



Rethinking approaches to international cooperation

# CLIMATE CHANGE ADAPTATION

Kevin Watkins  
and Human Development Report Office Team



# Defining the problem

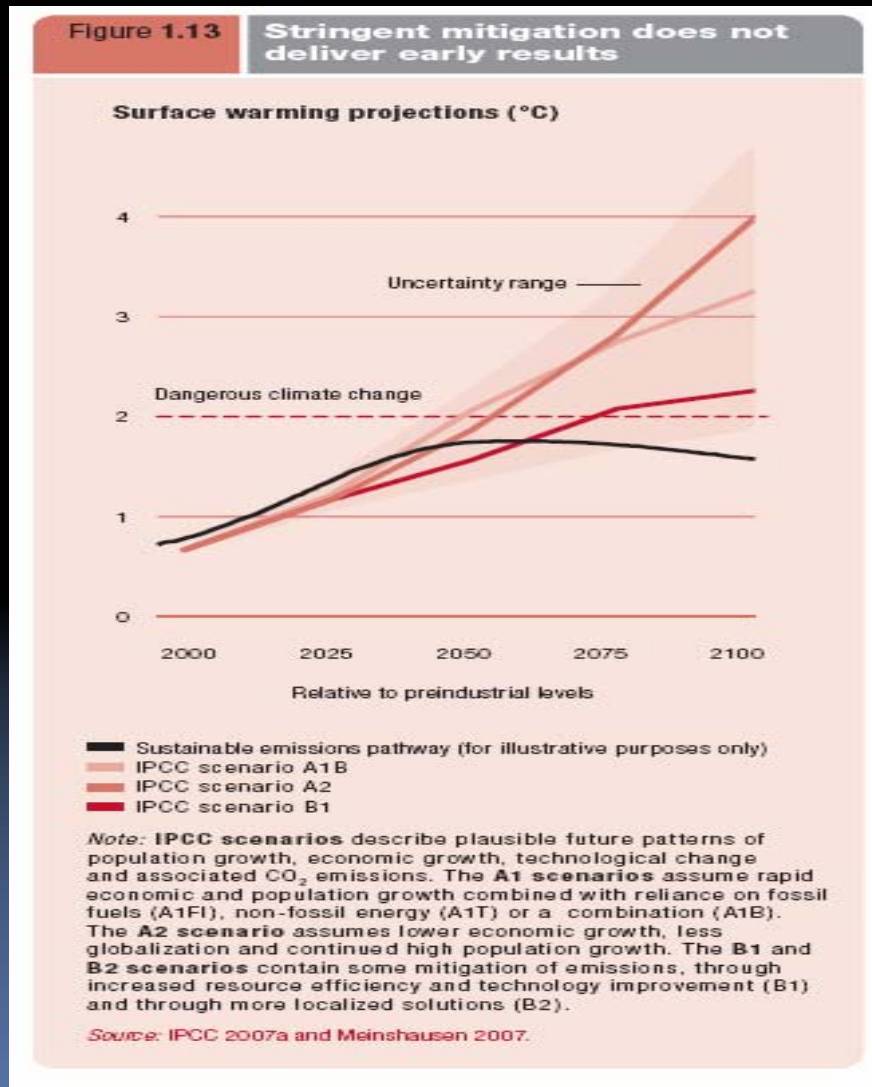
Climate change is real, it is happening today, and raises the spectre of reversals in human development, rising inequality and reduced growth. But how do we.....

- Plan for adaptation given large areas of uncertainty and problems in identifying incremental risk?
- Assess the financing requirements for adaptation?
- Allocate resources in the face of competing demand?
- Integrate adaptation into strategies for reducing poverty and vulnerability?
- Develop an architecture for international cooperation?

