

Food waste reduction by developing legislation

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Food waste can be reduced by developing legislation.

The food waste in the Finnish food chain amounts to about 400 to 500 million kilos per year. Some of this is caused by legislation. To date, more effective policies to combat and reduce food loss have been sought through voluntary actions. This study assessed the current national and EU legislation affecting the food chain and the factors that might cause unintentionally food waste. In addition, it was investigated what kind of feasible legislative changes could mitigate food waste. The methods used in this research were literature review on legislation and guidelines, interviews with authorities and actors along the food chain, as well as workshops.

The study identified legislative themes that were shared through the food chain as causing unnecessary food waste. These were the requirements for food labelling and the storage temperatures, which were brought to discussion by the food industry, catering services and the retail. In addition, the study identified a need for development in the food chain as follows: delivery time for the food chain information to slaughterhouses, EU crop classification in accordance with general marketing standards and restrictions of cooling the food already served in buffet. Moreover, the harmonization and clarification of the food safety control was not explicitly addressed as legislative, but as a major aspect throughout the food chain. Throughout the food chain also other aspects and non-legislative factors were brought to discussion.

Towards the goal of halving the food waste

The EU circular economy action plan and the UN Sustainable Development Goals¹ aim to halving the food waste at consumer and retail levels and to reduce food waste elsewhere along the food chain by 2030. Legislative development and voluntary means to minimize food waste are major steps to promote the action plan.

The European Commission's objective of making the EU a resource-efficient recycling society by 2020, when all waste is utilized as a resource, also drives the reduction of food loss. According to the waste hierarchy of the EU Waste Framework Directive, the Finnish national wastes plan and the principles of circular economy, the primary objective is to reduce and prevent waste, and also food waste. When that is not possible, the food surplus will need to be reused, primarily as a food and secondary in the food chain as feed or fertiliser and as least favourable, as energy or landfill. By critically reviewing legislation, this study identified legislative factors causing unintentional food waste from edible foods.

Food waste is generated throughout the food chain

According to previous studies by the Natural Resources Institute Finland^{2,3}, approximately 400-500 million kilos of food waste (originally edible food) is generated in Finland, i.e. about 15% of the edible food produced is lost. Most food is wasted in households and the second most with nearly equal shares in the rest of the food chain; primary production, industry, restaurants and retail. In relation to the throughput of food, by far the largest loss is caused by restaurants where food waste is as high as 20 % when in other parts of the chain typically have some percentages^{4,5}.

Food waste indicates the inefficiency of the food chain and its large unnecessary environmental impact is undeniable. Food accounts for as much as a third of all the environmental impacts caused by Finnish consumption. The production of wasted food has required equally inputs, fertilisers and feed, energy and manpower to produce as the food eaten. According to the estimation by the Natural Resources Institute Finland, the climate impact of the annual food waste from the food chain is equivalent to about 400,000 passenger cars annual emissions⁴.

Reducing food waste is a simple way of preventing the environmental impact of food. Inefficiency may also be a reflection of legislation that, unintentionally, leads to unnecessary food waste through regulations.

¹ UN, G. A. (2015). Transforming our world: The 2030 agenda for sustainable development. A/RES/70/1, 21 October.

² Silvennoinen, K., Koivupuro, H. K., Katajajuuri, J. M., Jalkanen, L., & Reinikainen, A. (2012). Ruokahävikki suomalaisessa ruokaketjussa: Foodspill 2010-2012-hankkeen loppuraportti.

³ Hartikainen, H., Kuisma, M., Pinolehto, M., Rääkkönen, R., & Kahiluoto, H. (2014). Ruokahävikki alkutuotannossa ja elintarvikejalostuksessa. Foodspill 2-hankkeen loppuraportti.

