

SHARED SOCIOECONOMIC PATHWAYS & POPULATION DYNAMICS

Landy Sánchez Peña

TOPICS

- What are the shared socioeconomic pathways (SSPs)?
- How is population considered in SSPs? What is not?
- How could demographers contribute further?



Climate-earth



Social world

Impacts of climate change in land productivity & food prices



Household Poverty & demographic behavior



SHARED SOCIOECONOMIC PATHWAYS (SSPs)

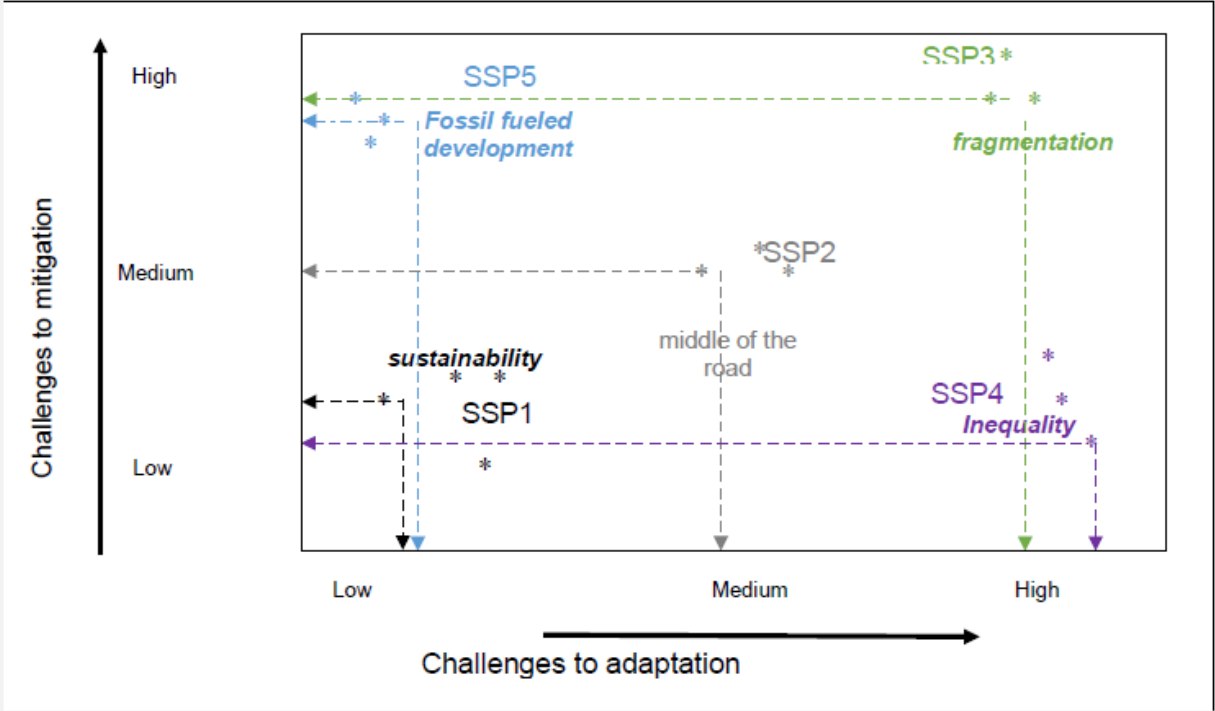
SSPs describe plausible alternative trends in the evolution of societies

Narrative story

Quantified measures

How the world would change under a given pathway

Economy
Technology
Population
Governance
Institutions



Escoto, Sánchez & Shultz, 2018

(O'Neill et al 2015)

