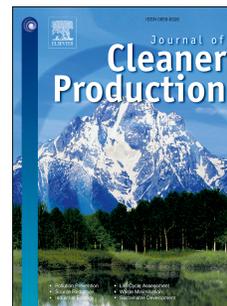


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**ENVIRONMENTAL IMPACTS OF FOOD CONSUMPTION IN EUROPE**

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**Abstract**

Food consumption is amongst the main drivers of environmental impacts. On one hand, there is the need to fulfil a fundamental human need for nutrition, and on the other hand this poses critical threats to the environment. In order to assess the environmental impact of food consumption, a lifecycle assessment (LCA)-based approach has been applied to a basket of products, selected as being representative of EU consumption. A basket of food products was identified as representative of the average food and beverage consumption in Europe, reflecting the relative importance of the products in terms of mass and economic value. The products in the basket are: pork, beef, poultry, milk, cheese, butter, bread, sugar, sunflower oil, olive oil, potatoes, oranges, apples, mineral water, roasted coffee, beer and pre-prepared meals. For each product in the basket, a highly disaggregated inventory model was developed based on a modular approach, and built using statistical data. The environmental impact of the average food consumption of European citizens was assessed using the International Reference Life Cycle Data System (ILCD) methodology. The overall results indicate that, for most of the impact categories, the consumed foods with the highest environmental burden are meat products (beef, pork and poultry) and dairy products (cheese, milk and butter). The agricultural phase is the lifecycle stage that has the highest impact of all the foods in the basket, due to the contribution of agronomic and zootechnical activities. Food processing and logistics are the next most important phases in terms of environmental impacts, due to their energy intensity and the related emissions to the atmosphere that occur through the production of heat, steam and electricity and during transport. Regarding the end-of-life phase, human excretion and wastewater treatments pose environmental burdens related to eutrophying substances whose environmental impacts are greater than those of the agriculture, transports and processing phases. Moreover, food losses which occur throughout the whole lifecycle, in terms of agricultural/industrial and domestic food waste, have also to be taken into consideration, since they can amount to up to 60% of the initial weight of the food products. The results of the study go beyond the mere assessment of the potential impacts associated with food consumption, as the overall approach may serve as a baseline for testing eco-innovation scenarios for impact reduction as well as for setting targets.

**Keywords:** food production; food consumption; food LCA; food waste; dietary habits; LCA

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