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# Good Practices for the Prevention and Reduction of Food Waste

## Report



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eventos científicos



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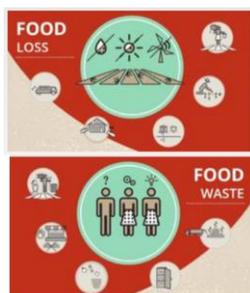
## INTRODUCTION

This report presents a collection of good practices for food waste prevention and reduction identified in the scope 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, 2020<sup>1</sup>), 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



Food loss: is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain [from production to distribution] excluding retailers, food service providers and consumers.

Food waste: refers to the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food service providers and consumers.

Source: FAO (2019<sup>2</sup>)

Data for **food waste** alone, according to estimations by the United Nations Environment Program (UNEP, 2021<sup>3</sup>), 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 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

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

cent in retail<sup>4</sup>). In Europe Feedback EU (2022<sup>5</sup>), 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, 2020<sup>6</sup>).

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 report is the third and last of the three intellectual outputs (IOs) envisaged by the Zero\_Waste project. The objective is to identify previous activities that comply with the definition of “good practice”, and which are reliable and tangible results promoting the circular economy in the field of food waste prevention and management and specific campaigns for sensitization.

When it comes down to good practices it may result complex to find a univocal definition agreed upon. Nonetheless, a shared concept provided by the European Website on Integration<sup>7</sup> states that a good practice “implies strategies, approaches or activities that have been shown through research and evaluation to be effective, efficient and to reliably lead to a desired result<sup>8</sup>”. For this reason, to consider a good practice as such it must comply with specific criteria defined prior to carrying out the collection of

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<sup>4</sup> Note from the editor: The apparent discrepancy between the sum of the percentages for each sector and the total is due to rounding.

<sup>5</sup> 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-4-b9938e27f1->

<sup>6</sup> 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.

<sup>7</sup> [https://ec.europa.eu/migrant-integration/eu-grid/implementation-2016-action-plan-integration\\_en](https://ec.europa.eu/migrant-integration/eu-grid/implementation-2016-action-plan-integration_en)

<sup>8</sup> [https://ec.europa.eu/migrant-integration/page/what-are-good-practices\\_en](https://ec.europa.eu/migrant-integration/page/what-are-good-practices_en)

information of the activities and strategies to evaluate.

In the frame of the Zero\_Waste Project, good practices were identified utilizing the criteria proposed within the European project FUSIONS (Vittuari et al., 2015<sup>9</sup>) that are the following:

- **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.

It was agreed that each of the six project partners would identify five initiatives which complied with the above criteria from their own country of origin, hence reaching an overall of 30 good practices. Subsequently, we selected three out of the five good practices per partner based on their capacity to stand out with respect to the others, in this way reaching a final number of 18 good practices, which are later analyzed and set out in this report. The remaining 12 good practices not chosen for an in-depth analysis are summarized in Annex 1.

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. The first proposal of the questionnaire was internally discussed by the project consortium and validated accordingly to the suggestions and comments provided by the partners, making sure to collect all the relevant details to ensure a thorough analytical process. In particular, the questionnaire asked for details about:

- Organization in charge of the good practice
- Scope of implementation of the good practice
- Timescale

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<sup>9</sup> 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).

- Resources required
- Results and impacts
- Challenges encountered
- Potential for learning and transfer

After validation, the questionnaire was sent out to the project partners. Subsequently, the compiled questionnaires were collected from the partner organizations in view of the analyses of the responses.



Meanwhile, in the table it is possible to have a preliminary overview of the good practices highlighting the type of implementer and its focus. 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). They are presented in the Table 1 taking into consideration their focus on reduction, prevention or management of food waste.

The first group of 18 good practices are described in depth after the following short section on literature review and the 12 remaining good practices are summarized and listed in the Annex 1. Annex 2 shows a summary of the 30 good practices investigated.

Table 1. The 30 good practices identified by Zero\_Waste partners

Good Practice	Implementer & Focus	Good Practice	Implementer & Focus
<b>Organiza, organizando menos desperdicio alimentario estamos generando (Organize, by organizing less food waste we generate)</b>	Public Awareness-raising campaign	<b>Elika Gunea Artxara: Multidisciplinary space for sale of indigenous products</b>	Third sector Food waste prevention Social support
<b>The Sustainable and Healthy Food Strategy</b>	Public Sustainable food systems	<b>Refood</b>	Third sector Food waste prevention Social support
<b>Guidance for Municipalities to Reduce Food Waste within Local Food Systems</b>	Public Policy guidelines Sustainable food systems	<b>Karabeleko</b>	Third sector Food waste prevention Awareness-raising Social support
<b>Multi-language STREFOWA tool</b>	Public Food waste prevention	<b>Alianza Agroalimentaria Aragonesa (Aragonese Food Alliance)</b>	Public and third sector Awareness-raising
<b>The Food Waste Recycling Project</b>	Public Awareness-raising Education	<b>The Food Waste Charter</b>	Public Food waste prevention
<b>Frylite</b>	Private Food waste prevention and management	<b>Aragonese Code of Good Practices Against Food Waste</b>	Public Awareness-raising
<b>SZIKRA (Spark) - Zero waste restaurant</b>	Private Food waste prevention	<b>Menos é Igual a Mais (Less is Equal to More)</b>	Public Awareness-raising
<b>La Alimentación no Tiene Desperdicio (Food is not Wasted)</b>	Private Awareness-raising Voluntary commitment	<b>Encantado de Comer (Happy to Eat It)</b>	Private Food waste prevention
<b>MUNCH - Close to Date Food Sale App</b>	Private Food waste prevention	<b>Good After</b>	Private Food waste prevention
<b>Too Good to Go</b>	Private Food waste prevention	<b>Olio App</b>	Third sector Food waste prevention
<b>CUIB - Centru Urban de Inițiative Bune (The Urban Center for Good Initiatives)</b>	Third sector Food waste prevention	<b>Talkual</b>	Private Food waste prevention
<b>FoodCloud</b>	Third sector Food waste prevention	<b>Bio&amp;Co</b>	Third sector Food waste prevention
<b>Fruta Feia (Ugly Food)</b>	Third sector Food waste prevention	<b>Zaragoza doesn't Waste Food</b>	Public and third sector Awareness-raising
<b>Menu Dose Certa (Right-size Menu)</b>	Third sector and private Awareness-raising	<b>Somaro Social Shop</b>	Third sector Food waste prevention Social support
<b>Red de Municipios por la Agroecología (Network of Municipalities for Agroecology)</b>	Public Sustainable food systems	<b>Muestra Agroecológica de Zaragoza (Agroecological Market of Zaragoza)</b>	Third sector Food waste prevention

## 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 households<sup>10</sup>. Data compiled by Feedback EU (2022<sup>11</sup>), 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 can also have positive economic returns due to enhanced production processes (REFRESH, 2019<sup>12</sup>).

<sup>10</sup> Stenmarck, Å., Jensen, C., Quested, T., Moates, G. (2016). Estimates of European food waste levels. 10.13140/RG.2.1.4658.4721.

<sup>11</sup> 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.

<sup>12</sup> 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.

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



Source: United Nations<sup>13</sup> (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:

- primary production;
- processing and manufacturing;
- retail and other distribution of food;

<sup>13</sup> 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

- 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, 2020<sup>14</sup>). 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., 2018<sup>15</sup>).

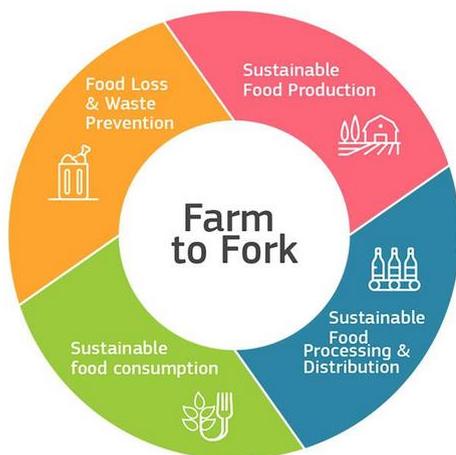
The European Farm to Fork (F2F) Strategy (EC, 2020<sup>16</sup>) is the most comprehensive policy action aiming at food waste fighting in the transition to sustainable food systems by aiming to make food systems fair, healthy and environmentally friendly. Its approach is summarized in Figure 3, which 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.

<sup>14</sup> 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](https://eu-refresh.org/sites/default/files/D3.5%20Policy%20recommendations_v.2.pdf). Access: 25.10.2022.

<sup>15</sup> 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>

<sup>16</sup> 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](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 (2022<sup>17</sup>)

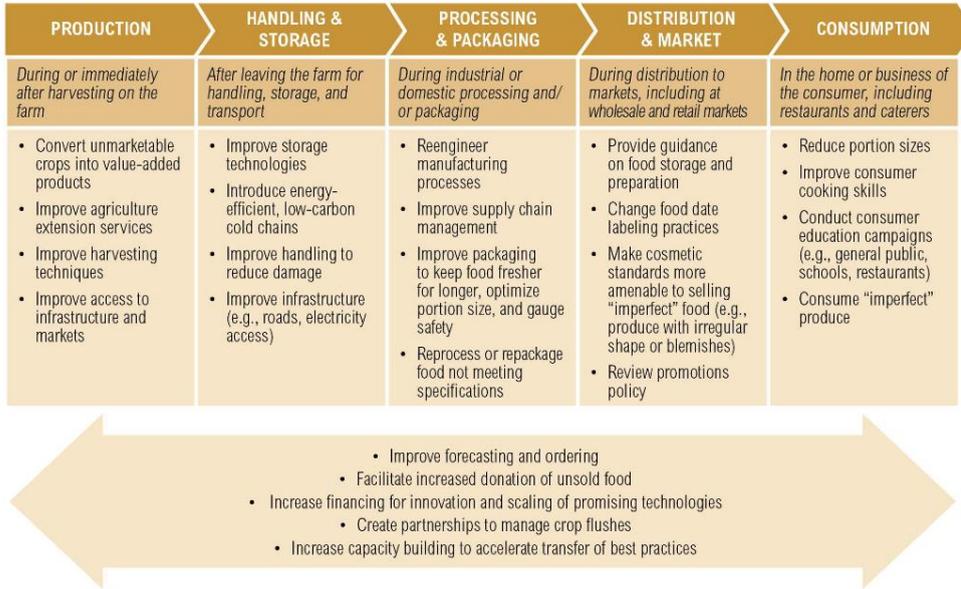
### Good practices to fighting food waste

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 (2017<sup>18</sup>), can be used to fight food loss and waste.

<sup>17</sup> Food Safety (2022). Farm to Fork strategy for a fair, healthy and environmentally-friendly food system. Available at: [https://food.ec.europa.eu/system/files/2020-05/f2f\\_action-plan\\_2020\\_strategy-info\\_en.pdf](https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf). Access: 18.10.2022.

<sup>18</sup> 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 2, which presents a brief selection of platforms to search from.

Table 2. Examples of platforms containing good practices

Platform	Summary
<b>Healthline by Healthline Media</b> <a href="https://www.healthline.com/">https://www.healthline.com/</a>	Tips to help make reducing food waste a little less overwhelming.
<b>Green Healthcare by Green Healthcare epa</b> <a href="https://www.greenhealthcare.ie/">https://www.greenhealthcare.ie/</a>	A guide with actions to reduce the quantity of food waste generated in healthcare facilities.
<b>Milan Pact Awards by the City of Milan and the Cariplo Foundation</b> <a href="https://www.milanurbanfoodpolicypact.org">https://www.milanurbanfoodpolicypact.org</a>	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.
<b>Case Studies of Organizations Managing Food Waste Properly by Food Waste Ireland</b> <a href="https://www.foodwaste.ie/">https://www.foodwaste.ie/</a>	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.
<b>Good practices searching tool by the European Circular Economy Stakeholder</b>	The platform has a tool for searching good practices in various areas. Utilizing search criteria "food" leads to good practices that have food waste

<b>Platform</b> <a href="https://circulareconomy.europa.eu">https://circulareconomy.europa.eu</a>	prevention as main aim.
<b>Platform on social innovations to combat food waste</b> <a href="https://www.eu-fusions.org/">https://www.eu-fusions.org/</a>	The platform created by the FUSIONS project shows a selection of social innovations, organized accordingly to the food supply chain sectors of farming, processing and retail.
<b>EU Platform on food losses and food wastes</b> <a href="https://food.ec.europa.eu/">https://food.ec.europa.eu/</a>	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.

## **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.

Next the good practices lead by or focused on public administrations are presented.

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



### Situating the good practice

Organiza, organizando is a campaign run by the Government of Aragon 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.

Since 2020, Organiza, organizando has been working to reduce the humanitarian and environmental concern of food waste. The main concerns of the initiative are reducing consumer food waste. Information sessions provided information about reducing food waste around meal planning, home food storage systems, the difference between the expiration date and the date of preferential consumption, and the preparation of recipes with leftovers. Stakeholders include citizens and markets in Aragonese municipalities.

### Results and impacts

Organiza, organizando has thus far collected data from 2800 survey respondents, disseminated important food waste reduction information to at least 2800 people.

For sure, this practice can attempt to measure the number of people that attend the information sessions, but measuring what knowledge people leave with would be extremely difficult without a post-session

survey. Furthermore, it can also measure the amount of consumer data that is collected from the consumer habits surveys.

In terms of innovation, instead, this practice shows innovative aspects in the primary data collection and in disseminating information foremost for the modality in which it was carried out. The Organiza Organizando members' costumes, indeed, make the information sessions feel more fun and less like unsolicited education.

Its simplicity makes it a highly replicable practice since it is able to reach a wide audience as a result of information sessions taking place in public spaces. Nonetheless, doing so requires trainers to deliver the information sessions, the materials they use during the sessions, and the preparation of the survey.

### **Potential for learning and replication**

The data collected by Organiza, organizando can be analyzed and used by policymakers and stakeholders to create food waste reduction initiatives that are targeted. By understanding the ways in which food waste occurs at home, these targeted measures can reduce household food waste with minimal incursions to the conveniences of people's first world lifestyles - meaning a higher rate of adoption and a larger overall reduction of household food waste. The addition of an attractive aspect such as the prize lottery represents a valuable means to increase the outreach of the initiative. It can be replicated in any part of the world. The collection of consumer data is a valuable market, and there are likely other initiatives and currently unrelated business ventures that have sought this data elsewhere.

The following steps should be followed to replicate the practice:

- Assembly of information session materials (visual aids, distribution materials such as pamphlets)
- Costumes for presenters to grab and hold attention of shoppers, particularly families
- Workers to conduct the information sessions
- Wages and training for the workers
- Agreements with supermarkets to hold information sessions on their premises

To conclude, Organiza Organizando is an important good practice because it sets an example of how best to maximize public attention. People are drawn in by colorful costumes and visual aids. They are given information, as they are shopping for food, on how to reduce food waste. This gives the dissemination the highest level of efficacy because it is given to the consumer at the exact point when it would be used. People who attend these public information sessions make more efficient shopping decisions immediately. These shopping decisions affect the choices these consumers make inside their home, and household food waste is reduced. This is an effective strategy that should be replicated by municipalities across Europe.

