

# Integrated climate change and sustainable development analysis at the national and global scale – an overview of the CD-LINKS project

Volker Krey, IIASA

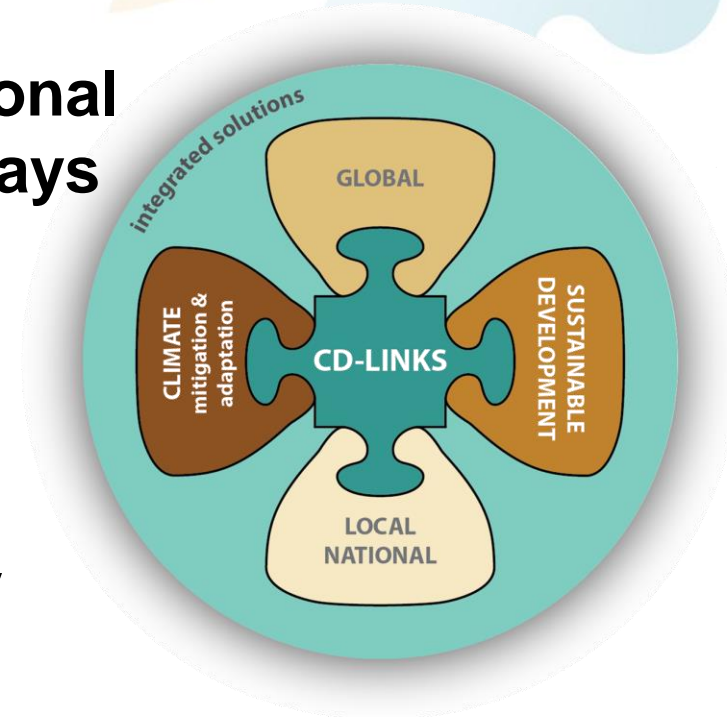
PCCB Capacity-Building Hub, COP24, Katowice,  
12 December 2018



# CD-LINKS Objectives



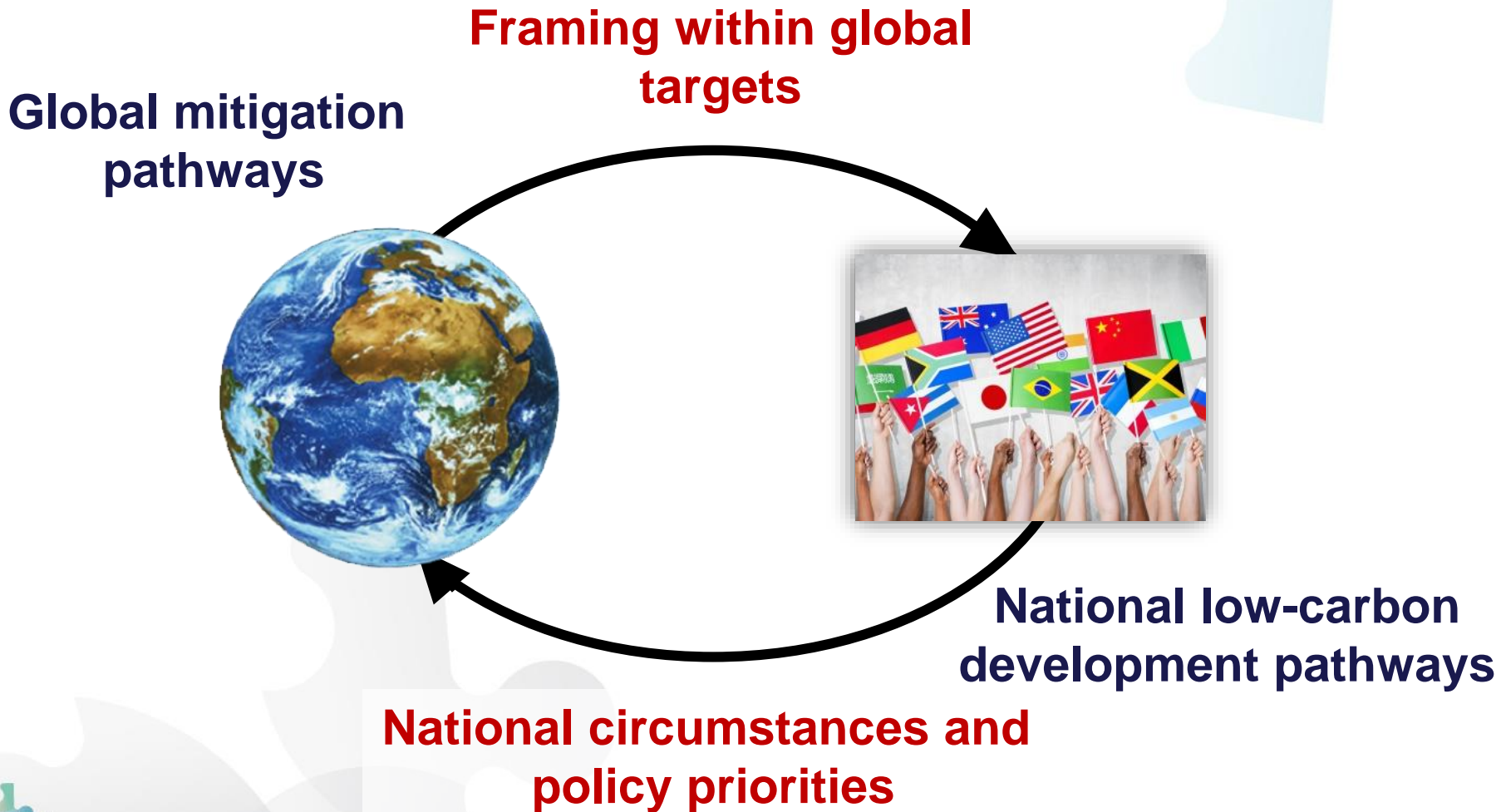
- Develop **globally** consistent, **national low-carbon development pathways**
- Improve scientific understanding of linkages between **climate change** and multiple **sustainable development** objectives
- Broaden evidence base on **policy effectiveness** (learn from past experience)
- Establish research network and **capacity building platform** among institutions from Europe and several Non-European G20 countries



