

Analysis of food waste in the Estonian food trade sector and the food industry

Summary

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In 2015, SEI Tallinn conducted an analysis of food waste in Estonian food trade sector and the food industry, commissioned by the Ministry of the Environment. The purpose of the study was to estimate the amount of food waste generated in the food retail and wholesale sector, as well as by the food industry and analyse the reasons behind it. This follows up on a study completed in 2014, which analysed the food waste and food loss in Estonian households and the food service sector.

Food waste in the food trade sector

Methodology

The study included both the retail and the wholesale sector. The results of the study are based on the survey as well as detailed interviews in retail and wholesale companies. In order to get more detailed results, food waste was actually weighed in the grocery stores. The waste was analysed in various stages in the retail sector (including transportation, storing and sales of food). The study took into account different types of grocery stores (small, medium and large) across Estonia (both major cities and rural areas). The amount of food waste was estimated based on unsold goods/food in nine food product categories (fruits, vegetables, meat products, fish products, bakery products, dairy products, prepared foods, solids, and other food stuff). Background information was collected from national statistical data, the Estonian national waste reporting system, literature and the results of previous studies.

The survey and interviews included questions about the main reasons for food waste generation and the main actions to prevent, reduce and manage it. A questionnaire was sent out to 600 different food retailers and to 183 wholesalers. A detailed analysis was carried out in order to get more accurate data, which included interviews, weighing unsold food at the stores and on-site observation in different retail establishments and the wholesale sector. Detailed analyses were conducted in 11 stores.

Results

According to the data from the Estonian national waste reporting system, approximately 5,290 tons of food waste was generated in 2013. Detailed analysis showed that on average approximately 128 kg of food was left unsold daily (46 tons annually) in large stores (size >2,500-1,000 m²), in medium-sized stores (size 400-1,000 m²) the amount was 29 kg daily (11 tons annually) and in small stores (size <100 m²) 4.8 kg food is wasted each day (1.7 tons annually). Based on the results of the detailed analysis it is estimated that in the retail sector approximately 12,000 tons of food remains unsold per year, worth approximately 22 million euros.

The main reason why food remains unsold in the trade sector is due to the difficulties in planning and forecasting the sale of products and customer demand. This is also connected to consumer behaviour and preferences. Consumers are rather price sensitive, therefore campaigns and price fluctuations in other stores influence the sales. Quality requirements, especially those of visual quality of food products, is another reason why products are not sold (especially in the case of fruit and vegetables).

The study results revealed that many larger stores use the opportunity to avoid food waste by donating food to the Estonian Food Bank. At the same time, small stores in rural areas often have problems with

donating food due to lack of human resources, storage space or transport. Also, current legislation does not facilitate food donation.

Food waste in the food industry

Methodology

The study was carried out in different food (processing) industries, such as dairy, bakery, meat, fish, fruit and vegetable, and grain processing as well as beverage industries. The amount of food waste generated in these industries was estimated based on data from National Waste reporting system. In addition, 35 companies (five from each type of food processing sector) were interviewed to find out what type of food waste is generated and the reasons for food waste, as well as activities by companies to avoid, reduce and manage food waste.

Results

The study revealed that it is not possible to precisely estimate the food waste amount generated in the food industry. This is due to the fact that most of the residues from food processing are neither regarded nor managed as waste, but rather as by-products. Different food processing industries create different kinds of by-products. For example, the meat industry generates mainly uneatable animal by-products (ABPs), such as skin, bones, cartilage, whereas the main by-product from dairy is whey, in fish processing it is fish skin and bones, in breweries brewery grains, etc. These by-products are usually used as fodder, sent for further processing to produce animal feed or products to be used in other parts of the food industry.

The data that was received from companies during the interviews about the amount of by-products cannot be extrapolated to the whole industry as the processing techniques may vary considerably in different companies. Therefore, only the amount of food waste that was collected and further managed by waste companies and recorded in the Estonian national waste reporting system was regarded as waste. Based on the Estonian national waste reporting system's data, it is estimated that 3,392 tons of food waste was collected in food industries. In the interviews, only a few companies stated that no food waste is generated in their production, mainly because they use pre-processed raw material. Others (51% of the responses) claimed that specific production processes are the biggest reason why food waste is generated. Other reasons that were expressed include technical reasons (including problems in planning and organisation of production) and issues with staff competence (such as incorrect working procedures, non-compliance with instructions, etc.).

All industries are striving for reducing food waste, as this is directly connected to resource efficiency and costs. In most companies, training and motivating the staff is considered the key measure to reducing food waste. As technical reasons are one of the main reasons for food waste, most companies look for technical solutions to avoid and reduce food waste.

The possibility of donating food to the Food Bank is not unknown, but still not a common practice by the food industry. Half of the respondents had not even considered the option. Many food companies feel that they do not have products to donate to the Food Bank, others do not that the donated food will be used for the intended purposes. There are concerns that the donated food could end up in the black market, which has happened in some cases.