



FOOD WASTE EVIDENCE-GATHERING REPORT



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1. INTRODUCTION EVIDENCE GATHERING REPORT

This report provides an overview of food waste, including policies, systems in [Poland](#), [The Netherlands](#), [Finland](#), [Italy](#) and [Cyprus](#) and the key findings that have emerged from set of questionnaires and interviews gathered as part of the GREEN AND SUSTAINABLE FOOD EDUCATORS Project, reflecting on relevant needs and perceptions about food waste to stakeholders.

This report provides information from every country about their policies and systems concerning the subject of food waste.

In addition, this evidence-gathering report includes the results and summaries of questionnaires and interviews collected from four categories: students, educators, entrepreneurs/consumers, and public representatives in [Poland](#), [The Netherlands](#), [Finland](#), [Italy](#) and [Cyprus](#).

The results reflect a diverse range of experiences, and whilst the key findings reflect common themes that have emerged from the interviews, in this Evidence Gathering Report, we have summarized the findings per participating country.

2. ABOUT THE GREASE PROJECT

The project aims to educate the consumers in food waste prevention by preparing informative toolkits and training materials. Project is needed, because there is no extended consumer education to prevent food waste at European level.

The project wants to change the consumer attitudes and behaviours to more sustainable ones.

3. FOOD WASTE, INCLUDING POLICIES, SYSTEMS

Introduction

Food waste poses a significant challenge to global sustainability, affecting economies, environments, and communities worldwide. This report delves into key facets of food waste policies and systems, encompassing legislation, national strategies, statistical analyses, education, and research efforts.

Legislation

The report examines legislative frameworks actively addressing food waste reduction and facilitating food (re-)distribution, providing insights into the legal mechanisms shaping food waste management practices.

National Strategies

It delves into national strategies on food waste prevention, elucidating the strategic approaches adopted by governments to mitigate food waste at a systemic level.

Statistics

Through statistical analysis, the report offers a quantitative understanding of the scope and impact of food waste, underpinning the urgency and necessity of effective interventions.

Food Waste Education and Research

It explores initiatives in food waste education and research, spotlighting efforts to raise awareness, develop innovative solutions, and foster behavioural change regarding food waste.

Conclusions and Recommendations

Finally, the report concludes with synthesized conclusions and actionable recommendations derived from the collective insights, aiming to inform and guide stakeholders towards more sustainable food waste management practices.

Through this exploration, the report aims to contribute to the discourse surrounding food waste mitigation, fostering informed decision-making and catalysing positive change towards a more sustainable food system.

3.1 POLAND

Legislation Actively Addressing Food Waste Reduction and Redistribution

Till August 2, 2019 In Poland, there was no legislation specifically addressing food waste reduction.

On 2019, the Senate adopted the Act on Counteracting Food Waste (*2).

The Act provides for the imposition on outlets fitted with a total surface of more than 250 square metres will be required to donate such food to charity organisations, with intentional discards punishable by financial penalties. The Act regulates fees for food waste and penalties in the event of non-conclusion of such agreements.

For every kilo of unallocated but wasted food, the seller will have to pay 0,10 pln (1/4 of one euro cent) to the account of the NGO he works with. According to the estimates of The Polish Food Banks Federation, the entry into force of the new provisions will save up to 100,000 tonnes of food more than before and will provide important support for around 2 million Poles in need.(2)

*(2) Act on Counteracting Food Waste.

The 2019 Act relates to the donation to NGOs of food that may end up in the bin due to an end-of-life date, an approaching minimum durability date or because of concerns about the substandard appearance of food products or their packaging. In the first two years, only shops or wholesalers with a surface area of more than 400 m² were covered by the legislation, now more than 250 m².

On the basis of a contract, shops donate unsold food products to a selected NGO that meets the requirements of the Act. In practice, this means that the food only goes to specific charities; it cannot be donated to, for example, orphanages or social welfare homes.

One of the organisations to which vendors can donate unsold products are food banks (FOBs). The NIK inspected 10 of the 31 existing ones.

The Chamber has no objections to the banks' use of public funds to carry out their food waste prevention tasks.

Food banks, on the other hand, signalled problems in obtaining public funding for what they consider to be a necessary expansion of the network to more effectively prevent food waste, e.g. by building more warehouses.

National Strategies on Food Waste Prevention

Legislation to be amended - still too much food ends up in the rubbish.

The existing legislation is not enough - despite the enactment of a law to prevent food waste, it has not been possible to create a comprehensive system that is fully effective in reducing the scale of the problem in Poland. The period from January 2019 to July 2021 was studied.

According to the NIK (National Audit Office) , the reason is that the regulations introduced in September 2019 only apply to trade, meanwhile. As the results of a recent study show, most food goes to waste straight from our homes, as much as 60%. Processing and agricultural production are next in line (around 16% each), and only in fourth place are shops responsible for 7% of wasted food. This means that in addition to legal regulations, the following are necessary: education and social campaigns on rational planning of purchases or principles of proper food storage.

The adoption of the law was a positive, but only a first step towards introducing institutional solutions to significantly reduce the scale of wastage. Legal and organisational problems reported during inspections by representatives of food banks and the Chief Inspector of Environmental Protection show that in order to be effective in preventing food waste and its negative social, environmental and economic consequences, it is necessary to change the law and introduce further regulations.

The Act on Counteracting Food Waste obliges both sellers and those who receive food products from them to jointly conduct information and education campaigns on rational

food management and preventing food waste. One of the organisations to which sellers can donate unsold products are food banks (FBOs). NIK audited 10 out of 31 existing food banks.

Meanwhile, more than half of the inspected Food Banks (6 out of 10) did not conduct such information and education campaigns, and in the case of the others, cooperation usually consisted in preparing and providing vendors with materials to be used in the campaigns organised.

Significant differences between individual food banks, both in terms of the number of agreements concluded on the free donation of food products, regulating the issue of participation of shops in the costs of transport and distribution of food, and actual participation in educational and informational campaigns, result from different conditions in which B operates and uneven practices in this area. Food banks operating in larger cities with more retail chains can, for example, count on more food products than those located in smaller towns.

