Sustainable development, climate change and international action

Inaugural lecture of the EIAS Sustainable Development series in honour of Amartya Sen

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The European Institute for Asian Studies, Brussels

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Speaking in personal capacity: views expressed are not necessarily those of the UK government

Structure of the Argument

1) The EU's delivery and commitments on aid and trade
2) The science and impacts of climate change
3) The implications of climate change for growth and development
4) The global challenge – building an international response to climate change
5) The role of the EU as global leader

Part One: EU delivery and commitments on aid and trade

Delivery **on aid**

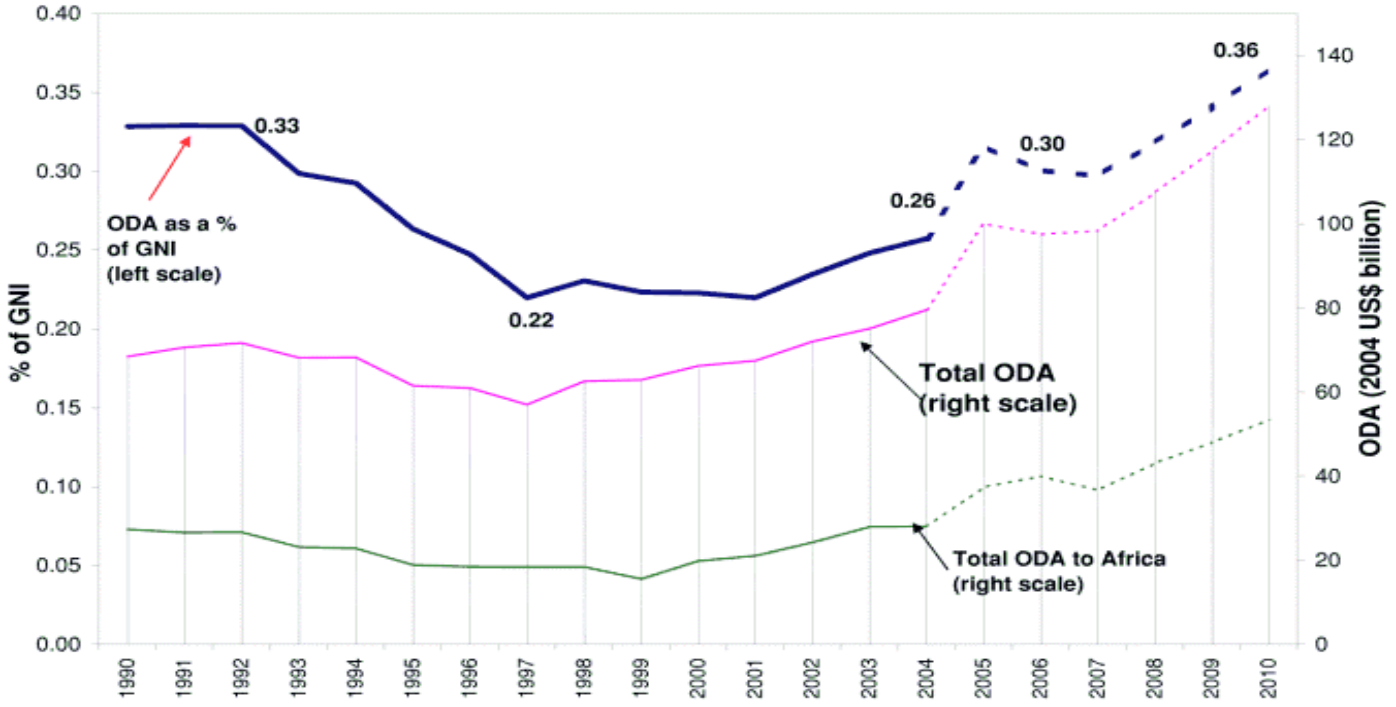
- EU played a leading role in commitments to increase ODA last year. Of the promise in 2005 to increase ODA by $50 billion by 2010, $40 billion will come from the EU

- Challenge is to deliver on these promises

- Predictable long-term finance is essential for developing countries to meet the challenge of providing basic public services – health and education. Also for investment in infrastructure and sustaining governance reform to support growth

- Failure to deliver and/or inept use of ODA will undermine our credibility and effectiveness

The spike in global ODA since 1990 was caused by debt relief



- The aid 'boom' in 2005-06 is primarily due to debt relief for Iraq (US$19bn) and Nigeria (US$11) and emergency Tsunami aid.
- The OECD's warns that as of 2007, when debt relief is completed, donors will have to increase other forms of aid substantially in order to meet 2005 aid commitments.
- Innovative finance mechanisms, such as the IFF, may have to be considered by some countries in order to meet these commitments

Our ***commitments*** on trade must complement our work on aid and debt relief

- Well directed aid fosters capacity to produce and trade
- But tariff and other barriers impose great costs to the global trade system, and these costs disproportionately hit poor people
- Tackling the pervasive and pernicious non-tariff barriers is also a crucial part of trade reform
- Stronger commitment to freer and fairer trade is now urgent to enhance opportunities for poor countries to grow

Agricultural trade reform crucial to progress in DDA: ***EU leadership essential***

