

## **Technological change and agriculture: looking for a win-win water policy**

Topic: CGE and econometric input-output modeling 3

Author: Maria Llop

Co-Authors: Xavier Ponce-Alifonso

Agriculture is an economic activity that usually consumes a greater percentage of water availabilities and not always does so efficiently. Given the growing water scarcity in some territories, the aim of this paper is to analyse the effects that technological changes in agriculture would cause on both water resources and the main economic indicators. Specifically, our study is focused on two alternative technological improvements that affect the water used by agriculture: a reduction in the water losses of the distribution channels versus an increase in the total productivity of agriculture. We use a Computable General Equilibrium (CGE) model, where the calibration of the exogenous variables is performed by using a 2001 Social Accounting Matrix (SAM) for the Catalan economy. Our results suggest that the kind of technological change raises the trade-off between economic efficiency and equity. However, this choice is irrelevant in terms of environmental sustainability, as the results depend on the institutional framework.