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## Going global to local: achieving agri-food sustainability from a spatially explicit input-output analysis perspective

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## Propositions

*“Going global to local: achieving agri-food sustainability from a spatially explicit input-output analysis perspective”*

by *Zhongxiao Sun*

1. Spatially explicit input-output analysis offers the opportunity for globally analyzing heterogeneous environmental pressures along the supply chain (Chapter 2).
2. Global food security is threatened by high-income diets, which due to their size and composition rely on importing large amounts of fodder and food from low- and middle-income nations (Chapter 3).
3. Animal products are the largest driver of various environmental impacts, such as biodiversity loss within Key Biodiversity Areas (Chapter 4).
4. Upstream land sparing from dietary changes across high-income nations could be used for carbon sequestration. The level of this sequestration could fulfill the carbon dioxide removal responsibilities of high-income nations (Chapter 5).
5. Global diets are converging and inequality in the availability of animal-source foods has declined substantially (Bell et al., 2021).
6. Tropical regions, which are biodiverse and store a very large amount of carbon stocks, are facing more trade-offs between food security and environmental protection due to rapid population growth and increasing per-capita consumption (Vijay et al., 2021).
7. The gain of forest cover in developed countries and “greening leaders” (i.e. China and India) is at the expense of overseas deforestation, especially in tropical regions (e.g. Brazil, Mexico, and Indonesia) (Hoang et al., 2021).
8. Global food security is threatened by human factors such as trade restrictions more than local production limitations (Falkendal et al., 2021).
9. More than a quarter of human infectious diseases are related to agri-food systems and this proportion increases as agriculture expands and intensifies (Rohr et al., 2019).
10. Future foods (e.g. insects, seaweed, and cultured meat) are capable of meeting the human demand of essential micronutrients and are land-efficient alternatives of animal products (Parodi et al., 2018).
11. The increasing body mass index and height would require more global food demand in the future (Deppenbusch et al., 2019).
12. Reducing food waste is vital for reducing the upstream land, biodiversity and climate impacts currently seen from food systems. New technologies such as mobile phone applications to encourage the consumption of food that would otherwise be wasted, and interventions such as fining supermarkets for food waste may facilitate reductions in food waste (Roe et al., 2020).