DIW Berlin

Deutsches Institut
für Wirtschaftsforschung

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WRAP - UP

- Lessons learned
- Agenda for future action

Cost of Inaction Workshop

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April 11, 2006

CLIMATE CHANGE

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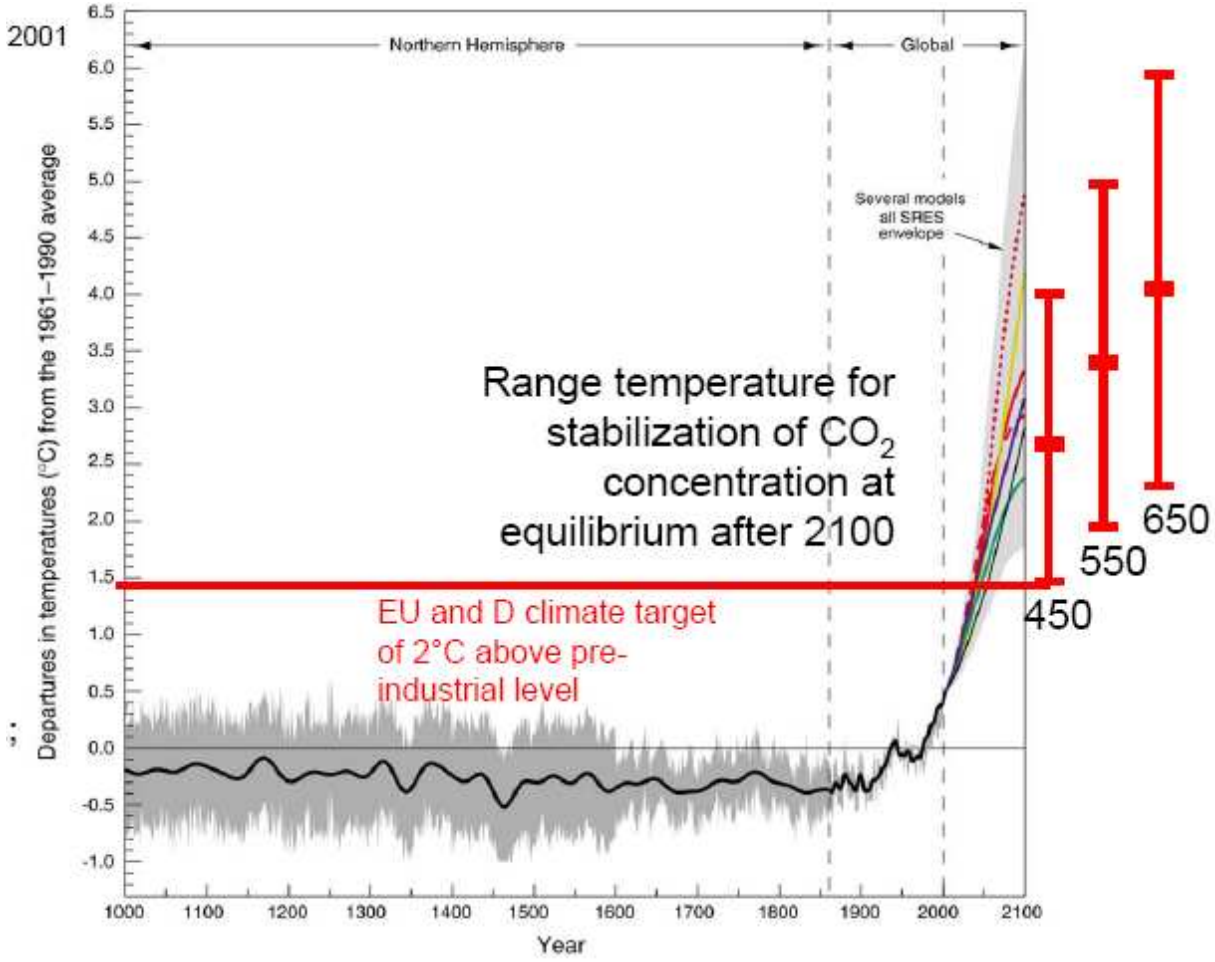
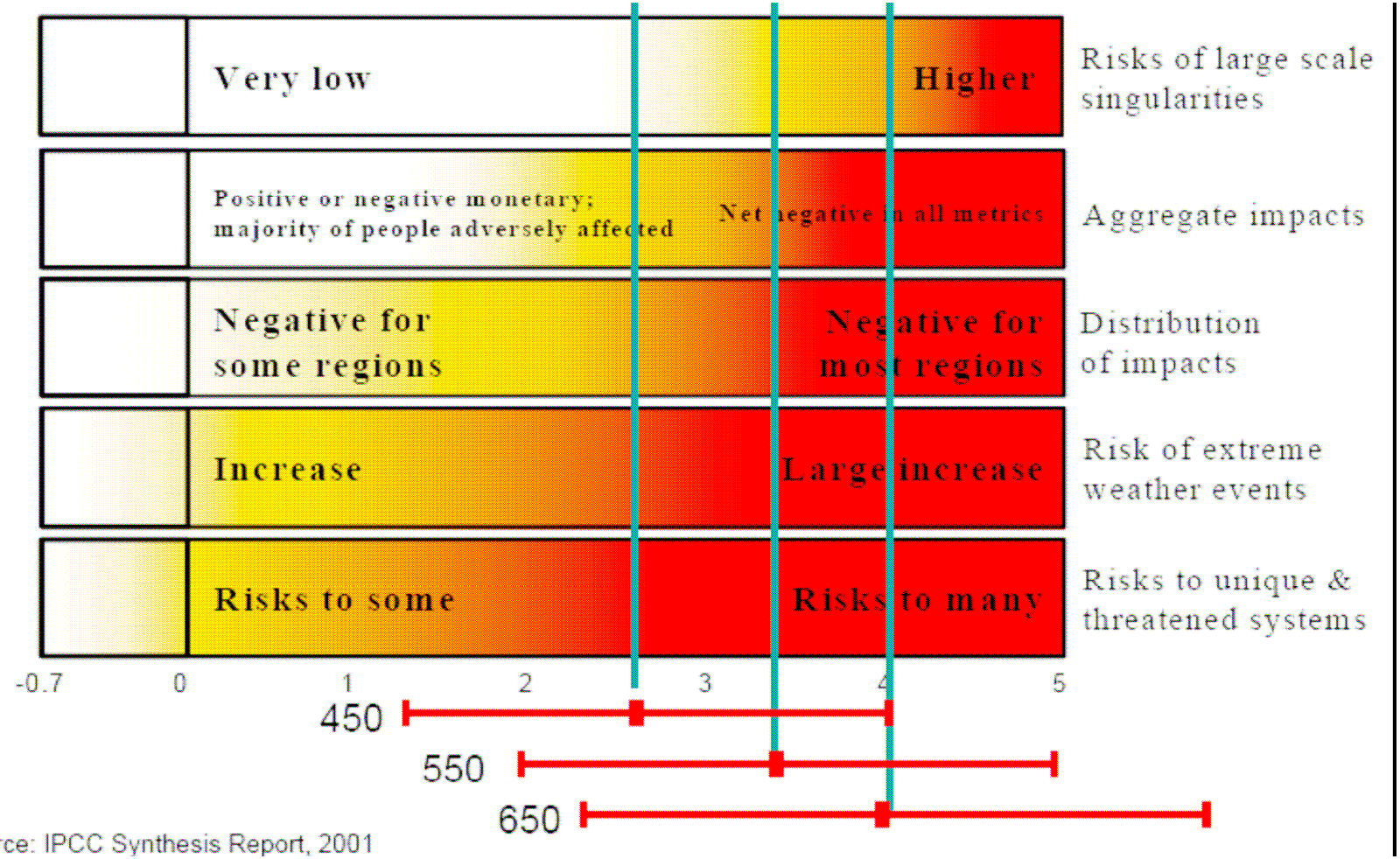
WHY BOTHER?

