



Co-funded by
the European Union

Good Practices for the Prevention and Reduction of Food Waste

Policy Brief



esciencia
eventos científicos



INDEX

INTRODUCTION	4
Methodology for Identification of Good Practices	5
FOOD WASTE PREVENTION AND MITIGATION IN THE TRANSITION TO SUSTAINABLE FOOD SYSTEMS	7
The extension of food waste problem	7
Role of policy making to fight food loss and waste	8
Good practices to fighting food waste	10
THE GOOD PRACTICES BY ZERO_WASTE	13
Government-led Good Practices	13
Organize, by organizing less food waste we generate (Organiza, organizando, menos desperdicios alimentarios estamos generando)	14
The Sustainable and Healthy Food Strategy	14
Guidance for municipalities to reduce food waste within local food systems: Reducing food waste at the local level	15
Multi-Language STREFOWA Tool	16
The Food Waste Recycling Project	16
The Food Waste Charter	17
Aragonese Code of Good Practices Against Food Waste (Código aragonés de buenas prácticas frente al desperdicio alimentario)	18
Less is Equal to More (Menos é Igual a Mais)	18
The Network of Municipalities for Agroecology	18
Business-led Good Practices	19
Frylite	20
SZIKRA (SPARK) - Zero Waste Restaurant	20
La Alimentación no Tiene Desperdicio (Food is not wasted)	21
MUNCH - Close to Date Food Sale App	21
Too Good To Go	22
GoodAfter Online Supermarket	23
OLIO APP	24
Talkual: Eliminating food waste by consuming visually defective fruits	24
Third Sector- led Practices	25
CUIB - Centru Urban de Inițiative Bune (The Urban Center for Good Initiatives)	26
FoodCloud	26
Fruta Feia (Ugly Fruit)	27
Right-size Menu (Menu Dose Certa)	27

Refood.....	29
Karabeleko Experimental Farm	29
Aragonese Food Alliance (Alianza Agroalimentaria Aragonesa).....	30
Bio&Co	30
Zaragoza doesn't Waste Food (Zaragoza no Tira Comida)	31
SOMARO Social Shop	31
Agroecological Market of Zaragoza (Muestra Local Agroecológica de Zaragoza)	32
LESSONS LEARNT AND RECOMMENDATIONS FROM THE GOOD PRACTICES	33
Digital platforms facilitate knowledge dissemination, marketplace and social action for food waste prevention	33
Private businesses bring new trends, including for preventing food waste, profitably	34
Context-based practices bring social support to people combining with a food waste prevention approach	34
Public policies are the backbone of sustainable transition food systems	35

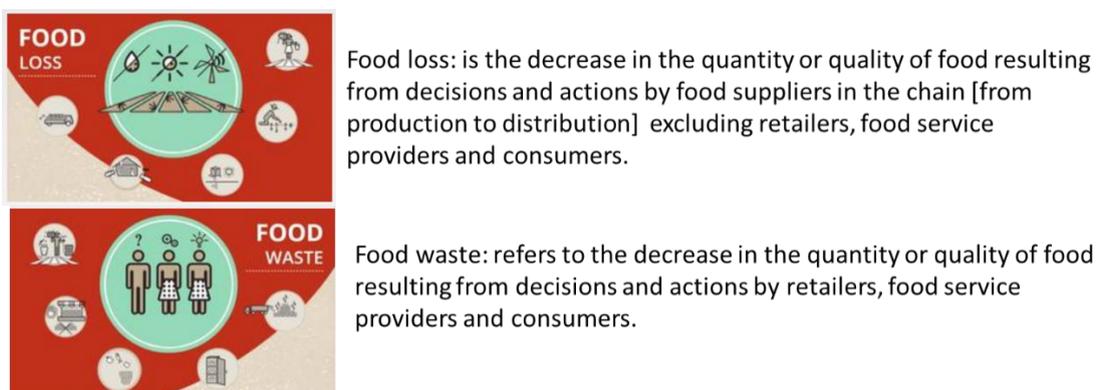
INTRODUCTION

This policy brief is a summary version of the report Good Practices for the Prevention and Reduction of Food Waste¹, a study published by SITES as an intellectual outcome of the **ZERO_WASTE** - Awareness for reduction of food waste project. It supports the United Nations Sustainability Goal 12.3: “By 2030, halve per capita global food waste at the retail and consumer level and reduce food losses along production and supply chains, including post-harvest losses.” The good practices presented have as the main approach prevention and reduction of food waste, promotion of sustainable food systems and the alleviation of poverty-driven food vulnerability.

ZERO_WASTE is a project whose main objective is to **promote social inclusion of rural areas** in the field of **education with contents related to reduction of food waste**, as well as to **improve the professional development of teachers** through the creation of an educational gamification tool with scientific content.

According to the World Food Program (WFP, 2020²), one-third of food produced for human consumption is lost or wasted globally. This amounts to about 1.3 billion tons per year, worth approximately US\$1 trillion. To provide conceptual understanding, the figure 1 shows the definitions of food waste and food loss utilized in this report.

Figure 1. Definitions: food loss and food waste



Source: FAO (2019³)

Data for **food waste** alone, according to estimations by the United Nations Environment Program (UNEP, 2021⁴), record around 931 million tons of food waste in 2019, 61 per cent of which came from households, 26 percent from food service and 13 percent from retail. These data means that about

¹ Available at: <https://www.euzerowaste.com/intellectual-output-3/>

² World Food Programme (2020). 5 facts about food waste and hunger: The shocking cost of poor storage in the farms of developing countries — and careless shopping in rich ones, 2 June 2020. Available at: <https://www.wfp.org/stories/5-facts-about-food-waste-and-hunger> Access: 25.10.2022.

³ FAO (2019). The State of Food and Agriculture 2019. Moving forward on food loss and waste reduction. Rome. Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://www.fao.org/3/ca6030en/ca6030en.pdf#page=48>. Access: 30.10.2022.

⁴ United Nations Environment Programme (2021). Food Waste Index Report 2021. Nairobi. Available at: <https://www.unep.org/resources/report/unep-food-waste-index-report-2021>. Access: 25.10.2022.

17 per cent of total global food production may be wasted (11 per cent in households, 5 per cent in food service and 2 per cent in retail⁵). In Europe Feedback EU (2022⁶), food waste amounts to 153.5 million tons each year, which is responsible for at least 6% of its total emissions and costs more than €143 billion per year (Feedback EU, 2022).

Halving food waste (Goal 12.3) is one of the commitments assumed by the countries that are part of the United Nations (UN) in 2015, after the approval of the **2030 Agenda for sustainability and development** with the purpose of ending poverty, protecting the planet and ensuring prosperity for everyone as part of a new sustainable development. Working towards the fulfillment of Goal 12.3 is in tandem with the achievement of SDG 2: Ending hunger and reducing malnutrition in all its forms by 2030. Above all, according to FAO (2019), reduction of food loss and waste is a means toward achieving other objectives, such as improving food security and nutrition, reducing greenhouse gas emissions, lowering pressure on water and land resources and can increase productivity and economic growth.

The fight against food waste is a shared responsibility of society. At an individual level, the consumer, as a final recipient of food, must also contribute to that end and it is fundamental that citizens are aware of the social and environmental implications of every decision they take when buying and consuming, change their attitudes and acquire responsible consumption habits.

On a political perspective, fighting food waste is one of the most important approaches to promote a **transition to sustainable food systems**, a shift that requires policies that focus on enabling transition in the face of changing climate, technological and economic factors (Jansen, 2020⁷).

ZERO_WASTE is a project that is born to address this problem through joint action and education. The good practices studied in this report are utilized as input to that end, as they are useful resources to stimulate learning and replication in specific contexts.

Methodology for Identification of Good Practices

This policy brief utilizes the term “good practice” as the initiative which have achieved reliable and tangible results promoting the circular economy in the field of food waste prevention and management and specific campaigns for sensitization.

In the frame of the Zero_Waste Project, good practices were identified utilizing the criteria proposed within the European project FUSIONS (Vittuari et al., 2015⁸) that are the following:

⁵ Note from the editor: The apparent discrepancy between the sum of the percentages for each sector and the total is due to rounding.

⁶ Feedback EU (2022). No time to waste: Why the EU needs to adopt ambitious legally binding food waste reduction targets. Rijswijk, the Netherlands: Feedback EU. Available at: https://feedbackglobal.org/wp-content/uploads/2022/09/Feedback-EU-2022-No-Time-To-Waste-report.pdf?utm_source=T%26E+EEB+super+list&utm_campaign=b9938e27f1-

⁷ Jansen, M. (2020). Transition to sustainable food systems. The European Files. November 20, 2020. Available at: <https://www.europeanfiles.eu/health/transition-to-sustainable-food-systems>. Access: 08.10.2022.

