

DIW Berlin

Deutsches Institut
für Wirtschaftsforschung

www.diw.de

WRAP - UP

- Lessons learned
- Agenda for future action

Cost of Inaction Workshop

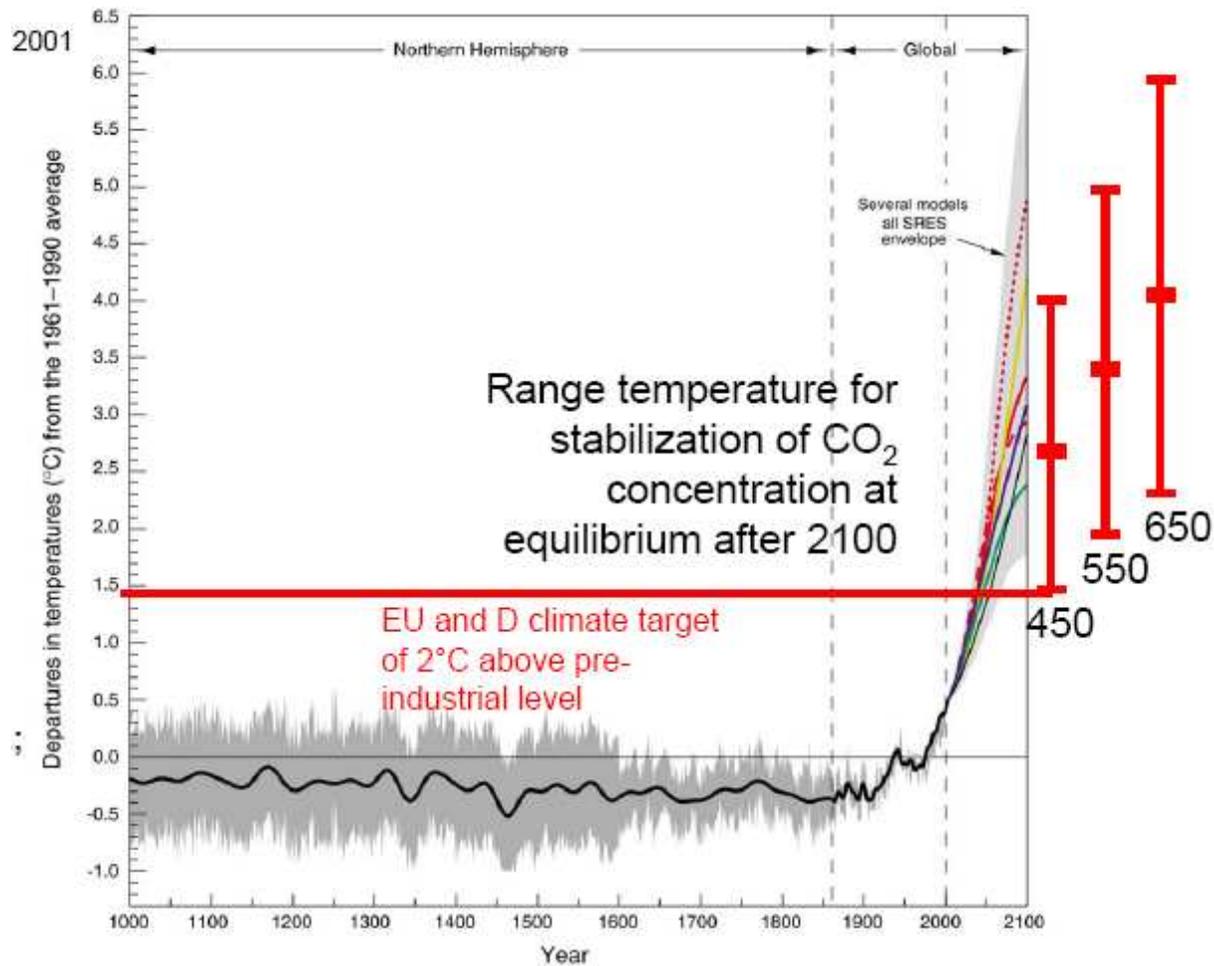
Katja Schumacher
April 11, 2006

CLIMATE CHANGE

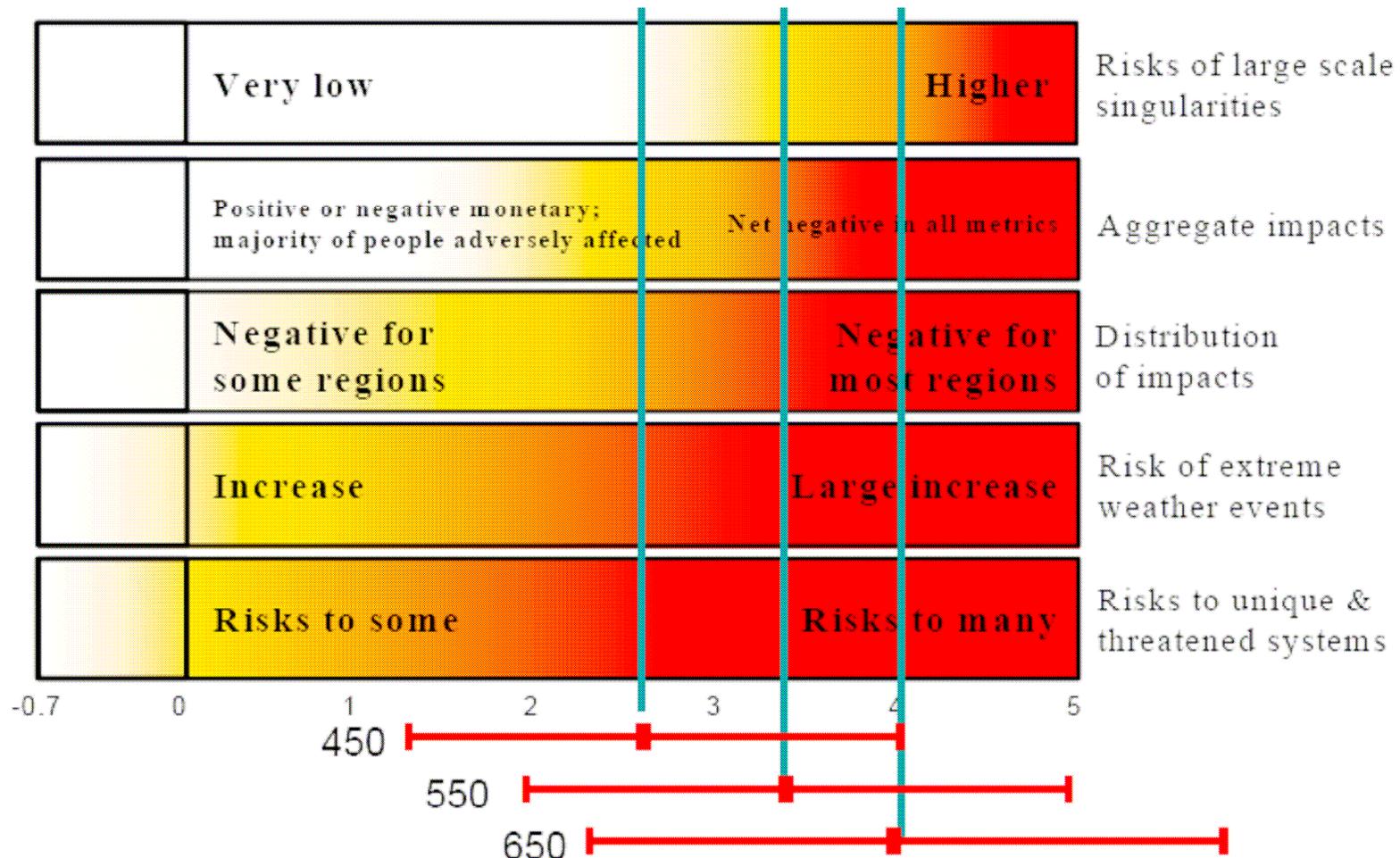
—

WHY BOTHER?

