EGM on SD21 Study, New York, 5-6 April 2012

The "SD21 scenario process"

Sustainable development scenarios for Rio+20

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DESA-DSD

Why scenarios?

- Minimum level of coherence, consistency and feasibility check.
- Help envisioning futures and inspire action ("what if?")
- Good governance calls for participative scenario analysis
- An art, not a science!
- Processes to link science, policy, and businesses

Areas considered
What is sustainable development?

Values	What is to be sustained?	For how long?	What is to be developed?
• Freedom • Equality • Solidarity • Tolerance • Respect for nature • Shared responsibility •….	**Nature** • Earth • Biodiversity • Ecosystems	5, 10, 20, 50, 100 years, forever, etc.	**People** • Child survival • Life expectancy • Education • Equity, Equal opportunity • Human security
	Life support • Ecosystem services • Resources • Environment		**Economy** • Wealth • Productive sectors • Consumption
	Community • Peace • Cultures • Groups • Places		**Society** • Institutions • Social capital • States • Regions

Adapted from NRC (1999) and Kates et al. (2005).

What we originally wanted to do? *(December 2010)*

1. Review of models, scenarios and science-policy interaction since 1992
2. Scenario meta-analysis
3. SD21 sustainable development scenarios
4. Debate on extreme events

- Approach:
  - Participative; Open-source, open-data process;
  - Comprehensive coverage of all sectors, modeling approaches, and worldviews;
  - Backcasting

Suggested scenario “families” (*Jan. 2011)*

Scenario families	*Endpoints / SD21 scenarios*	*“Partial” environ-mental*	*GHG concen-trations*	*Other long-term environmental*	*Economic*	*Social*
Brown	Business-as-usual scenario (“Growth first”)					
	Dynamics-as-usual scenario (“Growth first with continued incremental improvements“)					
	Catch-up scenario (“Growth first with focus on catch-up development”)				Yes	
Green	Green economy scenario (“Growth with partial environmental objectives”)	Yes				
	Climate scenario ("IPCC world")		Yes			
	Planetary boundaries scenario ("One planet world")		Yes	Yes		
Yellow	Development scenario ("MDG+ economy")					
Rainbow	Sustainable development scenario (“SD21 scenario”)		Yes	Yes	Yes	Yes