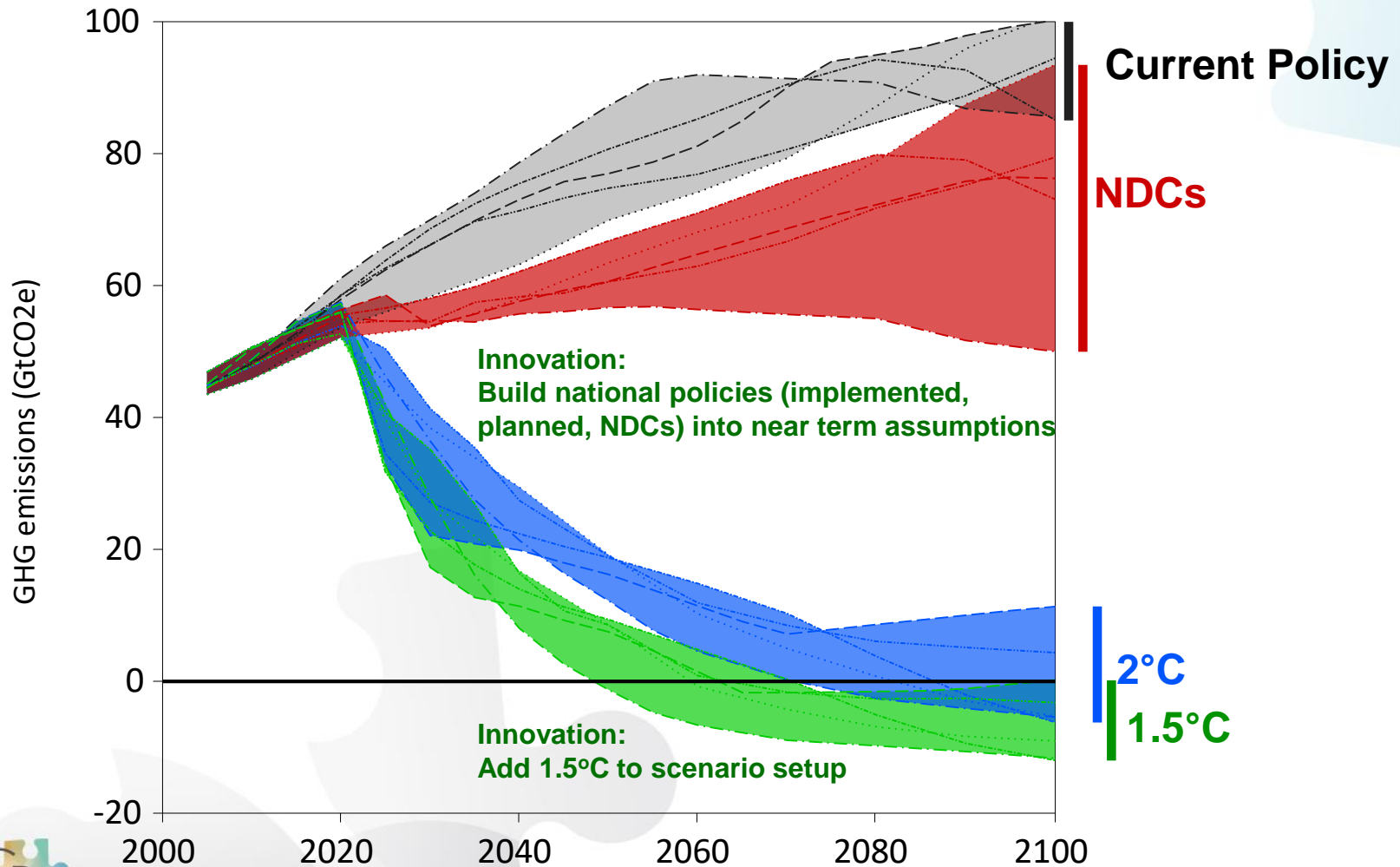
# CD-LINKS Partners