The contracts established, for example, the issue of vendors' participation in the costs of transporting and distributing the donated food.

Some of the contracts did not provide for the vendors to subsidise the cost of collecting the food, and in individual cases the vendors themselves took the food with their own transport to the partner organisations designated by the bank.

It is also not without significance that, as it stands, the regulations refer only to the stage of food distribution and regulate relations between private entities, which does not favour the transparency of the whole process and makes it difficult to verify it on an ongoing basis. For example, municipalities, which have the greatest number of obligations related to social assistance, such as feeding the needy, are left out.

Source: PREVENTING FOOD WASTE https://www.nik.gov.pl/plik/id_25262,vp,28013.pdf
21.10.2021

Statistics

A recent study in Poland shows that almost 5 million tonnes of food are wasted in our country every year, more than half of which ends up in the rubbish not from trade and catering, as you might think, but from our homes.

The amount of food wasted is 4.8 million tonnes per year:

- ✓ 1.17% gastronomy
- ✓ 6.96% trade
- ✓ 15.50% agricultural production
- ✓ 16.60% processing
- ✓ 0.65% transport
- ✓ 60.00% households

These are the findings of the "Programme for Rationalisation of Food Loss and Reduction of Food Waste" (PROM). These are the first studies of this kind conducted in Poland

indicating the directions of actions that should be taken to counteract food waste effectively.

Reasons for discarding food products and food components in households.

- ✓ 65.2% Food spoilage
- ✓ 42.0% Oversight of expiry date
- ✓ 26.5% Preparation of too much food
- ✓ 22.2% Buying too much food
- ✓ 19.7% Ill-considered purchases
- ✓ 17.00% Over-packaging
- ✓ 14.2% Improper storage
- ✓ 10.8% Purchases of low-quality products
- ✓ 10.3% Lack of ideas on how to use the products to prepare meals.

We dispose of food products primarily because they have gone bad, or we have missed their expiry date.

This is because not everyone knows the difference between the term 'best consumed before' and the term: "should be consumed by". The former simply means the date the food is guaranteed by the manufacturer, the latter the date it is fit for consumption.

Research conducted as part of the PROM programme shows that almost 337 thousand tonnes of food are wasted annually in the trade in Poland. In turn, according to information from the Chief Inspector of Environmental Protection, in 2020, within the framework of the Act on Counteracting Food Wastage, non-governmental organisations received a total of just over 18.5 thousand tonnes of food products from vendors, which they almost entirely donated to the needy. This means that last year, these organisations received about 5.5% of food wasted in trade and about 0.4% of all food wasted in Poland (out of nearly 5 million tonnes).

According to the Research Body, these figures clearly show that legislation to prevent food waste should cover many more beneficiaries than just the strictly defined charities in the Act. They should also apply to a wider range of food retailers - today it is only the big-box stores.

So much for theory. In practice, as the audit has shown, the data provided is incomplete and inconsistent,

Source: "Programme for Rationalisation of Food Loss and Reduction of Food Waste" (PROM), 30.11.2020, <https://bankizywnosci.pl/prom/> 12.02.2024

Source: PREVENTING FOOD WASTE https://www.nik.gov.pl/plik/id_25262,vp,28013.pdf
21.10.2021

Food waste education in Poland

The Polish Food Banks Federation is supporting "zero waste food" idea and food waste education.

The Polish Food Banks Federation is the only Polish organization that comprehensively examines the level of food waste throughout the food chain. According to the idea - it is easier to manage what we can measure - they are currently conducting the first extensive research of this type on the phenomenon of food waste at every stage of the chain.

Banks are supporting the 'zero waste food' idea and food waste education.

Conclusions and recommendations in Poland

According to representatives of food banks, in order to prevent food waste more effectively, the law should also extend to food producers, companies that package food or import it, as well as prioritising the donation of food products to charity, and only secondarily to animal feed or biofuels.

Food bank representatives also point to the need to increase the charge for wasted food and to clarify the costs that retailers can deduct from the charge. This is because some chains claim that the costs exceed the fee. It would also make sense to standardise the way in which the costs of collecting/transporting/distributing food are calculated or to introduce a fixed fee for retailers, lower than the fee paid for wasted food.

Reducing the problem in economic, environmental, and ethical terms by:

- Take cross-ministerial action: to establish a comprehensive and effective system for monitoring and preventing food waste along the food chain, in particular by taking the necessary legislative action to achieve the above objectives, in cooperation with all stakeholders.
- Undertake cross-departmental activities: to build public awareness of the need to counteract food waste, using a nationwide information campaign on, among other things, the scale of the phenomenon and its negative social, environmental and economic consequences.
- *Source:* The Polish Food Banks Federation

3.2 THE NETHERLANDS

Statistics on Food Waste in the Netherlands

Understanding the scale of the food waste problem is crucial for effective policy development. According to recent statistics, the Netherlands has made notable progress in reducing food waste. The Dutch Ministry of Agriculture, Nature and Food Quality, in collaboration with various organizations, regularly publishes reports detailing the amount of food wasted at different stages of the supply chain.

These statistics reveal a decline in food waste, indicating the effectiveness of implemented measures. The data also highlights specific sectors or products where waste reduction efforts can be intensified. This information serves as a foundation for evidence-based policy development and targeted interventions.

Promising Initiatives

The ministry collaborates with the Nutrition Center and the Foundation 'Together Against Food Waste' to combat wastage. Significant progress has already been made in households, thanks in part to campaigns such as the annual Waste-Free Week in September. In 2022, Dutch citizens discarded an average of 33.4 kilograms of food per person at home. This represents a 23% reduction compared to the baseline year of 2015. However, the declining trend seems to be plateauing, necessitating more action across the entire food chain to assist Dutch citizens in reducing food waste at home.