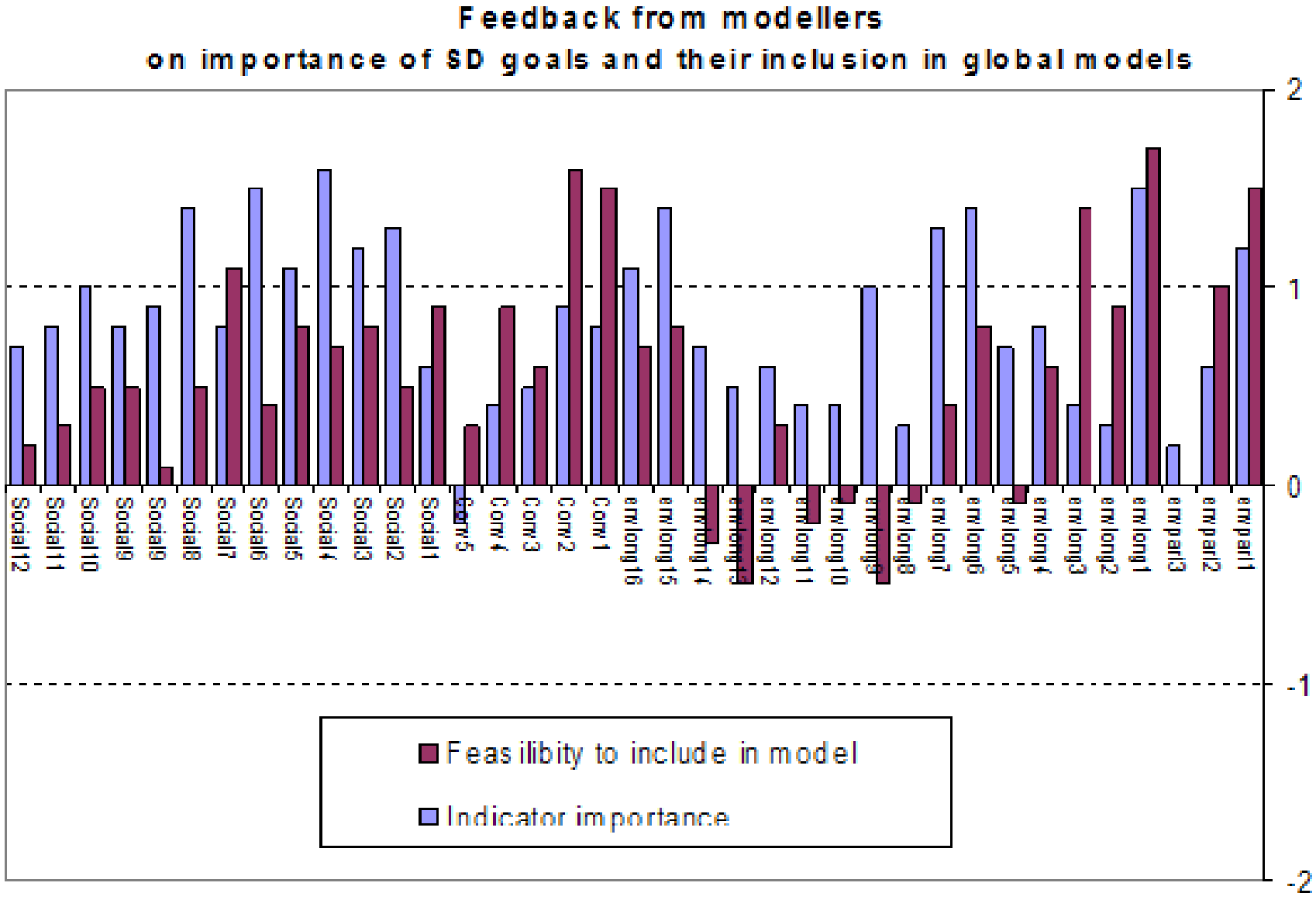
Challenges encountered

- Internal and external politics and rivalries
- Administrative constraints
- Strategic gaming and complex contractual relationships in the “industry”
- Over-commitment of major players
- Delays

Milestones - what we actually did
Jan. 2011 – April 2012

- Concept note on scenario process with “storylines”
- Assembled team of 49 scenario experts
  - More than 1,000 papers and contributions; covering several sectors, many approaches;
  - Surveys among modelers on worldviews and on SD goals/targets
  - Reviewed 98 models; inputs from OSEMOSYS and CLEWS…
- SD scenarios:
  - Triggered in-depth scenario studies (several US$) for Rio+20
  - In-house development of simple SD meta-model (getting there);
- EGM at IIASA, Austria, 27-29 June 2011
- Consultations, consultations, consultations!
- SD21 scenario study (almost ready)