# The scientific backdrop

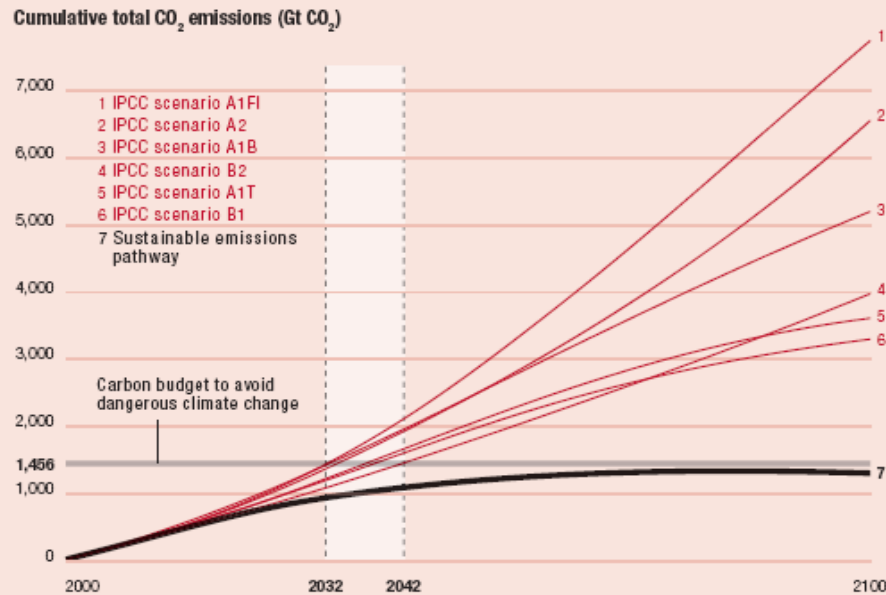
- 2°C threshold for 'dangerous' climate change – around 450ppm (50:50)
- GHG cuts required – 50%+ by 2050 (7t → 2/3t pc)
- Current trajectory – 50%+ by 2030 - 21<sup>st</sup> Century carbon budget expiry by 2042
- Business-as-usual ppm stabilisation could reach 650ppm and temperature change >5° C
- Large uncertainties (glacial melting) and feedback effects
- In-built inertia and the time-horizon problem

# Inertia matters



# Heading for a carbon debt

Figure 1.10 The 21<sup>st</sup> Century carbon budget is set for early expiry




*Note:* IPCC scenarios describe plausible future patterns of population growth, economic growth, technological change and associated CO<sub>2</sub> emissions. The A1 scenarios assume rapid economic and population growth combined with reliance on fossil fuels (A1FI), non-fossil energy (A1T) or a combination (A1B). The A2 scenario assumes lower economic growth, less globalization and continued high population growth. The B1 and B2 scenarios contain some mitigation of emissions, through increased resource efficiency and technology improvement (B1) and through more localized solutions (B2).

Source: Meinshausen 2007.



# ‘Knowns, known unknowns, and unknowns unknowns’

- Adaptation is about the economics, ethics and equity in risk management with two large uncertainties
  - The post-2012 mitigation effort is an unknown, but good case scenarios require heavy doses of optimism (carbon intensity of growth is rising, high-carbon ‘lock-in’)
  - Past climate patterns are a diminishing predictor for future risk
- 

# Five foundations for action

1. Ethical imperatives – treatment of the world's most vulnerable people
2. Human rights - *"In no case may a people be deprived of its own means of subsistence."* (ICSER/Oxfam)
3. MDGs – Post December 31, 2014 prospects for human development
4. Liability – Protection from harm by others
5. Equity – Cross-country, within country, cross-generation

# Incremental risks – present and pipeline

- Increase in exposure to drought and long-term drying (Hadley Centre)
- Reduced agricultural productivity, especially in rainfed areas:
  - Global modelling points to losses of 10% for developing countries, ranging 7% Asia to 17% SSA, with gains for developed countries (Cline 2007)
  - Ricardian modelling for dryland SSA points to losses of 25% by 2060
  - Probabilistic Monte Carlo crop modelling reveals high (95%) probability of large losses for southern African maize, West African root crops and sorghum in Sahel (Lobell et al 2008)