Stabilized temperatures at different CO2 concentrations

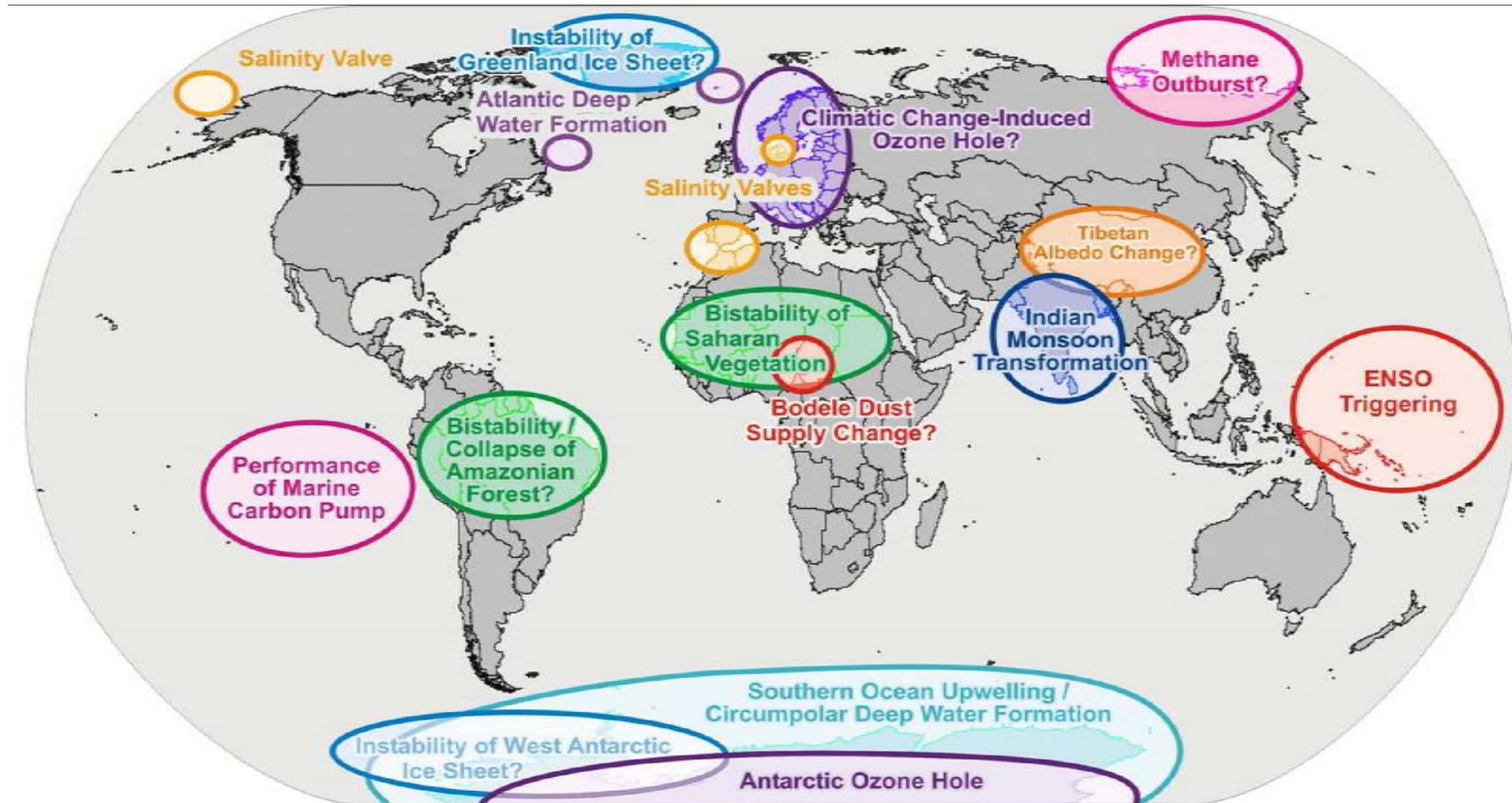


Impacts



Source: IPCC Synthesis Report, 2001

Tipping points in the Earth System

