

Policy Brief

Controlling Food Waste Through Resilient Storage and Preservation Systems

Executive Summary

Food waste is a growing global concern affecting both developed and developing nations. It is not only a matter of economic loss for individuals and households, it contributes to profound environmental degradation and hinders global food security. Every year, an alarming amount of food is discarded at various stages of the supply chain, including the household level. The findings of research conducted by a research team from the University of Ghana show that food waste is a major concern as substantial amounts of food is wasted at the consumption stage of the food value chain due to over-purchasing, improper storage and unplanned meal quantities.

The research evidence also emphasizes the need for a multifaceted approach that incorporates consumer education, awareness campaigns and behavioral change strategies to reduce food waste. This policy brief underscores the gravity of food waste, highlights the research conducted and calls on governments, the food industry and communities to take collective responsibility for minimizing food waste. It also offers a comprehensive set of recommendations for policymakers to combat food waste effectively, including meal planning, portion control and sustainable consumption of food.

Introduction

With rapidly growing populations across the globe, food availability has become a major area of interest as demand surges. Food waste is a growing global concern affecting both developed and developing nations. Food waste refers to the discarding of food by consumers or retailers, primarily at the consumption stage, due to various reasons such as over-purchasing, improper storage, cosmetic imperfections, or expiration dates. Food waste at the household level contributes substantially (approximately 24%) to overall food loss and waste, which is a matter of grave concern. It has far-reaching implications, causing economic strain for consumers, environmental degradation and poses food security challenges (Hamilton et al., 2020). Paradoxically, while a substantial amount of food is wasted, millions of people around the world suffer from hunger and food insecurity. Efficient food distribution and reduction of waste could help alleviate this issue. Also, the production of food involves extensive use of natural resources such as water, land, and energy. When food is wasted, these resources go to waste as well, contributing to resource depletion. The urgency of addressing this issue is underscored by its role in intensifying economic burdens on individuals and communities and exacerbating environmental problems (Meybeck et al., 2017). The implications of food waste are multifaceted, affecting the environment, economy, and society. Addressing this issue requires a comprehensive approach involving individuals, businesses and governments.

Research Approach

This policy brief is based on a synthesis report prepared by the Data Repository and Advocacy for Policy (DARAP), which conducted an in-depth analysis of the factors contributing to food waste, with a focus on consumer behaviors, identifying the key policy options, barriers, enablers and solutions to the problem, through empirical studies and expert insights. We conducted a thorough search to identify relevant studies, reports and publications that discuss the topic of food waste. In particular, we sourced information from various academic databases, peer-reviewed journals, books, conference proceedings and reputable online repositories. Both qualitative and quantitative studies were considered in order to gather comprehensive information on food loss and waste. This was supported with qualitative data

from in-depth interviews with key stakeholders who matter in the food waste discussion with the aid of an interview guide.

Results

The findings from the synthesis report revealed that a worrying percentage (approximately 24%) of total food loss and waste occur at the household level, often due to over-purchasing, improper storage and disposal of edible food. At the global level, for the consumption stage of the food value chain, about 14%, 13.7% and 10.3% of food is wasted, respectively for cereals, fruits and vegetables, and roots and tubers (FAO, 2011). Relative to the Sub-Saharan Africa context, the global averages are higher. In Sub-Saharan Africa, only about 1%, 5% and 2% of food is wasted for cereals, fruits and vegetables, and roots and tubers, respectively (FAO, 2011). Several cross-cutting factors contribute to food loss and waste (FLW) at the household level. According to Attiq et al (2021), behaviour is the main cause of FLW in households in the world including Ghanaian households. This highlights the substantial role of consumers in reducing food waste. Consumer behaviour plays a central role in food waste, with factors such as poor meal planning, overbuying and a preference for constant freshness contributing to the problem of food waste. Also, as shown in the report, cultural practices in some regions promote abundance and overconsumption, resulting in more food waste.

Conclusion and Recommendations

Food waste at the household level is a significant problem. It leads to economic losses for consumers, strains the environment and exacerbates food security issues. The results from our research strongly indicate that educating consumers, addressing cultural norms surrounding food, portion control and effective meal planning can substantially reduce food. We therefore propose the following policy options for consideration and immediate action by relevant policy actors in the sector such as the Ministry of Food and Agriculture (MoFA) and the Ministry of Environment, Science, Technology and Innovation (MESTI) in the Ghanaian context, and globally by the Food and Agriculture Organization

(FAO) and the World Food Programme (WFP).

Consumer Awareness and Education

- Implement nationwide awareness campaigns to educate consumers about responsible food consumption, including proper storage, meal planning and portion control.
- Collaborate with schools, communities and media outlets to disseminate information on reducing food waste at the household level.

We propose these policy options for adoption locally by the Ministry of Food and Agriculture (MoFA) in collaboration with the Ministry of Education and for global consideration by the World Food Programme (WFP).

Regulatory Measures

- Introduce regulations that encourage businesses to donate surplus food to those in need, while ensuring compliance with safety and hygiene standards.
- Consider tax incentives or rewards for businesses and individuals that implement food waste reduction initiatives.