Several promising initiatives have been undertaken throughout the entire food chain to combat food waste. Efforts are underway to create a more effective bread chain to prevent reverse flows. Currently, 700,000 loaves of bread are overproduced daily, with about half being lost in the chain, including 8% returned to bakeries by supermarkets and processed into animal feed. Additionally, business cases are being developed to process unavoidable waste streams, such as potato, vegetable, and fruit trimmings, on a large scale into animal feed for the circular production of meat, dairy, and eggs.

Total Food Waste

Nevertheless, there is still considerable room for improvement in combating food waste throughout the entire food chain, from agriculture to consumers. According to new data from WUR (Wageningen University & Research), the food waste per Dutch citizen in the entire food chain ranged from 97 to 123 kilograms in 2020 when converted per capita. This reflects a reduction of 5.8% to a maximum of 15.8% compared to 2015. Due to the imprecise data from chain parties and the lack of measurement of waste everywhere, ranges are used. However, the figures indicate that halving total food waste in the Netherlands would be a significant achievement. This reduction could provide a year's worth of food for 2.7 million people and result in a reduction of greenhouse gases by two to three megatons.

Additional Measures

To achieve the food waste reduction goal, the WUR concludes in its research that, in addition to continuing the current approach, supplementary measures are necessary. It is crucial to better monitor food losses in agriculture. The ministry is also exploring the possibility of making monitoring and reporting in the chain mandatory. This approach would allow for a more accurate assessment of the effectiveness of measures to combat food waste. Alongside additional measures, a decision to be made later this year should ensure that by 2030, food waste in the Netherlands is halved compared to 2015.

National Strategies on Food Waste Prevention in the Netherlands

The Dutch government has implemented comprehensive strategies to prevent and reduce food waste across the entire supply chain. The "National Program Circular Economy" outlines key objectives and actions related to sustainable resource management, including

food waste reduction. This program emphasizes collaboration between government, businesses, and consumers to create a circular economy.

Key components of the national strategies include:

- **Target Setting:** The Netherlands has set ambitious targets for reducing food waste, aiming to cut it in half by 2030. These targets provide a framework for businesses and individuals to align their efforts with national goals.
- **Collaboration and Innovation:** The government actively encourages collaboration between stakeholders, fostering innovation in the food industry to develop new technologies and processes that minimize waste.
- **Consumer Awareness Campaigns:** Public awareness campaigns educate consumers about the impact of food waste and provide practical tips to reduce waste at the household level.

Legislation Actively Addressing Food Waste Reduction and Redistribution

The Dutch government has enacted legislation to address food waste at various stages of the supply chain. Key legislative measures include:

Waste Reduction Agreements: The Dutch government has established agreements with businesses to collectively work towards waste reduction targets. Companies commit to specific goals, and progress is monitored regularly.

Tax Incentives: Legislation includes tax incentives for businesses that actively work to reduce food waste. These incentives encourage businesses to implement sustainable practices and contribute to the achievement of national targets.

Surplus Redistribution: Legal frameworks facilitate the donation of surplus food to charities, allowing businesses to contribute to social causes while minimizing waste. Clear guidelines ensure the safety and quality of redistributed food.

Food Waste Education and Research in the Netherlands

Education and research play a crucial role in shaping a sustainable food system. In the Netherlands, various initiatives focus on educating the public and conducting research to inform policy decisions:

- **Educational Programs:** Schools and community organizations implement educational programs that teach individuals about the consequences of food waste and ways to minimize it. These programs instill a sense of responsibility and sustainability from an early age.
- **Research and Innovation Hubs:** Research institutions collaborate with the government and industry to explore innovative solutions for reducing food waste.

This includes developing technologies for better storage, transportation, and processing of food products.

Partnerships with NGOs: The government collaborates with non-governmental organizations (NGOs) working on food waste issues. This collaboration enhances research capabilities and facilitates the implementation of effective educational campaigns.

Conclusion

The Netherlands has made significant strides in addressing food waste through a combination of statistical analysis, national strategies, legislative measures, and educational initiatives. By setting ambitious targets, fostering collaboration, and implementing effective legislation, the country is working towards a more sustainable and circular food system. Continued efforts in research and education will play a vital role in ensuring a holistic and enduring approach to tackling food waste in the Netherlands.

3.3 FINLAND

Introduction

Food waste continues to represent a significant sustainability challenge in Finland, affecting households, educational institutions, public organisations and private-sector actors alike. Finland's national approach is rooted in a strong commitment to the principles of a circular economy, in which resources are used efficiently and food waste is minimised through coordinated action across the entire food chain.

This chapter provides an overview of national policies, systems and educational initiatives, and presents insights gathered through surveys and interviews with Finnish stakeholders. The data for this section were collected from a combined total of 36 survey respondents and eight interviewees, reflecting contributions from students, educators, entrepreneurs and public representatives. These findings offer a comprehensive picture of Finnish behaviours, perceptions and system level structures concerning food waste.

Legislation, National Strategies and System-Level Actions

Finland's policy framework for food waste reduction is shaped strongly by national strategies such as the Food Research and Innovation Strategy for Finland 2021–2035 (<https://www.vttresearch.com/sites/default/files/2021-03/Food-research-and-innovation-research-for-Finland-2021-2035.pdf>), which places emphasis on sustainable, healthy and resource efficient diets, responsible production practices and comprehensive waste reduction measures.

Finland positions itself as a leading platform for testing and scaling sustainable food-system innovations, and the strategy highlights the importance of zero-waste principles and improved resource efficiency throughout the food chain. Collaborative efforts between governmental bodies, research organisations, food producers and consumers are seen as essential to addressing food waste effectively.

Public awareness campaigns form an important part of the national system. These campaigns focus on consumer education, teaching proper food storage, safe handling practices and creative approaches for using leftovers. The national redistribution network—comprising food banks, local associations and partnerships with retailers—plays a significant role in ensuring that surplus food is directed toward individuals and families in need.

Alongside these initiatives, Finland promotes a circular economy approach in which organic waste is recycled into compost or biogas, thereby reducing landfill masses and supporting renewable energy production. The alignment of these measures demonstrates Finland's ongoing commitment to reducing the environmental footprint of its food system.