⁸ Vittuari, M., Gaiani, S., Politano, A., Aramyan, L., Gheoldus, M., Schneider, F., 2015. D3.1 Review of current EU Member States legislation and policies addressing food waste. Report of the project FUSIONS (contract number: 311972) granted by the European Commission (FP7).

- **targeted:** practices that have a strong waste prevention focus, clearly distinct from other waste management strategies or broad environmental goals;
- **effective:** practices based on guidelines, protocols, standards, reports, or preferred practice patterns that have been proven to lead to effective food waste prevention/reduction practices;
- **measurable:** practices that have an evaluation plan in place to measure program outcomes, even if they do not yet have evaluation data available to demonstrate the effectiveness of positive outcomes;
- **innovative:** practices that use original or resourceful techniques for waste prevention;
- **replicable:** practices that can be easily reproduced and are similarly relevant in regions.

Specifically, to evaluate the replicability of the practice, it is necessary to check that:

- the practice continues after the initial phase;
- the practice attracts structural funding, support from new sponsors or generates its own resources;
- the practice shows potential for replication in different contexts and towards different target groups.

Each of Zero_Waste partners identified five initiatives which complied with the above criteria from their own country of origin, hence reaching an overall of 30 good practices. The identification of the good practices was carried out with the support of a questionnaire to compile with information on the added value of the initiatives analyzed. In particular, the questionnaire asked for details about:

- Organization in charge of the good practice
- Scope of implementation of the good practice
- Timescale
- Resources required
- Results and impacts
- Challenges encountered
- Potential for learning and transfer

The analysis of the 30 good practices brought to the identification of three main categories in which they could be grouped by the type of implementation stakeholder in **Public** (Government organizations), **Private** (Business organizations) and **Third Sector** (Not-for-profit organizations). It is worth reminding that in this policy brief the good practices are summarized regarding their context of implementation. The full report followed a different structure for the reporting of the practices.

The 30 good practices are briefly described in the section after the literature review. Following are the lessons learnt from the practices and recommendations for capitalizing on them in the scope of food waste prevention and reduction, education, outreach and funding of initiatives.

FOOD WASTE PREVENTION AND MITIGATION IN THE TRANSITION TO SUSTAINABLE FOOD SYSTEMS

More than a third of the food that is cultivated globally is ultimately wasted. This is economically and environmentally inefficient. This market inefficiency is morally inadequate as well, as valuable resources are being used to grow food that will end up in the trash. Optimizing food distribution logistics is an important goal as the climate change-driven aridification of many parts of the world make cultivating food more difficult.

Fighting food waste and loss is embedded within the United Nations Sustainability Goal 12.3 on reducing food loss and waste:

“By 2030, halve per capita global food waste at the retail and consumer level and reduce food losses along production and supply chains, including post-harvest losses.”

The extension of food waste problem

The dimension of the food loss and waste problem in Europe is essential since it is a far-reaching problem stemming from several sectors such as food processing, wholesaling and retailing, food service sector and households⁹. Data compiled by Feedback EU (2022¹⁰), shows the dimension of the food waste problem in the region. Food waste accounts for at least 6% of its total emissions and costs the European Union more than €143 billion per year. Considering that the total volume of food imported in 2021 from outside of its borders of almost 138 million tons of agricultural products worth €150 billion, the wasting exceeds that amount, being 153.5 million tons of food each year.

Feedback EU highlights that the scale of waste is even more concerning when taking into consideration that, across the block, 33 million people suffer from food insecurity. Knowingly, food insecurity and climate change disproportionately impact women and historically marginalized communities, which turns food waste into a human rights and gender equality issue. Figure 2 shows a schematic representation of the amount of food being lost or wasted in the world while and the dimension of the food waste problem in Europe.

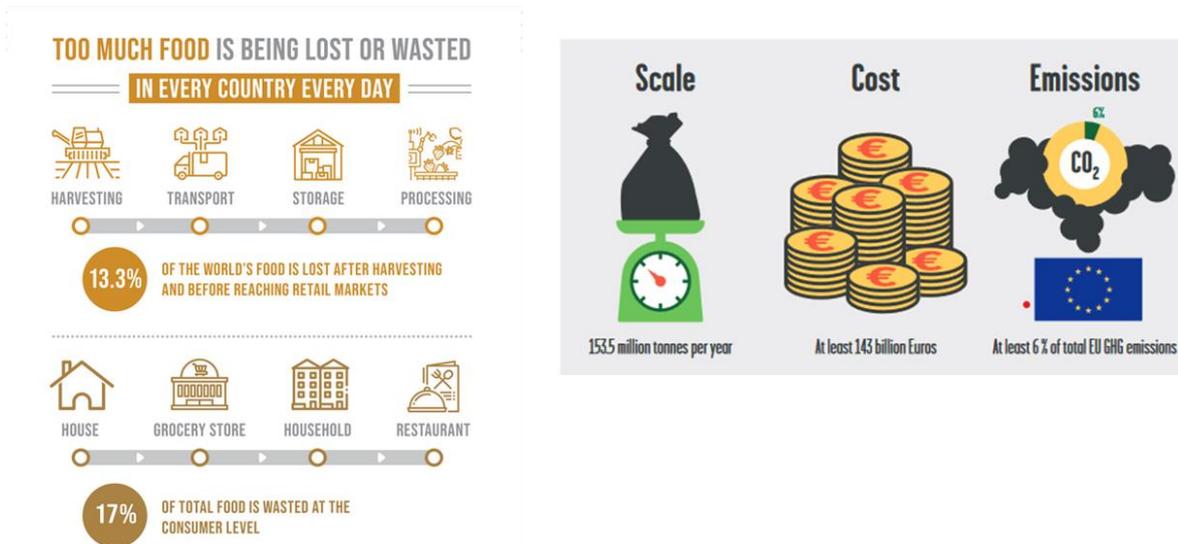
Research done in the scope of the European project Resource Efficient Food and Drink for the Entire Supply Chain (REFRESH) has shown that, in addition to the environmental benefits of optimized supply chain dynamics for the reduction of food waste, implementing measures to prevent and reduce food waste is justified by a strong business case. Research conducted in 17 countries proved that half of businesses engaging in food waste prevention activities achieved a return on investment of at least 14 to 1. In this regard, SDG 12.3 is achievable with investment of supply chain actors and

⁹ Stenmarck, Å., Jensen, C., Quedsted, T., Moates, G. (2016). Estimates of European food waste levels. 10.13140/RG.2.1.4658.4721.

¹⁰ Feedback EU (2022). No time to waste: Why the EU needs to adopt ambitious legally binding food waste reduction targets. Rijswijk, the Netherlands: Feedback EU.

can also have positive economic returns due to enhanced production processes (REFRESH, 2019¹¹).

Figure 2. Food waste and loss in the world and in Europe



Source: United Nations¹² (2022:50) for the world and Feedback EU (2022:6) for Europe

Role of policy making to fight food loss and waste

Policy making is key to addressing the dimensions of food waste and loss and their impact on society, starting from the extreme of the food supply chain, the producers' side, to the fabrication, retail and delivery sectors until the consumer. Good practices for food waste and loss prevention, reduction and management are a means to demonstrate actions that have been effective in a similar context and serve as benchmark for interventions.

There are two fundamental objectives of public policies for reducing food loss and waste: improved food security and nutrition; and environmental sustainability. Public intervention should interfere when the business case for private investments and efforts to reduce food loss and waste through private incentives are not enough, it should focus on reducing barriers that prevent producers and consumers from reducing food loss and waste, e.g. generating and/or sharing information on how to reduce food loss and waste, and on providing public goods or reducing negative externalities. Broader policies to promote overall rural development may allow producers along the supply chain to make investments that will also reduce food losses (FAO, 2019).

In the area of policy making, the European Union has addressed the topic across many policies. To ensure that national efforts against food waste are informed by a solid evidence base, Member States are required by the EU to measure food waste, and report on progress made, at the following stages:

¹¹ REFRESH, WRAP Global (2019). Building partnerships, driving change - A voluntary approach to cutting food waste. Available at: <http://tiny.cc/VABlueprint>. Access: 25.10.2022.

¹² United Nations (2022). The Sustainable Development Goals Report 2022. Available at: <https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf>. Access: 20.10.2022

- primary production;
- processing and manufacturing;
- retail and other distribution of food;
- restaurants and food services;
- households.

