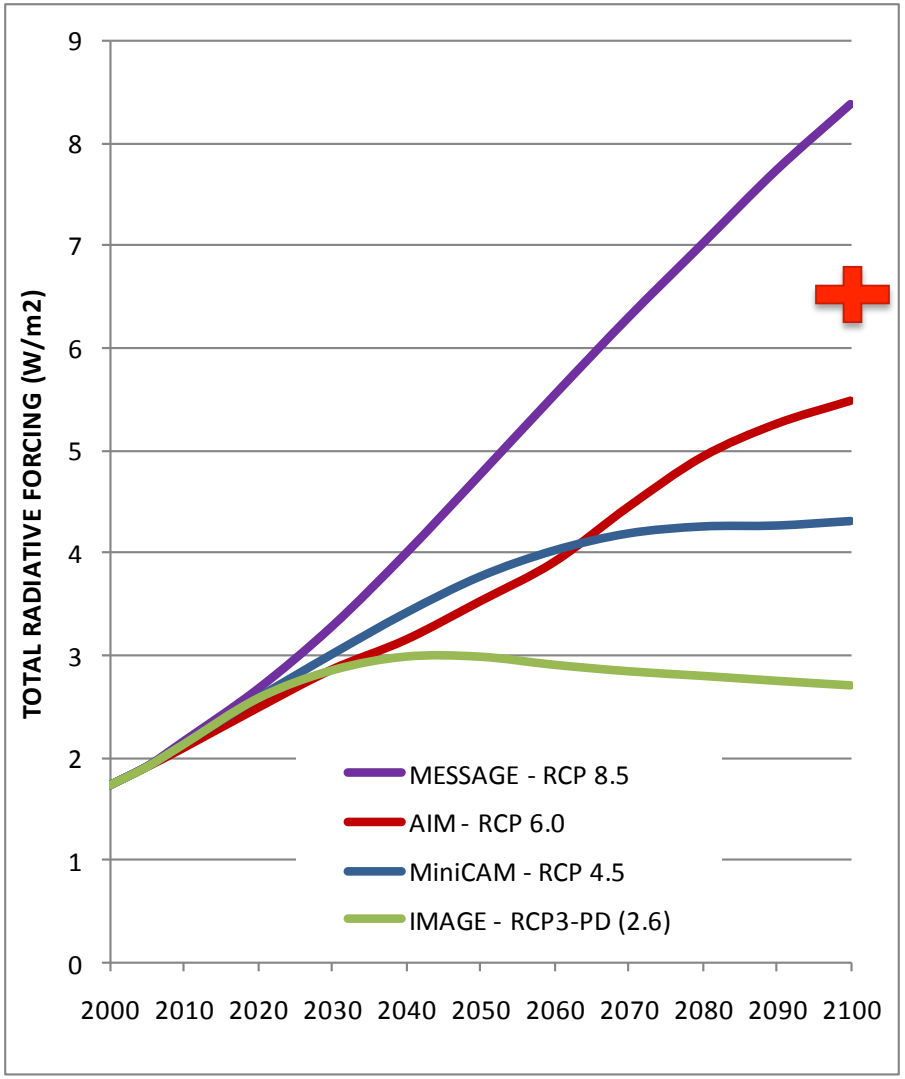
1. Outline

1. Dialogue inter WGIII
   - Exploring the impact of climate change on mitigation capacity
   - Exploring the equity, efficiency, political acceptability space

