

Environmental impacts of European consumption and production patterns

Highlights from a recent EEA report based on environmental IO analyses

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Abstract

The challenge of achieving more sustainable consumption and production (SCP) has gained significant policy attention at the global, EU, and national levels. Instigating changes in patterns of consumption and production – particularly in industrialised countries – is increasingly seen as the key means for solving a host of environmental problems, not least that of climate change, and excessive resource use.

The policy issue of SCP calls for deeper analyses of current patterns of consumption and production. The European Environment Agency – in collaboration with its European Topic Centre on Resource and Waste Management – has been engaged in a multi-annual project to develop a policy-support tool which can be used to analyse and monitor global environmental pressures resulting directly and indirectly from both production and consumption patterns in European countries.

The project employs economy-wide environmentally extended input-output analyses (EE-IOA). This method makes use of so-called *national accounting matrices including environmental accounts* (NAMEA).

The method has a large number of potential outputs. These include:

- Ranking of economic branches according to their overall environmental pressures
- Ranking of economic branches according to their eco-efficiencies (i.e. economic output per unit pressure, or per unit resource consumed)
- Identification of product groups which are of most concern with respect to certain environmental pressures (ranking).
- Estimates of the full 'ecological rucksacks' of product groups including environmental pressures arising in other countries to produce that final product
- Comparisons of the environmental pressures arising from national production with global environmental pressures attributable to national consumption
- Identification of where in the process-trees of a broad product group, environmental impacts arise e.g. the environmental pressures related to transport equipment mainly stem from the metals industries and not from the vehicle manufacturers
- Developments over time in levels of environmental pressures arising from a given economic branch, from households, or from particular product groups i.e. monitoring of decoupling
- Comparison of eco-efficiencies of the same branch across two or more countries
- Analysis of the combined effects of several economic driving forces –growth, economic

structural changes, changed consumption patterns – on the development of an environmental pressure. Use of the same factors to explain country differences in pressures per capita

During the first phase of the project, a data-inventory of national NAMEA-type tables and monetary Input-Output Tables was built up for 8 European countries (Denmark, Germany, Hungary, Italy, the Netherlands, Spain, Sweden and the UK), 60 disaggregated economic branches representing the entire economy of each country, 9 emissions to air and 8 resource input categories. The 17 environmental inputs and outputs were aggregated to 4 main environmental pressures: global warming potential, acidification potential, tropospheric ozone forming potential and domestic material input. During 2006, model calculations and analyses of these tables were carried out. In 2007, NAMEA-type data for additional countries became available from a EUROSTAT survey to compliment the above resources and the project team began work on an EEA report which will be published in June 2008. The paper will present highlights from this report.

Keywords: Sustainable Consumption and Production (SCP), Environmental Input-Output Analysis, European Environment Agency, environmental impacts.