Carbon, Water and Land use accounting: Consumption vs Production perspectives

Topic:
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The traditional approach of accounting of environmental pressure in the Kyoto Protocols follows the production-based accounting, which attributes all environmental pressures generated from production activities within a country boundary to that country total environmental pressure. However, the major flaws of this approach is that it does not take into account environmental pressures embodied in imports and so build stimulus for shifting of environmental pressures abroad. An alternative approach to include environmental pressures associated with imports to the country and subtract export related environmental pressures is the consumption-based approach or footprint approach. This approach has been widely considered as an alternative way to more adequately allot responsibilities between the emitters and final consumers. This study compares and discusses the concepts of both approaches, showing the results of an empirical analysis and going into the application of the two different perspectives in worldwide environmental policies. This paper presents the results of an analysis of the Carbon, water and land footprints of the worldwide from 1995 to 2009, and comparing the outcomes for the two approaches for four world regions (i.e. EU, OECD, BRIC and RoW). The analysis is based on a multi-region input output (MRIO) model to assess these environmental pressures. The proposed model use the world-input-output-database (WIOD) covering 35 sectors and 41 countries. The results shows that during the entire study period, the carbon emissions, land use and water use for the EU and OECD regions are higher in the consumer approach than in the producer approach. The results further indicate that, for the BRIC and rest of the world (RoW) regions, the carbon emission, land and water use are higher in the producer approach than in consumer approach.