2. Dialogue with WGII
   - Alternative storylines that deliver the same level of radiative forcing

- Goal: reduce the dimensionality of the problem

2. WITCH and the RCPs



BaU Scenario

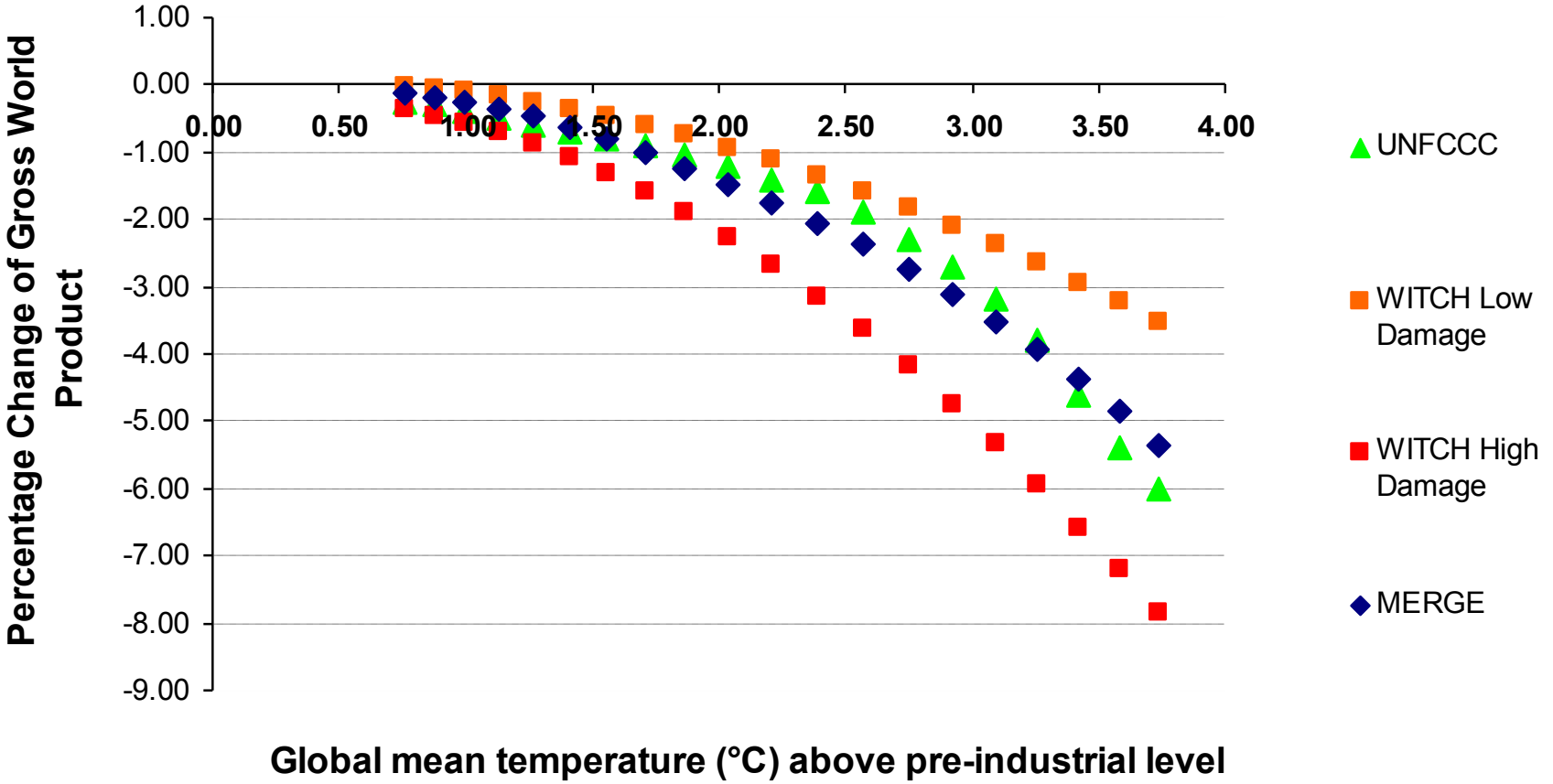
3. Impacts on mitigation capacity

1. Climate change feedback on the economy
   - Standard damage function
   - Extensive work to have a new generation impact model (CLI-EMA, GLOBAL-IQ, YALE-FEEM Partnership)
   - Cost-benefit for fine-tuning of climate policy

2. Adaptation and Mitigation
   - Endogenous adaptative capacity

3. Impact of climate change on mitigation capacity

4. Damage function - global



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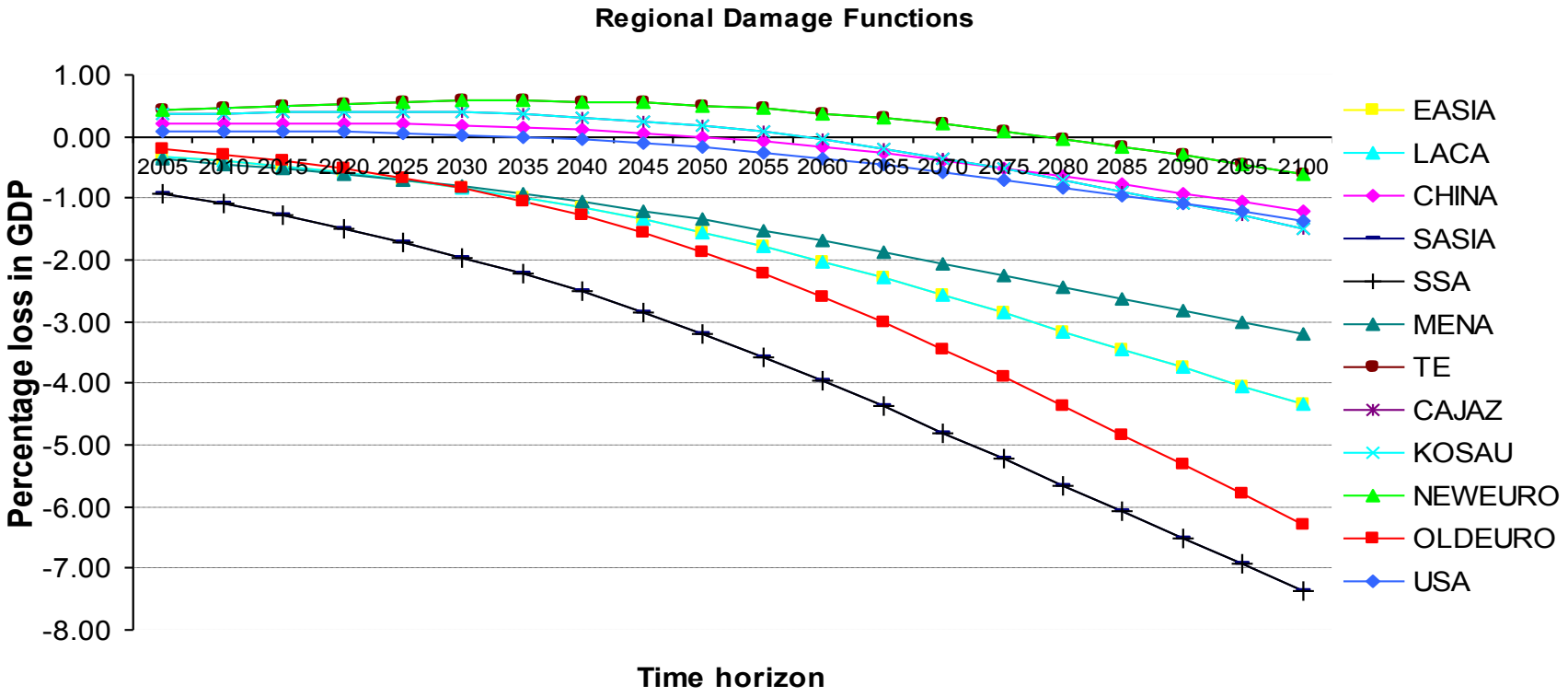
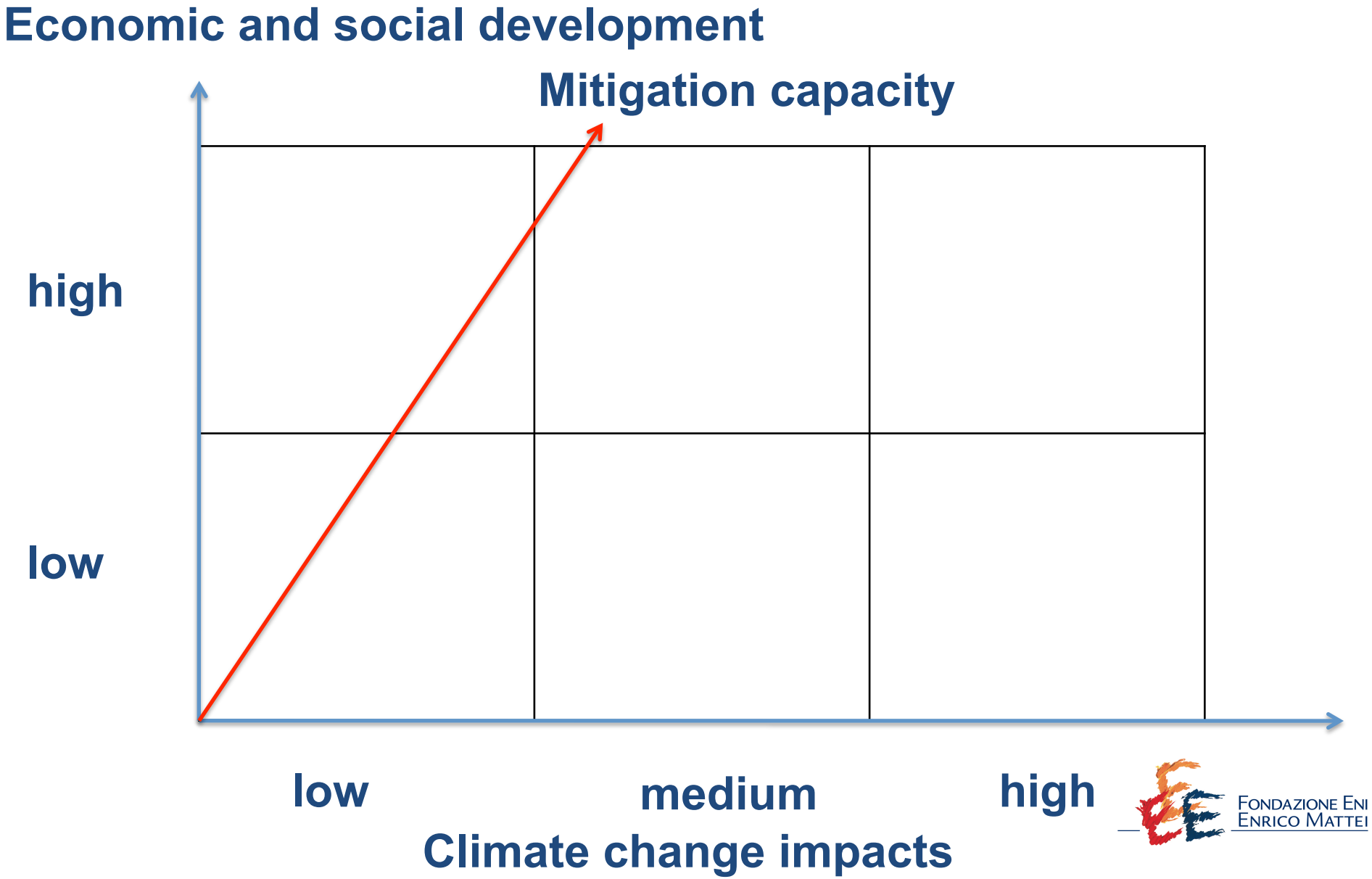
5. Damage function - regional



