CHORIZO PROJECT

# Deliverable 4.1

**ACTOR SPECIFIC GUIDANCE**

# NOTE ON CHORIZO DELIVERABLE 4.1

As stated in the project Grant Agreement, the purpose of Deliverable 4.1 "Actor specific guidance" is to "develop actor- and context specific guidance on how to work to change social norms to successfully support FLW reduction", including "a specific report focusing towards Local Governments".

In order to achieve this goal and ensure maximum use and therefore impact of the guidance, **it was decided to produce several guidance documents which are targetted at different actors**. In the next stages of the CHORIZO project, the guidance will be disseminated to relevant actors in an accessible format, and used as input for the capacity building programme (T4.4 Capacity building and help desk).

**In this deliverable for submission, all guidance documents are included in their full form, one after another.** The table below sets out the different guidance documents, their target readers and where you can find them in this submitted deliverable PDF (please note that the page numbers in each section will be different as they correspond to that guidance rather than the combined version).

| Guidance document | Target actors | Page in this document |
|---|---|---|
| Cities | Those working in city-level FLW planning and implementation, e.g. local governments, municipalities, | 7 |
| Food redistribution and donation | Those working in the field of food redistribution, donation and in particular, food banks | 37 |
| Schools | Those working in schools and with the associated communities (e.g. headteachers, class teachers, staff) | 62 |
| Food services | Those working in food services, in particular restaurants and catering services | 86 |
| All sectors | This document brings together the key findings from all of the specific sector guidance documents (including additional input on retail), aimed at those wishing to have a broad overview (e.g. from an academic, multi-sector or policy perspective) | 110 |

D4.1

# D4.1 Actor specific guidance

| | | | |
|---|---|---|---|
| **Full title project** | Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste | | |
| **Call** | HORIZON-CL6-2021-FARM2FORK-01 | | |
| **Topic** | HORIZON-CL6-2021-FARM2FORK-01-13 | | |
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# Deliverable 4.1

## ACTOR SPECIFIC GUIDANCE

## CITIES

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D4.1

# D4.1 Actor specific guidance - Cities

| | | | |
|---|---|---|---|
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| **Call** | HORIZON-CL6-2021-FARM2FORK-01 | | |
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## Glossary of terms and acronyms

| Acronym/Term | Description |
|---|---|
| **FLW** | Zero Food Loss & Waste |
| **HoReCa** | Hotels, restaurants and caterers (including institutional catering) |
| **MOA** | Motivation, Opportunity, Ability (framework) |
| **SN** | Social norm(s) |

*Table 1: Glossary of terms and acronyms*

# 1. About this guidance: how to work with social norms to reduce FLW in cities

## 1.1. Background to the guidance

CHORIZO (Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste) is a project co-funded by the Horizon Europe programme that aims to improve the understanding of the links between social norms, consumer behaviours, decisions of economic actors and food loss and waste (FLW) generation, and to use this knowledge to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. The project´s main goal is to address existing research gaps and enable actors to use its outcomes to deliver and advance innovations helping a range of actors to engage more effectively in food waste prevention and reduction activities.

**What are social norms?**

In the CHORIZO project, we understand social norms as the unwritten rules and expectations which guide people's behaviour within a society or group. In the context of food waste and loss, social norms influence individual attitudes, beliefs, and behaviours related to food consumption, preservation and disposal.

*Figure 1: What are social norms? Description from CHORIZO Deliverable 3.1 "Conceptual framework for behavioural change understanding" (2023), p15*

This document is part of a series of actor-, context- and gender-specific guidance resources which have been developed from the research findings in the project. It is aimed at supporting actors in different contexts to be equipped with the knowledge to work with social norms to reduce food loss and waste generated by related target groups. Cities and urban planning have been found to be an important lever of change and as a result in this document we focus on the part of the findings from the CHORIZO project's research activities that can be used here. We have combined our findings with wider knowledge and the Academy of Change approach[1] to produce this guidance aimed at actors in European cities and municipalities.

## 1.2. The purpose of this guide and how to read it

Would you like to reduce food loss and waste (FLW) in your city? Do you have the motivation and the opportunities to do so? Do you already have plans for activities in your city that focus on sustainable food practices? Then you are in the right place! This document aims to assist you in your urban food strategy and planning efforts and to increase your capability to take action effectively in cities, by providing you with knowledge on *social norms* in your context and a how to include this knowledge in a step-by step guide to implement a FW reduction intervention. Changing social norms, as you will read also further in this document, is an impactful tool in reducing food waste. Using social norms in your planning and implementation of interventions makes them even more effective in reducing FLW.

[1] The Academy of Change (AoC) (http://aochange.org/) is a capacity building programme first created by the Collaborating Centre on Sustainable Consumption and Production (CSCP) and Behaviour Change (https://behaviourchange.org.uk/), initially funded by the KR Foundation, to support organisations to develop behaviour change interventions.

This guide will equip you with practical knowledge on how to work with **social norms** - unwritten rules which influence people's everyday behaviour - to reduce FLW, in a knowledge process illustrated in **figure 2**.

**How to read this document**


*Figure 2: How to read this document - illustration of the structure of the guidance document.*

**Section 2** of this guide equips you with background information to **learn** about social norms (**section 2.1**) and how they affect FLW in the many different ways that food is part of foodways in the city (**section 2.2**).

**Section 3** provides tangible examples of how social norms affect FLW in cities. Even better, you will learn how others have also designed interventions to change social norms and behaviour to save precious food. Then, you are ready to **identify** different kinds of social norms which are relevant to your context and start your own interventions!

**Section 4** is designed to support you to easily **plan, design, implement and evaluate** your own interventions to reduce FLW. The presented 8 step guide to reduce food waste includes insights into social norms. This includes **evaluating** your own interventions to understand the impact and improvement potentials to continue to tackle FLW with social norms

**Section 5** represents a resource library, sharing further insights on social norms and behaviour change approaches and interventions that might serve as an additional inspiration.

**Where should I start reading?**

- For those *new to how to conduct an intervention towards food waste reduction*, the whole document should be of high interest to you.
- For those *new to the concept of social norms* and how to use them in a FLW context, we also suggest following the guide from start to finish to understand how to enrich your current practice with new insights. (You might already work with 6-steps to implement your FW intervention, look out for the additional 2 steps we have added in **section 4**!)
- If you *already have experience in using social norms* in your context, but would like to hear more about the findings of the CHORIZO project in your field, we suggest to start with **sections 2.2 and 3**. Also check the two additional tips in the 8-step guide presented in **section 4**.

# 2. Social norms in the context of food systems

## 2.1. What are social norms?

Social norms are unwritten rules which influence people's everyday behaviour. They can do so in two ways.

On the one hand, people might behave a certain way because they see other people doing a certain thing. For instance, a child may not eat their vegetables in the school lunch break, because they see other children leaving their salad on the plate as well. This behaviour of copying what most people do in the same situation is called a descriptive social norm.

On the other hand, people might behave a certain way because they think that others expect them to act like this. For instance, a person might no longer be hungry but still finish their plate, since they think that otherwise they might be perceived as being rude. These people thereby react to what they think is a rule of what is acceptable - which is called an injunctive social norm.

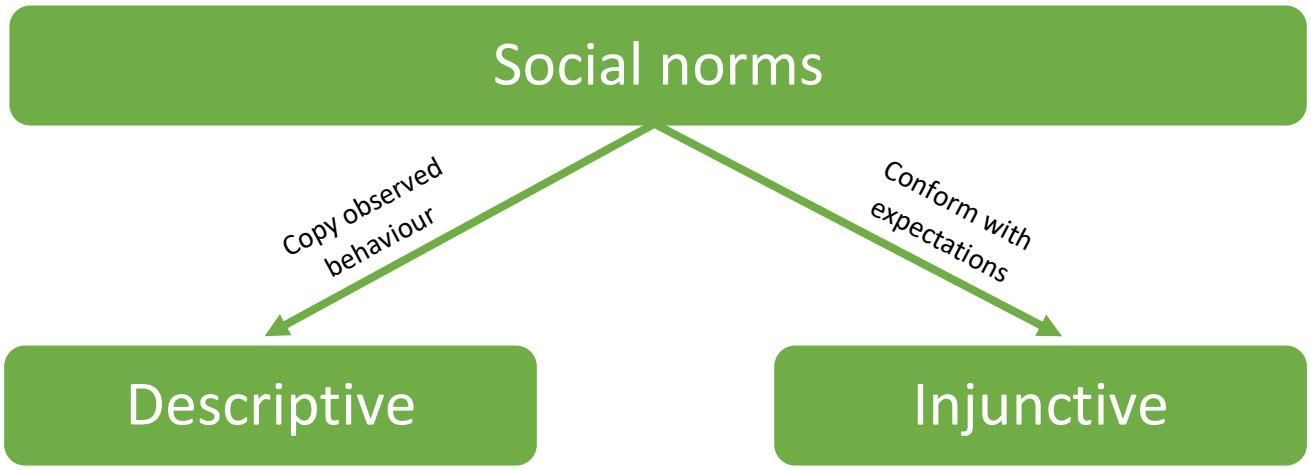


*Figure 3: Descriptive and injunctive social norms*

Norms can be static – based on a current situation – or dynamic – articulating a behavioural movement in one way or another.

Whichever type or combination - descriptive or injunctive, and static or dynamic - social norms can be seen as a powerful tool for change. The above examples - of a person eating more than they need to in order to finish their plate of food, and of a child not eating vegetables - show social norms that lead to more food waste. See **figure 4** for a range of different examples of social norms.

Now imagine the possible impact by changing behaviours of several people towards creating social norms which favour less FLW. Learning about social norms can support you in developing different interventions to achieve a more desirable behaviour.

This guidance will help you to design your own interventions to drive change using social norms.

**Examples of different types of social norms**

To illustrate different types of social forms, here are some examples of social norms communication about how to deal with leftovers in a household context:

- "75% of households reuse leftovers" is a **descriptive norm**.

- "Reusing leftovers for other dishes is regarded as good housekeeping" is an **injunctive norm**.
- "Most people reuse leftovers" is an example of **static framing**.
- "More people reuse leftovers every year" is an example of **dynamic framing**.

*Figure 4: Examples of different types of social norms*

**How do social norms fit within human behaviour overall?**

Besides social norms, there are many other aspects influencing human behaviour. To better understand the degree to which social norms influence our behaviour, the CHORIZO Project has combined an agent-based decision model (HUMAT) with a behavioural psychological model (MOA). The MOA framework, first designed for marketing purposes (Rothschild, 1999), was adapted to analyse Motivation, Opportunity and Ability (MOA) factors affecting food waste behaviour for the EU Refresh project[2]. The HUMAT model is used for modelling actor decision making and so is not referred to in this document. If you would like to learn more about the model and how it is used in the CHORIZO research, this can be found in the project's Conceptual framework for behavioural change understanding[3].

The MOA framework is used throughout the CHORIZO project and in this document to understand on the one hand what hinders behaviour change, and on the other hand how interventions to reduce FLW can overcome these barriers.

In the MOA framework, aspects of motivation, opportunity and ability combine to determine if and how a person behaves in any given situation. In line with behavioural change scientists, we believe, that behavioural change is based on an interplay of these three factors. In this model, social norms come under the motivations category, meaning that, combined with attitudes and awareness, the level of motivation of an individual will be developed. For example, in the case of using up leftover food, if someone is aware that leftovers can safely be eaten (awareness), believe that they should reuse leftovers in order to save food (attitude), and see others cooking with leftovers (social norm), overall they are likely to have a strong *motivation* component towards their behaviour. In order for the person to actually behave in this way, however, there will also need to be the *opportunity* for them to do so (e.g. time to prepare the leftovers, the right cooking/storage equipment) and the *ability* to enact the behaviour (e.g. knowledge of a recipe to re-use the leftovers they have and the appropriate cooking skills to successfully prepare the meal). **Figure 5** sets out a visualization of the model and its components.

[2] https://www.eu-refresh.org/
[3] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

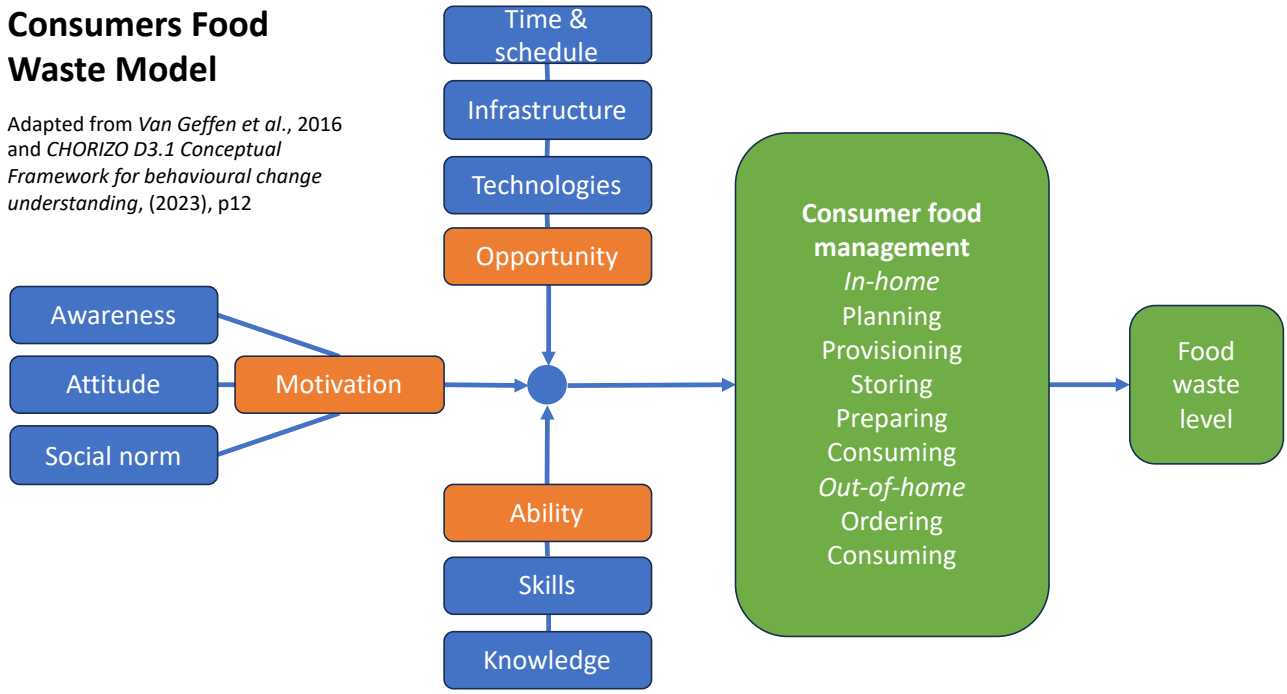


*Figure 5: Consumers Food Waste Model, illustrating the MOA framework (including social norms) in the context of food waste behaviours (source: see figure)*

Aspects of background, demographic or identity may affect the factors influencing behaviour of your target group members. In particular, gender may have an impact on the MOA. While CHORIZO research on FLW prevention actions did not find any existing interventions specifically designed to systematically incorporate the gender dimension (see Chapter 6 in Deliverable 1.2 *Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions* for further information), we know that social norms can be differently developed or perceived by individuals depending on their gender. For example, there may be social norms in which gender affects who is expected to conduct food shopping, meal planning and cooking in the household. Additionally, CHORIZO case study research has identified some differences between genders in terms of perceived social norms and behaviours around food loss and waste. Relevant findings on gender are further discussed in **section 2.2**.

Of course, human behaviour is not deterministic. The existence of social norms does not necessarily mean that we also behave to conform with these norms. While some norms are helpful, others can lead to unhelpful outcomes (leading to negative societal, environmental or for other impacts).

If you would like to learn more about the models used in the CHORIZO project research, we suggest reading the Conceptual framework for behavioural change understanding[4].

## 2.2. Why are social norms relevant to food loss and waste in cities?

Cities are key actors in creating a more sustainable food system under SDG 12.3 on food loss and waste, and European frameworks like urban food policy pacts[5] and Food 2030 and the EU Platform on Food Losses and Food Waste.

[4] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/
[5] See, for example, the Milan Urban Food Policy Pact https://www.milanurbanfoodpolicypact.org/

City governments have many institutional powers that can help reduce food waste, and they are involved in all stages of the food system. Roles include including planning, regulation, taxes, procurement, city-run food service facilities like school cafeterias, engagement, awareness- raising, and waste management. To reduce food waste, cities generally have the most power to act in waste management, engagement and procurement, and may face more constraints in regulation and legislation. City governments' efforts will interact with those of various food waste generators, including restaurants, schools, hospitals, manufacturers, and households.

Social norms can be powerful drivers of impact when thoughtfully incorporated into city initiative to reduce food waste. The point of this guide is not necessarily to urge cities to change the social norms that promote food waste, but rather to **equip city governments with knowledge of social norms as a tool in their toolbox.** If city governments understand the norms that lead people and businesses to waste or conserve food in a specific context, they can use that knowledge to design more effective interventions - and predict how people will respond to them. This guide provides a framework and examples of leveraging social norms to reduce food waste across cities' powers and roles.

Social norms can have positive and negative effects on food waste in cities. City governments can leverage helpful social norms and shift social norms that increase food waste.

**Helpful social norms**

Some social norms encourage people, institutions and businesses to waste less food. Identifying and leveraging these helpful social norms can unlock greater impact from cities' programs, initiatives and regulations.

For example, emphasising a norm that "leftovers are valuable" can encourage people to save leftover food, not discard it. Cities can design communication materials to celebrate these behaviours, such as "Our City Values Every Bite," reinforcing that careful food use is both a social expectation and something to be proud of.

**Unhelpful social norms**

Some social norms might unintentionally increase the amount of food that is wasted. By addressing these unhelpful social norms, cities can remove behavioural barriers to reducing food waste.

For example, a preference for perfect-looking fruits and vegetables might cause consumers to reject produce with slight blemishes or irregular shapes. City governments can use their procurement powers and visibility to lead by example to shift this norm, by using "ugly" produce in publicly run food service settings like a café in city hall, or to prepare food for large public events.

**What is the impact of reducing food waste in cities?**

Urban areas currently consume over 70% of the global food supply. Food waste happens all along the value chain, but in the EU, the largest share of food waste - 54% - is at the household level. Restaurants and food service (11%) and retail (8%) are also major sources. Commonly wasted items include fruits, vegetables, and bread.

In European cities, food waste typically ranges from 30-100 kg per person per year. For instance, annual food waste per person is 46 kg in Paris and 37 kg in the Flanders region, and London wastes nearly 2 million tonnes of food every year, with a value of over £2.5 billion.

*Figure 6: What is the impact of reducing food waste in cities?*

**Targeting with social norms**

Identifying social norms within certain groups allows cities to create tailored campaigns or programs that resonate with those groups, such as children or food service workers.

For example, among food service workers at public or private institutions, there may be a norm that "wasting food is part of the job," if food is commonly over-prepared or discarded at the end of shifts. Cities could address this by providing training on portion planning and facilitating food rescue partnerships. This builds a norm that reducing waste is a professional standard in the industry.

**Leveraging social norms can help cities during multiple stages of an initiative**

For instance, in the previous example about food service workers, being aware of the norm of "wasting food is part of the job" would allow cities to anticipate challenges they might face when they implement a regulation that limits or penalizes food waste. This would enable cities to proactively conduct training or set up partnerships, so that regulations will receive less pushback from affected stakeholders and cities can spend less resources and political capital enforcing them.

**Food Waste, Social Norms and Gender**

Women are responsible for a disproportionate share of household management in most contexts. This means that changes to a city's waste management systems that require more effort from residents - for example, a program that makes it more complicated or time-consuming to sort, clean or drop off recyclable materials - might disproportionately burden women.

In addition, gendered social norms contribute to certain jobs being held predominantly by women or by men. In many contexts, most waste collection workers are men. These jobs are often relatively well paid, stable or public-sector/unionized jobs, as compared to jobs in retail or caregiving which tend to have a higher share of women, and more precarious conditions or lower pay. Cities have an opportunity to ensure that jobs (especially public-sector jobs) that are impacted or created by their food waste prevention programs are good-quality jobs that are accessible to workers of all genders and backgrounds. Local governments can intentionally create pipelines for women and people from under-represented demographics to access those opportunities.

# 3. Overview of relevant social norms in cities

The following section offers dozens of examples of how cities care (and already are) leveraging social norms to reduce food waste. Each section contains examples related to one area of cities' roles and power:

**3.1. Strategy and multi-level governance**

**3.2. Procurement, legislation and regulation**

**3.3. Cross-sectoral partnerships and private sector engagement**

**3.4. Communications, public events and awareness-raising**

**3.5. Waste management and asset management**

Each example includes the social norm being addressed, and examples from cities across Europe or idea of approaches that cities could take.