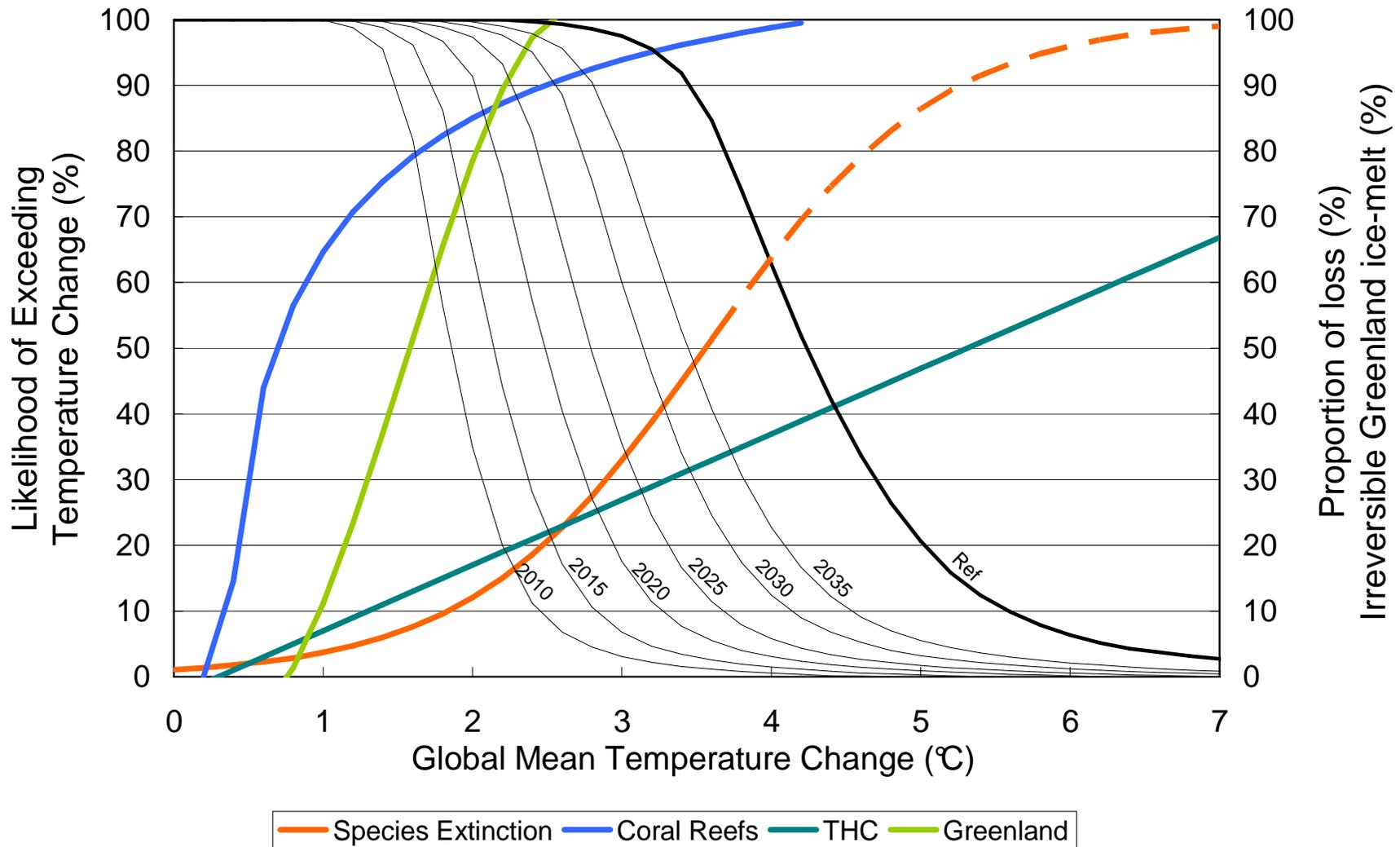


Impacts

- 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 Assessment: Roger Jones



Climate policy benefits –

What? Where? When?

What? When? Where?