+ 2.5ºC - WITCH high damage function

6. Mitigation capacity



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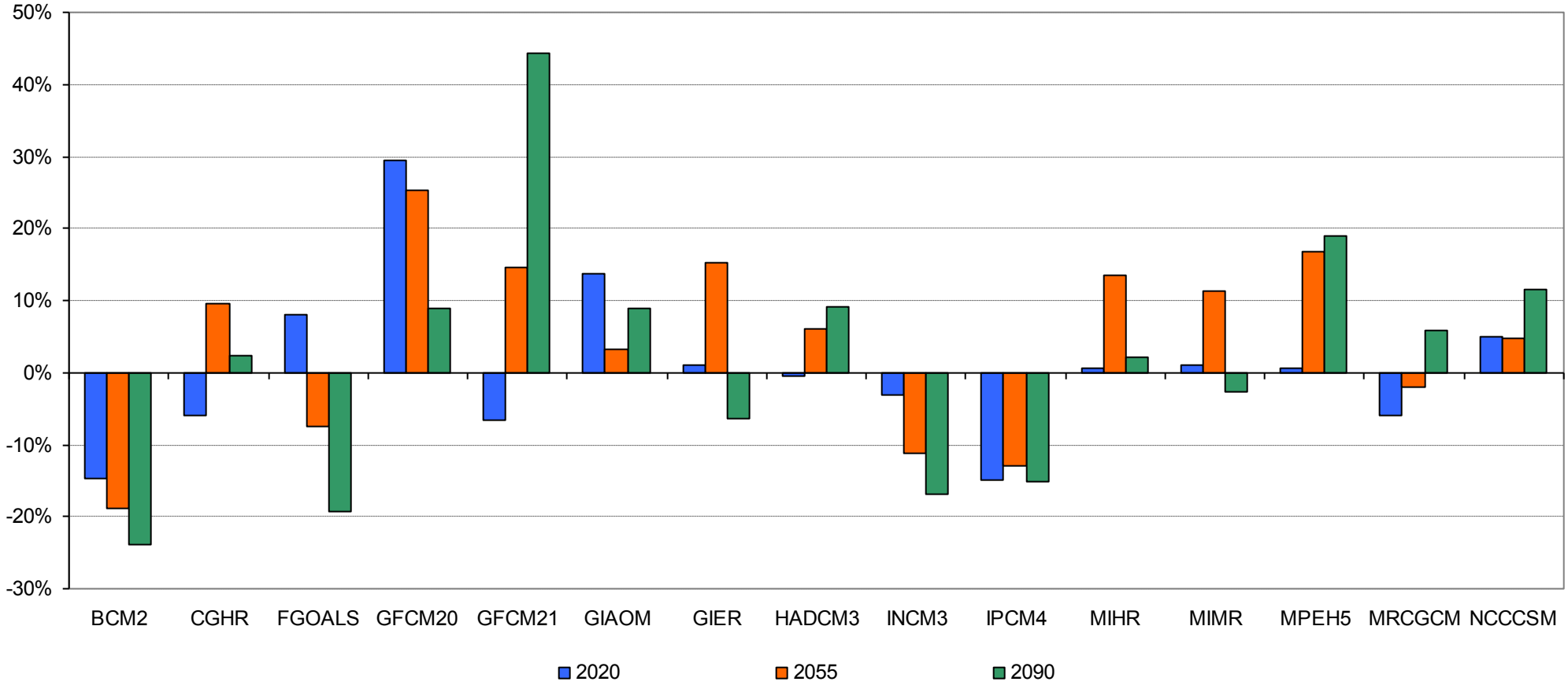
7. New impact model