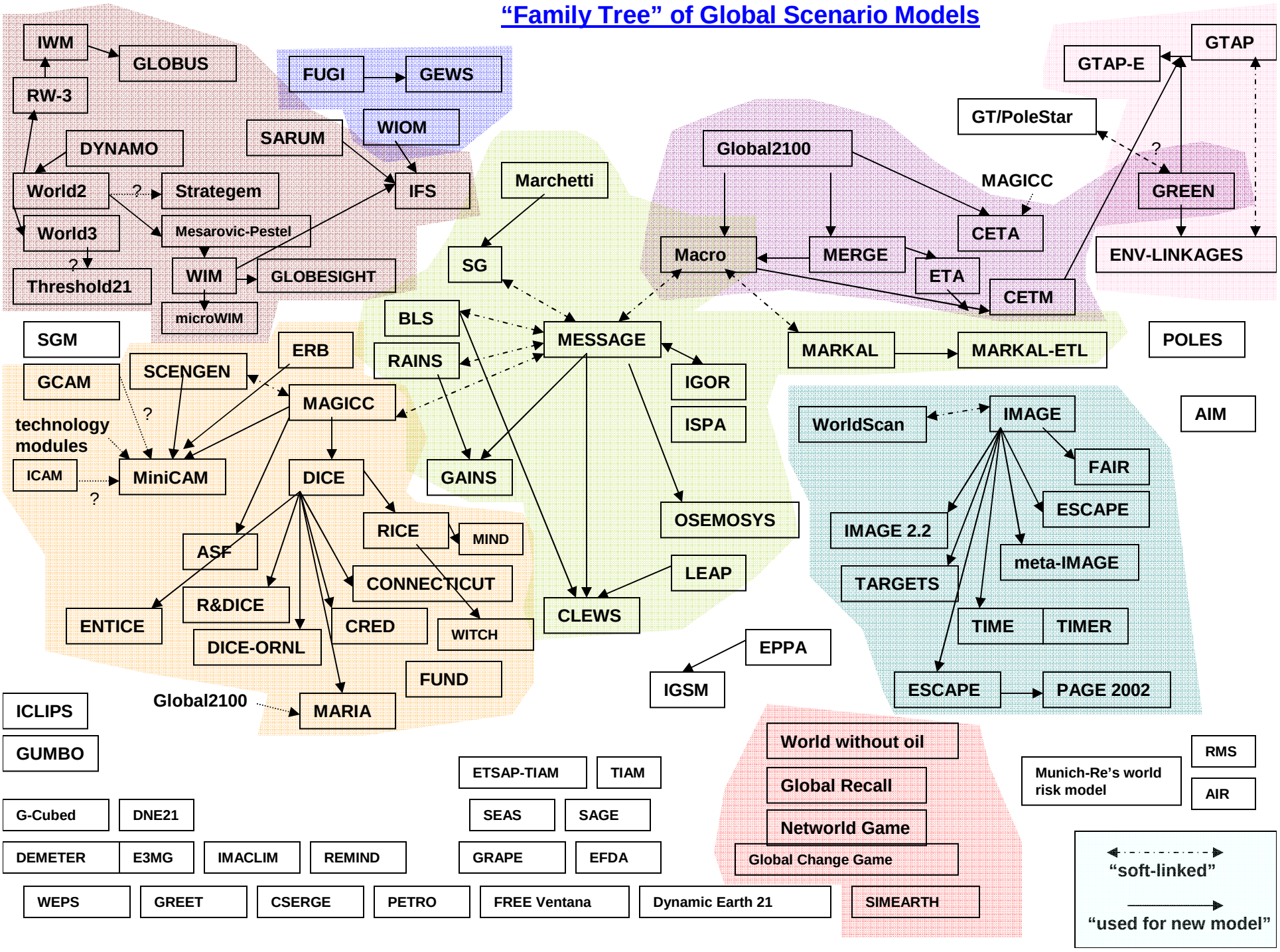
Survey results on “endpoints”



