GREEN AND SUSTAINABLE FOOD EDUCATORS

SUSTAINABLE APPROACHES TO FOOD ACROSS EUROPE

DESK RESEARCH

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RASEKO

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INTRODUCTION

According to United Nations Environmental Programme (UNEP, 2024) food loss and waste have become a pressing issue with significant economic, environmental, and social implications globally. The inefficiencies within the food system, from production to consumption, result in substantial quantities of food being lost or wasted at various stages, exacerbating food insecurity, straining natural resources, and contributing to climate change. As the world's population grows, and as pressures on land, water, and biodiversity intensify, addressing food loss and waste has become a critical priority for sustainable development.

Food loss and waste refers to the discarding or spoiling of food that is still safe and suitable for consumption (Food Waste Index Report, 2021). Food loss typically occurs during production, post-harvest handling, processing, and distribution, primarily in developing countries with inadequate infrastructure, poor storage facilities, and inefficient supply chains. In contrast, food waste typically occurs at the retail and consumer levels in more affluent societies, where factors such as over-purchasing, improper storage, and aesthetic preferences contribute to edible food being discarded.

According to the Food and Agriculture Organization (2023) of the United Nations, approximately one-third of all food produced globally—roughly 1.3 billion metric tons—is lost or wasted each year. This represents a tremendous waste of resources, including water, energy, and land, and contributes to greenhouse gas emissions, deforestation, and biodiversity loss.

Tackling this issue requires a holistic and coordinated approach that involves stakeholders at all levels, from policymakers and businesses to farmers, consumers, and civil society organizations. It includes measures to improve agricultural practices, enhance supply chain efficiency, promote sustainable consumption patterns, and raise awareness about the impacts of food waste (World Resource Institute, 2022). This way societies can move towards more resilient, equitable, and sustainable food systems that ensure food security for all while minimizing environmental spoilage.

DISCUSSION

1.1 DIRECT AND INDIRECT DETERMINANTS OF FOOD LOSS AND WASTE

Understanding the global food systems, Allievi (Allievi;Antonelli;Dembska;& Principato, 2019) states that food loss and waste are multifaceted issues influenced by both direct and indirect determinants. Direct determinants include specific actions, practices, or conditions that directly contribute to the generation of food loss and waste, such as production practices, processing methods, transportation issues, retail practices, and consumer behavior. Indirect determinants, on the other hand, encompass systemic, structural, or socio-economic factors that indirectly shape behaviors, practices, and decision-making processes across the food supply chain. These factors include policy

and regulation, infrastructure and technology, economic factors, cultural and social norms, and education and awareness.

Direct determinants impact the quantity and quality of food lost or wasted, leading to economic losses for producers, increased resource use, and environmental degradation. Indirect determinants influence the broader context in which food loss and waste occur, shaping systemic issues such as market dynamics, infrastructure development, and consumer behavior such as food purchasing habits, storage practices, and portion sizes, directly influences food waste at the household level. Examples include overbuying, improper storage, and discarding edible food (Grunert, 2011). Both types of determinants interact with each other, creating complex relationships and feedback loops that contribute to the persistence of food loss and waste.

Understanding the interplay between direct and indirect determinants is crucial for developing effective strategies to mitigate food loss and waste. By addressing both the immediate causes and underlying conditions that contribute to food loss and waste, stakeholders can work towards more sustainable and resilient food systems that ensure food security for all while minimizing waste and environmental degradation.

1.2 POLICY CHALLENGES

Policy challenges related to food loss and waste are significant concerns in Europe, requiring coordinated efforts at the national, regional, and international levels. While progress has been made in addressing these challenges, several key obstacles remain.

One of the primary challenges in Europe is the lack of harmonized regulatory frameworks across EU member states. Existing regulations related to food safety, labeling, and waste management vary between countries, leading to inconsistencies and barriers to effective coordination. Economic factors and market dynamics also present challenges. Subsidies, incentives, and pricing mechanisms often favor overproduction (Grunert, 2011) and contribute to the generation of surplus food, which subsequently leads to waste. Also demands for perfect-looking produce and excessive packaging exacerbate food waste at the retail and consumer levels.

Strenght2Food programme (2020) lists issues affecting the food distribution, such as inadequate storage facilities and transportation networks. In addition, access to affordable and appropriate technologies for food preservation, packaging, and waste management remains a barrier for many farmers and food producers. Policy interventions focused on infrastructure development, technology transfer, and capacity building are crucial to modernize and optimize Europe's food supply chains.

While efforts have been made at the EU level to tackle food loss and waste, greater collaboration and information sharing between EU member states and international partners are needed to develop harmonized approaches, share best practices, and mobilize resources. Strengthening partnerships with international organizations, such as the Food and Agriculture Organization (2023) and the United Nations Environment Programme (UNEP, 2024), can facilitate dialogue, knowledge exchange, and collective action on food loss and waste at the global level. Overcoming these challenges and implementing effective policies and strategies, Europe can play a leading role in building more sustainable, resilient, and equitable food systems that minimize waste, conserve resources, and ensure food security for all.

1.3 CURRENT SUSTAINABLE APPROACHES ACROSS EUROPE

Case - The Farm to Fork Strategy

A key component of the European Union's ambitious Green Deal, the Farm to Fork Strategy marks a significant milestone in the quest for a sustainable and resilient food system (European Comission, 2024). Unveiled in May 2020 by the European Commission, this strategy outlines a holistic vision for reimagining the entire food supply chain – from production to consumption.