- Joint work with Robert Mendelsohn at Yale University
- Regional impacts on most sensitive sectors integrated into a single framework
- Compatible with most IAMs

8. Impact as % of US land value



- SRES B1 - 1.1-2.9 ºC in 2100

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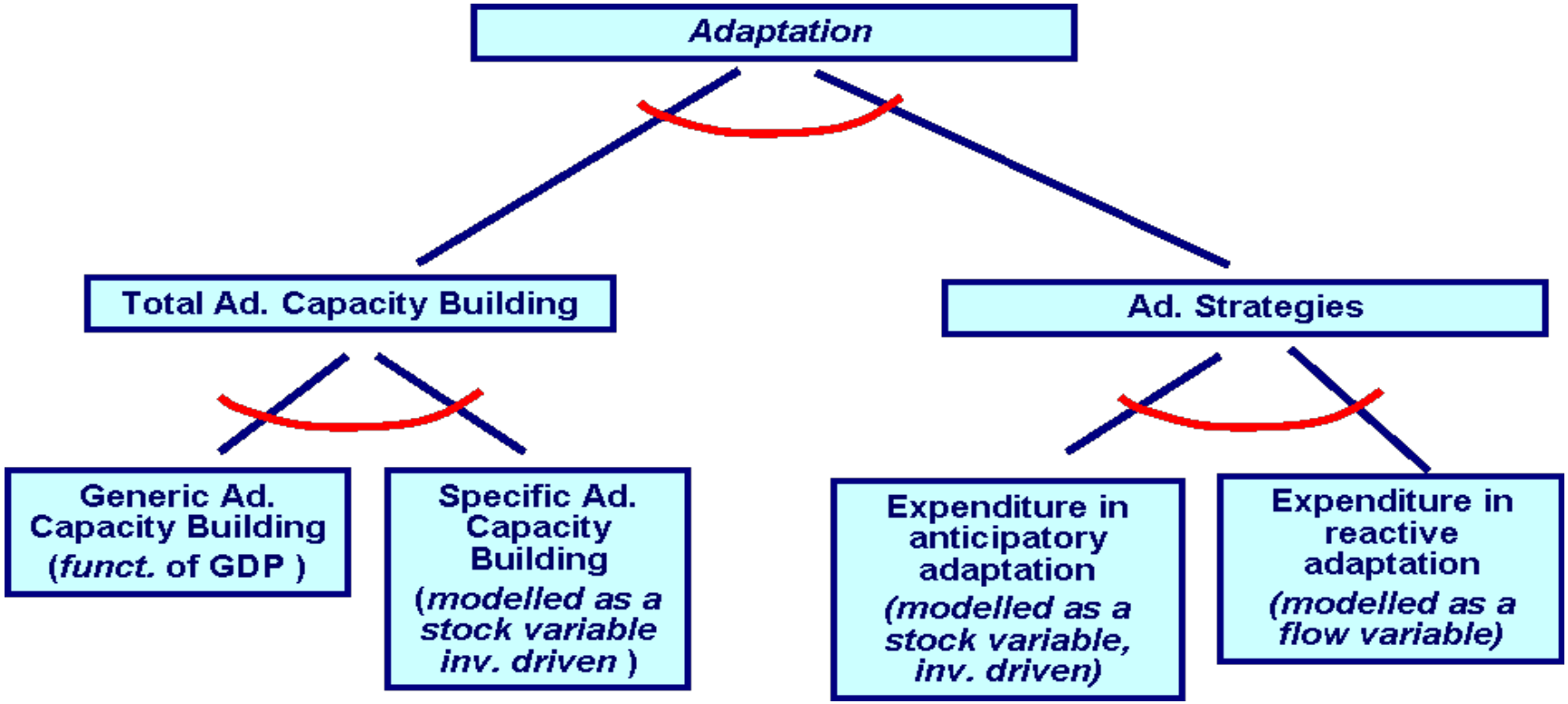
9. Adaptive capacity in WITCH



