

## **Extending multi-regional input-output (MRIO) models with water use data for policy-related applications**

Topic: Environmental IO models 2

Author: Stephan Lutter

Co-Authors: Thomas Oliver Wiedmann

In a globalised economy, local water depletion and pollution are often closely tied to consumption in other countries and world regions, as water used to produce exported products is 'embodied' in traded commodities as so-called 'virtual' water. Integrating economic and environmental water data within a single framework allows for modelling the interactions between the economy and the environment in order to quantify the relative benefits of mitigation measures on the political as well as on the technical level. Multi-regional input-output (MRIO) models can track the distribution of water use within countries and across countries on a sectoral level, but they require appropriate water accounts with an acceptable level of accuracy and specificity for policy-making. Implementing robust water use models with global scope is essential to foster water use policies on the national and international level.

This paper addresses the following questions: What are the most pressing water-policy questions which Water MRIO models (W-MRIO) can help answering? Which indicators can be produced with W-MRIO, which are of key importance for water policy making? How should water use be accounted for to fulfil the W-MRIO requirements? What are the necessary next steps in developing the W-MRIO approach further and strengthen it for use in water policy making?