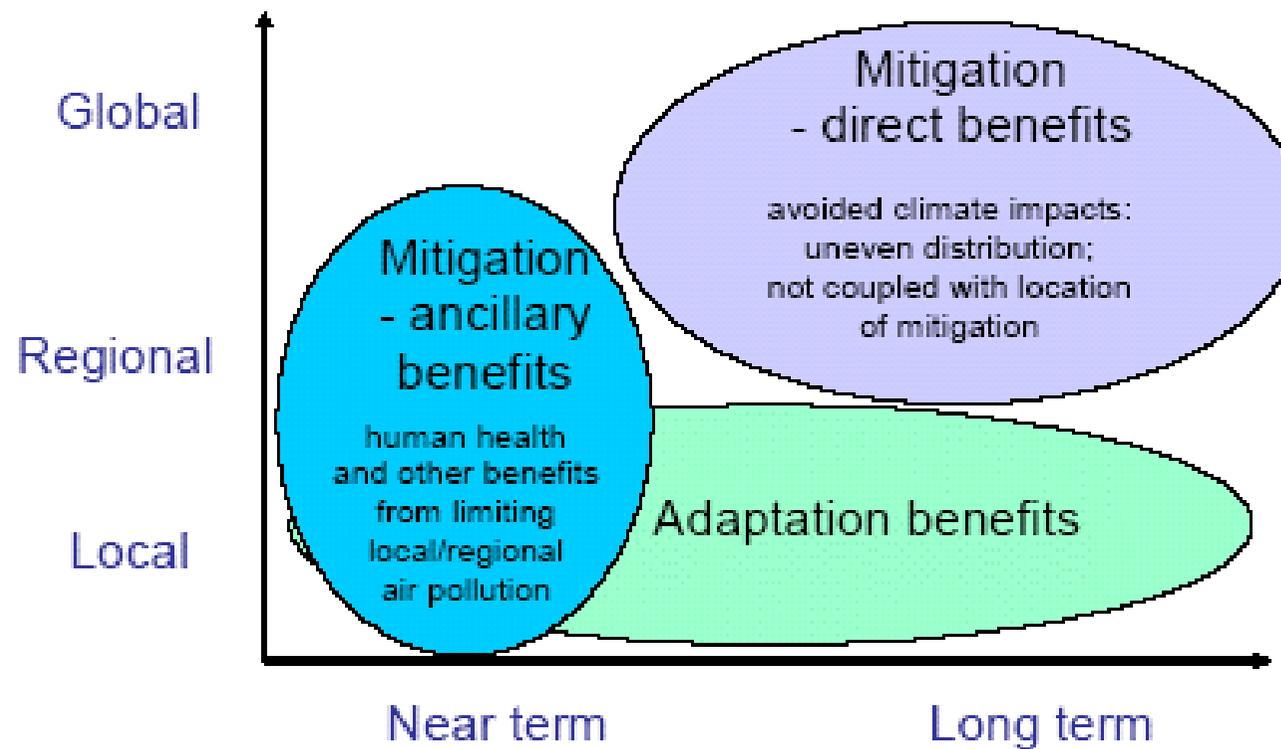


Figure 4. Sector damage relationships with increasing global mean temperature⁷

