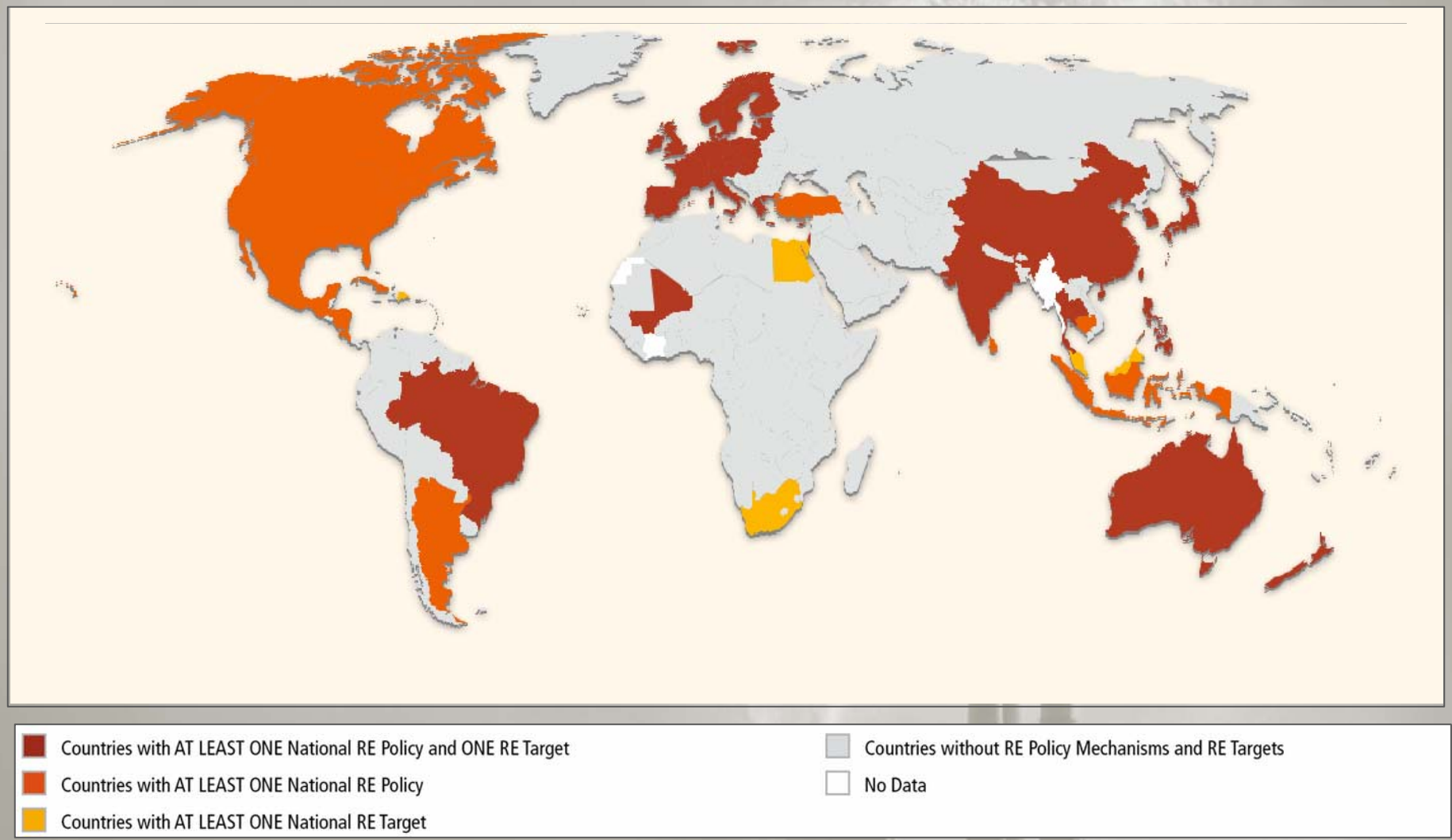
Source : IPCC

RE costs have declined in the past and further declines can be expected in the future