POPULATION DYNAMICS

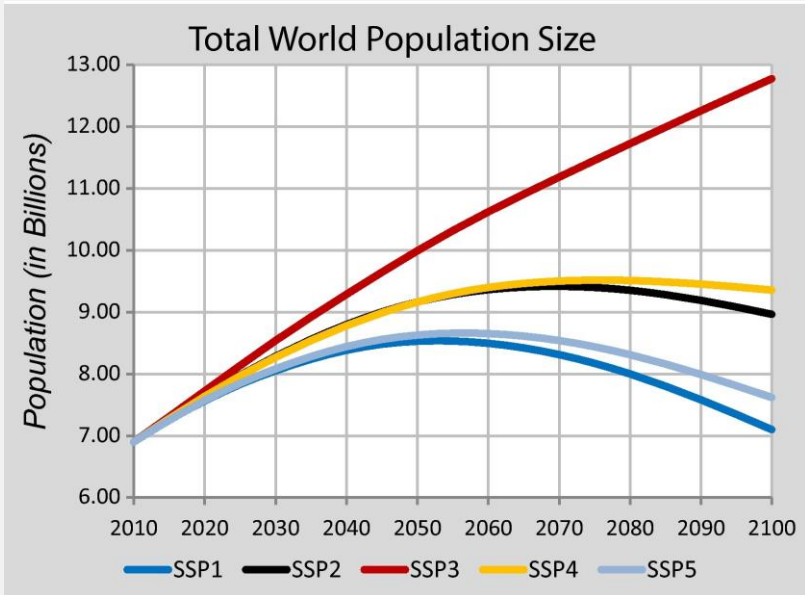
Population
projections

- Fertility
- Mortality
- Migration
- Education

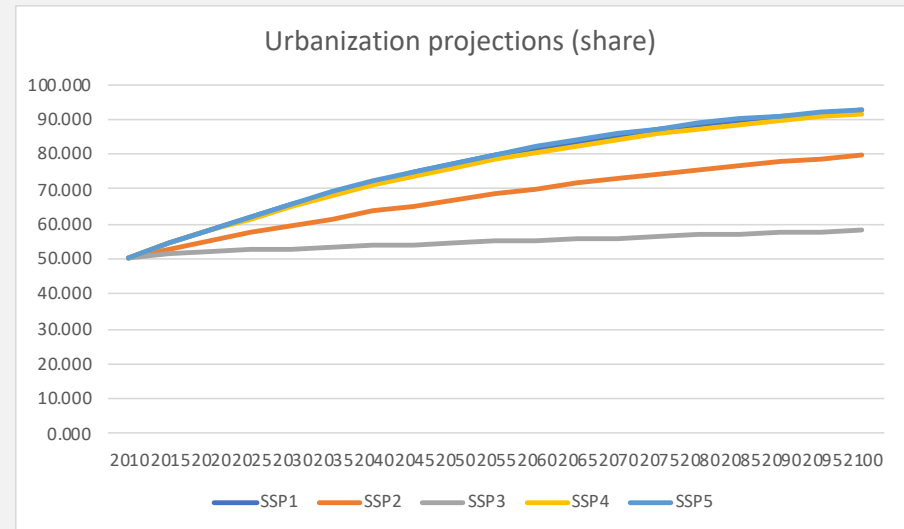
Urbanization
projections

- Rate
- Spatial pattern

	SSP3 Fragmentation	SSP5 Speedy Fossil Fuel Development
Population growth		
High fertility	High	low
High income/low fertility	Low	High
Other low fertility	High	low
Urbanization		
High income	Slow	Fast
Medium income	Slow	Fast
Low income	Slow	Fast
Spatial pattern	Mixed	Disperse