## Examples: Strategy and multi-level governance

Cities can lead in reducing food waste, but they cannot act alone. Coordinated multi-level governance is essential because cities may not have the powers to enact certain regulations, legislation or taxes that could reduce food waste and create an enabling environment for city initiatives.

| Role, Power or Activity of City Government | Example |
|---|---|
| Strategy Development | Cities can develop a vision for a sustainable food system, embedded in strategies and roadmaps that leverage and address social norms. In many cities, this is an Urban Food Strategy/Policy. For example, Milan, Italy's widely acknowledged leadership in reducing food waste is anchored in the Milan Urban Food Policy Pact, which helped guide and align many pilots, projects and policies across the city. A city-level food policy or strategy can be made more effective by leveraging helpful social norms and deliberately tackling social norms that encourage wasteful practices. |
| Food Waste Analysis | Cities could conduct or support data collection and analysis of food waste in the city to understand where waste is being generated and by who. This could build on the EU methodology for measuring food waste, such as the LIPOR Waste Observatory in Porto, Portugal. Data is key to policy design, so this analysis could inform strategy development and project planning. |
| Multi-level Governance | Many powers that influence food waste sit with regional or national levels of government, such as changing tax structure to incentivise food redistribution and penalise food waste like in France, Bulgaria or New York State. Cities can advocate to higher levels of government for policies that leverage or tackle social norms to reduce waste, which will support cities' local implementation of national or European policies like the legally binding EU food waste reduction targets adopted by the European Commission in July 2023. Cities can pilot voluntary schemes to showcase their potential impact, making a stronger case for regional and national action. The region of Catalonia's tax return system rewards municipalities that improve their management of recyclable or organic waste, by redistributing landfill and incineration taxes based on performance. |

*Table 2: Examples - Strategy and multi-level governance*

## Examples: Procurement, legislation and regulation

Cities can design their public procurement tenders to disincentivize food waste among their contractors or select businesses that minimize waste, and use their regulatory and legislative power to require waste-minimizing practices.

| Role, Power or Activity of City Government | This action addresses the social norm that: | Example |
|---|---|---|
| Public Procurement | Good planning or hospitality means preparing more food than | In public food service settings like school cafeterias (see guidance document on school |

| | | |
|---|---|---|
| | you need / Food waste is an unavoidable cost of doing business | food for further details), hospitals, or restaurants in public institutions like city hall, cities can establish procurement standards that reduce food waste, drawing on resources like the Manifesto for Establishing Minimum Standards for Public Canteens Across the EU (see page 12) and the best practices from SchoolFood4Change to shift kitchen staff norms around food preparation quantities. It could include training on accurate portion planning, and celebrating kitchens that reduce waste while maintaining service quality. Procurement contracts could be preferentially awarded to companies that redistribute unused food. |
| Public Procurement / Public Events | Visually "perfect" produce is preferable | Cities can adopt policies to procure "ugly" produce whenever possible, like for schools (see guidance document on school food), municipal offices or public events. Leading by example, cities can challenge the idea that only "flawless" produce is desirable. |
| Legislation and Regulation | It is risky or irresponsible to donate food because it could make someone ill | Cities could implement or advocate for laws that shield businesses from legal liability if someone becomes sick after eating donated food that was handled correctly. In the US, the Good Samaritan Food Donation Act provides liability protection for people who make good-faith donations of food and grocery products to organizations that feed the hungry. It also provides civil and criminal liability protection for institutions that distribute food and groceries, such as food banks. |
| Legislation and Regulation | Food donation is an optional charitable activity, not a standard business practice | Cities might have powers to adopt a regulation like the 2016 French law that requires supermarkets over a certain size to sign donation contracts with charities, or else face a fee. This regulation helped establish a norm of viewing food donation as a standard part of running a supermarket, not optional charity. |

*Table 3: Examples - Procurement, legislation and regulation*

## Examples: Cross-sectoral partnerships and private sector engagement

By partnering with specific stakeholder groups like markets, restaurants or caterers, cities can (co-)develop tailored interventions that have greater impact and smoother roll-out because they account for the group's social norms.

| Role, Power or Activity of City Government | This action addresses the social norm that: | Example |
|---|---|---|
| Building Multi-Sectoral Partnerships | Food waste reduction is solely an environmental issue | Cities can create or support a Food Waste Alliance bringing together food-related businesses, anti-hunger charities, government agencies, community groups, and other stakeholders, helping establish a norm that food waste is a shared responsibility requiring collaborative solutions. In France, the RÉGAL networks fight food waste at the territorial level by convening all stakeholders in the food chain. This alliance can help shift the narrative from environmental compliance to social and economic opportunity. |
| Private Sector Engagement & Guidelines | Food waste is an unavoidable part of doing business / Good planning or hospitality means preparing more food than you need | Cities can partner with food service providers or public markets to standardise and disseminate food redistribution practices. Paris City Hall, with a working group of caterers, associations and logisticians, developed a guide for caterers to organize the redistribution of unsold goods to people in need, by systematizing the revaluation of surpluses. By working with food businesses, cities can encourage food redistribution as standard practice, helping shift norms about waste being unavoidable. Cities can also legislate or incentivise businesses to accept bring-your-own containers to take home leftovers, like Brussels' "Rest-O-Pack" initiative in restaurants. |
| Private Sector Engagement & Guidelines | Bigger portions are more desirable or better value | New York City attempted to ban sodas larger than 16 oz (0.5 liters) to promote healthier diets. Cities can apply similar approaches like banning restaurant promotions that push people to eat supersized portions, or pursue voluntary approaches like engaging with restaurants to develop guidelines that normalise smaller portions, such as offering mini versions of menu items. Co-development ensures that the messaging will not ignore restaurateurs' norms, like that large portions indicate a welcoming environment. |
| Building Multi-Sectoral Partnerships / | It's easier to discard food than to redistribute it / Donated or | Apps like Too Good to Go allow consumers to buy surplus food from businesses at a discount, |

| | | |
|---|---|---|
| Communications Campaigns | surplus food is lower quality or undesirable | shifting businesses' norms towards seeing food redistribution as easy. Cities could promote similar apps or develop their own like in Almada, Portugal. Offering surplus food in a widely visible, publicly sanctioned app can shift residents' norm of perceiving unused food as low quality or associated with "dumpster diving." |

*Table 4: Examples - Cross-sectoral partnerships and private sector engagement*

## Examples: Communications, public events and awareness-raising

When communicating with residents through campaigns or events, cities can identify what social norms connect to their topic, and then reinforce or counteract the norms themselves - not just the behaviours they produce. For example, to address people's preference for "perfect" produce at markets, cities campaigns can use norm-focused slogans like "Delicious, No Matter the Shape."

| **Role, Power or Activity of City Government** | **This action addresses the social norm that:** | **Example** |
|---|---|---|
| Data Collection and Monitoring / Awareness-Raising | I waste less than my neighbours | Research (see here and here) shows that most people think that their own household wastes less food than average, and that people align with their neighbours' behaviours. Bruges, Belgium trained 50 residents as ambassadors to influence their neighbours to reduce food waste, and they achieved an average of 65% less waste. With growing use of sensors that measure waste before or during collection, cities can collect data on the compost collected from each household, and send households reports that compare their separation rates or waste volumes with city averages. |
| Communications Campaigns / Public Events | Visually "perfect" produce is preferable | Cities can build on examples like British chef Jamie Oliver's campaign celebrating irregular produce in supermarkets, helping shift perceptions that "ugly" produce is less valuable. Local chefs and could highlight imperfect produce, while supermarkets to set up discounted "ugly produce" areas within campaign signage. For example, Banquet des 5000 organisers led volunteers to cook 5,000 meals using irregular or surplus food, and Disco Soup events use imperfect produce to cook community meals, reducing stigma of "ugly" produce quality in a fun, interactive setting. |
| Public Events | Donated or surplus food is lower quality or undesirable | Cities can host events or initiatives that highlight high-quality surplus or donated food. At Refettorio Paris, high-end guest chefs cook meals for homeless or precarious residents with surplus ingredients. Associating surplus food |

| | | |
|---|---|---|
| | | with luxury gastronomy is a great way to shift public perception. |
| Public Events and Festivals / Communications Campaigns | Celebrations or hosting events requires excessive amounts of food | Cities can develop sustainable event guidelines that include responsible portions and sharing practices. Encouraging "thoughtful hosting" practices, including for hosting at home, shifts the norm from associating large quantities of food with event success to viewing responsible portions as the new standard. |

*Table 5: Examples - Communications, public events and awareness-raising*

## Examples: Waste management and asset management

Most city governments have direct control over their waste collection system and manage a significant body of assets, making these low-friction areas for municipal governments to implement innovative measures to reduce urban food waste.

| Role, Power or Activity of City Government | This action addresses the social norm that: | Example |
|---|---|---|
| Waste Management | Separation Anxiety: Sorting waste is too complicated or time-consuming | Cities can learn about the social norms in a given context and use that to predict and pre-emptively address obstacles to implementing a new regulation or legislation. When piloting kerbside food waste collection, Auckland, New Zealand overcame perceptions that sorting waste was unreasonably complicated. They informed residents with postcards and door-to-door advisors, and distributed bins, caddies, bags, collection calendars and 'how-to' guides. The trial had an approval rating of 93%. |
| Waste Management / Taxes and Fees | Food waste is not penalized so it must not be a problem | City governments are usually responsible for waste management. The incentives in a city's waste fee structure, and municipal systems for waste sorting and collection, can reflect and reinforce norms about which practices are desirable or harmful. "Pay as you throw" (PAYT) schemes like in Parma, Italy charge residents more for waste collection if they produce more waste, especially mixed waste that is not compostable or recyclable. By embodying the "producer pays" principle, PAYT establishes a norm that producing excessive household waste is problematic and gives financial incentives to reduce food waste. Milan offered a 20% discount on waste tax to |

| | | |
|---|---|---|
| | | businesses that donated surplus food, and gave them a special label. |
| Asset Management (the use of publicly owned assets like buildings, land or equipment) | Unused space is wasted space / Public assets should serve social and environmental goals | In many cities, including Galdakao, Spain and the Danish cities of Aarhus, Kolding and Copenhagen, local groups have introduced community fridges in public spaces to encourage residents to donate and take excess food freely. Cities can run their own community fridge, like Hernani, Spain's Zero Zabor fridge to share food from school canteens, or can provide accessible public space for NGOs to install them. This helps normalize the idea that public space should be used for communal goals while drawing attention to the twin issues of food waste and hunger. Porto supported the creation of new vegetable gardens using locally generated compost. |

*Table 6: Examples - Waste management and asset management*

# 4. 8 steps to reduce food waste, including social norms insights in cities

Interventions, actions or just initiatives are words that is often used when organisations want to achieve more effective operations. For instance when they want to address food waste and when they want to move from one set of routines to a more effective one. Traditionally such attempts are organised as projects in order to make sure the participants know what to do what to achieve and how to measure whether the objectives are achieved. At research level such attempts are normally referred to interventions, but the approach can be used in practise as well and is a way for the organisation to make sure that goals are reached. An important part of interventions actions and initiatives is the inflation. Here we present a general model for that can be used as a recipe.

The following 8-step guide is designed to break down the process of designing and implementing a food waste reduction intervention into manageable steps. Based upon tried and tested expertise from the behaviour change field, this approach is adapted from the Academy of Change framework[6] and combined with CHORIZO research findings, case study knowledge and examples from the wider food waste sector.

**Figure 6** shows the order of the steps to reduce food waste. The CHORIZO additions relate to the steps 3 and 4, enabling the inclusion of social norm insights in the intervention. Once you have put your intervention in place following step 1-7 and evaluated its impact, steps 4 to 8 can be followed again in order to refine the process for continual improvements in effectiveness. If you already have interventions in place and would like to refine the social norms elements in the process, we suggest that you focus on step 3 onwards.

[6] See http://aochange.org/

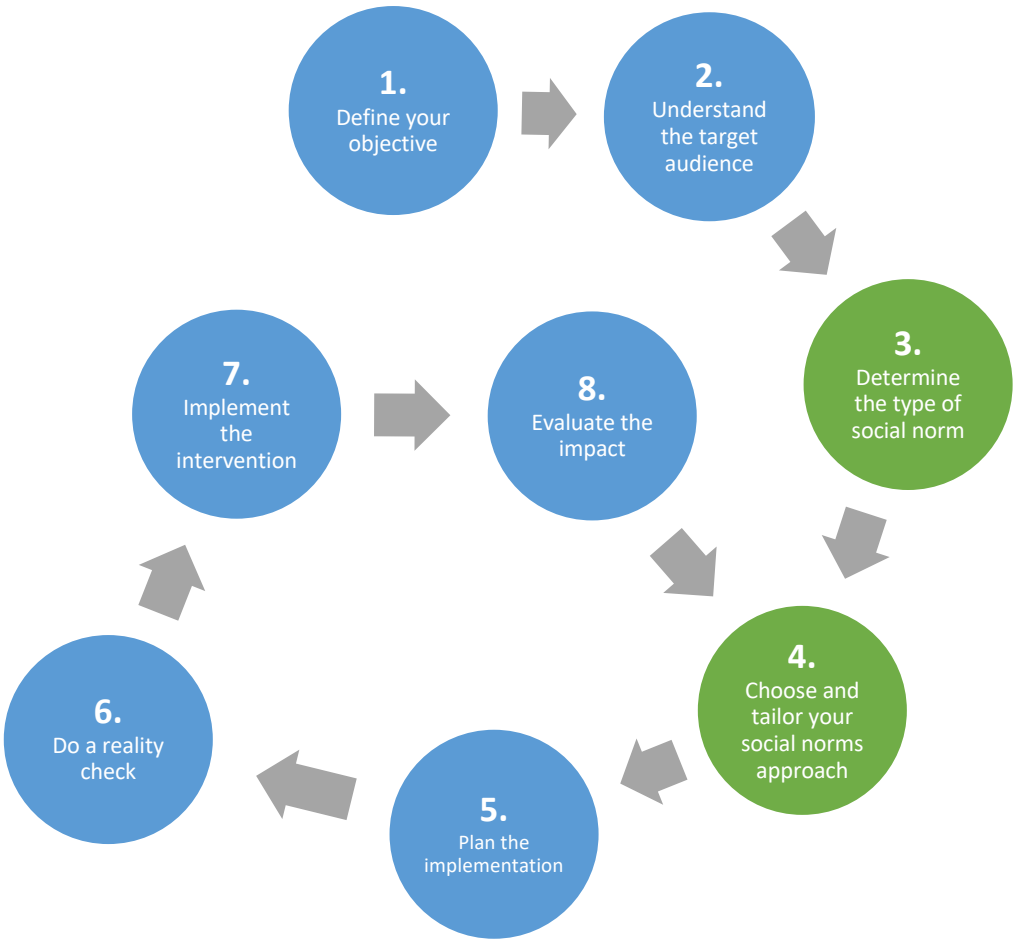


*Figure 7: 8 steps to reduce food waste, including social norms insights (steps shown in green)*

## 4.1. Step 1: Define your objective

In this first step, it's time to get clear about what exactly you aim to achieve with your intervention. To take action now, ask yourself the following critical questions:

**What is the specific, tangible behaviour you're targeting?**

Try to first focus on one specific behaviour you want to target as this makes designing an intervention more manageable, as the scale is not too big. It is easier to dive into the factors surrounding one particular behaviour, than to try to analyse a complex system of behaviours. To ensure that you are focusing on a behaviour rather than an attitude, see **Figure 7** for an overview of the differences.

**Attitude-Action-Gap of food waste activities**

Consider if you are thinking of a behaviour or an attitude. An attitude of believing that we should only take what we can eat in a hotel breakfast buffet is different to the actual behaviour of not overfilling the plate in practice. Attitudes may support behaviour but often are not enough on their own to reduce FLW effectively. For instance, someone might care deeply about sustainability but still choose convenience over environmentally friendly options (e.g. buying multipacks of food products because there is a deal in the

supermarket, while believing that we should only buy what we need to avoid waste). This is called the "attitude-action-gap"— the reality that people's beliefs don't always align with their behaviours, due to habits, social pressures, social norms or practical barriers. Recognizing this gap helps clarify whether influencing attitudes alone will achieve your goal or if your approach needs to address a behaviour directly.

*Figure 8: Attitude-Action-gap of food waste activities*

**What influences your targeted, specific behaviour?**

If you do have a specific, tangible behaviour in mind, then dive deeper—analyse the context around this behaviour. Map out the general influences, using a model like the MOA (see **figure 5** and **section 2.1**) to capture how various factors in the fields of motivation, opportunity and ability connect and impact upon your objective. Be specific and thorough; it will strengthen your intervention strategy. In this step, try to think in general terms about the MOA of this behaviour in society. In step 2, you will dive into the MOA of your target group more specifically.

**How would you like to change the behaviour with your intervention?**

Try crafting a clear, detailed objective: define exactly what you want to change in this behaviour and what the desired impacts should be. The more concrete you are, the easier it will be to follow the next steps effectively.

## 4.2. Step 2: Understand the target group

With this second step we dive even deeper into the context of the targeted behaviour to define and understand the target group you have in mind.

**What do you know about your target group?**

Remember the MOA Framework introduced in **figure 5**? You can use the framework to understand the motivations, opportunities and abilities of the targeted group. The following questions may help you to navigate the MOA framework by adding in specific considerations which are of relevance to your target group:

- What is your target group's **motivation** to engage with a new behaviour or to elaborate a new social norm?
- Do the target group have the **opportunity** to take the action? Is there a supporting infrastructure in place, physically and socially?
- What **abilities** do they need in order to enact and establish the behaviour? Consider how existing skills and abilities may differ across a diverse target group.

If you are struggling to answer the questions above, further research on your target group may help. There may be existing evidence or knowledge from other actors in the sector (including, for example, CHORIZO project resources), or gathering your own additional data may support this understanding (e.g. through surveys or interviews with the target group).

## 4.3. Step 3: Determine the type of social norm

Social norms are both a reflection of common behaviours within a group and powerful tools for driving change. Observing norms helps reveal what people already do or value, and strategically highlighting these behaviours can encourage broader adoption. Understanding which type of social norm you are working with will help to tailor your approach and therefore bring a FW intervention to the next level of impact.

*Descriptive norms* show widespread behaviours, such as “most households reuse leftovers” while *injunctive norms* reflect what a group considers the right action, like “our community values wasting less to protect resources”. Deciding whether it will work best to use *static framing* around existing behaviours, like "Most people plan meals to avoid waste" versus *dynamic framing* around growing trends like "More people each year are joining the movement to reduce food waste" will make your message resonate even more.

Gather the information you have already brought together on the 1) target behaviour, 2) influences on the behaviour, 3) specific desired change in the behaviour through your intervention, and 4) the motivations, opportunities and (cap)abilities of your target group. With this information, consider the potential relation of social norms to each:

1) **Target behaviour** – is there already a relevant social norm mentioned in **section 3** which is known to relate to this kind of behaviour? If not, consider what else may be a norm in the context upon which you are focusing.

2) **Influences on that behaviour** – consider the environment in which the behaviour takes place. What are the factors which might affect whether someone behaves in this specific way or not?

3) **The desired change in the behaviour through your intervention** – consider whether the desired change is either a) a wish to make a certain behaviour itself a norm (e.g. taking home a ‘doggy bag’ of leftovers from a restaurant if you don’t finish your meal), or b) influenced by social norms which exist around the behaviour and contribute to its uptake (e.g. the behaviour of over-providing for guests when hosting a dinner party is influenced by the social norm of a good host being seen as providing multiple different options and more food than is needed).

4) **The motivations, opportunities and (cap)abilities of your target group** – map out the MOA of your target audience (those who do/would conduct the behaviour in question) especially focusing on what motivates the target group to perform certain behaviour related to food waste. The social norms are the influencing factors to the motivation. Social norms are most likely to be found in the motivation section (see CHORIZO Deliverable 3.1 *Conceptual Framework for Behavioural Change Understanding* for further information).

With this information, you should have been able to identify a specific social norm or norms with which you can work, in order to change the desired behaviour (whether directly or indirectly).

At this point it is also important to be clear on whether the norm(s) are *helpful norms* which you are looking to support to have a bigger influence (e.g. those which already contribute to lower FLW behaviours but are not yet routine or mainstreamed in your target group) or *unhelpful norms* which reduce the likelihood of the FLW behaviour taking place (e.g. something which influences individuals towards another behaviour than the socially desirable one, or which makes the FLW behaviour less likely or impossible). Examples are given in **section 2.2**. By identifying this, you know whether your intervention should seek to a) build and support an existing social norm or norms, or b) change or reduce the influence of an existing social norm or norms.

**Shifting the norm of the "good provider": The role of cities**

Cities can develop sustainable event guidelines that include responsible portions and sharing practices. Encouraging "thoughtful hosting" practices, including for hosting at home, shifts the norm from associating large quantities of food with event success to viewing responsible portions as the new standard.

*Figure 9: Shifting the norm of the "good provider" - The role of cities*

## 4.4. Step 4: Choose and tailor your social norms approach

Now that you have identified social norms that can influence behaviour, it's time to design your intervention plan by choosing your approach. Referencing **sections 2.2 and 3** for additional evidence-based insights as you create your intervention plan. Using varied communication strategies—whether static, dynamic, or changing the 'environment'—can help reinforce and spread desired behaviours (for more information see **section 4.5**).

To effectively use social norms to reduce food waste, consider these three approaches, how they can be used and the potential for tailoring, based on the CHORIZO project's learnings:

1. **Reinforce Existing Norms**: If an appropriate social norm around reducing waste already exists, emphasize it to strengthen commitment. Reminding people can for example happen like "most people in our community already avoid food waste" and can build on this established behaviour.

2. **Create New Norms Through In-Group Values**: When a norm is not yet present, it should be built by aligning it with in-group values. For instance, messaging like "In our community, we believe in reducing food waste to support sustainability" can shape waste reduction as part of the group's identity.

3. **Establish Norms via Environmental Cues**: Modify the environment to signal desirable behaviours. Visible prompts, such as signage promoting meal planning or providing compost bins, illustrate that reducing waste is common here, encouraging others to follow suit.

By tailoring these approaches—reinforcing, creating, and establishing norms—to specific communities and behaviours, social norms can inspire and drive lasting change in achieving zero food loss and waste.

**Influenced by neighbours: Using the "IN-group" as ambassadors**

Most people think that their own household wastes less food than average (see here and here) and that people align with their neighbours' behaviours. Bruges, Belgium trained 50 residents as ambassadors to influence their neighbours to reduce food waste, and they achieved an average of 65% less waste.

*Figure 10: Influenced by neighbours: Using the "IN-group" as ambassadors*

## 4.5. Step 5: Plan the implementation

Now it is time to devise a plan for implementing the intervention by considering the following three **key Steps for Designing an Effective Plan:**

1. **Define setting, delivery and timing**: Determine *where*, *how*, *when* and *by whom* your intervention will be communicated to the target group/audience. Find the best setting: in which location or situation can you get closest to the target behaviour? What is the right place and time to reach your target audience ? Interventions can be targeted communication at points of action, appealing to people's identity, or altering the choice environment (the space or set of conditions in which they make a

decision). When is your target audience most receptive? What are their relevant moments of change (e.g. is there a seasonal point when people already take action in this field)? Target locations where waste behaviours are most relevant—like meal prep areas or trash disposal points—and time your intervention when people are most receptive, such as before meals. How will you communicate your intervention? See **section 2.1** for the different ways in which norms can be expressed. Anticipate challenges and adapt plans as needed to overcome potential obstacles, such as practical barriers to running an intervention in a specific location, or the target group's lack of capacity to focus on something new at busy times of year.

