

Integrated hybrid MRIO analysis of biofuels production in Spain: climate change and socio-economic effects

Topic: 814Y LCA and Industrial Ecology (2)

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Over the last decades, biofuel promotion in Europe has been seen as an opportunity to face the challenge of climate change. The initially domestic nature of the resources and its potential availability in Europe made biofuels to position at the top of agenda during years. However, due to the economic crises in Europe, and specifically in Spain, politicians' interest on its promotion has decreased. Concerning climate change, biofuels have usually better environmental performance than fossil fuels from a Life Cycle Thinking approach. Nevertheless, the potential socio-economic benefits that its production can provide are not usually mentioned. The objective of this study is to present the results obtained from an integrated analysis of biofuels production in Spain along the whole life cycle using an hybrid Multi-Regional Input-Output approach, taking advantage of the benefits from both Life Cycle Analysis and Input- Output Analysis. The study has been conducted using the World Input-Output Database and specific emission factors from process LCA. The origin of the different raw materials has been also taken into account based on the latest biofuels report from the National Energy Commission. Results indicate the countries and activity sectors that benefit the most from socio-economic perspective, in terms of GDP and job creation, and those that contribute the most to climate change.