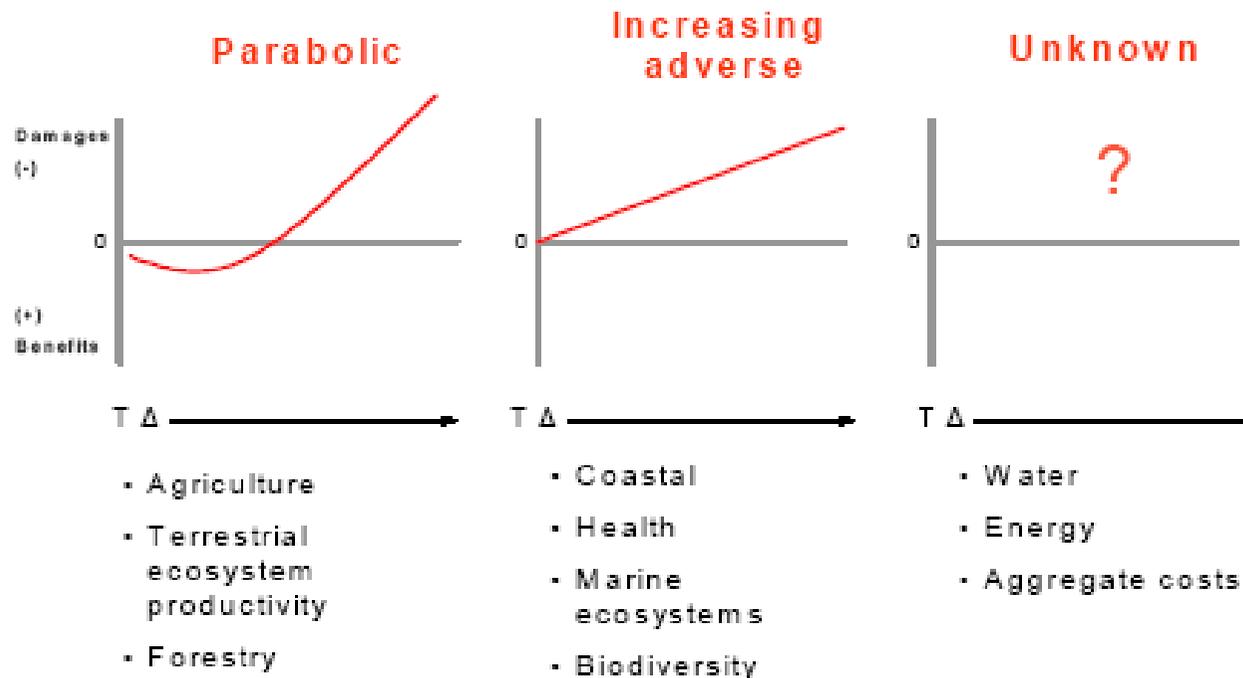
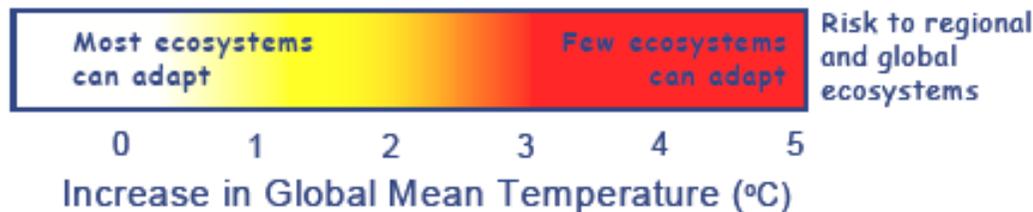
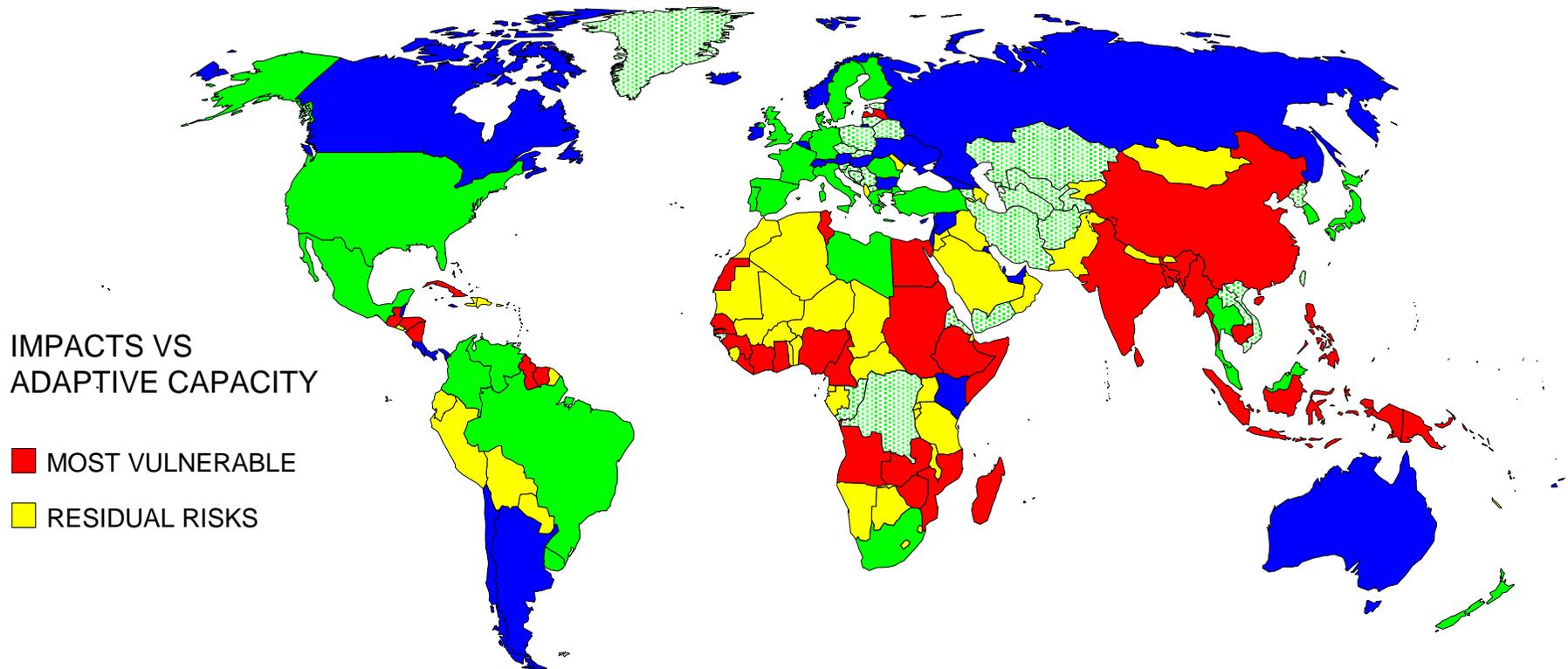