2. **Identify Tools and Add Fun Elements**: Use tools like *nudging*, *self-commitments*, or *gamification* to engage participants. For instance, place reminders near waste bins or introduce rewards for reducing waste. Make the initiative fun and memorable—use engaging visuals, creative prompts, or interactive elements to boost participation.

3. **Collaborate for Greater Impact**: Team up with diverse partners to broaden reach and share resources. Collaborating with unexpected allies—like local businesses, schools, or community groups—can amplify the intervention's effectiveness and encourage a community-wide commitment to reducing waste.

By carefully coordinating these steps, your intervention can promote lasting change, making food waste reduction a shared, impactful effort.

**Collaborate for greater impact: example from Paris**

Cities can partner with food service providers or public markets to standardise and disseminate food redistribution practices. Paris City Hall, with a working group of caterers, associations and logisticians, developed a guide for caterers to organize the redistribution of unsold goods to people in need, by systematizing the revaluation of surpluses.

*Figure 11: Collaborate for greater impact - example from Paris*

## 4.6. Step 6: Do a reality check

Before launching your intervention, it's essential to do a reality check to ensure it is as effective and user-friendly as possible. This step helps identify any obstacles that could hinder participation and allows you to refine your approach for maximum impact.

1. **Make It Easy:** Simplify every step. Remove barriers, streamline interventions, and, if possible, eliminate unnecessary choices to guide participants naturally toward the desired behaviour.

2. **Choose Clear Language:** Use accessible, relatable language, avoiding overly technical or distant terms. Language should connect with the audience and reflect shared values, making it easy for others to support and spread.

3. **Did you think of everyone?** Consider whether your approach is truly inclusive. Are there potential biases, like assuming certain cultural norms or access to resources? Tailor your plan to include diverse perspectives (considering e.g. gender, disability, socio-economic background and other factors) and adapt it as needed to make sure no group is overlooked.

Conducting this reality check ensures your intervention is clear, simple, and inviting, ultimately making it more likely to achieve meaningful change by many people.

## 4.7. Step 7: Implement the intervention

Now it's time to bring your plan to life! Implementation is all about making your intervention visible, accessible, and impactful. To ensure your planned project reaches people effectively in the right place and at the right time, keep these steps in mind:

- **Prepare Your Resources**: Confirm locations, timing, and materials to make sure your messages and tools are available exactly where and when people need them.
- **Coordinate with Your Team**: Align everyone involved, so they're prepared to answer questions and make adjustments on the go. Plan in time for feedback talks.
- **Start with a pilot**: Testing in smaller settings first can reveal what works best, letting you refine and scale up smoothly.
- **Stay Flexible**: Watch how people respond, and be ready to adapt! If certain elements are more engaging than others, adjust your approach to enhance impact.

A well-implemented plan brings your ideas to action, helping people connect with the message and inspiring them to reduce food waste.

**Pilot and tailor: example on sorting waste from Auckland, New Zealand**

When piloting kerbside food waste collection, Auckland, New Zealand overcame perceptions that sorting waste was unreasonably complicated. They informed residents with postcards and door-to-door advisors, and distributed bins, caddies, bags, collection calendars and 'how-to' guides. The trial had an approval rating of 93%.

*Figure 12: Pilot and tailor - example on sorting waste from Auckland, New Zealand*

## 4.8. Step 8: Evaluate the impact

Evaluating impact is crucial to see if the action you took truly made a difference. This step focuses on measuring real behaviour changes and understanding the broader effects of your intervention.

Measuring change is always a crucial and important action in any intervention. Amount of food waste is easy to understand and is always a good measure. However it should be kept in mind that collecting data can be a tedious and challenging task. Therefore it's important to find easy ways to measure but also to think about the fact that there might be good proxies or indicators for the real amounts. Such proxies are often easier to measure through questionnaires and surveys and can include topics such as knowledge about the goals, skills to carry out the intended action, willingness to act or simply knowledge about the intervention program. Often it is a good idea to have more outcome measures to verify that the intervention is actually working.

Here's a guide to effective evaluation:

- **Define Key Metrics and Collect Evidence**: Set clear measures like waste volume reduction, participation rates, or uptake of new habits like meal planning. Combine this quantitative data with feedback to provide you a full picture.
- **Measure Behaviour, Not Just Attitudes**: Track real actions (like reduced waste) instead of relying only on survey responses. This helps address the *attitude-behaviour gap*, where people's stated values don't always align with their actions.
- **Monitor for Rebound Effects**: Monitor whether reduced waste in one area causes increased waste elsewhere, helping you avoid unintended consequences.
- **Tailor Evidence to Your Audience**: Think about who you need to convince—community members or stakeholders. Collect the evidence they'll find most compelling.

By tracking outcomes and refining your approach based on real-world results, you can enhance the long-term impact of your interventions.

# 5. Additional resources and support to implement interventions

Have you now read the guidance and find yourself feeling inspired but not sure where to get started? Don't worry - in 2025 we are running a European capacity building programme designed specifically to help you put these words into action!

The online and physical workshops will provide you with practical skills, examples and tips to design your own behaviour change intervention using fresh findings from the CHORIZO project and the relevant tools to use social norms in the reduction of food waste.

Sound good? Sign up to the CHORIZO newsletter to hear about the latest information and capacity building registration.

Additionally, the CHORIZO Insighter Data Hub contains a whole range of data collected through the project's case studies and research on FLW and social norms. Feel free to request relevant data for use in designing your own interventions.

**CHORIZO Project Deliverables and resources**


- CHORIZO project *Food Loss and Waste (FLW) Datahub and "Insighter"*, available at https://data.chorizoproject.eu/. (Accessed 29 January 2025)
- CHORIZO Deliverable 1.2 (2023), "*Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO Deliverable 2.3 (2024), *Empirical Evidence Sensemaking*, available at https://chorizoproject.eu/deliverables-repository/. (Accessed 29 January 2025)
- CHORIZO Deliverable 3.1 (2023), "*Conceptual framework for behavioural change understanding*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO project *newsletter sign up form*, available at https://chorizoproject.eu/dissemination_and_newsletter/. (Accessed 29 January 2025)

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CHORIZO PROJECT


# Deliverable 4.1

**ACTOR SPECIFIC GUIDANCE**

## FOOD REDISTRIBUTION AND DONATION

Picture credit: Joel Muniz I Unsplash

D4.1

# D4.1 Actor specific guidance – Food redistribution and donation

| | |
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## Glossary of terms and acronyms

| Acronym/Term | Description |
|---|---|
| **FLW** | Zero Food Loss & Waste |
| **HFBA** | Hungarian Food Bank Association |
| **HoReCa** | Hotels, restaurants and caterers (including institutional catering) |
| **MOA** | Motivation, Opportunity, Ability (framework) |
| **SN** | Social norm(s) |

*Table 1: Glossary of terms and acronyms*

# 1. About this guidance: how to work with social norms to reduce FLW through food redistribution and donation

## 1.1. Background to the guidance

The idea of food banks is an important component of strategies to reduce food waste. In this document we summarise the findings from the CHORIZO project for this important sector and share suggestions of how food banks can work with social norms in their own context. CHORIZO (Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste) is a project co-funded by the Horizon Europe programme that aims to improve the understanding of the links between social norms, consumer behaviours, decisions of economic actors and food loss and waste (FLW) generation, and to use this knowledge to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. The project´s main goal is to address existing research gaps and enable actors to use its outcomes to deliver and advance innovations helping a range of actors to engage more effectively in food waste prevention and reduction activities.

**What are social norms?**

In the CHORIZO project, we understand social norms as the unwritten rules and expectations which guide people's behaviour within a society or group. In the context of food waste and loss, social norms influence individual attitudes, beliefs, and behaviours related to food consumption, preservation and disposal.

*Figure 1: What are social norms? Description from CHORIZO Deliverable 3.1 "Conceptual framework for behavioural change understanding" (2023), p15*

This document is part of a series of actor-, context- and gender-specific guidance resources which have been developed from the research findings in the project. It is aimed at supporting actors in different contexts to be equipped with the knowledge to work with social norms to reduce food loss and waste generated by related target groups. Redistribution and donation systems, and in particular food banks, have been found to be important levers of change and as a result in this document we focus on the part of the findings from the CHORIZO project's research activities that can be used in this context. We have combined our findings with wider knowledge and the Academy of Change approach[1] to produce this guidance aimed at actors in European food banks.

## 1.2. The purpose of this guide and how to read it

Would you like to reduce food loss and waste (FLW) through your city's food redistribution system? Do you have the motivation and the opportunities to do so? Do you already have plans for activities in your food bank that focus on sustainable food practices? Then you are in the right place! This document aims to assist you in your food redistribution strategy and planning efforts and to increase your capability to take action effectively in food banks, by providing you with knowledge on *social norms* in your context and a how to include this knowledge in a step-by step guide to implement a FW reduction intervention. Changing social norms, as you

[1] The Academy of Change (AoC) (http://aochange.org/) is a capacity building programme first created by the Collaborating Centre on Sustainable Consumption and Production (CSCP) and Behaviour Change (https://behaviourchange.org.uk/), initially funded by the KR Foundation, to support organisations to develop behaviour change interventions.

will read also further in this document, is an impactful tool in reducing food waste. Using social norms in your planning and implementation of interventions makes them even more effective in reducing FLW.

This guide will equip you with practical knowledge on how to work with **social norms** - unwritten rules which influence people's everyday behaviour - to reduce FLW, in a knowledge process illustrated in **figure 2**.

**How to read this document**


*Figure 2: How to read this document - illustration of the structure of the guidance document.*

**Section 2** of this guide equips you with background information to **learn** about social norms (**section 2.1**) and how they affect FLW in the many different ways in the food redistribution system (**section 2.2**).

**Section 3** provides tangible examples of how social norms affect FLW in the food redistribution and donation sector. Even better, you will learn how others have also designed interventions to change social norms and behaviour to save precious food. Then, you are ready to **identify** different kinds of social norms which are relevant to your context and start your own interventions!

**Section 4** is designed to support you to easily **plan, design, implement and evaluate** your own interventions to reduce FLW. The presented 8 step guide to reduce food waste includes insights into social norms. This includes **evaluating** your own interventions to understand the impact and improvement potentials to continue to tackle FLW with social norms

**Section 5** represents a resource library, sharing further insights on social norms and behaviour change approaches and interventions that might serve as an additional inspiration.

**Where should I start reading?**

- For those *new to how to conduct an intervention towards food waste reduction*, the whole document should be of high interest to you.
- For those *new to the concept of social norms* and how to use them in a FLW context, we also suggest following the guide from start to finish to understand how to enrich your current practice with new insights. (You might already work with 6-steps to implement your FW intervention, look out for the additional 2 steps we have added in **section 4**!)
- If you *already have experience in using social norms* in your context, but would like to hear more about the findings of the CHORIZO project in your field, we suggest to start with **sections 2.2 and 3**. Also check the two additional tips in the 8-step guide presented in **section 4**.

# 2. Social norms in the context of food systems

## 2.1. What are social norms?

Social norms are unwritten rules which influence people's everyday behaviour. They can do so in two ways.

On the one hand, people might behave a certain way because they see other people doing a certain thing. For instance, a child may not eat their vegetables in the school lunch break, because they see other children leaving their salad on the plate as well. This behaviour of copying what most people do in the same situation is called a descriptive social norm.

On the other hand, people might behave a certain way because they think that others expect them to act like this. For instance, a person might no longer be hungry but still finish their plate, since they think that otherwise they might be perceived as being rude. These people thereby react to what they think is a rule of what is acceptable - which is called an injunctive social norm.

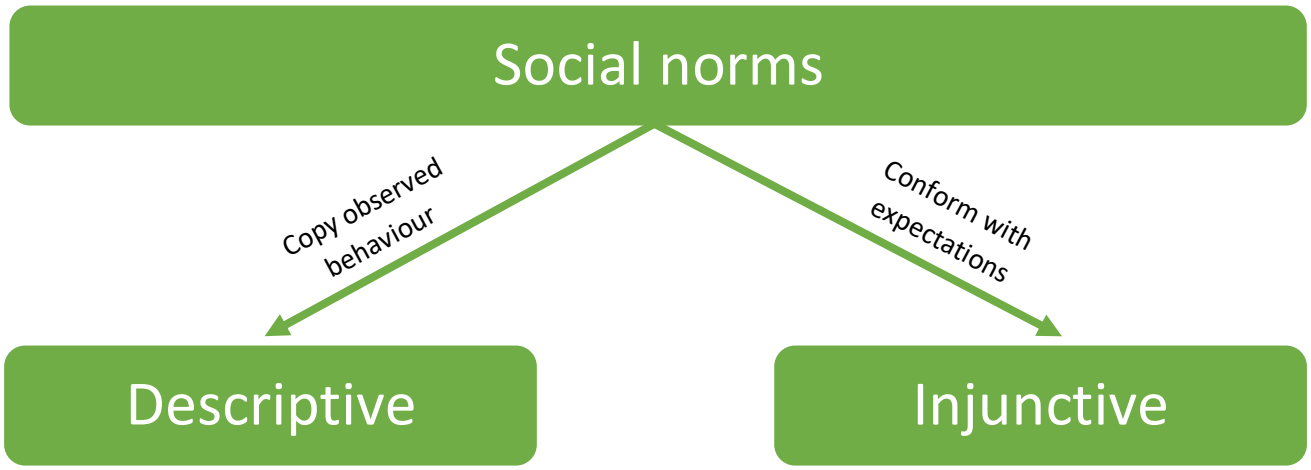


*Figure 3: Descriptive and injunctive social norms*

Norms can be static – based on a current situation – or dynamic – articulating a behavioural movement in one way or another.

Whichever type or combination - descriptive or injunctive, and static or dynamic - social norms can be seen as a powerful tool for change. The above examples - of a person eating more than they need to in order to finish their plate of food, and of a child not eating vegetables - show social norms that lead to more food waste. See **figure 4** for a range of different examples of social norms.

Now imagine the possible impact by changing behaviours of several people towards creating social norms which favour less FLW. Learning about social norms can support you in developing different interventions to achieve a more desirable behaviour.

This guidance will help you to design your own interventions to drive change using social norms.

**Examples of different types of social norms**

To illustrate different types of social forms, here are some examples of social norms communication about how to deal with leftovers in a household context:

- "75% of households reuse leftovers" is a **descriptive norm**.

- "Reusing leftovers for other dishes is regarded as good housekeeping" is an **injunctive norm**.
- "Most people reuse leftovers" is an example of **static framing**.
- "More people reuse leftovers every year" is an example of **dynamic framing**.

*Figure 4: Examples of different types of social norms*

**How do social norms fit within human behaviour overall?**

Besides social norms, there are many other aspects influencing human behaviour. To better understand the degree to which social norms influence our behaviour, the CHORIZO Project has combined an agent-based decision model (HUMAT) with a behavioural psychological model (MOA). The MOA framework, first designed for marketing purposes (Rothschild, 1999), was adapted to analyse Motivation, Opportunity and Ability (MOA) factors affecting food waste behaviour for the EU Refresh project[2]. The HUMAT model is used for modelling actor decision making and so is not referred to in this document. If you would like to learn more about the model and how it is used in the CHORIZO research, this can be found in the project's Conceptual framework for behavioural change understanding[3].

The MOA framework is used throughout the CHORIZO project and in this document to understand on the one hand what hinders behaviour change, and on the other hand how interventions to reduce FLW can overcome these barriers.

In the MOA framework, aspects of motivation, opportunity and ability combine to determine if and how a person behaves in any given situation. In line with behavioural change scientists, we believe, that behavioural change is based on an interplay of these three factors. In this model, social norms come under the motivations category, meaning that, combined with attitudes and awareness, the level of motivation of an individual will be developed. For example, in the case of using up leftover food, if someone is aware that leftovers can safely be eaten (awareness), believe that they should reuse leftovers in order to save food (attitude), and see others cooking with leftovers (social norm), overall they are likely to have a strong *motivation* component towards their behaviour. In order for the person to actually behave in this way, however, there will also need to be the *opportunity* for them to do so (e.g. time to prepare the leftovers, the right cooking/storage equipment) and the *ability* to enact the behaviour (e.g. knowledge of a recipe to re-use the leftovers they have and the appropriate cooking skills to successfully prepare the meal). **Figure 5** sets out a visualization of the model and its components.

[2] https://www.eu-refresh.org/
[3] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

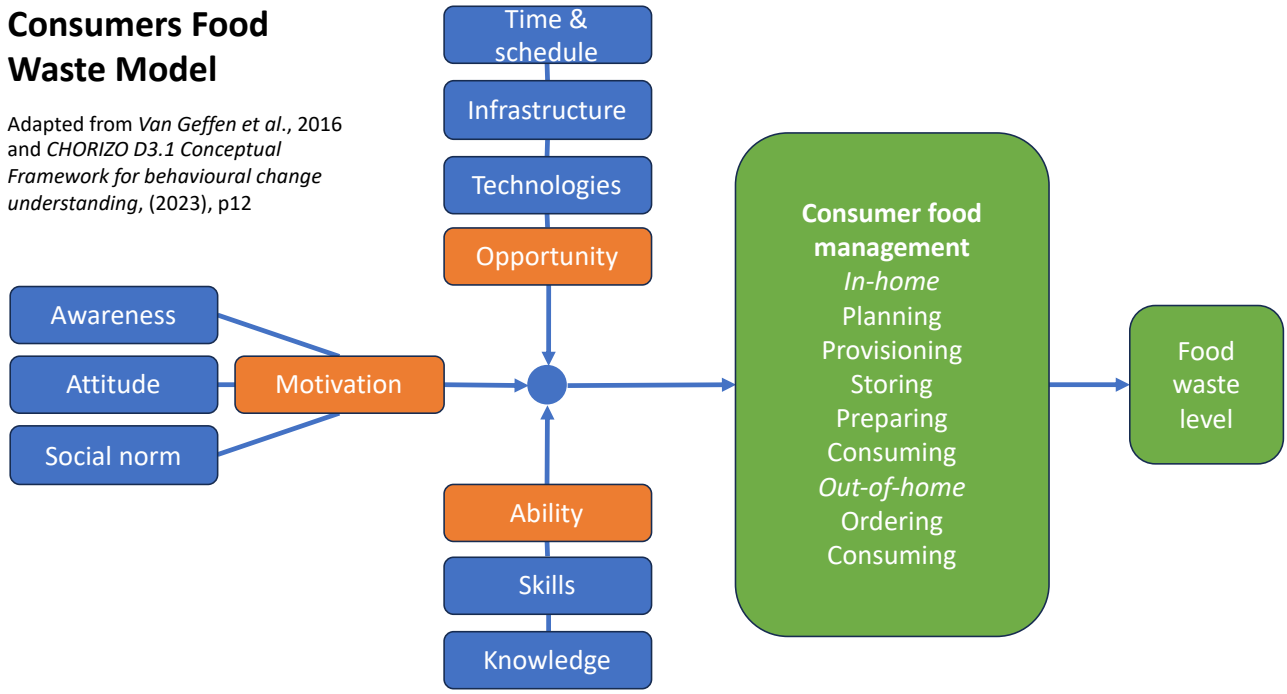


*Figure 5: Consumers Food Waste Model, illustrating the MOA framework (including social norms) in the context of food waste behaviours (source: see figure)*

Aspects of background, demographic or identity may affect the factors influencing behaviour of your target group members. In particular, gender may have an impact on the MOA. While CHORIZO research on FLW prevention actions did not find any existing interventions specifically designed to systematically incorporate the gender dimension (see Chapter 6 in Deliverable 1.2 *Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions* for further information), we know that social norms can be differently developed or perceived by individuals depending on their gender. For example, there may be social norms in which gender affects who is expected to conduct food shopping, meal planning and cooking in the household. Additionally, CHORIZO case study research has identified some differences between genders in terms of perceived social norms and behaviours around food loss and waste. Relevant findings on gender are further discussed in **section 2.2**.

Of course, human behaviour is not deterministic. The existence of social norms does not necessarily mean that we also behave to conform with these norms. While some norms are helpful, others can lead to unhelpful outcomes (leading to negative societal, environmental or for other impacts).

If you would like to learn more about the models used in the CHORIZO project research, we suggest reading the Conceptual framework for behavioural change understanding[4].

## 2.2. Why are social norms relevant to food loss and waste in the food redistribution and donation sector?

An estimated 59 million tonnes of food are wasted annually in Europe[5], highlighting a critical need for innovative and effective solutions to address this issue. Among these, the food redistribution and donation

[4] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

[5] See https://food.ec.europa.eu/food-safety/food-waste_en

sector plays a pivotal role in reducing food waste by recovering surplus food and redirecting it to those in need for human consumption.

The potential for food waste reduction in food redistribution and donation arises from the significant quantities of surplus food generated at various stages of the food supply chain. In many locations in Europe, these food-redistribution and donation activities have been handled by NGO-type organizations and most of the time volunteer-based, for instance food banks. By capturing this surplus and redirecting it to food banks, a substantial portion of edible food can be saved from landfills and utilized to address food insecurity.

Food banks are non-profit organizations that collect, store, and distribute surplus food from donors such as retailers, manufacturers and HORECA actors to people in need through partner agencies like homeless shelters, food pantries, and community centres. Food banks serve as critical intermediaries between food surplus generators and communities in need and stablish the social norms among stakeholders that help to reduce food waste. Food banks possess the infrastructure and logistics needed to safely collect, store, and distribute surplus food, as well as they partner with local charities to ensure that food reaches vulnerable populations.

The success of food redistribution initiatives often hinges on shifting social norms around food waste. By normalizing practices such as donating surplus food and valuing food as a precious resource, businesses can be motivated to participate in reducing food waste. Campaigns and educational efforts led by food banks and allied organizations can play a transformative role in fostering these behavioural changes.

