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RESOURCE

Future Changes in the Trading of Virtual Water

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Description / Abstract

Water-stressed regions rely heavily on the import of water-intensive goods to offset insufficient food production driven by socioeconomic and environmental factors. The water embedded in these traded commodities, virtual water, has received increasing interest in the scientific community. However, comprehensive future projections of virtual water trading remain absent. Here we show, for the first time, changes over the 21st century in the number of various water types required to meet international agricultural demands. Accounting for evolution in socioeconomic and climatic conditions, we estimate future interregional virtual water trading and find trading of renewable water sources may triple by 2100 while nonrenewable groundwater trading may at least double. Basins in North America, and the La Plata and Nile Rivers are found to contribute extensively to virtual water exports, while much of Africa, India, and the Middle East relies heavily on virtual water imports by the end of the century.

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