Stabilized temperatures at different CO2 concentrations

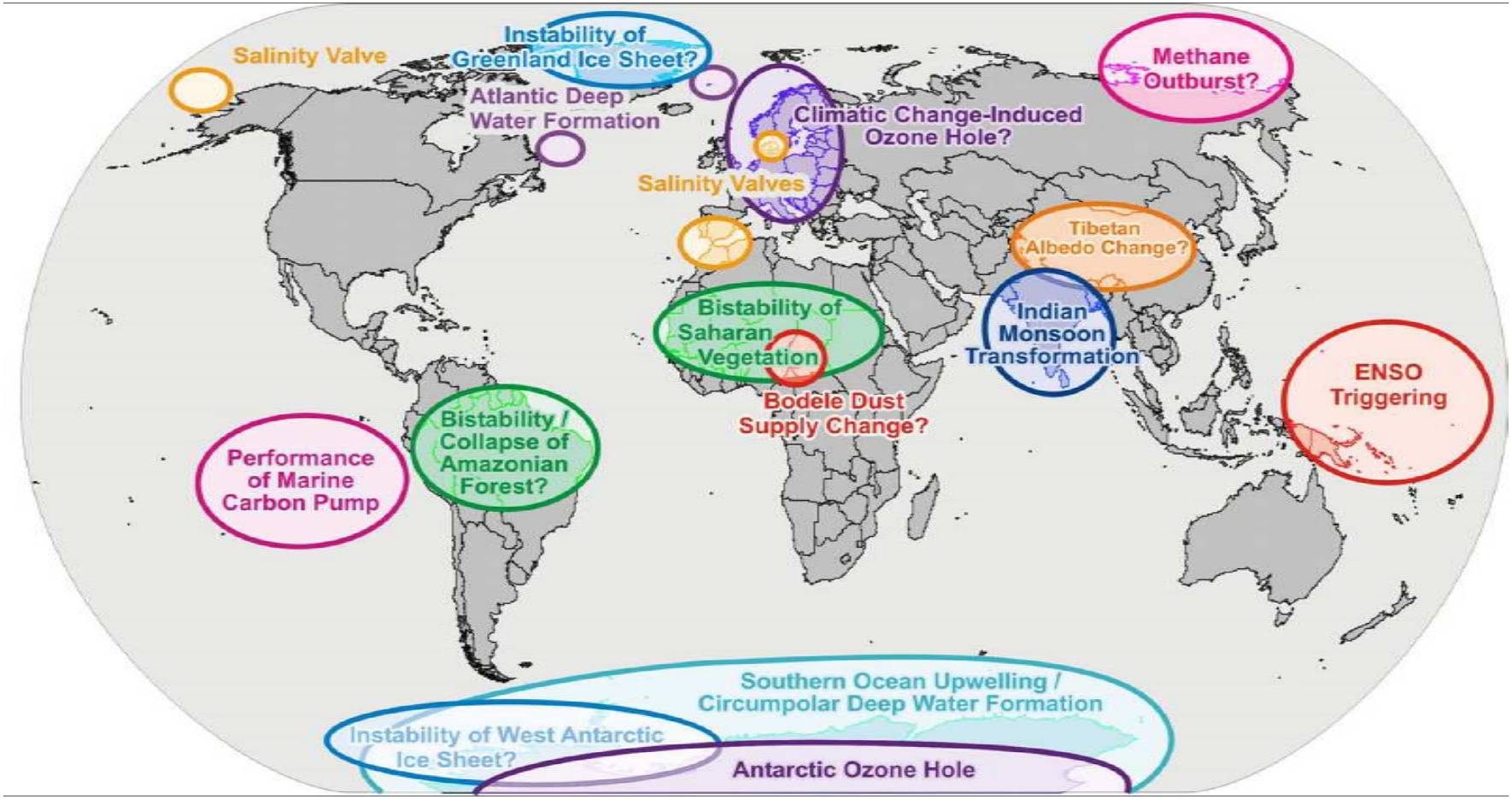


Impacts



Source: IPCC Synthesis Report, 2001

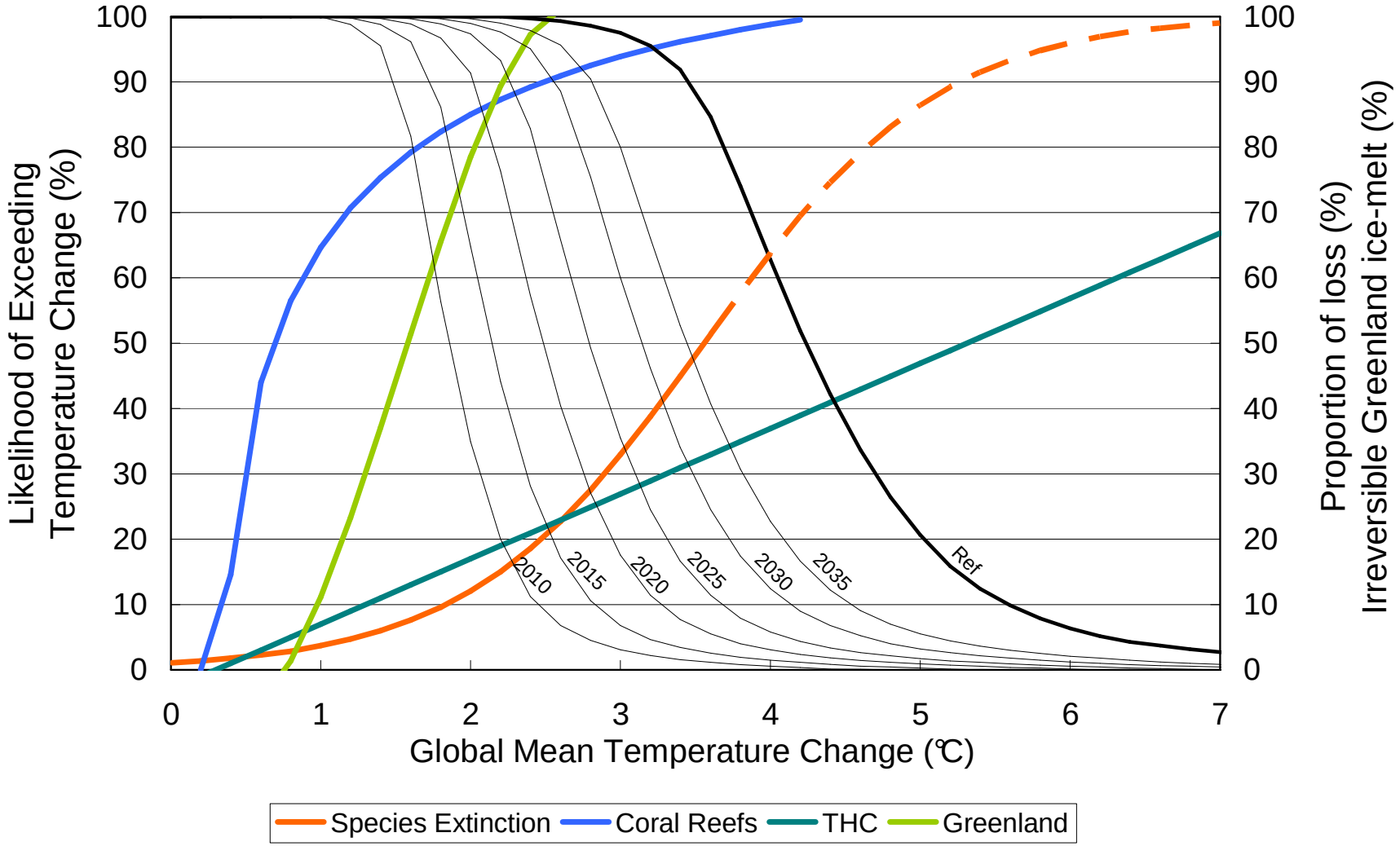
Tipping points in the Earth System



Impacts

- High and multidimensional uncertainties
- Change in mean climate,
- Climate variability,
- Frequency and severity of extreme events,
- Irreversible abrupt change

Warming curves and critical thresholds
Risk Assesment: Roger Jones



Climate policy benefits –

What? Where? When?

What? When? Where?

