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Policy Brief

Recycling or prevention of waste? Addressing the food waste challenge in the right end

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Executive summary

Trying to solve the world's food waste problem is a complex task. Food waste management is becoming more sustainable, but so far, many efforts have targeted recycling food waste rather than preventing food from becoming waste in the first place. Food waste prevention is a far more challenging and sustainable solution than creating systems for recycling food waste. How can we ensure that grand challenges like this are addressed in the right way? Many actors can contribute and play a part in the solution, but their efforts and actions need to be mobilised and coordinated.

The food waste challenge

Food waste is a significant and growing challenge globally. Fully 1.3 billion tonnes of edible food, one-third of what has been produced for human consumption, is lost or wasted at a global scale annually (FAO 2011). This challenge will only become more demanding in the future as worldwide waste production rises; it is estimated to double by 2025 (Hoornweg, Bhada-Tata, and Kennedy 2013). Food waste negatively affects social, economic, and environmental dimensions of sustainability. A UN Food and Agriculture Organisation (FAO) study of the full global costs of food wastage estimated that it results in USD 1 trillion of economic costs per year, with further indirect environmental costs of around USD 700 billion and social costs of around USD 900 billion (FAO 2014).

Food waste has been largely ignored for decades (Halloran et al. 2014). Now, however, it is beginning to appear as a visible feature in political agendas and is attracting more media coverage and scholarly attention (Hamilton et al. 2015). The UN's Sustainable Development Goals adopted in 2015 emphasise the importance of dealing with food waste and aim to reduce the worlds' food waste by 50 percent by 2030. Many actors across the whole food value chain can help reach this goal, but if their efforts are not coordinated, the chances of unnecessary detours and inexpedient use of time and resources may ensue.

The figure below presents the waste hierarchy (Mourad 2016) in which different waste treatment options are ranked according to how sustainable they are—with disposal and energy recovery as the less favourable options and recycling, reuse, and prevention as the more favourable and sustainable options.

Recycling versus prevention of food waste

There is considerable variation in how municipalities approach the food waste challenge locally. As part of the RCN-funded SusValueWaste project (see textbox below) we have studied how various systems for recycling and reusing food waste were initiated in three Norwegian municipalities: Oslo, Bergen and Drammen.

- In Oslo, three municipal departments with their respective areas of responsibility oversee the development of more sustainable waste treatment. Legislation provides that waste from households is treated by the public sector, whereas waste from industry is treated by the private sector in two parallel waste-treatment systems.
- In Bergen, a public waste agency has been assigned the task of aiming for more sustainable waste treatment. The aim is to develop a geographically conditioned system which is tailored to the industrial structure and resource base of the region with a long coastline and limited cultivable soil. They are doing this by seeking to upgrade the organic household waste to salmon fodder by feeding it to fly larvae.
- In Drammen, a municipally owned and diversified industrial group oversees waste treatment. The company operates in several locations in southern Norway and covers both private and public sectors across the entire value chain and waste hierarchy in a networked governance model.

These case studies have shown how public initiatives have primarily targeted recycling systems where organic waste is processed and used as inputs in other products such as biofertilisers, biogas, and district heating. However, these initiatives are primarily represented by the public sector, and there is no coordination mechanism ensuring joint learning and diffusion of best practices across the diverse initiatives by different municipalities.

Private initiatives and agreements

In parallel with these public initiatives towards recycling, private industry and civic actors in Norway have aimed at reducing and preventing food waste. The research project ForMat[1] (2010-2015) initiated by Norgesgruppen, a central industry actor, has helped create the foundations for the recent food waste policy debates and actions in Norway. It put on the table concrete data providing extensive surveys of waste generated along the food chain. ForMat led to industrial self-regulation towards limiting food waste with the Agreement of intent to reduce food waste signed in May 2015. This was further developed and formalised in June 2017, as the Industry agreement on reduction of food waste, signed by five ministries and industry representatives. The agreement has a main reduction target of 50 percent by 2030 which is further subdivided into two intermediary targets: 15 percent by 2020 and 30 percent by 2025 (Regjeringen 2017).

