Tele-connecting local consumption to global land use and water consumption

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Pre-seminar refreshment: 3:00-3:30pm
Meet with Dr. Hubacek from 4:45-5:15pm, CSS 3400

Consumption-based accounting (or footprinting) is becoming more accepted for carbon accounting especially when looking at carbon leakages, which are not well captured in traditional accounting approaches. Similarly, consumption-based approaches are increasingly used for land and water accounting. Local land use changes and water consumption are increasingly triggered by demands for products that are part of global supply chains. Trade oftentimes involves large geographical distances and creates environmental impacts around the globe. Using a global trade model we connect local consumption to global land use and water consumption through tracking global supply chains. Our results show to what extent developed countries consume large amounts of goods and services produced around the globe thus displacing and competing with local uses, a fact that is recently be discussed with regards to land grab. On the land use side, we see for example that 39% of total land use for U.S. consumption is requiring and displacing land use in other countries. This ratio becomes much larger for the EU (more than 50%) and Japan (85%). When looking at providers of land for foreign consumption our analysis shows that 47% of Brazilian and 88% of Argentinean cropland is used for consumption purposes outside of their territories, mainly in EU countries and China. The emerging economies and population giants, China and India, are likely to further increase their appetite for land from other countries, such as Africa, Russia and Latin America, to satisfy their own land needs driven by their fast economic growth and the needs and lifestyles of their growing populations. A similar story can be told when looking at water consumption where oftentimes water-scarce regions export virtual water and further threaten their local water resources and livelihoods versus strategically using water accounting tools to import water intensive products from abroad and so protecting their own resources.

Dr. Hubacek’s research interests involve the modelling and analysis of socio-ecological systems. He has conducted studies for a number of national agencies in Austria, China, Japan, UK, US, and international institutions such as the EUROSTAT, OECD, IUCN, World Bank, and UNESCO. Dr. Hubacek has published over 150 scientific articles. His research on global environmental issues has been featured and discussed in national and international news outlets such as Britain’s The Guardian, France’s Le Monde and Le Figaro, Italy’s La Repubblica, the German TV (WDR), Chicago Tribune, Reuters, Scientific American, ScienceNews, New Scientist, Nature, and BBC’s Material World.