Samir & Lutz 2017



SSPs data based on Jiang & O'Neill, 2017

SSPs BALANCE

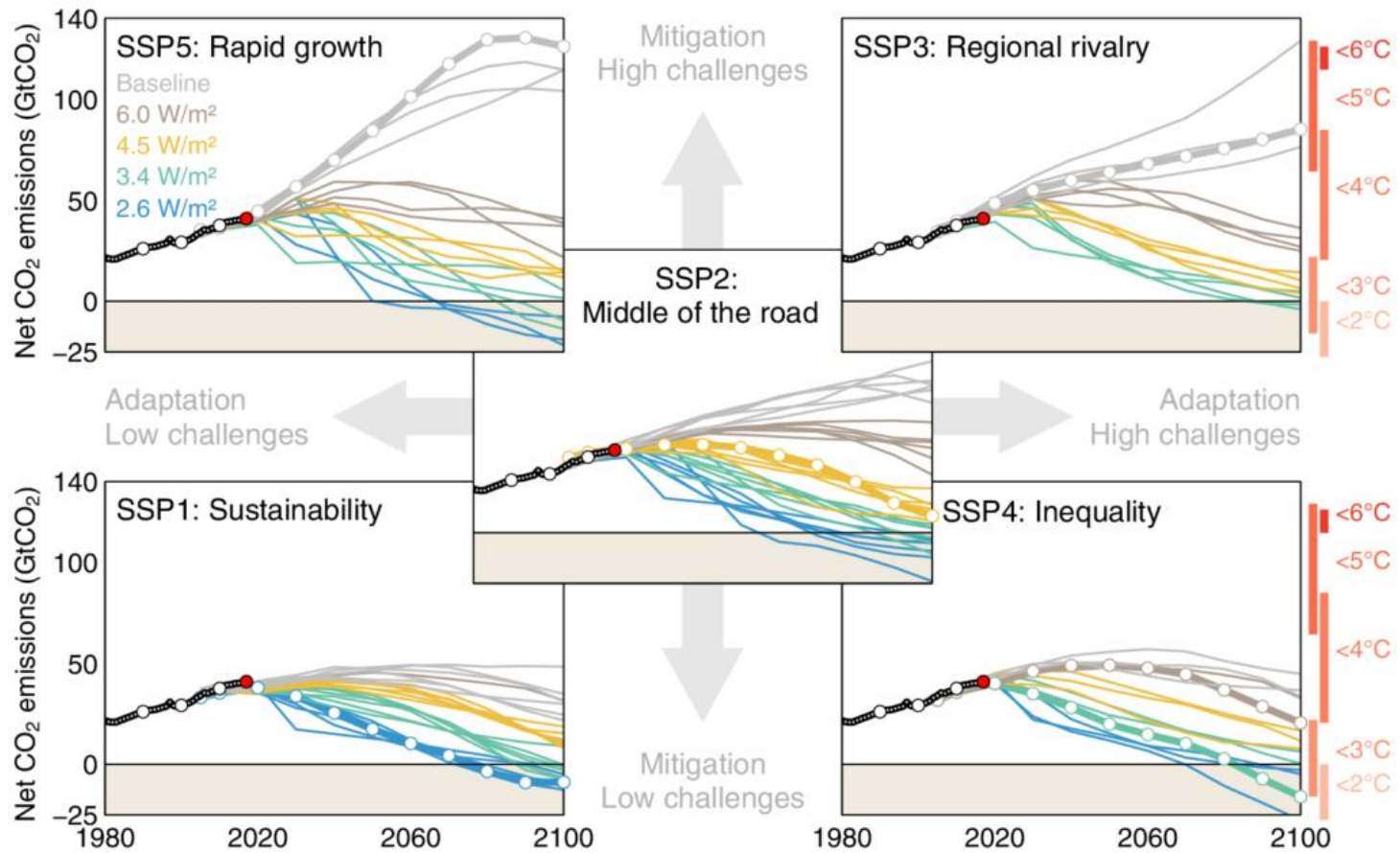
GAINS

- Integrate mitigation and adaptation
- Address more effectively questions concerning climate policies (Edbi et al. 2014)
- Multiple demographic and socioeconomic development pathways are consistent with different concentration pathways
- Better indicators and spatial data

APPLICATIONS

- Climate change policies
- Inequality and Poverty
- Economic sector analysis
- Land use, biodiversity, food
- Spatial population projections
- Spatial urbanization projections

