



Coping with increasing water and land resources limitation for meeting world's food needs: the role of virtual water and virtual land trade

Barbara Soriano, Alberto Garrido, and Paula Novo

CEIGRAM, ETSI Agrónomos, Universidad Politécnica de Madrid, Ciudad Universitaria sn, Madrid 28040, Spain
(barbara.soriano@upm.es)

Increasing pressure to expand agriculture production is giving rise to renewed interest to obtain access to land and water resources in the world. Water footprint evaluations show the importance of green water in global food trade and production. Green water and land are almost inseparable resources.

In this work we analyse the role of foreign direct investment and cooperation programmes from developed countries in developing counties, focusing on virtual water trade and associated resources. We develop econometric models with the aim to explain observed trends in virtual water exports from developing countries as explained by the inverse flow of investments and cooperation programmes. We analyse the main 19 emerging food exporters, from Africa, Asia and America, using 15 years of data.

Results show that land per capita availability and foreign direct investments explain observed flows of virtual water exports. However, there is no causality with these and flows cooperation investments. Our analysis sheds light on the underlying forces explaining the phenomenon of land grab, which is the appropriation of land access in developing countries by food-importers.