⁴ Katajajuuri J.-M., Silvennoinen K., Hartikainen H., Heikkilä L., Reinikainen A. (2014). Food waste in the Finnish food chain. Journal of Cleaner Production, Volume 73, 15: 322-329

⁵ Silvennoinen, K., Heikkilä, L., Katajajuuri, J. M., & Reinikainen, A. (2015). Food waste volume and origin: Case studies in the Finnish food service sector. Waste Management, 46, 140-145

The food regulations causing food waste were surveyed by studying EU and national legislation, key food laws and regulations, feed and by-product laws, food redistribution guidelines, and the Waste Act and other related legislation that directly or indirectly can affect the onset of food waste. In addition, the Finnish Food Safety Authority Evira's guidelines on food chain monitoring, which are also utilised by food chain operators, were reviewed. The material was refined and supplemented by interviewing food safety authorities and food chain operators. The interviews sought operators' views on acts that would cause the edible food to be wasted. Based on the literature and the interviews, legislative development needs to reduce food waste were surveyed to promote sustainable and profitable food production and food redistribution. The material was reviewed and refined in participative workshops in February and September 2017. The participants in the workshops represented different parts of the food chain from primary production to food aid, various ministries, food safety authority and food redistribution organizations as well as other specialists in the field. The total number of participants in the workshops was 87 and 17 people participated in the interviews. Between the workshops, an intensive revision of the developmental aspects of the existing legislation and interpretations was carried out by interest group experts. Based on the results of the interviews, expert opinions and the workshops, the key points and interpretations of the legislation possibly causing food waste was obtained.

PROPOSED ACTIONS FOR FOOD LEGISLATION TO REDUCE FOOD WASTE

The study identified shared legislative themes through the food chain causing unnecessary food waste. These were the requirements for food labelling and the storage temperatures.

1. Food labelling requirements

a. Allowing retail of mislabeled food with additional information and guide for use



Re-labeling of mislabeled products is allowed in the legislation but is seldomly done for its high logistics and labour costs. The re-labeling is the manufacturer's responsibility. In addition, products quality can cause re-labeling to be impossible, such as in frozen and fresh products. Product recalls generally apply to large batches. The donation of mislabeled products to food aid is possible with the instructions, but they can be sold only if the labelling is corrected. Food waste could be reduced if mislabelled products could also be sold with the instructions for use. Level of legislation: EU, national (EPNA (EU) N:o 1169/2011)

2. Temperature control



- a. Increasing consistency of storage temperature requirements and national the requirements.** Food safety authority Evira's instructions have very different temperature limits for a variety of products. The temperature tables in Evira's food safety control instructions should be more consistent and streamlined so that supervisors and operators have a consistent view of the interpretation. National restrictions for storage temperatures should be abandoned. Level of legislation: National and food safety control guidelines (MMM 1367/2011)

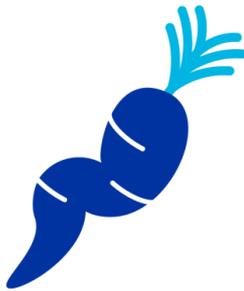
b. Reviewing the temperature requirements of frozen food transportation



Requirements of temperature limits of frozen food need to be reviewed on EU level. Current temperature limits (-18 °C, short 3 degree tolerance) are same for all products. Temperature limits should be moderated at least for the most safe product groups (e.g. bread). Level of legislation: EU, national ((89/108/ETY, MMM 818/2012, ATP-contract 48/1981)

3. Development needs in the legislation by food chain sectors

a. Primary production: Moderating EU classification in accordance to general marketing standards.



EU general marketing standards for fruits and vegetables can cause food waste in primary production as a lack of marketing channels for the products not reaching class I and as customer complaints on misclassified products. Marketing standards include as faults an irregular shape or color, of the otherwise edible products. Level of legislation: EU (EPNA (EU) N:o 1308/2013)

b. Primary production: Delivery time for the food chain information to slaughterhouses



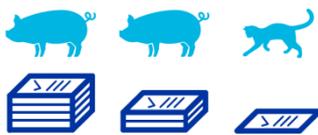
EU legislation requirement for the delivery of the food chain information to slaughterhouses is at latest within 24 hours from arrival of the animals to the slaughterhouse. Time limit is suggested by primary production stakeholders to be extended to 48 hours. Knowledge of producers and veterinarians on correct recording and delivery of the food chain information should also be increased. Level of legislation: EU (EPNA (EY) N:o 854/2004, EPNA (EY) N:o 853/2004).