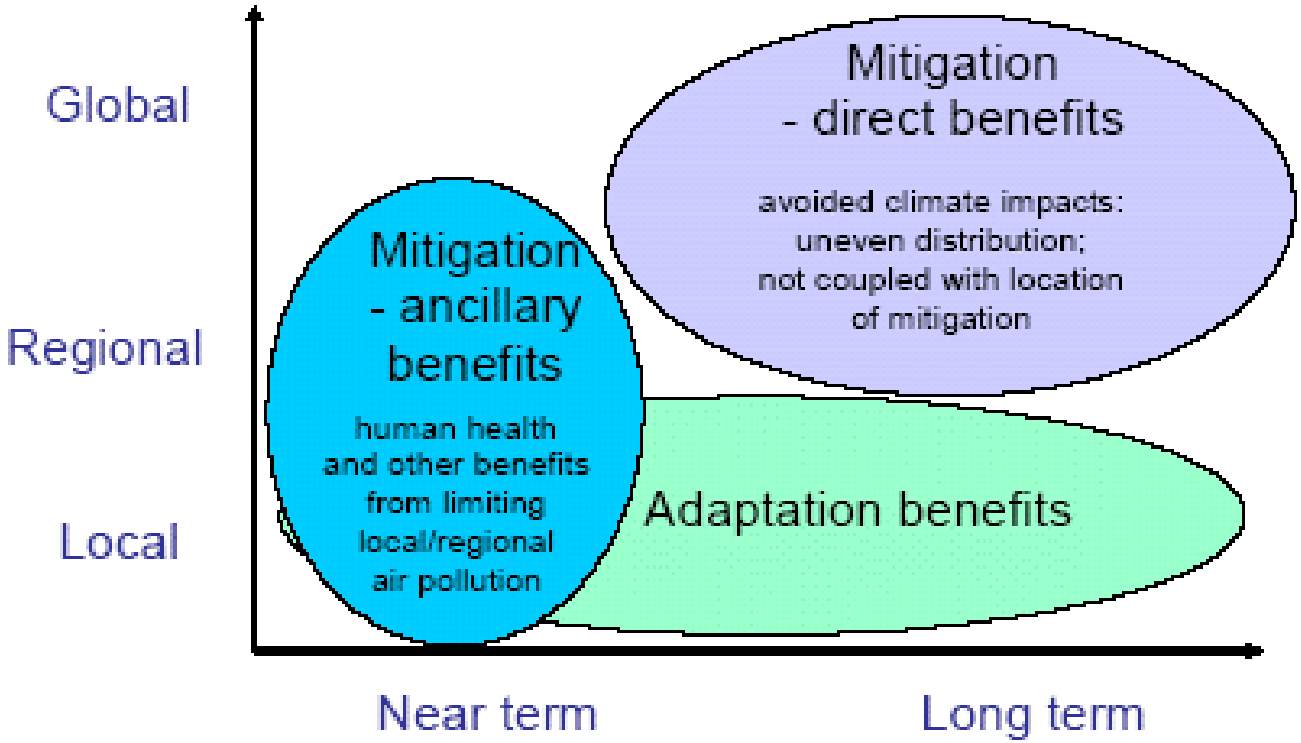


Figure 4. Sector damage relationships with increasing global mean temperature[7]

