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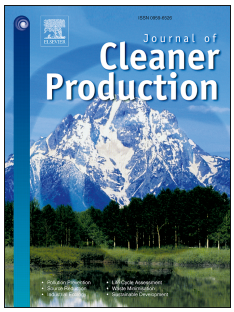

Food miles, carbon footprint and global value chains for Spanish agriculture: Assessing the impact of a carbon border tax

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FOOD MILES, CARBON FOOTPRINT AND GLOBAL VALUE CHAINS FOR SPANISH AGRICULTURE: ASSESSING THE IMPACT OF A CARBON BORDER TAX

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Abstract

We develop a multiregional input-output model to evaluate the importance of international trade of agricultural products as well as their food-miles emissions on the proposed extended carbon footprint (ECF) measure of Spanish agriculture in 2000-2008. This measure of ECF incorporates the virtual carbon embodied (domestic, imported and international transport) in the consumption of Spanish products of agriculture plus the direct emissions or producer responsibility of the Spanish agriculture sector. Our results show that Spanish agriculture ECF in 2008 is 18.5 Mt CO_2, more than doubles the usual measure of carbon footprint. The importance of these emissions leads us to calculate the effect of levying a carbon border tax, on both embodied emissions and international freight transport in agriculture products, on the price of agriculture products consumed by Spanish households and bought by different Spanish industries. Our results do not appear to impose too great a burden on the economy as a whole (3.7% over the value of imported agriculture products and 0.02% over total Spanish domestic final demand). However, there might be a significant impact from taxing embodied carbon and transport emissions on some sectors and in terms of a potential change in the origin of imports, with Chinese and East-Asian exports into Spain being the most affected.

Keywords: Carbon Footprint, Agriculture, Food-miles, Multiregional Input-Output, Carbon Border Tax.
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