



Demographic Component in the Development of IPCC Assessment Report

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Population Action International

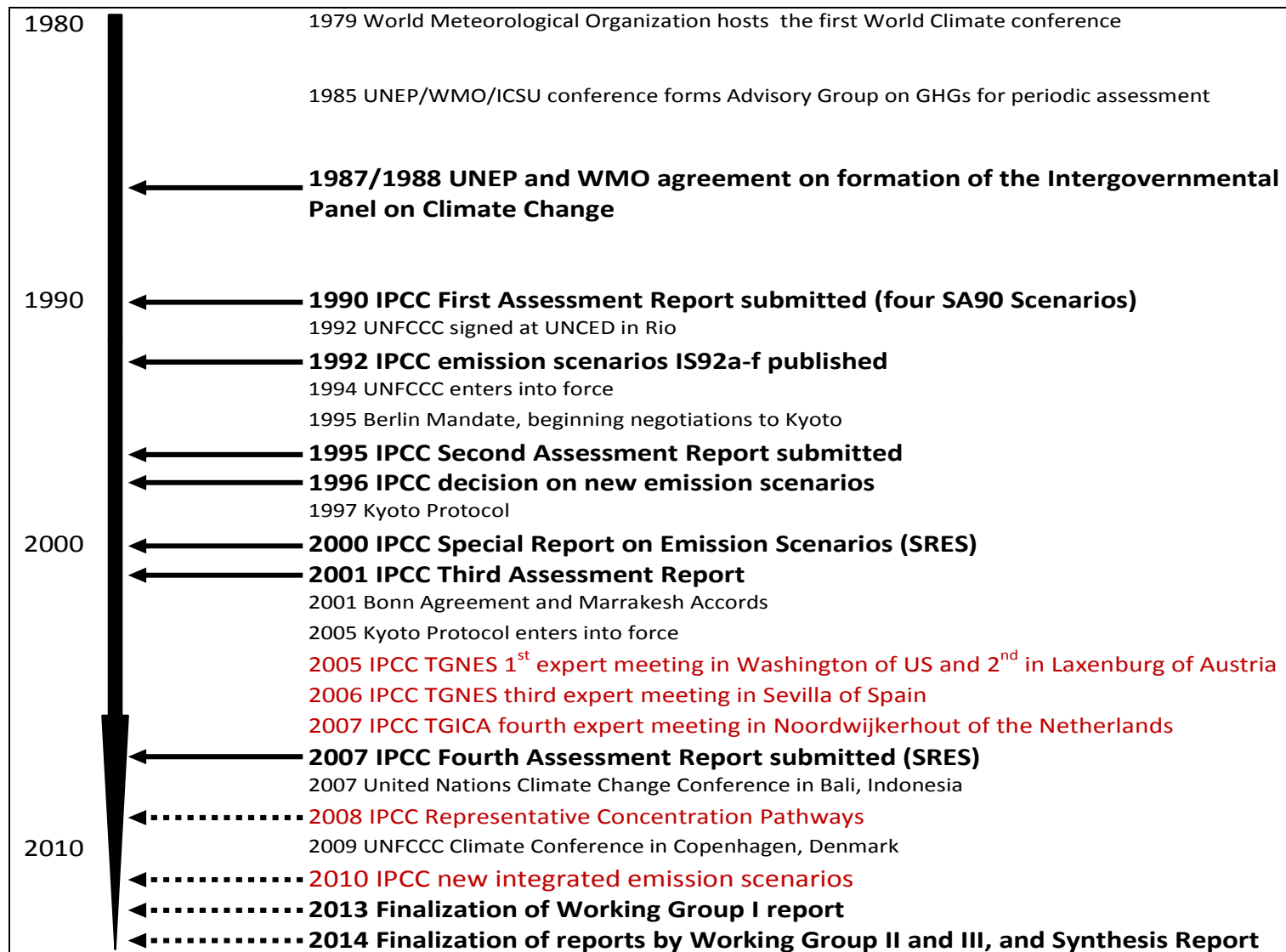
UNFPA Expert Group Meeting
London, June 24-25, 2009

Outline

- Brief Review: population in emission scenarios of previous IPCC assessment report
Limitation and needs for improvement
- New process of scenario development and assessment report
Opportunity and challenges



30 Years History of Global Climate Change Discussion



IPCC and Climate Sciences and Policies

- 1990 First Assessment Report requested by UNGA for 1992 Earth Summit
 - Four IS90 Scenarios
- 1995 Second Assessment Report requested by UNFCCC for Kyoto process
 - IS92a-f Scenarios
- 2000 Third Assessment Report for 2002 Earth Summit
- 2007 Fourth Assessment Report for post-Kyoto talks
 - SRES scenarios
- IPCC Fifth Assessment Report, scheduled in 2013 and 2014.