c. Catering: Allowing selling after cooling for the food that has been on a serve in a buffet

Warm food that has been on a serve in a buffet can be donated to food aid after cooling to 6 °C. This option should be extended to the salable food, with limited shelf life. Most professional kitchens have the facilities for cooling but not that often for keeping food warm. Level of legislation: national (MMM 1367/2011, Evira 16035/2).



e. Feed use: Limitations in feed used because of EU classification of animals



In EU animals are classified into two categories: production animals and pets. This classification of animals should be corrected so, that for the animals belonging to a production animal species, but are kept as pets or for hobby, the restrictions for feed use could be lower. Yet no harm for animals, humans or environment can be caused. Level of legislation: EU

f. Feed use: Compulsory registration as feed business operators

Registration as feed business operator is compulsory for the whole feed chain. For safe, in original packaging and plant-based products of food waste and loss origin, lower requirements could be applied. Registration would still be required for those delivering to farms, but lowered requirements would concern transportation and storage. Level of legislation: EU, food safety control (EPNA (EY) N:o 183/2005)



In addition, several not directly legislative aspects were discussed

Date labelling



After the product has reached its Use by –date, it cannot be sold, used or donated to food aid due to food safety reasons. Use by –date marking is strict and all products which have reached the date marked are put to waste. Use by –date should be used only for products which are likely to cause an immediate danger to human health. Level of legislation: EU, national, guidelines (EPNA (EU) 1169/2011)

Primary production: Increasing the availability of the *ante mortem* –inspection in emergency slaughter



When emergency slaughtering is required, *ante mortem* –inspection needs to be done by veterinarian at farm. Without *ante mortem* –inspection all meat is declared as unfit for human consumption. To increase availability and accessibility of the *ante mortem* –inspection, *ante mortem* -inspection done with video connection has been developed. Allowing *ante mortem* –inspection with remote video connection would be possible with legislative changes. Level of legislation: EU ((EPNA (EY) N:o 853/2004, EPNA (EY) N:o 854/2004, MMM 590/2014)

Harmonizing the interpretation of food safety control guidelines

One of the reasons for generating food loss is the different practises of food safety control in different municipalities. Municipalities handle most of the food safety control. Evira guides and develops control throughout Finland. Oiva instructions have increased consistency, but there is still a need for harmonization in interpretations. To improve food safety and reduce food waste, Evira's control guidelines should be standardized in interpretation in Finland so that operators and supervisors have the most consistent view of requirements. Consistency of supervision should also be developed by developing training for supervisors and increasing communication. Legislative Level: Evira's Guidelines.



The study also outlined a number of operational practises as a cause of food waste. In the case of plant primary production, the regular sales channel for Class II products is missing. In addition, the quality requirements of the client may exceed the criteria set by the law. Here, voluntary restraints should be abandoned. In animal production, more knowledge is needed on causes of food chain information problems. It should be investigated further why the given time limits are not adequate for providing food chain information.

The retail has also the practice of removing the best before -dated products from the shelf even though legislation allows sales after the date as long as the quality of products is monitored. Here, more precise management of losses should be encouraged by keeping edible products available.

Much of the food waste in the food industry is caused by products produced based on forecasts for which there's no market. Forecasts on orders should be presented more transparently, including in the primary production, in order to better tailor production to the actual need.

For food aid food products can be donated throughout the food chain. Food aid is also receiving clearly low-quality and even perished products, of which disposal is left on voluntary food

aid, entailing them additional costs for bio-waste treatment. It should be ensured that donations to food aid do not include spoiled products. Food aid organisations should be able to return poor quality products to a donor to whose bio-waste treatment these products belong.

Voluntary actions have a significant impact on the reaching of food waste reduction goals. Together with legislative development, targets set for the food chain on reducing food waste can be met.

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Additional reading:

Project information http://tietokayttoon.fi/hankkeet/hanke-esittely/-/asset_publisher/ohjauskeinot-ruokahavikin-ja-elintarvikejatteen-puolittamiseksi

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Lexfoodwaste is part of the implementation of the 2016 Government plan for analysis, assessment and research.