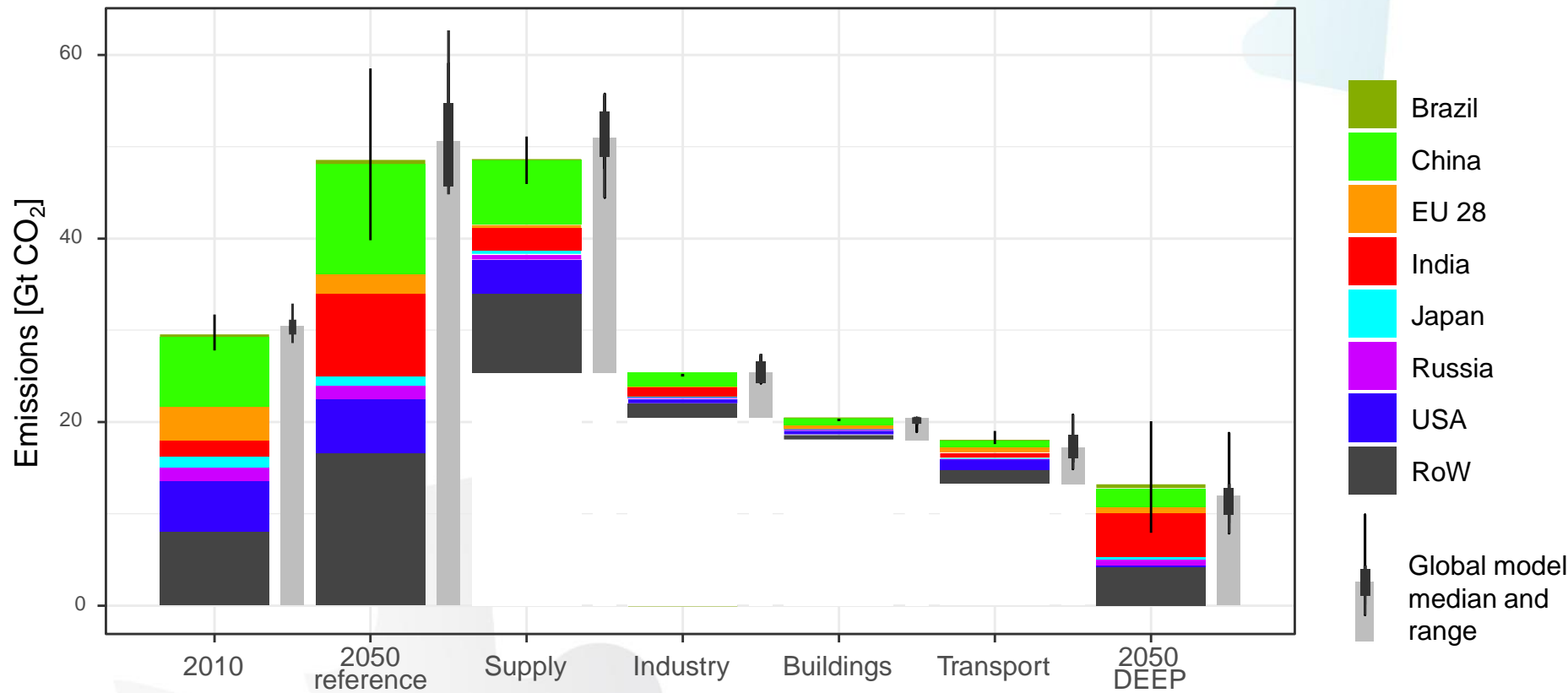
# Integration of global and national perspective



