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From Evidence to Action: LCA to Prioritise Food Waste Prevention Actions Across the Supply Chain

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Abstract

Although prevention is widely recognised as the most effective response to the food waste issue, decision-makers often lack robust, comparable evidence to detect which actions deliver the greatest life-cycle benefits at different points in the supply chain. This keynote argues that Life Cycle Assessment adapted to evaluate prevention measures offers a rigorous, transparent approach for turning evidence into priorities. The main methodological issues for prevention-focused LCA are highlighted and discussed. Special focus is given on the selection of functional units that may reflect avoided consumption, the impacts to avoided production rather than only disposal, the potential behavioural rebound effects, and the application of uncertainty and sensitivity analyses.
Drawing on comparative examples from production, processing, retail and households, some counterintuitive trade-offs (i.e. the environmental cost of energy-intensive redistribution versus source reduction) will be presented. Also, hotspots where modest interventions can produce disproportionate gains will be discussed. By linking robust evidence to practical action, prevention-focused LCA can guide investments and policies that most effectively reduce the environmental footprint of food systems.

Keywords: food surplus, food suply, environmental impact assessment

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