REFRESH's research gives input to understanding of the evolution of food waste policies in the EU. To this end, the policy actions started in 2010, which shows the newness of food waste as policy making issue. The policy actions show that food waste is a cross-cutting issue, strongly interrelated to food security, human health, economic development and environmental impact (Bos-Brouwers, 2020¹³). At least 10 policy areas, namely: waste and resource policy, hygiene and food safety, use of former food for animal feed, agriculture and rural development, fisheries policies, unfair trading practices, bioenergy, on-pack product information and date labelling, changing consumer behavior and voluntary cooperation in the food chain, are involved with the topic and have demonstrated opportunities for improvement in the prevention or management of food waste (Wunder et al., 2018¹⁴).

The European Farm to Fork (F2F) Strategy (EC, 2020¹⁵) is the most comprehensive policy action aiming at food waste fighting in the transition to sustainable food systems by aiming to make food systems fair, healthy and environmentally friendly. Its approach is summarized in Figure 3, which shows the main areas of action. As in all EU strategies, and especially for being related to the EU Green Deal, the F2F Strategy is subject to implementation by means of actions within all European concerned programs, including research and innovation, business support and regional development, for example.

¹³ Bos-Brouwers, H., Burgos, S., Colin, F., Graf, V. - REFRESH (2020). Policy recommendations to improve food waste prevention and valorisation in the EU. Deliverable D 3.5. Available at: https://eu-refresh.org/sites/default/files/D3.5%20Policy%20recommendations_v.2.pdf. Access: 25.10.2022.

¹⁴ Wunder, S., McFarland, K., Hirschnitz-Garbers, M., Parfitt, J., Luyckx, K., Jarosz, D., Youhanan, L. (2018). Food Waste Prevention and Valorisation: Relevant EU Policy Areas - Review of EU Policy Areas with Relevant Impact on Food Waste Prevention and Valorisation.' <https://www.eu-refresh.org/food-waste-prevention-and-valorisation-relevant-eu-policy-areas>

¹⁵ European Commission (2020). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system Brussels, 20.5.2020. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75ed71a1.0001.02/DOC_1&format=PDF. Access: 05.10.2022.

Figure 3. Focus areas of the European Farm to Fork Strategy



Source: Food Safety (2022¹⁶)

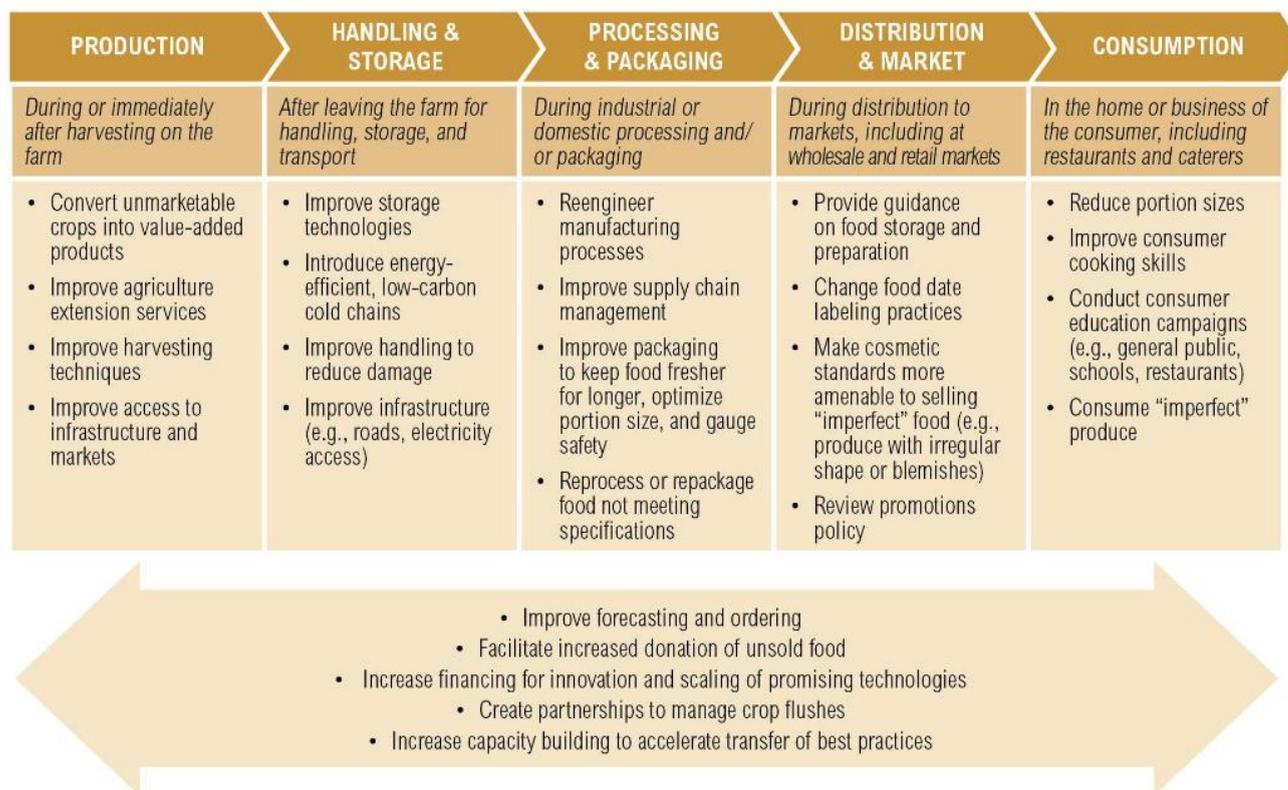
Good practices to fighting food waste

Good practices have been an efficient tool to stimulate action as they serve as an example and support the implementation of measures that have been tested and proved efficient. Various approaches, such as illustrated in figure 4, by Hanson and Mitchell (2017¹⁷), can be used to fight food loss and waste.

¹⁶ Food Safety (2022). Farm to Fork strategy for a fair, healthy and environmentally-friendly food system

¹⁷ Hanson, C., P. Mitchell. 2017. The Business Case for Reducing Food Loss and Waste. Washington, DC: Champions 12.3. Available at: <https://champions123.org/sites/default/files/2020-08/business-case-for-reducing-food-loss-and-waste.pdf>. Access: 18.10.2022.

Figure 4. Possible approaches for reducing food loss and waste (non-exhaustive)



Source: (Hanson and Mitchell, 2017)

Besides the practices presented in this report, there are other resources available to identify benchmarks for food waste prevention and reduction, such as in the table 1, which presents a brief selection of platforms to search from.

Table 1. Examples of platforms containing good practices

Platform	Summary
Healthline by Healthline Media https://www.healthline.com/	Tips to help make reducing food waste a little less overwhelming.
Green Healthcare by Green Healthcare epa https://www.greenhealthcare.ie/	A guide with actions to reduce the quantity of food waste generated in healthcare facilities.
Milan Pact Awards by the City of Milan and the Cariplo Foundation https://www.milanurbanfoodpolicypact.org	A collection of practices implemented by cities signatory of the Milan Urban Food Policy Pact recognizing the most creative efforts and monitoring the commitments they had made when they joined the pact.
Case Studies of Organizations Managing Food Waste Properly by Food Waste Ireland https://www.foodwaste.ie/	The case studies show savings for organizations who have implemented food waste prevention measure, the use of a brown bin service or composting on site.

<p>Good practices searching tool by the European Circular Economy Stakeholder Platform</p> <p>https://circulareconomy.europa.eu</p>	<p>The platform has a tool for searching good practices in various areas. Utilizing search criteria "food" leads to good practices that have food waste prevention as main aim.</p>
<p>Platform on social innovations to combat food waste</p> <p>https://www.eu-fusions.org/</p>	<p>The platform created by the FUSIONS project shows a selection of social innovations, organized accordingly to the food supply chain sectors: farming, processing and retail.</p>
<p>EU Platform on food losses and food wastes</p> <p>https://food.ec.europa.eu/</p>	<p>The Platform also operates in sub-groups to examine specific aspects and/or questions related to food waste prevention. To date, the sub-groups are: Action and implementation, Date marking and food waste prevention, Food donation, Food loss and waste, Consumer food waste prevention.</p>

THE GOOD PRACTICES BY ZERO_WASTE

The good practices are categorized, according to the organization that implemented them, in: Government-led, Business-led and Third sector-led. They are described in the sequence.

Government-led Good Practices

This category of good practices comprises those practices that have been implemented by government organizations or present guidelines for government/public administration actions. They focus on policies, awareness-raising, education, reduction of food loss and waste and food waste management.

According to FAO (2019), the rationale for government interventions to influence decisions made by individual suppliers and consumers on food loss and waste is twofold. First, even where the business case for food loss or waste reduction is clear, individual stakeholders may be unable to implement the necessary actions because of financial constraints. So, the public sector intervenes to modify the incentives for individual suppliers and consumers or help them overcome these constraints, favoring reduction of food loss and waste and increase of productivity or jobs creation. Second, the decisions of individual suppliers or consumers as to food loss and waste have negative implications on wider society that these individual actors do not consider and the government intervenes to put a cap on these negative externalities.