Statistics and National Context

Finland's policy and research landscape prioritises sustainable resource use, efficient food system management and circular economy integration. Research efforts are targeted toward reducing food losses at all supply chain levels and improving societal understanding of food waste. Continuous educational and awareness building initiatives encourage consumers to adopt more responsible buying, storage and consumption habits. Finland's national strategies emphasize holistic system development rather than isolated interventions, ensuring that food waste is addressed as part of a broader sustainability agenda.

3.4 ITALY

Statistics in Italy

In Italy some data on the phenomenon can be found in the following two 2022 reports:

- 1) Report drawn up by the Waste Watcher International Observatory on the impulse of the Zero waste campaign of Last minute market and the University of Bologna estimated that in 2021 domestic food waste in our country was 31 kilograms per person, for a total of 1.8 million tonnes – which becomes 5 million if we also consider the other phases of the supply chain: production, transformation, distribution, sale.
- 2) Report drawn up by the Joint Research Center (JRC) of the European Commission which, considering the period 2000-2017, claims that in 2017 domestic food waste would have been 9.8 million tonnes, and that of the entire supply chain 14, 3 million tons.

Both reports, although not using the rigorous methodology indicated by the EU, are nevertheless useful for understanding how citizens' self-perception and awareness regarding waste evolves.

In recent years, other studies based on European methodology have been conducted in Italy: one of these is the one drawn up in the REDUCE project, coordinated by the University of Bologna, which analysed both the distribution and consumption phases and according where in 2017 domestic waste was 27.5 kilos per year per person, around 500 grams per person per week, for a total of 1.6 million tonnes. This report presents numbers

compatible with those of Waste Watcher and in line with those deriving from similar reports in other EU countries.

Another important report is the one called Food Sustainability Index 2021 and is the result of the collaboration born in 2016 between the Barilla Foundation and the Economist Impact: this report puts Italy on the world podium in the fight against food waste.

The food system is analysed, in the aforementioned report, according to 38 indicators, in three main areas: nutritional challenges, sustainable agriculture and the fight against food waste (an area in which Italy has particularly distinguished itself, ranking first in the world in 2021 for the actions undertaken to fight food waste).

Again according to this report, the Italian production chain loses only 2% of food (also thanks to greater attention to the circular economy of the agri-food sector), while food waste records the lowest figure recorded among the 78 countries analysed:

- ✓ at a domestic level, it is approximately 67 kg per capita per year;
- ✓ in catering it amounts to approximately 26 kg per capita per year;
- ✓ in distribution is approximately 4 kg per capita per year.

However, if Italy is a global example in the fight against food waste and for nutritional issues Italy obtains a good position in the promotion of a healthy and sustainable diet, the same is not the case for the other area analysed and in particular for water consumption.

In fact, in Italy the "pressure on surface and groundwater resources for food production" is quite high and greater and more profitable policies are needed to promote sustainable irrigation to achieve the desired results.

National strategies on food waste prevention

A basic concept of the national strategy launched by the Ministry of the Environment is to prevent food waste and not just recover it.

Food waste prevention refers to "all measures taken before a substance, material or product has become waste".

The Italian National Waste Prevention Plan, adopted by the Ministry of the Environment with a directorial decree of 7 October 2013, addressed the problem of food waste in Italy in an organic way for the first time, in line with what was indicated by the European Commission.

In this context, the PINPAS - National Food Waste Prevention Plan was established, which in 2014 also led to the birth of the Food Waste Prevention Day in Italy.

In line with the aforementioned national dictates, an interesting strategy implemented by the Waste Watcher International Observatory on food and sustainability and born from the joint work of the Department of Agri-food Sciences and Technologies of the University of Bologna and Last Minute Market (a which is also an academic spin off of the Alma Mater)

is the Waste Meter App, which is used to measure and prevent food waste, alone or in a group (family, friends, work group, etc.).

The app also assigns scores for each decrease in individual waste over time and for each content viewed: videos, card reading, correct quiz answers, allowing you to compare yourself with other users.

Among the main anti-waste strategies it is suggested to:

- check the pantry before doing the shopping;
- freeze food at risk of perishability;
- check the optimal quantity of food before cooking it;
- check the edibility of the food even after the expiry date;
- use culinary recipes with food recovered from the leftovers of the previous meal;
- ask the restaurateur for the availability of a doggy or family-bag, for transporting uneaten food home;
- donate excess food at risk of waste to those in need.

Legislation actively addressing food waste reduction & food (re)distribution

Italy is committed to implementing the strategic objectives of the United Nations 2030 Agenda signed in September 2015 for sustainable development in the context of economic, social and environmental planning.

The strategy was approved by the Presidency of the Council of Ministers in 2017 and from March 2018 coordination passed to the National Commission for Sustainable Development, chaired by the Prime Minister or his delegate.

Furthermore, Italy, although already adhering to the 2030 Agenda, was the first European country to also equip itself with a regulatory instrument to combat food waste with law no. 166/2016 (so-called "Gadda law").

This law establishes various measures and actions aimed at encouraging the redistribution of surplus food and medicines for social solidarity purposes, through bureaucratic simplifications, tax relief and bonuses for donors (public bodies, businesses and citizens).

The law also provided for the establishment of the Coordination Table (in line with the policies contained in the European agenda of Sustainable Food Production and Consumption) which has the task of formulating proposals for the development of information and awareness initiatives regarding donation and recovery of food surpluses, promote knowledge of the tools, including fiscal ones, regarding charitable donations, encourage the definition of provisions relating to specific incentives for the subjects involved in the donation, recovery and distribution of foodstuffs and in the donation of money, goods and services, but above all carry out monitoring activities of food surpluses and waste. For this reason, the Roundtable foresees the participation of various interested stakeholders (companies, consumers, policy makers, researchers, scientists, retailers, media and development cooperation agencies).

