SCHEMA, a crosscutting project: Accounting for Socioeconomic Heterogeneity in IIASA Models

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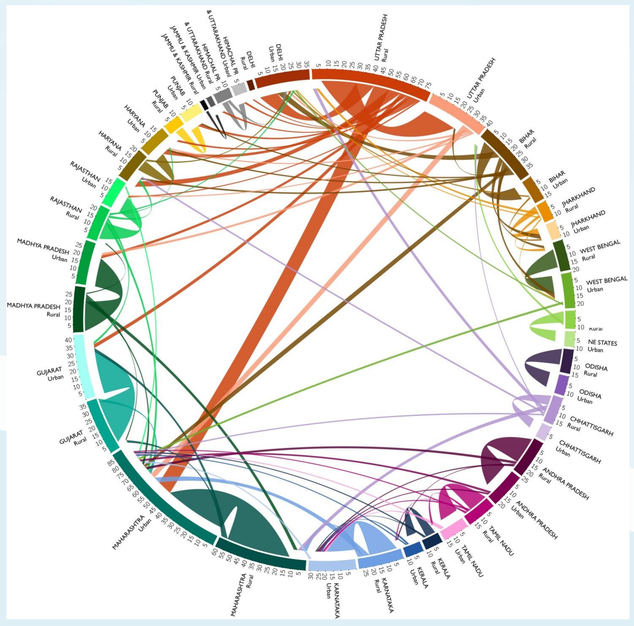
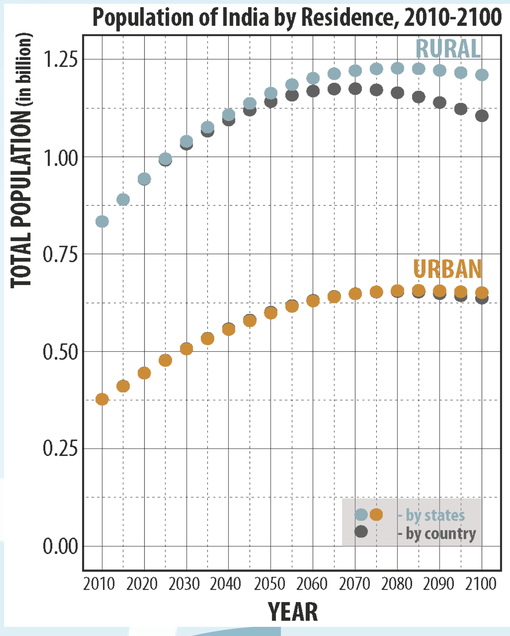
Population

Disregarding internal migration and urbanization leads to underestimation of total population due to fertility and education differences

Concept: Internal Migration

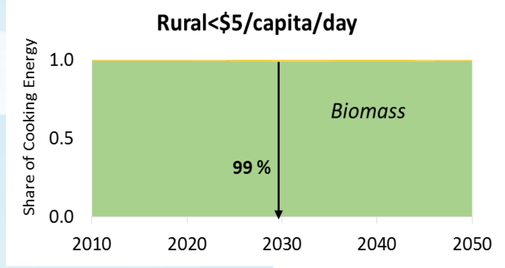
Source: Census 2001; Visualization: N. Sander, M. Sperringer & S. KC

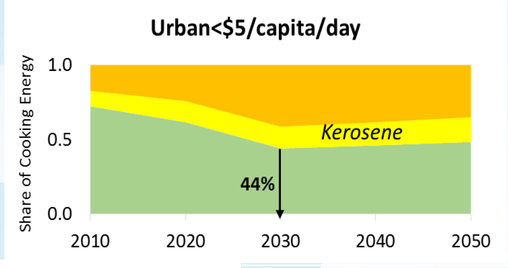


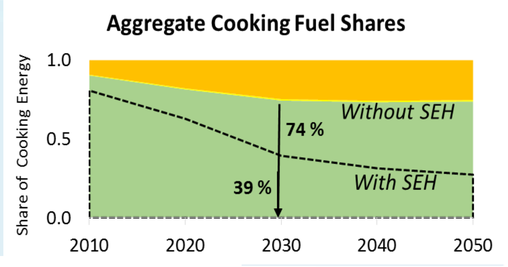


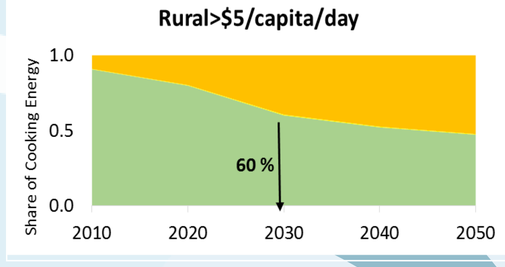
Energy access

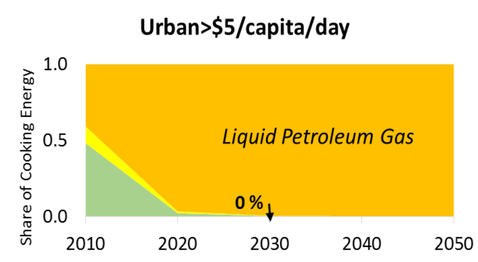
Disregarding income heterogeneity and urban/rural differences leads to overestimation of biomass (solid fuels) in cooking energy