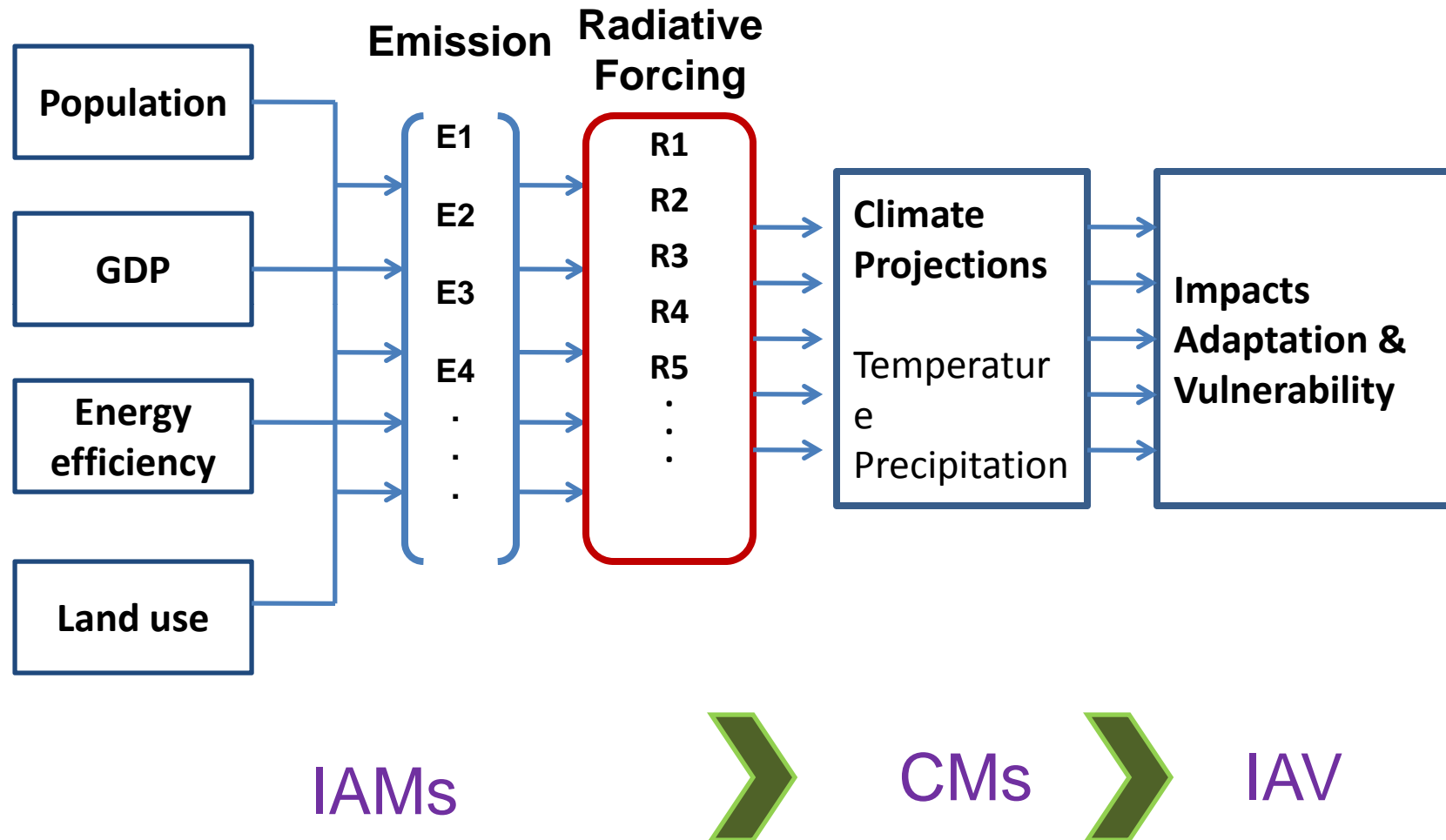


IPCC and Climate Sciences and Policies

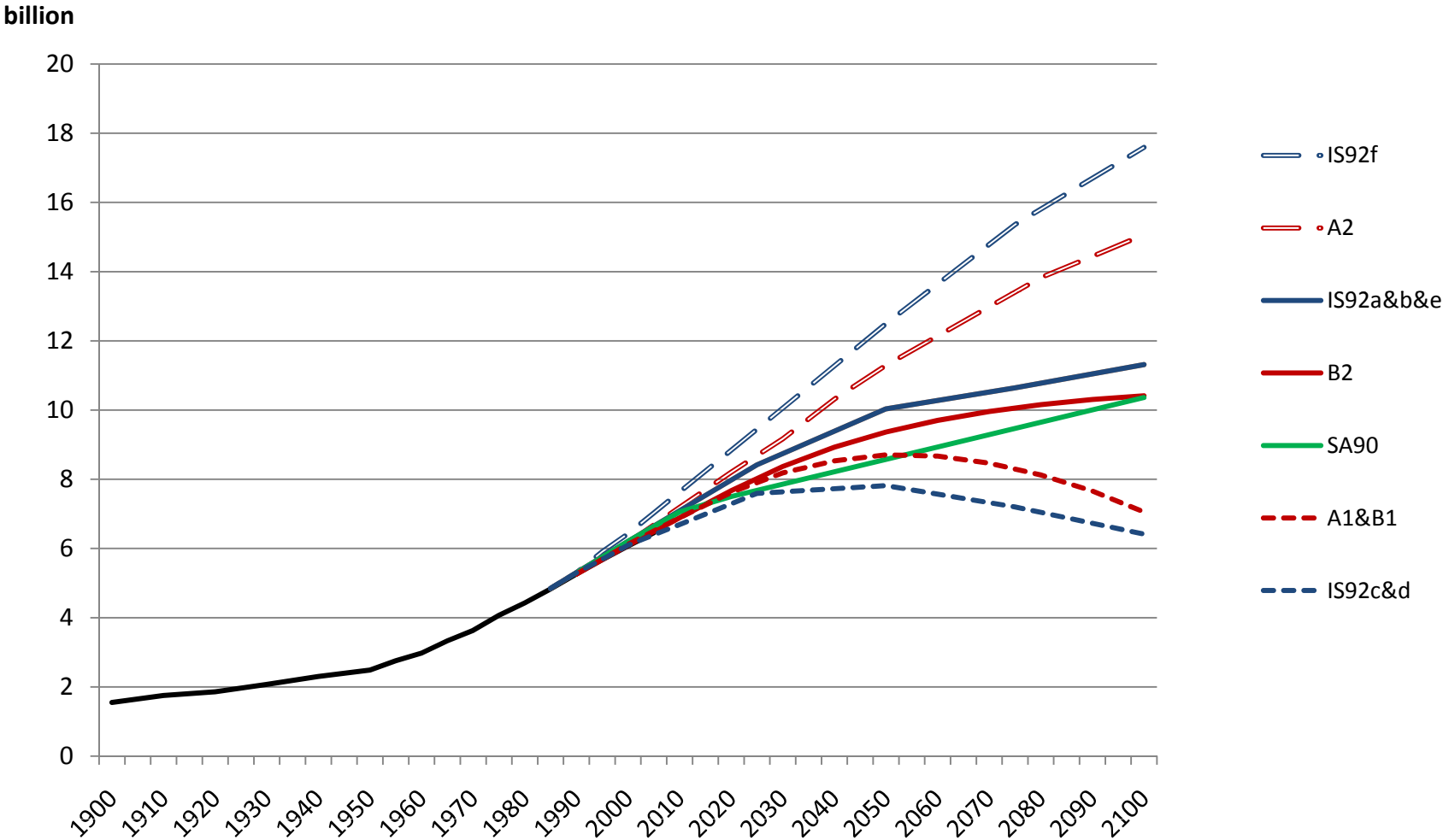
- Scientific group and modeling community
 1. Working group 1: assesses climate system and change, Climate modeling (CM) community
 2. Working group 2: assess impacts, adaption options and vulnerability (IMV) community
 3. Working group 3: assess options for mitigating climate change, provide emission scenarios, Integrated assessment modeling (IAM) community