The Gadda law introduces a notable simplification of donation procedures. The previous regulation provided for prior communication to the financial administration for each donation exceeding 5,164.57 euros and the drafting of transport documents with a detailed description of the products that were donated. The new law eliminates preventive

communications, replacing them with a monthly cumulative communication, exempts from the obligation of communication for donations with a value of less than 15,000 euros or concerning easily perishable goods, and simplifies transport documents (for example, being able to simply report the weight total assets donated).

Food waste education and research

In Italy there is no real legislation for education against food waste but many initiatives carried out by organizations or public bodies or often both.

In fact, currently, the Italian system does not provide for the compulsory teaching of nutritional education in schools of all levels. Some initiatives, including legislative ones, nevertheless underline the importance of a correct and healthy diet for students and on several occasions the Ministry of Education has also promoted some educational activities in this sense in primary and secondary schools (for example on the occasion of the day of 16 October 2022 dedicated to the theme of World Food Day 2022).

For this reason, a bill has also been presented a few months ago that seeks to bridge this gap.

We can also mention the recent initiatives promoted by the education ministry:

- 1) the Memorandum of Understanding between the Ministry of Education and Merit and the Coldiretti National Confederation, signed on 29 April 2023. This Memorandum intends to develop projects concerning food education, in order to promote adequate awareness of the importance of nutrition education in schools and to raise awareness of the value of correct nutrition and a healthy and balanced lifestyle for physical and psychological health;
- 2) the Memorandum of Understanding between the Ministry of Education and the Barilla Foundation (BCNF), published on 25 January 2022, concerning the "Collaboration Agreement for multidisciplinary training for correct nutrition through the use of teaching digital" which is aimed at establishing and regulating a collaboration between the Ministry of Education and the BCFN Foundation to promote and enhance education aimed at the green and digital transition, which the two Parties will deem useful to activate.

Conclusion

In Italy in recent years there has been an intense debate on food waste and many awareness campaigns have been started which have led to discussion of the issue also at a legislative level.

Although Italians appear to be quite respectful of the problem and are showing ever greater attention to tax, there is still a lot to do so that this phenomenon is significantly reduced and the objectives set by the EU are achieved.

3.5 CYPRUS

The last decade has seen an exponential increase in interest on the issue of food loss and waste (FLW), in policy circles, academia, and even the private sector. Food loss and

waste are defined as the decrease in quantity or quality of food along the food supply chain (FAO, 2019). Quantitative FLW refers to food that exits the food supply chain, while qualitative FLW refers to the decrease in food attributes that reduces its value in terms of intended use. Following FAO, in practice food losses are considered as occurring along the food supply chain from harvest (or slaughter/catch) up to, but not including, the retail level. Food waste, on the other hand, occurs at the retail and consumption level (Annex I). This definition aligns with the distinction implicit in SDG Target 12.3, which focuses on halving per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains (SDG Report, 2022).

Essentially, the extent of reported FLW raised concerns about food availability, farm and food supplier revenues, natural resource sustainability, food safety, and the global ramifications of their impacts. Even though, those research studies emphasized the need for more data, the notion that “one third of food produced is wasted” has prevailed among many observers and policymakers as a “stylized fact (Cattaneo et.al., 2021).”

However, apart from the alleged simplified presentation of empirical findings, the spread of the novel coronavirus disease (COVID-19) in 2020 has drawn further attention to the risks of substantial food loss, particularly those of dairy, meats, fruits and vegetables, as social distancing measures have caused supply chain disruptions and demand to drop in many countries with a potential to increase losses specially in high value and nutrient-rich food commodities (Torero, 2020; Laborde et al., 2020). Taking under consideration these parameters, the pandemic and inadequate food access, can contribute significantly to morbidity (FAO et al., 2020).

At the time of writing, it was unclear whether these immediate impacts would have lasting effects on supply chains and consumption behavior, but no doubt they raise the importance of addressing FLW as part of the food policy agenda (Cattaneo et.al., 2021).

Statistics

Based on a recent socio-economic impact report by the “FOODprint campaign” that highlights the significant issue of food waste in Cyprus, households across the country generate nearly 48,000 tonnes of food waste per year, with each household discarding approximately 2.5 kg of food waste per week. This accumulates to a total of 47,746 tonnes per year. The economic impact of this waste is substantial, with researchers estimating that each inhabitant loses around 1,000 EUR annually due to food waste.

In addition to household waste, commercial activities, particularly in the catering and restaurant sectors, contribute an additional 110,504 tonnes of food waste annually. According to the report, adopting a zero-waste approach could lead to significant reductions. More specifically, if 100,000 citizens adopt such an attitude, food waste could be reduced by 17,237 tonnes per year.

Environmental concerns are also significant, as food waste disposal in landfills is estimated to produce 119,786 tonnes of greenhouse gas emissions annually. However,

the report notes that diverting food waste to biogas plants could substantially reduce emissions by 131,555 tonnes per year and generate 13,791,828 kWh of energy annually.

Globally, one-third of food production is wasted, and Cyprus ranks third among EU countries in terms of food waste. Given this reality, public awareness is crucial to addressing overconsumption and reducing waste, which can lead to substantial environmental, economic and social benefits.

Strategies

Despite the urgency of the food waste problem, as indicated by the numbers, Cyprus has no solid, established policies dedicated to food waste per se. Instead, food waste management is indirectly integrated into broader waste management policies, particularly those addressing organic waste.

The Cyprus Department of Environment, in accordance with Directive 2008/98/EC and its national counterpart (L.185(I)/2011), developed the 2012 Management Plan for Household and Similar Type of Waste, which was later revised into the 2015-2021 **Municipal Waste Management Plan** after public consultation. This plan, along with the Municipal Waste Management Strategy for **2015-2021**, focuses on complying with European waste management directives, optimizing existing infrastructure, adhering to the waste management hierarchy, and adopting cost-effective best practices. Key objectives include achieving 40% separate collection of municipal solid waste by 2021 (with a goal of 50% by 2027) and ensuring that no more than 95,000 tonnes of biodegradable waste is sent to landfills.

Additionally, the Department of Environment created the **Waste Prevention Programme** in line with Article 29 of the Directive. This program outlines prevention measures for various waste streams, including organic waste, paper, plastics, electronic equipment, and construction waste, and targets waste generation from households, the public sector, agriculture, tourism, and private companies.