- Unless rich countries commit to agricultural trade reform, Doha will fail
- Agriculture is the most protected sector, and most countries rich and poor protect it
- A better deal on agriculture means a much better DDA and an enhanced opportunity for half of 5 billion people in developing world living on less than $2 a day compared to the costs to 2% of rich country labour force who work in agriculture, who can be compensated
- Time is running out to get a deal that provides this opportunity, EU should take a lead

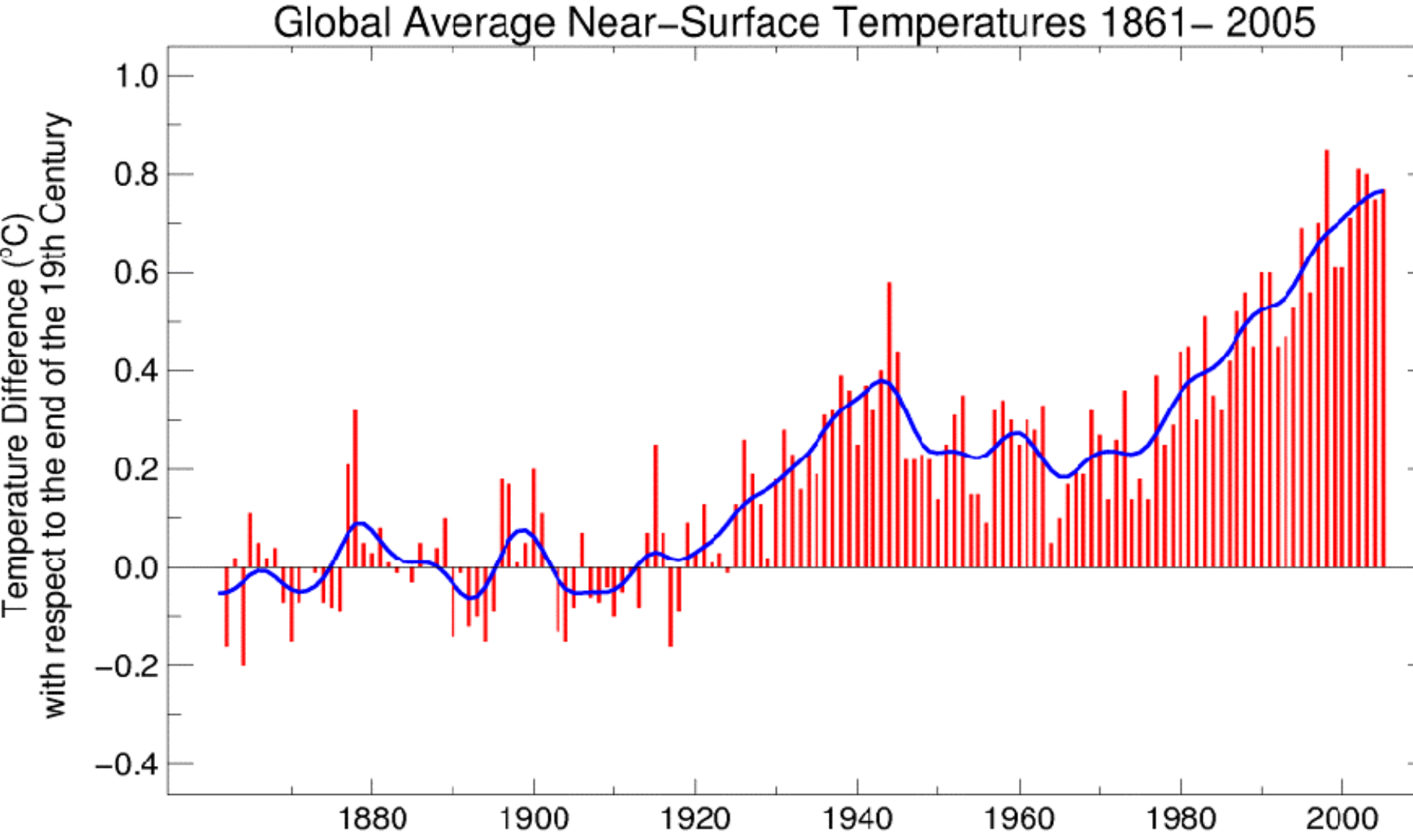
Part Two: The science and impacts of climate change

The science of climate change

- The science of climate change is now well understood
  - basic physics was described in the19th century
  - 19th century predictions – that average global temperatures could rise by 5-6 degrees if greenhouse gas concentrations in the atmosphere double – are close to current models

- Climate change is caused by greenhouse gas emissions
  - Greenhouse gases include carbon dioxide, methane, nitrous oxides, and some industrial chemicals
  - Main sources are from burning fossil fuels also from agriculture and deforestation

