



Practice Abstract #11: Methods for assessing environmental rebound effects



WASTEWISE
Waste Avoidance Strategies for
Environmental Sustainability

One of the primary aims of the WASTEWISE project is to deepen knowledge about the environmental benefits achievable through food waste prevention and reduction. In order to develop more robust methods for assessing environmental impacts, researchers from the Swedish University of Agricultural Sciences (SLU), AGROSCOPE, the Natural Resources Institute Finland (LUKE) and the University of Tuscia (UNITUS) conducted a study on rebound effects, which are often overlooked in conventional attributional life cycle assessments (LCA).

Rebound effects refer to unintended environmental consequences that occur when savings from food waste reduction, whether financial, material, or time-based, are redirected into other forms of consumption. For example, a household that saves money by wasting less food might spend it on frequent travel, non-food goods, or more resource-intensive foods, potentially offsetting the initial environmental gains.

“excluding rebound effects from the assessments of food waste prevention measures can result in an overestimation of net environmental mitigation”

The study consisted of a semi-structured review of scientific literature combined with a targeted survey of food system LCA practitioners. From the study results, the WASTEWISE team identified five types of rebound effects relevant to food waste prevention and proposed a framework adapting attributional LCA through system expansion, prioritizing income-driven rebound mechanisms. This approach balances practicality and transparency, enabling integration into standard LCA workflows while acknowledging limitations in capturing broader economic feedback. Focusing on monetary savings and re-spending patterns, the framework ensures compatibility with existing tools, empowering stakeholders to evaluate unintended consequences of food waste prevention measures.

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