In 2023, food banks across Europe distributed over 839,000 tonnes of food, providing support to 12.8 million people in need[6]. Despite this achievement, it accounts for only 3% of the total food waste generated in the food supply chain (excluding household waste)[7]. These numbers highlight the significant untapped potential for expanding food redistribution initiatives.

By addressing these challenges and opportunities, food banks and their partners can play a central role in building a more sustainable and equitable food system.

**Relevance of social norms and FLW initiatives: example from CHORIZO partner the Hungarian Food Bank Association (HFBA)**

Every company dealing with food has some degree of food surplus that could potentially be donated, for example:

- **Retailers**: mostly unsold bakery products, fruits and vegetables, left at the end of the day of the shelves of the stores
- **Food processing companies**: products in slightly damaged packaging, seasonal products after the seasons, products coming to close to expiration date, and wrong packaging therefore not possible to sell to food retail chains
- **Hospitality sector**: food surplus in hotels, restaurants, school canteens, event catering

[6] See https://www.eurofoodbank.org/our-mission-impact-values/
[7] See https://www.eurofoodbank.org/our-mission-impact-values/

Although awareness related to food waste and sustainability is growing in Hungary, food donation is still not an unequivocal solution. Currently approximately 10 000 tonnes of food are donated through and redistributed by Hungarian Food Bank (HFBA) annually[8], but a multiple of this amount could be saved. HFBA currently has partnerships with about 150 companies, and there are still many more that could be involved. The members of the European Food Bank Federation (FEBA) have redistributed 840 000 tonnes of food in 2023 in 30 European countries[9].

*Figure 6: Relevance of social norms and FLW initiatives: example from CHORIZO partner the Hungarian Food Bank Association (HFBA)*

Through CHORIZO research and food bank case study, several social norms have been identified that affect food donation. Social norms can have a number of impacts, both positive and negative. We have therefore made a distinction between those which may help the reduction of FLW in the context of redistribution and donation, and those which may be less helpful, instead supporting the increase of FLW. Interventions to reduce FLW can therefore work with and support helpful social norms, or try to enable target groups to move away from existing unhelpful norms.

**Helpful social norms:**

- In order to reduce the food safety concerns clear guidelines for effective storage and handling practices approved by National Food Chain Safety Office and established through donation chain should be better communicated to the donor companies. Social norms can be used in the way this information in communicated (also potentially in cooperation with the NFCSO), like “more and more companies are donating their food safely through the Food Bank”. In relation to the MOA Framework this solution can help increasing the capability and motivation.

- Awareness should be raised about the ultimate destination of the donations, how these donations help people in need, and the long-term social benefits of such actions. If companies better understand the social impact and importance of food donation and its effect on the corporate image, then it would help them changing their attitude toward surplus food donation.

- Finding and engaging "internal champions" - individuals within companies who are passionate about social causes – could influence immediate decisions and also play a key role in shaping the company's long-term strategies, fostering a more socially responsible and impactful approach to surplus food management. In MOA terms we would call this enabling the motivated employees and in social norms terms to uplift the in-group and make the behaviour appealing to people’s identity.

**Unhelpful social norms:**

- The social norm of “better stay on the safe side” often blocks the donation process. The donated food has to be given to people in need and has to remain suitable for human consumption through the donation chain. Companies often have unjustified fear of potential legal consequences or negative public perception if the donated food was misused or did not meet safety standards. However, this mindset can often be shifted through effective long-term awareness campaigns that educate companies about food safety measures within the redistribution process[10].

[8] See https://www.elelmiszerbank.hu/hu/eredmenyeink.html
[9] See https://www.eurofoodbank.org/our-mission-impact-values/
[10] For example, through articles such as https://www.flavournetwork.ca/article/10-foods-you-can-eat-after-the-expiry-date/

- Decision makers in all food chain segments often feel the pressure of making profit, therefore they usually prioritize the immediate financial benefits of discounting surplus products over the longer-term, intangible benefits of donating the food, such as improved social image of the company. We see the injunctive norm here at place that "making profit is seen as good (and normal) practice", and also the descriptive one of "many other companies prioritize profit over social impact".

- Employees often experience value dissonances when their personal views on food surplus donations ("should do") differ from their company's actions. Although personal beliefs in a fortunate scenario can have a significant impact on corporate decision-making.

**Gender and social norms:**

Although the CHORIZO food banks case study did not explicitly address gender and intersectional differences, there is a potential impact of gender when it comes to systems of redistribution and donation. Additionally, other intersectional differences, including age, socio-economic status, and geographical location, may influence the MOA of individuals when it comes to FLW behaviours.

# 3. Overview of relevant social norms in the food redistribution and donation sector

The table below sets out a number of social norms which are found in relation to questions in food redistribution and donation settings and examples of how these have been or could be used to reduce food loss and waste.

| KEY QUESTIONS | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Are we sure about the quality of donated food | Better for reputation and legal issues to stay on the safe side: never compromise on food safety! | The donated food has to be and has to remain suitable for human consumption through the donation chain. The fear of the companies that there is going to be complain about donated food quality can be reduced with more detailed and thorough communication regarding the applied food safety actions. |
| Should we really redistribute to people in need | Businesses are cautious about collaborating with NGOs due to concerns over reliability | By presenting the organizations involved in the distribution and explaining the processes, accountability, and control mechanisms in place, we can reduce the perceived risk and increase the willingness to donate |
| What to do with food surplus? | All edible surplus food should be donated to people in need | Individual beliefs can influence decisions about donating food surplus within a company. Identifying and contacting the persons at companies who are committed |

| | | |
|---|---|---|
| | | to food donation can help accelerating the donation process |
| Business considerations or CSR? | Decision makers prioritize financial benefits over non-financial benefits such as social impact when donating food. | Decision-makers should receive detailed insights and feedback on where the donated food went and the impact it had on those who received it. If we can make social impact more measurable, there is an opportunity for non-financial impacts to become more 'competitive' in executive decision-making. It is equally important to communicate that surplus food is distributed to only those who otherwise will not have access to such food, as so business are not losing potential demand and their sell. |
| What is really the best alternative usage of food surplus | Utilizing food surplus for animal feed or biofuel production is equally beneficial as donating it. | Surplus food can be used not only for human consumption but also for feeding animals or producing biofuel. By widely promoting the hierarchy of food waste management and emphasizing that higher levels yield greater social impact, we can create opportunities to 'guide' efforts from lower levels toward donation. |

*Table 2: Social norms and how to address them: The table shows some of the key questions to ask, the social norms around and suggestions for how to do something about them*

# 4. 8 steps to reduce food waste, including social norms insights in the food redistribution sector

Interventions, actions or just initiatives are words that is often used when organisations want to achieve more effective operations. For instance when they want to address food waste and when they want to move from one set of routines to a more effective one. Traditionally such attempts are organised as projects in order to make sure the participants know what to do what to achieve and how to measure whether the objectives are achieved. At research level such attempts are normally referred to interventions, but the approach can be used in practise as well and is a way for the organisation to make sure that goals are reached. An important part of interventions actions and initiatives is the inflation. Here we present a general model for that can be used as a recipe.

The following 8-step guide is designed to break down the process of designing and implementing a food waste reduction intervention into manageable steps. Based upon tried and tested expertise from the behaviour

change field, this approach is adapted from the Academy of Change framework[11] and combined with CHORIZO research findings, case study knowledge and examples from the wider food waste sector.

**Figure 6** shows the order of the steps to reduce food waste. The CHORIZO additions relate to the steps 3 and 4, enabling the inclusion of social norm insights in the intervention. Once you have put your intervention in place following step 1-7 and evaluated its impact, steps 4 to 8 can be followed again in order to refine the process for continual improvements in effectiveness. If you already have interventions in place and would like to refine the social norms elements in the process, we suggest that you focus on step 3 onwards.

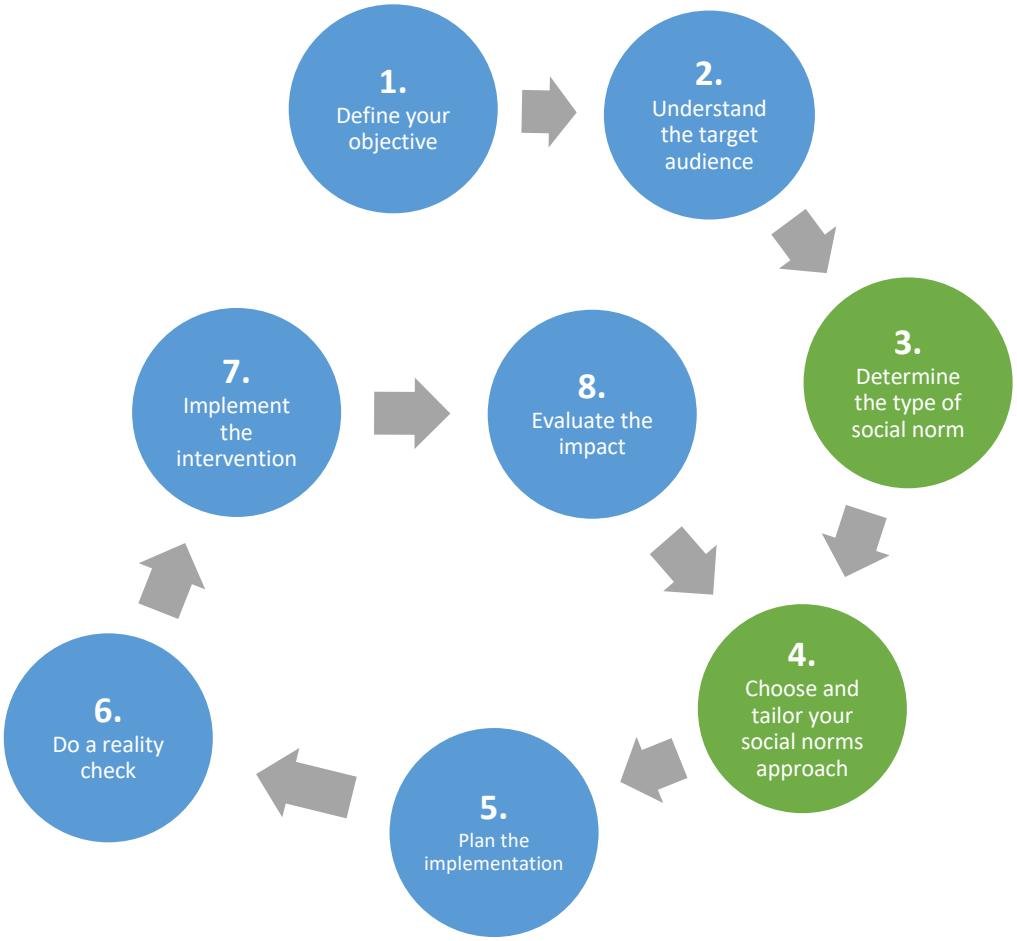


*Figure 7: 8 steps to reduce food waste, including social norms insights (steps shown in green)*

## 4.1. Step 1: Define your objective

In this first step, it's time to get clear about what exactly you aim to achieve with your intervention. To take action now, ask yourself the following critical questions:

**What is the specific, tangible behaviour you're targeting?**

[11] See http://aochange.org/

Try to first focus on one specific behaviour you want to target as this makes designing an intervention more manageable, as the scale is not too big. It is easier to dive into the factors surrounding one particular behaviour, than to try to analyse a complex system of behaviours. To ensure that you are focusing on a behaviour rather than an attitude, see **Figure 7** for an overview of the differences.

**Attitude-Action-Gap of food waste activities**

Consider if you are thinking of a behaviour or an attitude. An attitude of believing that we should only take what we can eat in a hotel breakfast buffet is different to the actual behaviour of not overfilling the plate in practice. Attitudes may support behaviour but often are not enough on their own to reduce FLW effectively. For instance, someone might care deeply about sustainability but still choose convenience over environmentally friendly options (e.g. buying multipacks of food products because there is a deal in the supermarket, while believing that we should only buy what we need to avoid waste). This is called the "attitude-action-gap"— the reality that people's beliefs don't always align with their behaviours, due to habits, social pressures, social norms or practical barriers. Recognizing this gap helps clarify whether influencing attitudes alone will achieve your goal or if your approach needs to address a behaviour directly.

*Figure 8: Attitude-Action-gap of food waste activities*

**What influences your targeted, specific behaviour?**

If you do have a specific, tangible behaviour in mind, then dive deeper—analyse the context around this behaviour. Map out the general influences, using a model like the MOA (see **figure 5** and **section 2.1**) to capture how various factors in the fields of motivation, opportunity and ability connect and impact upon your objective. Be specific and thorough; it will strengthen your intervention strategy. In this step, try to think in general terms about the MOA of this behaviour in society. In step 2, you will dive into the MOA of your target group more specifically.

**How would you like to change the behaviour with your intervention?**

Try crafting a clear, detailed objective: define exactly what you want to change in this behaviour and what the desired impacts should be. The more concrete you are, the easier it will be to follow the next steps effectively.

## 4.2. Step 2: Understand the target group

With this second step we dive even deeper into the context of the targeted behaviour to define and understand the target group you have in mind.

**What do you know about your target group?**

Remember the MOA Framework introduced in **figure 5**? You can use the framework to understand the motivations, opportunities and abilities of the targeted group. The following questions may help you to navigate the MOA framework by adding in specific considerations which are of relevance to your target group:

- What is your target group's **motivation** to engage with a new behaviour or to elaborate a new social norm?
- Do the target group have the **opportunity** to take the action? Is there a supporting infrastructure in place, physically and socially?
- What **abilities** do they need in order to enact and establish the behaviour? Consider how existing skills and abilities may differ across a diverse target group.

If you are struggling to answer the questions above, further research on your target group may help. There may be existing evidence or knowledge from other actors in the sector (including, for example, CHORIZO project resources), or gathering your own additional data may support this understanding (e.g. through surveys or interviews with the target group).

**Understanding the target group: example from HFBA**

Based on HFBA's experience, the Horeca sector has both the ability and opportunity for food donations, but motivation remains a challenge. HFBA is well-acquainted with the sector's players, regularly attending and organizing events. Despite the prevalence of leftover food at these events, companies are often reluctant to donate due to concerns about food safety. To address this, HFBA can enhance motivation by sharing information on food safety measures and successful donation examples from other actors. This can be achieved through casual discussions, formal presentations, or by engaging a dedicated internal contact person within the companies.

*Figure 9: Understanding the target group: example from HFBA*

## 4.3. Step 3: Determine the type of social norm

Social norms are both a reflection of common behaviours within a group and powerful tools for driving change. Observing norms helps reveal what people already do or value, and strategically highlighting these behaviours can encourage broader adoption. Understanding which type of social norm you are working with will help to tailor your approach and therefore bring a FW intervention to the next level of impact.

*Descriptive norms* show widespread behaviours, such as "most households reuse leftovers" while *injunctive norms* reflect what a group considers the right action, like "our community values wasting less to protect resources". Deciding whether it will work best to use *static framing* around existing behaviours, like "Most people plan meals to avoid waste" versus *dynamic framing* around growing trends like "More people each year are joining the movement to reduce food waste" will make your message resonate even more.

Gather the information you have already brought together on the 1) target behaviour, 2) influences on the behaviour, 3) specific desired change in the behaviour through your intervention, and 4) the motivations, opportunities and (cap)abilities of your target group. With this information, consider the potential relation of social norms to each:

1) **Target behaviour** – is there already a relevant social norm mentioned in **section 3** which is known to relate to this kind of behaviour? If not, consider what else may be a norm in the context upon which you are focusing.

2) **Influences on that behaviour** – consider the environment in which the behaviour takes place. What are the factors which might affect whether someone behaves in this specific way or not?

3) **The desired change in the behaviour through your intervention** – consider whether the desired change is either a) a wish to make a certain behaviour itself a norm (e.g. taking home a 'doggy bag' of leftovers from a restaurant if you don't finish your meal), or b) influenced by social norms which exist around the behaviour and contribute to its uptake (e.g. the behaviour of over-providing for guests when hosting a dinner party is influenced by the social norm of a good host being seen as providing multiple different options and more food than is needed).

4) **The motivations, opportunities and (cap)abilities of your target group** – map out the MOA of your target audience (those who do/would conduct the behaviour in question) especially focusing on what motivates the target group to perform certain behaviour related to food waste. The social norms are the influencing factors to the motivation. Social norms are most likely to be found in the motivation section (see CHORIZO Deliverable 3.1 *Conceptual Framework for Behavioural Change Understanding* for further information).

With this information, you should have been able to identify a specific social norm or norms with which you can work, in order to change the desired behaviour (whether directly or indirectly).

At this point it is also important to be clear on whether the norm(s) are *helpful norms* which you are looking to support to have a bigger influence (e.g. those which already contribute to lower FLW behaviours but are not yet routine or mainstreamed in your target group) or *unhelpful norms* which reduce the likelihood of the FLW behaviour taking place (e.g. something which influences individuals towards another behaviour than the socially desirable one, or which makes the FLW behaviour less likely or impossible). Examples are given in **section 2.2**. By identifying this, you know whether your intervention should seek to a) build and support an existing social norm or norms, or b) change or reduce the influence of an existing social norm or norms.

## 4.4. Step 4: Choose and tailor your social norms approach

Now that you have identified social norms that can influence behaviour, it's time to design your intervention plan by choosing your approach. Referencing **sections 2.2 and 3** for additional evidence-based insights as you create your intervention plan. Using varied communication strategies—whether static, dynamic, or changing the 'environment'—can help reinforce and spread desired behaviours (for more information see **section 4.5**).

To effectively use social norms to reduce food waste, consider these three approaches, how they can be used and the potential for tailoring, based on the CHORIZO project's learnings:

1. **Reinforce Existing Norms**: If an appropriate social norm around reducing waste already exists, emphasize it to strengthen commitment. Reminding people can for example happen like "most people in our community already avoid food waste" and can build on this established behaviour.

2. **Create New Norms Through In-Group Values**: When a norm is not yet present, it should be built by aligning it with in-group values. For instance, messaging like "In our community, we believe in reducing food waste to support sustainability" can shape waste reduction as part of the group's identity.

3. **Establish Norms via Environmental Cues**: Modify the environment to signal desirable behaviours. Visible prompts, such as signage promoting meal planning or providing compost bins, illustrate that reducing waste is common here, encouraging others to follow suit.

**Tailoring your approach: example from HFBA**

At the Association of Hungarian Event Organizers (AHEO), HFBA presented a case study of a pioneering donor, highlighting their donation process, food safety measures, and the social impact of their contributions. This initiative aimed to foster new norms within the group by leveraging shared values among the Association's members.

*Figure 10: Tailoring your approach: example from HFBA*

By tailoring these approaches—reinforcing, creating, and establishing norms—to specific communities and behaviours, social norms can inspire and drive lasting change in achieving zero food loss and waste.

## 4.5. Step 5: Plan the implementation

Now it is time to devise a plan for implementing the intervention by considering the following three **key Steps for Designing an Effective Plan:**

1. **Define setting, delivery and timing**: Determine *where*, *how*, *when* and *by whom* your intervention will be communicated to the target group/audience. Find the best setting: in which location or situation can you get closest to the target behaviour? What is the right place and time to reach your target audience ? Interventions can be targeted communication at points of action, appealing to people's identity, or altering the choice environment (the space or set of conditions in which they make a decision). When is your target audience most receptive? What are their relevant moments of change (e.g. is there a seasonal point when people already take action in this field)? Target locations where waste behaviours are most relevant—like meal prep areas or trash disposal points—and time your intervention when people are most receptive, such as before meals. How will you communicate your intervention? See **section 2.1** for the different ways in which norms can be expressed. Anticipate challenges and adapt plans as needed to overcome potential obstacles, such as practical barriers to running an intervention in a specific location, or the target group's lack of capacity to focus on something new at busy times of year.

2. **Identify Tools and Add Fun Elements**: Use tools like *nudging*, *self-commitments*, or *gamification* to engage participants. For instance, place reminders near waste bins or introduce rewards for reducing waste. Make the initiative fun and memorable—use engaging visuals, creative prompts, or interactive elements to boost participation.

3. **Collaborate for Greater Impact**: Team up with diverse partners to broaden reach and share resources. Collaborating with unexpected allies—like local businesses, schools, or community groups—can amplify the intervention's effectiveness and encourage a community-wide commitment to reducing waste.

**Communicating an intervention: example from HFBA**

The Association of Hungarian Event Organizers invited HFBA to present to their conference. The goal was to emphasize the importance of food donation and establish connections with potential new donors, with the aim of involving them in food donation initiatives in the future. During the presentation, we included a testimonial from the CEO of the pioneering partner and also officially appointed him as a Food Bank Ambassador.

*Figure 11: Communicating an intervention: example from HFBA*

By carefully coordinating these steps, your intervention can promote lasting change, making food waste reduction a shared, impactful effort.

## 4.6. Step 6: Do a reality check

Before launching your intervention, it's essential to do a reality check to ensure it is as effective and user-friendly as possible. This step helps identify any obstacles that could hinder participation and allows you to refine your approach for maximum impact.

1. **Make It Easy:** Simplify every step. Remove barriers, streamline interventions, and, if possible, eliminate unnecessary choices to guide participants naturally toward the desired behaviour.

2. **Choose Clear Language:** Use accessible, relatable language, avoiding overly technical or distant terms. Language should connect with the audience and reflect shared values, making it easy for others to support and spread.

3. **Did you think of everyone?** Consider whether your approach is truly inclusive. Are there potential biases, like assuming certain cultural norms or access to resources? Tailor your plan to include diverse perspectives (considering e.g. gender, disability, socio-economic background and other factors) and adapt it as needed to make sure no group is overlooked.

**Doing a reality check: example from HFBA**

Some HFBA colleagues reviewed a presentation prepared for a conference prior to the event, providing feedback on its clarity, engagement, and motivational impact.

*Figure 12: Doing a reality check: example from HFBA*

Conducting this reality check ensures your intervention is clear, simple, and inviting, ultimately making it more likely to achieve meaningful change by many people.