### **Further information**

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

## The Sustainable and Healthy Food Strategy



### Situating the good practice

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 the 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, 2015<sup>19</sup>).

### Overview of the good practice

Over the last three decades, Zaragoza has developed an important and growing activity around food policies. In this context, the drafting of this strategy is an opportunity to assess the progress made so far, to organize reflection on all that remains to be done and to promote future actions. The EASS develops an approach that seeks to provide a comprehensive and strategic vision of the actions underway and tries to identify shortcomings and weaknesses to develop new complementary and synergistic actions to what is already being done. Based on this analysis, it establishes a general framework for action, ambitious and at the same time coherent and adjusted, for food policies in Zaragoza in the coming years.

One of the principles or strategic objectives of the EASS for Zaragoza is to move towards a more sustainable and healthy food system for the city and its immediate surroundings. For this reason, the following premises orient the objectives of the Strategy:

- To move towards a more sustainable food system that contributes to mitigating and adapting to Climate Change.
- To recover the productive capacity of Zaragoza's market gardens and its immediate rural

<sup>19</sup> Municipality of Milan (2015). The Milan Urban Food Policy Pact. Available at: <https://www.milanurbanfoodpolicypact.org/>. Access: 20.10.2022.

environments.

- To promote healthy eating habits that contribute to improving the health of the citizens of Zaragoza.
- To promote local commerce of healthy and local food.
- To move towards a reduction of food waste throughout the food chain and its better management by promoting, in a context of circular economy, the recovery and redistribution of safe and nutritious food intended for human consumption and the ability to use food no longer fit for human consumption as animal feed, compost, etc.

These objectives will be implemented through the following action plans:

- Governance and strategic planning
- Awareness raising, education and training around sustainable and healthy food
- Training and advice in agroecological farming
- Strengthening agroecological markets
- Food waste

The elaboration of the EASS was carried out by the Entretantos Foundation<sup>20</sup> through a minor contract with the Zaragoza Environment Agency, for the total amount of €17,182 VAT included. The project included the design and implementation of the deliberative process to agree on such a document between the local government and local social organizations, and the drafting of said document.

## Results and impacts

The implementation of EASS is still under formulation. As of November 2021<sup>21</sup>, the Zaragoza City Council, together with the International Center of Rural and Agriculture Studies (CERAI) and Mensa Cívica, with the financial support of the Daniel and Nina Carasso Foundation, are developing the project "From theory to action: first steps for the development of the Food Strategy Sustainable and Healthy Zaragoza", preparing the different governance actions for the implementation of the EASS. To this end, the Municipal Food Council of Zaragoza has set up a participatory body made up of 110 social and economic entities related to the local food system and a transversal coordination work is being carried out between all the municipal areas related to food policies.

## Potential for learning and replication

This practice, especially the action plan aimed at combating food waste, has great potential to be of interest to other regions, organizations, etc. and can be an inspiring model. Among other aspects, monitoring for waste loss reduction, awareness raising among population and institutions, participatory policies to reduce food waste and food recovery and redistribution are considered. If considered in the

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<sup>20</sup> Fundación Entretantos. Estrategia alimentaria de Zaragoza. Available at: <https://www.entretantos.org/proyectos-entretantos/estrategia-alimentaria-de-zaragoza/>. Access: 20.10.2022

<sup>21</sup> Salud Pública de Aragón (2021). Estrategia de Alimentación Sostenible y Saludable. Noviembre 25, 2021. Available at: <http://saludpublicaaragon.blogspot.com/2021/11/estrategia-de-alimentacion-sostenible-y.html>. Access: 20.10.2022

scope of the Milan Pact achievements, it has even more scope to grow because of the singular results the Pact has reached on its own behalf (Milan Pact, 2021<sup>22</sup>).

### **Further information**

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

<https://www.milanurbanfoodpolicypact.org>

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<sup>22</sup> Milan Urban Food Policy Pact (2021). POLICY BRIEF Milan Urban Food Policy Pact. Available at: Policy-Brief\_MUFPP\_2022.pdf (milanurbanfoodpolicypact.org). Access: 20.10.2022.

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



### Situating the good practice

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 al<sup>23</sup>, 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 Program<sup>24</sup>, the EU's funding instrument for the environment and climate action.

### Overview of the good practice

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 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.

The guide presents five guidelines for action at the municipal level and includes case studies showing examples of municipalities that are succeeding in reducing food waste at the local level, as well as indications of how municipalities should move forward on each of them. The five guidelines are:

- Plan and strategize to prepare and adopt a holistic plan that aims to reduce food waste as part of a broader transition to a sustainable food system.
- Stimulate the local food system through community-supported agriculture and initiatives that reduce food loss at the primary level.
- Create a local food environment that encourages a wide range of public and private actors to develop food waste prevention activities.

<sup>23</sup> Coste, M., Feiteira, F., Condamine, P. (2021). Reducing food waste at the local level. Guidance 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.

<sup>24</sup> [https://cinea.ec.europa.eu/programmes/life\\_en](https://cinea.ec.europa.eu/programmes/life_en)

- Raise awareness and educate about the value of food through educational programs or hard-hitting campaigns that encourage citizens to reduce food waste.
- Develop a proper bio-waste management system to ensure that food waste is valorized into fertilizer if it cannot be avoided.

### **Results and potential for replication**

The Table 3 shows some concrete examples of application of the guidelines. It serves to highlight how cities can adopt different practices aiming at combating food waste within specific strategies. In themselves, they give support to the replication of this practice.

### **Further information**

<https://www.slowfood.com/wp-content/uploads/2022/01/Guidance-on-food-waste-reduction-in-cities-EN.pdf>

Table 3. Cases of local level actions to reduce food waste

Case and Implementing City	Umbrella Strategies	Main Actions
<b>Paris and its multi-driven approach to tackling food waste</b> City: Paris, France	Circular Economy Plan Climate Action Plan Plan to Combat Food Waste	<ul style="list-style-type: none"> <li>• Reducing food waste in public procurement</li> <li>• Involving Parisian shops and food markets to fight food waste</li> <li>• Raising awareness among citizens</li> <li>• Door-to-door collection of separated organic waste</li> <li>• Collecting and transforming organic waste into bio fertilizer</li> </ul>
<b>Milan and food waste reduction at the core of the city's food policy</b> City: Milan, Italy	Milan's Food Policy	<ul style="list-style-type: none"> <li>• Creation of a Local Food Waste Hub</li> <li>• Providing "waste tax" reductions</li> </ul>
<b>Porto and a cross-sectoral approach on the nutrient cycle</b> City: Porto, Portugal	Roadmap for Circular Economy in 2030	<ul style="list-style-type: none"> <li>• Promotion of local agriculture through local and regional production</li> <li>• Food waste prevention</li> <li>• Bio-waste management</li> <li>• Raising Citizens' and local actors' awareness</li> </ul>
<b>Ghent's Gent en garde, the food policy council and community-supported agriculture</b> City: Ghent, Belgium	Food Policy 2020-2025 Climate Plan	<ul style="list-style-type: none"> <li>• Community-Supported Agriculture in the De Goedinge</li> <li>• A local food shop, Vanier</li> <li>• Support for community vegetable gardens</li> <li>• Mapping sustainable food initiatives including free fruit-picking</li> </ul>
<b>Mouans-Sartoux food waste strategy to promote 100% organic meals in municipal canteens without raising costs</b> City: Mouans-Sartoux, France	Strategy to Fight Food Waste	<ul style="list-style-type: none"> <li>• Setting up of an organic municipal farm</li> <li>• Reduction of costs</li> <li>• Reducing food waste by standardizing size of meals</li> <li>• Educational activities to students</li> </ul>
<b>Paris stimulates food redistribution in the city</b> City: Paris, France	Participatory Budget "Solidarity Fridges"	<ul style="list-style-type: none"> <li>• Repurposing of food waste through food redistribution</li> <li>• Promoting citizens' initiatives</li> <li>• Incentivize and engage citizens to become actors in their local food system</li> </ul>
<b>Bruges and its zero food waste strategy for public buildings and events</b> City: Bruges, Belgium	Zero food waste strategy for public buildings and events Prevention of food waste in healthcare	<ul style="list-style-type: none"> <li>• Measuring food waste</li> <li>• Creating an action plan based on the measurement</li> <li>• Piloting small-scale solutions</li> <li>• Measuring the impact</li> <li>• Upscaling the solutions</li> </ul>
<b>Really Healthy School and its comprehensive approach to educate about the value of food</b> Currently in more than 300 cities, Czechia	Really Healthy School	<ul style="list-style-type: none"> <li>• Educating children about food</li> <li>• Supporting canteens to become more sustainable</li> <li>• Awareness raising campaign to tackle food waste</li> </ul>
<b>Raise your voice against food waste</b> City: Ljubljana, Slovenia	Zero Waste City	<ul style="list-style-type: none"> <li>• Organization of a "bin strike"</li> <li>• Awareness raising media tools</li> </ul>
<b>Milan and its centralized bio-waste collection scheme</b> City: Milan, Italy	Strategy to collect and recycle food waste	<ul style="list-style-type: none"> <li>• Design of a waste collection scheme for 1.4 million inhabitants</li> <li>• Citizens' communication campaign</li> </ul>

## Multi-Language STREFOWA Tool



### Situating the good practice

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.

### Overview of the good practice

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.

The STREFOWA Tool is just one aspect worth considering a good practice and which is part of a larger program which offers Food Waste Hackathons that inspire participants to engineer apps and other software to reduce food waste. Users engaging with the Multi-Language Tool will be exposed to other STREFOWA programs and their success stories and may even be inspired to innovate on their own.

The STREFOWA Tool has been active since 2019 and is ongoing. It actively promotes the reduction of food waste by engaging with users and directing them to 249 food waste reduction initiatives that are easily accessible to them in 6 languages. The information provided by the tool is freely available to users as well as organizations and governments. Granting such initiatives greater access to an international audience not only directly affects change but attracts private investment by bringing potential market gaps to the attention of investors.

### Results and impacts

The STREFOWA tool targets information dissemination and the disconnection between consumers understanding of the importance of food waste reduction and feeling personally responsible for it.

Effectiveness is ensured by the exposition of consumers in several different countries to waste reduction practices and waste reduction initiatives in their local area in which they can participate. STREFOWA's hackathons encourage private innovation to reduce food waste. This program was recognized by the Best Project Initiative in 2017 and received an award from the Blog Tool in the same year.

STREFOWA publishes a semiannual newsletter in which they detail their results and keep stakeholders updated on the status and results of the project. Information dissemination is usually done in more traditional manners, in English as an inexpensive medium, with documents that facilitate understanding. One of the main tracts of innovation of this practice is the dissemination of information in a user's native language to better facilitate their understanding and provide them with available and convenient initiatives in which they can participate.

### **Potential for learning and replication**

There is great potential for data collection and transfer in STREFOWA tool. Data can be collected on which of the initiatives made available to users through the portal are the most successful. Those initiatives and their adoption patterns can be analyzed to elevate those practices that are most impactful. If there is a set of conditions that make an initiative more successful, those conditions would be worthy of study, and potentially, replication. The multi-language tool has massive data potential. More simply, the tool can be expanded to further geographic regions and expanded to include more languages in the future to cast a wider net. The multi-language tool disseminates information related to the STREFOWA project, but another organization, cooperative, or government agency can replicate this model to disseminate food waste or other information to several different demographics.

The basic principles of the program are simple but replicating the program would require initial startup capital to create a multi-language platform, organize the data to be disseminated, and more still to host hackathons in a similar fashion.

The STREFOWA multi-language tool attempts to solve the concerned consumer problem of "What do I do about this?" By putting information about food waste reduction initiatives closer to people, the information will have a wider reach. This is an excellent example of an innovation in dissemination that should be replicated by other organizations and institutions. It directly reduces food waste, reduces international barriers to information dissemination, and attracts private investment to reduce food waste further still.

## The Food Waste Recycling Project



### Situating the good practice

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, which focus on the city of Milan<sup>25</sup>.

### Overview of the good practice

The relevance of this practice is crystal clear since today it is usual to hear about the importance of preventing and reducing food waste, but when it comes to practically adopting measures to reduce household food waste, the issue becomes pretty much harder. Such a premise ensues the urgency of food waste literacy actions which can outreach households and concretely guide them during their everyday life in their house chores. This would make sure that they optimize food conservation, consumption and, when impossible to avoid, disposal.

The Food Waste Recycling project is the result of various sources, such as awareness campaigns, the EPA 2018 National Waste Characterization study and obligations set out in the regional waste management plans 2016-2021. Although, according to the regulation, both, householders and waste collectors, have obligations to promote waste segregation, that was not fully implemented until the enforcement of food waste prevention as a priority came into force in April 2018 and ended in March 2020.

The main stakeholders of the practice have been Cré (Composting & Anaerobic Digestion Association of Ireland), the Regional Waste Management Planning Lead Authorities (WMPLA) of Connacht Ulster, Eastern Midlands, Southern and the Irish Waste Management Association. The beneficiaries were the

<sup>25</sup> 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](https://www.acrplus.org/images/project/R4R/Good_Practices/GP_Amsa_Food-Waste-Collection.pdf). Access: 24.10.2022.

4763 households that were involved in the pilot.

The project was implemented with the aim to increase the quality and quantity of food waste separated by households in the pilot towns of Trim, Ballaghaderreen, Borrisoleigh and Buncrana. It tested the effectiveness of a household kit containing practical kitchen tools to separate food waste within the home along with a series of communication tools to clearly explain the positive benefits of separating food waste. It introduced new communication tools and assessed their effectiveness in eliminating barriers for householders to participate in food waste segregation.

The communications highlighted benefits as to contribute to the climate action, green jobs and Irish circular economy products. The households were given a “Household Pack” which consisted of a kitchen caddy, a supply of liners for the caddy, an information leaflet and a sticker. Against a control group, the effectiveness of the household pack was proved.

To realize the initiative, the WMPLA received €40,000.00 from the Department of the Environment, Climate and Communications (DCCAE) and the national waste awareness budget to develop communication tools and procure the household waste management packs and delivery services. Project management costs and staff time are not imputed.

A survey informed that most people found the food waste bin easy to use and provision of the caddy and liners were an incentive to use the bin. Moreover, some respondents did not know that it is illegal to place food waste in the residual waste.

The challenges encountered were the effect of the weather on stickers and the lack of an appropriate place to put the bins in some households.

## **Results and impacts**

The added value of this project is represented by its purpose to target specifically households making sure to provide tailor-made solutions that consider the household context and its needs.

The comparison with a control group not exposed to the project, which we consider as the treatment of the experiment, proved the effectiveness and scientific reliability of the initiative. It can surely be set up to allow measurements of the amount of food waste avoided.