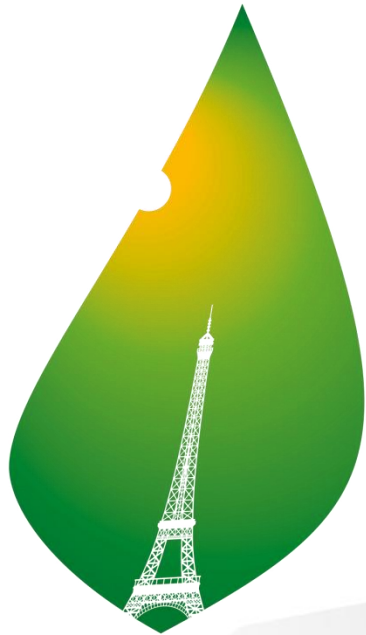
# Global transformation pathways



# Collective national mid-century pathways consistent with global 2°C pathways



# Paris Agreement & SDGs



COP21 • CMP11

## PARIS 2015

UN CLIMATE CHANGE CONFERENCE

&

 **SUSTAINABLE DEVELOPMENT GOALS**





# SUSTAINABLE DEVELOPMENT GOALS

**1** NO POVERTY

**2** ZERO HUNGER

**3** GOOD HEALTH AND WELL-BEING

**4** QUALITY EDUCATION

**5** GENDER EQUALITY

**6** CLEAN WATER AND SANITATION

**7** AFFORDABLE AND CLEAN ENERGY

**8** DECENT WORK AND ECONOMIC GROWTH

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**10** REDUCED INEQUALITIES

**11** SUSTAINABLE CITIES AND COMMUNITIES

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**13** CLIMATE ACTION

**14** LIFE BELOW WATER

**15** LIFE ON LAND

**16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**17** PARTNERSHIPS FOR THE GOALS

  
SUSTAINABLE DEVELOPMENT GOALS

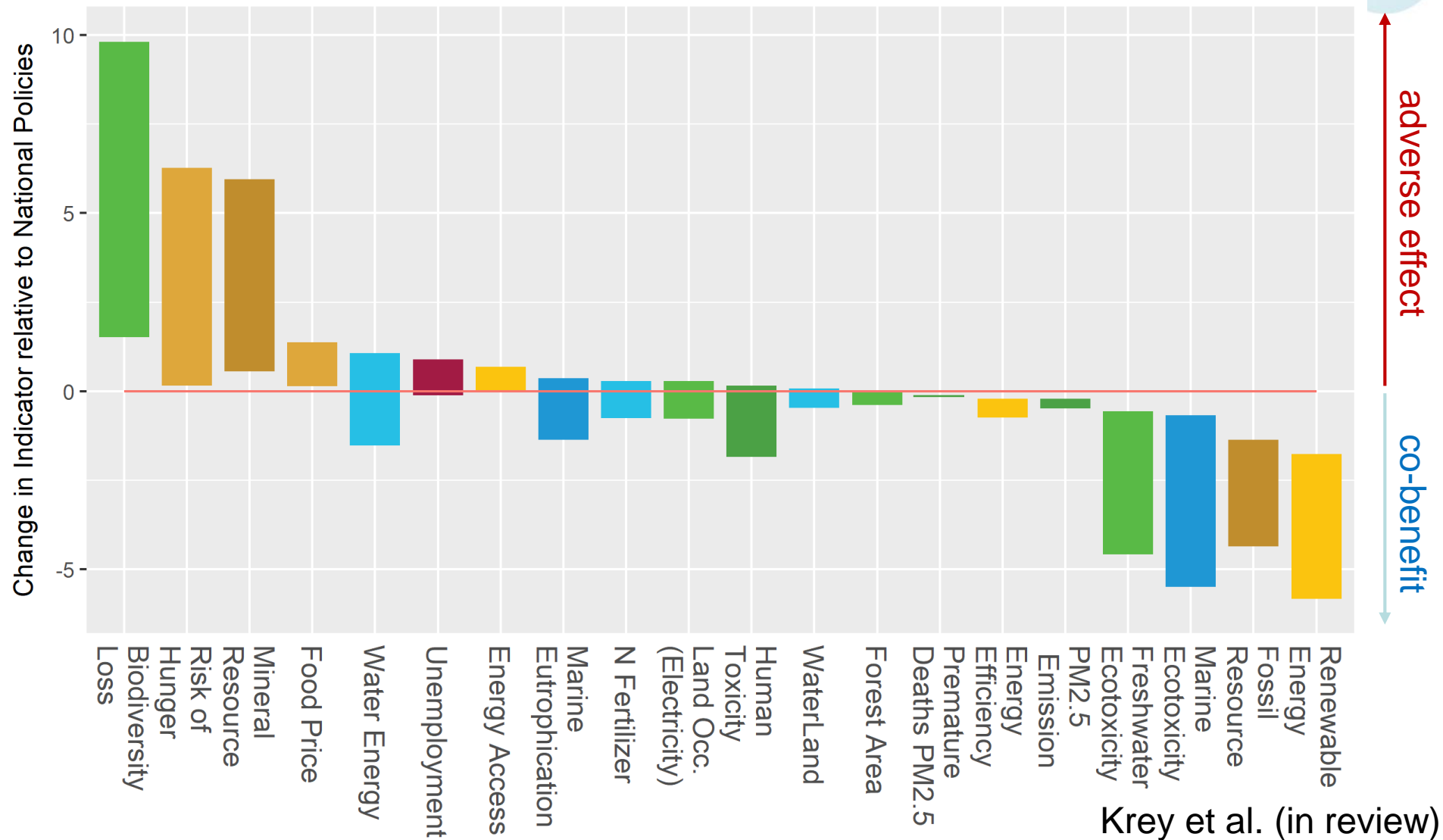




# SUSTAINABLE DEVELOPMENT GOALS

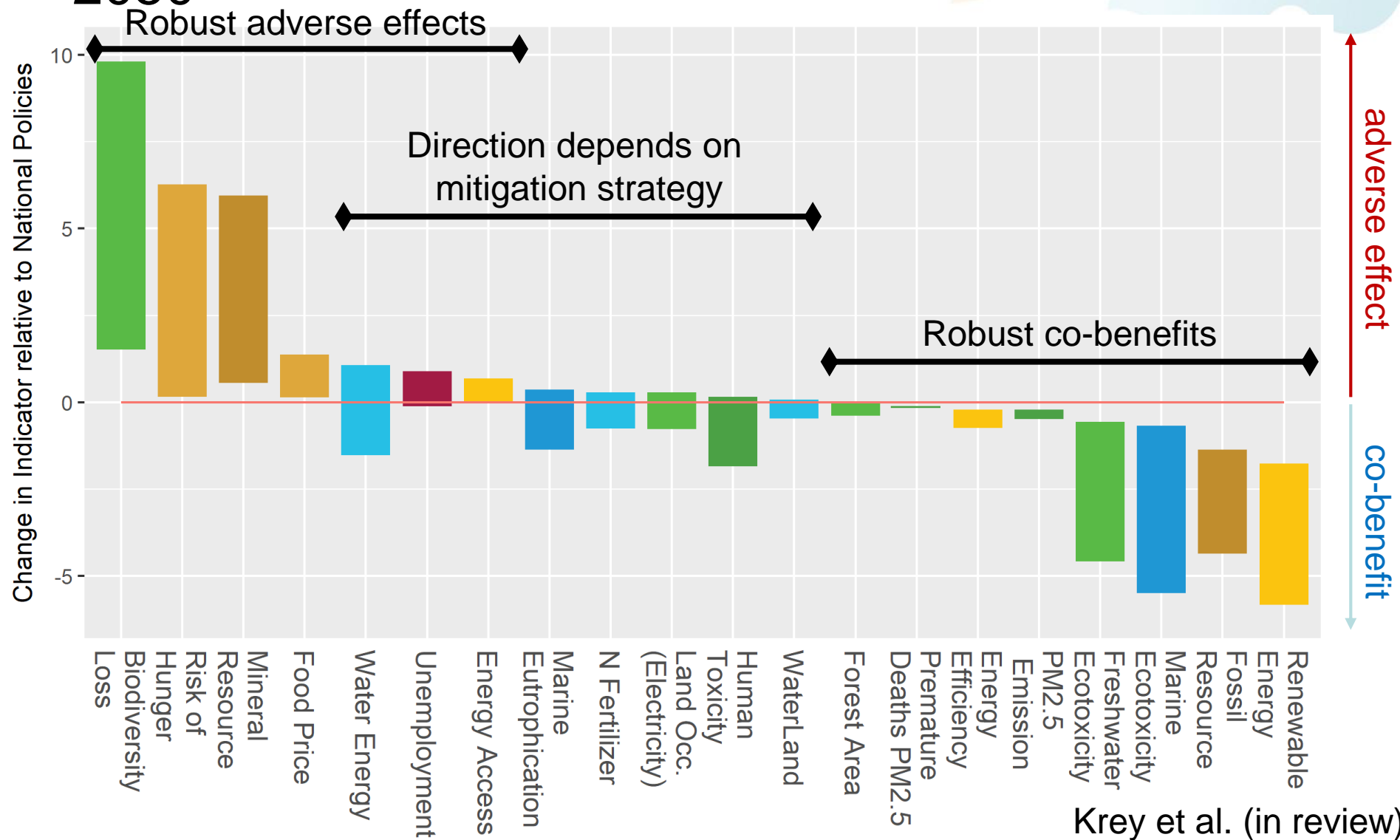