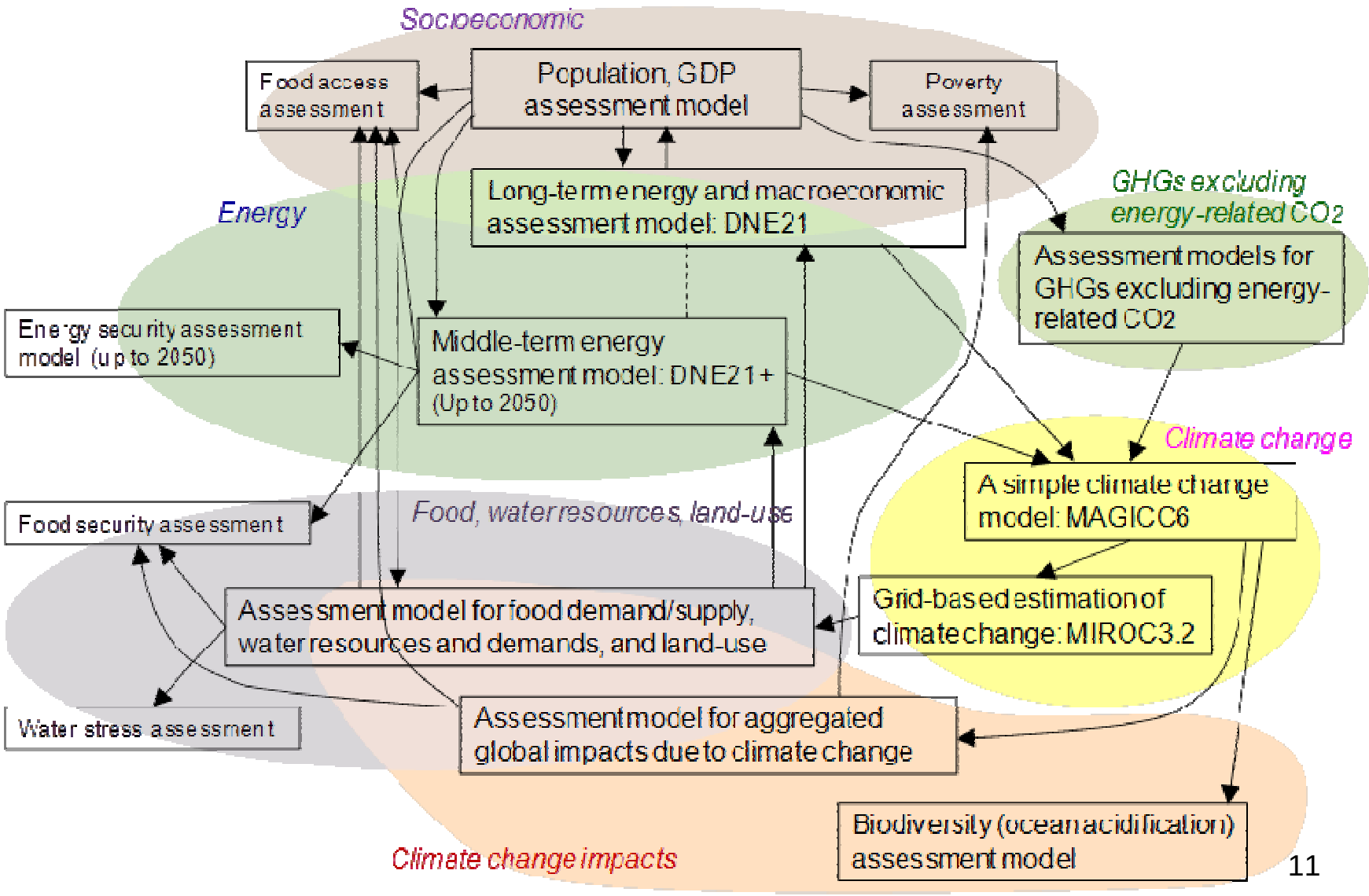
SD21 scenario study
Contents

1. Introduction
2. Historical evidence and scientific consensus
3. Global scenario models
4. Art of modeling
5. Sustainable development scenarios for Rio+20
6. Synergies and trade-offs in SD scenarios
7. Which way forward?