Previous Climate Change Modeling – Sequential Approach



Population in IPCC emission scenarios



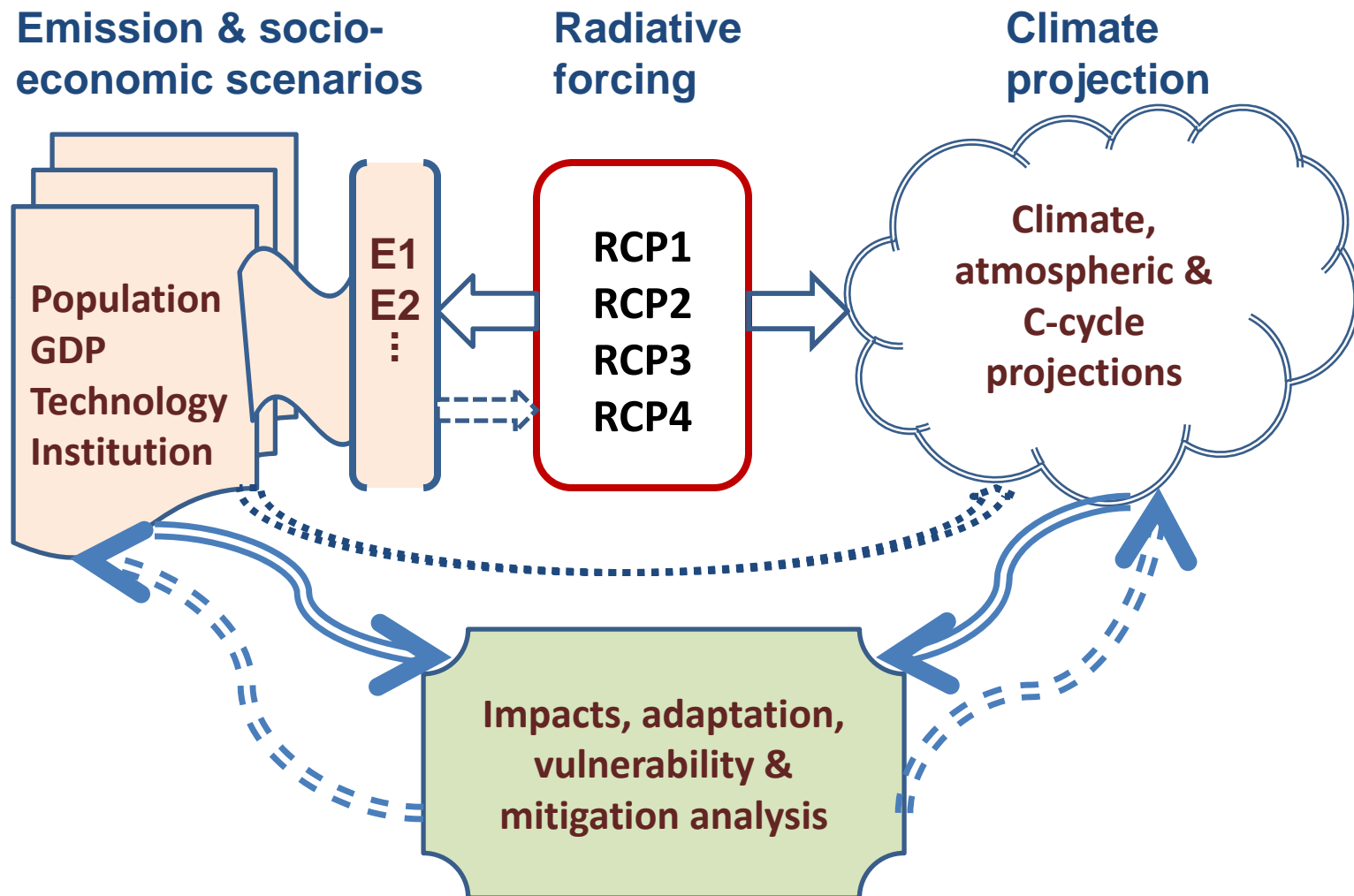
IPCC New Processes of Scenario Development and Assessment Report

- Coordinated by research community
- New approach: from sequential to parallel





New Climate Change Modeling – Parallel Approach



IPCC New Processes of Scenario Development and Assessment Report

- Why parallel approach? limitations in the old approach:
 1. Long time lag (up to 10 years);
 2. Difficult for integrating information and consistent assessment;
 3. Could not be modified to reflect new climate model simulation
 4. Population size, three scenarios