# Climate Policy Impact on SDG: 1.5°C 2050



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2050



# Capacity Building + Dissemination



## Traditional Approach:

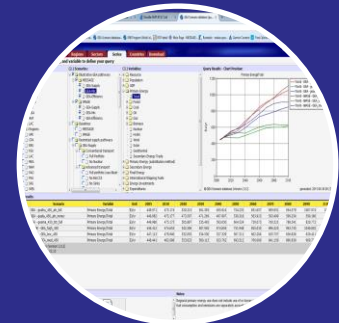
- Scientific Publications
- Stakeholder workshops (in major economies)
- Policy Briefs
- Final Conference (Brussels)
- Side events at COPs, SDSN events, etc..



## CD-LINKS Summer School + YSSP



## CD-LINKS Research Exchange Program + YSSP



## Dissemination and Research Tools

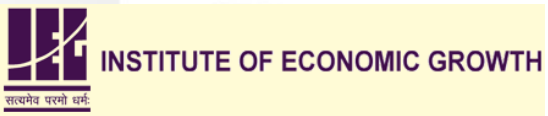
- Climate Policy Database
- Interactive Scenario Database
- Communication tools
- Modeling and analysis tools



# CD-LINKS Stakeholder & Expert Workshop India



- Session 1: Presentations by policy-makers and national modeling teams – moderator Ajay Mathur, TERI
- Session 2: Panel discussions: From Paris to the SDGs in India and globally – How can science contribute?
  - Panel A: Climate, energy, air pollution – moderator Keywan Riahi, IIASA
  - Panel B: Energy-water nexus, energy access, food security – moderator Anil Jain, Ministry of Environment, Forest and Climate Change



Ministry of Environment, Forest and Climate Change  
Government of India

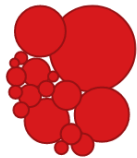
# Capacity Building Workshops

- Aimed at junior researchers and PhD students interested in integrated assessments and systems analysis, modelling, and visualization tools
- Locations: China (2016), Germany (2017), India (2018), Brazil – Rio de Janeiro (March 2019)

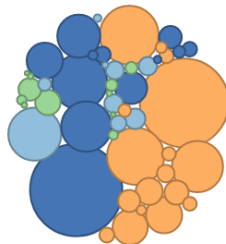
## Annual energy investments in the Electricity sector

Future Investments | Investments by Policy in 2020-2030 | Investments by Region in 2020-2030 | Investment changes  
Policies implemented: Current policies INDC 2°C 1.5°C

2015



2020-2030



*Data visualization tools and data management workshop at PIK, Potsdam, May 2017*



*Integrated assessment modelling and visualization tools workshop at TERI, Delhi, March 2018*