The specificity of the Food Waste Recycling Project and the simple but effective solutions which it adopts are an innovative element that is featured by a low level of complexity that might ensure a higher uptake rate. Especially considering its simplicity, this practice is easily replicable in other contexts, making sure to benefit from an initial social acceptance of the participant households.

## **Potential for learning and replication**

The practice is easy and relatively low-cost to be replicated beyond the pilot sites. As the main stakeholders involved are the local administration and the regional waste management office, it is possible to smoothly implement similar practices, especially taking advantage of the communication materials already developed.

Important recommendations for replication have been given by the working group that managed the project. They are in favor of encouraging waste collectors to subsidize the household pack and to provide

it at a nominal fee to householders, as well as finding means of subsidizing the costs to support broader adoption of the food waste collection pack, since expecting that households will autonomously provide the pack for themselves might be too demanding, especially at the first stage of the project.

A protocol for communications with the householders has been recommended to be done on a weekly basis and to enforce positive customer feedback to yield additional behavioral changes. Information regarding increases in tonnage or decreases in contamination directly with customers could contribute to customers continuing to participate positively in the separation of food waste.

The Food Waste Recycling project has proved the effectiveness and the importance of targeting and engaging final consumers since consumption alone accounts for about 20% of the overall food waste globally. Introducing food waste reduction practices in people's everyday life is paramount to address a relevant part of food waste and its relative carbon and water footprints. Nudging policies and guidelines are valuable allies in this challenge which might ensure promising results in the challenge of saving food.

### **Further information**

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

## 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.

In a survey of more than 700 companies from various sectors in 17 countries, Hanson and Mitchell (2017<sup>26</sup>), 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, actions and enterprises implemented by business organizations to prevent and combat food waste. They reveal novel approaches to tackling the problem while generating profit and instilling new habits connected with taking advantage of, for example, discounted prices and access to good food that is about to expire its best date for consumption, and create social and environmental impact, among other benefits.

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<sup>26</sup> 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



### Situating the good practice

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.

### Overview of the good practice

Frylite Group is a business company launched in 1992 and still ongoing, which aims at preventing cooking oil from going to landfill and providing recycling solutions, such as composting and biofuels production. Especially, it promotes efficiency, greener business and circular economy. In this way, Frylite offers solutions for businesses to comply with the food waste legislation (SI 508 of 2009) in the food service and hospitality sectors, avoiding hefty fines for non-compliance, the outbreak of insects' invasion due to their attraction to FOG's fumes, costly repairs to sewer plumbing caused by solidified grease within pipes and terrible smell looming large all over the interested area.

Frylite's business model refers to the collection and disposal of used cooking oil, as well as the supply of fresh one for its customers in a take-back fashion.

The implementation of such practices takes place through four steps outlined by the company as:

- Step 1 - Your Bin: Removal of food waste from the general waste bin will save the clients' money.
- Step 2 - Your Collection: Frylite delivers directly to a local anaerobic digestion plant, ensuring the food waste travels minimal distances thus reducing its carbon miles and is transformed into renewable energy.

- Step 3 – Paperwork: Monthly reports, delivered electronically, to show clients’ recycling levels.
- Step 4 – Clients’ Green Story: Lower costs as clients will not incur landfill charges.

The main stakeholders of the practice are the local waste management offices, the anaerobic digestion plant management, suppliers of equipment and other materials. As beneficiaries are the food service (restaurants, canteens, hospitals) and hospitality (hotels, event management, recreation, etc.) companies.

As for the resources required for the implementation of this practice, there is no publicly available information about the operational costs of the services or the facility's capital goods. Knowingly, they involve management, transportation (the company has its own fleet for waste collection and cooking oil delivery), and operational costs for the implementation of services. Moreover, it has 200+ employees, including about 30 managers.

Challenges related to the implementation of this practice might arise from the adaptation process needed to comply with the national waste regulation and the transfer of know-how required to apply the company’s services to pursue a circular-economy-based approach.

## **Results and Impacts**

Frylite Group has been in operation for 26 years helping businesses in hospitality and food to be sustainable and comply with legislation. It has supplied 32.5 million liters of fresh cooking oil and collected 22 million liters of used cooking oil for recycling into biodiesel. Its full spectrum of the cooking oil system (from supply to collection and transformation into biofuel) and food waste collection and recycling into fuel. Furthermore, it is a market leader in Northern Ireland and Ireland’s main supplier of fresh cooking oil and collector of waste oil. It is noteworthy that its effort contributes to the fight against climate change by diverting 64,000 tons of CO2 equivalent saved from entering the Earth’s atmosphere.

Even its packaging is an element of innovation. Indeed, it was designed to comply with the requirements of the circular economy by ensuring multiple uses thanks to its re-usable buckets and tanks.

This practice stands out for its focus on cooking oil, especially considering the detriment that could derive from it and the importance that its management implies. The results achieved by Frylite makes it a leader in the sector with its effective core business which prevents oil from ending up in landfills with the risk to disperse it into the environment.

The execution of paperwork on behalf of customers ensures easy access to data on the amount of oil collected and recycled ensuring the measurability of the results. This practice shows margins of innovation especially for its contribution to circular economy which grants an extensive use of a resource which would be otherwise wasted. Moreover, it is possible to notice that such a business model is quite spread EU-wide with many companies contributing to the recycle of used cooking oil.

## **Potential for learning and replication**

Frylite is considered a pioneer of the complete collection and delivery service for cooking oil. This operational model can be replicated provided alliances with cooking oil suppliers and biofuels plant production are in place and transportation distances are not so long, which affects the carbon footprint of the service.

A very good business case, Frylite helps clients to cope with regulations regarding used cooking oil and food waste. It presents a sensible approach for the industry to be more accountable and responsible, making its contribution relevant for circular economy implementation. Its capacity as a provider of the complete oil management system, waste collection service and biofuel producer are worth replicating elsewhere, especially in lagging-behind regions of Europe and in other countries, especially emerging economies.

To replicate it is necessary to:

- supply cooking oil to customers;
- providing customers with bins to store used cooking oil;
- collecting used cooking oil;
- diverting it from landfills by recycling it at oil recycling plants;
- setting up ICT solutions to keep track of the green story of customers;
- providing customers with documents certifying the amount of oil recycled monthly to prove their compliance with the food waste regulation.

The technology on which used cooking oil recycling is based is quite spread elsewhere and there are several companies providing such a service. An example is Osso Ltd providing a high-speed oil separator which can also be used in the recycling of lube oil, as well as fuel oil and heavy fuel oil ensuring reduction in ppm for discharge legislation, the recovery of clean fuel, high efficiency and reduction of operating costs. Nonetheless, a business model encompassing the features showcased by Frylite is difficult to find, especially due to its all-comprehensive approach towards the cooking oil system. It could be worth extending the range of customers also to private citizens also by associating outreach campaigns to raise awareness on the harmful impact that cooking oil can have if leaked into the environment.

To sum up, Frylite represents a valuable example to counter food waste and its negative implications. Its contribution to circularity ensures an efficient use of resources also providing economic benefits for customers. Despite this, technical limitations to the reutilization of used cooking oil might be present. EU-funded projects are currently ongoing to address these problems as in the case of WORLD H2020 project set to finish in 2026. Further effort is required to make cooking oil recycling more effective and efficient. Nevertheless, Frylite is already an outstanding case study which, beside benefiting customers, also helps the environment.

### **Further information**

<https://frylite.com/>

## SZIKRA (SPARK) - Zero Waste Restaurant



### Situating the good practice

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, 2020<sup>27</sup>) and circular economy principles.

SZIKRA Restaurant is a unique good practice in the context of this report. 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.

### Overview of the good practice

The name SZIKRA means spark and is derived from a Bruce Springsteen song, which had an inspirational effect on the owner, Madalina Santa. The lyrics say: “You can’t start a fire without a spark”. With this enterprise, Madalina wants to inspire others to follow her steps.

SZIKRA is one of the first zero waste restaurants in Romania, which serves almost waste-free foods. The objective of SZIKRA is to present people with other options for dining out and contributing to sustainability. Its specialty is to use all the ingredients, and their entirety, even the ones that usually are thrown out for having some problems, such as spotting, are too small, or are not attractive enough. The main emphasis is on the food and preventing food waste as much as possible.

The first step to cutting on waste generation is planning ahead and ordering only ingredients that will be used. Next, they adopt recycling and upcycling remains and leftovers of ingredients. The whole process of finding proper recipes to apply the remains or leftovers can be a long and sometimes costly procedure. To name a few examples: for soups, they use onion, celery, and carrot peelings, which gives the soup a

<sup>27</sup> 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.

lot of flavor and color; apple peels are made into gummy chips, powdered for decorating desserts; remaining powder from coffee, with added oatmeal, turn into cookies offered next to a dessert or as a little treat from the house.

Regarding the resources to start and run the business, Madalina and her husband had no previous experience in running a business but set a six-month goal to succeed with the project. A friend supported them in finding the ideal location for the restaurant and they got startup funding from a bank through a call for applications. The money was enough just to renew the building and kitchen appliances, but there was no money for decoration or internal renovation. Therefore, they sold all the machines to a company to finish the construction and leased them, as the restaurant opened. It was a matter of entrepreneurial spirit to move ahead with the business.

The pandemic affected the business of SZIKRA, as well as other restaurants in general. Yet, SZIKRA managed to survive and two years later it is running smoothly, which is a big achievement in such a small town, while in more vibrant, bigger cities these initiatives wither away.

Supply management is another area that can present significant challenges for the enterprise. At SZIKRA food is made only from local/regional ingredients, so all the supplies come from nearby Harghita, Covasna or Brasov counties. While reducing the distance between the gardens and the plate is important, working with small, local farmers, who are producing vegetables and fruits without artificial fertilizers is hard, since many of them do not work on weekends or Sundays. If one of the ingredients runs out the restaurant must wait until Monday, and these delays can have extra costs. Because of the lack of business acumen, doing transactions with local farmers is often more time-consuming than ordering from a big company.

Specifically, regarding running a zero waste restaurant in a small town, the chef must know about the habits and preferences of its inhabitants to preserve the authenticity of the food given the somewhat conservative preferences of consumers.

## **Results and Impacts**

Certain elements are to be highlighted as responsible for the success of SZIKRA, specifically in a smaller town in Romania, where zero waste restaurants are still a thing of tomorrow. Mostly, the success is due to Madalina as an “early implementer”, for her sturdiness and devotion helped her in the opening of the restaurant. A well-founded business plan and realistic estimates about the turnover etc. have helped Madalina and her husband to secure the funding for the operation. The couple expects new funding calls, by Romanian agencies or by the European Union, for startup funding in the services sector.

The success of this practice is evidenced by a clearly defined target of providing people with an experience of enjoying zero waste quality food while contributing to sustainability.

A testimony shown by Kaplan (2020) of a zero waste restaurant owner evidence the sustainability approach of this type of enterprise. He refers to “a closed-loop, root-to-fruit and nose-to-tail approach to cuisine”. Sustainability commitment is holistic, applying to every point of the culinary chain, from direct farmer relationships to reusing all organic waste, and recycling any non-biodegradable waste that is generated. Using local or regional ingredients helps to cut down on CO2 emission caused by transportation.

From a business model perspective, zero waste restaurants pay off even additional investments made to

reach greater levels of sustainability, such as the acquisition of more efficient, energy-saving equipment for example, because zero-waste, sustainable cuisine is more cost-effective than a traditional restaurant. Vegetable costs are less than meat or fish, as well as the principle of reusing rather than discarding help reduce expenses. An estimate by an interviewee (Kaplan, 2020) zero waste food costs about 10% of a client's budget, compared with 40 to 50% for a traditional fine dining restaurant.

### **Potential for learning and replication**

As reported by the European Union project FoodSHIFT2030<sup>28</sup>, SZIKRA aims to motivate the adoption of a circular economy approach in other restaurants and is setting up a project to identify 'Food Waste Good Practices'. With collaboration from local students, they are surveying local restaurants to map the actual food waste rates, and with support from a nutritionist and economist, they will give value to the waste and provide concrete figures that can incentivize restaurants to adopt a more circular approach.

The most unique feature of this good practice is that, besides starting a zero waste restaurant, the entrepreneur behind the enterprise, did it in a small town, which can be considered a hard environment to test alternative approaches to cooking and dining out. It proves the approach can be accepted by different audiences in different spaces, provided there is an understanding of the local culture, and a commitment is created with local suppliers.

Other references for zero waste restaurants, according to Kaplan (2020), are: Silo<sup>29</sup>, in London, Rhodora<sup>30</sup>, in New York, Nolla<sup>31</sup> in Helsinki, and La Table de Colette<sup>32</sup>, in Paris. Another reference in Romania is Syndicat Gourmet Restaurant<sup>33</sup>.

### **Further information**

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

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

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<sup>28</sup> <https://foodshift2030.eu/>

<sup>29</sup> <https://silolondon.com>

<sup>30</sup> <https://www.rhodorabk.com>

<sup>31</sup> <https://www.restaurantnolla.com>

<sup>32</sup> <https://www.latabledecolette.fr/>

<sup>33</sup> <https://syndicatgourmet.ro>

## La Alimentación no Tiene Desperdicio (Food is not Wasted)



### Situating the good practice

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 (2022<sup>34</sup>). 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 tons 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 threw 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).

### Overview of the good practice

According to data provided by around a hundred companies from the food industry and distribution integrated into the project Food is not wasted, 1.79% of products are never sold. There are various reasons for this: deterioration of containers and packaging, labeling errors, nearness of the expiration date, etc. So, the main mission of this initiative is to tackle food waste by creating and applying efficient practices throughout the entire value chain – from the primary sector to the final consumer.

The initiative has the support of more than 600 manufacturing and distribution companies in the consumer goods, logistics services and transport sector, and is coordinated by AECOC through two working committees: The Prevention Committee, focused on the development of good practices to prevent and reduce the waste generated along the links of the food chain, and the Redistribution Committee, which works to carry out collaborative projects that help redistribute and optimize the surpluses generated throughout the process.

The practice has three main objectives:

- to establish prevention and efficiency practices along the entire food chain, leading to a

<sup>34</sup> 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](https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/paginas/2022/20220607_council.aspx). Access: 05.10.2022.

reduction of waste;

- to maximize the use of the surplus produced throughout the different stages of the value chain (redistribution, reuse and recycling);
- to raise awareness of the problem and the need to reduce food waste also at consumers' individual level.

Outreach activities for awareness raising and promotion of food waste prevention practices and technologies are realized by Food is not wasted. They are:

- **Week Against Food Waste.** In its 5th edition this year, this campaign involves citizens, private companies and public administration in activities and projects aimed at creating awareness about the value of food and waste prevention.
- **Meeting Point Against Food Waste.** The event, in its 10th edition this year, showcases innovative and successful initiatives implemented by companies and public administrations to prevent food waste.
- **Good Practices Against Waste.** This webpage shows practices implemented by AEOC associates to reduce food waste along the supply chain, emphasizing the primary sector, fabrication, transport and storage, distribution and consumers.
- **Repository of Food Reuse Recipes.** A collection of recipes sent by citizens in which the reuse of ingredients is the main purpose.

