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*„Is International Trade Driving Global Resource Use?
An Analysis of the Socioeconomic Drivers of the Growth in Global Raw Material Consumption from
1990 to 2010“*

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Summary

The vast expansion of resource use of human societies is associated with growing pressure on the environment and encroachment on the habitats of other species. Environmental impacts of economic production are furthermore increasingly de-linked from the consumption of final products due to spatial disconnectedness facilitated by international trade. To better understand the environmental consequences of trade, a deeper understanding of the impacts of international trade on material use is required. The question whether changing trade patterns drive the increase in global material use has remained unanswered. I conducted a structural decomposition analysis using a comprehensive multi-regional input-output model to assess the driving forces underlying the change in global raw material consumption (RMC) from 1990 to 2010.

It could be shown for the first time that changes in the international trade structure has significantly contributed to global RMC growth, i.e. international trade as actually facilitated global RMC growth. Increasing international interdependence between 1990 and 2010 contributed 30% to the global RMC growth, i.e. if the global consumption in 2010 would have been produced with the trade structure of 1990, global RMC would only have grown 22.7 Gt between 1990 and 2010, instead of the actual 32.46 Gt. The assessment furthermore showed that wealthy developed countries play a major role in driving global RMC growth through changes in their trade structures, as they source production processes increasingly from less material-efficient countries. Even the dramatic increase in material consumption in the emerging economies has not diminished the role of wealthy countries as drivers of global RMC growth. This information is crucial for future political decision making on resource use in industrialized countries.