Strong Global Warming Observed

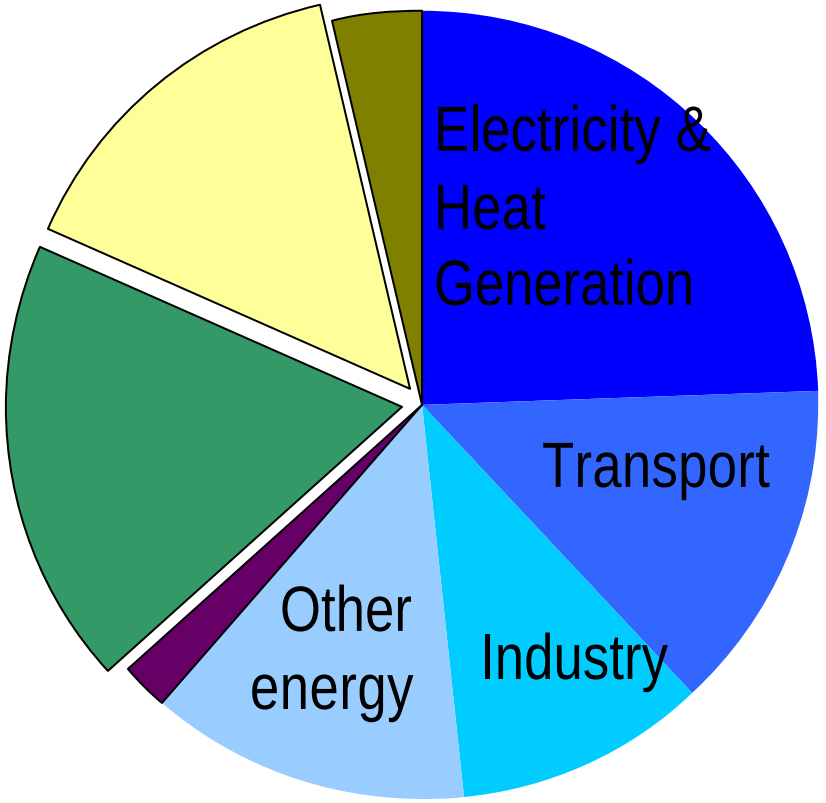


Hadley Centre for Climate Prediction and Research
Based on Folland et al (2000) and Jones and Moberg (2003)

Global emissions of greenhouse gases come from a wide range of sources

Agriculture
5.6 Gt 14%
mostly from soils & livestock

Land Use changes
7.6 Gt 18%
primarily deforestation



Energy – 25.6 Gt 61%
Consuming fossil fuels

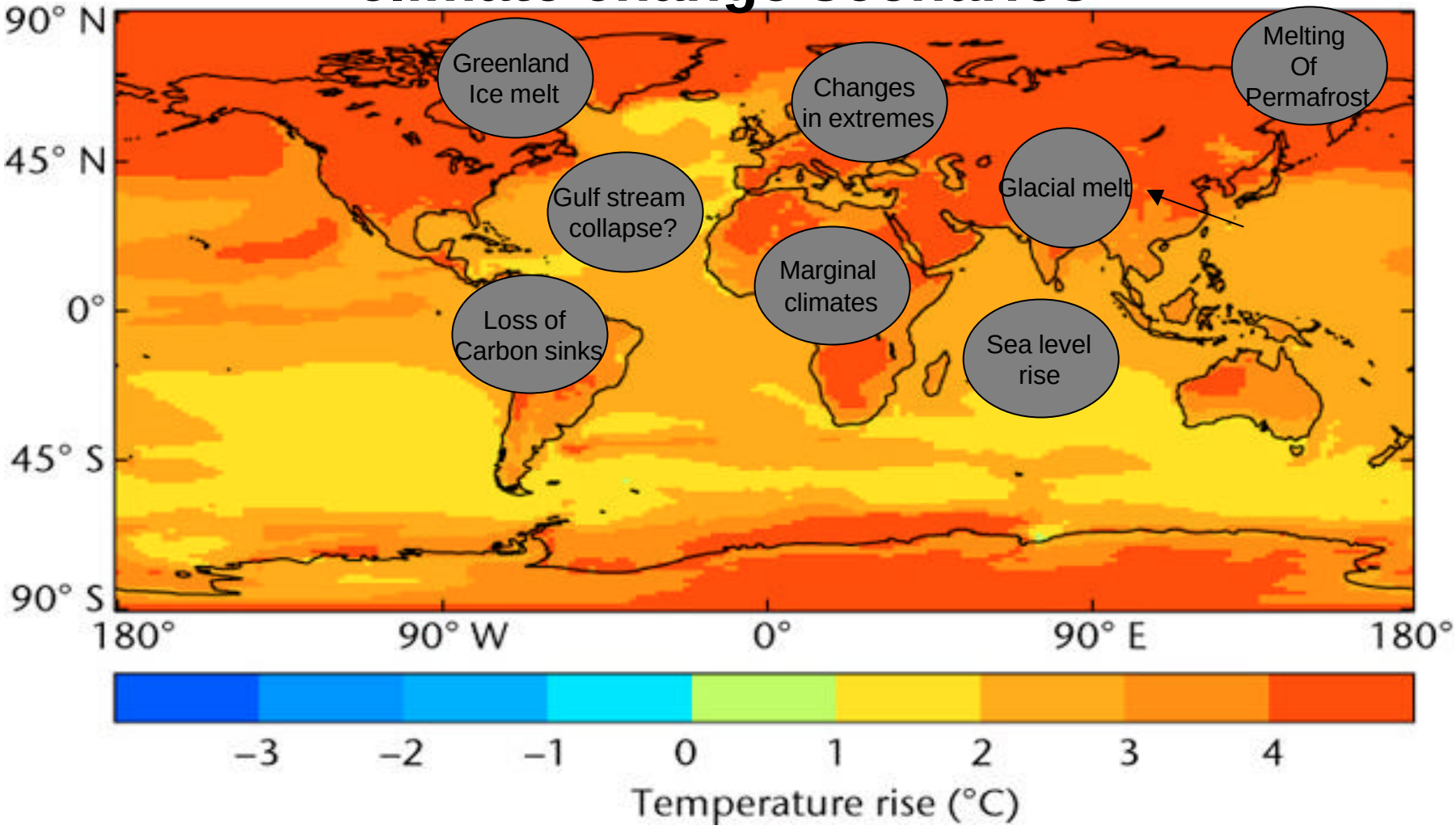
Source: World Resources Institute. 2000 estimate.