## Results and impacts

Some evidence of the success of the Food is not wasted initiative are the successive editions of the campaigns it promotes, and the results presented by the companies involved. In the last two years, the Spanish consumer goods companies integrated into the project have managed to increase by 6% the amount of unsold products that are donated to charities, going from 27% to 32% of the total product not marketed fit for human consumption.

The leadership by the AECOC is also an important reason for this practice's success. The Association has associates belonging to the whole food supply chain and has mobilized public sector and citizens' associations to engage with its campaigns.

## Potential for learning and replication

The Food is not wasted good practice has important learning and transfer potential because it fosters the creation of good practices and educational campaigns and material to guide in the efficient management of operations by all concerned stakeholders in the food chain to avoid food waste.

The main steps to be taken for the implementation of such a practice are the mobilization of business stakeholders, so they implement food waste prevention practices within their own companies, and the public administration to mobilize resources and support for both, companies and citizens engagement. An eye on innovative solutions, such as those due to change in legislation, brought by new startup ventures and new technologies, are to facilitate the adoption and scaling up of solutions to prevent food

waste.

Considering the new legislation in place in Spain from the beginning of 2023, the practices implemented by the companies associated to AECOC may be streamlined to be replicable by similar businesses throughout the country. It has set precedent for behavioral change and law enforcement for food waste prevention.

### **Further information**

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

## MUNCH - Close to Date Food Sale App



### Situating the good practice

Similarly, to other popular food-saving applications, such as Too Good to Go, and Encantado de ComerTE, which are summarized in Annex 1, 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 (2022<sup>35</sup>), which shows the main apps available on the market and their respective individual features besides guidelines on how to build the apps. Sillitoe (2022<sup>36</sup>) also shows how mobile apps are helping to reduce food waste.

The MUNCH franchise in Romania apparently is facing a liquidation phase. In case this possibility is confirmed, the lessons drawn from the experience may prevent a similar type of business from failing.

### Overview of the good practice

According to estimates, 1.3 million tons of food are wasted annually in Romania. The number is similar to neighboring countries like Slovakia, Ukraine, or the Czech Republic, which is approximately 70 kilograms of food per capita. While households are largely responsible for food waste, restaurants, hotels, and bakeries are also producing surplus food which ends up in landfills. MUNCH offers a solution to them, to turn the loss into profit, by creating surprise packages from the remained food and selling it at a 40% to 70% discount. People can browse for restaurants in the application and place an order for a specific package, then take it on the way home. This model helps to save food and cut down CO2 emissions, since there is no delivery, the client goes personally to the store.

The company was present in two Transylvanian cities, Cluj Napoca and Targu Mures. It was part of a franchise that started in Hungary and what makes this application special is that it was the first of its kind in Romania. It works by offering food packages for a good price in return for a commission. This results in a win-win-win situation since the vendor can sell what would otherwise be thrown out, the buyer gets a

<sup>35</sup> 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>. Access: 18.10.2022

<sup>36</sup> 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>. Access: 18.10.2022

delicious meal from a restaurant of his\her choice and the middleman derives the profit from this transaction, not to speak about the environment, which also benefits from this practice.

MUNCH was started by 4 people in Hungary, who received financial support from investors to develop the final application. In the case of MUNCH Romania, a 4-people team started the business at their own expense and the financial investment by a businessman.

Although they got a functional application and the brand without financial reimbursement (they had another agreement in place), the costs of sales and marketing represented a big chunk of their costs. There were two persons in the sales department, one in each city, who contacted the restaurants and tried to sell them the concept. Their task was to create a database and keep in touch with the vendors constantly. The Public Relations and Marketing consisted of one person, who was responsible for building the brand and one person oversaw the administrative and operative tasks. Every employee got the necessary device to do their job (laptops, phones), and they got the software from the “parent company”.

## Results and Impacts

Even though they are facing liquidation the practice itself is close to flawless. Faulty business policy and immaturity of the market led to this point. While in operation, between June 2021 and the Summer of 2022, the Hungarian franchise of MUNCH succeeded to gather 40 partners in two cities, selling more than 600 packages of Munch and building a Facebook group with ≈2000 members. In their marketing plan they estimated 337,5 tons of food will be saved annually, which is not a negligible number.

During the implementation of the operation the entrepreneurs faced three major challenges, which affected the whole operation:

- **Openness of the partners/potential partners:** When MUNCH Romania was launched, the entrepreneurs were aware of potential challenges to engaging business partners. But reality showed that compared to the Hungarian restaurant owners, in Cluj Napoca or Targu Mures (especially in Targu Mures) they did not consider it as important to cut down on their losses and to build a green brand for themselves by partnering with MUNCH. Finding new partners proved to be more difficult than they originally thought.
- **Not owning the brand:** Since they did not own the brand it was difficult to find investors in the country, so they had to finance it from their own capital, which is not much if we consider all four of the entrepreneurs were relatively young.
- **Strategic decision:** After the launch in Cluj Napoca the entrepreneurs should have expanded in Bucharest and other big cities in the country. As they did not make this step after the application was launched competition has appeared (bonapp.eco, Clever Eat). In a saturated market with limited resources, they could not stand against competitors.

## Potential for learning and replication

The main lessons learned in the implementation of this practice in Romania have to do with the failure of the enterprise and the challenges they faced to establish the business, which are listed above, and are more related to the entrance of the operation in a new market.

As any franchise, MUNCH Romania already had the ingredients and the recipe to become successful. But as the founders learned the Romanian legislature regarding startups is stricter than in other Eastern European countries, and this hindered the operation. In many restaurants, a certain degree of digitalization is missing, and the lack of digital platforms or payment methods represented another obstacle in the implementation process.

Since the components of this practice are prefabricated, the implementation largely depends on the local team, their expertise, and some luck. The parental organization grants a certain strategy, but this is more of a guideline. What the management team of MUNCH Romania learned from this is that having a deeper understanding of the market and the conjuncture of the country is crucial and implementation can be only successful if they are knowledgeable in these areas and have performed a preliminary needs assessment among business owners. Finally, the acquisition of the necessary amount of financial resources at the right stages is of fundamental value for the success of the app.

If there is no similar company operating in the current region the idea to start a franchise is totally feasible. Many of these food-saver businesses are successful and while they are doing it for profit, they are doing some good for the environment too, as well as contributing to social impact when they connect the businesses with those most in need, such Encantado de Comerte partnership with the Red Cross in Spain, or Olio with the food sharing approach.

### **Further information**

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

[https://www.instagram.com/munch\\_romania/](https://www.instagram.com/munch_romania/)

**Too Good To Go**



**Too Good To Go**

### **Situating the good practice**

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.

### **Overview of the good practice**

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.

### **Results and Impacts**

This practice targets consumers and distributors to reduce food waste at the point of consumption. Both distributors and consumers are incentivized to participate by economic benefits. The app currently has 5.3 million+ users, 15000+ businesses have reduced their food surpluses, and the program is active in 13 countries in Europe and North America. This app has enjoyed such success because it has aligned an environmentally sustainable practice with an economically sustainable practice.

Too Good to Go publishes an annual Impact Report<sup>37</sup>, in which they detail the effect they've had on the market and reducing food waste for year 2021.

This practice is innovative because it provides an economic incentive to reduce food waste and also creates a community that customers and operators of businesses feel good about joining. Saving the earth seems much more reasonable when you can make or save money doing it. The alignment of an environmentally sustainable practice with an economically sustainable practice is very innovative and

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<sup>37</sup> <https://toogoodtogo.org/en/download/impactreport2021>

effective.

### **Potential for learning and replication**

This practice is replicable because there is nothing specific about its basic principles. Distributors anywhere can be incentivized to sell food on which they would have otherwise taken a loss and consumers anywhere can be incentivized to buy food at discounted prices. The connection of economic frugality to sustainability can be made anywhere. The creation of the platform itself and generating initial participation represent startup costs, but it might be easier and more cost-effective to simply expand the domain of the existing platform as the app has already expanded from Denmark to Spain.

Too Good to Go sets an example of a highly functional economic model that can and should be replicated to reduce food waste across the globe. It focuses on reducing food waste at the point of consumption, the only point in the supply chain that cannot be easily optimized by logistics or policy. Along with their subscription, customers receive information regarding food waste reduction disseminated by the platform to nudge consumer habits further and ensure that food-efficient practices are adopted. Less loss by distributors means an eventual long run reduction in demand for food, which would apply pressure up the supply chain, reducing the amount of food subsequently lost at other levels.

### **Further information**

<https://toogoodtogo.org>

## Third Sector- led Practices

According to Galli et al (2019<sup>38</sup>), 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.

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<sup>38</sup> 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.

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



### Situating the good practice

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.

### Overview of the good practice

The parental organization of CUIB – The Mai Bine Association (MBA) - started its activities in 2009. Under the slogan “ethical, ecological, fair” they adopted the theoretical and practical promotion of responsible consumption, with care towards people and nature. The engagement with the Slow Food Movement started in 2011 and led them to promote vegetarian, locally sourced, and zero-waste food, which has a low environmental footprint and significant social effects, food being the most important dimension of sustainable living.

With the establishment of CUIB, MBA started expanding its activity to food waste prevention. The practice is embedded with environmentally sustainable, socially equitable, and sound ethical norms and principles. CUIB was born after the MBA won a business plan competition, which earned them recognition and financial aid of 20.000€, which was complemented by the members of the association to build the place. Today, people contribute to their activities through a membership monthly fee, which allows them for discounts and gifts from CUIB.

The number of employees is between 7 and 9. The core team of CUIB is formed of 7 people, who are all devoted environmentalists. A financially and emotionally important resource is membership, which many of the frequent visitors commit to. Other non-financial resources committed to the practice are:

- the website which is informative and stylish;
- establishment of partnerships;
- volunteering;
- real-estate.

In a certain way, the whole population of customers and visitors is enjoying the benefits of CUIB’s work, since they are working in a cleaner, greener environment. But local farmers and producers are the direct beneficiaries, who are valued by the people of CUIB, and they receive fair compensation for their work,

as opposed to selling to a supermarket. The disadvantaged people who are working for CUIB are also benefiting from this practice.

In the case of such a pioneering enterprise, financial hardships are almost constant. The main reason for that is that profit is not their primary goal. According to the latest available data from 2020, which was a critical year for every business, they losses as the year closed with substantial debt. As a reference, the turnover in 2019 was 603.673,00 RON. In 2020, it dropped to almost its half, to 384.709,00 RON. As a social enterprise the most common challenge CUIB faces is funding uncertainty.

In specific areas the challenges are, for example 1) being fully zero waste is still an objective because the bistro generates waste, without a proper place to compost or recycle it and 2) difficult finding the right vendors/producers for the local sourcing of ingredients for the restaurant affects the plan to become a certified Zero Waste Restaurant by 2023.

Planning for a more sustainable future, under the umbrella project Tende, established in 2020, CUIB defined an aspiration to further reduce its impact on the environment, aiming at becoming an example of a circular economy approach in the hotel, restaurant, and café sector in Romania. Three targets have been set to be reached by the end of 2024:

- **Close to zero food waste:** CUIB is registered to use food close to its expiry date and/or with damaged packaging and integrate it into the menus. The goal here is to generate as little organic waste as possible.
- **Nearly zero kilometers food:** The CUIB restaurant is known for its tasty, healthy and environmentally friendly food from fresh, organic, local and seasonal ingredients. Currently, 70-80% of the ingredients on their menu are from local or regional sources. The long-term plan is to have its own garden and a new restaurant nearby. Since the Spring of 2021, over 90% of drinks and ingredients are produced regionally, at least 50% within a radius of up to 100 km around Iasi.
- **Close to zero waste:** Sustainable waste management is one of the core components of CUIB's social and green business model. In 2021, reduced the amount of waste closer to the target of 90% recyclable waste and only 10% non-recyclable and aim at halving the amount of waste generated by the end of 2024.

## Results and impacts

Sustainability has the utmost importance in their work, which includes avoiding meat-based foods. Their cookbook with titled "Positive Food" contains their most popular vegetarian recipes. Since the opening vegan and vegetarian dishes saved approximately 1350 lives (2020). Other waste prevention practices involve not serving water in plastic bottles, never using disposable cups and containers for takeaway or in the bistro food or drinks and offering options of half portions.

Some examples of the impact created by CUIB can be summarized as:

- reduction of the carbon footprint with 40 million tons of emission;
- creation of 6 permanent in-practice jobs;

- educating community members in +100 solidarity, awareness and/or community events with +2500 volunteer participants;
- offering, in the name of Solidarity Economy, 3020+ liters of food for homeless people in the winter;
- engagement of 50+ volunteers and supporters in developing and implementing community activities;
- reducing consumption of packaging and other disposable items, avoiding at least 111000 pcs. of packaging and other disposable items going to the landfill.
- food cooked from local ingredients (90%).

### **Potential for learning and replication**

The ethical and moral framework by which CUIB is run has been recognized as it was nominated as a pilot project within the European project Horizon 2020 - Food E to contribute to the development of sustainable food systems in city regions. Therefore, the knowledge about the practice will be disseminated.

On a national level, this initiative is unique. There are other almost zero waste restaurants in Romania, but CUIB is a more complex entity. It exists in harmony with their zero waste shop, the conference room, and other activities they lead. In Romania the situation of social enterprises is still developing, its law is unclear or incomplete in some respects. Such a business as CUIB can only rely on people and volunteers who are helping an initiative that aims to reach social and environmental impact.

Their experiences in Romania are difficult to transfer, as they need to find solutions for the Romanian legislation and Romanian life, but the worldview and the practices connecting to sustainability can be implemented in other cities and countries as well. The crucial aspect is to have a dedicated team, who can be authentic.

### **Further information**

<https://incuib.ro>

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

## FoodCloud



### Situating the good practice

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.

### Overview of the good practice

FoodCloud operates in Ireland, 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. All together contribute more and more to the reduction of households' purchasing power. Regarding the current pandemic, Drew (2022<sup>39</sup>) carried out a study on the impact it had on the Irish population and found out that it has profoundly affected fragile groups who are at risk of food poverty, such as low-income families with children, lone parents, and people with disabilities. The sum of all these concurrent problems has resulted in a substantial increase in the turnout to food banks.

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 CO<sub>2</sub> 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.

### Overview of the good practice

FoodCloud is a social enterprise founded in 2013 and currently striving to change people's lives by connecting food businesses with surplus food to charities, de facto reducing food waste and its negative impact on the environment and supporting the most socially disadvantaged layers of the population.

The process is boosted by a digital platform that complements and enhances the operations of food banks by planning food collection dates and communicating users the positive impact they produced.

The functioning of FoodCloud's business model is based on three pillars:

- **FoodCloud Hubs** – The three redistribution hubs located in Dublin, Cork and Galway work with

<sup>39</sup> Drew, M. (2022). *Uncovering Food Poverty in Ireland* (1st ed.). Policy Press. Available at: <https://www.perlego.com/book/3532969/uncovering-food-poverty-in-ireland-a-hidden-deprivation-pdf>. Access: 20.10.2022

registered food industry partners to receive surplus food and segregate it into storage.

