

## Is China net importer or exporter of agricultural footprint?

Topic: The Importance of Resources

Author: Jan WEINZETTEL

Co-Authors: Glen P. PETERS, Richard WOOD

Consumption based accounting (or “footprint accounting”) has increasingly become of interest to the research community seeking to link a population’s lifestyle to their environmental impact. Input-output analysis (IOA) serves well in this approach as it covers all traded products, their full supply chains and explicitly delineates final consumption. However, using IOA comes at the expense of precision due to an aggregation error – often environmentally important supply chains, especially in agriculture are represented only in aggregate in many input-output databases. In this contribution we focus on the Chinese agricultural footprint and try to answer the question, whether the high agricultural footprint of Chinese exports is a result of the precision of the method, or whether it is based on actual production patterns of the exported products. A footprint related to agricultural products of a country with exceptionally high exports of manufactured non-agricultural products calculated through input-output analysis can be affected to an extent that it changes from a net exporter to a net importer of the embodied impact.

The novelty of this work is that we employ a hybrid MRIO method based on the EXIOBASE 2 database, and hybridized with the explicit representation of over 150 agriculturally intensive products. This follows the work of Weinzettel et al 2013, but includes additional information to physical trade flows with the additional information on use of agricultural products in food and non-food manufacturing. We use the case of Chinese trade to calculate the harvested area and harvested weight footprint of Chinese exports. We further applied contribution analysis in order to identify the most important products and structural path analysis in order to identify the most important production nodes in the specific production paths. We compare results from the standard MRIO approach to the hybrid MRIO approach to show the effect of explicit representation of the manufacturing stage in the detailed accounts.