Figure 5. Risk to regional and global ecosystems by global mean temperature increase



Source: OECD 2004

Vulnerability/Equity – Distributional Effects



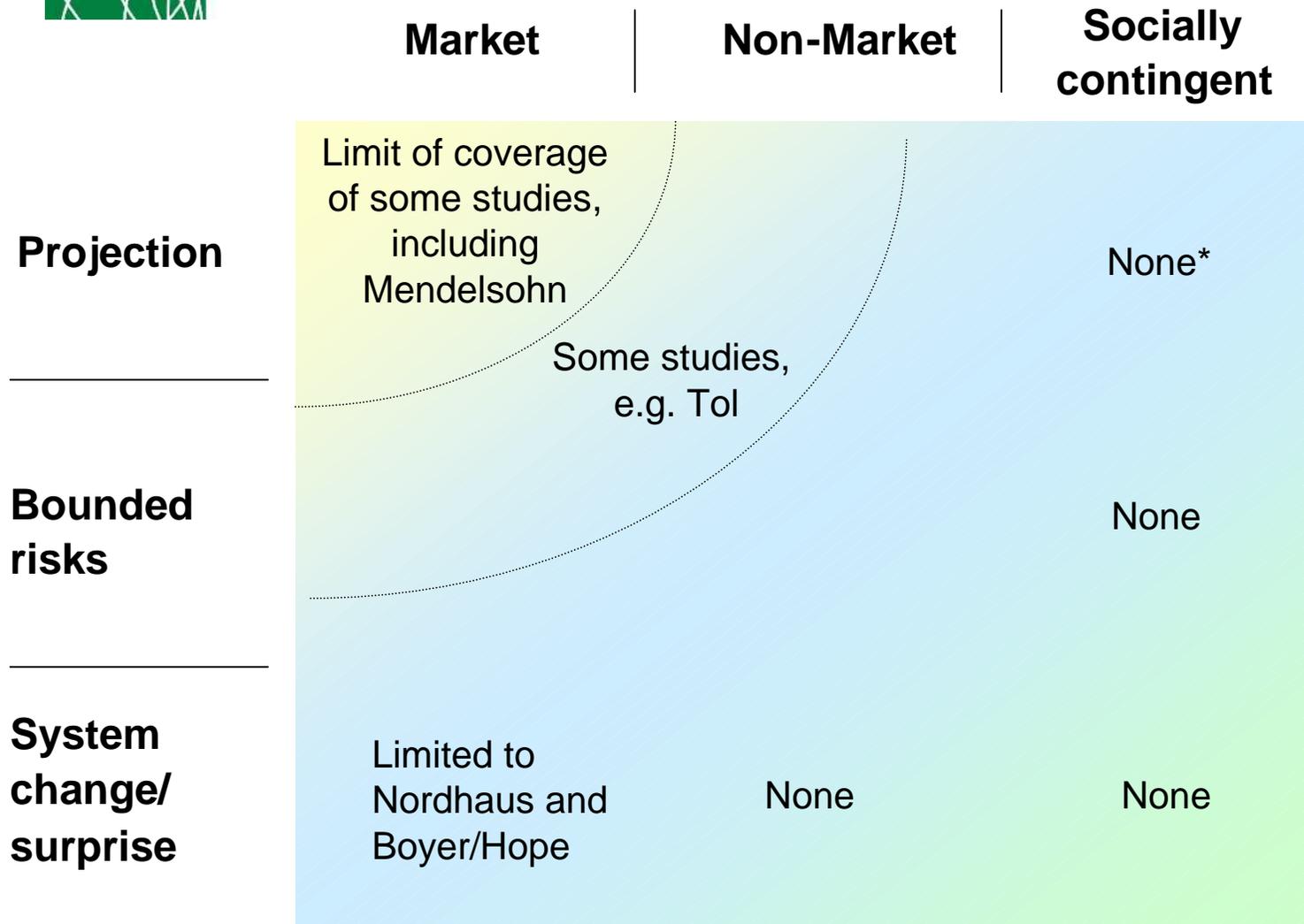
- Poorer countries likely to be net losers, as more vulnerable
 - If adjust impacts across regions makes big difference to results
 - Issue of consistency with other policy (UK or EU citizens)