- **Retail solution** – Stores that have available fresh food that cannot be sold upload it to the FoodCloud app. Local charities linked to the store through the app receive a notification and decide whether to accept it. Retailers pay a fee per store to cover operating expenses.
- **Food industry** – Food businesses with large volumes of surplus food are connected to charities that need it through the redistribution hubs. There is no fee for their participation.

The stakeholders involved range from retailers to food companies, charity beneficiaries and policymakers. As for the partners, the most noteworthy are Lidl, Aldi, AIB, Waitrose, Tesco and Musgrave. Retailers and the food industry benefit from the reduction in waste disposal costs and carbon footprint, fulfill Origin Green targets, achieve positive Brand sentiment, strengthen community relationships and increased staff engagement. Charities can collect fresh surplus food from their local food retailer through FoodCloud, and avail of the service and food free of charge. When collecting food from FoodCloud Hubs, instead, are charged based on the weight of food being collected.

The main beneficiaries of FoodCloud are children and youth at risk of food poverty, the elderly, homeless people, those who are going through drug and alcohol rehabilitation, women escaping domestic violence and families with low incomes who need help to get by.

To provide an overview of the financial needs of this practice, in 2020, it expended €7,668,709 according to the 2020 Annual Report and Audit Financial Statement<sup>40</sup>.

In addition to the economic resources deriving from the business core activities it also benefited from the EU Fund for European Aid to the Most Deprived (FEAD) Program, the Community Services Program funding from the Department of Rural Community Development and the Social Innovation Growth Fund and the Allied Irish Banks (AIB). Amongst the other sources of incoming economic resources are:

- Digital platform to connect charities and food suppliers;
- Warehouses to stock saved food;
- Establishment of partnerships with food industry and charities;
- Volunteering;
- 98 Employees;
- Refrigerated vehicles;
- Food at risk of wastage.

## Results and Impacts

FoodCloud represents an outstanding example of a combination between operative solutions, efficient logistic organization and the wise use of digital tools. These three elements, jointly with the trust gained

<sup>40</sup> O'Connor Pyne & Co. Limited (2021). FoodCloud Annual Report and Audited Financial Statements for the financial year ended 31 December 2020. Available at: [https://assets.website-files.com/6059c0de72f0102a11a6ddc7/61718c19e3ad6136013f714c\\_FoodCloud%20-%20YE%202020%20Accounts%20Signed%20by%20Auditors.pdf](https://assets.website-files.com/6059c0de72f0102a11a6ddc7/61718c19e3ad6136013f714c_FoodCloud%20-%20YE%202020%20Accounts%20Signed%20by%20Auditors.pdf). Access: 20.10.2022

by this social enterprise yield an extremely positive impact which prevents food waste and concretely helps most disadvantaged people who struggle to access nutritious food. All these elements, along with its inclination towards replicability make it one of the most valuable good practices identified in the frame of the Zero\_Waste project.

FoodCloud has achieved paramount goals both in Ireland and abroad. Indeed, in Ireland it achieved the following results:

- The technology platform connects over 500 supermarkets to local community groups.
- FoodCloud connects 2,900+ stores directly with 7,000+ local charities across the country.
- 3,022 Tons of food redistributed
- 7.2 million equivalent meals donated estimated worth of €9.1 Million
- 180,000 Individuals reached
- 9,670 Tons of CO<sub>2</sub> avoided
- 825 Community groups supported
- 433 Volunteers employed
- 1,800 Volunteering work hours.

Just in the beginning of the COVID-19 pandemic, FoodCloud contributed to the distribution of 128 tons of food and the establishment of 32 new strategic partnerships to support the government-led Community Call. Contributions have followed even in the subsequent phases of the pandemic.

On the international level, the FoodCloud technology is also being used across multiple food banks worldwide including Australia, Poland, Slovakia, and the Czech Republic. The results achieved abroad are:

- 10,094 Tons of food redistributed
- 24 million meals redistributed by partners through the technology platform
- 31,301 Tons of CO<sub>2</sub>e avoided
- €30.3 Million estimated value of food saved

It shows a high level of specificity with respect to the context of action, given its attention on deprived people and their need of nutritious food which, considering their situation, could be difficult to find.

So far, FoodCloud has been successfully implemented both saving food from wastage and helping people in need. The measurement of the quantity of food saved is an integral part of the business model. Hence, it allows the possibility to keep track of the progress done.

### **Potential for learning and replication**

FoodCloud's good practice is highly transferable. It just requires the development of a digital platform to facilitate the matching between food suppliers and the participation of stakeholders to the network. The main elements required for the replication of this practice are:

- the availability of warehouses to stock the saved food
- a digital platform to connect charities and food suppliers;
- establishment of partnerships with the food industry and charities;
- volunteering;
- professionals;
- refrigerated vehicles;

The FoodCloud business model has been already transferred to other countries. Indeed, its technology is now also being used across multiple food banks worldwide including Australia, Poland, Slovakia, and the Czech Republic.

One challenge which might arise in its implementation is that it could turn out to be difficult to establish partnership first-hand since it requires accountability and stewardship by the organization implementing the good practice. Indeed, its activity is far-reaching since not only does it save food at risk of wastage, but charities also benefit from food produced ad hoc for their needs by food firms, in the field of their corporate social responsibility actions. The involvement of so many actors might represent a relevant barrier if not well managed.

### **Further information**

<https://food.cloud/>

## Fruta Feia (Ugly Fruit)



### Situating the good practice

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. 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, 2018<sup>41</sup>).

### Overview of the good practice

The Fruta Feia cooperative started operating in November 2013 and arises from the need to reverse the trends in the standardization of fruits and vegetables that are not related to food safety and quality issues. This practice aims to combat market inefficiency by creating an alternative market for "ugly" fruits and vegetables that can change consumption patterns. Fruta Feia operates specifically by providing a second market where to place fruit which was subject to aesthetic damages along the food supply chain until it's arrival to the retailing point. This brings up the relevance of a systemic shift towards a short supply chain in which food manipulation and brokerage is limited to the minimum necessary.

By allowing food products that look bad not to be wasted, Fruta Feia contributes to the reduction of food waste and, at the same time, helps to reduce the environmental impacts of production, since their non-marketing would force the production of other products replacement.

The main stakeholders and beneficiaries of the practice are producers, who thus ensure another distribution channel for their less marketable products, and consumers, who are thus able to acquire products with good quality at a low price. To access the service, consumers need to pay a €5 annual subscription fee. The user agrees with the supplier where to deliver the "ugly" product. The ordering process takes place online. It is possible to choose between two options which consist of one small box,

<sup>41</sup> 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.

containing from 3 to 4 kilos and 7 varieties, and one large box, containing from 6 to 8 kilos and 8 varieties. Deliveries are carried out on weekly basis.

In terms of feasibility, the project required the creation of a new distribution channel for food products with marketing difficulties, with the acquisition of storage facilities and means of transport for their distribution. Every week, contact is made with the region's producers, visiting their vegetable gardens and orchards to buy the small, large or misshapen fruits and vegetables that they are unable to dispose of. With these products, we prepare baskets of two different sizes to sell to consumers associated with the Cooperative at delivery points across the country.

The biggest challenges reported by the cooperative were establishing a network of farmer partners and creating an image of trust with consumers.

## **Results and Impacts**

So far, the Fruta Feia project has produced a positive impact by preventing the waste of fruit and vegetables which amount to 4,115,000 tons and that could have ended up in the trash just because of their appearance. This has ensured the distribution of one million euros among 324 partner farmers in addition to the benefit produced for the environment.

The Fruta Feia approach stands out thanks to its specific target on aesthetically unattractive food. Its implementation ensures astonishing results by saving products that would be discarded. Beyond the merely economic aspect, it guarantees the transfer of ethical principles related to the importance of the work of farmers and the value of food as something that need to be treated with respect.

## **Potential for learning and replication**

Fruta Feia presents a straight-forward approach which can be replicated anywhere there are amounts of fruit and vegetables that tend to be discarded just because of their aesthetics.

Successful cases of replication of Fruta Feia have been conducted in other places in Portugal. It is possible to replicate this alternative consumption model in other countries, with the advantages already described. It is just necessary to overcome the initial frictions that might arise when facing obstacles and challenges, but once consumer's trust is gained and the network with farmers is established, the work is done.

The principle at the base of Fruta Feia has been applied also abroad. An example is the project called "Culinary Misfits<sup>42</sup>" which takes place in Berlin, Germany, where it seeks out the ugly vegetables at grocery stores, farmers markets, and restaurants and turns them into delectable dishes at the events they cater in the city. This means that an increase in awareness regarding the importance of going beyond food aesthetics is taking over and it will benefit both people and the planet.

## **Further information**

<https://frutafeia.pt/>

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<sup>42</sup> [http://foodtank.org/resources/1032/Organizations/Culinary\\_Misfits](http://foodtank.org/resources/1032/Organizations/Culinary_Misfits)

## Right-size Menu (Menu Dose Certa)



### Situating the good practice

Menu Dose Certa (Right-size Menu) 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 sustainable food in the menu.

### Overview of the good practice

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.

The Dose Certa initiative was launched in February 2016. In its area of intervention, about 27% of the waste consists of food that is wasted. In view of this impressive data, and to minimize it and respond to the principles of the Waste Management Hierarchy, the project has implemented a Strategy for the Prevention of Food Waste Production.

With this project, in partnership with the Portuguese Nutrition Association, it is intended, through the analysis and evaluation of the practices of each establishment, to create an improvement plan, reducing losses and consequently costs.

The main stakeholders and beneficiaries of the practice are restaurants and other public and private services that provide meals, which thus benefit from specialized advice, in order to avoid food waste and have more nutritionally balanced meals

The initiative is divided into two main objectives: On the one hand, to quantify and reduce food waste in the restaurant sector and, on the other hand, to encourage the Portuguese population to have a more balanced diet. Raising restaurant owners' awareness is the first step towards the adoption of a menu based on sustainable ingredients which comply with the farm-to-fork strategy and respect the principle of seasonality.

Cooks have an important role in assuring that dishes are served in the right size and with healthy nutritional values.

The project required the creation of a network of restaurants and other services that ensure the voluntary provision of meals. The first step is to raise awareness by making restaurants weigh the food they waste.

Making them count is a way of raising their awareness and then training is carried out with the volunteers regarding environmental and nutritional practices, in which the menus are adapted to the reality of the establishments. The objective is to not generate food waste and to bring economic, environmental and nutritional benefits. In order to take part in the project, it is important to fill out an agreement with Lipor and to send it via-email. In this way, it will be possible to express the firm will to be involved in the project and to respect the agreed terms for the pursuit of the project objectives.

The biggest challenges reported were establishing a network of restaurants and other service providers of meals (which participants voluntarily). Moreover, since paying more attention to food waste prevention practices represents an effort as well as endeavoring to move away from one's comfort zone, showing the advantages of providing balanced meals from the point of view of environmental and nutritional sustainability is important, yet difficult to put into practice.

### **Results and impacts**

The added value of this project is represented by the particular attention paid to the size of the dishes, which is not always taken into consideration. The Menu Dose Certa initiative has so far shown to be effective in preventing food reduction by redesigning the role of restaurants which now, beyond taking care of customers' satisfaction, also play an important role in benefiting the environment and people's health by providing for nutritious and tasty dishes.

The practice envisages the monitoring activity carried out by Lipor which supervises on the effort to ensure food waste reduction. This makes it possible to keep track of the progress done.

The networking at the base of this practice and the combination between the environmental and healthy dietary dimensions ensures a twofold positive impact thanks to this innovative approach. The simplicity which characterizes the project makes it easily replicable, but to do so, it is important to assure the coordination by a leader organization which keeps track of the progress achieved and the respect of the agreement requirements.

### **Potential for learning and replication**

It is possible to replicate this alternative consumption model in other countries, with great advantages from an environmental and nutritional point of view, if it is promoted by organizations with a local impact, associated (as is this case) with an association of nutritionists or other professionals and actors in the sector, possibly on a small scale at local level to ensure a good level of effectiveness. When creating the menu, special attention could be paid to traditional dishes of the local culture, maybe even revisited in a more sustainable version to assure a good level of social acceptance by users. Finally, further effort to reduce food waste could be the joint implementation of the initiative called "Embrulha" which in Portuguese means "wrap up". This practice consists of predisposing sustainable solutions for packaging to allow customers to take away the food they do not finish.

### **Further information**

<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**



### **Situating the good practice**

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.

### **Overview of the good practice**

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.

Cooperativa Artxara is unique in that, although the renovation of Elikagunea was led by the city council of Azpeita, citizens were engaged and involved from the outset. The community of Azpeita is very much invested in the success of this initiative and its success can therefore be partially attributed to the sense of pride that it brings to the community.

The Elikagunea multipurpose space has been operating in its current form since 2016. Cooperativa Artxara is financed by the Azpeita City Council and the Basque Government. They have since expanded and now market the products available for sale outside of Elikagunea. Goods are distributed to community kitchens in Azpeita 3 days a week. This is a clear indication of success as demand for these products and a shorter supply chain are growing. Prior to Elikagunea's renovation, unemployment in Azpeita was at 17%. Elikagunea's renovation and consequent designation as a market has created several jobs, improved the local economy, and created an improved sense of community for residents of Azpeita.

A challenge that Cooperativa Artxara continues to face is diversification. Their threshold for "indigenous" products is a 150km radius. Consequently, variety in the market is limited as only so many things can be grown in that area. For people in Azpeita that have a wider palette, the market won't offer enough competition to a retail market such as Lidl. The same problem presents itself when considering the local

producers that supply Elikagunea's market. There are only so many producers that can supply the market's needs, potentially stifling growth. However, the market offers processed goods that are produced from the same locally grown products. These processed goods aid in increasing the variety of the market's offerings.

### **Results and impacts**

Cooperativa Artxara began the renovation of Elikagunea with a simple goal: to improve their community by making it more vibrant, active, and economically healthy. Their target was to create a space that would serve these purposes. While their main focus was not the reduction of food waste, the practice does indirectly reduce food waste by creating a shortened supply chain.

It has improved the local economy of Azpeita by employing residents and has improved the demand for locally grown products by making Elikagunea a centerpiece of the community and bringing small producers together. Demand for locally grown products is clearly growing because of this initiative. Cooperativa Artxara also has a focus on information dissemination, telling consumers how they can change their consumption habits to reduce food waste by proper food storage, preparing recipes with leftovers, and other methods. The improvement in the employment rate in Azpeita is easily measurable. The greater economic improvement in Azpeita is measurable as well. Reduction in food waste can be measured by data from Azpeita's designated landfill(s), noting a reduction in food waste material.

The cooperative has set a good example of a shortened, local supply chain. As Elikagunea integrates further into the local economy, the shortened supply chain will become more robust and the environmental and economic benefits will continue to increase. The involvement of citizens in the project allows the project to grow and continue to be a source of community pride. This ensures that the citizens will remain engaged as stakeholders in the well-being of Elikagunea and that its economic and sustainability benefits will continue to grow.

