Input Output model for assessing the Water Footprint. The case of Spain.

Madrid, Cristina[a*]; Hoekstra, Arjen Y.[b]; Alcantara, Vicent[c].

[a] Department of Applied Economics. Autonomous University of Barcelona
Edificio B. Campus de Bellaterra. 08290 Cerdanyola del Valles. Spain.
Phone:+34 93 581 45 82 Fax: +34 93 581 22 92
E-mail: Cristina.Madrid@uab.es

[b] Twente Water Centre. Dept. WEM, Faculty CTW, University of Twente.
P.O.Box 217, 7500 AE Enschede, Netherlands.
Phone: +31 53 489 3880. Fax: +31 53 489 5377
E-mail: A.Y.Hoekstra@utwente.nl

[c] Department of Applied Economics. Autonomous University of Barcelona
Edificio B. Campus de Bellaterra. 08290 Cerdanyola del Valles. Spain.
Phone:+34 93 581 12 76 Fax: +34 93 581 22 92
E-mail: Vicent.Alcantara@uab.es

*Corresponding author

Abstract

The water footprint represents the freshwater volume required to sustain a population. Since the direct data of the water consumption is in many cases not available it is necessary to estimate it.

This paper estimates the Water Footprint of Spain, examine the flows over the sectors and identify the key sectors of the water footprint for the years 2000 and 2004.

The methodologies used for the estimation of the water footprint have been mainly related to what can be called “unitary product requirement” estimations where from climatic data, the unitary use of water per product is calculated and used to estimate virtual flows within product chains and between trading regions. As an alternative approach the Input-Output model can be used for the estimation of virtual water flows between sectors and regions.

The Spanish national statistic service has included the physical flows of water to the national accounts by means of the satellite water accounts. From these tables, we estimate the technical coefficients matrix that allows us to know the extraction and commercial flows of water, including the virtual water flows.

Keywords: Input-output, Spain, Virtual Water, Water Footprint, Water Metabolism.