The table 2 shows the government-related good practices described in this section and their focus.

Table 2. Zero_Waste government-led good practices

Good Practice	Focus
Organize, by organizing less food waste generate	Awareness-raising
Aragonese Code of Good Practices on Food Waste	
Zaragoza doesn't waste food ¹⁸	
Less is equal to more	
Alianza Agroalimentaria Aragonesa ¹⁹	
The Food Waste Recycling Project	Awareness-raising Food waste prevention
Multi-language STREFOWA tool	
The Food Waste Charter	Sustainable food systems
Network of Municipalities for Agroecology	
The Sustainable and Healthy Food Strategy	
Guidance for municipalities to reduce food waste within local food systems	

^{18,18} These practices have been implemented by means of partnership between government and third sector organizations.

Organize, by organizing less food waste we generate (Organiza, organizando, menos desperdicios alimentarios estamos generando)



Organiza, organizando is a campaign run by the Government of Aragon since 2020 to provide information sessions for citizens on responsible consumption. Citizens are targeted to attempt to reduce food waste reduction on the consumer side. Topics of information sessions include: reducing food waste with meal planning, food storage at home, differences between expiration date/preferential consumption, and preparing recipes with leftovers. The information sessions are held in public places to engage best with the public. Researchers dress as superheroes and mascots to draw attention. Every session performs a “consumption habits survey” to collect information on the consumption habits of Aragonese citizens. Moreover, participants are persuaded to complete the survey because it grants them entrance into a prize lottery.

This practice collects consumer data and simultaneously disseminates information. Data collected would inform city-level policymakers on the consumption habits of their constituents. With this data, they can create a plan to reduce food waste that is tailored for the Aragonese people. This type of practice is important because it collects primary data about consumer behavior and disseminates information to reduce food waste at the same time.

<https://www.aragon.es/-/campanas-1>

The Sustainable and Healthy Food Strategy



The Sustainable and Healthy Food Strategy (EASS) is a strategic plan that constitutes Zaragoza City Council's reference framework for moving towards a more sustainable and healthy food system. The EASS was approved by de City Council of Zaragoza 9th May 2019. This strategy guides municipal food policies, in line with the provisions of the Milan Pact signed by the Zaragoza City Council in October 2015 and includes objectives, key concepts and specific measures and actions, as well as a food governance

proposal for the city of Zaragoza. Its focus on food waste contemplates generating a change in habits and practices throughout the food chain and promoting the social economy for the recovery of food and its transformation, commercialization and use, involving vulnerable groups as well.

The Milan Urban Food Policy Pact, was launched by the municipality of Milan in 2015 and is an international agreement among cities from all over the world, committed "to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimize waste and conserve biodiversity while adapting to and mitigating impacts of climate change". Its main aim is to support cities wishing to develop more sustainable urban food systems by fostering city-to-city cooperation and best practices exchange (Milan, 2015²⁰).

<https://www.zaragoza.es/sede/portal/medioambiente/alimentacion/>

<https://www.milanurbanfoodpolicypact.org>

Guidance for municipalities to reduce food waste within local food systems: Reducing food waste at the local level



The Guidance for municipalities to reduce food waste within local systems constitutes of a guide developed by Zero Waste Europe and Slow Food (Coste et al²¹, 2021) aimed at providing support to local municipalities to help reduce food waste through a holistic approach enabling the transition towards a sustainable food system. The guidance outlines the various actions that a municipality can implement to influence food waste reduction and stimulate its sustainable local food system. The guide was developed with the support of Zero Waste Europe and the financial assistance from the European Union through the LIFE Program²², the EU's funding instrument for the environment and climate action.

By adopting an integrated approach and acting on preventing food waste from occurring in the first place, a municipality can trigger other positive impacts on the local economy and health and will make its food system more resilient and fairer. Local and systemic thinking about food and food waste prevention can strengthen the local economy through the creation of jobs with positive impacts

²⁰ Municipality of Milan (2015). The Milan Urban Food Policy Pact. Available at: <https://www.milanurbanfoodpolicypact.org/>. Access: 20.10.2022.

²¹ Coste, M., Feiteira, F., Condamine, P. (2021). Reducing food wasteat the local level. Fuidance for municipalities to reduce food waste within local food systems. Zero Waste Europe and Slow Food. Brussels, December 2021. Available at: <https://zerowastecities.eu/wp-content/uploads/2021/12/Guidance-on-food-waste-reduction-in-cities-EN.pdf>. Access: 04.10.2022.

²² https://cinea.ec.europa.eu/programmes/life_en

benefitting the municipality. It can also promote food biodiversity (i.e., the array of varieties, breeds, and processed foods unique to given regions), support urban or peri-urban sustainable food production, making organic and healthy food available for the local population.

Multi-Language STREFOWA Tool



This good practice was created by the STREFOWA (Strategies to Reduce Food Waste in Central Europe), an Interreg project led by the Austrian University of Natural Resources of Life Sciences, run from 2016 to 2019. The STREFOWA multi-language tool houses and disseminates STREFOWA project’s food waste-reducing strategies and is available in English, Hungarian, Italian, Polish, German and Czech languages.

Descriptions of good practices may be highly academic in language, hindering understanding across countries. This tool seeks to remove that hindrance, facilitating inspiration and the expansion of proven practices to new communities, and accelerating the reduction of food waste. It is listed as government-related practice because it has been funded by the European Union in the context of the Interreg program.

The multi-language tool informs consumers of food waste reduction practices and efforts that are local to their geographic region. The tool connects users with food waste reduction initiatives that they can participate in based on their location. The tool offers support for English, Hungarian, Polish, Italian, German, and Czech. Surveys conducted on food waste reduction are available therein. This type of practice is important because it is inclusive and efficient. English proficiency need not be a prerequisite to gaining an understanding of proven scientific methods. This language tool prevents important details from being lost in translation by potentially subpar reporting from one language to English, and to another language to reach an audience in another country.

<https://tool.reducefoodwaste.eu/>

The Food Waste Recycling Project



The Food Waste Recycling project aimed at educating households to use the food waste bin correctly and identified practical steps to be adopted by waste collection services. It was run from April 2018 to March 2020 by the Cré (Composting & Anaerobic Digestion Association of Ireland) in collaboration with the Regional Waste Management Planning Lead Authorities Connacht Ulster, Eastern Midlands, Southern (WMPLA) and the Irish Waste Management Association. It implemented three trials to test

the effectiveness, cost and logistics to provide households with communication and practical tools to increase participation in separating food waste. Similar approach to household food waste collection is presented by the Regions for Recycling (R4R) Interreg IVC project good practices report for the city of Milan²³.

<https://www.mywaste.ie/wp-content/uploads/2020/09/Food-Waste-Report-3.pdf>

The Food Waste Charter



Ireland's Food Waste Charter is an initiative launched in 2017 to support businesses to reduce food waste by promoting a collective industry commitment focusing on the entire supply chain. Food waste has been a priority waste stream for the Environment Protection Agency (EPA) National Waste Prevention Program and the Government's Climate Action Plan and Waste Action Plan for a Circular Economy, aiming at a 50% reduction in food waste. It is also related to the broader commitment that Ireland, as a signatory of the United Nation's Sustainable Development Goals, has made to reduce food waste by 2030.

Food businesses can voluntarily show their commitment to reducing food waste by signing up to The Food Waste Charter and join other businesses and industry leaders working together to reduce food waste across the entire value chain (farming and fishing primary production, manufacturing and processing, distribution and retail, restaurants and food services, households). The signatories of this initiative are pledging to take positive actions – through measuring, reducing, and reporting their food waste. EPA supports the businesses by developing free food waste prevention resources, helping to identify opportunities and providing support for the implementation of actions to address food waste.

<https://foodwastecharter.ie>

²³ Regions for Recycling (2014). Good Practice Milan: Door to door food waste collection for households. November 2014. Available at: https://www.acrplus.org/images/project/R4R/Good_Practices/GP_Amsa_Food-Waste-Collection.pdf. Access: 24.10.2022.

Aragonese Code of Good Practices Against Food Waste (Código aragonés de buenas prácticas frente al desperdicio alimentario)

Código aragonés de buenas prácticas frente al desperdicio alimentario



This good practice refers to the elaboration of a code of good practice in Aragon for the prevention of food waste. The main associations and entities involved are committed to work together by joining forces with different sectors (civil society, business and public administration), to the extent of the possibilities and nature of each entity, to reduce food waste in the community. Aware of the environmental, social and economic problems caused by food waste, this initiative is launched with the aim of contributing to building a more sustainable, fair and efficient society.