Elikagunea's basic principles are easily replicable, but they may depend on certain conditions. Having a dedicated space for the sale of locally grown produce and generating demand for those products are replicable practices, but they may require a rural environment to attract consumers. Farmers' markets are less popular in metropolitan areas where consumers have more choice in where they can shop and more availability of conveniences such as grocery delivery services. A shortened supply chain can compensate for this by leaning into the community service aspect of the market and offering the lower prices that a shortened supply chain naturally affords.

### **Potential for learning and replication**

The Cooperativa Artxara Elikagunea's model is quite simple and replicable. Elikagunea's rural location make it conducive to such success. Rural locations generally offer less choice for consumers, making them more likely to explore new options, such as those offered by shortened supply chain farmers' markets. A business that is looking to reduce food waste while having positive effects on their local economy should replicate these elements of Elikagunea's success. Factors for replication are:

- a space for selling products that is accessible to the whole community
- a healthy, functional market for locally grown produce

- citizen engagement
- funding from the local government (to retain the municipality as a primary stakeholder).

The Cooperativa Artxara at Elikagunea has set a great example of a shortened supply chain that can be replicated in other rural areas and areas that are at risk for supply disruption as climate change advances. They have also set an example of how such a program can be expanded by distributing products outside of the designated space. They have been able to increase demand for locally grown produce and engage citizens in a way that allows the community to be a stakeholder in the project's success. This is an element that should be replicated by more municipal governments.

### **Further information**

<https://elikagunea.eus/>



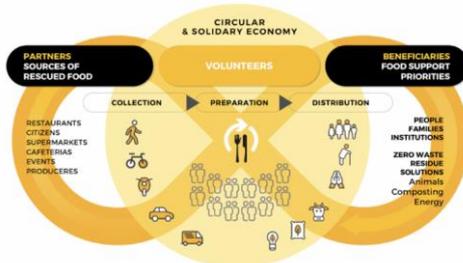
### Situating the good practice

Refood 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.

### Overview of the good practice

Refood Viana do Castelo, started in 2015 as the local derivation of a national project. Its objective - whose section operates in Viana do Castelo, but which is part of a national project, is to collect surplus meals from hospitality and food sector organizations (restaurants, hotels, supermarkets and public and private canteens) and distribute these meals to various institutions that work with people in need and directly to homeless people in the same area. By allowing these meals not to be wasted they are contributing to the reduction of food waste, at the same time fighting the hunger of very needy people.

The main stakeholders and beneficiaries of the practice are social institutions and people at risk of food insecurity. Its business model is based on a circular and solidary economy which takes advantage of the wide web of people involved in the three main steps, which are collection, preparation and distribution.



This good practice involves the acquisition of vehicles for the collection and subsequent distribution of surplus meals, a place for storage and subsequent distribution of the meals and assembling a team of

volunteers willing to carry out the tasks of collecting and distributing the meals. It is necessary to create a network of contacts with the local restaurants. This project had the support of several local public and private institutions.

For its implementation ReFood benefited from funding channels provided by the European Social Fund, Portugal Inovação Social, and Lisb@2020.

The biggest challenges reported were establishing a network of local partners to donate excess meals and creating a team which is composed by 100% by volunteers who carry out the task of distributing meals.

## **Results and impacts**

In terms of impact, the ReFood cooperative has benefited 66800 beneficiaries, involved 7,500 volunteers, hence fulfilling the pursuit of outreach and making sure to save 150,000 meals per month. Its effort prevents about 1,000 tons of food from being wasted every month.

The engagement ReFood has with the local stakeholders is a major strength that ensures the feasibility of its implementation. REFOOD's innovations have a transformative effect – turning food waste into nutrition to end hunger; mobilizing goodwill and untapped resources to transform indifference into solidarity in local communities – which, in turn, transforms the lives of everyone involved.

## **Potential for learning and replication**

This practice aims to ensure the immediate distribution of surpluses from the restaurants to those who need it most and are close to them. Re-food intends to follow this path and this cause by offering an implementation strategy both on the local and the global level by fostering the outspread of its movement and values. The most effective solution would be the reception and delivery of meals within the same local area, with organized volunteers.

To make this practice safer and easier to implement, it is possible to have a look at the food guidelines that the European Commission has drawn up, in terms of food safety and sustainability. Cooperatives and associations that showcase the same dynamics or similarities as ReFood are quite present in Europe. Food Cycle<sup>43</sup>, for example, is an organization that operates following a similar business model in the UK relieving the situations of those people facing hardships. As such, ReFood model is being replicated in Spain (Tetuán) and conversations are ongoing with organizations in Italy, United States and Brazil to establish local initiatives. Key to its replication is the establishment of a network with local extra food suppliers and the engagement of loyal volunteers supporting the work and sharing the vision of the company. Amongst the values embodied by ReFood and essential to the assurance of stewardship and accountability are equality, respect, inclusion, sustainability, volunteering, and gratitude. Without these elements, endeavors of replication might lack of effectiveness since they are commonly the features which trigger people to be involved in such an initiative.

## **Further information**

<https://re-food.org>

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<sup>43</sup> <https://foodcycle.org.uk/>

## Karabeleko Experimental Farm



### Situating the good practice

Karabeleko is an experimental agroecological farm in the city of Hernani in the Basque Country in Spain. It 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.

### Overview of the good practice

Karabeleko has been active since 2014. The experimental farm does not primarily focus on food waste reduction, but Lurretik Lurrera's composting initiative recaptures material that would have eventually become food waste. 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.

The market they have created for their own organic produce reduces food waste. Customers receive baskets of Karabeleko produce by subscription. Lurretik Lurrera is Karabeleko's composting program, supported by the Provincial Council of Gipuzkoa. Karabeleko has an associated restaurant, Diameter 200, that uses Karabeleko produce. Food waste from the restaurant and Karabeleko's Telleri Zahar farmhouse is turned into compost to fertilize more organically grown produce. This practice also aims to disseminate information about Karabeleko to consumers and businesses, which is hoped to indirectly reduce food waste. Lurretik Lurrera directly reduces food waste and represents a unique example of the supply chain not only reducing, but recapturing loss.

Karabeleko employs 8 people full time, 6 sponsors contribute 500EUR per year and 13 sponsors contribute 50EUR per year. Their full budget and total contributions are not disclosed.

### Results and Impacts

The practice that has a strong waste prevention focus is the composting with the Telleri Zahar farmhouse and Diameter 200 restaurant food waste. This self-sustaining practice is Karabeleko's foremost food waste reduction innovation. Their information dissemination campaign targets consumers who will adopt food waste reduction practices, such as preparing recipes with leftovers and making more efficient shopping decisions.

Karabeleko has been active since 2014, demonstrating a self-sustaining model for nearly 9 years. In addition, the experimental farm has been providing jobs for several people who are recovering from mental health issues, ensuring that they remain active members of their community.

The reduction in waste by Telleri Zahar and Diameter 200 is a measurable aspect of this project's success, although this information is not yet publicly available. Consumer's uptake of the practice is also measurable through the conducting of surveys, but this has also not yet been done.

The cooperative has created a vertically integrated model. They have successfully aligned an economic incentive with a sustainability goal. This is an excellent example for others who wish to save money and reduce food waste. Another business that is able to vertically integrate would enjoy the same benefits of reduced logistical costs and reduced waste.

Karabeleko's vertically integrated model can be replicated by other business that have the ability to produce as well as distribute food. They have also achieved minimal logistical costs because of the in-situ nature of the initiative. Other ventures that wish to save on logistical costs and reduce food waste can use Karabeleko's success as an example.

### **Potential for learning and replication**

Karabeleko's main innovation is their composting program. They demonstrate that recapturing food waste material is a self-sustaining practice. Karabeleko is vertically integrated because they control their entire supply chain, from production to distribution. The fact that everything is done in situ removes the need for complex logistics. This sets an excellent example for other businesses or cooperatives that want to shorten supply chains and minimize waste. Karabeleko functions in a rural environment, where a program separated from the conveniences of urban life were allowed to thrive. Vertical control over production and distribution are an excellent way to reduce costs, providing an incentive for other businesses to replicate the practice. The incentive for other businesses to replicate this practice are deepened when other food reduction practices are considered. A business that is both a producer and a distributor have additional incentive to invest in vertical integration because they are granted access to programs that increase the profits of both stages of their supply chain. Apps such as Too Good to Go and Fruta Feia provide the would-be replicator with additional avenues to increase profits and reduce loss.

The core features of Karabeleko's innovative self-sustaining vertical integration that would be necessary for replication are:

- a space in which to grow food;
- a restaurant that cooperates with the production space to use its produce and deliver compostable material;
- limited logistical capability to deliver produce to the restaurant and return compost material to the farm/growing space;
- restaurant water purification system (optional).

This experimental farm might not seem like an initiative that has a large direct impact on food waste reduction, but it's vertical integration strategy, its ability to recapture loss from a restaurant and reintegrate it into the supply chain, and its ability to inspire others through information dissemination are

proven successes that align economic benefits with sustainability good practices. They set a wonderful example of a shortened, highly efficient supply chain that should be replicated as closely as possible, especially in communities where complicated logistics play a large role in food losses.

**Further information**

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

## **Aragonese Food Alliance (Alianza Agroalimentaria Aragonesa)**



### **Situating the good practice**

The Alianza Agroalimentaria Aragonesa (AAA) establishes a community-based incentive for stakeholders in the Aragonese food supply chain to make improvements to their processes. 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.

### **Overview of the good practice**

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. The perceived value assigned to rural environments and the work of producers is typically low. The AAA Awards generate recognition for individuals and organizations that innovate in the agrifood sector. It reminds consumers of where their food comes from and the work that goes into maintaining a supply chain that most take for granted. The Awards also create a low-pressure competition between stakeholders. Although each of the awards is given to only one winner, there are many considered, which generates innovation that is not officially recognized. The AAA Award is not economic, however there is an inherent benefit in recognition of any kind. The individuals or organizations that do receive AAA awards will enjoy increased publicity which will drive an increase in demand for their products or services.

Incentivizing upper supply chain stakeholders to innovate and reduce food waste sets an example for other communities that environmentally sustainable practices don't have to be costly in terms of capital. As the awards continue to be distributed, the initiatives of the award winners will become more well known. The AAA is effectively bringing about change with minimal investment capital of their own.

### **Results and impacts**

The target group is represented by Aragonese agrifood stakeholders and Aragonese consumers. The AAA was created to appeal to stakeholders and encourage them to join. Its purpose is to improve the reputation of the agrifood sector among consumers while reducing food waste.

The Awards program was created to incentivize improvements in Agrifood Research and Innovation, Industrialization and Agrifood Marketing, and Farming and Ranching. The marketing aspect of the AAA targets consumers and their perceptions about rural producers. It was itself recognized by the Official College of Agricultural Technical Engineers and Agricultural Experts of Aragon when it was awarded the 2021 Distinction of Honor. The AAA was also present at the European Researchers' Night in September 2022. This is evidence of the initiative making waves within the scientific community and that other researchers have recognized the AAA's benefit to society. The AAA has yet to publish results of their own initiative.

The AAA awards are an incentive for agrifood stakeholders to innovate. Recipients of prizes, and others who have put to make improvements but had fallen short of an AAA Award, have innovated new processes or products that will benefit the agrifood industry and reduce food waste. The results of these industry improvements will have a measurable effect on reducing food waste that can be attributed to the structure provided by the AAA. The AAA itself does not, as of yet, have published results of their own. The awards have been distributed since 2014. Patterns may soon emerge regarding the innovations that are most worthy of AAA awards. The effect on these individual practices on food waste reduction and economic improvement are measurable and are attributable to the success of the AAA as well.

This practice incentivizes the reduction of food waste, it generates recognition for food production and distribution stakeholders and their invaluable role to society and attracts investment to the agrifood sector. The AAA has aligned organizations and discordant factors of the food supply chain toward a common goal of food waste reduction with a simple social incentive.

Governments or interest groups that seek to promote the importance of their rural food producers, increase economic vitality, or reduce food waste should look to the AAA as an example.

### **Potential for learning and replication**

The basic principles of the AAA can be replicated anywhere. Across the developed world, consumers are disconnected from their food sources. Programs such as the AAA Awards attempt to remedy that disconnect by putting food production stakeholders in the spotlight and drawing attention to their achievements. Unifying agrifood actors in this way is a simple concept and one that can be easily repeated in other parts of the world because it requires minimal startup capital and a commitment to reducing food waste is an easy one for organizations and individuals to make.

After the awards have been distributed for some time, patterns will begin to emerge about what kinds of changes are being made. These changes can be studied and replicated in similar environments. In time, an economic incentive may be attached to the awards as well. Though there is no mention of that in the good practice report, it would be an opportunity to explore if the practice were to be replicated.

The necessary factors for replication are:

- an organization to review and award best practices;
- a strategy for marketing the initiative and getting the word out to agrifood stakeholders and consumers;
- a venue for the awards to be distributed.

The AAA highlights the value of recognizing the efforts of rural food producers. In doing so, it has created opportunities for those producers and other stakeholders to reduce food waste, save resources, and inspire others to do the same. By giving recognition to these stakeholders, the AAA attracts private investment to the agrifood sector, which will further increase the waste reduction efforts that they put forth.

**Further information**

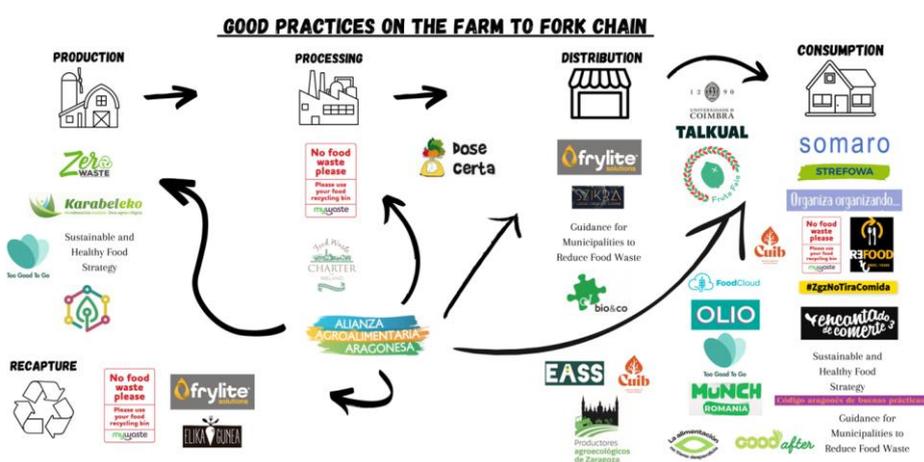
<https://alianzaagroalimentariaaragonesa.com>

## 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 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 and beyond 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 presented in Table 3, 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.