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

Aggregation and monetization of impacts

Economic evaluation of impacts

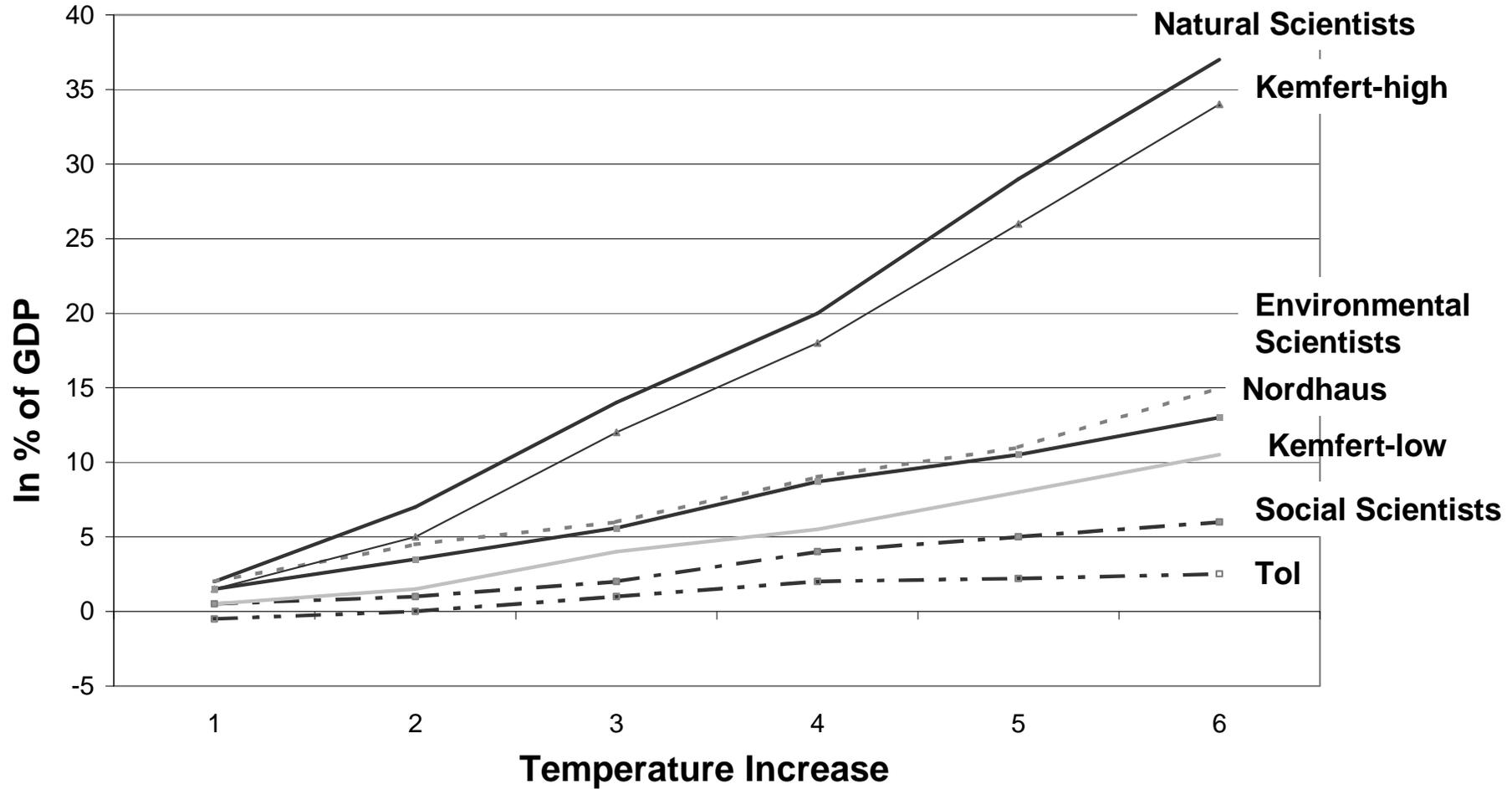
- Value judgements for non-market goods
- Regional aggregation (equity weighting)
- Aggregation across generations (discount rate)
- Prediction of key drivers and impacts into future
- Economic development and climate change policies



