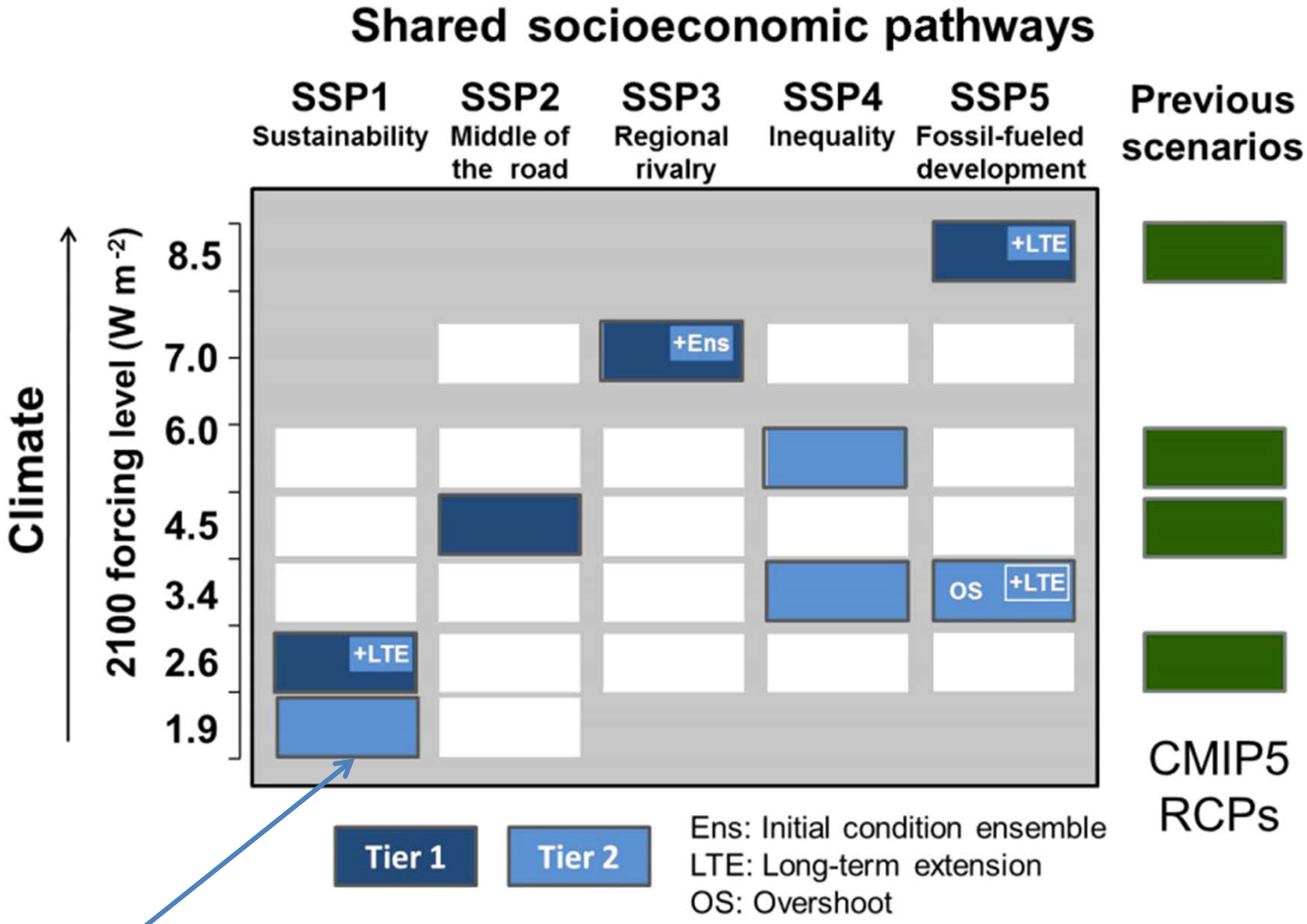
ScenarioMIP design

SLIDES kindly provided by Detlef van Vuuren – THANKS!