"Family Tree" of Global Scenario Models



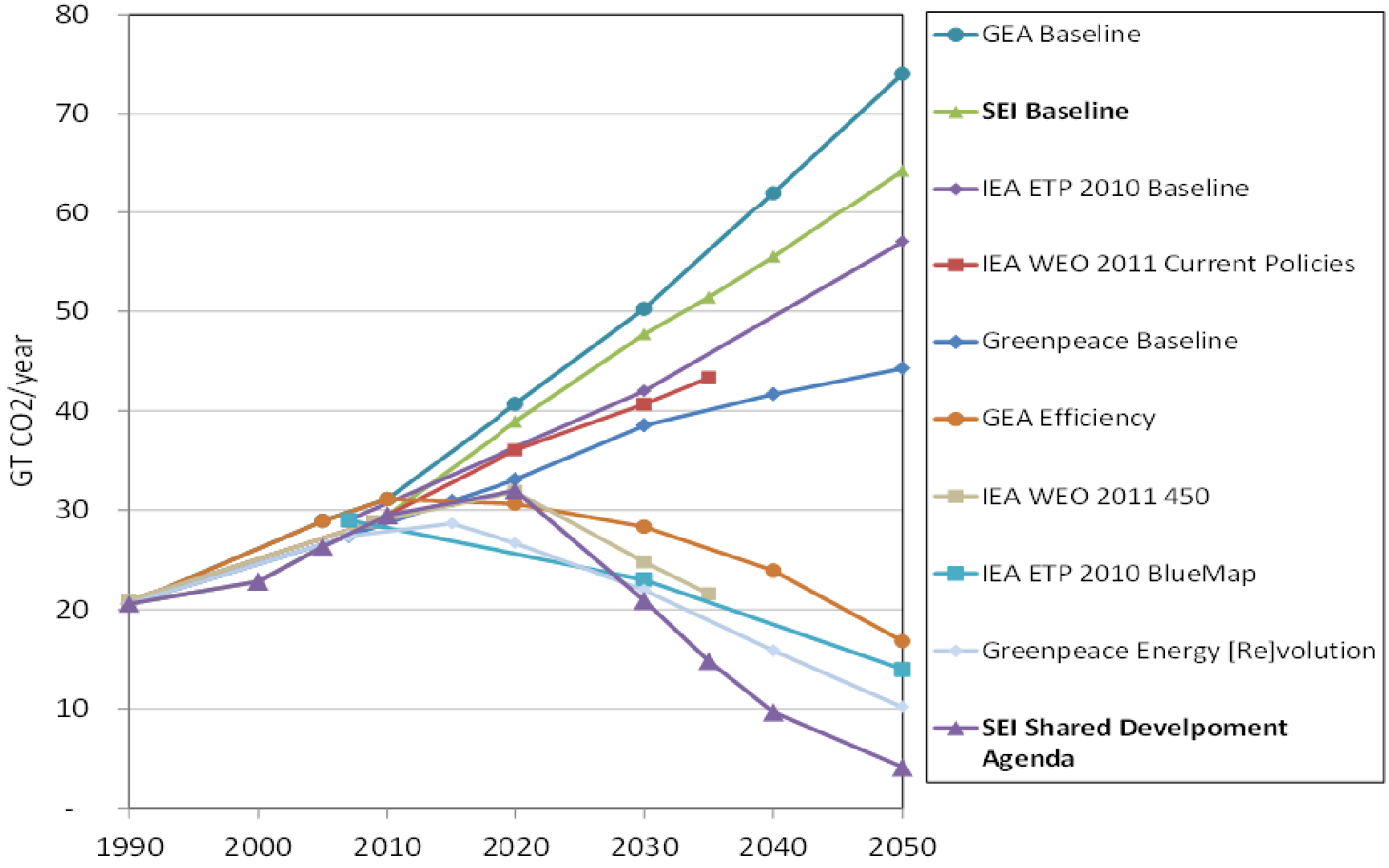
Complex sets of global scenario models *(Example: DNE21+ framework of RITE)*



