

The use of water and the interdependence of regional economies: the case of Brazilian Hydrographic Basins

Topic: Sustainable production and consumption

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Brazil is known for its satisfactory water availability. However, there is an uneven spatial distribution of this resource in the country. These characteristics, combined with the strong economic concentration, have caused some regions to face scenarios of water restrictions. In this work, the objective is to identify the main water users in Brazil. To achieve this goal, it were calculated the direct technical coefficients of withdrawn, consumption and return of water, volume of water use, the Virtual Water interregional flows and the Water Footprints of the Hydrographic Basins of the National Water Resource Plan. Based on this information, the impacts of the current water use pattern on the local Water Balance were verified. In order to meet the proposed objectives, an interregional input-output system with 50 sectors and 56 regions for 2009 was estimated. Among the main results, it is worth noting that the Hydrographic Basin Litoral AL PE PB was the main responsible for water withdrawn in the country, while it presented the worst Water Balance. In addition, it was verified that the TietÃª Basin was the main region from the water demand point of view. Regarding the interregional flows among the Watersheds, it were verified that the water interdependence was bigger than economic interdependence and that 66% of exported Virtual Water volume among the regions came from Basins where the Water Balance was critical. From this information, it was found that these exports affected the water availability of some Basins with an unsustainable Water Balance. Thus, it can be concluded that in some Hydrographic Basins the exports of Virtual Water counteract what is expected from the water security point of view. Front of that, public policies are required to promote the use of scarce water resources in a less intensive way in these regions.