<http://www.cd-links.org/?p=1301>

# Research Exchange Program

- Aimed at exchange among project partners
- Priority to early/mid-career researchers
- Exchanges between non-Europe and European institutions
- ~12 research exchanges during project lifetime
- Duration of 1-3 months

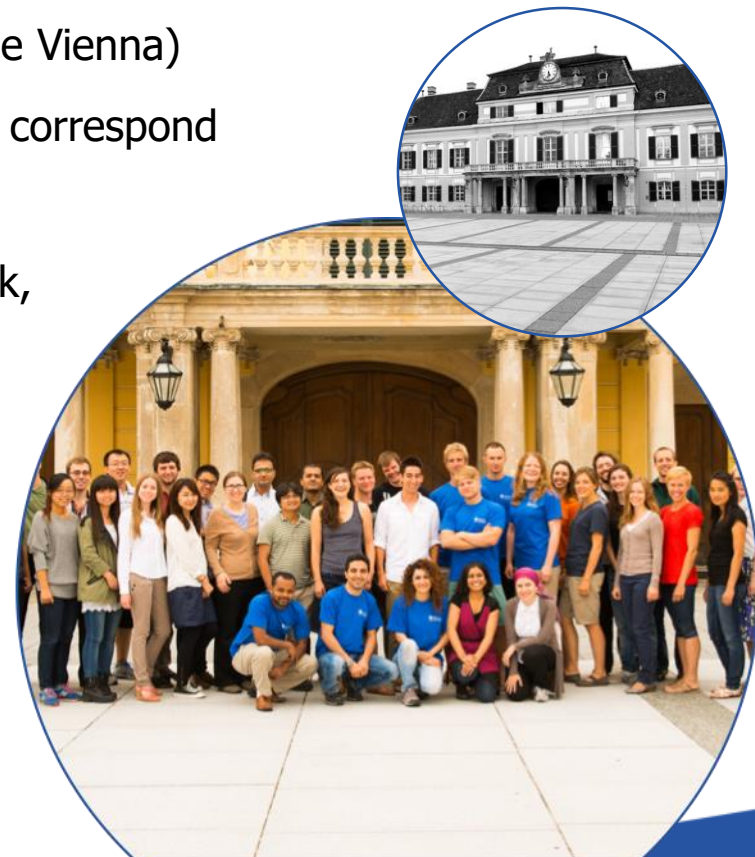
# IIASA's Young Scientists Summer Program YSSP 2019

- 50 international students working under the supervision of IIASA staff
- 1 June - 31 August, in Laxenburg, Austria (just outside Vienna)
- Open to advanced graduate students whose interests correspond to IIASA's research programs
- Goal: publishable journal article on the summer's work,
- Funding available from IIASA's member organizations

## Online application:

<http://www.iiasa.ac.at/yssp/apply>

Application deadline: 11 January 2019







**CALL FOR APPLICATIONS**  
**CD-LINKS Summer School on**

**Submit your application**

Venice, at the Palazzo Artigianelli, from 30th June to 6th July 2019.

## **Integrated Assessment Models: A Tool for Science-Based Policy Making**

**Deadline to apply: 1 March, 2019**

*In cooperation with [CD-LINKS](#), [CMCC](#), [IIASA](#), and the support of [EAERE](#)*



<http://www.cd-links.org/?p=1425>

# Topics

- History of integrated assessment modeling of human activities and the earth system
- Past socio-demographic trends, their implications for energy and future trends
- Overview of land use, agriculture and food modeling
- Modeling the impacts of climate change
- Modeling SDGs: Linking IAMs with disciplinary tools
- IAMs and their use: 3 national experiences

# Faculty

- **Dr. John WEYANT**  
Professor at Stanford and Director of the Energy Modeling Forum (EMF)
- **Dr. Kate CALVIN**  
Pacific Northwest National Laboratory's Joint Global Change Research Institute (JGCRI)
- **Dr. Keywan RIAHI**  
Director of the Energy Program of International Institute for Applied Systems Analysis (IIASA)
- **Dr. Ritu MATHUR**  
Director, Integrated Assessments & Modelling, The Energy and Resources Institute (TERI)
- **Dr. Roberto SCHAEFFER**  
Professor at Federal University of Rio de Janeiro (UFRJ)
- **Dr. Volker KREY**  
International Institute for Applied Systems Analysis (IIASA)
- **Dr. Zoi VRONTISI**  
National Technical University of Athens

