

# A multi-regional input-output analysis of ozone precursor emissions embodied in Spanish international trade

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Higher levels of ozone in the troposphere is a severe threat to both environment and human health. Many countries are concerned about the effects that critical levels of ozone have on them. Countries pollute to satisfy their domestic and external demand (production perspective) and, at the same time, these countries also generate emissions abroad indirectly via their imports and via their domestic production (consumption perspective). Spain is one of the EU countries with the highest pollution records in the emissions of tropospheric ozone precursor gases. A multiregional input-output model (MRIO) allows us to analyze the total emissions embodied in Spanish international trade in 35 sectors within the EU area and the rest of the world. MRIO models, are commonly chosen as they provide an appropriate methodological framework for complete emissions footprint estimates at the national and supranational level. The results show that the most polluting sectors involved in Spanish trade are Agriculture, Basic Metals, Coke and Refined Petroleum Production. Some policy recommendations follow these results; for example, a higher number of environmental regulations focused on the Agricultural sector, such as the introduction of codes of good practices in the use of fertilizers and the promotion of cleaner production technologies might lead to less burden to the environment. © 2016 Elsevier Ltd

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