<https://ecodes.org/hacemos/produccion-y-consumo-responsable/alimentacion-sostenible/desperdicio-alimentario>

Less is Equal to More (Menos é Igual a Mais)

UNIVERSIDADE DE
COIMBRA "Menos é Igual a Mais"

This is a campaign implemented at the University of Coimbra to raise awareness on food waste by weighting meal leftovers at the canteens and measures. It is listed as a government-led practice for the university of Coimbra being a public university. The aim of this practice is to sensitize students to the reduction of food waste, through the creation of a mechanism that, by being aware that it is choosing more food than we are going to consume, we are feeding food waste and not ourselves. By allowing all students to measure the amount of food waste after each meal, it allows them to be more easily aware of the problem and the next time we use the canteen we will select only the foods that we will consume.

<https://noticias.uc.pt/artigos/campanha-menos-e-igual-a-mais-monitoriza-o-desperdicio-nas-unidades-alimentares-da-uc/>

The Network of Municipalities for Agroecology (Red de Municipios por la Agroecología)



The Network of Municipalities for Agroecology (RMAe) was created in 2017 as a network formed by cities. In 2022 it adopted its new name as it expanded as a Network of local entities with agroecology-based food policies. It is an association formed by local entities of the Spanish State, with the aim to

help administrations build sustainable, resilient and environmentally friendly local food systems; inclusive, safe and diversified to ensure healthy, sustainable and accessible food for the entire population; and promote local employment.

<https://www.municipiosagroeco.red/>

Business-led Good Practices

There are many reasons why businesses should engage in the fight against food waste. These reasons are related to 1) preventing the generation of waste by adopting adequate management practices; 2) developing solutions to prevent food waste; 3) developing solutions to process food waste so to dispose of them adequately and to transform them into raw materials for other processes. But it may not be always clear for businesses why they should engage in and how companies could benefit by tackling food waste. Creating awareness of successful initiatives is a potential means of convincing them.

In a survey of more than 700 companies from various sectors in 17 countries, Hanson and Mitchell (2017²⁴), found that 99 percent of the sites earned a positive return on investment on food waste and loss reduction of the order of 14:1, for restaurants and ratios between 5:1 and 10:1 for hotels, food service companies, and food retailers. According to the survey, there are also strategic nonfinancial benefits from investing in such practices, they are compliance with waste regulations, environmental sustainability, stakeholder relationships, and a sense of ethical responsibility.

This category of practices shows different business models, solutions, initiatives and enterprises implemented by business organizations to prevent and combat food waste. Table 3 shows the good practices that are reported in this sub-section.

Table 3. Zero_Waste business-led good practices

Good Practice	Focus
Talkual	Food waste prevention
Encantado de Comerte	
Good After	
SZIKRA - Zero waste restaurant	
Too Good to Go	
MUNCH - Close to Date Food App	
Food is not Wasted	Awareness-raising
Frylite	Food waste prevention & management

²⁴ Hanson, C., P. Mitchell. 2017. The Business Case for Reducing Food Loss and Waste. Washington, DC: Champions 12.3. Available at: <https://champions123.org/sites/default/files/2020-08/business-case-for-reducing-food-loss-and-waste.pdf>. Access: 18.10.2022.

Frylite



Frylite is a private company whose core business is focused on the supply and collection of used cooking oil which, once used, is recycled by turning it into renewable resources, such as electricity, heat, fuel and organic fertilizer. In this way, Frylite provides a high-level solution to extend the practical as well as the economic value of oil, preventing it from being sent to landfill. Furthermore, it ensures an option to comply with the food waste legislation SI 508 of 2009 in place in Ireland in the scope of the food service and hospitality industry, as well as provides means which prevents oil spills and lack of management of waste oil from causing harm to the environment, to human health and to wastewater treatment infrastructure.

<https://frylite.com/>

SZIKRA (SPARK) - Zero Waste Restaurant



Zero waste restaurants, such as SZIKRA, is a trend that calls for restaurants to contribute to decreasing the amount of food waste and related greenhouse emissions, which they can do by cutting on waste generation and adopting practices that help to foster sustainability in order ways, such as building closer relationships with committed producers (Kaplan, 2020²⁵) and circular economy principles.

SZIKRA Restaurant is a unique good practice. It refers to a business initiative led by a strong entrepreneurial orientation of its founder. It has been seen as innovative and the creator of an important environmental impact while preventing food waste and implementing new practices and developing networks of local suppliers that apply sustainable food principles, such as sourcing from local producers, recycling, and emphasizing the low carbon footprint of ingredients.

<https://www.facebook.com/SZIKRArestaurant>

<https://mindcraftstories.ro/societate/zero-food-waste-restaurantele-romanesti-care-nu-vor-sa-creeze-deseuri/>

²⁵ Kaplan, R. (2020). Zero-waste restaurants tap growing appetite for sustainability: Their cost-effective business model may also help them weather the pandemic. Financial Times, November 19, 2020. Available at: <https://www.ft.com/content/eaeca1f9-6ead-42a5-9ad3-5fe371d0d552>. Access: 05.10.2022.

La Alimentación no Tiene Desperdicio (Food is not wasted)



Food is not wasted, “La alimentación no tiene desperdicio” in Spanish, is a collaborative initiative to reduce food waste, started in 2016 by AECOC (Spanish Business Association for Manufacturers and Distributors), which congregates business associations of food industry, distribution and operators. This practice is in line, and in some extent, it has advanced the means to respond to the new Draft Bill on Prevention of Food Loss and Waste, issued by the Council of Ministers of Spain (2022²⁶). The Spanish Draft Bill follows the examples of Italy and France, and aims at preventing the discarding of unconsumed food and encouraging better use of it.

Food waste in Spain amounts to 1,300 tonnes annually, which equates to 31kg a person. Food wastage is due to inefficiency in the food chain, wherein 20% of food is wasted, of which 40% occur at retail or household level. Spanish households throw away 1.4 billion kilos/liters of food, an average of 31 kilos/liters, amounting to 250 euros per person per year. For this reason, raising social awareness of food waste is one of the pillars of the new law (Council of Ministers of Spain, 2022).

<https://www.alimentacionsindesperdicio.com/>

MUNCH - Close to Date Food Sale App



Similarly, to other popular food-saving applications, such as Too Good to Go, and Encantado de Comerte, MUNCH developed by Munch Europe Szolgaltato Korlatolt Felelossegu Tarsasag from Hungary, combines the possibility of eating affordable food with environmental benefits, all of this facilitated by a simple-to-use application.

The main reason for the success of this kind of practice is that it contributes to the fight against food waste and a more sustainable economy and draws attention to a problem even among those who are not concerned by climate change but see discounted food as an opportunity. For a short introductory lesson on food waste management apps is worth recurring to Emizentech (2022²⁷), which shows the

²⁶ Council of Ministers of Spain (2022). Government of Spain approves pioneering law against food waste Council of Ministers - 2022.6.7. Available at: https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/paginas/2022/20220607_council.aspx. Access: 05.10.2022.

²⁷ Emizentech (2022). Developing a Food Waste Management App: Features and Cost. Mobile App Development, September 8, 2022. Available at: <https://www.emizentech.com/blog/food-waste-management-app-development.html>.

main apps available on the market and their respective individual features besides guidelines on how to build the apps. Sillitoe (2022²⁸) also shows how mobile apps are helping to reduce food waste.

<https://www.romania-insider.com/munch-food-waste-app-launch-cluj-jul-2021>

https://www.instagram.com/munch_romania/

Too Good To Go



Too Good To Go

Too Good to Go is an app that distributes unsold food from distributors directly to consumers. Food that would potentially be wasted is repackaged in surprise food packs and made available at a discounted price. This directly reduces food waste by reducing loss from distributors. It also incentivizes businesses to participate by paying them for food they would have otherwise thrown away.

Too Good to Go has been operating in Denmark since 2016. In the 6 years since, it has gained over 5.3 million users (distributors and consumers) and 15000 businesses have reduced their food surpluses. Businesses are incentivized to join the program because they earn profits from excess food sold and advertisement to the users on the platform. 76% of customers who discover a store through the Too Good to Go app return as repeat customers. Consumers are incentivized to join because they gain access to high quality food for a cheaper price, tips on how to reduce food waste, anti-waste recipes, blogs, and tips for the best food pack purchases.

<https://toogoodtogo.org>

²⁸ Sillitoe, B. (2022). Retailers choose from menu of mobile apps to help reduce food waste. Supermarkets, convenience stores and coffee shops are among the retailers connecting with mobile apps and tech firms to drive down the wastage of food. Computer Weekly. Feature, 11 Jul 2022. Available at: <https://www.computerweekly.com/feature/Retailers-choose-from-menu-of-mobile-apps-to-help-reduce-food-waste>.