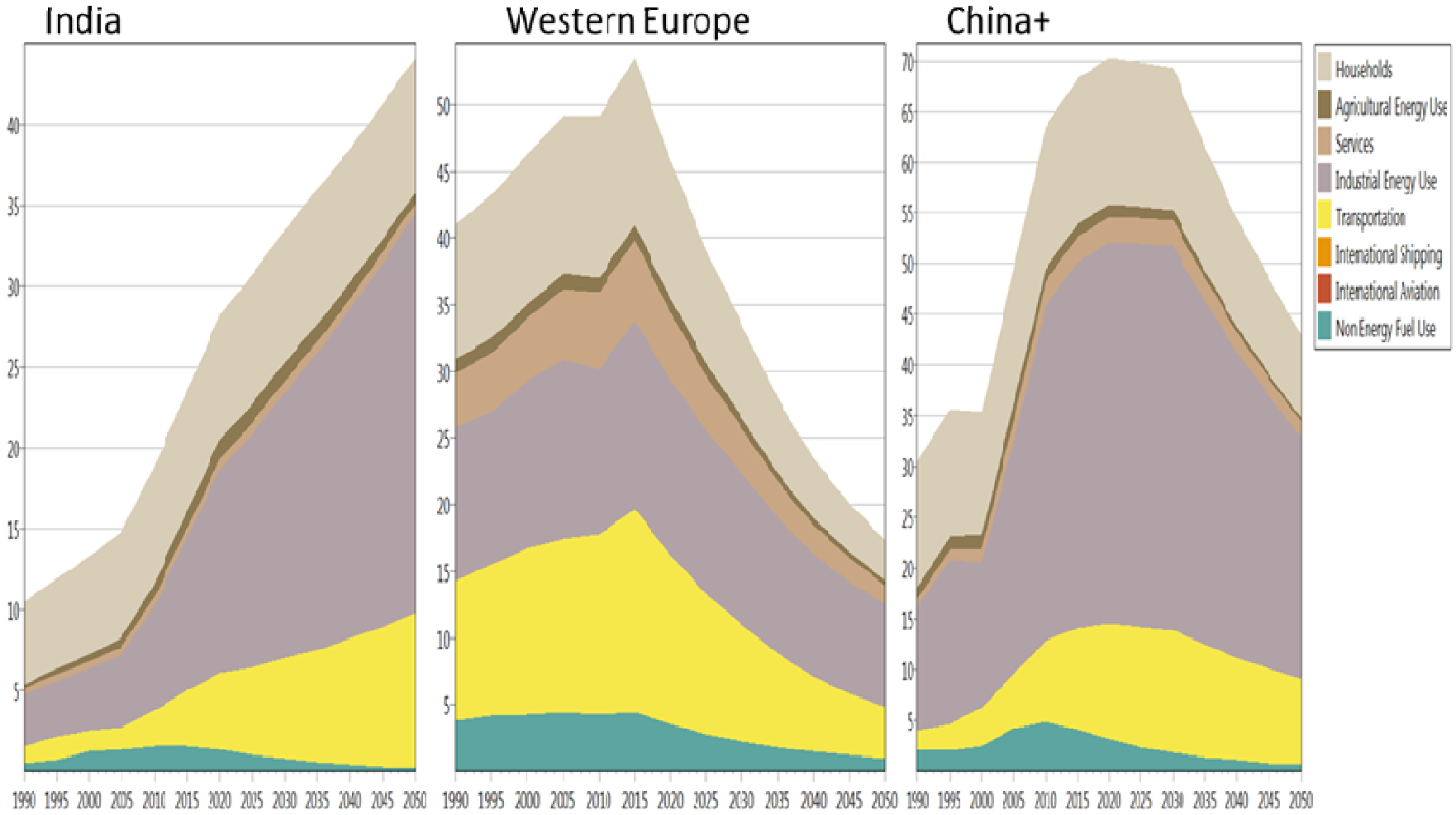
Major SD21 scenario studies

- Van Vuuren et al. (2012). *Making ends meet - Pathways to reconcile global food, energy, climate and biodiversity goals*. PBL Netherlands with inputs from ODI and IVM/VU, April 2012.
- Riahi, McCollum, et al. (2012). *To Rio and Beyond: Sustainable Energy Scenarios for the 21st Century*. IIASA, April 2012. (based on GEA scenario chapter)
- Akimoto et al. (2012). *Consistent assessments of pathways toward sustainable development and climate stabilization*. RITE-ALPS Japan.
- Nilsson et al. (2012). *Energy for all in the Anthropocene: towards a shared development agenda*. SEI, April 2012.
- Dellink (2012). *OECD Environment Outlook for 2050.*
- *Finding CLEWS in Burkina Faso - An Analysis of the Climate, Land Use, Energy and Water Interrelation in Burkina Faso.* IAEA, KTH and SEI, March 2012.
- *Howells et al. (2012). Integrated analysis for climate change, land-use, energy and water strategies*. KTH et al. (draft)
- etc.