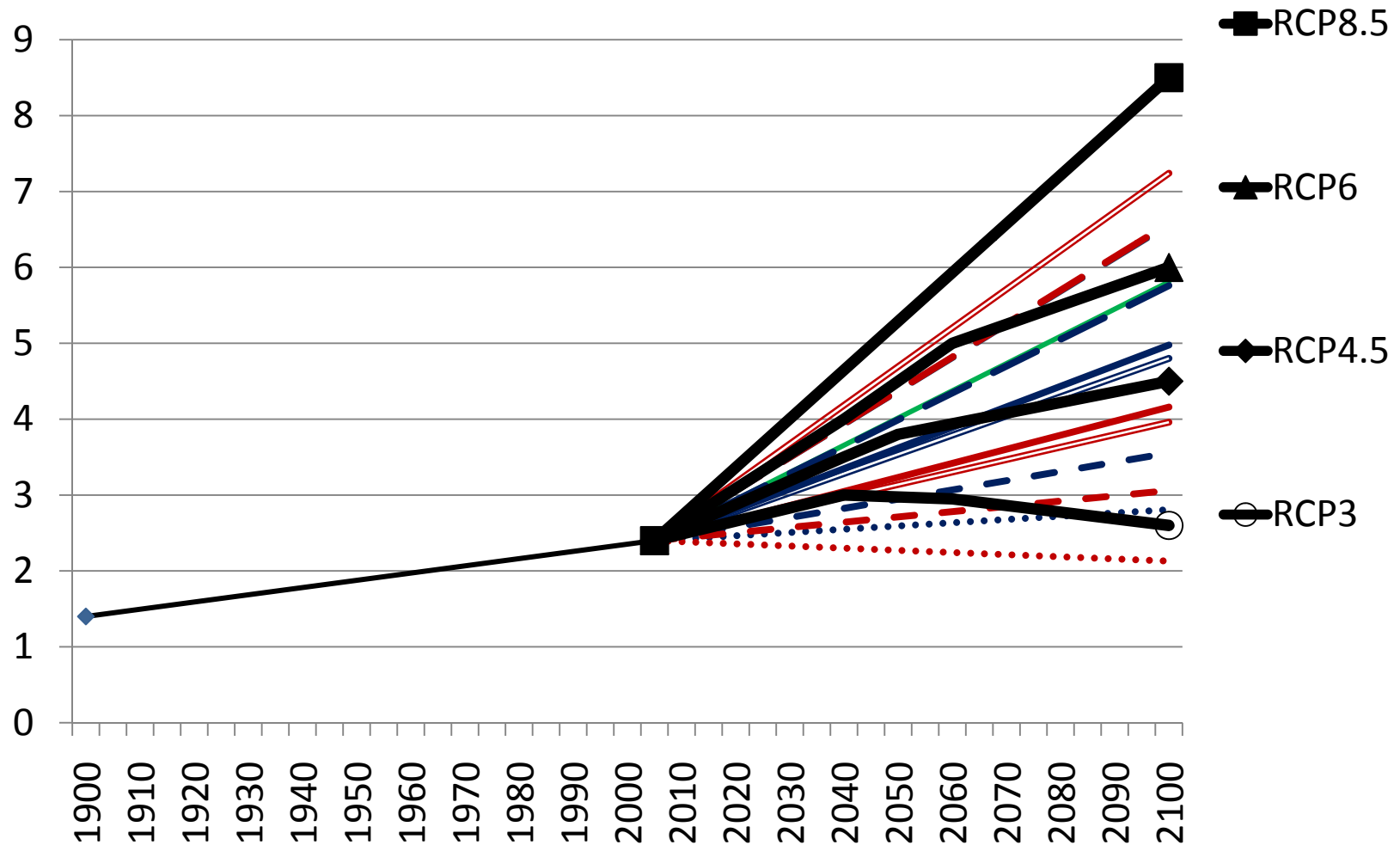


Choose of RCPs

- Desirable characteristics:
 1. Full **Range** of stabilization, mitigation, references in literature
 2. Enough but limited, and even **Number**
 3. Statistically significantly **Separated** pathways with distinctive **Shapes**,
 4. Technically **Robust, Reproducible** by a number of IAMs
 5. Model **Comprehensive** factors (full suit GHGs, aerosols, chemically active gases, land use/cover)
 6. Sufficiently **High Resolution** for the **Near-Term** output