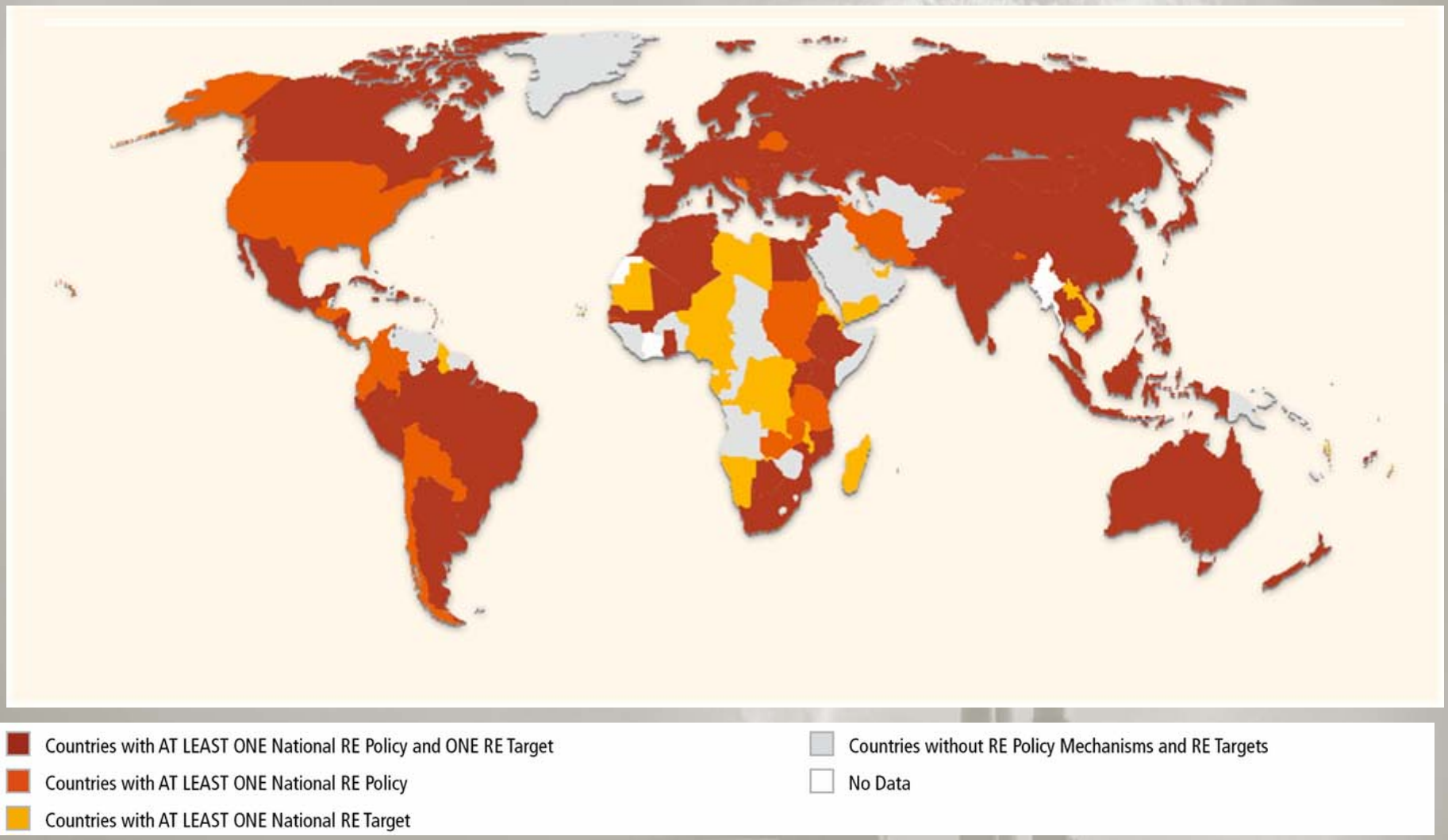
Source: IPCC SRREN

RE and Climate Change Mitigation Policies 2004



Source : IPCC

RE and Climate Change Mitigation Policies 2011



Source : IPCC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LIGHTING A BILLION LIVES

“A technological society has two choices.

First it can wait until catastrophic failures expose systemic deficiencies, distortion and self deceptions…

Secondly, a culture can provide social checks and balances to correct for systemic distortion prior to catastrophic failures”

- Mahatma Gandhi