# Incremental risks continued

- Coastal/Delta flooding and sea surges (Bangladesh, Vietnam and Egypt)
- Port city exposure (50 → 150m by 2070: Mumbai, Guangzhou, Shanghai...OECD 2008)
- Storm damage (eg Central America)
- Increased water stress on ecosystems
- Glacial melting
  - Short-term flooding risks (Nepal, Central Asia)
  - Long-term threat to irrigation systems (Indus, northern India and China)
  - Urban water supply (Peru)

# Climate risks and vulnerability

- Inability to cope with climate risk is already a major cause of poverty
- Incremental risks superimposed on global picture of 2bn living on less than \$2 a day and 1/3 children malnourished
- 'Low human development traps':
  - Ex ante losses in productivity
  - Asset erosion
  - Capability erosion (health, nutrition, education)
- Human impacts (Seck and Fuentes HDR 2008)
  - Ethiopia: children aged -5 are 41% more likely to be stunted if born in drought year and affected
- Global modelling for growth impacts have tended to obscure distributional concerns: the poor face earliest and deepest damage

# Climate risk management options

- Enhanced information – SSA has lowest met station density in the world
- Integration of climate risk assessment into national planning and institutional structures
- Scaled-up social insurance to prevent conversion of incremental risk into greater vulnerability. Learning from good practice (Mexico, Brazil, parts of India, and Ethiopia's PSNP) – and bad practice (Pakistan and India's nutrition programmes)
- Investment in small-scale water harvesting and management
- 'Climate defence infrastructure' – sea dykes, soil binding, glacial lake protection, raised roads
- Cost-benefit analysis (and discounting) needs pro-poor weighting – and it needs to recognise the limits of cost-benefit approaches

# International cooperation on adaptation

- Current model based on 'adaptation apartheid'
  - Many rich countries heavily scaling-up 'climate proofing investments':
    - The Netherlands 'Room for the River' programme
    - UK strengthening coastal defences and Thames Barrier
    - California 2005 Water Plan
    - Germany Flood Control Articles
  - Developing country adaptation happening through household investments and adjustments
    - Walking further to collect water
    - Reduced consumption
    - Community investments in sea-dykes
    - Construction of elevated homes
    - Rich country risk is socialised through public action and private insurance markets
- Developing country adaptation is a private enterprise financed by poor households

# The pre-Bali multilateral response

- Adaptation has taken a back-seat to mitigation. Institutional arrangements characterised by
- Fragmentation under GEF leadership
  - The LDC fund with pledges from 17 donors has financed National Adaptation Plans of Action (NAPAs)
  - The Special Climate Change Fund
  - The Strategic priority on Adaptation
  - The Adaptation Fund
- Chronic under-financing (\$26m by mid-2007). On an annualised basis less than UK flood defence spending
- Project-based orientation under NAPAs and other facilities
- Delinkage from national poverty reduction planning
- Developing country perception that GEF is unresponsive

# Post-Bali – progress...

- Recognition that adaptation is a priority
- Commitment to activate Adaptation Fund levy on Clean Development Mechanism transfers
- Creation of an Adaptation Fund Board with a more democratic governance structure (a majority of developing countries and designated representation of LDCs and ASIS)
- Possible resource flows estimated at \$500m+ by 2012
- Adaptation on G8 agenda



# ...and problems

- Potential for fragmentation and duplication with WB Climate Resilience Pilot Programme
- Political friction over ownership with G77 and other developing countries (Bangkok UNFCCC meeting)
- No clear commitments by donors to mobilise 'new and additional resources' for climate change adaptation
- No framework for determining resource distribution, or concessionality of finance
- Growing evidence that existing Gleneagles aid commitments will not be met



# Four critical questions

- Do we really need (yet another) global fund?
  - Where are the commitments and WB advocacy?
  - How can we transition from a project-based model to the integration of climate risk management into national poverty reduction strategies?
  - Given the scale of resources required, what are the options for innovative financing on adaptation (carbon taxation, airline levies etc)
- 