More than 60 percent of food is wasted by the consumers, which signals that civil society organisations also should play a central role in bridging the public and the civic sector. A growing number of companies and NGOs have developed innovative solutions to deal with the food waste challenge in the last years. There are now apps for selling surplus food (ToGoodToGo), sharing information about food that is approaching expiration date (Foodlist), or selling food that is close to or has passed the best date mark (Best Før supermarket in Oslo, Holdbart stores and online shopping, further online shops Havaristen.no or MatSmart.no). Restaurants such as the Kutt Gourmet student restaurant at the Blindern campus at the University of Oslo (since 2015) and Oslomet (since 2017) serve inexpensive food made from ingredients that would otherwise have been wasted. Matsentralen, which distributes surplus food to charity organisations, has established several food banks in larger cities across Norway. In the policy arena, a Norwegian NGO, The Future in our Hands (Framtiden i våre hender) has been particularly vocal in advocating binding state regulations on food waste at the national level.

These examples illustrate how the private and civic sectors in Norway have advocated for the waste prevention agenda. In comparison, in Sweden, food waste regulatory action has been driven primarily by public administration, and in Denmark, by civil society organisations. However, the state is now getting more involved as several political parties are pushing for the proposal of a food waste law to be drafted this year or the next.

Lessons learned and policy implications

Based on our research on food waste, we will here put forward three key insights:

1) Conflicting modes of sustainability: Public initiatives in the three municipalities studied can be interpreted as a step-by-step move upwards in the waste hierarchy towards more sustainable production and consumption systems. Increased recycling of food waste is often portrayed as a sustainable win-win measure, but there are important caveats. Conflicts of interests may occur when waste turns into valuable resources for other value chains, as this might segment systems that are dependent upon stable waste streams. In this sense, a recycling system may conflict with a waste prevention mode of sustainability.

2) Broader mobilisation of stakeholders: Food waste is an example of a grand challenge that is complex and cuts across the private, public, and civic sectors. Therefore, such challenges need to be addressed in coordinated ways that comprise several different types of actors. In sharp contrast, we have seen examples of waste streams from the private and public sectors being treated in siloes and in separate systems, where each department is responsible for their respective part of the value chain. This practice contributes to a lack of directionality and to restricting the respective actors in addressing the waste problem jointly. Such a fragmented and atomistic organisation is likely to hold implications for how the problem is perceived, defined, and addressed. If a broader constellation of actors across the public, private, and civic sectors had been involved in the problem definition from the start, it is likely that one would have been able to address the core problem in the first place, that is, the vast generation of waste. In this way, one would have arrived at a waste prevention model earlier.

3) Coordinated working practices: Instead of addressing grand challenges in siloes and separate organisations, one should—from the start—approach these through collaborative initiatives that span the entire value chain. This calls for exploring new forms of working practices that transcend existing organisational boundaries and structures when addressing complex societal challenges. As opposed to other grand societal challenges, such as demographic ageing and sustainable transport, there is no national policy program or governmental coordination mechanism that proactively ensures joint reflexivity, learning, and diffusion across innovation projects in different municipalities in the case of (urban) food waste. Consequently, there is a lack of coherence in waste systems and legislation in different municipalities, and there are several ongoing innovative projects that aim to transform existing waste processing systems in Norwegian municipalities which unfold independently of each other. Such a lack of a coordinating mechanism for experience sharing and mutual learning may increase the costs and limit the effects of the ongoing initiatives.

This policy brief presents findings from the ongoing research project SusValueWaste (2015-2019) led by NIFU Nordic Institute for Studies in Innovation, Research and Education. The project addresses the potential for added value and improved sustainability in the valorisation of organic waste streams, residual feedstock, and by-products by analysing value chains inside and across different sectors of the bioeconomy. For more information on the research project; SusValueWaste, please see http://www.susvaluewaste.no/

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1. The ForMat project was run by the company Matvett AS and led by representatives from the Food and Drink section of the Confederation of Norwegian Enterprise (NHO), the Norwegian Grocery Sector's Environmental Forum (DMF), the Grocery Producers of Norway (DLF). The Norwegian Packaging Association, with the Ministry of Agriculture and Food and the Environment Agency acting on behalf of the Ministry of Climate and Environment, participated as observers (Elstad Stensgård and Hanssen 2015).

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