

Decomposition of Sectoral Water Consumption: A Subsystem SAM for Extremadura, Spain

Topic: Water Issues Worldwide

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Though most direct water use is generally associated with agriculture, and therefore with the production of food, there is a clear consensus that considering indirect water uses is an important factor to be considered in any environmental analysis. In this regard, the subsystems input-output approach makes it possible to isolate the water relations of a limited number of activities as part of the entire production sphere and thus obtain specific production information of them. However, not directly related with production, the demand of goods and services closely linked to available income, also play a significant role in water consumption. Hence, in this paper we propose an extension of the input-output subsystem model to account for all transactions within a Social Accounting Matrix (SAM) and capture the entire flow by which water depletion is caused and transmitted throughout the economic system. The empirical application is for the Spanish regional economy of Extremadura, and the economic and environmental data are for the year 2005. Our results show that large asymmetries exist not only in the quantitative contribution of the different economic agents to water consumption, but also in the decomposed effects of this contribution.