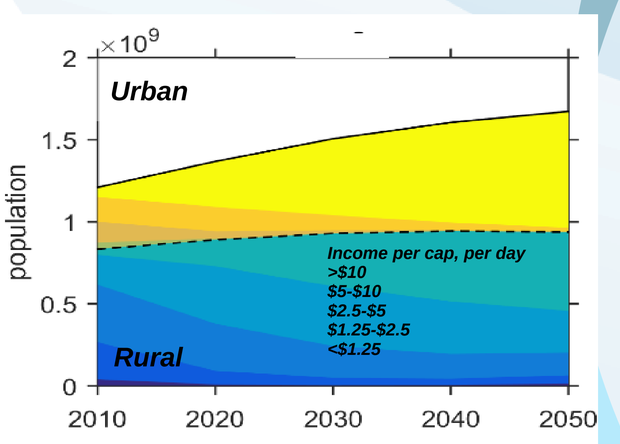






Income distribution

Technological change, education inequality and capital flows tend to increase income inequality



Socio-economic heterogeneity critical for capturing preferences and impacts on well-being

Research approach

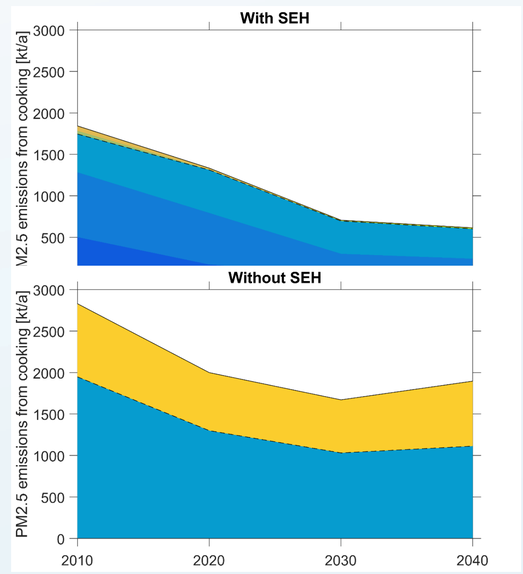
- Identify and develop projections for key drivers of heterogeneity
- Link primary drivers of heterogeneity to final well-being indicators in IIASA's large-scale integrated assessment models for population, energy, air pollution, food and nutrition
- Create a common input database for use by all models
- Develop proof-of-concept with India, a large and very diverse country

Dimensions of heterogeneity

- Urban vs rural
- Income inequality
- Age, sex, education
- State of residence

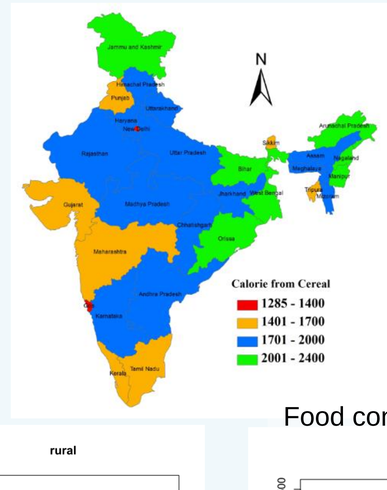
Local Pollution

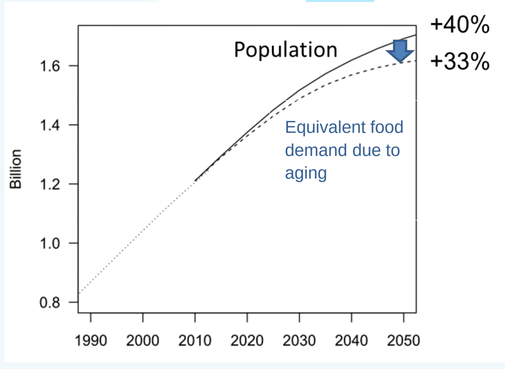
Disregarding heterogeneity in cooking fuel choices leads to overestimation of particulate ($PM_{2.5}$) emissions



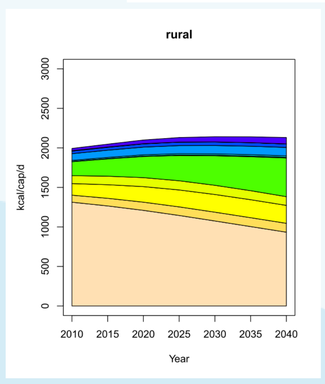
Food and nutrition

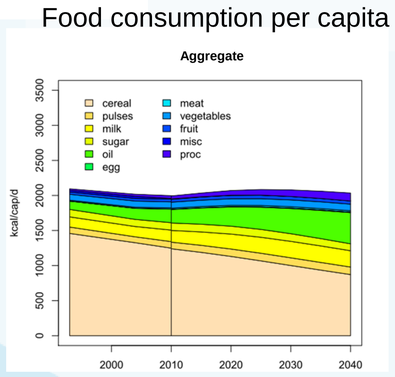
Disregarding regional, income, demographic, and urban/rural differences underestimates the diversity in dietary patterns in India.

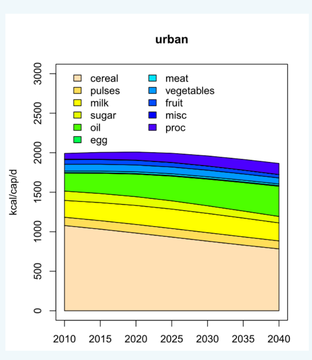




Food consumption per capita







Air quality and health

Disregarding spatial distribution of particulate $PM_{2.5}$ emissions results in overestimating exposure and related premature mortality