The **Municipal Waste Management Strategy 2021-2027** represents a significant advancement in addressing food waste management, marking a positive and encouraging step forward. Developed by the Ministry of Agriculture, Rural Development, and Environment (MARDE) of Cyprus, with technical support from the European Commission's Structural Reform Support Service (SRSS) and the IMPEL Network, this strategy builds upon the progress made by the previous Municipal Waste Management Plan (2015-2021). It sets out a framework of actions aimed at promoting sustainable waste management practices and facilitating Cyprus' transition towards a circular economy. The MWMS 2021-2027 introduces several measures that emphasize the management of food waste, alongside broader waste reduction initiatives.

More specifically, the Strategy supports tendering procedures to include circular economy principles in public contracts, establishes a sharing platform to encourage food donation from retail and hospitality, including connecting companies that have food to donate with redistribution organisations, supports local initiatives to reduce food waste, supports R&D on eco-design with the aim to create new circular products and services, and sets-up a Sharing Marketplace platform for the circular economy, aiming to connect supply and demand of materials, scrub of waste in professional manner, in order to reduce waste.

Moreover, the Strategy initiates the installation of community composters (50 small and medium-sized) and 2000 home composters in remote and semi-remote areas, specifically targeting the treatment of organic waste, including food waste. It also sets up standards for quality compost and bio-waste entering recycling processes, ensuring that food waste is properly processed into valuable compost.

4. CONCLUSION, EVIDENCE GATHERING INTERVIEWS

Introduction

For our desk research we have conducted questionnaires amongst our network. In this second part of this evidence gathering report, we will give you the conclusions of all the interviews and surveys conducted by all the partners. In the following order: Poland, Netherlands, Finland, Italy and Cyprus.

Methodology

We have sent the questionnaires via a digital form. The results are automatically generated via this program. The questionnaires were sent to our own clients, stakeholders, students and contactlist. Every partner used their own connections to make sure that there is a variety of end results and different views.

Characteristics of the target group

All of the partners have specifically asked the following target groups to answer questions about Food waste:

- Students
- Entrepreneurs
- Educators
- Public sector

To make this evidence gathering report easy to read for our target audience, you can find merely the results and conclusions of our conducted interviews. The elaborated evidence

gathering report of each of the partners can be found in the TEAMS files of the project. The detailed version of each of our partners can be requested from the project manager if you deem it necessary for clearer context. There is also a possibility to ask for the interview and survey questions. Each partner has used exactly the same questions and methodology for the interviews and surveys in this study.

4.1 CONCLUSION, EVIDENCE GATHERING INTERVIEWS & SURVEYS: POLAND

The sample used in the online survey was consisted of 30 people that they are students, public representatives, educators and entrepreneurs /consumers. More specifically, in this report the data were collected through the use of a online questionnaire consisted of 20 questions. The participants in this study were:

• Students	36.7%	11 respondents
• Educators/teachers	6,7%	2 respondents
• Entrepreneur / consumers	46.7 %	14 respondents
• Public administration representatives	10%	3 respondents

Age of respondents

18-24 years	36,7 %	11 respondents
25-34 years	6,7 %	2 respondents
35-44 years	30 %	9 respondents
45-54 years	16,7 %	5 respondents
55-64 years	6,7 %	2 respondents
65-74 years	3,3 %	1 respondents

The data collected were analysed with MS Excel and are presented as a report.

The results reflect a diverse range of experiences, and whilst the key findings reflect common themes that have emerged from the interviews.

Key point about the survey

The main reason for food wastage in the respondents' household is **OVERBUYING FOOD**, the next most important reason is **RESERVES**. Respondents also admit that wastage is due to Excessive buying of food items. A minor reason for wastage is Cooking too large portions.

When asked how concerned you were about food waste, we received contrasting and extreme answers.

- One third of entrepreneur / consumers as well as public administration representatives are not worried about waste. For the remaining two thirds it is a definite problem.
- Educators also agree on the significant importance of the problem of waste.

- 55% of students are very concerned about food waste.
- Wasting definitely worries more mature people as much as 75 % between the ages of 35 and 54.
- 67% say they would actively participate in reducing food waste. 3% show a lack of interest.
- 70% are actively implementing strategies to reduce food waste.
- 10% show passivity and and 20% do not implement or are not sure if they are implementing any strategy.
- 13.3% are definitely aware of the importance of the problem and set clear goals and actions in reducing food waste. 36.7% declare that they have clear goals and targets for reducing food waste. As many as 20 do not set goals for reducing food waste.
- 40% of respondents Regularly monitor efforts to reduce food waste, 36% are not sure and 24 do not monitor.
- 60% manage leftovers, surplus or unsold/unused foodstuffs. As many as 23% make no effort at all.
- 43.3 % Actively educate family members, friends, employees or volunteers on food waste reduction practices.26.7 % do not take any action towards education.
- 23.3% I source food from sustainable and environmentally friendly sources. 50 % are not sure if they source their food from sustainable and environmentally friendly sources. For one-fifth of respondents, sourcing food from sustainable and environmentally friendly sources is not a priority.

Results of the survey

More than half of the respondents pay attention to ensure that the packaging of the food they buy is environmentally friendly and eco-friendly, and for 30% they do not pay attention to eco-friendly packaging.

76% reduce the use of single-use plastics, while almost 17% do not.

More than a third of respondents Have plans and goals to promote sustainability in the future and 40% are not interested in promoting sustainability.

96% of respondents understand the issue of food waste.

For only 16.7% sustainable food and reducing food waste is a top priority and for 30% it is not.

70% of respondents feel that there is a lack of practical information on how to reduce food waste.

90% of respondents have not attended a training course on food waste.

More than half of the respondents are interested in participating in training on food waste 20% are not interested.

The motivating factor for not wasting food is economic and environmental.

4.2 CONCLUSION, EVIDENCE GATHERING INTERVIEWS & SURVEYS: THE NETHERLANDS

For our desk research we have conducted questionnaires amongst our network.