All GHG in CO2 equivalent

Future emissions could intensify climate change

- GHG emissions and concentrations have increased sharply since 1950
  - already led to a temperature rise of 0.7 degrees.
  - already committed to a further 1 degree of warming
- Concentrations in the atmosphere are now 425ppm CO2 equivalent, rising 2ppm each year
  - we are heading for 550ppm by mid-century, leading to a global average temperature increase of at least 2 degrees, probably >3
- The rate of annual increase is also growing
  - So possible that temperature increases could reach 5-6 degrees or higher by the end of the century.

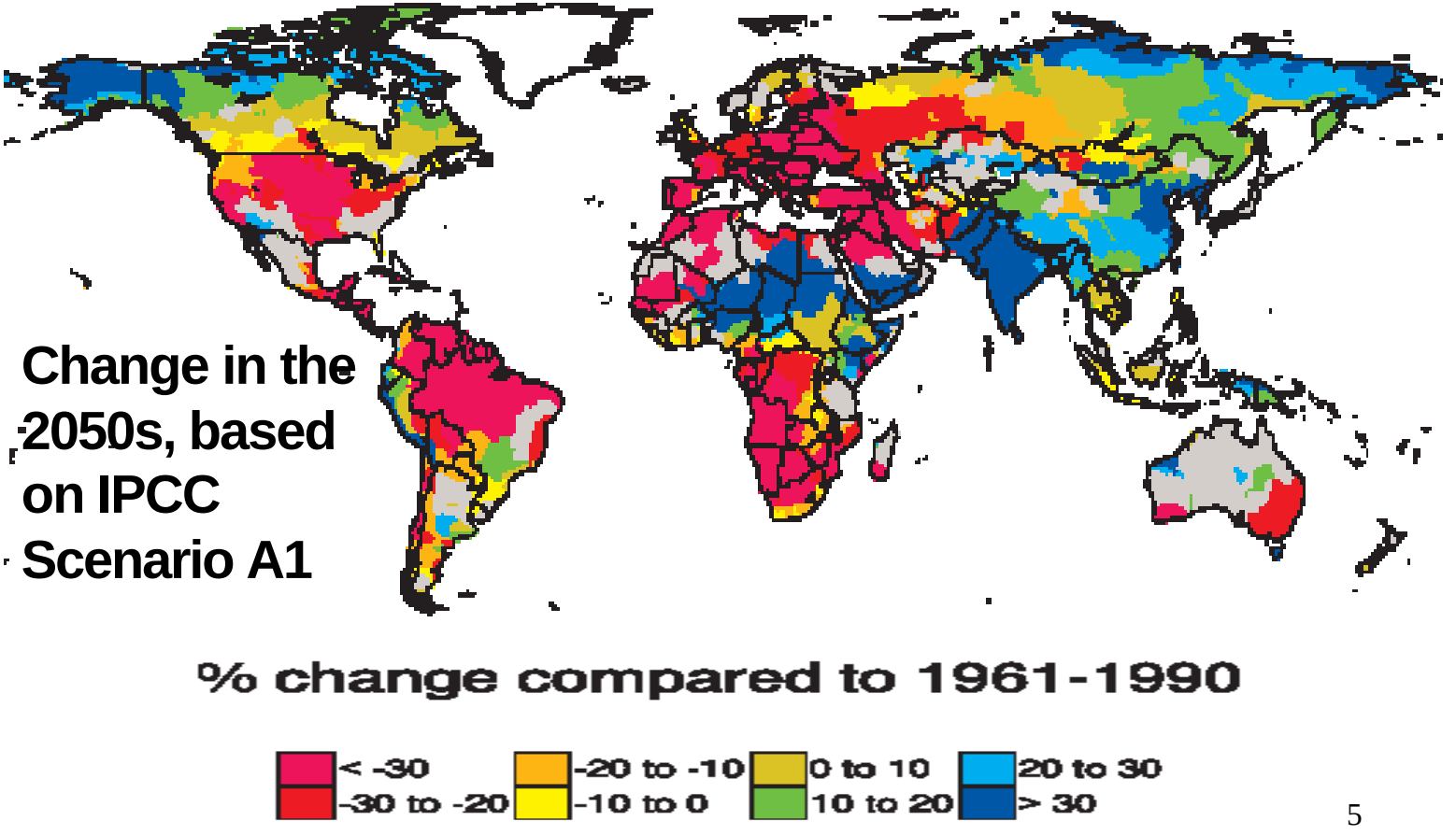
Impacts of climate change:
The sting is in the tail…possible severe climate change scenarios