10. Equity-efficiency

Robustness of incentives

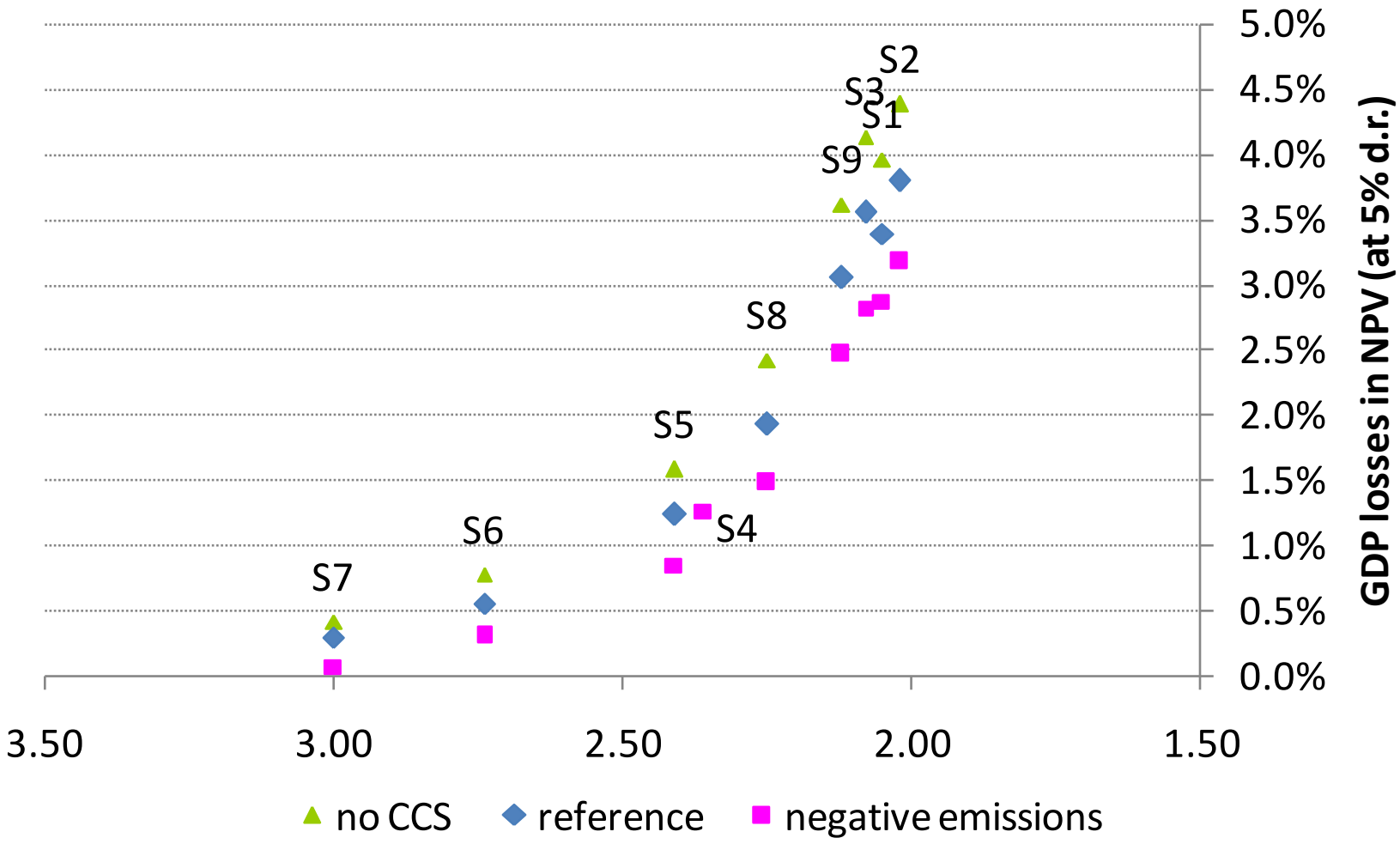
- Coalitions' stability

Analysis of second-best policy tools

- Sub-regional markets (or non uniform carbon pricing) vs domestic carbon taxes or global carbon markets

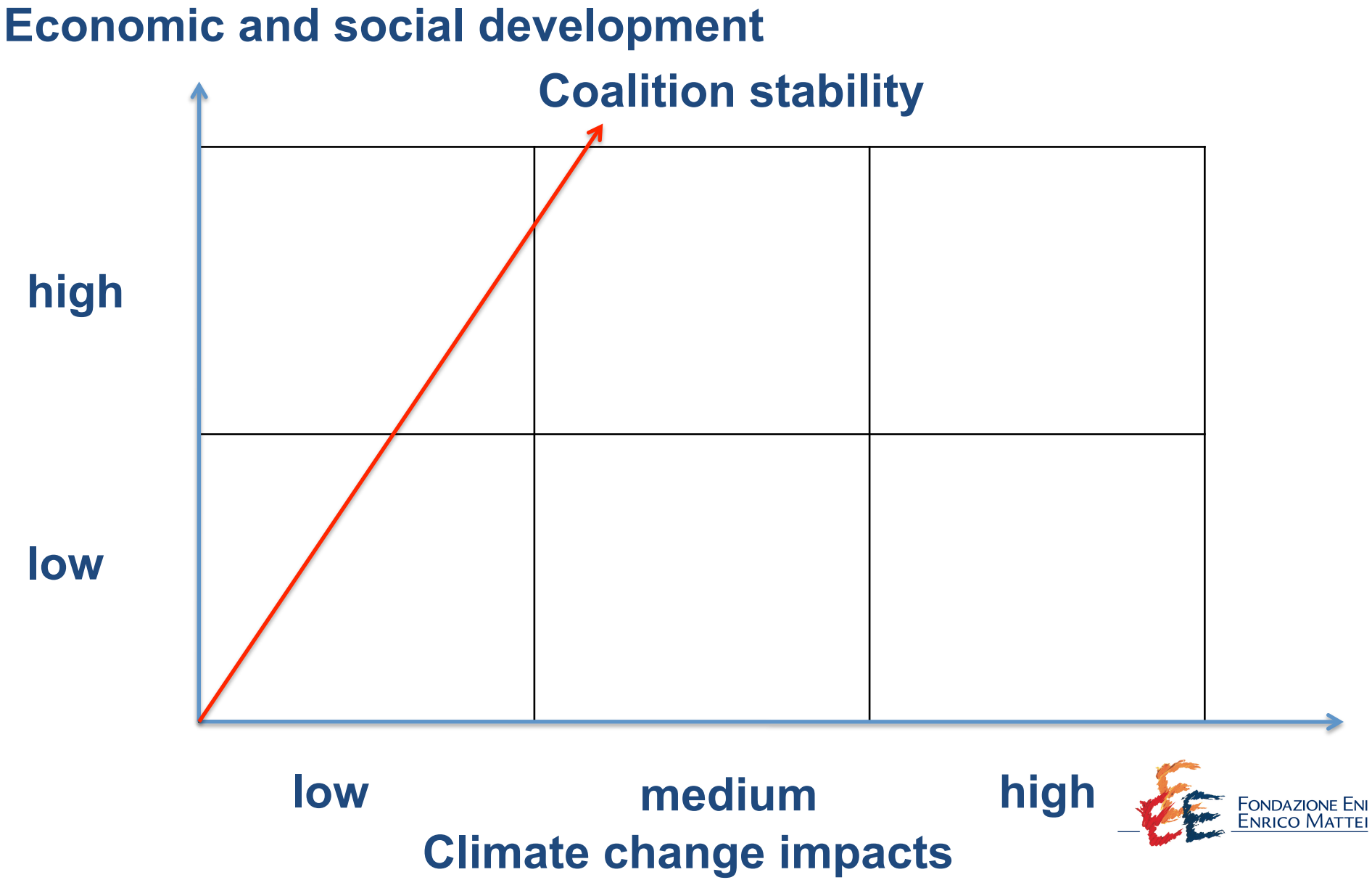
Are the scenarios that we draw plausible from a climate policy point of view?