Methodology

We have sent the questionnaires via a digital form (digital program Monday). The results are automatically generated via this program. The questionnaires were sent to our own clients, students and contactlist. We have a big contactlist of horeca entrepreneurs, because of the line of work that we are in.

Characteristics of the target group

We have specifically asked the following target groups to answer questions about Food waste:

- Students
- Entrepreneurs
- Educators
- Public sector

We have had 12 people that responded to this survey.

3 educators, 3 entrepreneurs and 6 students filled in the questionnaire. The people in our target group are all working in Hospitality industry (restaurants, hotels, dark kitchens, café's) and are Food educators or student Chefs.

Key point about the survey

The food waste reduction survey in the Netherlands reveals a strong commitment and awareness among diverse participants, including students, educators, entrepreneurs, and public representatives. Key findings include:

Results of the survey

The survey covered various aspects, including primary reasons for food waste, concerns, likelihood to participate, implementation of strategies, and attitudes toward sustainability.

Participants identified leftovers, overbuying groceries, and expired food as the primary reasons for food waste in their households. The average concern level about food waste was 7.67 out of 10, indicating a significant awareness of the issue. The likelihood to actively participate in reducing food waste scored an average of 8.08, reflecting a strong willingness to engage in efforts to minimize waste.

Strategies for reducing food waste were actively implemented by a majority of respondents, and many had set clear goals and targets for waste reduction. However, opinions varied on the regular monitoring and tracking of food waste reduction efforts, suggesting potential areas for improvement in consistent implementation.

Participants demonstrated effective management of leftovers and unsellable food items, with a majority strongly agreeing that these aspects were well-handled to minimize waste. Active education about food waste reduction practices was prevalent, with respondents often sourcing food sustainably and paying attention to environmentally friendly packaging.

Reduction of single-use plastics emerged as a notable focus, with a substantial number actively working to minimize their usage. Clear plans and goals for promoting sustainability in the future were expressed by a majority, demonstrating a forward-looking perspective among respondents.

Understanding the reasoning behind food waste reduction was strong across participants, with many considering it a top priority. However, opinions were mixed on the availability of practical information on ways to reduce food waste, indicating a potential need for more accessible resources.

In terms of training, responses varied, with some participants having attended sessions concerning food waste, while others expressed interest in future training opportunities. Motivations to avoid food waste included ethical considerations, cost savings, ease of implementation, and environmental concerns.

To summarise

The survey outcomes provide a comprehensive snapshot of food waste reduction efforts in the Netherlands across various demographics. Participants, representing different roles and age groups, exhibited a commendable level of awareness and commitment to actively address food waste. Strategies and goals for waste reduction, along with sustainable practices and educational initiatives, were prevalent, showcasing a collective effort toward a more responsible approach.

Challenges and opportunities emerged in areas such as the consistent monitoring of efforts and the availability of practical information. These insights present an opportunity for targeted interventions, including enhanced educational programs and support mechanisms, to further strengthen food waste reduction initiatives.

Motivations to avoid food waste align with broader sustainability goals, and the understanding of the reasoning behind food waste reduction is robust. While opinions on training and information availability varied, the majority considered food waste reduction a top priority, indicating a shared commitment to mitigating this issue.

In conclusion, the survey not only sheds light on the current landscape of food waste reduction in the Netherlands but also suggests avenues for improvement and collaboration. By recognizing the diverse perspectives of students, educators, entrepreneurs, and public representatives, tailored strategies can be developed to foster a more sustainable and collectively responsible approach to minimizing food waste in the Netherlands.

- **Primary Reasons for Food Waste:** Participants identified leftovers, overbuying groceries, and expired food as major contributors to food waste in households.
- **Awareness and Concern:** Participants demonstrated a high level of awareness, with an average concern level of 7.67 out of 10, indicating a significant recognition of the issue.
- **Willingness to Participate:** The average likelihood to actively participate in reducing food waste was 8.08, showcasing a strong willingness to engage in waste reduction efforts.
- **Implementation of Strategies:** Many respondents actively implemented strategies, set clear goals for waste reduction, and effectively managed leftovers and unsellable items.

- **Focus on Sustainability:** Participants actively focused on reducing single-use plastics, sourced food sustainably, and paid attention to environmentally friendly packaging.
- **Challenges and Opportunities:** Challenges included mixed opinions on the availability of practical information and varying responses to training opportunities. The survey highlights opportunities for targeted interventions, including enhanced educational programs and support mechanisms.
- **Motivations for Waste Reduction:** Motivations included ethical considerations, cost savings, ease of implementation, and environmental concerns, aligning with broader sustainability goals.

4.3 CONCLUSION, EVIDENCE GATHERING INTERVIEWS & SURVEYS: FINLAND

Methodology

Evidence gathering in Finland was carried out using a combination of online surveys and personal interviews.

A total of 36 individuals completed the online surveys and eight individuals participated in personal interviews, resulting in 44 Finnish participants across the four target groups. The combined dataset included 26 students, 10 educators, 4 entrepreneurs and 4 public sector representatives. This distribution reflects the strong representation of young people and educational professionals in the Finnish material, while also incorporating perspectives from business actors and public administration.

The respondents represented a broad age range from 12 to 64 years, with the detailed age distribution available for 18 respondents indicating participation from every major age category. These varied backgrounds ensured that the evidence reflected both household level behaviours and organisational sustainability practices in the Finnish context.

The surveys were delivered digitally and generated results automatically, while the interviews were conducted in person. Together, the surveys and interviews provide a nuanced understanding of consumer and organisational behaviours related to food waste in Finland.

Results and Key Points of the Evidence Gathering

Across the Finnish dataset, two primary causes of food waste were consistently identified: leftovers and overbuying groceries. These causes appeared prominently in both the surveys and interviews, indicating that food waste often arises from everyday routines rather than unusual circumstances. Respondents demonstrated a generally positive attitude toward reducing food waste, with many indicating that they already take actions to minimise it. Approximately sixty percent of participants agreed that they actively implement strategies aimed at reducing their waste, showing a clear willingness to adopt responsible practices.