Models only have partial coverage of impacts

Values in the literature are a sub-total of impacts

Economic Damages in % of GDP





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

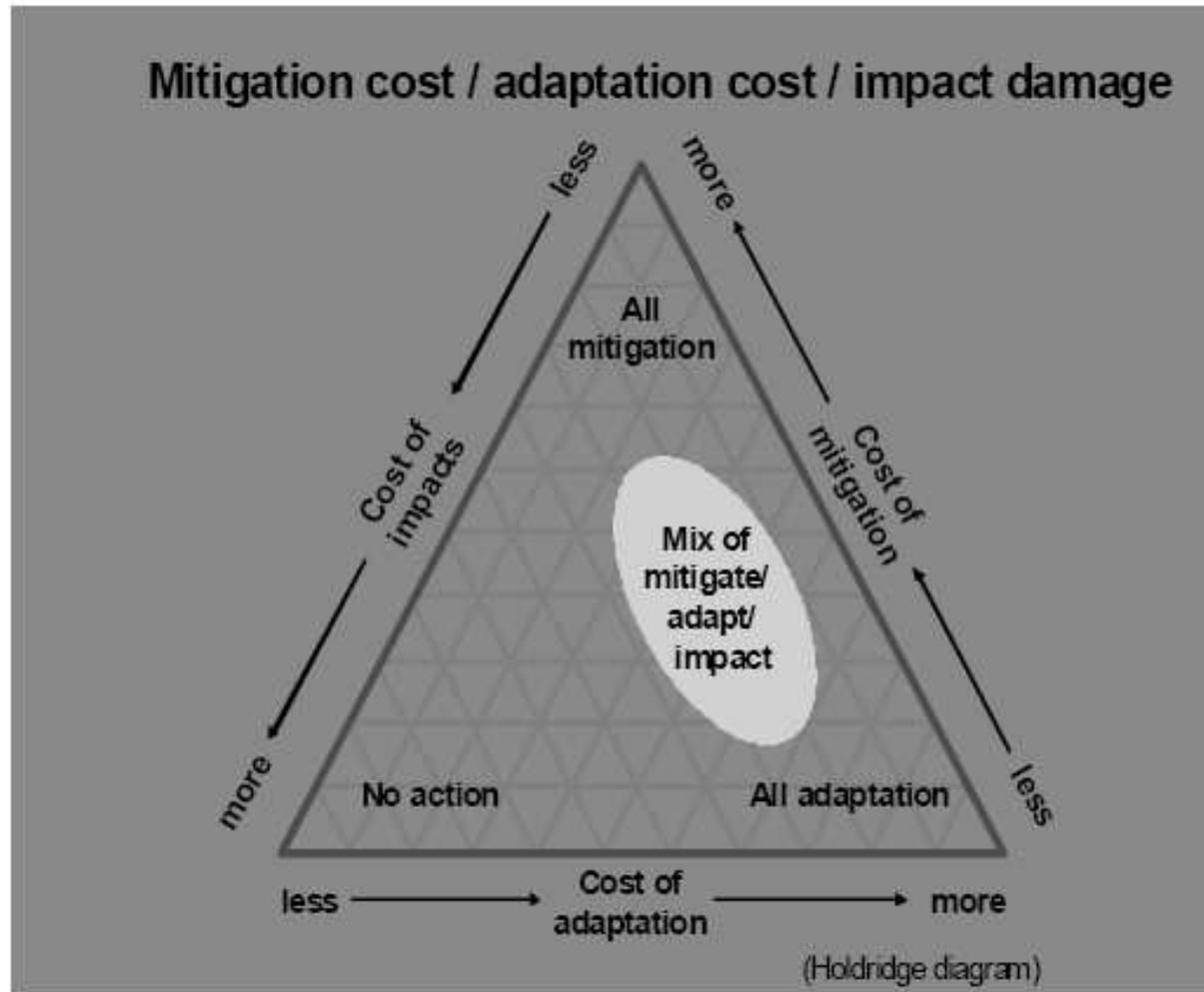
OECD study: Coherent set of indicators and research strategy

- 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