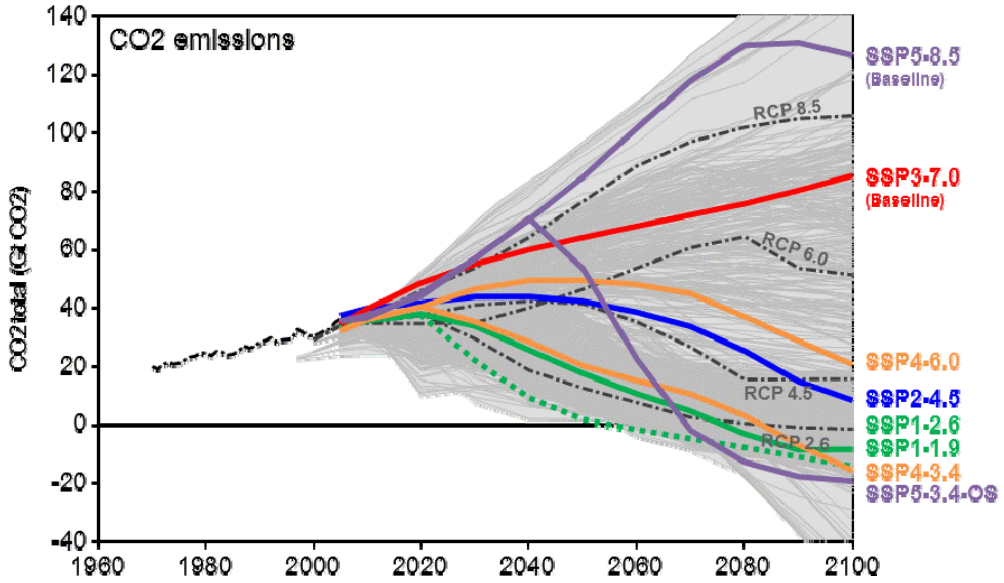


Rogelj et al

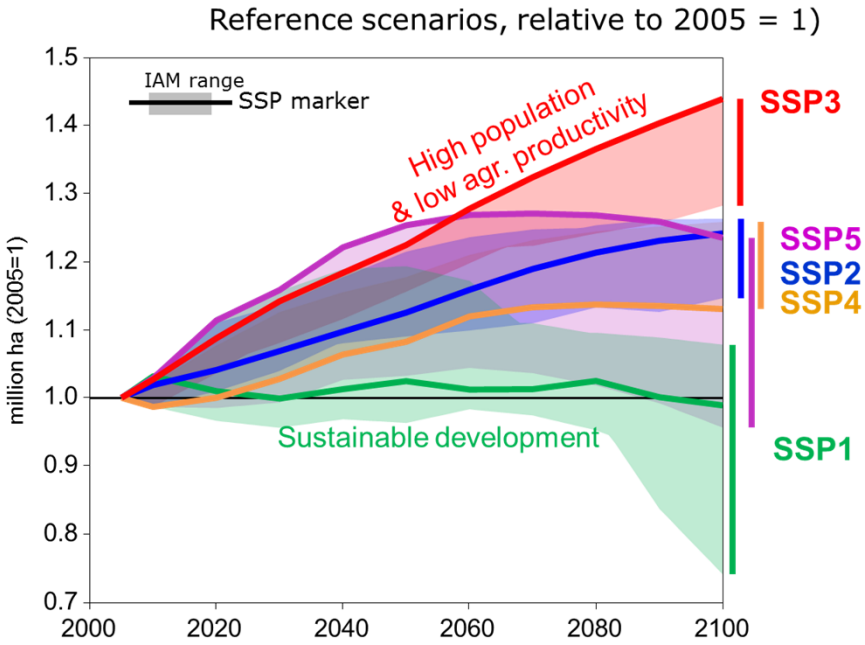
O'Neill et al., 2016

IAM scenarios for ScenarioMIP

Emissions



Land use

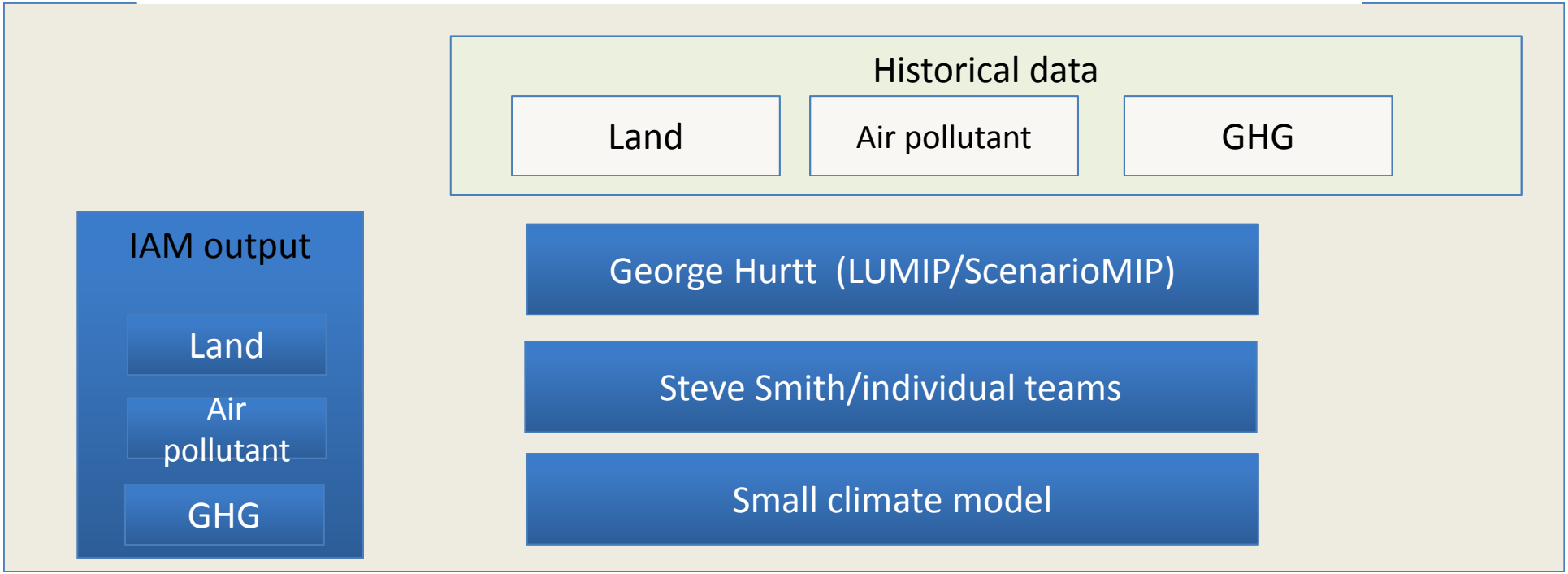


Work on SSP scenarios by IAM is finished and fully documented in Special Issue Global Environmental Change (16 papers; published November 2016)

Based on Riahi et al., 2016

Next activity IAM → ESMs

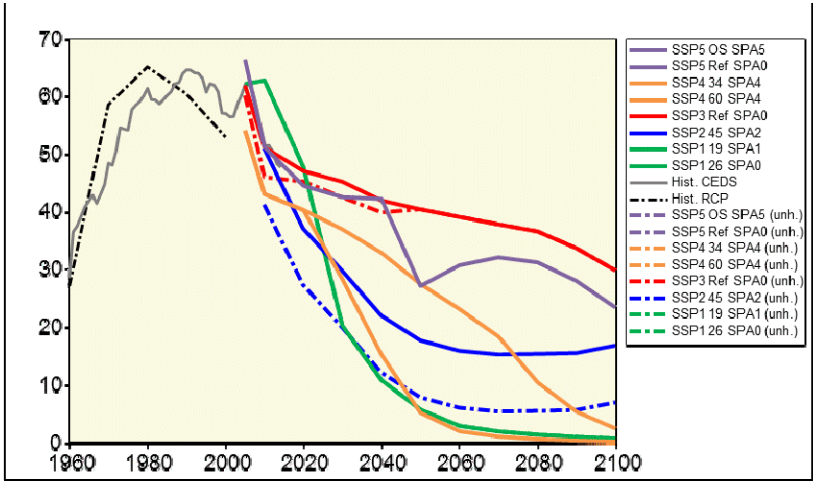
Variable	Subcategories	Resolution	Sources
Land use	Crop, pasture, urban area, vegetation, forest (latter two both primary and secondary).	Spatial maps indicating land use and transition matrices	Methods for historical data and scenarios developed by LUMIP
Emissions of long-lived greenhouse gases	CO_2, N_2O, halogenated gases	Spatial maps and/or emissions by region.	Historical data described in Meinshausen et al. (2016)
Concentrations of long-lived greenhouse gases	CO_2, N_2O, halogenated gases	Time series	
Emissions of air pollutants	CH_4, SO_2, NO_x, VOC, CO, NH_y, BC, OC	Spatial maps	Historical data described to be provided by the Community Emissions Data System (CEDS) project (http://www.globalchange.umd.edu/ceds/ceds-cmip6-data/)
Short-lived forcing	Ozone, optical depth	Spatial maps	



Activities IAM → ESMs

Emissions

- Teams submit as closely as possible harmonised emissions in detailed emission categories
- Algorithms do last harmonisation and downscale to grid – based on generic or more specific rules (population/income, land use)
- Checks on quality