Despite this willingness, fewer than half of the participants reported that they monitor their food waste reduction efforts. This suggests that actions are often taken informally, without systematic tracking or evaluation. Interviewees in organisational roles, such as educators and entrepreneurs, demonstrated significantly higher awareness and engagement. These individuals described adopting structured measures—such as surplus food initiatives, sustainable procurement practices and the use of environmentally friendly packaging—to

support both professional and personal sustainability. Their responses show that professional responsibility can increase the likelihood of systematic action.

Education emerged as a central theme throughout the Finnish dataset. Although respondents largely understood the importance of reducing food waste, only about thirty percent felt that sufficient educational resources were available. Interview participants, particularly those from educational and public sector backgrounds, emphasised the role of training and awareness raising in shaping long term behavioural change. Almost all respondents expressed interest in participating in additional training, reflecting a strong desire for more practical guidance.

In relation to sustainable purchasing, around thirty percent of respondents reported buying food from environmentally friendly sources, while nearly sixty percent stated that they avoid single use plastic packaging. Interviewees with professional sustainability experience confirmed adopting more advanced sustainability actions such as using compostable packaging and integrating environmental certifications into organisational processes. These findings suggest that sustainable practices are more common among individuals in roles that require or encourage such behaviour

Respondents widely demonstrated understanding of the reasons behind food waste reduction; however, not all perceived it as a top priority. Financial benefits and environmental concerns were identified as the strongest motivators for reducing waste. A smaller number of respondents also referred to ethical considerations, affirming that reducing food waste is simply the right thing to do. Many participants felt that practical information on how to reduce food waste is still lacking, indicating that increased accessibility to guidance could positively influence consumer behaviour.

Conclusions

The evidence gathered from the combined 36 survey responses and eight interviews demonstrates that Finnish respondents possess strong conceptual understanding of food waste issues and significant willingness to address them. However, consistent follow up and structured goal setting are not yet widespread. The findings highlight the importance of expanding practical education, strengthening communication around sustainable practices and improving access to tools that help consumers monitor their behaviours effectively.

Respondents who work professionally with sustainability demonstrate more advanced food waste management practices than the general population. For the wider public, food waste reduction is often seen as important but not always prioritised in daily decision making. Nevertheless, the widespread willingness to participate in training suggests strong potential for improvement.

Education, cross sector collaboration and continued development of national strategies will be essential to ensuring that Finland builds upon its current strengths. By enhancing practical skills and supporting structured approaches, Finland can make further progress toward its goal of a resilient, sustainable and low waste food system.

The one survey, composed of 20 questions, was developed online using the following link:

<https://forms.gle/EeApJGvRigqgr1ei8>

Methodology

We had 10 participants coming from the asked target groups and the results of the online survey are reported with the graphics and the numbers obtained and described at the next pages.

Conclusion of the survey

From the answers received it seems that the knowledge on the project matter is not so high in Italy among the target groups, even if it seems that most of them are interested to learn more on the food waste. All of the results of the surveys can be found in the elaborated evidence gathering report of each of the partners.

From the answers received in the interviews it is clear that in Italy it is necessary to implement actions of trainings and campaigns of information on the fight against food waste.

There is for sure an attention from the audience but many of them do not know exactly every steps.

It is also important to share good practices to motivate more to reduce food waste.

The most important thing probably is the necessity that this subject could become a specific subject to be studied compulsorily at school.

4.5 CONCLUSION, EVIDENCE GATHERING INTERVIEWS & SURVEYS: CYPRUS

Methodology

The sample used in the online survey was consisted of 10 people that are students, public representatives, educators and entrepreneurs. More specifically, in this report the data were collected through the use of a questionnaire consisted of 20 questions. The participants in this study were 2 students, 3 educators, 1 entrepreneur and 4 public representatives. The data collected were analysed with MS Excel and are presented with the use of tables and the respective graphs.

Key points and conclusion of the survey

- The majority of the group understands the reasoning behind the reduction of food waste
- The majority of the group perceives the reduction of food waste as a top priority with the older members of the group belonging to the professions of educators and public representatives to score high on that aspect.

- There is a strong tendency that showcases the lack of practical information on ways to reduce food waste which mostly comes from the participants that in general scored high in most of the statements and demonstrated an active interest on food waste reduction.
- The opinions seem to be fragmented on the matter of training with 40% having a neutral stance which possibly implies a certain skepticism on the specific practice.
- 70% of the respondents pointed out the ethical aspect of the cause itself and the environmental concerns that are connected with food waste. The result supports a previous finding with regards the reasoning behind food reduction.
- In general, in this study elders coming from the group of educators and public representatives demonstrate a more concerned stance on the issue of food waste.
- Expired food, in this study, is the number one source of food waste with overbuying and overcooking as the other two primary reasons. However, the number reason of expired food can be correlated with high consumption levels and overcooking.

Conclusions of the interviews

- Education can play a crucial role in reducing food loss and waste particularly through shaping the values and mindsets of pupils at a young age.
- Education and awareness raising on the issue of food waste are the most important actions that the governments could take in their effort to address the issue and improve the current state of things.
- There is no adequate and consistent information on the issue of food waste so the general public to be aware of the possible corrective actions that could be taken.
- There is no formal planning and setting of targets on food waste reduction in the organizations that the participants work or follow a program of studies.

5. FINAL THOUGHTS

Although it appears that all participating European partners are indeed concerned about the issue of food waste, there are no visible European guidelines in education on this topic yet. The intention to make changes exists, but the resources are not yet available.

Additionally, many countries' policies are still too divergent. While some countries are already taking action, others lag behind because this specific issue of food waste is simply not a top priority among their pressing problems. This is also reflected in the responses given in the interviews and online surveys.

A good job for the GREEN AND SUSTAINABLE FOOD EDUCATORS to make a difference and conduct trainings and handbooks that can be used by each partner and can be applied in every country in Europe.

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