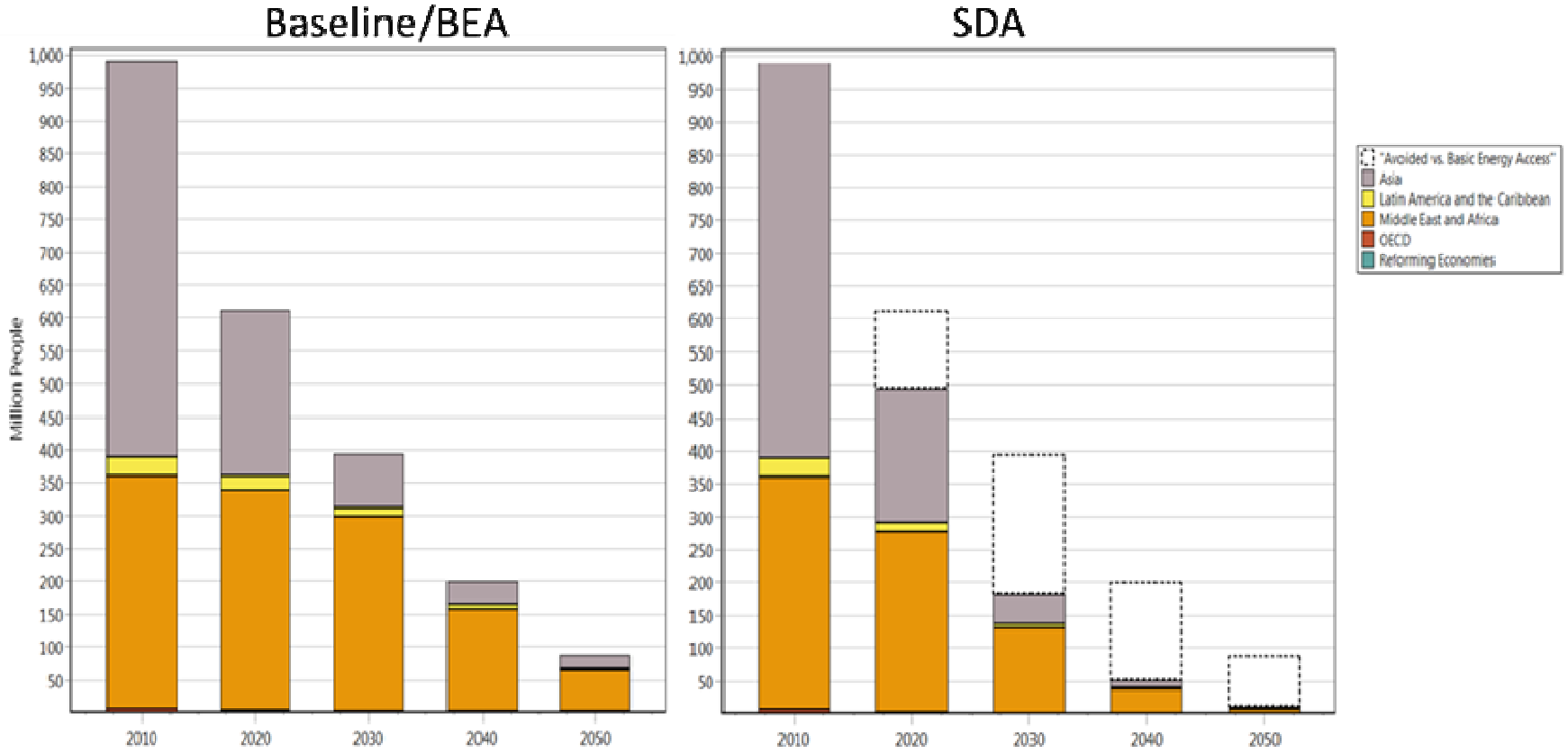
Climate benefits of a "shared development" agenda *(SEI's SDA scenario)*



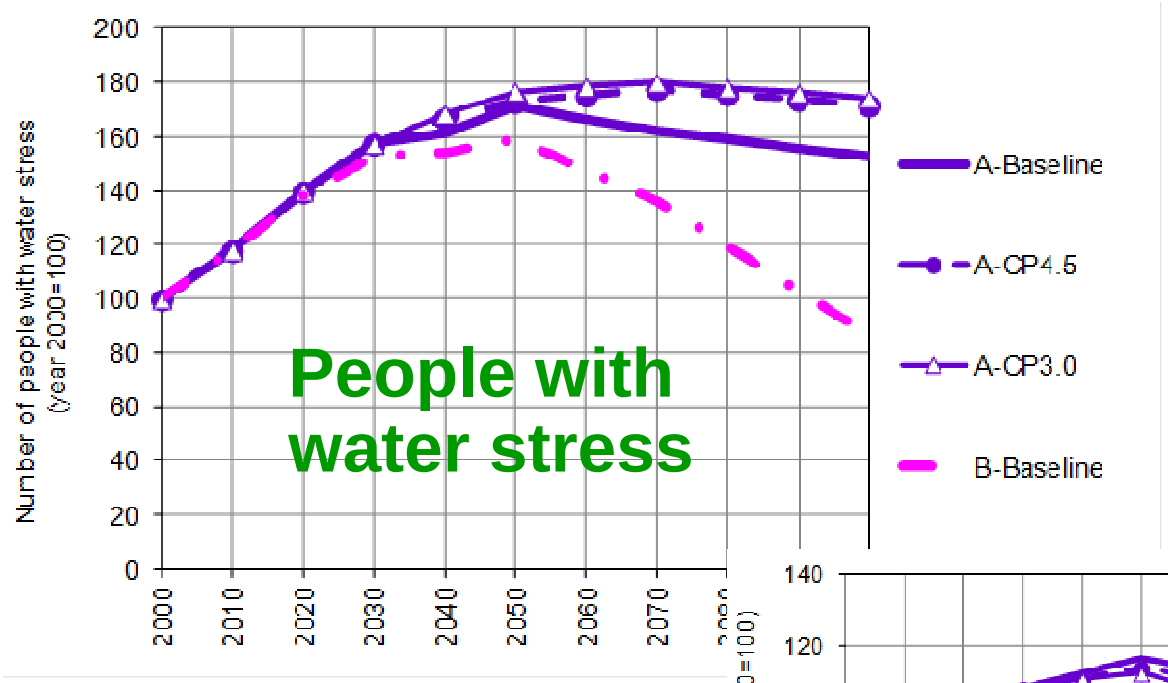
Energy demand by sector
(SEI's SDA scenario)