## 4.7. Step 7: Implement the intervention

Now it's time to bring your plan to life! Implementation is all about making your intervention visible, accessible, and impactful. To ensure your planned project reaches people effectively in the right place and at the right time, keep these steps in mind:

- **Prepare Your Resources**: Confirm locations, timing, and materials to make sure your messages and tools are available exactly where and when people need them.

- **Coordinate with Your Team**: Align everyone involved, so they're prepared to answer questions and make adjustments on the go. Plan in time for feedback talks.

- **Start with a pilot**: Testing in smaller settings first can reveal what works best, letting you refine and scale up smoothly.

- **Stay Flexible**: Watch how people respond, and be ready to adapt! If certain elements are more engaging than others, adjust your approach to enhance impact.

A well-implemented plan brings your ideas to action, helping people connect with the message and inspiring them to reduce food waste.

## 4.8. Step 8: Evaluate the impact

Evaluating impact is crucial to see if the action you took truly made a difference. This step focuses on measuring real behaviour changes and understanding the broader effects of your intervention.

Measuring change is always a crucial and important action in any intervention. Amount of food waste is easy to understand and is always a good measure. However it should be kept in mind that collecting data can be a tedious and challenging task. Therefore it's important to find easy ways to measure but also to think about the fact that there might be good proxies or indicators for the real amounts. Such proxies are often easier to measure through questionnaires and surveys and can include topics such as knowledge about the goals, skills to carry out the intended action, willingness to act or simply knowledge about the intervention program. Often it is a good idea to have more outcome measures to verify that the intervention is actually working.

Here's a guide to effective evaluation:

- **Define Key Metrics and Collect Evidence**: Set clear measures like waste volume reduction, participation rates, or uptake of new habits like meal planning. Combine this quantitative data with feedback to provide you a full picture.
- **Measure Behaviour, Not Just Attitudes**: Track real actions (like reduced waste) instead of relying only on survey responses. This helps address the *attitude-behaviour gap*, where people's stated values don't always align with their actions.
- **Monitor for Rebound Effects**: Monitor whether reduced waste in one area causes increased waste elsewhere, helping you avoid unintended consequences.
- **Tailor Evidence to Your Audience**: Think about who you need to convince—community members or stakeholders. Collect the evidence they'll find most compelling.

**Use of metrics: example from HFBA**

**Key Metrics for the food redistribution and donation sector:**

- **Leads:** Number of potential donors expressing interest.
- **Engagement:** Number of signed donation agreements.
- **Impact:** Number of meals donated.

HFBA also monitors the use of plastic boxes and other packaging materials, which tends to rise with the increase in food saved from the Horeca sector. This usage is tracked, and actions are planned to minimize environmental impact.

Depending on the target audience of HFBA's communication, various metrics are employed, such as the number of portions saved, the number of people served, or the equivalent kilograms of carbon footprint neutralized.

*Figure 13: Use of metrics: example from HFBA*

By tracking outcomes and refining your approach based on real-world results, you can enhance the long-term impact of your interventions.

# 5. Additional resources and support to implement interventions

Have you now read the guidance and find yourself feeling inspired but not sure where to get started? Don't worry - in 2025 we are running a European capacity building programme designed specifically to help you put these words into action!

The online and physical workshops will provide you with practical skills, examples and tips to design your own behaviour change intervention using fresh findings from the CHORIZO project and the relevant tools to use social norms in the reduction of food waste.

Sound good? Sign up to the CHORIZO newsletter to hear about the latest information and capacity building registration.

Additionally, the CHORIZO Insighter Data Hub contains a whole range of data collected through the project's case studies and research on FLW and social norms. Feel free to request relevant data for use in designing your own interventions.

**CHORIZO Project Deliverables and resources**


- CHORIZO project *Food Loss and Waste (FLW) Datahub and "Insighter"*, available at https://data.chorizoproject.eu/. (Accessed 29 January 2025)
- CHORIZO Deliverable 1.2 (2023), "*Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO Deliverable 2.3 (2024), *Empirical Evidence Sensemaking*, available at https://chorizoproject.eu/deliverables-repository/. (Accessed 29 January 2025)
- CHORIZO Deliverable 3.1 (2023), "*Conceptual framework for behavioural change understanding*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO project *newsletter sign up form*, available at https://chorizoproject.eu/dissemination_and_newsletter/. (Accessed 29 January 2025)


**Literature**


- Van Geffen, L.E.J., van Herpen, E., van Trijp, J.C.M., REFRESH Deliverable 1.1 (2016), *Causes & Determinants of Consumers Food Waste*., Available at https://eu-refresh.org/causes-determinants-consumers-food-waste. (Accessed 29 January 2025)


**Websites**


- *Behaviour Change*, available at https://behaviourchange.org.uk/. (Accessed 29 January 2025)
- European Commission, *Food Waste*, available at https://food.ec.europa.eu/food-safety/food-waste_en. (Accessed 29 January 2025)
- European Food Bank Association, *Our Mission, Impact & Values*, available at https://www.eurofoodbank.org/our-mission-impact-values/. (Accessed 29 January 2025)
- Flavour Network, (2024), *Foods You Can Still Eat After the Expiry Date*, available at https://www.flavournetwork.ca/article/10-foods-you-can-eat-after-the-expiry-date/. (Accessed 29 January 2025)

- Magyar Élelmiszerbank Egyesület, *Eredményeink*, available at https://www.elelmiszerbank.hu/hu/eredmenyeink.html. (Accessed 29 January 2025)
- REFRESH project: *Resource Efficient Food and dRink for the Entire Supply cHain*, available at https://www.eu-refresh.org/. (Accessed 29 January 2025)
- *The Academy of Change*, available at http://aochange.org/. (Accessed 29 January 2025)

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# Deliverable 4.1

**ACTOR SPECIFIC GUIDANCE**

## Schools

Picture credit: Yankrukov I Pexels

D4.1

# D4.1 Actor specific guidance - Schools

| | | | |
|---|---|---|---|
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## Table of contents



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## Glossary of terms and acronyms

| Acronym/Term | Description |
|---|---|
| **FLW** | Zero Food Loss & Waste |
| **HoReCa** | Hotels, restaurants and caterers (including institutional catering) |
| **MOA** | Motivation, Opportunity, Ability (framework) |
| **SN** | Social norm(s) |

*Table 1: Glossary of terms and acronyms*

# 1. About this guidance: how to work with social norms to reduce FLW in schools

## 1.1. Background to the guidance

CHORIZO (Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste) is a project co-funded by the Horizon Europe programme that aims to improve the understanding of the links between social norms, consumer behaviours, decisions of economic actors and food loss and waste (FLW) generation, and to use this knowledge to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. The project´s main goal is to address existing research gaps and enable actors to use its outcomes to deliver and advance innovations helping a range of actors to engage more effectively in food waste prevention and reduction activities.

**What are social norms?**

In the CHORIZO project, we understand social norms as the unwritten rules and expectations which guide people's behaviour within a society or group. In the context of food waste and loss, social norms influence individual attitudes, beliefs, and behaviours related to food consumption, preservation and disposal.

*Figure 1: What are social norms? Description from CHORIZO Deliverable 3.1 "Conceptual framework for behavioural change understanding" (2023), p15*

This document is part of a series of actor-, context- and gender-specific guidance resources which have been developed from the research findings in the project. It is aimed at supporting actors in different contexts to be equipped with the knowledge to work with social norms to reduce food loss and waste generated by related target groups. Schools are an important lever of change and as a result in this document we focus on the part of the findings from the CHORIZO project's research activities that can be used in educational contexts, to reach school pupils, staff and families. We have combined our findings with wider knowledge and the Academy of Change approach[1] to produce this guidance aimed at actors in European schools.

## 1.2. The purpose of this guide and how to read it

Would you like to reduce food loss and waste (FLW) in your school community? Do you have the motivation and the opportunities to do so? Do you already have plans for activities in your school that focus on sustainable food practices? Then you are in the right place! This document aims to assist you in your school's food strategy and to increase your capability to take action effectively in educational settings, by providing you with knowledge on *social norms* in your context and a how to include this knowledge in a step-by step guide to implement a FW reduction intervention. Changing social norms, as you will read also further in this document, is an impactful tool in reducing food waste. Using social norms in your planning and implementation of interventions makes them even more effective in reducing FLW.

[1] The Academy of Change (AoC) (http://aochange.org/) is a capacity building programme first created by the Collaborating Centre on Sustainable Consumption and Production (CSCP) and Behaviour Change (https://behaviourchange.org.uk/), initially funded by the KR Foundation, to support organisations to develop behaviour change interventions.

This guide will equip you with practical knowledge on how to work with **social norms** - unwritten rules which influence people's everyday behaviour - to reduce FLW, in a knowledge process illustrated in **figure 2**.

**How to read this document**


*Figure 2: How to read this document - illustration of the structure of the guidance document.*

**Section 2** of this guide equips you with background information to **learn** about social norms (**section 2.1**) and how they affect FLW in the many different ways that food is part of life for the school community (**section 2.2**).

**Section 3** provides tangible examples of how social norms affect FLW in schools. Even better, you will learn how others have also designed interventions to change social norms and behaviour to save precious food. Then, you are ready to **identify** different kinds of social norms which are relevant to your context and start your own interventions!

**Section 4** is designed to support you to easily **plan, design, implement and evaluate** your own interventions to reduce FLW. The presented 8 step guide to reduce food waste includes insights into social norms. This includes **evaluating** your own interventions to understand the impact and improvement potentials to continue to tackle FLW with social norms

**Section 5** represents a resource library, sharing further insights on social norms and behaviour change approaches and interventions that might serve as an additional inspiration.

**Where should I start reading?**

- For those *new to how to conduct an intervention towards food waste reduction*, the whole document should be of high interest to you.
- For those *new to the concept of social norms* and how to use them in a FLW context, we also suggest following the guide from start to finish to understand how to enrich your current practice with new insights. (You might already work with 6-steps to implement your FW intervention, look out for the additional 2 steps we have added in **section 4**!)
- If you *already have experience in using social norms* in your context, but would like to hear more about the findings of the CHORIZO project in your field, we suggest to start with **sections 2.2 and 3**. Also check the two additional tips in the 8-step guide presented in **section 4**.

# 2. Social norms in the context of food systems

## 2.1. What are social norms?

Social norms are unwritten rules which influence people's everyday behaviour. They can do so in two ways.

On the one hand, people might behave a certain way because they see other people doing a certain thing. For instance, a child may not eat their vegetables in the school lunch break, because they see other children leaving their salad on the plate as well. This behaviour of copying what most people do in the same situation is called a descriptive social norm.

On the other hand, people might behave a certain way because they think that others expect them to act like this. For instance, a person might no longer be hungry but still finish their plate, since they think that otherwise they might be perceived as being rude. These people thereby react to what they think is a rule of what is acceptable - which is called an injunctive social norm.

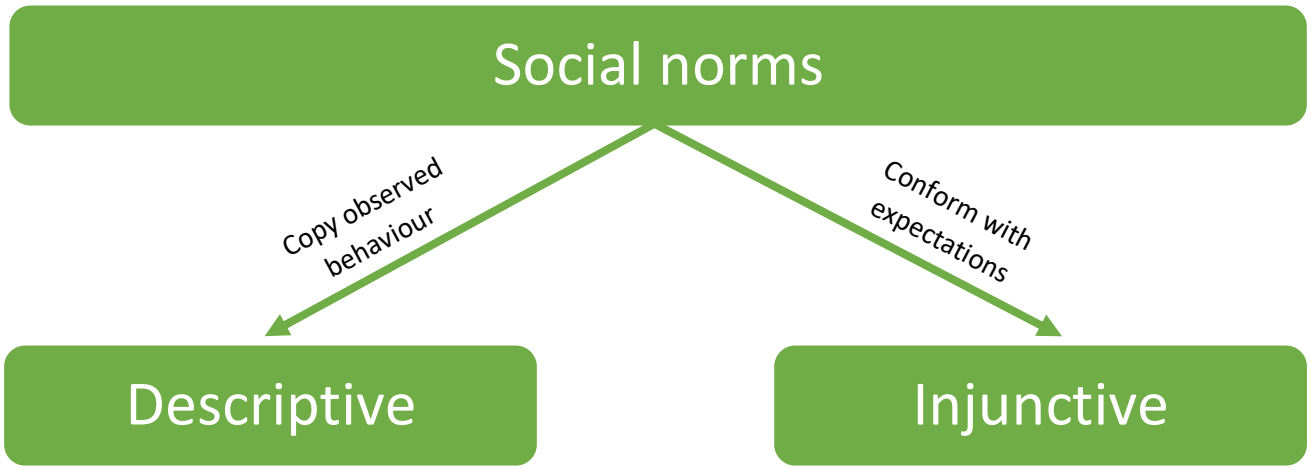


*Figure 3: Descriptive and injunctive social norms*

Norms can be static – based on a current situation – or dynamic – articulating a behavioural movement in one way or another.

Whichever type or combination - descriptive or injunctive, and static or dynamic - social norms can be seen as a powerful tool for change. The above examples - of a person eating more than they need to in order to finish their plate of food, and of a child not eating vegetables - show social norms that lead to more food waste. See **figure 4** for a range of different examples of social norms.

Now imagine the possible impact by changing behaviours of several people towards creating social norms which favour less FLW. Learning about social norms can support you in developing different interventions to achieve a more desirable behaviour.

This guidance will help you to design your own interventions to drive change using social norms.

**Examples of different types of social norms**

To illustrate different types of social forms, here are some examples of social norms communication about how to deal with leftovers in a household context:

- "75% of households reuse leftovers" is a **descriptive norm**.

- "Reusing leftovers for other dishes is regarded as good housekeeping" is an **injunctive norm**.
- "Most people reuse leftovers" is an example of **static framing**.
- "More people reuse leftovers every year" is an example of **dynamic framing**.

*Figure 4: Examples of different types of social norms*

**How do social norms fit within human behaviour overall?**

Besides social norms, there are many other aspects influencing human behaviour. To better understand the degree to which social norms influence our behaviour, the CHORIZO Project has combined an agent-based decision model (HUMAT) with a behavioural psychological model (MOA). The MOA framework, first designed for marketing purposes (Rothschild, 1999), was adapted to analyse Motivation, Opportunity and Ability (MOA) factors affecting food waste behaviour for the EU Refresh project[2]. The HUMAT model is used for modelling actor decision making and so is not referred to in this document. If you would like to learn more about the model and how it is used in the CHORIZO research, this can be found in the project's Conceptual framework for behavioural change understanding[3].

The MOA framework is used throughout the CHORIZO project and in this document to understand on the one hand what hinders behaviour change, and on the other hand how interventions to reduce FLW can overcome these barriers.

In the MOA framework, aspects of motivation, opportunity and ability combine to determine if and how a person behaves in any given situation. In line with behavioural change scientists, we believe, that behavioural change is based on an interplay of these three factors. In this model, social norms come under the motivations category, meaning that, combined with attitudes and awareness, the level of motivation of an individual will be developed. For example, in the case of using up leftover food, if someone is aware that leftovers can safely be eaten (awareness), believe that they should reuse leftovers in order to save food (attitude), and see others cooking with leftovers (social norm), overall they are likely to have a strong *motivation* component towards their behaviour. In order for the person to actually behave in this way, however, there will also need to be the *opportunity* for them to do so (e.g. time to prepare the leftovers, the right cooking/storage equipment) and the *ability* to enact the behaviour (e.g. knowledge of a recipe to re-use the leftovers they have and the appropriate cooking skills to successfully prepare the meal). **Figure 5** sets out a visualization of the model and its components.

[2] https://www.eu-refresh.org/
[3] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

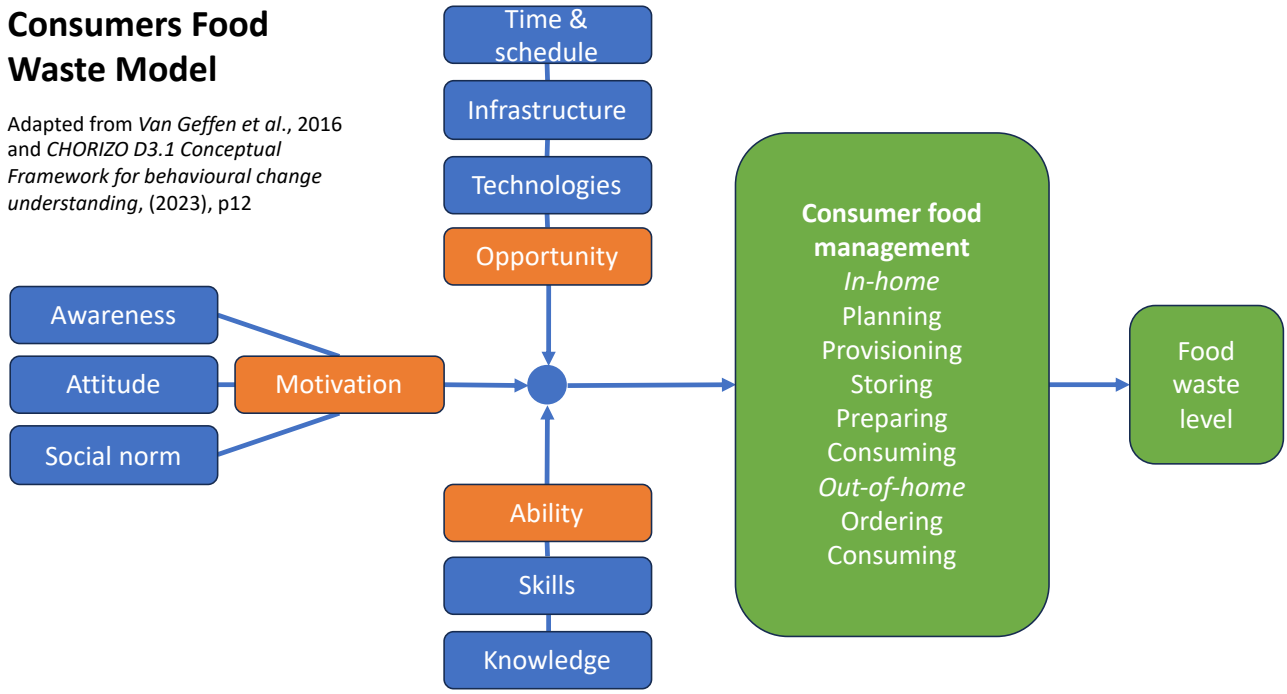


*Figure 5: Consumers Food Waste Model, illustrating the MOA framework (including social norms) in the context of food waste behaviours (source: see figure)*

Aspects of background, demographic or identity may affect the factors influencing behaviour of your target group members. In particular, gender may have an impact on the MOA. While CHORIZO research on FLW prevention actions did not find any existing interventions specifically designed to systematically incorporate the gender dimension (see Chapter 6 in Deliverable 1.2 *Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions* for further information), we know that social norms can be differently developed or perceived by individuals depending on their gender. For example, there may be social norms in which gender affects who is expected to conduct food shopping, meal planning and cooking in the household. Additionally, CHORIZO case study research has identified some differences between genders in terms of perceived social norms and behaviours around food loss and waste. Relevant findings on gender are further discussed in **section 2.2**.

Of course, human behaviour is not deterministic. The existence of social norms does not necessarily mean that we also behave to conform with these norms. While some norms are helpful, others can lead to unhelpful outcomes (leading to negative societal, environmental or for other impacts).

If you would like to learn more about the models used in the CHORIZO project research, we suggest reading the Conceptual framework for behavioural change understanding[4].

## 2.2. Why are social norms relevant to food loss and waste in schools?

Food loss and waste can occur in four main interfaces in the school context. Firstly, school canteens are a source of food loss and waste. Secondly, peer behaviour can have an influence on how much food students waste. Thirdly, related to this, the students' households also have an influence on amounts of FLW. Lastly,

[4] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

FLW can also be integrated as a topic in different subjects at school, with the potential to raise levels of food waste literacy.

Schools must address social norms around food waste as children are future consumers, and habits formed early can last a lifetime. Since most schools are taking pride in teaching about sustainable development goals, fighting food waste has a natural place in the curriculum. Schools play a key role in influencing food intake and behaviour, making it vital to understand the drivers of food waste and balance these with a healthy diet. Social contexts—family, peers, and school environments—shape children's decisions, so interventions must consider these influences and the norms present within those settings. In general, there are four areas in which schools can address food waste and the related social norms:

- In the school canteen, by implementing targeted interventions to reduce food loss and waste.
- By regularly measuring food waste amounts in the canteen.
- By promoting more sustainable food behaviour among students.
- By promoting more sustainable practices for families through school2home communication channel (in households which have children attending the school).
- By educating about healthy diets and food waste reduction in different school subjects to raise food waste literacy.

Addressing food waste and its surrounding social norms in the school context is a complex undertaking, as it contains a mixture of descriptive social norms on the students' side and injunctive social norms on the parents' side. Additionally, school canteens can employ insights derived from other food services. Another opportunity lies in expanding food waste education beyond canteens and households to include such elements in science classes and SDG teaching (especially Goal 12.3), although this can be a pedagogic challenge for teachers.

However, this complexity also results in many opportunities and potential entry-points to change social norms and incentivise more sustainable food-related behaviour change. The next section will outline examples to tackle the FW challenges by working with social norms in the school context.

**Gender and social norms:**

As part of the CHORIZO schools case study, the influence of gender and intersectional differences in relation to social norms was explored. Findings (taken from CHORIZO Deliverable 2.3 Empirical Evidence Sensemaking, p237) included:

- There were no significant differences were found between boys and girls regarding the type of wasted food items and choice behaviours.
- In Denmark, while there was no evidence of any significant difference between boys and girls in regards of food choices or wasting certain types of food items, it was noted by one headmaster that generally boys more readily went outside to play during recess. This consequently might entail that the boys do not take the time to eat a packed lunch.