# Agenda

- **Heleen van Soest (PBL)**  
Tools for assessing the impact of climate policies and NDCs
- **Daniel Huppmann (IIASA)**  
The MESSAGE*ix* modeling framework and other state-of-the-art tools for integrated scenario analysis
- **Swapnil Shekhar (TERI)**  
Experience with the collaborative capacity building approach



# Thank you!

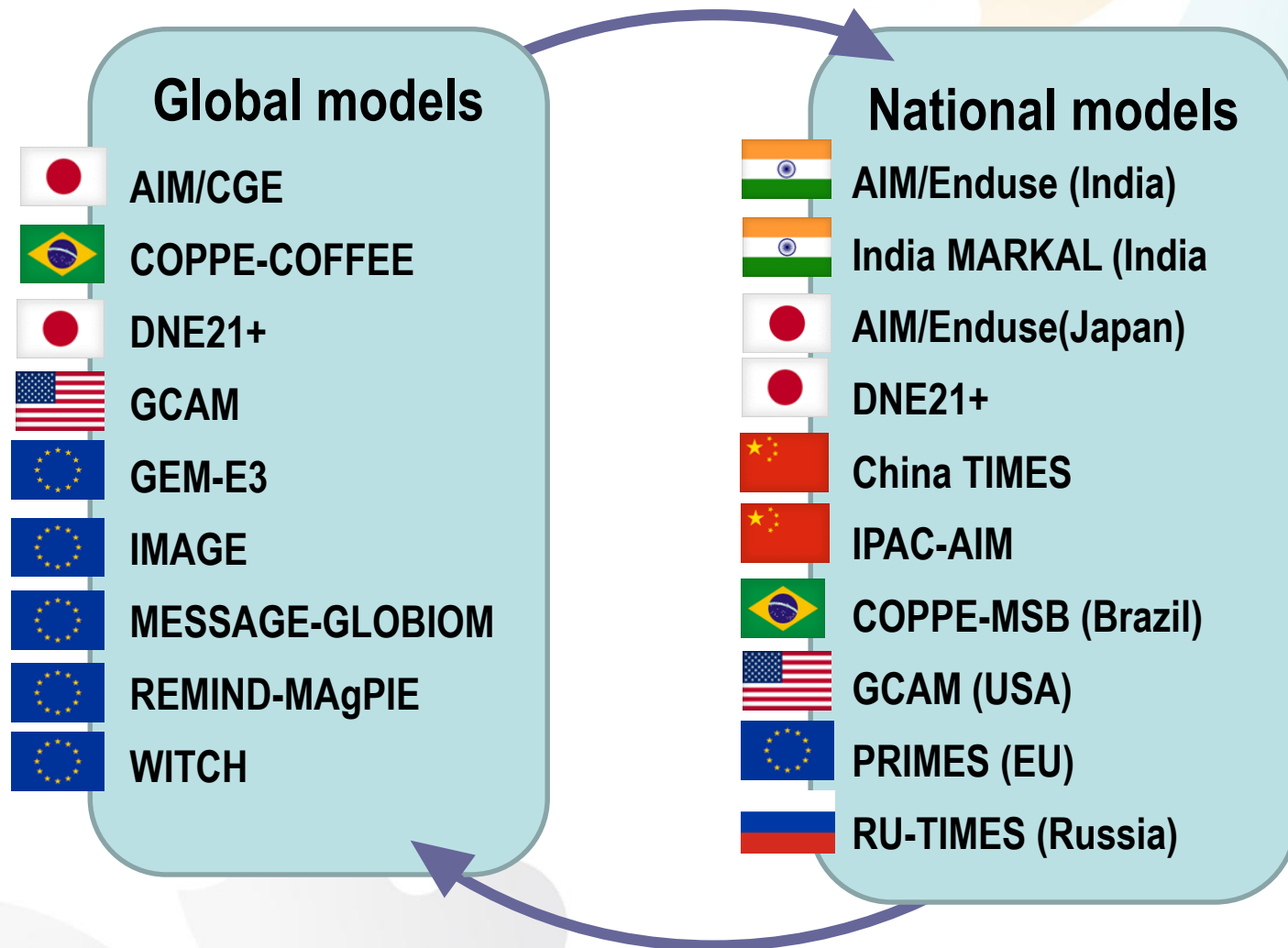
<http://www.cd-links.org>



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# National and global models



Top 7 emitters (~ 66% of global GHG emissions).