

## **Life cycle assessment of household food waste in Zimbabwe: a systematic review**

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### **Abstract**

Food waste is a significant issue worldwide, with developing countries like Zimbabwe facing unique challenges in managing household food waste. Life Cycle Assessment (LCA) is a tool that can help to understand the environmental impacts of food waste and identify opportunities for reduction. The aim of this review paper is to utilize the LCA approach to examine and analyze the environmental effects of food waste produced at household level in Zimbabwe. The study also attempts to offer insights on feasible methods and interventions that can be used in Zimbabwe to lessen household food waste and the effects it has on the environment. A systematic literature search was conducted using Science Direct, Google Scholar, Springer, African Journal Online, PubMed, Scopus and Sage Publications using key words for example life cycle assessment, food waste, household food waste, sustainability, waste management and environmental impact. The review includes 41 English articles published up to 2024. The references added up to 76 because some of the references were found inside the 41 articles used to compile the review. The review established that household food waste in Zimbabwe is a significant issue. The main causes of food waste include poverty, lack of access to markets and inadequate storage and transportation infrastructure. Life Cycle Assessment has been applied in Zimbabwe to assess the environmental impacts of food waste, with a focus on land, water and greenhouse gas emissions. As a result, relevant stakeholders and the government should give priority to implementing awareness campaigns and education programs to promote food preservation techniques, minimize food loss and encourage the adoption of home composting systems in order to improve Zimbabwe's LCA of household food waste. The review emphasizes the importance of addressing the root causes of household food waste, such as inadequate infrastructure to reduce impacts of household food waste in Zimbabwe.

**Keywords:** Life cycle assessment, Food waste, Household food waste, Solid waste, Waste management, Sustainability and environmental impact