

## **Water footprints in Spain based on a MRIO model with 16 Spanish regions**

Topic: Environmental IO models 2

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In this work we use a Multi-regional Input-Output model, constructed with 16 Spanish regions, an account of the EU, and an account of RW, in order to estimate the Water Footprints of the regions, their Virtual Water trade, and the pressures on the resource that it implies given the different availabilities of the regions. The study is framed with those interregional input-output models constructed to study water flows and impacts of regions in China (Okadera et al., 2005, Guan and Hubacek, 2007, 2008, Feng et al., 2011), Australia (Lenzen, 2008, 2009), Mexico (Duchin and Lopez, 2011). The construction of interregional matrices and models in Spain has its precedent in the works of Perez (2001), Llano (2004, 2009) and Perez et al. (2009), with the INTERTIO model, for 1995. To build our database, we reconciled a small number of sources (regional tables, regional accountancy of Spain, and the database C-Intereg), and water data by updating regional Satellite Water Accounts, and from the water needs by crop obtained from Mekonnen and Hoekstra (2011). Our interest here is the agrarian sector, food industry and a few related sectors, and so in the results, we look at the specific nature of those sectors, and from a concrete regions, finding e.g. the net export character of regions such as Andalucía, Aragón, Castilla La Mancha or Castilla y León, but with very different effects and implications on the local water management.