Happy to Eat It (Encantado de Comerte)



Encantado de Comerte puts at your disposal food that has not been sold at reduced prices through the app. A winning solution for all parties and with a positive impact on the environment. The mobile app “Encantado de Comerte” works on both Android and iOS and works with batches of food that the subscribing shops have not managed to sell during the day, but which are still in good enough condition to be consumed. In this way, the establishments offer these products with at least a 40% discount through their application and once reserved by the customer, the customer can pick them up at the shop. The collaborating establishments provide the packaging (topper and bag) so this is not a mandatory condition. But it is a highly recommended condition if you want your purchase to be 100% respectful of the environment. Payment is made through the app when you place the order, either by credit card or by Encantado de Comerte credit.

<https://encantadodecomerte.es>

GoodAfter Online Supermarket



GoodAfter.com is an online supermarket dedicated to the sale of products that are close to the end of the preferential consumption period, or even beyond that period. In addition to other types of opportunities, offers products that, being food safe and legally marketable, are reaching or have already reached their preferential consumption date and therefore, because they are no longer of their quality guaranteed by the brand, can be sold at substantially lower prices (savings of up to 70%). GoodAfter.com is a clearly “green” solution, insofar as it allows to reduce food waste and waste and pollution related to its elimination. The main stakeholders and beneficiaries of the practice are the retailers, who thus ensure another distribution channel for their expired products, and consumers, who can thus purchase expired products at a reduced price. It was necessary to develop a good network of GoodAfter suppliers, ranging from manufacturers, distributors, supermarkets or small grocery stores, since “all products have validity problems, discontinued/obsolete lines or seasonal products”, most of which are acquired in Portugal, but also with suppliers from Spain, France, Italy and the Netherlands. A logistics platform was created for the company, which is located at Hipercentro Areosa, in Porto, where the products are stored and picked, as well as shipments to Portugal and Spain.

<https://goodafter.com/pt/>

OLIO APP



OLIO App, a digital tool enabling people with surplus food to share it with those people who need it preventing food waste through very straight-forward steps. OLIO App departs from the assumption that within communities there could be several opportunities to prevent food (and non-food) from being wasted, but the lack of information about such opportunities represents an obstacle for food waste reduction. OLIO App provides a solution by allowing users who have surplus food to make it available for others in the area for free, just by paying a subscription fee (monthly or annually). The practice is implemented through a mobile App that connects neighbours and local shops enabling them to accede to spare food that, if not shared, would end up being thrown away. This digital service envisages a subscription fee, but all interactions with the OLIO community are free of charge. If one is not going to eat some food, one can upload it on the App. If one wants to get spare food, it is possible to check the list of food that is available in the surroundings. By involving a minimum number of intermediaries, the app fosters community cohesion, other than economic savings and food waste prevention.

<https://olioex.com/>

Talkual: Eliminating food waste by consuming visually defective fruits



Talkual focuses on creating boxes with a selection of fruit and vegetables that have visual defects but retain all the flavour and quality of origin. Consumers can subscribe to receive one or more of these boxes per month. Currently, some food production never reaches the supermarkets, due to several factors in what are known as food losses. However, some of these factors are purely aesthetic, which do not affect the quality of the products. Many attempts have been made to address this problem, one of which is to promote the consumption of such products, mainly fruit and vegetables that have

relatively marked visual defects. However, it is still the case that many supermarkets refuse to have these products on their shelves and on display.

This project is based on a web platform that centralizes all consumer subscriptions, from which everything related to them is managed (payment methods, periodicity, subscription pause...). In addition, it also requires a group of people who are in permanent contact with the producers to adjust the boxes and delivery packages to the surplus production of each producer.

<https://www.talkualfoods.com/>

Third Sector- led Practices

According to Galli et al (2019²⁹), organizations belonging to the third sector, or non-profit organizations, have been active in redistributing recoverable food surpluses to people who are living in a condition of food insecurity, either on a permanent or a temporary basis. The role of non-profit actors has been particularly important in addressing food poverty in most European countries that have involved societal actors in the delivery of social services. Different arrangements are made to redistribute surplus food to those people who need them, often in connection with public social services, depending on institutional context, history and culture.

The good practices shown in this section have been implemented by charities or other types of non-profit organizations and aim at relieving food poverty while promoting food waste prevention, awareness raising and education, as well as more sustainable and organic food culture. This category of good practices includes those that have social and environmental goal as their primary aim when working to achieve food waste prevention. They have been implemented by organizations belonging to the third sector, such as social enterprises, associations, cooperatives and are example of context restriction practices that, besides targeting food waste prevention or reduction, provide beneficial services to vulnerable populations. Table 4 shows the practices that are reported in this sub-section.

Table 4. Zero_Waste third sector-led good practices

Good Practice	Focus
Elika Gunea Artxara: Multidisciplinary space for sale of indigenous products	Food waste prevention Social support
Refood	
Food Cloud	
Somaro Social Shop	
Olio App	
Multi-language STREFOWA tool	Food waste prevention
Agroecological Market of Zaragoza	
Bio&Co	
Karabeleko	Food waste prevention

²⁹ Galli, F., Cavicchi, A., Brunori, G. (2019). Food waste reduction and food poverty alleviation: a system dynamics conceptual model. *Agric Hum Values* 36, 289–300.

The Urban Center for Good Initiatives	Awareness-raising
Right-size menu*	

CUIB - Centru Urban de Inițiativă Bune (The Urban Center for Good Initiatives)



The Urban Center for Good Initiatives (CUIB) is a social enterprise Mai Bine Association, in Iasi County, Romania. The name is metaphoric, CUIB means nest in Romanian and refers to an actual place for developing good ideas. Found in 2013, it is a nearly zero waste bistro combined with zero waste shop and a conference room, as a space for social-educational events.

<https://incuib.ro>

<https://green-report.ro/cuib-bistro-aproape-zero-waste/>

FoodCloud



FoodCloud is a social enterprise that offers a solution to transform surplus food into opportunities for charities to help most disadvantaged people and prevent food wastage. Hence, this practice yields a twofold impact by combining the issue of food waste with the need to support fragile people.

Ireland is a country which is subject to several issues such as economic and food poverty, and a relatively high incidence of fragile groups within the population. Indeed, to date it is estimated that about 350,000 people, approximately 7% of the Irish population, are impacted by food poverty. This current situation is then exacerbated by the surge in inflation because of scarce resources and the increase in the prices of raw materials, and the COVID-19 pandemic. On the other hand, according to EPA, around 800,000 tons of food waste are produced every year in Ireland. Just to provide an idea of the impact that food waste has in terms of carbon footprint, if we consider the world-wide problem, it accounts for from 8% to 10% of the global CO2 emissions. As a matter of fact, if food

waste and loss were a country, it would be the 3rd biggest source of greenhouse gas emissions.

<https://food.cloud/>

Fruta Feia (Ugly Fruit)



Fruta Feia (Ugly Fruit) is a model that works and that manages to save relevant quantities of food diverting it from the garbage by leveraging on consumer's responsibility. It is a cooperative founded in 2013 in Portugal. The focus of this good practice is on fruit which presents aesthetically unattractive features. It is widely known that consumers generally privilege products which are appealing. This causes many retailers to get rid of such products much before they even get on the market shelf. Subsequently, once rejected by the processor, if there isn't a secondary market to sell to, these "ugly" agricultural products go to the landfill. This is all because the product has a blemish, bruise, discoloration, or is "ugly" somehow. It follows a trend to favor the trading of fruits and vegetables that are beneath commercial standards (The Economist, 2018³⁰).

<https://frutafeia.pt/>

Right-size Menu (Menu Dose Certa)



Menu Dose Certa (Right-size Menu) was launched in February 2016. It is a practice implemented by the waste management company Lipor jointly with the Portuguese Nutrition Association. It is as an outreach activity and targets catering establishments (canteens, restaurants, hotels, shopping centers and markets, among others) by combining the reduction of food waste with the adoption of

³⁰ The Economist (2018). Beneath the bruises: A new market for old and ugly fruit and vegetables takes shape - Far too much ends up wasted. Finance & economics, New York, Jan 11th 2018. Available at: <https://www.economist.com/finance-and-economics/2018/01/11/a-new-market-for-old-and-ugly-fruit-and-vegetables-takes-shape>. Access: 22.10.2022.

sustainable food in the menu.