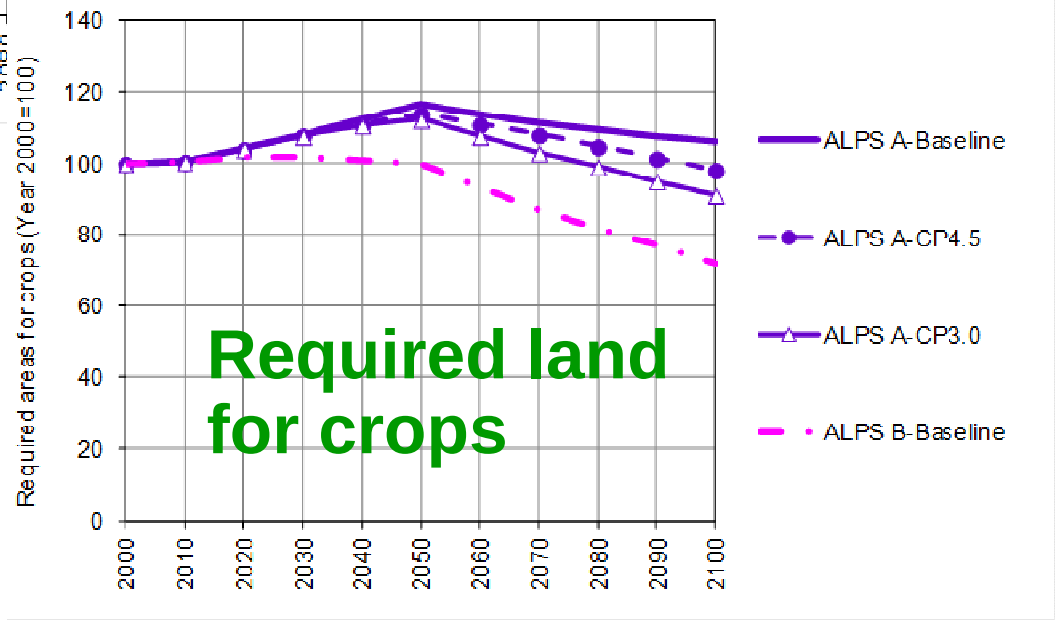


Poverty levels, 2010-2050
(SEI's SDA scenario)



Water stress and land area for crops bound to increase until 2050 *(RITE's ALPS scenarios)*





All the credit goes to *Our SD21 scenario friends at…*

- **Universities:** Tokyo University of Science, Yale University, Graz University, Columbia University, Wageningen University, KTH, University of Vienna, WU Vienna, Lund University, Utrecht University, John Hopkins University
- **Think-tanks:** PBL, IIASA, WWAP, ERI, CIRED, TERI, IFPRI, FEEM, DIE, RITE, SEI (Sweden and North America), ECN, PIK,
- **Academies of Sciences:** Austria, USA, and Russia
- **International organizations:** UN-DESA. UNIDO. IAEA, FAO, WB, OECD, EC, IRENA

Thank you.

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