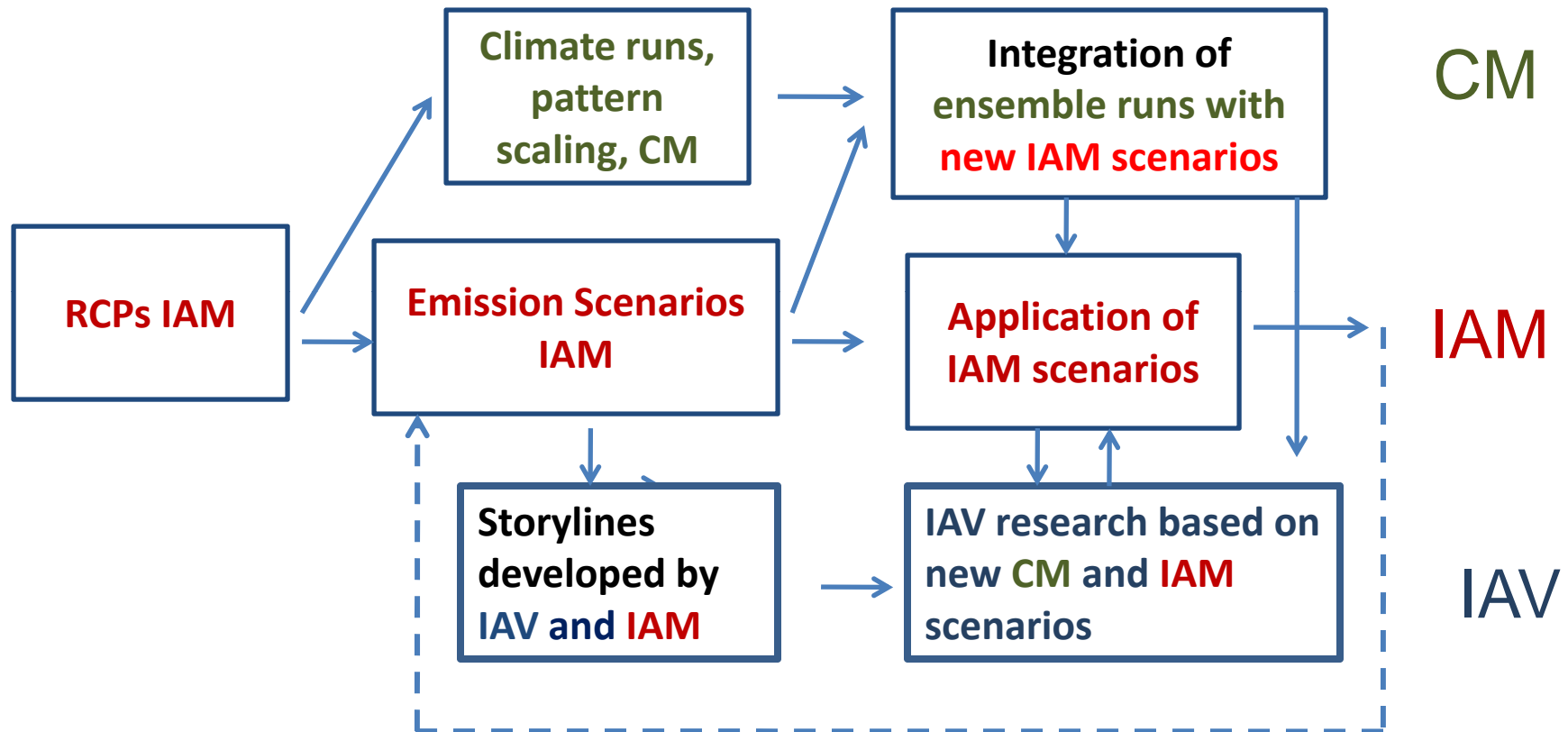


Representative Concentration Pathways in the IPCC New Scenarios





IAM, CM, IAV models in Parallel Approach



Opportunities and Challenges

- Opportunities:
 1. Same RCP driven by different demographic and socioeconomic forces, and
 2. Same demographic and socioeconomic forces form different RCPs
 3. Feed back of climate impacts and climate policies (including population policies) as a driven force
 4. Scaling up-and downward impact patterns linking global, regional and local interactions, considering demographic heterogeneity

Opportunities and Challenges

- Challenges:
 1. Common language and platform, understanding the complexity and gaining familiarity
 2. Understanding the mechanisms of impacts of demographic trends on emissions and climate changes, urbanization
 3. Uncertainties (probabilistic population and household projection)