# 3. Overview of relevant social norms in schools

Through the schools' case study, alongside research on FLW actions within the sector, the CHORIZO project has been able to compile a collection of social norms present in the school setting. In the table below you can



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find identified social norms, with a short explanation about the social norm and the respective setting. Further, ideas on interventions to reduce food waste are highlighted.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEENOR COULD BE USED TO REDUCE FLW |
|---|---|---|
| Targeting counting waste behaviour | Plate size influences the amount of food waste | For a long time it was assumed that a reduced plate size also leads to less food waste, with people eating smaller portions at once, and thus reducing the overall leftovers. However, in the Chorizo project, the intervention was tested with mixed results. Instead, it was found that increasing the size of the plate lead to less food waste. The reason was that in the tested scenario, people were more likely to take more portions in total with smaller plates, often taking more rounds than they could eat. Thus, we recommend testing this in the case of the school cafeteria. When testing, it is worth paying attention to queues and time limits, as they may impact group behaviour (for further ideas, see **section 4.8** on evaluation of interventions). |
| Roots and vegetables in focus | Students are often focused on the external appearance of their fruit and vegetables and reject them, if they show spots or signs of browning | The descriptive social norm of students to be reluctant to eat imperfect-looking fruits and veggies is best countered by showing that the food is still very tasty and edible, and secondly informing their parents about better food packaging practices, which will reduce the number of dents and brown spots. Teachers, peers, and parents can act as positive change agents here. |
| Creating school to home learning | Good provider identity | Some parents tend to provide more food than necessary, or "healthy" food (e.g. which kids don't want to eat) because of the fear of being perceived as a bad host or parent.<br>On the other hand, it is reported to increase acceptance and reduce food waste if parents prepare lunch boxes together with their kids. |
| Influencing pupils' group behaviour | Students are likely to adapt peer behaviour | Especially younger students are likely to copy observed behaviour. In the food waste context, this may for instance be by throwing away still-edible food. However, peer behaviour can also be an opportunity. For instance, by planning group activities, entire groups of students can be motivated to take up more sustainable practices, using the peer pressure for something good. One example is to eat packed lunches together, to reduce the amount of imperfect-looking food which is thrown away. In canteen settings, group interventions can be used to pack leftovers of the canteen meal. Students can be invited to bring their own boxes from home to take some school canteen leftovers home with them. It's important to have in mind that the interventions do not work for every case. Testing it is therefore very important! |

| | | |
|---|---|---|
| Fostering food waste literacy in the classroom | Awareness about food loss and waste and how to reduce it can have a substantial impact on food-related behaviour. | Implementing education about sustainable practices and skills around food waste can reduce the amount of food waste significantly.[5] Especially, knowledge about the impacts of food waste, better packaging, storing, and interpreting of date markings can reduce food waste. |

*Table 2: Relevant social norms*

# 4. 8 steps to reduce food waste, including social norms insights in schools

Interventions, actions or just initiatives are words that is often used when organisations want to achieve more effective operations. For instance when they want to address food waste and when they want to move from one set of routines to a more effective one. Traditionally such attempts are organised as projects in order to make sure the participants know what to do what to achieve and how to measure whether the objectives are achieved. At research level such attempts are normally referred to interventions, but the approach can be used in practise as well and is a way for the organisation to make sure that goals are reached. An important part of interventions actions and initiatives is the inflation. Here we present a general model for that can be used as a recipe.

The following 8-step guide is designed to break down the process of designing and implementing a food waste reduction intervention into manageable steps. Based upon tried and tested expertise from the behaviour change field, this approach is adapted from the Academy of Change framework[6] and combined with CHORIZO research findings, case study knowledge and examples from the wider food waste sector.

**Figure 6** shows the order of the steps to reduce food waste. The CHORIZO additions relate to the steps 3 and 4, enabling the inclusion of social norm insights in the intervention. Once you have put your intervention in place following step 1-7 and evaluated its impact, steps 4 to 8 can be followed again in order to refine the process for continual improvements in effectiveness. If you already have interventions in place and would like to refine the social norms elements in the process, we suggest that you focus on step 3 onwards.

[5] See, for example: https://youth.world-food-forum.org/education/youth-towards-zero-food-waste/en; https://data.chorizoproject.eu/tl/dataset/master8a/resource/67779173-686f-475c-b554-fc9833024b57; and https://www.mdpi.com/2673-995X/3/1/1

[6] See http://aochange.org/



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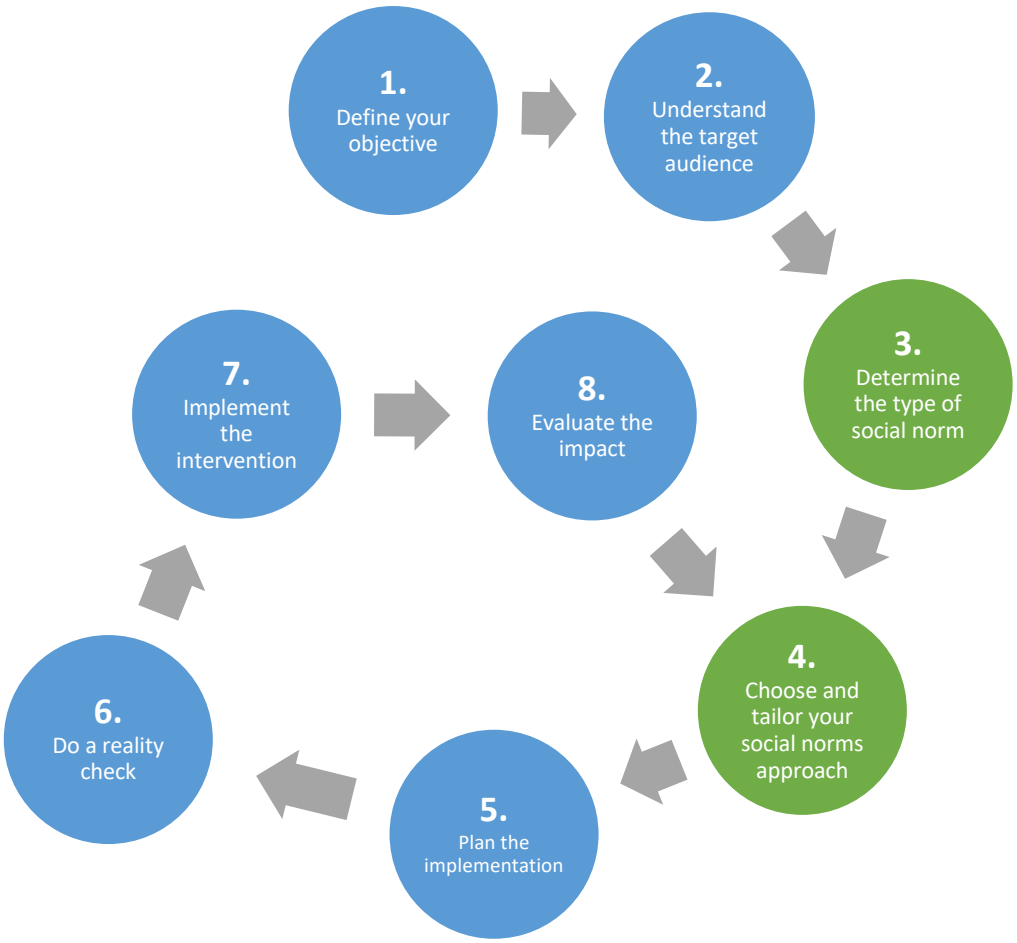


*Figure 6: 8 steps to reduce food waste, including social norms insights (steps shown in green)*

## 4.1. Step 1: Define your objective

In this first step, it's time to get clear about what exactly you aim to achieve with your intervention. To take action now, ask yourself the following critical questions:

**What is the specific, tangible behaviour you're targeting?**

Try to first focus on one specific behaviour you want to target as this makes designing an intervention more manageable, as the scale is not too big. It is easier to dive into the factors surrounding one particular behaviour, than to try to analyse a complex system of behaviours. To ensure that you are focusing on a behaviour rather than an attitude, see **Figure 7** for an overview of the differences.

**Attitude-Action-Gap of food waste activities**

Consider if you are thinking of a behaviour or an attitude. An attitude of believing that we should only take what we can eat in a hotel breakfast buffet is different to the actual behaviour of not overfilling the plate in practice. Attitudes may support behaviour but often are not enough on their own to reduce FLW effectively. For instance, someone might care deeply about sustainability but still choose convenience over environmentally friendly options (e.g. buying multipacks of food products because there is a deal in the

supermarket, while believing that we should only buy what we need to avoid waste). This is called the "attitude-action-gap"— the reality that people's beliefs don't always align with their behaviours, due to habits, social pressures, social norms or practical barriers. Recognizing this gap helps clarify whether influencing attitudes alone will achieve your goal or if your approach needs to address a behaviour directly.

*Figure 7: Attitude-Action-gap of food waste activities*

**What influences your targeted, specific behaviour?**

If you do have a specific, tangible behaviour in mind, then dive deeper—analyse the context around this behaviour. Together with staff and/or pupils in the school, you could map out the general influences on FLW behaviours in the schools. For example, as a project activity, you could ask a group:

> ***What are the social norms that we want to change in our school, and in which way do we want to change them?***

The more concrete you are with your answers, the easier it will be to follow the next steps effectively.

## 4.2. Step 2: Understand the target group

With this second step we dive even deeper into the context of the targeted behaviour to define and understand the target group you have in mind.

**What do you know about your target group?**

Remember the MOA Framework introduced in **figure 5**? You can use the framework to understand the motivations, opportunities and abilities of the targeted group. The following questions may help you to navigate the MOA framework by adding in specific considerations which are of relevance to your target group within the school community (e.g. teachers, pupils or parents):

- What is your target group's **motivation** to engage with a new behaviour or to elaborate a new social norm?
- Do the target group have the **opportunity** to take the action? Is there a supporting infrastructure in place, physically and socially?
- What **abilities** do they need in order to enact and establish the behaviour? Consider how existing skills and abilities may differ across a diverse target group.

If you are struggling to answer the questions above, further research on your target group may help. There may be existing evidence or knowledge from other actors in the sector (including, for example, CHORIZO project resources), or gathering your own additional data may support this understanding (e.g. through surveys or interviews with the target group).

**Targeting gender and age: example from schools**

School pupils are just as different as the rest of us. That also means that interventions needs to target and take into consideration age and gender. From the research in CHORIZO's schools case study, we found that:

"No significant differences were found between boys and girls regarding the type of wasted food items and choice behaviours. Teachers noticed that younger students tended to follow their parents' advice, ate more of whatever they had brought from home. In contrast, older students sought to assert their independence

by making their own choices, often opting for unhealthy options as a form of rebellion against parental expectations." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 8: Targeting gender and age: example from schools*

## 4.3. Step 3: Determine the type of social norm

Social norms are both a reflection of common behaviours within a group and powerful tools for driving change. Observing norms helps reveal what people already do or value, and strategically highlighting these behaviours can encourage broader adoption. Understanding which type of social norm you are working with will help to tailor your approach and therefore bring a FW intervention to the next level of impact.

*Descriptive norms* show widespread behaviours, such as "most children finish their packed lunch food" while *injunctive norms* reflect what a group considers the right action, like "our school values students and staff only taking what they can eat in the canteen". Deciding whether it will work best to use *static framing* around existing behaviours, like "Most students plan their packed lunch with their parents or guardians to avoid waste" versus *dynamic framing* around growing trends like "More students each year are joining the movement to reduce food waste" will make your message resonate even more.

Gather the information you have already brought together on the 1) target behaviour, 2) influences on the behaviour, 3) specific desired change in the behaviour through your intervention, and 4) the motivations, opportunities and (cap)abilities of your target group. With this information, consider the potential relation of social norms to each:

1) **Target behaviour** – is there already a relevant social norm mentioned in **section 3** which is known to relate to this kind of behaviour? If not, consider what else may be a norm in the context upon which you are focusing.

2) **Influences on that behaviour** – consider the environment in which the behaviour takes place. What are the factors which might affect whether someone behaves in this specific way or not?

3) **The desired change in the behaviour through your intervention** – consider whether the desired change is either a) a wish to make a certain behaviour itself a norm (e.g. taking home a 'doggy bag' of leftovers from a restaurant if you don't finish your meal), or b) influenced by social norms which exist around the behaviour and contribute to its uptake (e.g. the behaviour of over-providing for guests when hosting a dinner party is influenced by the social norm of a good host being seen as providing multiple different options and more food than is needed).

4) **The motivations, opportunities and (cap)abilities of your target group** – map out the MOA of your target audience (those who do/would conduct the behaviour in question) especially focusing on what motivates the target group to perform certain behaviour related to food waste. The social norms are the influencing factors to the motivation. Social norms are most likely to be found in the motivation section (see CHORIZO Deliverable 3.1 *Conceptual Framework for Behavioural Change Understanding* for further information).

With this information, you should have been able to identify a specific social norm or norms with which you can work, in order to change the desired behaviour (whether directly or indirectly).



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**Suboptimal food/undesirable food quality: example from schools**

"The most prevalent and important social norm in the schools' case study was **suboptimal food/undesirable food quality**. In this respect, the following characteristics were key: appearance and consistency, texture, taste and quality, and social acceptance. […] Ultimately, the social acceptance of the food among peers also played a significant role. It was mentioned that foods that an individual was prone to like could be perceived as gross among their peers, leading the individual to throw it out, as well as changing their own taste preferences for these food items. Social context played a significant role in these decisions, with some foods deemed more "popular" than others." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 9: Suboptimal food/undesirable food quality: example from schools*

At this point it is also important to be clear on whether the norm(s) are *helpful norms* which you are looking to support to have a bigger influence (e.g. those which already contribute to lower FLW behaviours but are not yet routine or mainstreamed in your target group) or *unhelpful norms* which reduce the likelihood of the FLW behaviour taking place (e.g. something which influences individuals towards another behaviour than the socially desirable one, or which makes the FLW behaviour less likely or impossible). Examples are given in **section 2.2**. By identifying this, you know whether your intervention should seek to a) build and support an existing social norm or norms, or b) change or reduce the influence of an existing social norm or norms.

## 4.4. Step 4: Choose and tailor your social norms approach

Now that you have identified social norms that can influence behaviour, it's time to design your intervention (project) plan by choosing your approach. Referencing **sections 2.2 and 3** for additional evidence-based insights as you create your intervention plan. Using varied communication strategies—whether static, dynamic, or changing the 'environment'—can help reinforce and spread desired behaviours (for more information see **section 4.5**).

To effectively use social norms to reduce food waste, consider these three approaches, how they can be used and the potential for tailoring, based on the CHORIZO project's learnings:

1. **Reinforce Existing Norms**: If an appropriate social norm around reducing waste already exists, emphasize it to strengthen commitment. Reminding people can for example happen like "most people in our community already avoid food waste" and can build on this established behaviour.

2. **Create New Norms Through In-Group Values**: When a norm is not yet present, it should be built by aligning it with in-group values. For instance, messaging like "In our community, we believe in reducing food waste to support sustainability" can shape waste reduction as part of the group's identity.

3. **Establish Norms via Environmental Cues**: Modify the environment to signal desirable behaviours. Visible prompts, such as signage promoting meal planning or providing compost bins, illustrate that reducing waste is common here, encouraging others to follow suit.

**Ugly veggies and good providers: example from schools**

"Fruits and vegetables frequently appearing in lunch boxes were perceived as boring and consequently thrown out. In some cases, these attitudes were formed due to the belief that none of the other pupils consume such food items and that it was embarrassing thus to do so. […] The data also demonstrated that

it was important to the parents to be **good food providers**. There were examples of parents who knew that the lunch was being thrown out but continued to provide the food because it was seen as the societal expectation of what a parent should do." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 10: Ugly veggies and good providers: example from schools*

By tailoring these approaches—reinforcing, creating, and establishing norms—to specific communities and behaviours, social norms can inspire and drive lasting change in achieving zero food loss and waste.

## 4.5. Step 5: Plan the implementation

Now it is time to devise a plan for implementing the intervention by considering the following three **key Steps for Designing an Effective Plan:**

1. **Define setting, delivery and timing**: Determine *where*, *how*, *when* and *by whom* your intervention will be communicated to the target group/audience. Find the best setting: in which location or situation can you get closest to the target behaviour? What is the right place and time to reach your target audience ? Interventions can be targeted communication at points of action, appealing to people's identity, or altering the choice environment (the space or set of conditions in which they make a decision). When is your target audience most receptive? What are their relevant moments of change (e.g. is there a seasonal point when people already take action in this field)? Target locations where waste behaviours are most relevant—like meal prep areas or trash disposal points—and time your intervention when people are most receptive, such as before meals. How will you communicate your intervention? See **section 2.1** for the different ways in which norms can be expressed. Anticipate challenges and adapt plans as needed to overcome potential obstacles, such as practical barriers to running an intervention in a specific location, or the target group's lack of capacity to focus on something new at busy times of year.

2. **Identify Tools and Add Fun Elements**: Use tools like *nudging*, *self-commitments*, or *gamification* to engage participants. For instance, place reminders near waste bins or introduce rewards for reducing waste. Make the initiative fun and memorable—use engaging visuals, creative prompts, or interactive elements to boost participation.

3. **Collaborate for Greater Impact**: Team up with diverse partners to broaden reach and share resources. Collaborating with unexpected allies—like local businesses, schools, or community groups—can amplify the intervention's effectiveness and encourage a community-wide commitment to reducing waste.

**Involve your students: example from schools**

Schools can involve students in food waste reduction efforts, such as the monitoring of food waste, the evaluation of the menu, the design of an action plan, and the celebration of results. One example is the "We ate responsibly" campaign in a kindergarten in Riga, Latvia[7]. Another example is "Love Food, Hate Waste /

[7] See https://www.eatresponsibly.eu/en/i-do/latvian-kindergarten-reduced-its-food-waste-by-nearly-70/

the really healthy school program" in the Czech Republic[8]. Also the Matsvinn project in Helsingborg schools is worth mentioning[9].

In relation to the school food waste intervention, food, health, environment and sustainability related subject and activities and their teacher are crucial aspect to be considered while planning the intervention.

*Figure 11: Involve your students: example from schools*

By carefully coordinating these steps, your intervention can promote lasting change, making food waste reduction a shared, impactful effort.

## 4.6. Step 6: Do a reality check

Before launching your intervention, it's essential to do a reality check to ensure it is as effective and user-friendly as possible. This step helps identify any obstacles that could hinder participation and allows you to refine your approach for maximum impact.

1. **Make It Easy:** Simplify every step. Remove barriers, streamline interventions, and, if possible, eliminate unnecessary choices to guide participants naturally toward the desired behaviour.
2. **Choose Clear Language:** Use accessible, relatable language, avoiding overly technical or distant terms. Language should connect with the audience and reflect shared values, making it easy for others to support and spread.
3. **Did you think of everyone?** Consider whether your approach is truly inclusive. Are there potential biases, like assuming certain cultural norms or access to resources? Tailor your plan to include diverse perspectives (considering e.g. gender, disability, socio-economic background and other factors) and adapt it as needed to make sure no group is overlooked.

**Cultural differences: example from CHORIZO case studies**

In some cultures it is not polite to leave food on the plate, while in other cultures it is totally the

opposite. Do you really know your target audience, or are there more aspects to consider?

In relation to communicating to students, it is crucial to consider the age of the student, understanding of the concept and the language that they are familiar with. The younger student might not be much familiar with the concept of sustainability, food system and so on.

*Figure 12: Cultural differences: example from CHORIZO case studies*

Conducting this reality check ensures your intervention is clear, simple, and inviting, ultimately making it more likely to achieve meaningful change by many people.

[8] See https://www.planetfriendlyschools.eu/projects/love-food-hate-waste
[9] See https://helsingborg.se/makingofasmartercity/now-children-in-40-classrooms-can-review-their-climate-data/

## 4.7. Step 7: Implement the intervention

Now it's time to bring your plan to life! Implementation is all about making your intervention visible, accessible, and impactful. To ensure your planned project reaches people effectively in the right place and at the right time, keep these steps in mind:

- **Prepare Your Resources**: Confirm locations, timing, and materials to make sure your messages and tools are available exactly where and when people need them.
- **Coordinate with Your Team**: Align everyone involved, so they're prepared to answer questions and make adjustments on the go. Plan in time for feedback talks.
- **Start with a pilot**: Testing in smaller settings first can reveal what works best, letting you refine and scale up smoothly.
- **Stay Flexible**: Watch how people respond, and be ready to adapt! If certain elements are more engaging than others, adjust your approach to enhance impact.

A well-implemented plan brings your ideas to action, helping people connect with the message and inspiring them to reduce food waste.

## 4.8. Step 8: Evaluate the impact

Evaluating impact is crucial to see if the action you took truly made a difference. This step focuses on measuring real behaviour changes and understanding the broader effects of your intervention.

Measuring change is always a crucial and important action in any intervention. Amount of food waste is easy to understand and is always a good measure. However it should be kept in mind that collecting data can be a tedious and challenging task. Therefore it's important to find easy ways to measure but also to think about the fact that there might be good proxies or indicators for the real amounts. Such proxies are often easier to measure through questionnaires and surveys and can include topics such as knowledge about the goals, skills to carry out the intended action, willingness to act or simply knowledge about the intervention program. Often it is a good idea to have more outcome measures to verify that the intervention is actually working.

Here's a guide to effective evaluation:

- **Define Key Metrics and Collect Evidence**: Set clear measures like waste volume reduction, participation rates, or uptake of new habits like meal planning. Combine this quantitative data with feedback to provide you a full picture.
- **Measure Behaviour, Not Just Attitudes**: Track real actions (like reduced waste) instead of relying only on survey responses. This helps address the *attitude-behaviour gap*, where people's stated values don't always align with their actions.
- **Monitor for Rebound Effects**: Monitor whether reduced waste in one area causes increased waste elsewhere, helping you avoid unintended consequences.
- **Tailor Evidence to Your Audience**: Think about who you need to convince—community members or stakeholders. Collect the evidence they'll find most compelling.

**Collaboration in a holistic approach: example from schools**

Municipalities design interventions for their food services (nursing homes, kindergardens, …) to reduce food waste by having an awareness campaign and education programme for the staff, an interactive monitoring step, and an identification and implementation of the actions. This usually requires a collaboration of market actors, public actors, and academia. One example is the efforts to measure food waste in the municipalites canteen with FoodOp digital platform technology by the Municipality of Gladsaxe in Denmark[10].