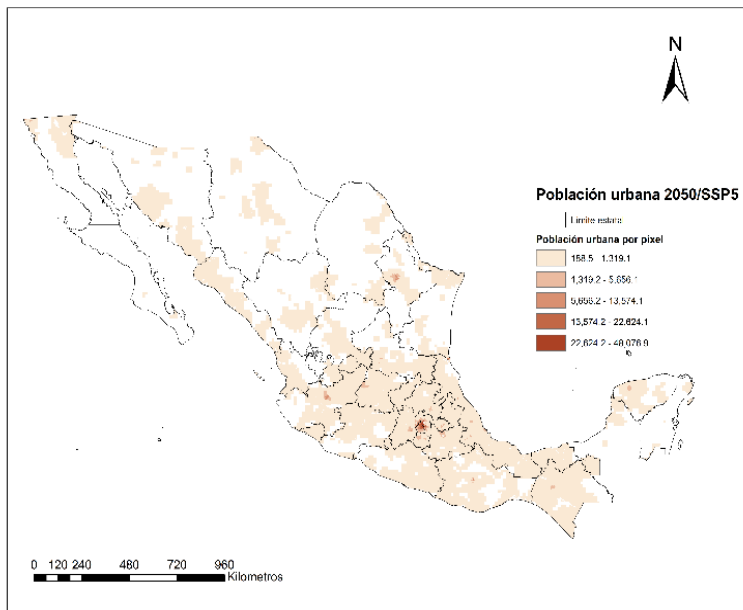
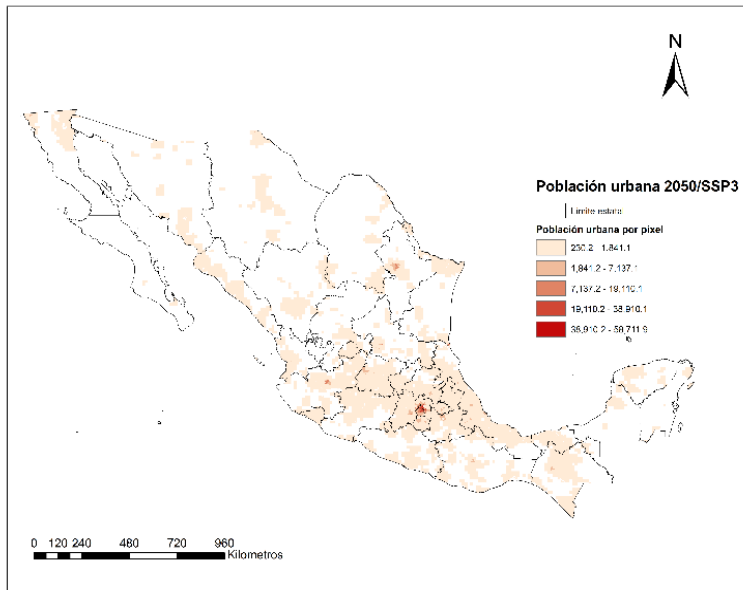
Is it possible to meet mitigation targets?



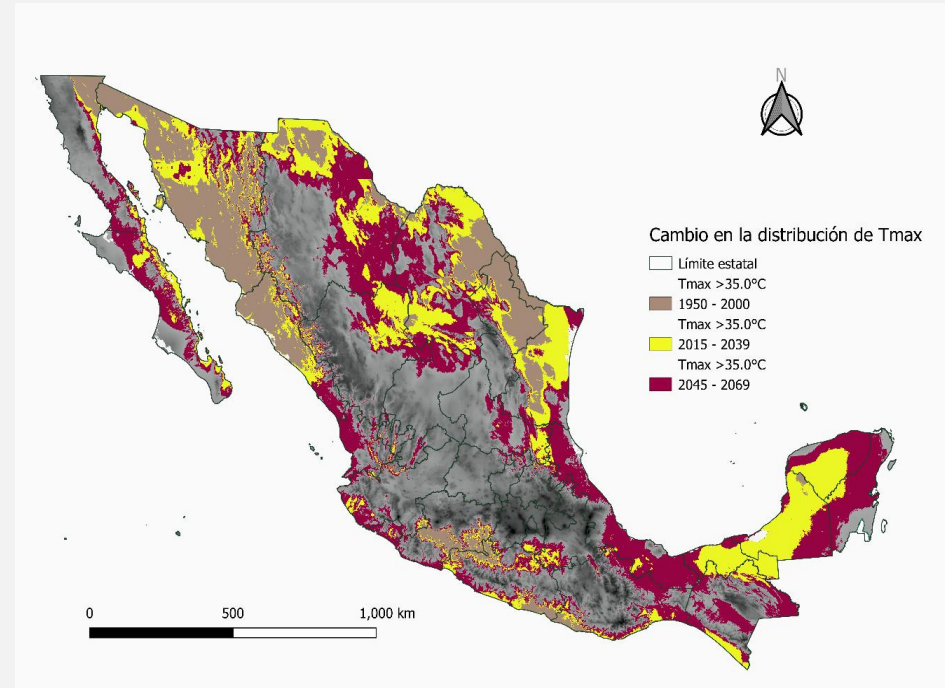
How population dynamics contribute?