Impacts of climate change on physical systems

- We expect major impacts on our physical environment from climate change:
  - rising average and peak temperatures
  - extreme weather events and related natural disasters
- Most of the impacts are mediated through water:
  - droughts and floods
  - changes to rainfall, including to the Indian monsoon
  - retreat of glaciers with impacts on major rivers
  - rising sea levels could displace millions from the coast

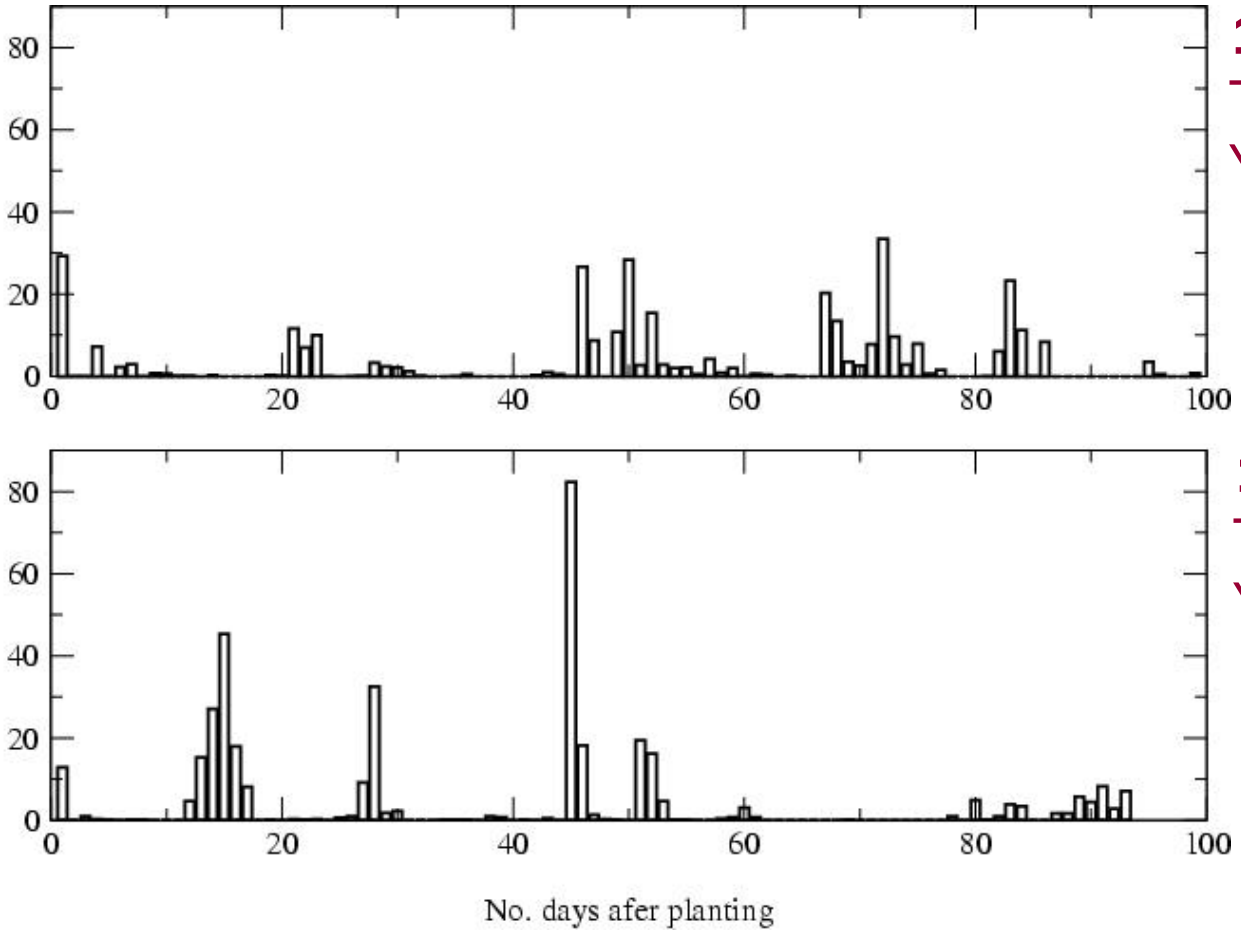
Warming will lead to major changes in water availability across the globe



Source: Arnell (2004)