We recommend these policy options for uptake locally by MoFA, Environmental Protection Agency and the Ghana Standards Authority. In the global context, they can be considered by the United Nations Environment Programme (UNEP) and World the Trade Organization (WTO).

Technology Adoption

- Promote the adoption of innovative technologies by retailers and distributors for inventory management, real-time monitoring and traceability of food stock to enhance supply chain efficiency and reduce food waste.
- Encourage the development and use of mobile applications for supply chain management and monitoring in the agri-food sector.

We propose these policy options for consideration by MoFA, in collaboration with MESTI, in Ghana. The Food and Agriculture Organization (FAO) and International Telecommunication Union (ITU) can consider these recommendations for implementation at the global level.

Support for Sustainable Packaging

- Support research and development efforts focused on eco-friendly packaging materials and methods to reduce food waste.
- Collaborate with businesses to optimize packaging designs for better product protection and longer shelf life.

We propose these policy options for uptake locally by MoFA, in collaboration with the Ministry of Trade and Industry and MESTI, and globally by the Food and Agriculture Organization (FAO) and the International Trade Centre (ITC).

Localized Solutions

- Foster innovation by providing incentives and support for the development and adoption of localized technologies, such as solar-powered cooling systems and community-based preservation methods.
- Promote the integration of indigenous knowledge and practices into preservation systems, helping safeguard cultural heritage while adopting modern technology.

We recommend these policy options for uptake locally by MoFA in collaboration with the Ministry of Tourism, Arts and Culture in Ghana and globally by the United Nations Development Programme (UNDP).

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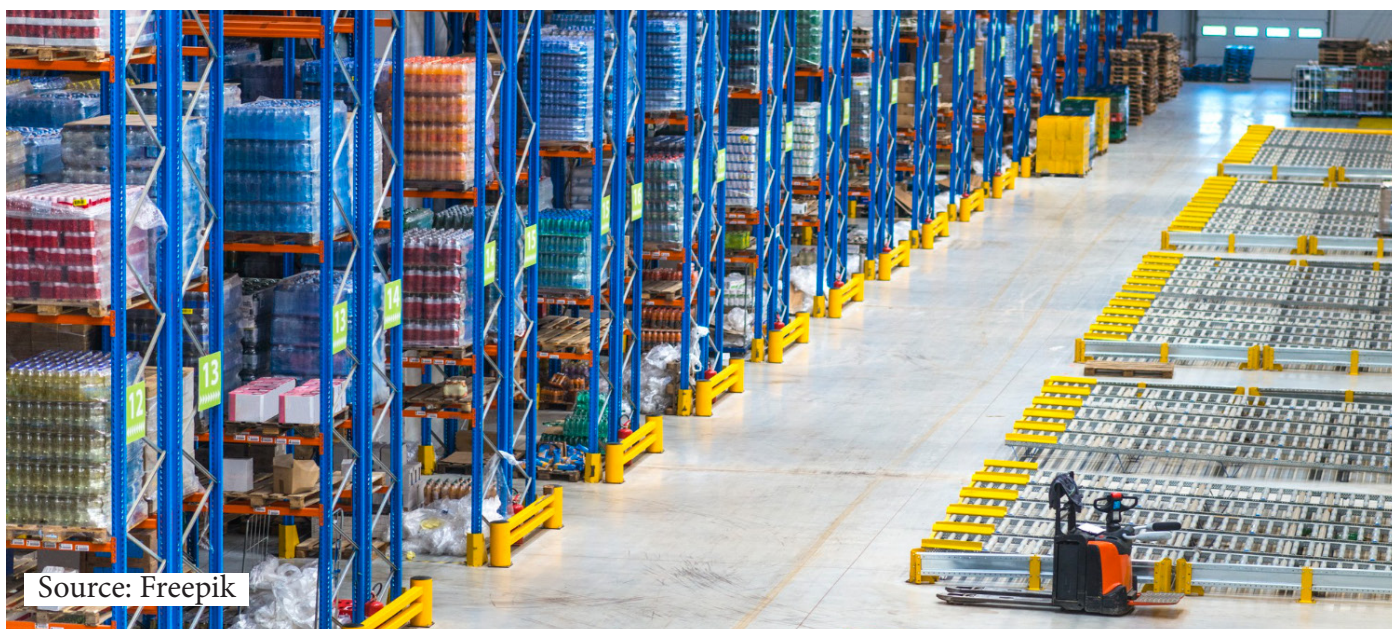
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About DARAP

The **Data Repository and Advocacy for Policy (DARAP)** project focuses on promoting the access and effective use of data and knowledge products to influence policymaking processes and outcomes. It contributes to evidence-led policymaking through data management services and capacity building in research data interpretation and usage, collaborating with civil society organisations and academics. DARAP is funded by The Open Society Institute and based at the Measurement, Learning, and Evaluation (MLE) Unit at the Institute of Statistical Social and Economic Research (ISSER), University of Ghana.

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