## **Annex 1: Set of good practices in summary version**

These good practices summarized in Annex 1 follow the same categorization utilized for the practices that were described in depth as central part of this report. They are presented in a summary version because they were not deemed outstanding as the ones fully described.

## Government-let good practices

### The Food Waste Charter



Geographic scope: Nation-wide, Ireland, based on international practice

#### Description

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.

The resources used to implement the practice are related to at least the following:

- Management
- Sectoral studies and demonstration of good practice
- Research (data, technology, market development)
- International collaboration (EU Food Losses and Waste Platform, REFRESH and FUSIONS projects)
- Resources database building and best practices.

The Food Charter has been implemented in other countries, such as Australia, Canada and United States. The Irish program's resource database shows evidence of savings and efficiency achieved. The database is itself a practice worth replicating.

### **Potential for learning and replication**

The Food Charter is a good practice for adopting a fact-based approach to convince the commercial food sector to acquire food waste prevention practices. The Program assembled a database of resources, which can be replicated for engaging stakeholders and preventing waste.

It is also noteworthy for the inclusion of food waste in the broader policymaking regarding waste prevention and circular economy, as it has been in relation to the National Waste Prevention Program, other national programs, such as the Local Authority Prevention Network, the Green Healthcare Programme and the Stop Food Waste Ireland, and European and International initiatives.

### **Further information**

<https://foodwastecharter.ie>

<https://foodwastecharter.ie/wp-content/uploads/2019/07/CTC-Research-Report-EPA-282.pdf>

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



Geographical scope: Spain, Aragón

### Description

This good practice refers to the elaboration of a code of good practice in Aragón 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.

- Establish partnerships between public administrations, the private sector and civil society
- Work in line with SDG 12
- Facilitating partnerships between the different actors in the food chain
- Help other entities to fight against food waste
- Introduce actions and initiatives to fight against food waste
- Work on communication, awareness raising and training for consumers, companies and administrations.

### Potential for learning and replication

This initiative has a great learning and transfer potential because it fosters the creation of good practices and didactic documents to guide in the efficient management of our food to avoid food waste. In addition, it aims to involve consumers, encouraging them to collaborate in reducing the waste that each of them generates on a personal level.

### Further information

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

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

UNIVERSIDADE D  
COIMBRA "Menos é Igual a Mais"

Geographical scope: Portugal, Coimbra

### Description

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. In parallel with the placement of scales in the canteens, a series of measures were taken to reduce waste in the cooking phase, such as cooking potatoes with their skins, using apple skin in fruit salad, using cabbage and lettuce stalks.

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. The principle that less equals more means that by using only the amount of food that we are going to consume (less waste), we are helping to reduce the environmental impact caused by the production of our food and, in this way, everyone benefits from this attitude.

### Potential for learning and replication

This good practice can be applied in several institutions (public and private) that serve meal, we know that there are already plans to apply it in more educational establishments across the country and that it could be even more important if applied in school canteens. basic, as it allows young students to be made aware of the problem of food waste from a younger age and to adopt behaviors that lead to the reduction of food waste earlier.

This action is part of the University of Coimbra's environmental sustainability plan, which includes a series of good practices to reduce the environmental impact resulting from the university's operation and to raise awareness of behavioral change. Any institution that may be interested in applying this good practice can contact the Social Action Services of the University of Coimbra, which have provided all the information about this action, which can also be consulted online in the Social Action Plan.

### Further information

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

<https://estudogeral.sib.uc.pt/handle/10316/99020>

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



Geographic scope: Spain, National

### Description

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.

The approach of the Network is eminently practical, with work aimed at sharing experiences and collaboratively developing innovative solutions for the problems suffered by these entities by:

- Providing access to land for farmers
- Protection of agricultural uses in the urban and peri-urban territory
- Professional incorporation of new and new farmers
- Provision of public and/or collective infrastructures for territorialized distribution
- Vocational training adapted to agroecological and food sovereignty schemes
- Enhancement of the uses of the territory and the agricultural professional activity itself
- Development of local food strategies

This Network includes technical staff and elected officials, research centers, farmers, food operators, and food social movements in each local, thus emphasizing collaboration to achieve sustainable local food systems. It functions as a platform and speaker for the needs and successes of the member entities. In addition, the Network has the Council of Social Organizations (COS), a body of the Network formed by social entities (NGOs, Associations, Foundations, etc.) that accompanies, supports and advises local governments and the Network as a whole. COS, as a consultative and monitoring body, supports RMAe's entities in the development of their agroecological policies, which aim at the organization and improvement of the social fabric of producers, the knowledge of tools for the protection of agricultural soil and the exchange of experiences on formulas for access to land and entrepreneurship.

The Network is participatory, and its members agree on and develop its objectives, action plans and its operating model, giving technical support, exchange of experiences among equals and training, knowledge creation and innovation in public policy, promoting exchange with other administrations,

networks and alliances and communication and awareness.

### **Potential for learning and replication**

Currently, the RMAe is composed by 26 member municipalities and is open to the incorporation of new members. Since its beginning, it has organized face-to-face and online spaces to facilitate exchange of information, experiences, technical resources and collective reflection on specific tools of local food policies with an agroecological approach. The objective is to contribute to the strengthening of individual and collective processes of its integrating entities are specified in the Exchange Routes, the Working Groups and the face-to-face meeting spaces. The topics of exchange are organized around three axes: Governance and Participation, Accompaniment to agroecological productive initiatives and Logistics and Distribution.

During 2021, the Exchange Spaces have received significant funding from the Ministry for the Ecological Transition and the Demographic Challenge (MITERD in Spanish) for dissemination and communication on agroecology and sustainable food systems, research-action on the sustainable use of natural resources, agroecology and city-country approach.

### **Further information**

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

## Business-led good practices

### Happy to Eat It (Encantado de Comerte)



Geographical scope: Spain, Zaragoza, Madrid, Logroño, Santiago de Compostela and Vitoria

#### Description

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 operation is very simple. As the creators of the app themselves indicate on their website, all you must do is choose "your favorite batch through the app and pick it up at the shop". If you have a Shop or Commerce, it is possible to fill out a form: <https://encantadodecomerte.es/alta-de-comercio/> and they will contact you shortly so that you can become part of the community as a business. If you are a user, instead, it is just necessary to download the APP Encantado de Comerte. 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.

#### Potential for learning and replication

In a simple and super flexible way, they publish in their app any product that is still in good condition for consumption: food prepared daily that no one has ordered, packaged products with a short expiration date or stock that has not met aesthetic standards (believe it or not, there are). Whatever the reason, the initiative brings benefits to each of the parties.

There are already 220 businesses offering through Encantado de Comerte and 40,000 people using it between Zaragoza, Madrid, Logroño, Santiago de Compostela and Vitoria.

#### Further information

<https://encantadodecomerte.es>

## GoodAfter Online Supermarket



Geographical scope: Portugal, Porto

### Description

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.

GoodAfter.com is an online supermarket that, 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%). In addition to transferring to the consumer the possibility of purchasing quality products and high savings, 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.

### Potential for learning and replication

It is a business model that can be replicated in other countries, with advantages in terms of environmental impacts and cost savings for consumers. For its applicability, as already mentioned, it will be necessary to have a place for the collection and storage of products, establish a good network of contacts with potential suppliers and have a good online sales strategy, capable of making it possible to sell products.

### Further information

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

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

## OLIO APP



Geographical scope: Nation-wide, Ireland, based on international practice.

### Description

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 neighbors 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.

### Potential for learning and replication

The OLIO App is user-friendly and already used in 62 countries all over the world. Users can just download it from the digital stores on their smartphones. These premises make it an easily transferrable good practice.

### Further information

<https://olioex.com/>

## Talkual: Eliminating food waste by consuming visually defective fruits



Geographic scope: Spain, Bellpuig

### Description

Talkual focuses on creating boxes with a selection of fruit and vegetables that have visual defects but retain all the flavor 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.

Talkual was born precisely with the idea of exclusively marketing this type of products through a subscription service. This service consists of sending a box with different fruits and vegetables that have visual defects. Consumers do not know exactly what they are going to receive, apart from fruit and vegetables produced by local farmers and with high quality standards that do not consider the aesthetic factor. To achieve this objective, the company has created a network of local producers located in Lleida, which sets aside part of the production for this type of subscription, so that this surplus (which is not usually bought) reaches consumers through the subscription service set up by Talkual. The entire subscription process is carried out online and the delivery is done through its own fleet (in the case of distant deliveries, through other courier companies). This also serves to achieve a commitment to reducing the use of plastics in all the products they ship, as only one biodegradable cardboard box is sent containing all the fresh produce. 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.

### Potential for learning and replication

A project like this, which only involves the creation of a hub to centralize the arrival of products with visual waste from local farmers, is relatively easy to transfer to other regions where there is local agriculture. In fact, Talkual's founders themselves are already developing a project to take this same business idea to other markets such as Italy or France. Thanks to the network of contacts, they have built up and the expertise they have gained in implementing the project in Spain, they hope that this will happen in the

next few years. The fundamental steps to do this would be to study how many of the local producers have a surplus of products that they cannot market because of their visual imperfections and to make sure they have a large enough variety of products. once this is done, the most important thing would be to make a good marketing campaign to publicize the project and get new subscriptions.

**Further information**

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

## Third Sector-led Good Practices

**Bio&Co**



Geographic scope: Romania, Ciocanari

### Description

Bio&Co is a food solidarity program, which prevents food waste that ends up in landfill without a recovery solution, but also poverty and exclusion. 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.

The mission of the Ateliere Fără Frontiere (Workshops without borders) association is, to:

- fight against exclusion, marginalization and discrimination, for the social and professional integration of the most disadvantaged
- fight against waste and pollution, for responsible waste management and environmental protection
- promote solidarity and responsibility for sustainable development.

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. The organization needed both significant human and financial resources to set up the project, but the specified amounts especially in the case of the financial part is not known. About the technical and material part they needed to implement the system of an ongoing farming model, thus every aspect of that had to be taken into consideration.

### Potential for learning and replication

The project itself is a very good example of mixing different ideas and goals to achieve some social progress, which is sustainable and meaningful. The communities must be challenged in very different

aspects of their lives, and they must see a big picture, if lasting progress is the aim hoped to achieve. Thinking about the globe/Earth, about the climate change is essential for a brighter future, but the real changes are coming from the level of ordinary people who need to think about each other and who genuinely want to integrate those in the social peripherals and want to act with the power of common force. Operating in the agriculture is essential for many political and economic reasons, but the work itself symbolizes an initiative to act for change. Act in order to reduce food waste, but also to empower those living for almost their almost lifetime in a lack of sense of belonging. A community which has a common reason can initialize real change.

### **Further information**

<https://bio-co.ro>

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

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

#ZgzNoTiraComida

Geographic scope: Spain, Zaragoza

### Description

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, which can be checked on the FeedBackGlobal<sup>44</sup> 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.

Almost 300 people volunteered for the #ZgzNoTiraComida. In addition, a day was prepared with attractive complementary activities, awareness activities and a good communication campaign was carried out. A crowdfunding was carried out, unfortunately, it was not successful and did not manage to mobilize enough resources, so no funding was received this way. This event is financed by the City Council of Zaragoza, but most of the participants are volunteers. The concrete allocation is not public, as it is part of the budget allocated to the Aragonese Federation of Solidarity.

### Potential for learning and replication

This event could be replicated in other countries through the association of hospitality groups and particularly those that already have actions against food waste, such as the listed on platforms as Too Good to Go). As in this case, actions can be implemented in specific festivities that serve to give visibility to the problem of food waste and use food leftovers that would be thrown away to make free food for the population. It would be necessary for an association to have sufficient convening power to attract people to work on a voluntary basis, and this should be one of the main points to be considered. The working protocol should start with the commitment of the entities that provide the raw material and the volunteers in charge of processing it, and once there is a feasible proposal, organize with the local authorities the location and timing of the event to promote it.

### Further information

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

<sup>44</sup> <https://feedbackglobal.org/campaigns/feeding-the-5000/>

## SOMARO Social Shop

# somaro

Geographic scope: Romania, Bucharest

### Description

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 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.

### Potential for learning and replication

When we think about food waste we often think about supermarkets and the fact that a lot of products are thrown away/wasted daily, while they could be donated to families in need. This concept offers a solution for the huge amount of food, and food-related product which ends up in the trash just because it does not fit some regulation, while it could save lives. Combining two very important aspects from a social point of view ends up creating something extraordinary. As it could be seen in the above description of SOMARO's activities, they are working together in partnership with local social services and product providers from their area for achieving their goals of helping those in need. Should anyone like to follow their example, the first steps to take would be, in our opinion, to build a network which has the same goals of helping the needy by doing good to the environment as well. Making good connections with local authorities who know about the local situations are also a must, alongside setting the criteria which can prevent the abuse of these well-intentioned actions.

### Further information

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

## Agroecological Market of Zaragoza (Muestra Local Agroecológica de Zaragoza)



Geographic scope: Spain, Zaragoza

### Description

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 (2020<sup>45</sup>).

It has been growing in the number of local agroecological producers, in the number of consumers and in market stalls and more sales areas with extended opening hours.

### Potential for learning and replication

Most cities and towns in Spain have own local agro-producers, but with the condition of ECO is not so easy to find. This GP can easily be transferred if the minimum requirements exist, which is a number of local producers of agroecological quality products, who can organize themselves to supply a demand of customers for ecological products and area to develop these market spaces in areas close to the citizen.

### Further information

<https://muestraagroecologica.es/>

<sup>45</sup> 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.