Variations in water available for crops will impact on agricultural yields

Example: Groundnut yields for Gujarat

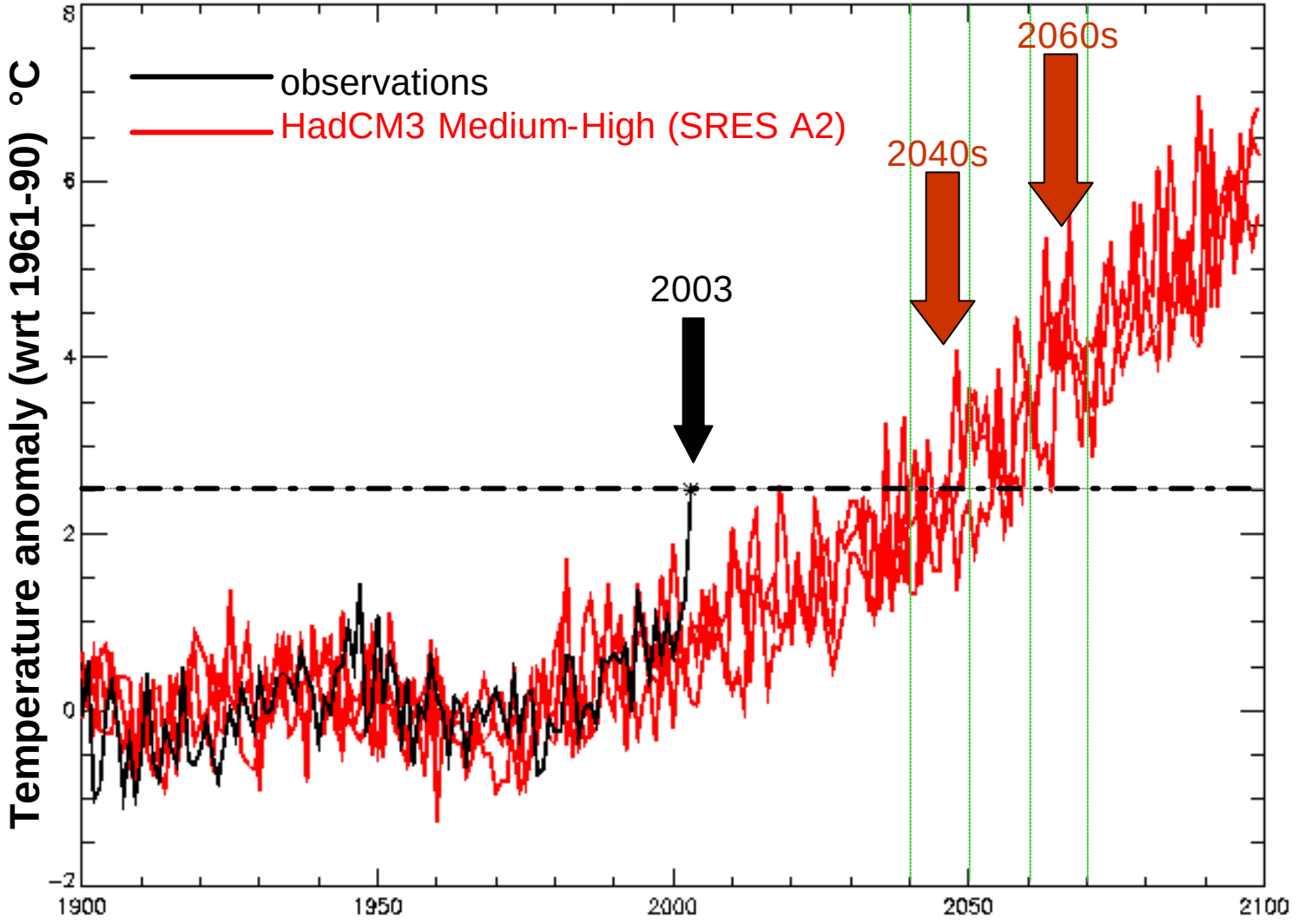


1975
Total rainfall: 394mm
Yield: 1360 kg/ha

1981
Total rainfall: 389mm
Yield: 901 kg/ha

Courtesy: Andrew Challinor, University of Reading

European 2003 summer temperatures: normal by 2040s, cool by 2060s



Part Three: Climate change and development

What do the impacts mean for development goals?

- Climate change impacts will affect everyone
- Climate change will severely damage progress on goals for development in the world's poorest regions
- Severe deterioration and/or high impact will create the potential for conflict and population movement, which will put pressure on the developed as well as the developing world

Key to understanding the climate change problem,is the role of uncertainty

- **There is uncertainty on what might happen and what that might cost:**

- **Impacts**- high confidence on **projection of the direction of change** and can place bounds around the **magnitude** of them (temperature change, sea-level rise). But we highly uncertain about the scale and consequences of the risks of **system change**

- **Valuation**- some studies value **direct impacts** (agriculture, water stress, health). But **much less on socially contingent responses**; these are large-scale, second-round social responses, to climate change, including migration and conflict

How can development policy help people to adapt to climate change?