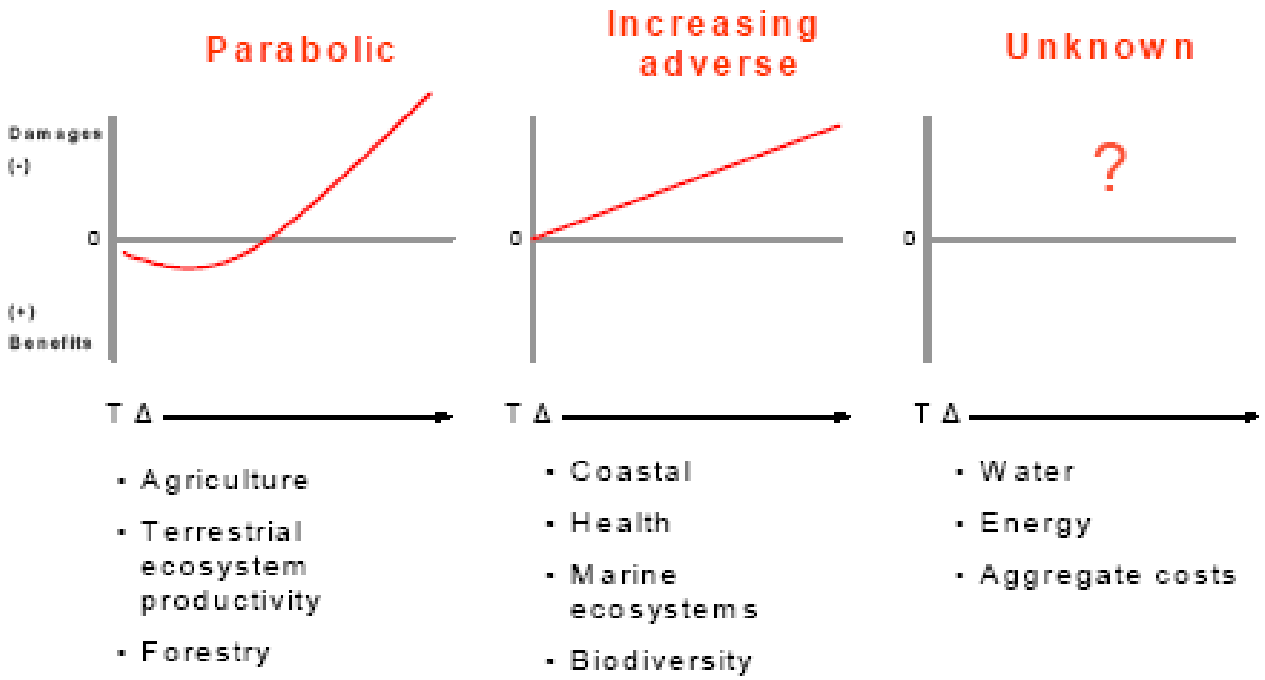
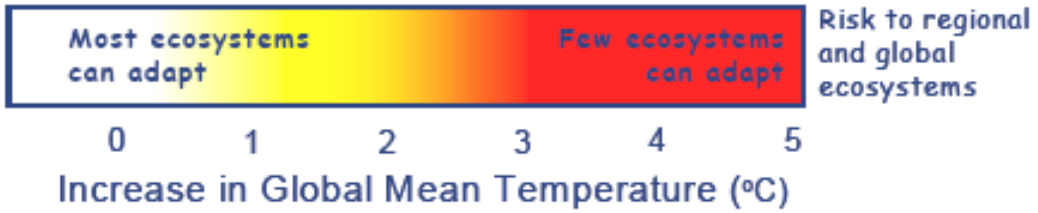
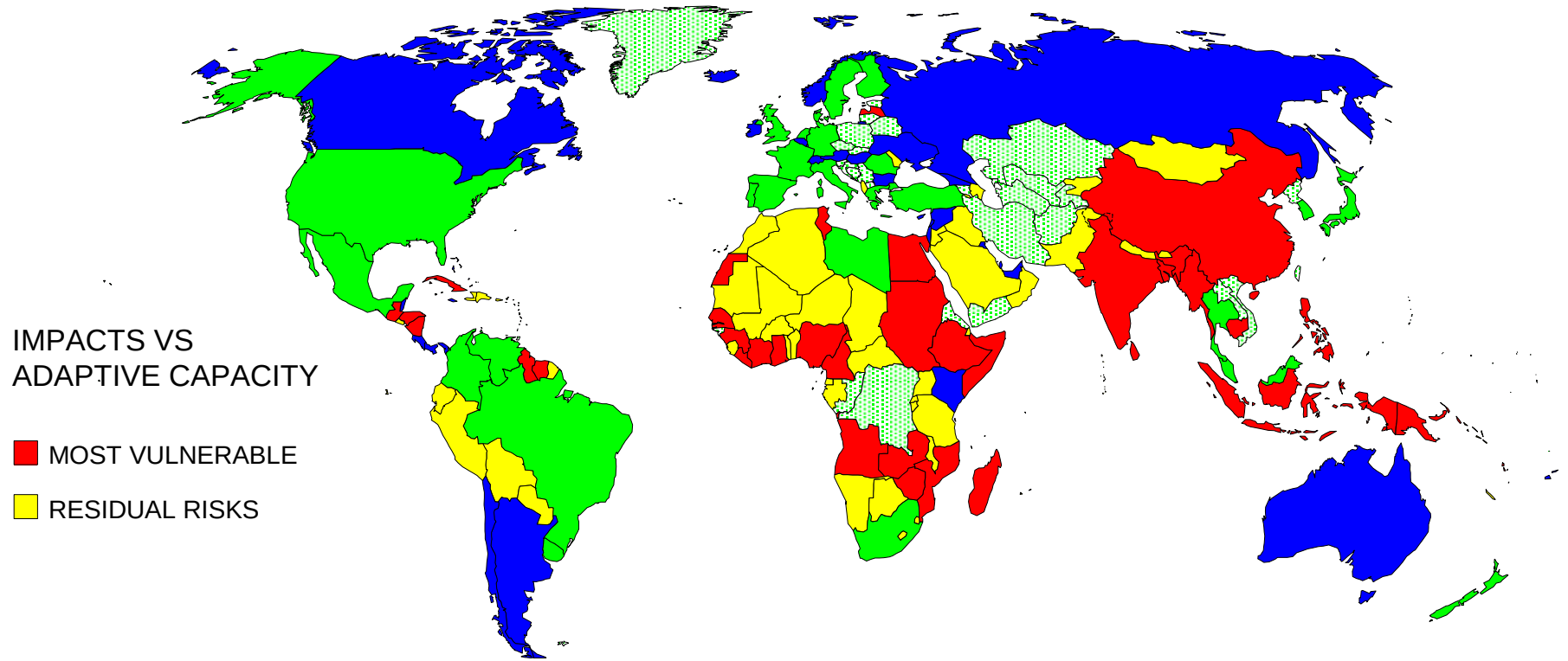


Figure 5. Risk to regional and global ecosystems by global mean temperature increase



Source: OECD 2004

Vulnerability/Equity – Distributional Effects



- Poorer countries likely to be net losers, as more vulnerable

  If adjust impacts across regions makes big difference to results

  Issue of consistency with other policy (UK or EU citizens)

From sectoral and regional to global – from physical to economical:

Aggregation and monetization of impacts

Economic evaluation of impacts

- Value judgements for non-market goods
- Regional aggregation (equity weighting)
- Aggregation across generations (discount rate)
- Prediction of key drivers and impacts into future
- Economic development and climate change policies