*Figure 13: Collaboration in a holistic approach: example from schools*

By tracking outcomes and refining your approach based on real-world results, you can enhance the long-term impact of your interventions.

# 5. Additional resources and support to implement interventions

Have you now read the guidance and find yourself feeling inspired but not sure where to get started? Don't worry - in 2025 we are running a European capacity building programme designed specifically to help you put these words into action!

The online and physical workshops will provide you with practical skills, examples and tips to design your own behaviour change intervention using fresh findings from the CHORIZO project and the relevant tools to use social norms in the reduction of food waste.

Sound good? Sign up to the CHORIZO newsletter to hear about the latest information and capacity building registration.

Additionally, the CHORIZO Insighter Data Hub contains a whole range of data collected through the project's case studies and research on FLW and social norms. Feel free to request relevant data for use in designing your own interventions.

**CHORIZO Project Deliverables and resources**

- CHORIZO project *Food Loss and Waste (FLW) Datahub and "Insighter"*, available at https://data.chorizoproject.eu/. (Accessed 29 January 2025)
- CHORIZO Deliverable 1.2 (2023), "*Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO Deliverable 2.3 (2024), *Empirical Evidence Sensemaking*, available at https://chorizoproject.eu/deliverables-repository/. (Accessed 29 January 2025)
- CHORIZO Deliverable 3.1 (2023), "*Conceptual framework for behavioural change understanding*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO project *newsletter sign up form*, available at https://chorizoproject.eu/dissemination_and_newsletter/. (Accessed 29 January 2025)

[10] See https://foodop.dk/

**Literature**


- Mikkelsen, B. E., (2023), *Fighting Food Waste – Good Old Boys or Young Minds Solutions? Insights from the Young Foodwaste Fighters Club*, Youth, 3(1), 1-17, available at: https://doi.org/10.3390/youth3010001. (Accessed 29 January 2025)
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**Websites**


- *Behaviour Change*, available at https://behaviourchange.org.uk/. (Accessed 29 January 2025)
- *FOODOP*, available at https://foodop.dk/. (Accessed 29 January 2025)
- Helsingborg, *Now, Children in 40 Classrooms Can Review Their Climate Data*, available at https://helsingborg.se/makingofasmartercity/now-children-in-40-classrooms-can-review-their-climate-data/. (Accessed 29 January 2025)
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- We Eat Responsibly, *Latvian kindergarten reduced its food waste by nearly 70%*, available at https://www.eatresponsibly.eu/en/i-do/latvian-kindergarten-reduced-its-food-waste-by-nearly-70/. (Accessed 29 January 2025)
- World Food Forum, Global Youth Action, *Youth Towards Zero Food Waste Campaign*, available at https://youth.world-food-forum.org/education/youth-towards-zero-food-waste/en. (Accessed 29 January 2025)

CHORIZO PROJECT

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# Deliverable 4.1

## ACTOR SPECIFIC GUIDANCE

## FOOD SERVICES

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D4.1

# D4.1 Actor specific guidance – Food services

| | | | |
|---|---|---|---|
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## Table of contents



## List of figures



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## Glossary of terms and acronyms

| Acronym/Term | Description |
|---|---|
| **FLW** | Zero Food Loss & Waste |
| **HoReCa** | Hotels, restaurants and caterers (including institutional catering) |
| **MOA** | Motivation, Opportunity, Ability (framework) |
| **SN** | Social norm(s) |

*Table 1: Glossary of terms and acronyms*

# 1. About this guidance: how to work with social norms to reduce FLW in food services

## 1.1. Background to the guidance

CHORIZO (Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste) is a project co-funded by the Horizon Europe programme that aims to improve the understanding of the links between social norms, consumer behaviours, decisions of economic actors and food loss and waste (FLW) generation, and to use this knowledge to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. The project´s main goal is to address existing research gaps and enable actors to use its outcomes to deliver and advance innovations helping a range of actors to engage more effectively in food waste prevention and reduction activities.

**What are social norms?**

In the CHORIZO project, we understand social norms as the unwritten rules and expectations which guide people's behaviour within a society or group. In the context of food waste and loss, social norms influence individual attitudes, beliefs, and behaviours related to food consumption, preservation and disposal.

*Figure 1: What are social norms? Description from CHORIZO Deliverable 3.1 "Conceptual framework for behavioural change understanding" (2023), p15*

This document is part of a series of actor-, context- and gender-specific guidance resources which have been developed from the research findings in the project. It is aimed at supporting actors in different contexts to be equipped with the knowledge to work with social norms to reduce food loss and waste generated by related target groups. Food services are an important lever of change and as a result in this document we focus on the part of the findings from the CHORIZO project's research activities that can be used in food service contexts (focusing on restaurants and catering services in particular). We have combined our findings with wider knowledge and the Academy of Change approach[1] to produce this guidance aimed at actors in European food services.

## 1.2. The purpose of this guide and how to read it

Would you like to reduce food loss and waste (FLW) in your organisation? Do you have the motivation and the opportunities to do so? Do you already have plans for activities in your organisation that focus on sustainable food practices? Then you are in the right place! This document aims to assist you in your food strategy and planning efforts and to increase your capability to take action effectively in food services, by providing you with knowledge on *social norms* in your context and a how to include this knowledge in a step-by step guide to implement a FW reduction intervention. Changing social norms, as you will read also further in this document, is an impactful tool in reducing food waste. Using social norms in your planning and implementation of interventions makes them even more effective in reducing FLW.

[1] The Academy of Change (AoC) (http://aochange.org/) is a capacity building programme first created by the Collaborating Centre on Sustainable Consumption and Production (CSCP) and Behaviour Change (https://behaviourchange.org.uk/), initially funded by the KR Foundation, to support organisations to develop behaviour change interventions.

This guide will equip you with practical knowledge on how to work with **social norms** - unwritten rules which influence people's everyday behaviour - to reduce FLW, in a knowledge process illustrated in **figure 2**.

**How to read this document**


*Figure 2: How to read this document - illustration of the structure of the guidance document.*

**Section 2** of this guide equips you with background information to **learn** about social norms (**section 2.1**) and how they affect FLW in the many different ways within food services (**section 2.2**).

**Section 3** provides tangible examples of how social norms affect FLW in food services. Even better, you will learn how others have also designed interventions to change social norms and behaviour to save precious food. Then, you are ready to **identify** different kinds of social norms which are relevant to your context and start your own interventions!

**Section 4** is designed to support you to easily **plan, design, implement and evaluate** your own interventions to reduce FLW. The presented 8 step guide to reduce food waste includes insights into social norms. This includes **evaluating** your own interventions to understand the impact and improvement potentials to continue to tackle FLW with social norms

**Section 5** represents a resource library, sharing further insights on social norms and behaviour change approaches and interventions that might serve as an additional inspiration.

**Where should I start reading?**

- For those *new to how to conduct an intervention towards food waste reduction*, the whole document should be of high interest to you.
- For those *new to the concept of social norms* and how to use them in a FLW context, we also suggest following the guide from start to finish to understand how to enrich your current practice with new insights. (You might already work with 6-steps to implement your FW intervention, look out for the additional 2 steps we have added in **section 4**!)
- If you *already have experience in using social norms* in your context, but would like to hear more about the findings of the CHORIZO project in your field, we suggest to start with **sections 2.2 and 3**. Also check the two additional tips in the 8-step guide presented in **section 4**.

# 2. Social norms in the context of food systems

## 2.1. What are social norms?

Social norms are unwritten rules which influence people's everyday behaviour. They can do so in two ways.

On the one hand, people might behave a certain way because they see other people doing a certain thing. For instance, a child may not eat their vegetables in the school lunch break, because they see other children leaving their salad on the plate as well. This behaviour of copying what most people do in the same situation is called a descriptive social norm.

On the other hand, people might behave a certain way because they think that others expect them to act like this. For instance, a person might no longer be hungry but still finish their plate, since they think that otherwise they might be perceived as being rude. These people thereby react to what they think is a rule of what is acceptable - which is called an injunctive social norm.

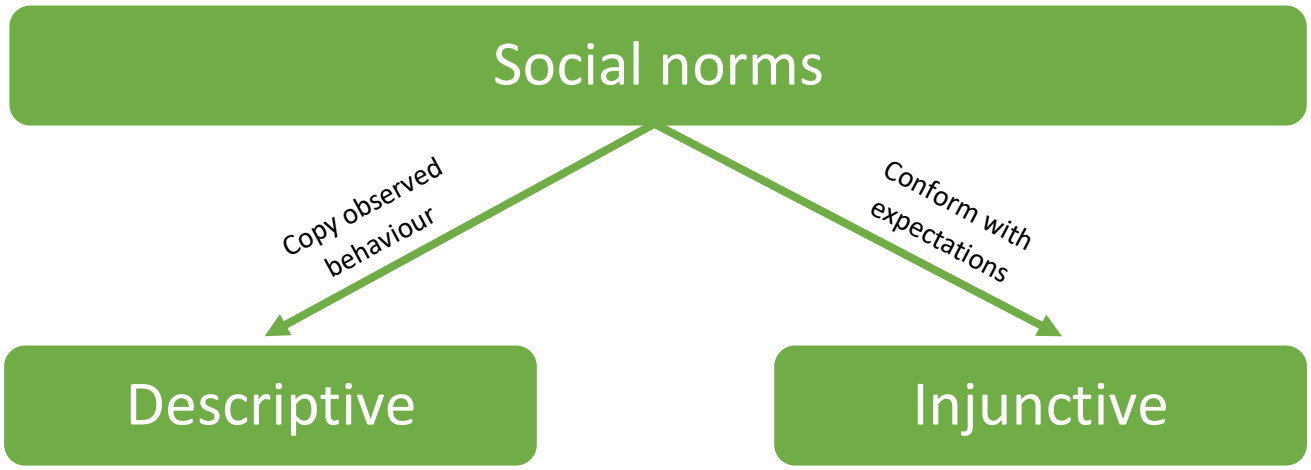


*Figure 3: Descriptive and injunctive social norms*

Norms can be static – based on a current situation – or dynamic – articulating a behavioural movement in one way or another.

Whichever type or combination - descriptive or injunctive, and static or dynamic - social norms can be seen as a powerful tool for change. The above examples - of a person eating more than they need to in order to finish their plate of food, and of a child not eating vegetables - show social norms that lead to more food waste. See **figure 4** for a range of different examples of social norms.

Now imagine the possible impact by changing behaviours of several people towards creating social norms which favour less FLW. Learning about social norms can support you in developing different interventions to achieve a more desirable behaviour.

This guidance will help you to design your own interventions to drive change using social norms.

**Examples of different types of social norms**

To illustrate different types of social forms, here are some examples of social norms communication about how to deal with leftovers in a household context:

- "75% of households reuse leftovers" is a **descriptive norm**.

- "Reusing leftovers for other dishes is regarded as good housekeeping" is an **injunctive norm**.
- "Most people reuse leftovers" is an example of **static framing**.
- "More people reuse leftovers every year" is an example of **dynamic framing**.

*Figure 4: Examples of different types of social norms*

**How do social norms fit within human behaviour overall?**

Besides social norms, there are many other aspects influencing human behaviour. To better understand the degree to which social norms influence our behaviour, the CHORIZO Project has combined an agent-based decision model (HUMAT) with a behavioural psychological model (MOA). The MOA framework, first designed for marketing purposes (Rothschild, 1999), was adapted to analyse Motivation, Opportunity and Ability (MOA) factors affecting food waste behaviour for the EU Refresh project[2]. The HUMAT model is used for modelling actor decision making and so is not referred to in this document. If you would like to learn more about the model and how it is used in the CHORIZO research, this can be found in the project's Conceptual framework for behavioural change understanding[3].

The MOA framework is used throughout the CHORIZO project and in this document to understand on the one hand what hinders behaviour change, and on the other hand how interventions to reduce FLW can overcome these barriers.

In the MOA framework, aspects of motivation, opportunity and ability combine to determine if and how a person behaves in any given situation. In line with behavioural change scientists, we believe, that behavioural change is based on an interplay of these three factors. In this model, social norms come under the motivations category, meaning that, combined with attitudes and awareness, the level of motivation of an individual will be developed. For example, in the case of using up leftover food, if someone is aware that leftovers can safely be eaten (awareness), believe that they should reuse leftovers in order to save food (attitude), and see others cooking with leftovers (social norm), overall they are likely to have a strong *motivation* component towards their behaviour. In order for the person to actually behave in this way, however, there will also need to be the *opportunity* for them to do so (e.g. time to prepare the leftovers, the right cooking/storage equipment) and the *ability* to enact the behaviour (e.g. knowledge of a recipe to re-use the leftovers they have and the appropriate cooking skills to successfully prepare the meal). **Figure 5** sets out a visualization of the model and its components.

[2] https://www.eu-refresh.org/
[3] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

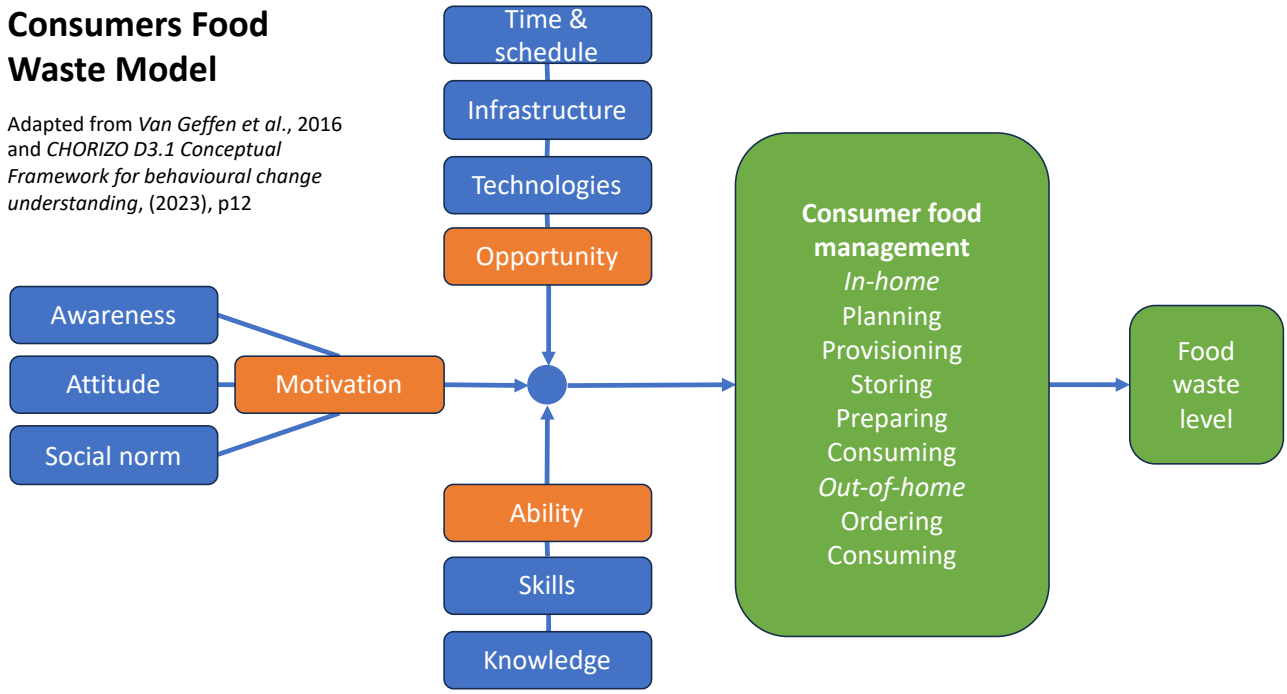


*Figure 5: Consumers Food Waste Model, illustrating the MOA framework (including social norms) in the context of food waste behaviours (source: see figure)*

Aspects of background, demographic or identity may affect the factors influencing behaviour of your target group members. In particular, gender may have an impact on the MOA. While CHORIZO research on FLW prevention actions did not find any existing interventions specifically designed to systematically incorporate the gender dimension (see Chapter 6 in Deliverable 1.2 *Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions* for further information), we know that social norms can be differently developed or perceived by individuals depending on their gender. For example, there may be social norms in which gender affects who is expected to conduct food shopping, meal planning and cooking in the household. Additionally, CHORIZO case study research has identified some differences between genders in terms of perceived social norms and behaviours around food loss and waste. Relevant findings on gender are further discussed in **section 2.2**.

Of course, human behaviour is not deterministic. The existence of social norms does not necessarily mean that we also behave to conform with these norms. While some norms are helpful, others can lead to unhelpful outcomes (leading to negative societal, environmental or for other impacts).

If you would like to learn more about the models used in the CHORIZO project research, we suggest reading the Conceptual framework for behavioural change understanding[4].

## 2.2. Why are social norms relevant to food loss and waste in food services?

The **food service sector** encompasses a wide range of businesses and organizations that prepare, serve, and deliver food and beverages to customers outside of their homes, also referred to as out-of-home consumption. It includes restaurants, catering services, hotels and hospitality, cafeterias and canteens, and takeaway services. Please note, that in addition to this resource, there is a separate dedicated guidance document to

[4] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

school food. If you are active in the food service sector in schools, we recommend also reading the guidance for schools. Additionally, information for retailers can be found in the overarching guidance document.

**What is the impact of reducing food waste in food service?**

In 2022, the EU generated approximately 59 million tonnes of food waste The food service sector was responsible for around 11% of this total, amounting to nearly 7 million tonnes, or approximately 15 kilograms per person[5]. A global perspective from 2022 indicates that food services contributed to 28% of the total amount of food waste generated, translating to 290 million tonnes[6]. This highlights the substantial role of food services in food waste generation both globally and within Europe.

*Figure 6: What is the impact of reducing food waste in food service?*

Food loss and waste in the food service sector can occur in procurement and storage, food preparation, as plate waste, or as leftovers from buffets or self-service environments. In the food service sector, social norms influence on two levels, namely on **customers** and **service providers**, impacting food waste levels, customer satisfaction, and the overall sustainability of operations.

- **Service providers:** In the kitchens and among service staff.
  - Descriptive: By the rules and norms that kitchen and service staff follow to procure, store, and prepare food, as well as how they manage leftovers.
  - Injunctive: By using group identity and education to promote and establish values and behaviours for more sustainable practices among employees.
- **Customers:** By promoting more sustainable norms and behaviours among guests.
  - Descriptive: By setting up the environment and services, e.g. by changing buffet set-up or promoting take-away of leftovers.
  - Injunctive: By appealing to believes among guests that can reduce FLW, such as the inherent value of good food.

Addressing food waste and its surrounding social norms in the food service context is a complex undertaking, as it contains a mixture of descriptive and injunctive social norms and the contexts vary a lot. However, this complexity also results in many opportunities and potential entry-points to change social norms and incentivise more sustainable food-related behaviour change. The next section will outline examples to tackle the FW challenges by working with social norms in the food service context.

**Gender and social norms:**

As part of the CHORIZO case studies on hotels and food services, gender and other intersectional differences were considered in relation to social norms. The following findings (taken from CHORIZO Deliverable 2.3 Empirical Evidence Sensemaking) may help you to adapt actions in your own context in a way which incorporates gender and diversity.

- In the food services context:
  - Men prioritize larger portion sizes and tend to finish their plates, while women prioritize seasonal menu changes and are more likely to leave food uneaten when dining with company.

[5] See https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/110448.pdf?utm_source=chatgpt.com
[6] See https://www.eufic.org/en/food-safety/article/food-waste-in-europe-statistics-and-facts-about-the-problem

- Males exhibit a greater tendency to struggle with over-eating when indulging in preferred foods.
- The data suggests that a slightly higher percentage of females (61.1%) leave less than a quarter of the plate as leftovers compared to males (50.9%). Conversely, a higher percentage of males (36.6%) leave none of their food as leftovers compared to females (20.6%) (refers to Figure 72 in CHORIZO D2.3). This suggests that, proportionally, more males tend to finish their entire meal without leaving any remnants.
- The majority (81%) foresees no change in the amount of food left on the plate when dining alone. Nevertheless, females show a slightly higher expectation of a decrease (12%) in the amount of food left on the plate compared to males (6.1%) when dining alone. This indicates that females may be more likely to leave more food uneaten when dining with company, compared to men. Nonetheless, these gender-specific variations are minimal and could also be influenced by a range of factors such as individual preferences, cultural norms, or perceptions.

- The hotels case study did not identify any relevant gender or cross-sectional differences.

# 3. Overview of relevant social norms in the food services sector

Through the food service (HORECA) case study, alongside research on FLW actions within the sector, the CHORIZO project has been able to compile a collection of social norms present in the food service setting. In the table below you can find identified social norms, with a short explanation about the social norm and the respective setting. Further, ideas on interventions to reduce food waste are highlighted. If you are running a canteen, please also take a look at our schools' guidance document, since you might want to draw parallels from these insights.