11. Potential for cost-benefit analysis



Extremely important for the analysis of coalition stability

12. Mitigation capacity



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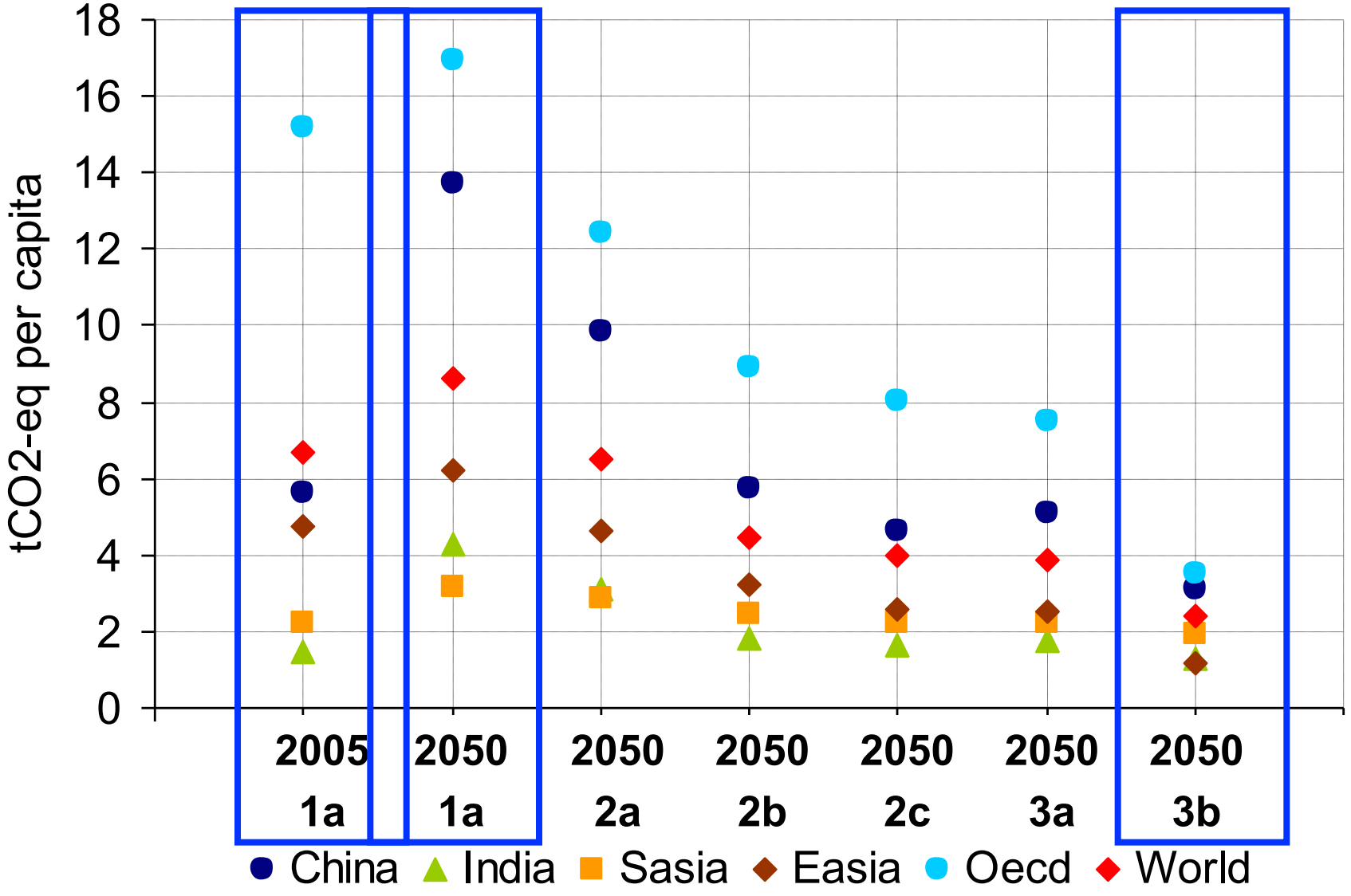
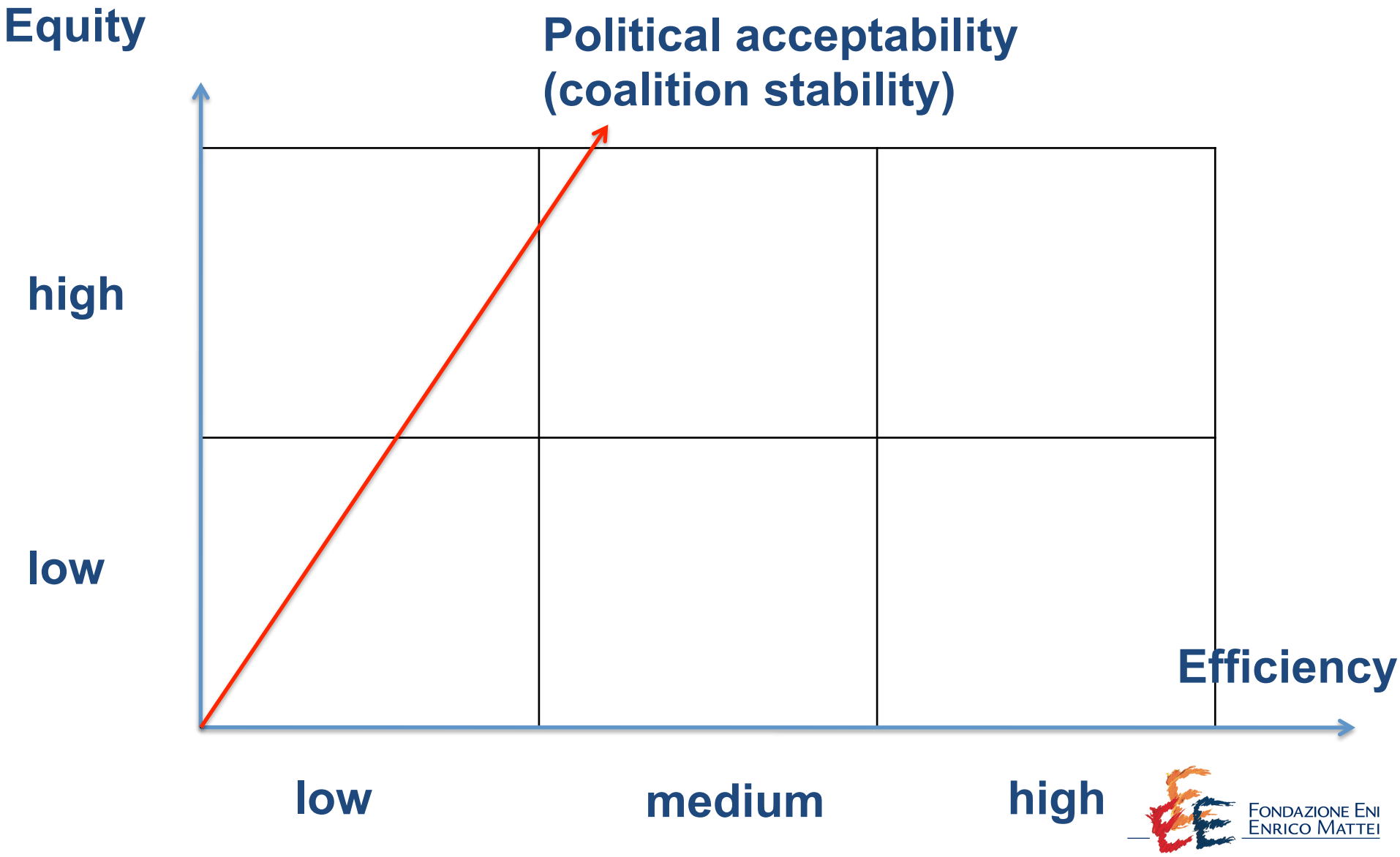
13. Implications of carbon taxes