The foundation of this practice considers a widely spread trends of overconsuming food, on the consumer's side, and providing oversize packages on market shelves, on the retailer's side. The latter is mainly associated to marketing strategies which strive to manipulate consumers' purchasing patterns by making them spend more for more food which presents a lower average cost. This tendency, when not resulting in food waste, might result in high obesity rates, which in Portugal are 20% of the population.

<https://www.eu-fusions.org/index.php/portugal-retail/196-menu-dose-certa-portugal>

<https://www.facebook.com/page/115075425179098/search/?q=dose%20certa>

Elikagunea Artxara: Multidisciplinary space for sale of indigenous products



Elikagunea is a multipurpose space in the city of Azpeita, in the Basque Country in Spain. The space is used as a market that promotes the sale of local products. Their aim is to transform the consumption model by shortening the supply chain and cultivating appreciation for local producers. This relates to food waste because food waste is largely fueled by consumer demand. Creating healthier ways of consumption will potentially go a long way to reducing household food waste.

The Elikagunea Food Center is comprised of an educational area, a tasting area, a kitchen, a Basque Label butcher shop, and several grocery stores. The Artxara Cooperative manages Elikagunea. The nonprofit's goal is to band producers, consumers, and other stakeholders together to promote equality, a more equitable consumption model, and promote practices that reduce food waste.

<https://elikagunea.eus/>

Refood



Refood Viana do Castelo, started in 2015 as the local derivation of a national project. It is a cooperative initiative which through the last ten years has been committed to reduce hunger in the urban environment by directing surplus meals to people who are hungry. Its work assumes more relevance considering that Portuguese citizens on average waste 183 kilos of food per year, above the European average which is, instead around 173 kilos of food per inhabitant, per year. These dire numbers clash with those describing the food insecurity that can be observed in the Lusitanian country. The COVID-19 pandemic has contributed to the exacerbation of this problem, as it was proved in a study carried out by the University of Oporto. This was observed especially with regard with those people earning a low income, regardless of their level of education.

<https://re-food.org>

Karabeleko Experimental Farm



Karabeleko is an experimental agroecological farm in the city of Hernani in the Basque Country in Spain. It was founded in 2014 and pioneers in organic farming, promotes ecological agriculture, and it qualifies as a Special Employment Center. It is a non-profit that promotes the production and consumption of organic horticulture. Their main objective is to promote knowledge of organic farming and they raise awareness of the sector and have created a place where the importance of horticulture is emphasized with careful study and cultivation. Though their emphasis is not on reducing food waste, waste is minimized by composting and purifying kitchen and bathroom water. They also indirectly reduce food waste by educating people on the importance of ecological agriculture and cultivating appreciation for the time and resource that goes into raising produce.

<https://www.karabeleko.org/>

Aragonese Food Alliance (Alianza Agroalimentaria Aragonesa)



The Alianza Agroalimentaria Aragonesa (AAA) establishes a community-based incentive for stakeholders in the Aragonese food supply chain to make improvements to their processes. The AAA was created in 2012 and the process is still ongoing. The practice was implemented by gathering organizations to participate in the AAA. The 11 stakeholder organizations in the AAA are collectively working to reduce food waste and bring recognition to those who do it best.

Awards are given to those actors who innovate in Agrifood Research and Innovation, Agrifood Industrialization and Marketing, Farming and Ranching, and another prize is awarded to an individual or organization who contributes to the development of the agrifood sector in an outstanding way. All prizes except for the special open prize are awarded annually. Winners are decided by the AAA. Distributing prizes directly incentivizes stakeholders. An award from the AAA means professional recognition. The Awards unite different spheres of the agrifood sector under a common goal that is presented to society.

<https://alianzaagroalimentariaaragonesa.com>

Bio&Co



Bio&Co is a food solidarity program, implemented by the Ateliere Fără Frontiere (Workshops without borders), which prevents food waste that ends up in landfill without a recovery solution, but also poverty and exclusion. It operated in Ciocanari, Romania. The goal is to promote solidarity and responsibility for sustainable development while combating exclusion, marginalization, and prejudice, ensuring social and professional inclusion of the most disadvantaged, fighting waste and pollution, and protecting the environment.

They cultivate solidarity for sustainable development, through a new social enterprise through the production of organic vegetables. What they do in relation to the reduction of waste and pollution is that they collect organic waste and composted it, transforming it into fertilizer for organic agriculture. The Zero Waste Store in Bucharest is one of the 12 delivery points of the Bio&Co basket, and the only

zero waste store in the capital city of Romania. What they are planning is one pilot project to reduce food waste and promote food solidarity, and collect fruit and vegetable waste from retail sources, or establish a farm for education (on wholesome foods, biodiversity, waste reduction, environmental protection) and sensory discovery for children.

<https://bio-co.ro>

<https://www.atelierefarafrontiere.ro/>

Zaragoza doesn't Waste Food (Zaragoza no Tira Comida)

#ZgzNoTiraComida

Zaragoza doesn't Waste Food (Zaragoza no Tira Comida) is an event focused on awareness-raising on food waste prevention. This event has only been held in the 10 most important cities in the world, New York, Paris and London among others, that can be checked on the FeedBackGlobal³¹ website.

In 2012, the organizations of the Aragonese Alliance against Poverty, promoted by the Aragonese Federation of Solidarity, held an event called Feeding Zgz to feed 1,000 people for free with food in good condition that had been discarded. In 2017, they repeated the event, this time feeding 5,000 people and in the Plaza del Pilar in Zaragoza. There was also entertainment, music, performances and activities to raise awareness against food waste. This event was called #ZgzNoTiraComida (Zaragoza doesn't waste food). Several entities of the Aragonese Federation of Solidarity are involved in the organization, in addition to the Feeding Zaragoza association, created after the first event and promoter of the one that is now proposed. It also has the support of the Zaragoza City Council.

<https://zgznotiracomida.aragonsolidario.org/#evento>

SOMARO Social Shop

somaro

Food, household goods, clothing, shoes, and other items are gathered by SOMARO from various businesses and sold to low-income customers at symbolic, steeply discounted prices. SOMARO collects products such as food and household essentials as well as clothing, shoes, etc. from various companies and sells them at symbolic, highly discounted prices to low-income customers. The entire product range in the SOMARO markets consists of products, which are 100 % suitable for consumption but cannot be sold in other stores due to damaged or soiled packaging, because the

³¹ <https://feedbackglobal.org/campaigns/feeding-the-5000/>

best-before date will soon be reached or for other reasons. SOMARO aims to be financially self-sufficient in its operations through its product sales. Since the products are donated, the beneficiaries are only paying the salaries of the staff and minimal overheads. To prevent hoarding or selling-on of goods, SOMARO have set up certain shopping restrictions. Thus, their clients can shop maximum three times a week in the stores and must keep the value of their purchases below a certain level/and are only permitted to spend up to a certain amount each visit. Products like food and supplies for the home are collected by SOMARO. The whole product line offered at SOMARO markets consists of goods that are entirely safe for ingestion but that, for a variety of reasons, cannot be sold in other establishments due to tattered or dirty packaging, a rapidly approaching best-before date, or other issues. Through the sale of its products, SOMARO seeks to be financially self-sufficient in its activities. The beneficiaries just must cover the employee wages and low overhead costs because the goods are given.

<http://somaro.org/en/>

Agroecological Market of Zaragoza (Muestra Local Agroecológica de Zaragoza)



The Zaragoza Agroecological Market was established in 2009 as a facility for the commercialization of quality agroecological products offered by the nearby producers at fair and sustainable prices. The market is maintained by the Association of Producers of Zaragoza. This Association was formed to make viable the sales of high-quality and sustainable products that sometimes remained unsold.

Many spaces around the city host agroecological markets and serve all those who want to consume ecological products. Additionally, the network provides last-minute information on social networks, as well as on the website of the Association of Producers of Agroecological Market of Zaragoza.

This good practice has been a revolution for the city and for the eco-agriculturists in the area. Producers of organic garden sell their goods in different strategic locations of the city: Pilar Square, University Campus and Parque Venecia, where more than 20 certified producers come together. For a sample of European initiatives in agroecology, which reports on similar initiatives like this one, is worth reading the report by Agroecology Europe (2020³²).