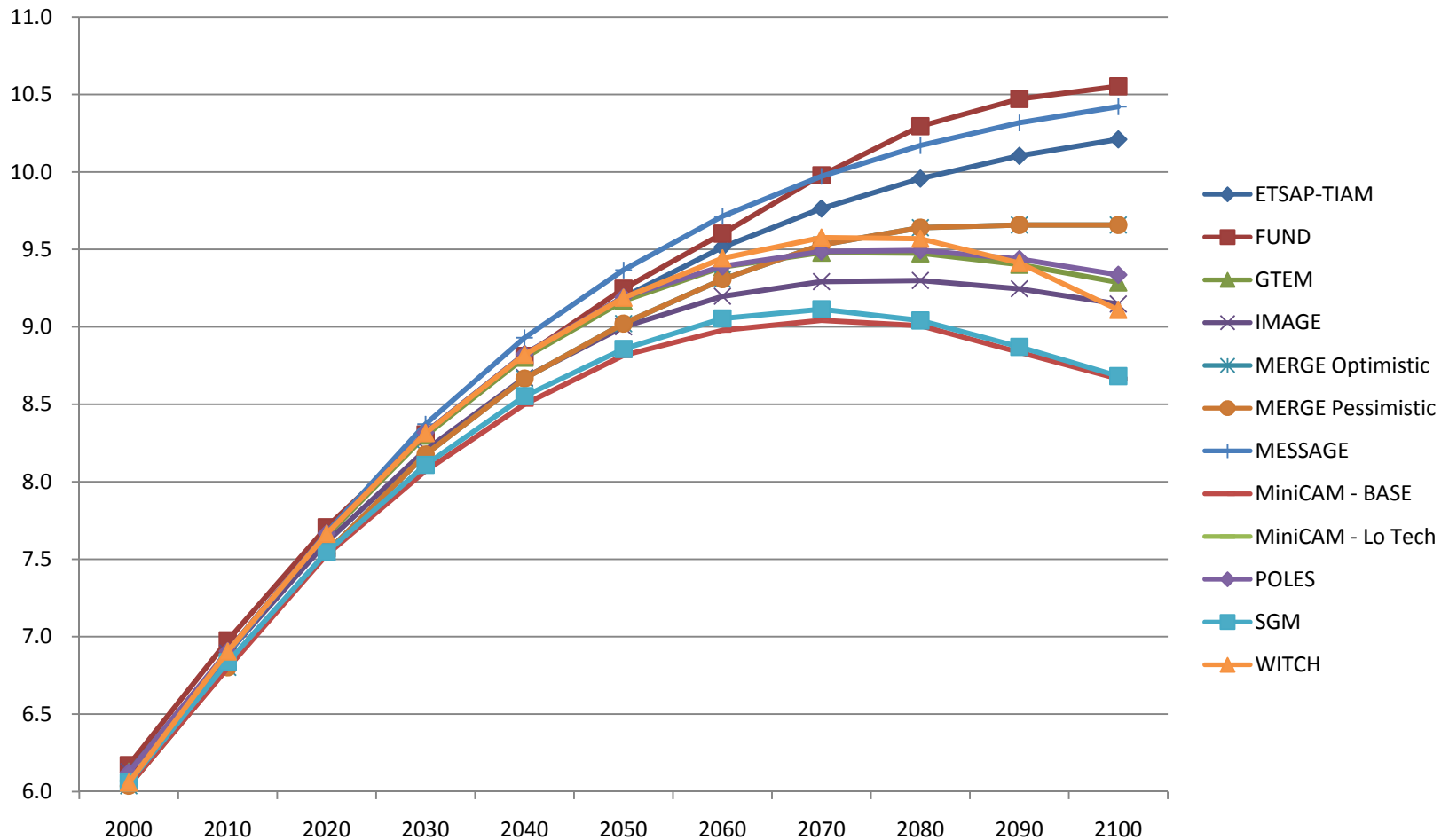
Energy Modeling Forum 22

- Put together set of transition policy scenarios to inform ongoing and upcoming climate policy discussions and talks
- Moving from reference scenarios to realistic scenarios
- Ten major IAMs
- Three radiative forcing (2.6, 3.7 and 4.5),
- Full gases
- Equilibrium temperature, 2 degree Celsius
- Not to exceed concentration goals, overshoot