The Farm to Fork Strategy (European Comission, 2023) aims to accelerate Europeans transition to a sustainable food system making it fair, healthy, and environmentally friendly. This strategy is necessary since our food systems account for nearly one-third of the global GHG emissions, consume large number of natural resources, result in biodiversity loss and negative health impacts.

Key objectives of the Farm to Fork Strategy include reducing the environmental footprint of food production, promoting healthier and more sustainable dietary patterns, and ensuring fair and equitable access to nutritious food for all Europeans. To achieve these goals, the strategy proposes a range of policy measures, regulatory frameworks, research and innovation initiatives, and stakeholder engagement efforts.

For instance, the strategy emphasizes the need to transition towards more sustainable farming practices, such as agroecology and organic farming, that prioritize soil health, biodiversity conservation, and resource efficiency. It also calls for measures to reduce the use of pesticides and antibiotics in agriculture, promote animal welfare standards, and support small-scale and family farmers. Enhancing nutritional education, improving food labeling, and promoting plant-based diets will encourage consumers to make healthier and more sustainable food choices.

Overall, the Farm to Fork Strategy represents a bold and comprehensive roadmap for building a sustainable, healthy, and resilient food system in Europe. By implementing its objectives and initiatives, the European Union aims to lead the way in transforming the global food system towards a more sustainable and equitable future.

Case – School meals for all

The Sustainable Development Goals (United Nations, 2024) serve as a global blueprint for addressing poverty, inequality, climate change, and environmental degradation. These 17 goals, adopted by all United Nations Member States in 2015, aim to mobilize efforts to end all forms of poverty, fight inequalities, and tackle climate change while ensuring that no one is left behind.

One of the key targets of the SDGs is to end hunger and ensure access to safe, nutritious, and sufficient food for all people, regardless of their socio-economic background. In Finland, this commitment is exemplified through the provision of free school meals to all students attending basic education schools (Ministry for Foreign Affairs, Finnish National Agency for Education, 2019). Supporting children's physical health and cognitive development Finland helps reduce the risk of malnutrition and diet-related diseases among students, laying the foundation for a healthier future generation.

Free school meal programs can significantly impact food loss and waste reduction efforts. By efficiently planning meals, utilizing surplus food, educating students about sustainable consumption, and supporting local food systems, these programs contribute to a more sustainable food system. Through these efforts, schools play a vital role in minimizing food waste, promoting environmental protection, and fostering a culture of responsible consumption among students.

CONCLUSIONS

The issue of food loss and waste is directly linked to sustainability and responsible consumption practices. As we strive to build a more sustainable food system, it is necessary to recognize the significant environmental, economic, and social impacts of food waste. By reducing food loss and waste, we can conserve valuable resources, minimize greenhouse gas emissions, and mitigate the environmental footprint. This does not only benefit the environment but also has significant social implications. By redirecting surplus food to those in need, we can address food insecurity and promote social equity, ensuring that everyone has access to nutritious and affordable food.

Addressing food loss and waste aligns with the principles of responsible consumption, promoting efficiency, and mindfulness in how we produce, distribute, and consume food. It encourages us to value food as a resource. Achieving sustainability in our food system requires a multi-faceted approach that involves collaboration across sectors and stakeholders. Governments, businesses, civil society organizations, and individuals all have a role to play in implementing solutions at every stage of the supply chain.

Our journey towards a more sustainable and resilient future calls for innovative solutions, behavioral changes, and collective action to transform our food system into one that is efficient, equitable, and environmentally sound. Through our commitment to responsible

consumption and sustainable practices, we can create a world where food is valued, respected, and shared in a way that benefits both people and the planet.

REFERENCES

Allievi, F.;Antonelli, M.;Dembska, K.;& Principato, L. (2019). Understanding the Global Food System.

European Comission. (2023). Factsheet: From farm to fork: Our food, our health, our planet, our future. Noudettu osoitteesta https://ec.europa.eu/commission/presscorner/detail/en/fs_20_908

European Comission. (2024). Farm to Fork Strategy. Noudettu osoitteesta https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en

Food and Agriculture Organization of the United Nations. (2023). Noudettu osoitteesta https://www.fao.org/interactive/sdg2-roadmap/assets/3d-models/inbrief-roadmap.pdf

Food Waste Index Report. (2021). UNEP.

Grunert, K. (2011). Sustainability in the Food Sector: A Consumer Behaviour Perspective. Noudettu osoitteesta https://www.researchgate.net/publication/227366514_Sustainability_in_the_Food_Sector_A_Consumer_Behaviour_Perspective

Kuosa, S. (2021). Noudettu osoitteesta https://www.theseus.fi/bitstream/handle/10024/507341/Sofia_Kuosa.pdf?sequence=4&isAllowed=y

Ministry for Foreign Affairs, Finnish National Agency for Education. (2019). Noudettu osoitteesta https://www.oph.fi/en/statistics-and-publications/publications/school-meals-all

Strenght2Food. (2020). European Union's Horizon 2020 research and innovation programme. Noudettu osoitteesta https://www.strength2food.eu/

UNEP. (2024). United Nations Environmental Programme. Noudettu osoitteesta https://wedocs.unep.org/bitstream/handle/20.500.11822/40426/Get_Involved.pdf?sequence=1&isAllowed=y

United Nations. (2024). Sustainable Development. Noudettu osoitteesta https://sdgs.un.org/goals

World Resource Institute. (2022). Noudettu osoitteesta https://www.wri.org/initiatives/food-loss-waste-protocol

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