<https://muestraagroecologica.es/>

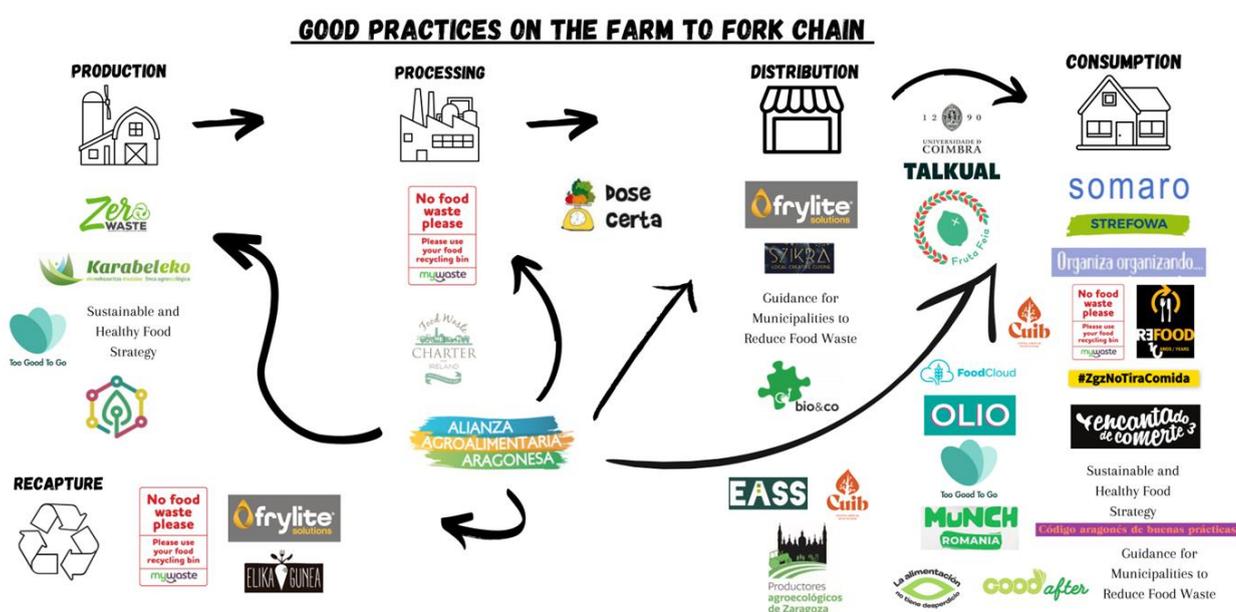
³² Agroecology Europe (2020). Agroecology initiatives in Europe. Corbais, Belgium. Available at: <https://www.agroecology-europe.org/wp-content/uploads/2020/11/AEEU-Mapping-Report-agroecological-practices-November-version.pdf>. Access: 31.10.2022.

LESSONS LEARNT AND RECOMMENDATIONS FROM THE GOOD PRACTICES

The good practices reported presented in this report show various ways how public, private and not-for-profit sectors can deliver solutions focusing on food waste management, prevention and reduction. Besides the impacts on environment and sustainability, there were clear societal impacts, especially when the good practices have been implemented through awareness-raising and by means of social enterprises.

Firstly, we provide a schematic illustration (figure 5) of how the good practices studied in this report fit to the farm to fork and beyond approach to food waste prevention. By farm to fork we mean the chain from food production to consumer utilization and by beyond we mean the destination of the food remains.

Figure 5. Representation of Zero_Waste good practices within the farm to fork framework



For this final analysis we examined the good practices and identified the main lessons bearing from their content. These lessons and corresponding recommendations are listed below.

Digital platforms facilitate knowledge dissemination, marketplace and social action for food waste prevention

Digitalization has accelerated in many fields of work and business during the COVID-19 pandemics. This holds true mainly within the food delivery sector. Although the sanitary crisis is not so impactful anymore, the established trend of food mobile apps, as well as food sales platforms, has favored in a great extent that people have access to food in general (groceries, meals, etc.) by means of a marketplace. Especially, with the mobile apps which focus on food waste prevention, such as Too

Good to Go, Munch and Encantado de Comerte, Good After, they have been granted with many opportunities to eat cheaper, good quality food and still contribute to environmental protection and saving of natural and financial resources, as well as bringing together a plethora of means to create social impact.

The mobile apps have also facilitated the operations of charities (Refood, FoodCloud, Encantado de Comerte) reach the disadvantaged people in situation of food insecurity. It has facilitated as well that citizens share meals on a one-to-one basis (Olio app), are reached by food waste prevention awareness-raising campaigns and can acquire fresh organic produce with special features (Ugly Fruit and Talkual) or not (Bio & Co, for example).

The platforms are facilitating the average citizen and people of specific professional profile to have access to good practices for waste prevention, be them in the form of leftovers cooking recipes, food waste management, policy guidelines. These good practices as resources to benchmark and to be deployed by different stakeholders along the food supply chain, society, public policy making and implementing organizations, have STREFOWA tool and other tools referred to in the report as good source for search of context-wise meaningful good practices.

Recommendation: Utilize the potential of digitalization to increase reach of enterprises as well to foment social innovations that impact sustainability by means of new businesses focusing on food waste prevention and management.

Private businesses bring new trends, including for preventing food waste, profitably

Entrepreneurial capacities often materialized by private enterprises show how to impact society and environment by preventing the generation and facilitating the management of food waste by means of new business models, services and creating trends while enhancing profits. The outstanding cases of SZIKRA and Frylite show completely new businesses born out of the food waste. SZIKRA, besides being a zero waste restaurant, brings the concept to a small town in a remote location of Romania and has managed to create social acceptance of the business model.

Even when in a capacity to mobilize awareness-raising and voluntary commitment, as in the case of Food is not waste, businesses associations, such as EOCC, agglutinate actors towards reaching societal and environmental goals as food waste prevention. Economic gains and business survival are also at the heart of the actions and they are able to convey that message.

Recommendation: emphasize entrepreneurial skills, share knowledge and enhance quality of funding and support in (also new) business and social ventures to foster food waste prevention and management.

Context-based practices bring social support to people combining with a food waste prevention approach

Food insecurity and other sorts of vulnerability have increased due to the COVID-19 pandemics,

immigration and other situation that enforced the need to support people in risk situations. The food waste prevention-focused Mobile apps and supermarket platforms bring the possibility to acquire cheaper food, which help to alleviate food poverty, and more targeted social support practices utilize food waste prevention and sustainable consumption as the motto for their initiatives. Knowingly, Romania is one of the poorest countries of Europe and the practices implemented, such as CUIB, SOMARO and Bio & Co, as well as Elikagunea and Karabeleko in Spain, are exemplary of how in a context of deprivation responsible and sustainable consumption can be integrated to food waste prevention, education and awareness-raising to instigate new eating (also Fruta Feia and Talkual) and consumption habits and better quality of life. Worth noting is the social innovation embedded within the apps that were created with the specific aim to provide food for the needy at same time that mobilize volunteering opportunities for people to do good.

Other important contribution from not-for-profit businesses, especially when organized by principles of private enterprises and in collaboration with public administrations, is the power they have to mobilize citizens to engage with food waste prevention by means of outreach, awareness-raising and dissemination activities. The practices from Spain (Food is not wasted, Aragonese Agrifood Alliance and #ZGZNOTIRACOMIDA) were highlights in this case.

Recommendation: Recognize and foment and share knowledge about initiatives and foment social innovations that impact society at grassroot level by taking care of the most vulnerable populations and meaningfully engaging citizens with the sustainable consumption and food waste prevention approaches.

Public policies are the backbone of sustainable transition food systems

The many government-led good practices presented focus on policies that foster sustainable transition food systems, therefore serving even as instruments for hope that the transition will indeed continue its path to consolidation. Although they were presented especially in the context of Ireland and Spain, respectively, the Food Waste Recycling Project and the Sustainable and Healthy Food Strategy (EASS), they are localization of practices that have been implemented elsewhere proving their effectiveness and the replication potential they bear. Together with Guidance for municipalities to reduce food waste within local food systems, the EASS is related to the Milan Food Pact, a milestone within local public sector-driven practices to favor the transition. They embed food waste management, prevention and reduction, awareness-raising, education, participatory policy making, social innovation and knowledge sharing in their approaches to consolidate sustainable food systems transition.

Even more grassroot outreach and awareness-raising initiatives implemented by public administrations, such as in Organiza, organizando, in the Food Waste Recycling Project and in the local actions available in the Guidance for municipalities to reduce food waste within local food systems, reverberate side and upwards to the spreading of commitment with the transition.

Recommendation: to increase sharing of knowledge and lessons on public policies to reach sustainable food transitions to speed up the implementation by means of participatory foresight and setting of ambitious targets in line with the EU Food to Fork Strategy and best international available

practices.

The lessons learnt from these good practices corroborate the approach to fighting food waste while promoting sustainable consumption, new habits and transversal policies based on food waste reduction and prevention. Considering that Zero_Waste has important educational and outreaching components, these good practices are useful material for demonstrating the diverse ways to prevent food waste, including by promoting new businesses and habits and societal impact. They can be useful to demonstrate to the different types of stakeholders how they can impact the environment and society by adhering to food waste prevention and reduction practices.