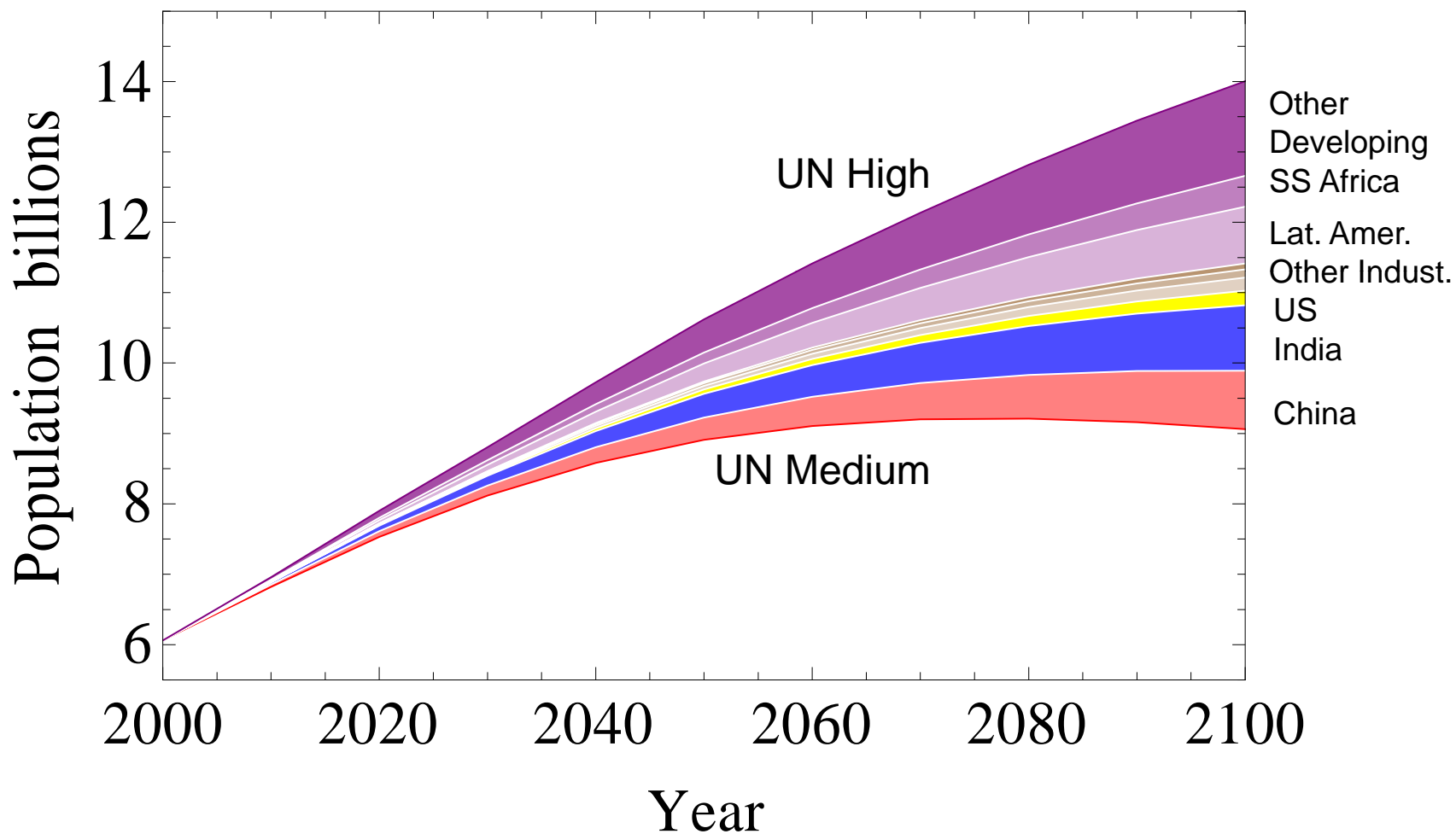




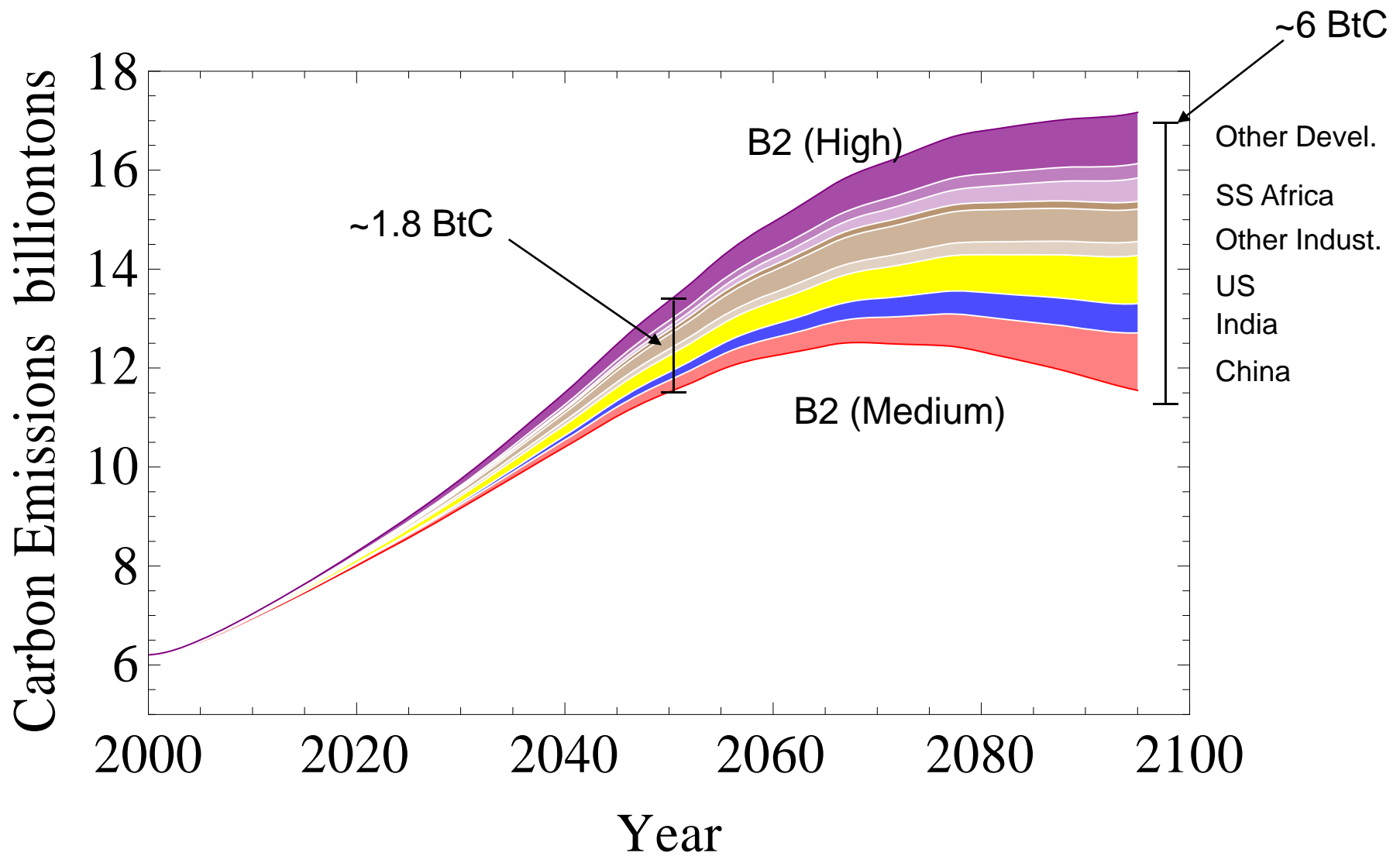
Population in EMF 22 Analysis



Population Scenarios



Emissions Results



Carbon emission differences to reach difference concentration goals