## **Annex 2: Summary of the Good Practices**





Good Practice	Short Description
<p><b>Organize, by organizing less food waste we generate</b> Spain, Aragon Government of Aragon <a href="https://www.aragon.es/">https://www.aragon.es/</a></p>	<p>It is a campaign which organizes information sessions for citizens on consumption in diverse supermarkets and agri-food markets in different Aragonese municipalities. Informative sessions are held to reduce food waste through meal planning, house storage systems, the differences between date of expiration and preferential consumption and the preparation of recipes with leftovers.</p>
<p><b>The Sustainable and Healthy Food Strategy</b> Spain, Zaragoza Ayuntamiento de Zaragoza <a href="https://www.zaragoza.es/sede/portal/medioambiente/alimentacion/">https://www.zaragoza.es/sede/portal/medioambiente/alimentacion/</a></p>	<p>The Sustainable and Healthy Food Strategy is a policy tool utilized by the Zaragoza City after taking part in the Milan Pact. This commitment envisages specific measures and actions which aim to establish a more sustainable food system, promote healthy eating habits promote local commerce, move towards a reduction of food waste throughout the food chain.</p>
<p><b>Guidance for municipalities to reduce food waste within local food systems</b> International level Zero Waste Europe and Slow Food <a href="https://www.slowfood.com">https://www.slowfood.com</a></p>	<p>This guide was developed by Slow Food and Zero Waste Europe and aims to provide municipalities with guidelines for reducing waste in local food systems and yielding positive impacts both on the local economy and health. Furthermore, it makes food systems more resilient and fairer.</p>
<p><b>Multi-language STREFOWA tool</b> Central Europe University of Natural Resources of Life Sciences, (lead partner) <a href="http://www.reducefoodwaste.eu">www.reducefoodwaste.eu</a></p>	<p>STREFOWA is a multi-language tool created to house and disseminate STREFOWA Project's food waste-reducing strategies. This tool is a friendly information platform, facilitating inspiration and the expansion of proven practices to new communities, and accelerating the reduction of food waste.</p>
<p><b>The Food Waste Recycling Project</b> Ireland, Trim, Ballaghaderreen, Borrisoleigh and Buncrana Cré (Composting &amp; Anaerobic Digestion Association of Ireland) <a href="https://www.mywaste.ie">https://www.mywaste.ie</a></p>	<p>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 implemented three trials to test the effectiveness, cost and logistics to providing householders with communication and practical tools to increase participation in separating food waste.</p>
<p><b>Frylite</b> Ireland and Northern Ireland Frylite <a href="https://frylite.com">https://frylite.com</a></p>	<p>Frylite is a private company which provides cooking oil management system and food waste collection and recycling into renewable resources, such as electricity, heat, fuel and organic fertilizer.</p>
<p><b>SZIKRA Zero Waste Restaurant</b> Romania, Covasna County</p>	<p>SZIKRA is a restaurant which maintains a zero-waste approach in a small town despite the difficulties associated with the economic activity. It prevents food waste and implements new practices also thanks to the networking with local</p>

Good Practice	Short Description
<a href="https://www.facebook.com/SZIKRArestaurant">https://www.facebook.com/SZIKRArestaurant</a>	suppliers.
<b>Food is not Wasted</b> Spain, national level AECOC – Spanish Business Association for Manufacturers and Distributors <a href="https://www.alimentacionsindesperdicio.com">https://www.alimentacionsindesperdicio.com</a>	La Alimentación no Tiene Desperdicio is a collaborative initiative which congregates business associations of food industry, distribution and operators. It promotes prevention and efficiency practices along the entire food chain, leading to a reduction of waste, the maximization of the use of the surplus produced (redistribution, reuse and recycling) and the increase in people’s awareness about the problem and the importance of food waste prevention practices and technologies.
<b>MUNCH - Close to Date Food Sale App</b> Hungary, regional level <a href="https://www.facebook.com/MunchRomania/">https://www.facebook.com/MunchRomania/</a>	MUNCH is a mobile app which allows users to purchase quality food, but yet complying with the effort to reduce food waste. By buying “munches” the buyer eating quality food for a reduced price while also preventing food waste. The practice analyzed in the report steams from the operation established in Romania, being the practice originated in Hungary.
<b>Too Good to Go</b> International level Too Good to Go (S.L.U.) <a href="https://toogoodtogo.es/">https://toogoodtogo.es/</a>	Too Good to Go is a mobile application which allows retailers, restaurants, cafeterias and so much more to upload to the marketplace magic boxes containing close-to-deadline food or which is no longer so fresh, hence preventing it from being wasted.
<b>CUIB - The Urban Center for Good Initiatives</b> Romania, Harghita county Mai Bine Association <a href="https://incuib.ro">https://incuib.ro</a>	CUIB is a shared space which offers a zero-waste shop, a conference room for socio-educational events and a nearly zero waste bistro combined. The menu proposed follows sustainability guidelines and complies with the Slow Food Movement principles which promotes vegetarian, locally sourced, and zero-waste food, hence both ensuring a low environmental footprint and significant social effects, food being the most important dimension of sustainable living.
<b>FoodCloud</b> Ireland, Dublin FoodCloud <a href="https://food.cloud">https://food.cloud</a>	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 using a mobile app and the establishment of a network among surplus food suppliers and charity organizations which help people in need by providing them with nutritious food they would hardly get access to otherwise.
<b>Ugly Fruit</b> Portugal, national level Fruta Feia CRL Web <a href="https://frutafeia.pt/en">https://frutafeia.pt/en</a>	Fruta Feia is a cooperative which strives to prevent aesthetically unattractive food from being wasted by collecting it from regional farmers and using it to wrap up tasty boxes containing fruit and vegetables which are delivered on a weekly basis to customers to their usual delivery point. This business model allows both to prevent food waste and to offer economic options for consumers to access nutritious food.
<b>Right-size Menu</b> Portugal, national level Lipor & Associação Portuguesa de Nutricionistas <a href="https://ec.europa.eu/environment/pdf/waste/prevention/MenuDoseCerta_Factsheet.pdf">https://ec.europa.eu/environment/pdf/waste/prevention/MenuDoseCerta_Factsheet.pdf</a>	The Menu Dose Certa project aims to reduce food waste by 48.5 kilos per year per restaurant client by 2011 and attempts to change attitudes and behaviors by raising awareness on the problem of food waste. The goal is to support restaurants in creating menus that generate notably less food waste. The project is a partnership between LIPOR, the Association of Portuguese Nutritionists, the local authorities of Espinho and local restaurants.

Good Practice	Short Description
<p><b>Elika Gunea Artxara: Multidisciplinary space for sale of indigenous products</b> Spain, Azpeitia Artxara Cooperative <a href="http://elikagunea.eus/">http://elikagunea.eus/</a></p>	<p>Elika Gunea is a cooperative project that aims to strengthen the primary sector by promoting the foods of the Basque Country and transforming the consumption model. It focuses on food sovereignty, cooperation, Basque cuisine, equality and zero waste philosophy. It consists of an education area, a tasting area, a kitchen, a Basque Label butcher shop and a grocery store.</p>
<p><b>Refood</b> Portugal, International level <a href="https://www.facebook.com/refoodviana/">https://www.facebook.com/refoodviana/</a></p>	<p>The mission of the Re-food project is to reduce hunger in the urban environment by directing (surplus) meals to people who are hungry by benefitting from volunteers' help.</p>
<p><b>Association Agroecological Farm Karabeleko</b> Spain, Hernani, Basque Country <a href="https://www.karabeleko.org/">https://www.karabeleko.org/</a></p>	<p>Karabeleko is a non-profit experimental agroecological farming and is qualified as a Special Employment Center for people suffering from mental health issues. It runs the Lurretik Lurrera composting program, supported by the Provincial Council of Gipuzkoa and Diameter 200, an associated restaurant that uses Karabeleko produce. Food waste from the restaurant and Karabeleko's Telleri Zahar farmhouse are turned into compost to fertilize more organically grown produce.</p>
<p><b>Aragonese Agrifood Alliance</b> Spain, Zaragoza, Aragon <a href="https://alianzaagroalimentariaaragonesa.com/">https://alianzaagroalimentariaaragonesa.com/</a></p>	<p>The AAA is a cooperation initiative, formed by 11 Aragonese organizations, which aims to develop a joint communication strategy, as an award competition, to influence public opinion on the importance of agrifood and the rural environment and the reduction of food waste.</p>
<p><b>The Food Waste Charter</b> Ireland, Nation-wide Environmental Protection Agency <a href="https://foodwastecharter.ie">https://foodwastecharter.ie</a></p>	<p>This initiative supports hotels, full-service restaurants, supermarkets, quick-service restaurants, and workplace canteens to reduce food waste by promoting a collective industry commitment focusing on the entire supply chain. The Environmental Protection Agency 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.</p>
<p><b>Aragonese Code of Good Practices Against Food Waste</b> Spain, Zaragoza, Aragon ECODES <a href="https://ecodes.org/documentos-ecodes/category/141-desperdicio-alimentario">https://ecodes.org/documentos-ecodes/category/141-desperdicio-alimentario</a></p>	<p>This code of good practices has been promoted by the 12 main organizations that bring together different sectors (civil society, business and public administration) with the aim to showcase actions and initiatives to fight against food waste. The work focus on communication, awareness raising and training for consumers, companies and public administrations.</p>
<p><b>Less is equal to more</b> Portugal, Coimbra Social Action Services of the University of Coimbra <a href="https://www.uc.pt/sustentabilidade/articulo?key=a-e8841e5df5">https://www.uc.pt/sustentabilidade/articulo?key=a-e8841e5df5</a></p>	<p>The aim of this practice is to sensitize students to the reduction of food waste, through the creation of an awareness-raising mechanism to avoid leftovers of meals at student canteens at the University of Coimbra. It consists of the placement of scales in the canteens and a series of measures to reduce waste in the cooking phase.</p>

Good Practice	Short Description
<p><b>The Network of Municipalities for Agroecology</b> Spain, national level <a href="https://www.municipiosagroeco.red/">https://www.municipiosagroeco.red/</a></p>	<p>It is an association found in 2017, formed by local entities of the Spanish State, with the aim to help public 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.</p>
<p><b>Agroecological Market of Zaragoza</b> Spain, Zaragoza <a href="https://muestraagroecologica.es/">https://muestraagroecologica.es/</a></p>	<p>This is 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.</p>
<p><b>Encantado de Comerte (Happy to Eat It)</b> Spain, Madrid Encantado de Comerte <a href="https://encantadodecomerte.es/">https://encantadodecomerte.es/</a></p>	<p>The mobile app “Encantado de Comerte” sells 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, at discounted prices. Through partnership with charity associations, such as the Red Cross Spain, these cheaper foods can support vulnerable people.</p>
<p><b>Good After Online Supermarket</b> Porto, Portugal Good After <a href="https://goodafter.com/">https://goodafter.com/</a></p>	<p>GoodAfter.com is an online supermarket that offers food safe and legally marketable products that are reaching or have already reached their preferential consumption date. Because they are no longer of their quality guaranteed by the brand, can be sold at substantially lower prices (savings of up to 70%).</p>
<p><b>OLIO APP</b> London, United Kingdom Olio <a href="https://olioex.com/">https://olioex.com/</a></p>	<p>OLIO App departs from the assumption that within communities there could be several opportunities to prevent food (and non-food) waste and aims to inform on opportunities to give them away. As a mobile application, paid by subscription fee, it allows 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).</p>
<p><b>Talkual</b> Spain, Bellpuig, Lleida Imperfectus box, S.L. / (Talkual) <a href="https://www.talkualfoods.com/">https://www.talkualfoods.com/</a></p>	<p>Talkual focuses on creating boxes with a selection of fruit and vegetables that have visual defects but retain all the flavor and quality of origin and sells them to consumers through an online subscription service. To achieve this objective, the company has created a network of local producers located in Lleida, which sets aside part of the production for this type of subscription, so that this surplus (which is not usually bought) reaches consumers.</p>
<p><b>Bio&amp;Co</b> Romania, Ciocanari, Dambovita county Ateliere Fără Frontiere (Workshops without borders) <a href="https://bio-co.ro">https://bio-co.ro</a></p>	<p>Bio&amp;Co is a food solidarity program, which prevents food waste while fighting poverty and exclusion. Working with disadvantaged people, the enterprise cultivates organic produce that are sold as food baskets at affordable prices through the online platform Bio&amp;Co.</p>

Good Practice	Short Description
<p><b>Zaragoza doesn't Waste Food</b>  Spain, Zaragoza, Aragón  Federación Aragonesa de Solidaridad  <a href="https://zgznotracomida.aragonsolidario.org">https://zgznotracomida.aragonsolidario.org</a></p>	<p>This is a campaign associated to the Public Feasts practice implemented by FeedBack, a London-based charity, to showcase solutions to food waste through public events. It brings together a coalition of organizations that offer the solutions to food waste, raising the issue up the political agenda and inspiring new local initiatives. In Zaragoza, the event involves the Aragonese Alliance Against Poverty, the Aragonese Federation of Solidarity, the Association Feeding Zaragoza and the City of Zaragoza.</p>
<p><b>SOMARO</b>  Romania, Bucharest, Ilfov county  <a href="http://somaro.org/">http://somaro.org/</a></p>	<p>SOMARO is a private, self-governing, non-profit, and politically independent Romanian association. It collects products, such as food and household essentials, clothing, shoes, etc. from various companies and sells them at symbolic, highly discounted prices to low-income customers. It has among its partners the SOMA Austria, the original practice SOMARO refers to.</p>

## Glossary

In this section the basic concepts that support the base for the Zero Waste project are defined to facilitate interpretation of specific terms.

**Food:** any substance –whether processed, semi-processed or raw – that is intended for human consumption. It includes drink, and any substance that has been used in the manufacture, preparation or treatment of food.

**Food chain:** Is the complete process of food production and it is divided into four parts (Agricultural production, processing and manufacturing, distribution and consumer)

**Food loss** refers to food that spills, spoils, incurs an abnormal reduction in quality or otherwise gets lost before it reaches the consumer. It typically occurs at the production, storage, processing and distribution stages of the food value chain.

**Food waste** refers to food that is of good quality and fit for human consumption but that is not consumed because it is discarded before or after it spoils. It occurs most at the consumer stage in households.

**Food losses:** Reduction of the amount of food originally destined to human consumption through the stages of the food chain.

**Habits:** context-behavior associations in memory that develop as people repeatedly experience rewards for a given action in a given context. Habitual behavior is cued directly by context and does not require supporting goals and conscious intentions.

**Motivation** (to prevent food waste): A person's willingness to perform actions that reduce the likelihood or amount of food waste being generated. Relevant aspects of motivation are attitude, awareness, and social norms

**Sustainable Development Goals:** are a collection of 17 interlinked global goals adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. They recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability

**Food information** means information concerning a food and made available to the final consumer by means of a label, other accompanying material, or any other means including modern technology tools or verbal communication.

**Food redistribution** is a process whereby surplus food that might otherwise be wasted is recovered, collected and provided to people, in particular to those in need.

**Labelling** means any words, particulars, trademarks, brand name, pictorial matter or symbol relating to a food and placed on any packaging, document, notice, label, ring or collar accompanying or referring to such food.

**Nutrient reference values (NRVs)** are a set of values used in nutrition labelling derived from authoritative recommendations for daily nutrient intake. These recommendations are based on best available scientific knowledge of the daily amount of energy or nutrient needed for good health.

**Open life** is the period of time during which a food will remain safe and/or of a suitable quality for consumption after the primary product packaging has been opened and it is stored as instructed.

**Ready-to-eat food (RTE)** means food intended by the producer or the manufacturer for direct human consumption without the need for cooking or other processing effective to eliminate or reduce to an acceptable level microorganisms of concern.

**Shelf-life** is the period in which a food remains safe to consume and/or retains its quality in reasonable foreseeable distribution, storage and usage conditions.

**Traceability** means the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution.

**Circular economy**: an economic proposal to close the cycles of production and consumption as much as possible, contributing to reduce consumption and emissions and to get a sustainable economy.

**Sustainable food chain**: food supply chain organization so as all its stages avoid the depletion of natural resources and the generation of emissions and waste in order to maintain an ecological balance in all the steps of the chain.

**Food processing**: Transformation of agricultural products into food, or of one form of food into other forms.

**“Best before”**: refers to quality and means that the food will be at its best before the date given. After this date, although it might not be at its best, it will still be safe to eat.

**“Use by”**: refers to safety and means that you must not eat food past the ‘use by’ date.