What Population policies are consistent with those futures?

Urban population 2050, SSP3 (a) y SSP5 (b)



Estimated Changes in temperature > 35 C 2050-2069. HADGEM2ES 8.5



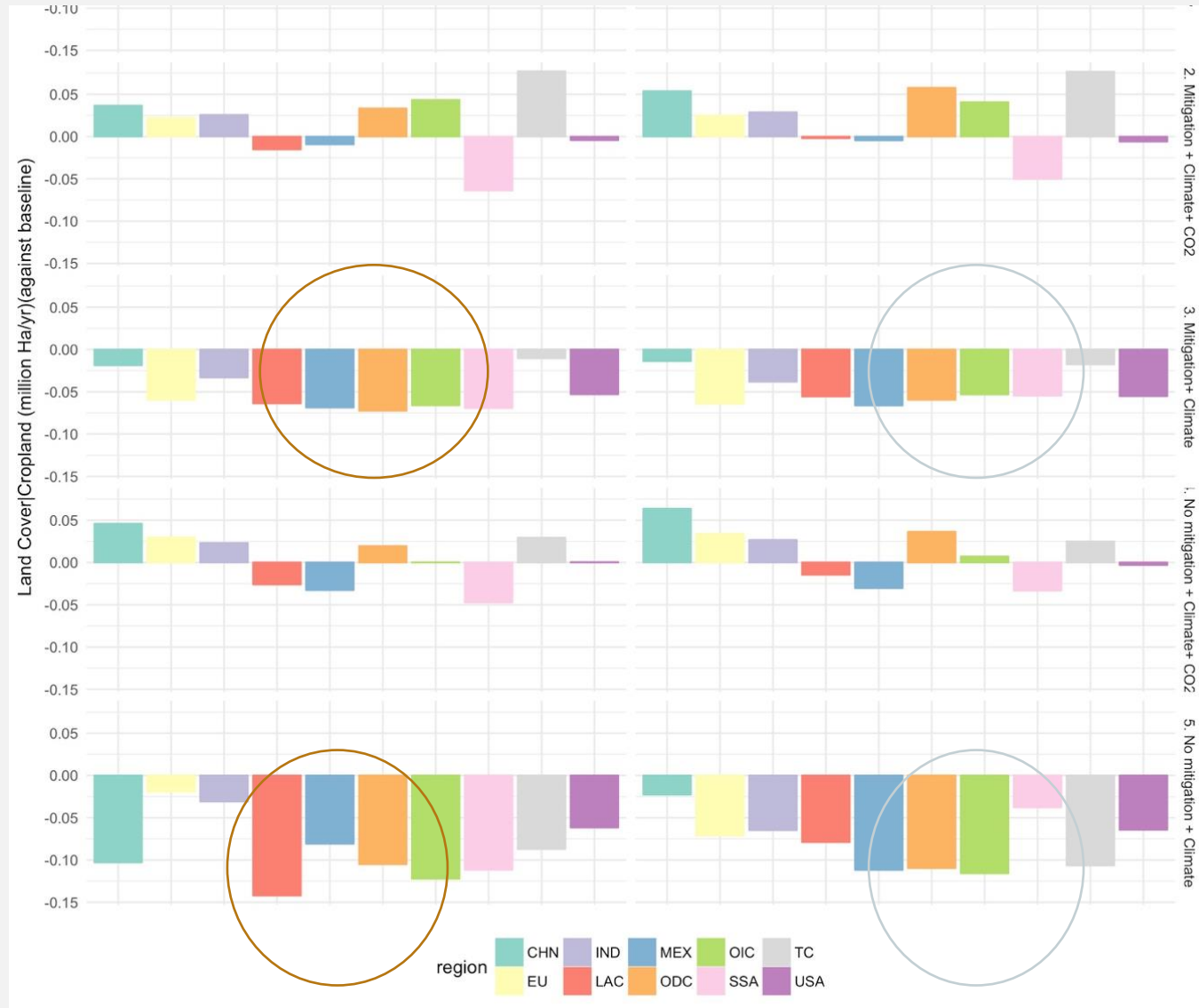
Herrera 2021

Improve mortality models and population projections

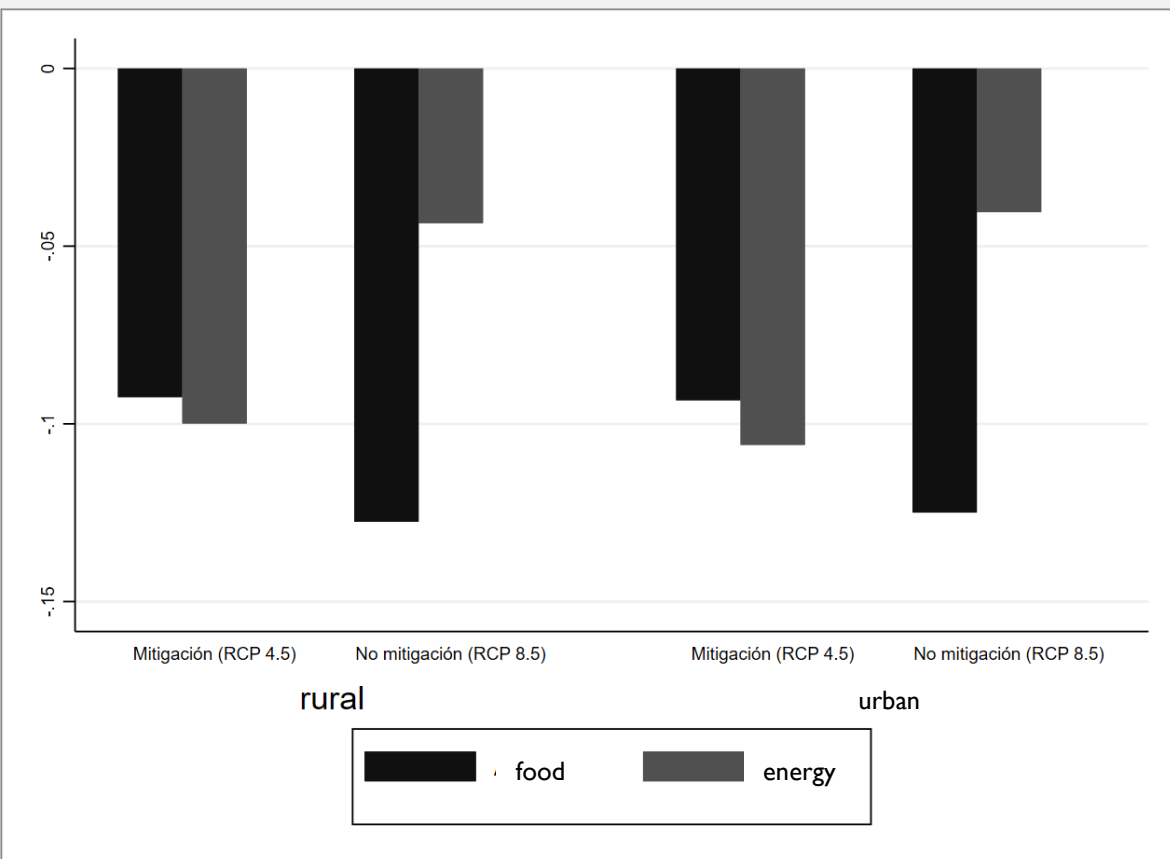
Crops Yields

SSP3

SSP5

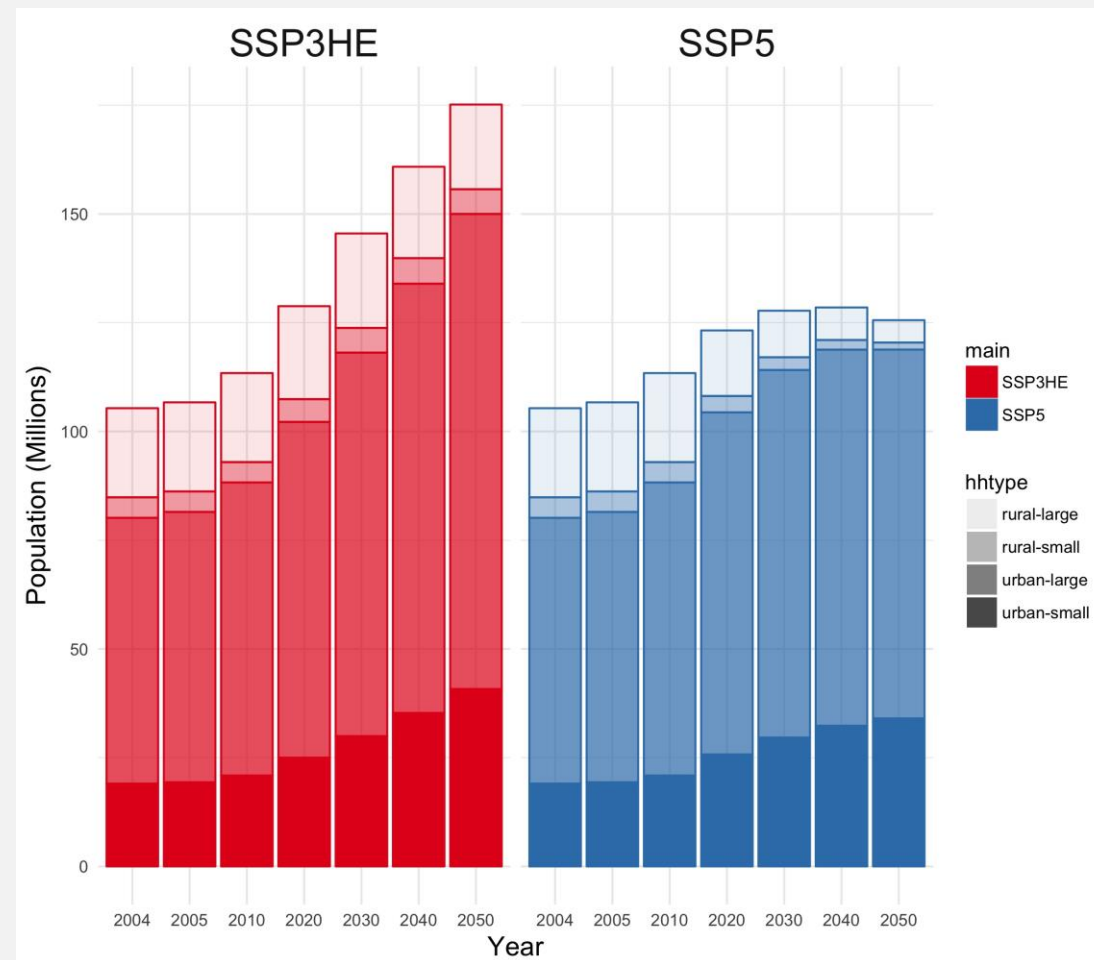


Decrements on food and energy consumption. Mexico (Expected mid Century)



Scarcity and
demography
behavior

Social policies for
heterogenous
households



(SOME) TASKS FOR DEMOGRAPHERS

- Evaluate whether socioeconomic indicators sufficiently describe development pathways
- Better and greater spatial resolution, central for adaptation and impact analysis
- More regional models, within global contexts
- Improving indicators and use for SSPs for adaptation
- Feedback between adaptation and mitigation
- By definition, SSPs don't include climate. How can we address issues of climate impacts on population dynamics? Turning points in population trajectories? How would that feed into the other drivers?

THANKS

lsanchez@colmex.mx

@landySanchezPe