- Providing better information about future climate scenarios
- Improving disaster preparedness and disaster recovery
- Funding to develop drought and flood resistant crops
- Assessing links between climate change and key policy areas–health, education
- Risk screening for major infrastructure projects
- Strengthening natural and man-made flood defences

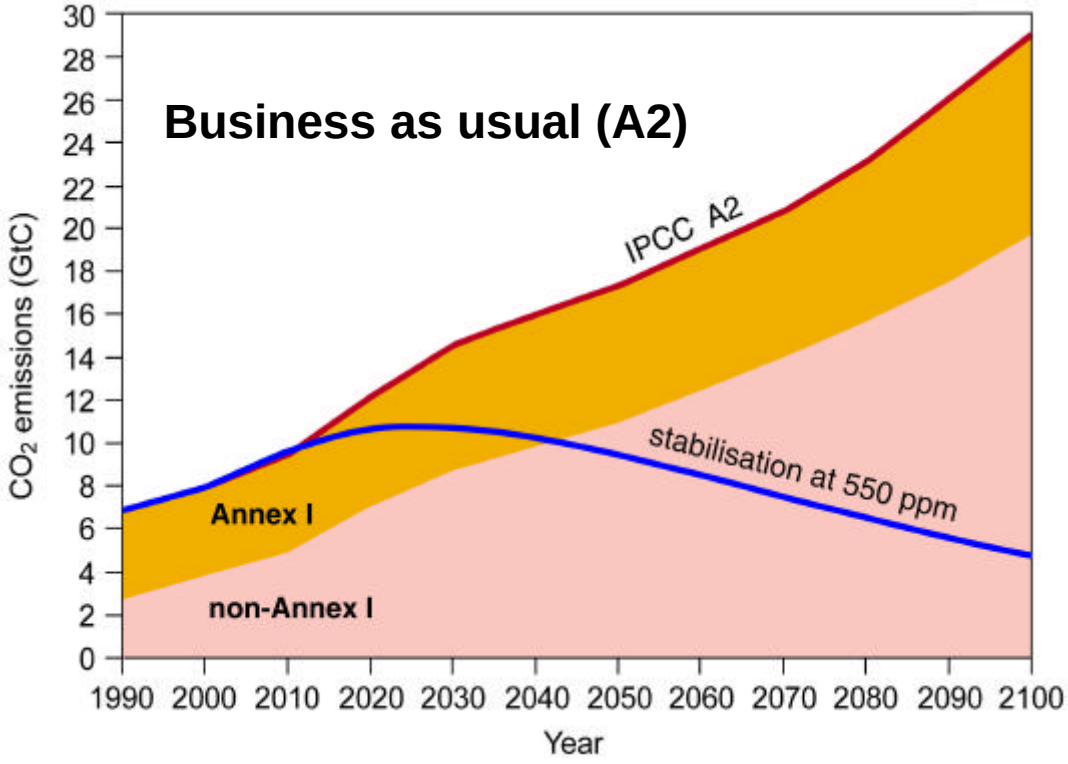
Part Four: Building an international response to climate change

Building an international response to climate change by integrating the economics with the science

- The science tells us that climate change is
  - an international collective action problem
  - with long-term impacts
  - with uncertain implications and potential for major disruption to societies and economies
- Adaptation is important but unlikely to be an adequate response
- Mitigation requires change to energy and land-use which leads to concern about growth and competitiveness

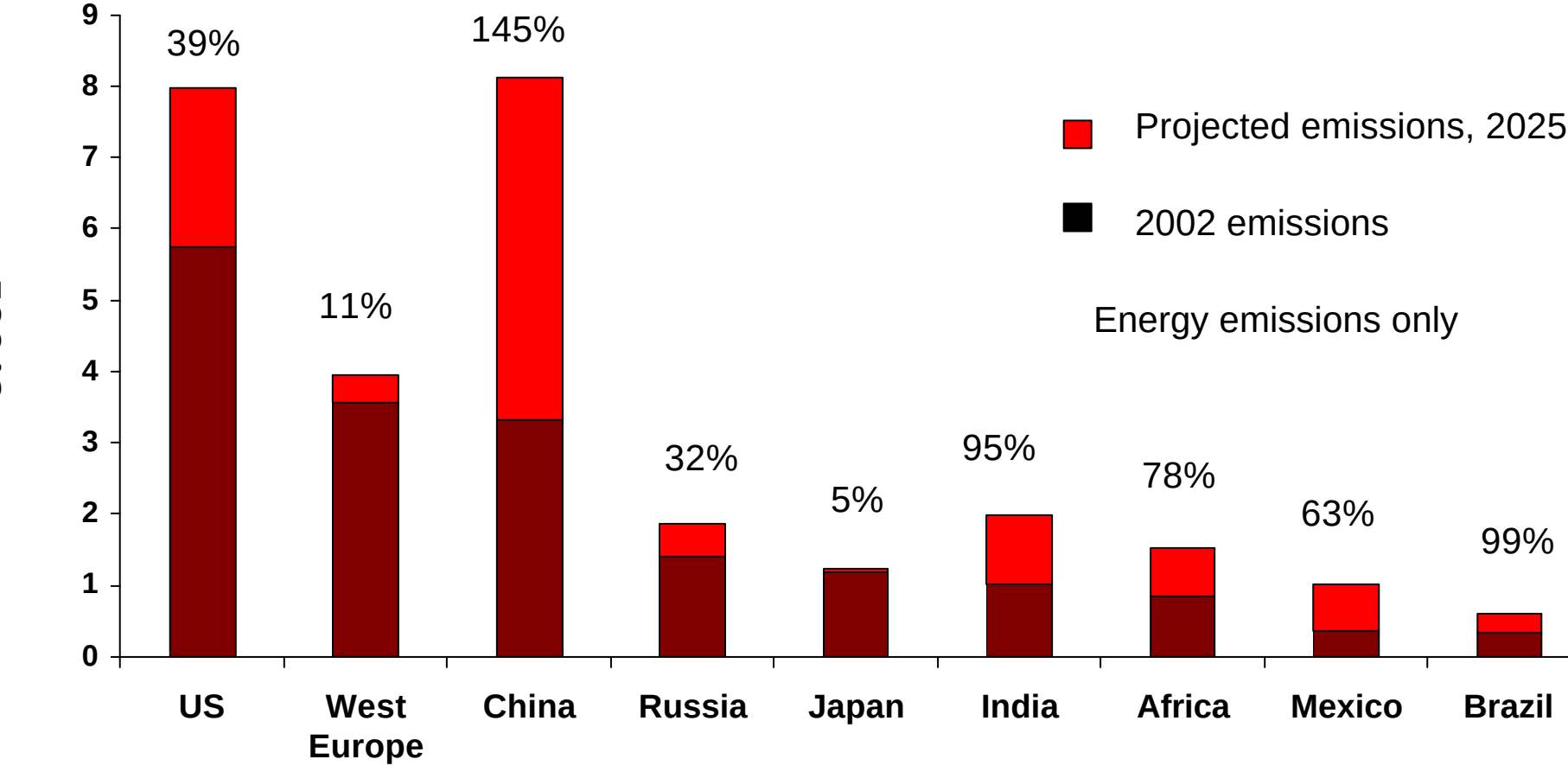
Pathways for effective mitigation of climate change will require a global response