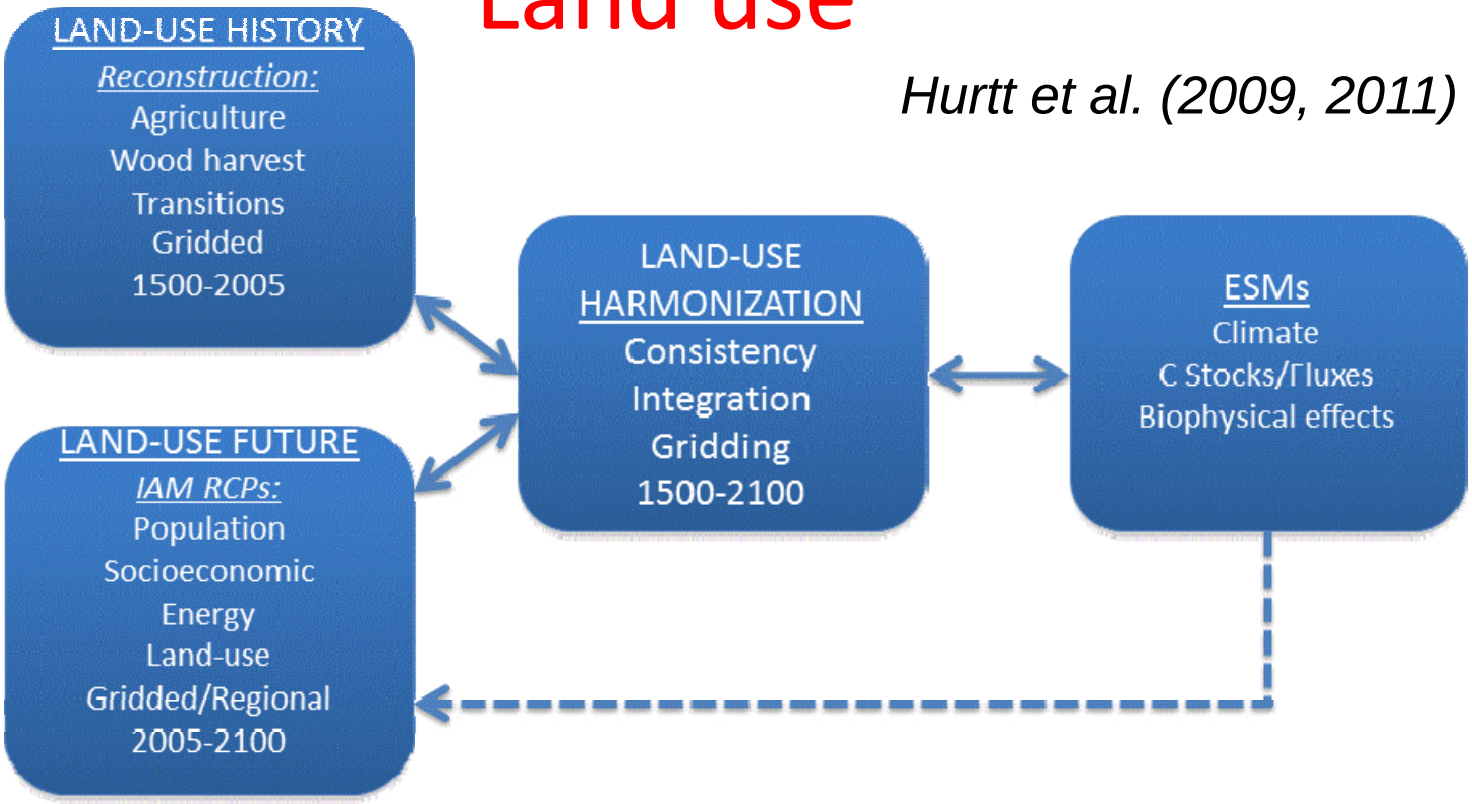


Example – sulphur from energy system

Activities IAM → ESMs

Land use

Hurtt et al. (2009, 2011)



- Develop consensus land-use history reconstruction
- Minimize differences between end of historical reconstruction and beginning of future projections
- Preserve as much information from IAMs on future as possible

Timing

- Land use harmonisation / downscaling → aimed at December, 31 2016
- Emission (air pollutants, some GHGs) harmonisation/downscaling → aimed at December, 31 2016
- Further translation of emission data into consistent GHG concentration files (and maps) → March, 2017.
- Last review; handover May, 2017