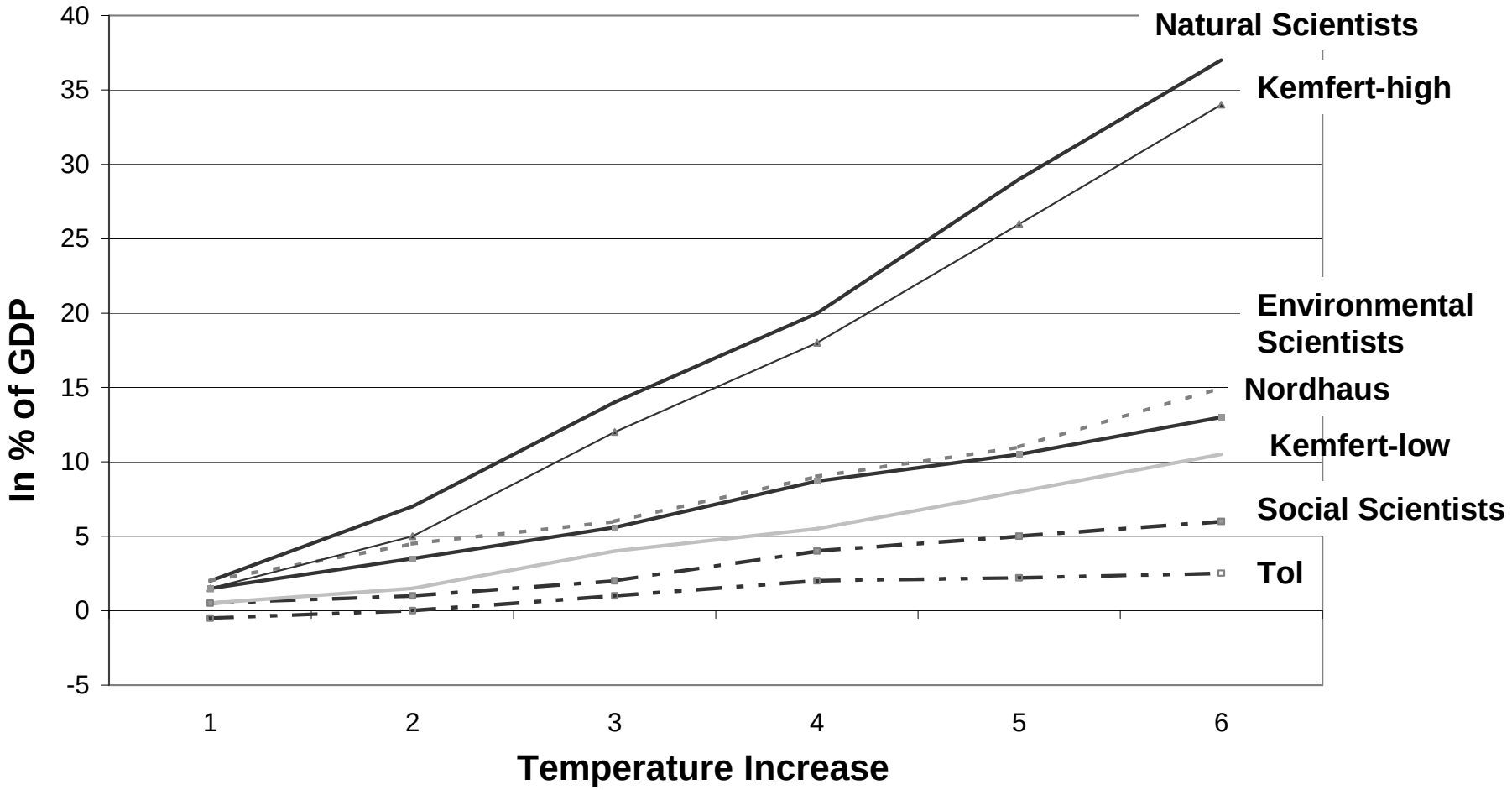
	Market	Non-Market	Socially contingent
Projection	Limit of coverage of some studies, including Mendelsohn; Some studies, e.g. Tol		None*
Bounded risks			None
System change/ surprise	Limited to Nordhaus and Boyer/Hope	None	None

Models only have partial coverage of impacts

Values in the literature are a sub-total of impacts

Source: Tom Downing and Paul Watkiss

Economic Damages in % of GDP



Source: OECD (2003) and Kemfert (2004)

What to draw from the existing and where to go from here?

