

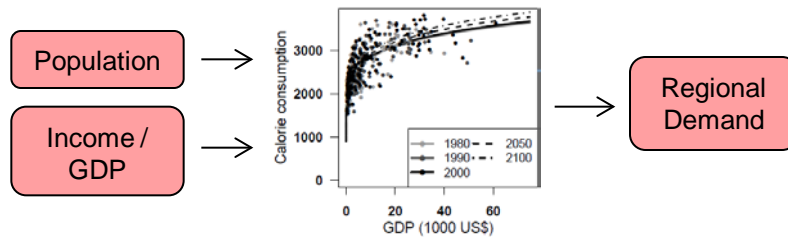
Integration of multiple biophysical impacts in agro-economic models

Hermann Lotze-Campen

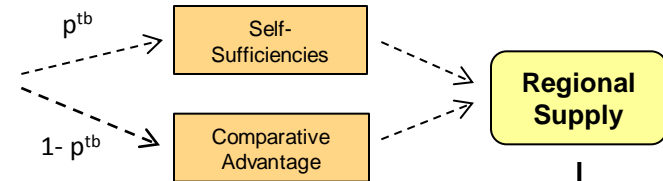


Potsdam Institute for Climate Impact Research
ISI-MIP Workshop, 22 Jun 2016

Calories and Livestock Share



International Trade



MAgPIE

Socio-Economic Data

- cost and investment data

regional



Biophysical inputs (LPJmL)

- crop yields
- land / water constraints
- vegetation and soil carbon

on 0.5° grid



Land Pools

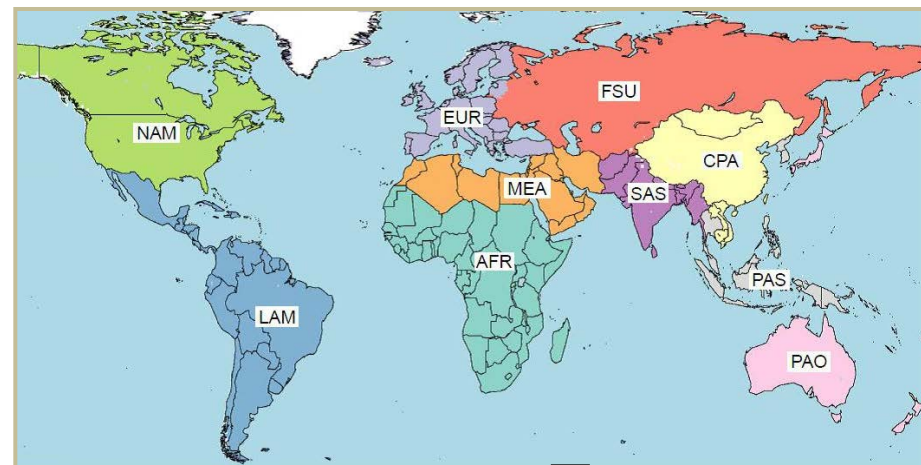
based on FAO, IUCN and WRI

on 0.5° grid



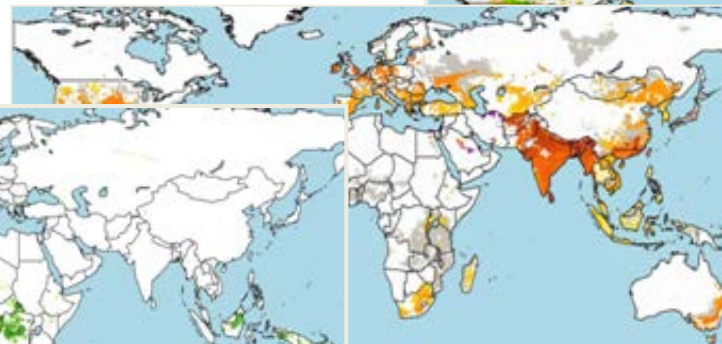
Transport Costs (JRC)

on 0.5° grid



Cropping Patterns

Water Scarcity



Deforestation Rate



Agricultural prices

Welfare

Integration of multiple biophysical impacts

Different socio-economic pathways (SSPs) combined with CC impacts on...

- Crop yields
- Grassland yields
- Water availability
- Productivity of forests
- Biome changes (e.g. as proxies for biodiversity impacts?)
- Land loss due to sea-level rise
- Fish supply
- Health impacts on labour productivity

Linked to AgMIP Global Economics work

Other agro-economic models with spatial detail:

GLOBIOM, IMPACT, IMAGE-MAGNET