14. A three-dimensional matrix



15. Dialogue with WGII community

- The "political feasibility" filter would restrict very much the group of relevant SSPs

- Focus on SSPs that create a significant variation of a few key variables (GDP, level and distribution, technological progress…) for any (policy relevant) level of radiative forcing

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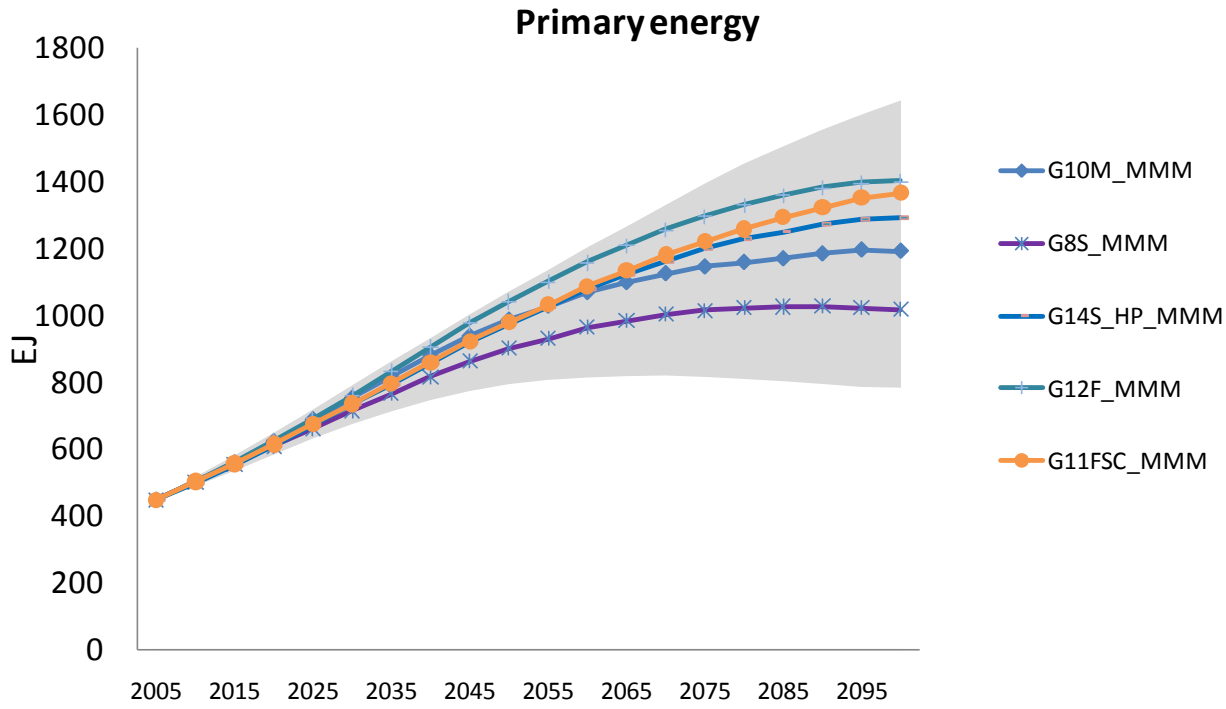
16. The Rose Project