To stabilise at below 550 ppm, emissions must start to fall soon & developing countries must be part of the solution



Source IPPC

70 percent of the stock of emissions from OECD countries. Much of the forecast rise in emissions is from developing countries



Source: World Resources Institute, CAIT Energy Information Administration Reference Scenario, Energy emissions only

Mitigation and growth in developed countries

- In developed countries, maintaining growth whilst reducing greenhouse gas emissions from energy requires increased efficiency and strong innovation

- ***Both*** direct incentives for carbon reduction ***and*** incentives for innovation in lower carbon technology are likely to be necessary

- Incentives for carbon reductions can take many forms: taxes, cap and trade, regulation

- Similarly for innovation, public-private relationship crucial

Mitigation and competitiveness in developed countries

- Concerns about competitiveness should be assessed quantitatively
- Competitiveness impacts can be reduced through multilateral action and system design
- Uncertainty and inconsistency on longer term carbon policy can undermine other goals including security of energy supply

Mitigation and growth in developing countries:incentives and resources

- Developing countries also have an interest in efficiency, diversifying sources of supply and strengthening innovation – China's 11th Five Year Plan sets target of 20% energy intensity improvement

- External finance will also be needed towards the incremental cost of investing in lower carbon infrastructure

- Improving access to technology is vital

- Incremental costs of lower carbon investment is likely to require flows of at least US $ 40 billion per year

Mitigation and growth in developing countries: institutional mechanisms

- Clean development mechanism (CDM) is currently the main channel, but it is a long way from generating the required flow of capital, currently around €500 million per annum

- Key challenge for future action on climate change is to scale up market based mechanisms to support growth based on clean technology and energy efficiency

- Will require adequate constraints on global emissions to drive demand, as well as appropriate institutional arrangements to handle these flows

- In addition, clear role for institutions for developing and deploying technology

Part Five: The role of the EU as a global leader

The role of the EU as leader on climate change

- **Leading through delivery –** European Climate Change Programme and national action to meet Kyoto Protocol targets
- **Leading with ideas** - research into the impacts of climate change, and lower carbon technologies for the future. EU 7th Framework Programme is a major opportunity
- **Leading by shaping markets** – voluntary agreements with auto manufacturers, energy efficiency standards
- **Leading international cooperation** – EU Emissions Trading Scheme, EU-China partnership on CCS

The role of the future EU ETS: leading future global action

- Review of EU ETS Phase III is crucial to steering direction of future global action on climate change
- EU ETS Phase III needs to give clear signals on direction of travel over longer term post 2012
- Global carbon markets will support incentives to act and allow for mechanisms such as trading and CDM to deliver GHG reductions in developing countries
- Future EU ETS should be outward looking, a ‘nucleus’ of global carbon markets
- Could also include links to voluntary and sub-sovereign schemes

Role of the EU: The EU's domestic policy agenda

- Efficiency and innovation can support EU priorities on delivering growth through the Lisbon agenda
- Climate change objectives can also be mainstreamed into the EU energy policy initiatives launched at Hampton Court
- Clear, long-term signals on climate change will support business confidence about making the right investments in the EU

Conclusions

EU policy to support sustainable development

- EU has a critical role to play in supporting sustainable development for its member states and around the world
- Essential to deliver on 2005 commitments on aid
- Must now go further with trade reform – including agriculture

EU policy to support climate change

- Action on climate change within the EU can be consistent with growth, energy and competitiveness priorities

- EU policy will be vital to building an international coalition which includes developing countries

Climate change and international action

- Climate change is a serious threat to sustainable development
- Scale of risks and uncertainties imply action now for the longer term
- Costs of action are significant, but will yield substantial benefit in threats avoided and need not imply slower growth in either developed or developing countries