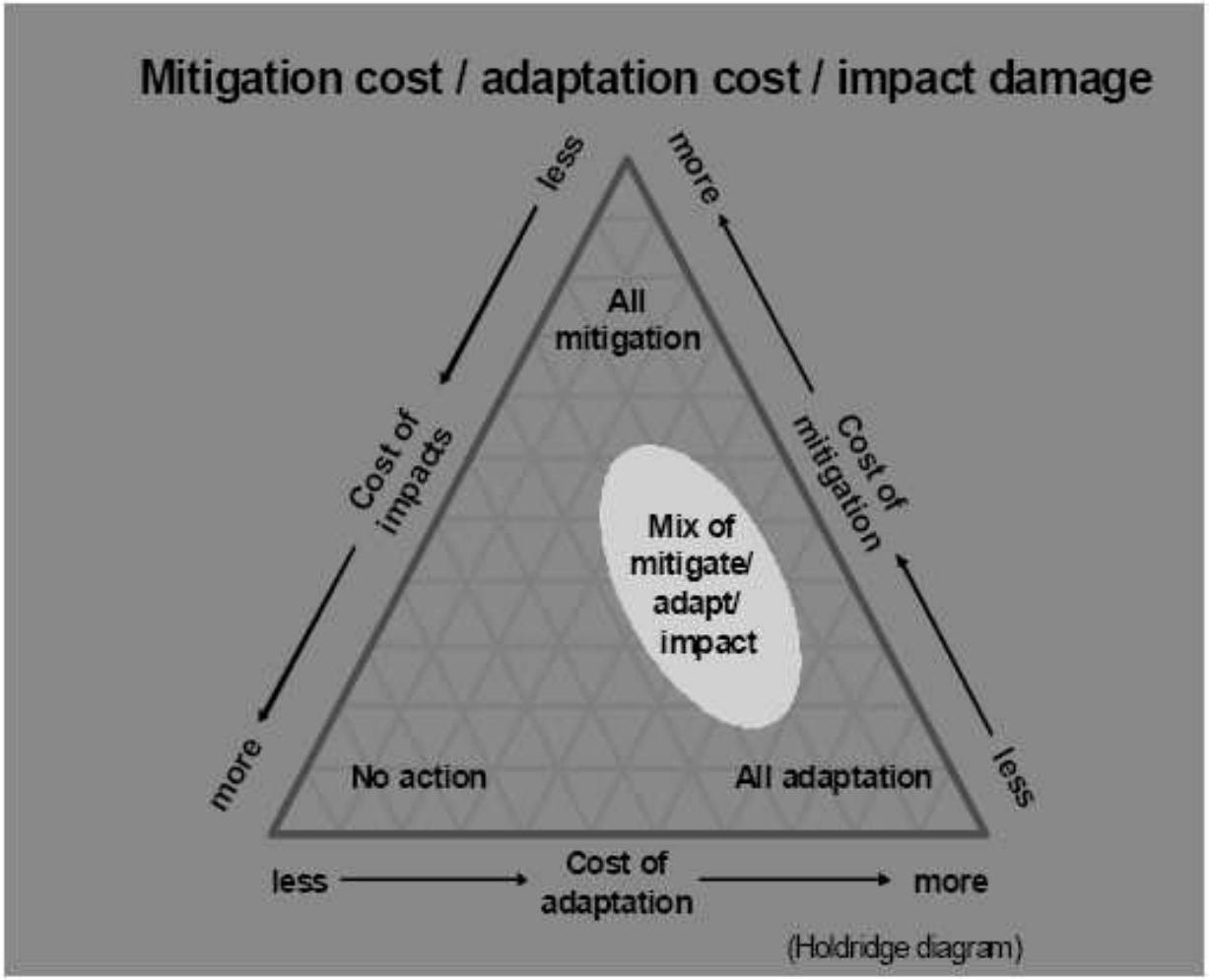
OECD study: Coherent set of indicators and research strategy

- Research and identify physical variables for impacts
- Tackle regional physical variables by sector
- Conduct economic valuation leading to a set of regional monetary variables
- Attempt to assess monetized aggregate benefits
- Goal: to have consistent and comparable regional information so that impacts associated with levels of global mitigation can be assessed.

From Science to Business and Policy: What benefits research needs to do….

- more research to reduce uncertainties
- synthesis of research into some coherent measure or set of measures for policymakers and the public to understand and weigh the benefits

But still: Decision between mitigation, adaptation and damages



Questions:

- Adaptation and mitigation efforts: Trade-offs or complements? Dynamics?
- Adaptation limitations, e.g. in case of abrupt climate change?
- Can we measure adaptation? Who will pay for adaptation? Where?
- Do we need (aggregate) economic valuation? Or an alternative global assessment/measure?
- Can we analyze winners and losers separately (Paul Watkiss)?
- Is probability distribution sufficient for policy makers and business?
- What kind of decision making framework would do?
- Business/industry vs. policy makers: Who will be first to (re)act?
- How do integrated assessment models help?
- How would they be improved?

- What are the next steps in the research agenda?

Thank you!

Open floor for discussion