Scenarios developed in the ROSE project => compare effects of different assumptions on

1. Fossil fuel resources (oil, gas, coal)
2. GDP growth and convergence
3. Population growth



17. Alternative scenarios - Pashmina

EU FP7 PASHMINA Project - http://www.pashmina-project.eu/

- Scenario 1: Growing beyond limits: featuring the strengthening of corporate capitalism
- Scenario 2: Growing within limits: a low-carbon economy and adequate biodiversity protection can be achieved with currently identifiable technologies
- Scenario 3: New welfare / beyond GDP: new techno-economic and social paradigm emerges
- Scenario 4: Turbulent decline: failure to manage common goods, economic, societal and environmental collapse

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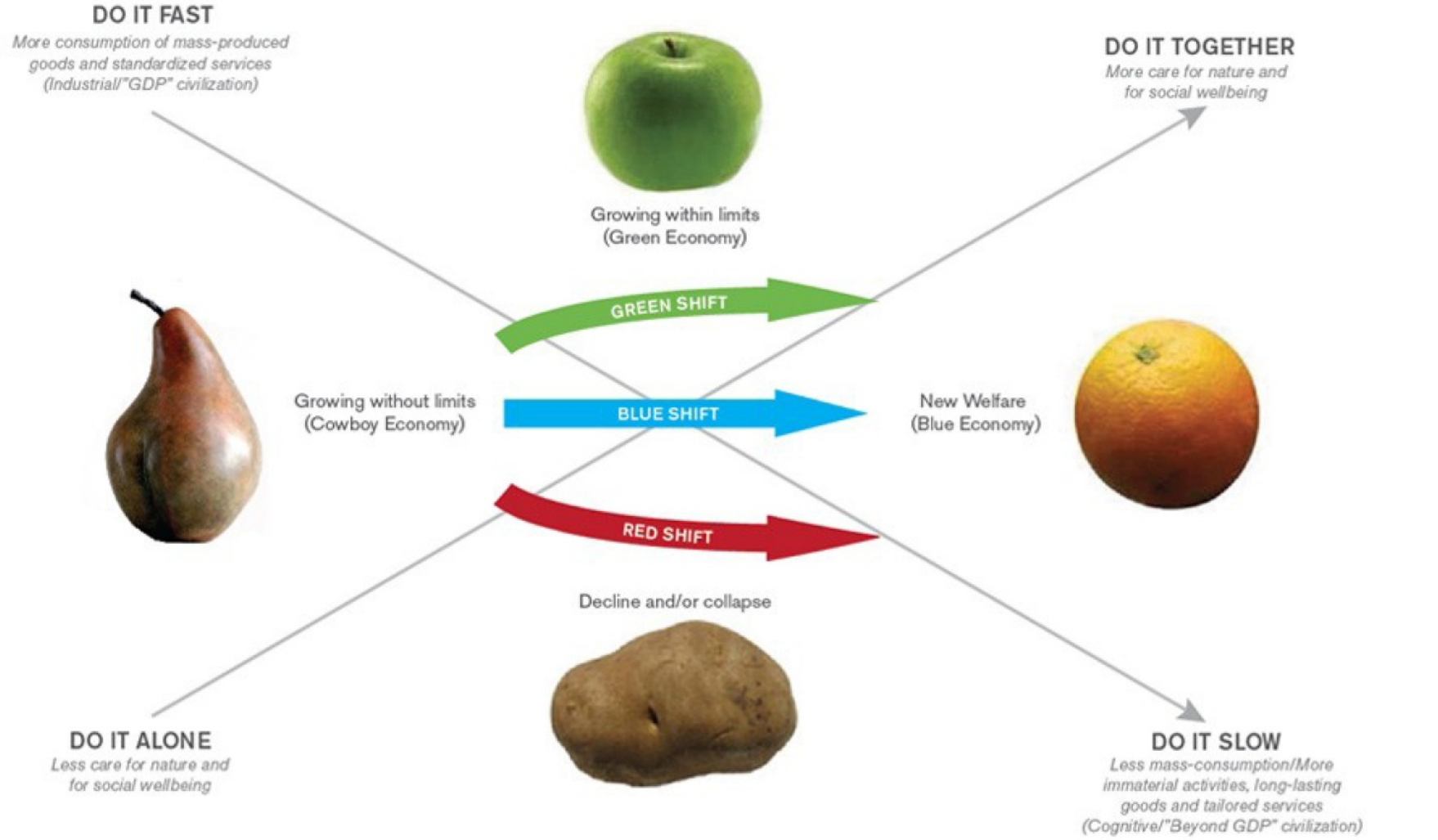
18. Alternative scenarios



19. Final thoughts

1. It is possible to reduce the dimensionality problem by introducing the "policy feasibility" dimension

2. Impact community might be interested in a limited number of variables compatible with a given level of temperature

3. Many scenarios with about 3.7w/sqm, relatively new runs with 4.5w/sqm

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