The following table indicates in column 1 the area of action mentioned in the chapter above (service providers), as well as indicating social norms and approaches targeting specific contexts, where applicable.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN OR COULD BE USED TO REDUCE FLW |
|---|---|---|
| Buffet behaviour<br>• customer interface<br>• canteen context | Plate size influences the amount of food waste<br>• descriptive | For a long time, it was assumed that a **reduced plate size** also leads to less food waste, with people eating smaller portions at once, and thus reducing the overall leftovers. However, in the Chorizo project, the intervention was tested with mixed results. Instead, it was found that increasing the size of the plate lead to less food waste. The reason was that in the tested scenario, people were more likely to take more portions in total with smaller plates, often taking more rounds than they could eat. Thus, it is recommended to test this in the case of your specific context. When testing, it is worth paying attention to queues and time limits, as they may impact group behaviour. |

| | | |
|---|---|---|
| Buffet behaviour<br>• customer interface<br>• restaurant context | Charging for leftovers in a buffet restaurant<br>• descriptive | A social norm of **charging for leftovers** is emerging in some buffet restaurants in Germany, such as Yuoki in Stuttgart and Okinii in Düsseldorf. The intention is that economic pressure will encourage customers to consider more carefully whether they take additional food which they may not be able to finish eating. |
| Buffet Behaviour<br>• service provider interface<br>• buffet context | Good provider identity<br>• injunctive, unhelpful | With self-service there can be a tendency to feel the need to provide the guest with an extensive range of food options to be a "**good provider**". It may be useful to ask your customers how much variety they expect, or develop messaging around why you reduced the options at play and how much waste is reduced by this action. |
| Messaging at breakfast buffet<br>• customer interface<br>• hotel & buffet context | SN Messaging on breakfast waste<br>• static, dynamic, injunctive, descriptive | Analysis from the CHORIZO hotels case study experiment[7] on impact of messaging to guests in buffet settings and resultant food waste reveals that while the control group (no message) aligns closely with the overall waste average, **positive messages seem to lead to reduced waste** per guest (31.85g), whereas provocative messages seam to lead to increased waste per guest (51.76g). Make sure to also consider other potential influencing factors (e.g. month, hotel type or guest count). The experiment underscores the importance of carefully framing messages to avoid triggering reactions. The results suggest that no message may be better than a poorly constructed one. (CS2 – Hotels) |
| Table reservation and preordering<br>• customer interface<br>• restaurant context | Social acceptance of pre-ordering or repurposing ingredients<br>• helpful norm still to be established | Changing the social norm to **normalize reservations and pre-orderings** in restaurants allows more precise meal preparation which would reduce FLW.<br>This could be increased by giving price reductions and incentives in case of pre-ordering. |
| Take left-overs home in boxes<br>• customer interface<br>• restaurant & hotel context | Establishing the norm to take leftovers home<br>• descriptive (providing boxes)<br>• injunctive (feeling judged, unhelpful SN) | From the CHORIZO food services case study data collection and analysis, we know that a significant majority of respondents would **take leftovers home**, even if they had to pay for the container. However, by openly promoting this action, food service providers can reduce leftovers even more. You make it even more easy for your customers to take their leftovers home, if you provide boxes for free, or provide circular containers.<br>The social norms at play, such as being ashamed to take leftovers home or **being judged to be greedy** by other customers, is an unhelpful norm that reduces willingness to |

[7] See CHORIZO Deliverable 2.3 Empirical Evidence Sensemaking, available at https://chorizoproject.eu/deliverables-repository/

| | | |
|---|---|---|
| | | take home leftovers and increases food waste. (CS 2 & 3 Hotels & restaurants). |
| Using leftovers in meal preparation<br>• service provider interface<br>• hotel context | Sub-optimal Food/Undesirable Food Quality<br>• injunctive | The SN of not buying, utilizing food in meal preparations, or eating it, due to "**sensory deviations**" such as unusual shape or colour. The interviews demonstrated that all the chefs have a strong sense of honour associated with their profession and the quality of their work. Only the best is good enough for guests. For example, the chefs questioned what guests would think about using leftovers or food past expiry dates for meal preparation, and thus deferred from doing so. |

*Table 2: Relevant social norms, context, and the example in the food service sector*

# 4. 8 steps to reduce food waste, including social norms insights in the food services sector

Interventions, actions or just initiatives are words that is often used when organisations want to achieve more effective operations. For instance when they want to address food waste and when they want to move from one set of routines to a more effective one. Traditionally such attempts are organised as projects in order to make sure the participants know what to do what to achieve and how to measure whether the objectives are achieved. At research level such attempts are normally referred to interventions, but the approach can be used in practise as well and is a way for the organisation to make sure that goals are reached. An important part of interventions actions and initiatives is the inflation. Here we present a general model for that can be used as a recipe.

The following 8-step guide is designed to break down the process of designing and implementing a food waste reduction intervention into manageable steps. Based upon tried and tested expertise from the behaviour change field, this approach is adapted from the Academy of Change framework[8] and combined with CHORIZO research findings, case study knowledge and examples from the wider food waste sector.

**Figure 7** shows the order of the steps to reduce food waste. The CHORIZO additions relate to the steps 3 and 4, enabling the inclusion of social norm insights in the intervention. Once you have put your intervention in place following step 1-7 and evaluated its impact, steps 4 to 8 can be followed again in order to refine the process for continual improvements in effectiveness. If you already have interventions in place and would like to refine the social norms elements in the process, we suggest that you focus on step 3 onwards.

[8] See http://aochange.org/

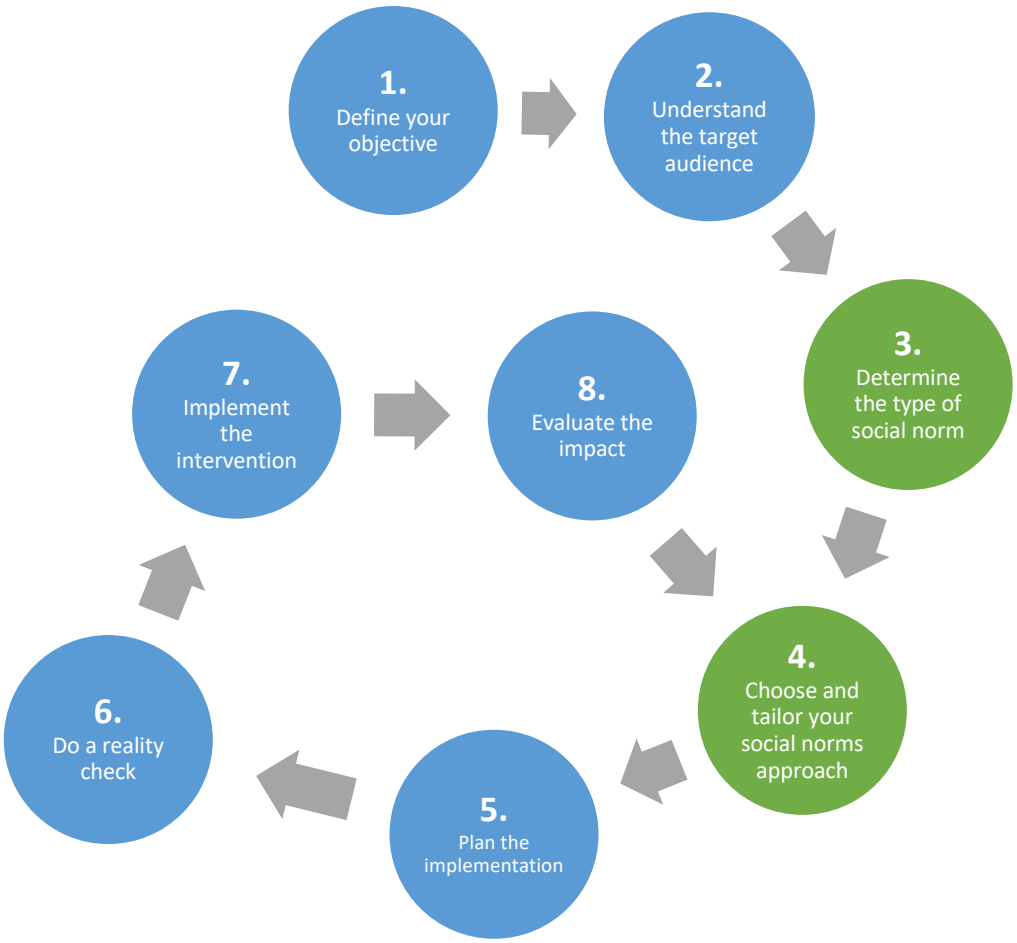


*Figure 7: 8 steps to reduce food waste, including social norms insights (steps shown in green)*

## 4.1. Step 1: Define your objective

In this first step, it's time to get clear about what exactly you aim to achieve with your intervention. To take action now, ask yourself the following critical questions:

**What is the specific, tangible behaviour you're targeting?**

Try to first focus on one specific behaviour you want to target as this makes designing an intervention more manageable, as the scale is not too big. It is easier to dive into the factors surrounding one particular behaviour, than to try to analyse a complex system of behaviours. To ensure that you are focusing on a behaviour rather than an attitude, see **Figure 8** for an overview of the differences.

**Attitude-Action-Gap of food waste activities**

Consider if you are thinking of a behaviour or an attitude. An attitude of believing that we should only take what we can eat in a hotel breakfast buffet is different to the actual behaviour of not overfilling the plate in practice. Attitudes may support behaviour but often are not enough on their own to reduce FLW effectively. For instance, someone might care deeply about sustainability but still choose convenience over environmentally friendly options (e.g. buying multipacks of food products because there is a deal in the

supermarket, while believing that we should only buy what we need to avoid waste). This is called the "attitude-action-gap"— the reality that people's beliefs don't always align with their behaviours, due to habits, social pressures, social norms or practical barriers. Recognizing this gap helps clarify whether influencing attitudes alone will achieve your goal or if your approach needs to address a behaviour directly.

*Figure 8: Attitude-Action-gap of food waste activities*

**What influences your targeted, specific behaviour?**

If you do have a specific, tangible behaviour in mind, then dive deeper—analyse the context around this behaviour. Map out the general influences, using a model like the MOA (see **figure 5** and **section 2.1**) to capture how various factors in the fields of motivation, opportunity and ability connect and impact upon your objective. Be specific and thorough; it will strengthen your intervention strategy. In this step, try to think in general terms about the MOA of this behaviour in society. In step 2, you will dive into the MOA of your target group more specifically.

**How would you like to change the behaviour with your intervention?**

Try crafting a clear, detailed objective: define exactly what you want to change in this behaviour and what the desired impacts should be. The more concrete you are, the easier it will be to follow the next steps effectively.

## 4.2. Step 2: Understand the target group

With this second step we dive even deeper into the context of the targeted behaviour to define and understand the target group you have in mind.

**What do you know about your target group?**

Remember the MOA Framework introduced in **figure 5**? You can use the framework to understand the motivations, opportunities and abilities of the targeted group. The following questions may help you to navigate the MOA framework by adding in specific considerations which are of relevance to your target group:

- What is your target group's **motivation** to engage with a new behaviour or to elaborate a new social norm?
- Do the target group have the **opportunity** to take the action? Is there a supporting infrastructure in place, physically and socially?
- What **abilities** do they need in order to enact and establish the behaviour? Consider how existing skills and abilities may differ across a diverse target group.

If you are struggling to answer the questions above, further research on your target group may help. There may be existing evidence or knowledge from other actors in the sector (including, for example, CHORIZO project resources), or gathering your own additional data may support this understanding (e.g. through surveys or interviews with the target group).

**Knowing your guests: example from food services**

Insights from the CHORIZO case studies confirm that many factors influence guest and food waste behaviour in a buffet context. In order to reduce FLW, it's of great help to know your guests and if their behaviour changes over times of the year and week. Make sure to consider all potential influencing factors (e.g. month,

hotel type, guest count, business or private stay, travelling alone or in group). Also, people tend to get inspired by other guests and copy their behaviour. This might amplify effects.

*Figure 9: Knowing your guests: example from food services*

## 4.3. Step 3: Determine the type of social norm

Social norms are both a reflection of common behaviours within a group and powerful tools for driving change. Observing norms helps reveal what people already do or value, and strategically highlighting these behaviours can encourage broader adoption. Understanding which type of social norm you are working with will help to tailor your approach and therefore bring a FW intervention to the next level of impact.

*Descriptive norms* show widespread behaviours, such as “most households reuse leftovers” while *injunctive norms* reflect what a group considers the right action, like “our community values wasting less to protect resources”. Deciding whether it will work best to use *static framing* around existing behaviours, like "Most people plan meals to avoid waste" versus *dynamic framing* around growing trends like "More people each year are joining the movement to reduce food waste" will make your message resonate even more.

Gather the information you have already brought together on the 1) target behaviour, 2) influences on the behaviour, 3) specific desired change in the behaviour through your intervention, and 4) the motivations, opportunities and (cap)abilities of your target group. With this information, consider the potential relation of social norms to each:

1) **Target behaviour** – is there already a relevant social norm mentioned in **section 3** which is known to relate to this kind of behaviour? If not, consider what else may be a norm in the context upon which you are focusing.

2) **Influences on that behaviour** – consider the environment in which the behaviour takes place. What are the factors which might affect whether someone behaves in this specific way or not?

3) **The desired change in the behaviour through your intervention** – consider whether the desired change is either a) a wish to make a certain behaviour itself a norm (e.g. taking home a ‘doggy bag’ of leftovers from a restaurant if you don’t finish your meal), or b) influenced by social norms which exist around the behaviour and contribute to its uptake (e.g. the behaviour of over-providing for guests when hosting a dinner party is influenced by the social norm of a good host being seen as providing multiple different options and more food than is needed).

4) **The motivations, opportunities and (cap)abilities of your target group** – map out the MOA of your target audience (those who do/would conduct the behaviour in question) especially focusing on what motivates the target group to perform certain behaviour related to food waste. The social norms are the influencing factors to the motivation. Social norms are most likely to be found in the motivation section (see CHORIZO Deliverable 3.1 *Conceptual Framework for Behavioural Change Understanding* for further information).

With this information, you should have been able to identify a specific social norm or norms with which you can work, in order to change the desired behaviour (whether directly or indirectly).



Horizon Europe

**Targeting staff or customer behaviour? Example from food services**

The "good provider identity" is a social norm at play among service providers and staff, whereas enforcing the norm of "taking leftovers home" is rather targeting customers, but with boxes to take the leftovers home provided by the staff. Focusing on the specific behaviours of the different target groups will help plan an effective intervention. It's always a good idea to make the desired behaviour as easy and as socially accepted as possible, for example by providing take-home boxes by default to every table without request – but in this case that requires targeted social norms from both staff and customers.

*Figure 10: Targeting staff or customer behaviour? Example from food services*

At this point it is also important to be clear on whether the norm(s) are *helpful norms* which you are looking to support to have a bigger influence (e.g. those which already contribute to lower FLW behaviours but are not yet routine or mainstreamed in your target group) or *unhelpful norms* which reduce the likelihood of the FLW behaviour taking place (e.g. something which influences individuals towards another behaviour than the socially desirable one, or which makes the FLW behaviour less likely or impossible). Examples are given in **section 2.2**. By identifying this, you know whether your intervention should seek to a) build and support an existing social norm or norms, or b) change or reduce the influence of an existing social norm or norms.

## 4.4. Step 4: Choose and tailor your social norms approach

Now that you have identified social norms that can influence behaviour, it's time to design your intervention plan by choosing your approach. Referencing **sections 2.2 and 3** for additional evidence-based insights as you create your intervention plan. Using varied communication strategies—whether static, dynamic, or changing the 'environment'—can help reinforce and spread desired behaviours (for more information see **section 4.5**).

To effectively use social norms to reduce food waste, consider these three approaches, how they can be used and the potential for tailoring, based on the CHORIZO project's learnings:

1. **Reinforce Existing Norms**: If an appropriate social norm around reducing waste already exists, emphasize it to strengthen commitment. Reminding people can for example happen like "most people in our community already avoid food waste" and can build on this established behaviour.

2. **Create New Norms Through In-Group Values**: When a norm is not yet present, it should be built by aligning it with in-group values. For instance, messaging like "In our community, we believe in reducing food waste to support sustainability" can shape waste reduction as part of the group's identity.

3. **Establish Norms via Environmental Cues**: Modify the environment to signal desirable behaviours. Visible prompts, such as signage promoting meal planning or providing compost bins, illustrate that reducing waste is common here, encouraging others to follow suit.

**Establish Norms via Environmental Cues - Take-home boxes: example from food services**

Taking leftovers home from a restaurant becomes more and more established. It's always a good idea to make the desired behaviour as easy and as socially accepted as possible, for example by providing take-home boxes by default to every table without request. Train the staff to make it a norm for them to ask all customers if they want to take their leftovers, or just put a box automatically to each table. With this, any customer feelings of shame or perceived greed might be reduced, because more customers also take home their food.

*Figure 11: Establish Norms via Environmental Cues - Take-home boxes: example from food services*

By tailoring these approaches—reinforcing, creating, and establishing norms—to specific communities and behaviours, social norms can inspire and drive lasting change in achieving zero food loss and waste.

## 4.5. Step 5: Plan the implementation

Now it is time to devise a plan for implementing the intervention by considering the following three **key Steps for Designing an Effective Plan:**

1. **Define setting, delivery and timing**: Determine *where*, *how*, *when* and *by whom* your intervention will be communicated to the target group/audience. Find the best setting: in which location or situation can you get closest to the target behaviour? What is the right place and time to reach your target audience ? Interventions can be targeted communication at points of action, appealing to people's identity, or altering the choice environment (the space or set of conditions in which they make a decision). When is your target audience most receptive? What are their relevant moments of change (e.g. is there a seasonal point when people already take action in this field)? Target locations where waste behaviours are most relevant—like meal prep areas or trash disposal points—and time your intervention when people are most receptive, such as before meals. How will you communicate your intervention? See **section 2.1** for the different ways in which norms can be expressed. Anticipate challenges and adapt plans as needed to overcome potential obstacles, such as practical barriers to running an intervention in a specific location, or the target group's lack of capacity to focus on something new at busy times of year.

2. **Identify Tools and Add Fun Elements**: Use tools like *nudging*, *self-commitments*, or *gamification* to engage participants. For instance, place reminders near waste bins or introduce rewards for reducing waste. Make the initiative fun and memorable—use engaging visuals, creative prompts, or interactive elements to boost participation.

3. **Collaborate for Greater Impact**: Team up with diverse partners to broaden reach and share resources. Collaborating with unexpected allies—like local businesses, schools, or community groups—can amplify the intervention's effectiveness and encourage a community-wide commitment to reducing waste.

**Creating new norms with carrot or stick? Example from food services**

To reduce the excessive plate waste by their customers, some German restaurants, such as Yuoki in Stuttgart[9] and Okinii in Düsseldorf[10], started **charging for leftovers** emerging in their buffet restaurants and created a new norm with this.

Other restaurants tested the approach of **price reductions and incentives for reservations and pre-orderings** that allowed them more precise meal preparation to reduce FLW. With this they want to normalize reservations and pre-orderings.

*Figure 12: Creating new norms with carrot or stick? Example from food services*

[9] See https://www.yuoki.de/
[10] See https://okinii.de/standorte-bu/dusseldorf/

By carefully coordinating these steps, your intervention can promote lasting change, making food waste reduction a shared, impactful effort.

## 4.6. Step 6: Do a reality check

Before launching your intervention, it's essential to do a reality check to ensure it is as effective and user-friendly as possible. This step helps identify any obstacles that could hinder participation and allows you to refine your approach for maximum impact.

1. **Make It Easy:** Simplify every step. Remove barriers, streamline interventions, and, if possible, eliminate unnecessary choices to guide participants naturally toward the desired behaviour.

2. **Choose Clear Language:** Use accessible, relatable language, avoiding overly technical or distant terms. Language should connect with the audience and reflect shared values, making it easy for others to support and spread.

3. **Did you think of everyone?** Consider whether your approach is truly inclusive. Are there potential biases, like assuming certain cultural norms or access to resources? Tailor your plan to include diverse perspectives (considering e.g. gender, disability, socio-economic background and other factors) and adapt it as needed to make sure no group is overlooked.

**No messaging might be better than a wrong one: example from food services**

Analysis from the CHORIZO hotel case study experiment investigated the impact of different types of messaging to guests in buffet settings and resultant food waste. The results revealed that while the control group (no message) aligns closely with the overall waste average, positive messages seem to lead to reduced waste per guest, whereas provocative messages seam to lead to increased waste per guest. Make sure to also consider other potential influencing factors (e.g. month, hotel type or guest count). The experiment underscores the importance of carefully framing messages to avoid triggering reactions. The results suggest that no message may be better than a poorly constructed one.

*Figure 13: No messaging might be better than a wrong one: example from food services*

Conducting this reality check ensures your intervention is clear, simple, and inviting, ultimately making it more likely to achieve meaningful change by many people.

## 4.7. Step 7: Implement the intervention

Now it's time to bring your plan to life! Implementation is all about making your intervention visible, accessible, and impactful. To ensure your plan reaches people effectively in the right place and at the right time, keep these steps in mind:

- **Prepare Your Resources**: Confirm locations, timing, and materials to make sure your messages and tools are available exactly where and when people need them.

- **Coordinate with Your Team**: Align everyone involved, so they're prepared to answer questions and make adjustments on the go. Plan in time for feedback talks.

- **Start with a pilot**: Testing in smaller settings first can reveal what works best, letting you refine and scale up smoothly.

- **Stay Flexible**: Watch how people respond, and be ready to adapt! If certain elements are more engaging than others, adjust your approach to enhance impact.

A well-implemented plan brings your ideas to action, helping people connect with the message and inspiring them to reduce food waste.

## 4.8. Step 8: Evaluate the impact

Evaluating impact is crucial to see if the action you took truly made a difference. This step focuses on measuring real behaviour changes and understanding the broader effects of your intervention.

Here's a guide to effective evaluation:

- **Define Key Metrics and Collect Evidence**: Set clear measures like waste volume reduction, participation rates, or uptake of new habits like meal planning. Combine this quantitative data with feedback to provide you a full picture.
- **Measure Behaviour, Not Just Attitudes**: Track real actions (like reduced waste) instead of relying only on survey responses. This helps address the *attitude-behaviour gap*, where people's stated values don't always align with their actions.
- **Monitor for Rebound Effects**: Monitor whether reduced waste in one area causes increased waste elsewhere, helping you avoid unintended consequences.
- **Tailor Evidence to Your Audience**: Think about who you need to convince—community members or stakeholders. Collect the evidence they'll find most compelling.

**Professional food waste management at Strawberry hotels: example from food services**

Chorizo project partner Strawberry set up a food waste measurement bin, that differentiates between plate waste, preparatory waste and other, giving clear numbers. They display the average plate waste per person from week before and the actual week to their guest at the buffet. With this messaging they increasing awareness, but also unconsciously challenge their guests to be "better" than the guests of last week in terms of plate waste. Still there are many factors in play that are hard to foresee, such as how long a specific messaging on the buffet has to be in place in order to measure reliable data, where a change in behaviour can be significantly brought back to this kind of messaging.

*Figure 14: Professional food waste management at Strawberry hotels: example from food services*

By tracking outcomes and refining your approach based on real-world results, you can enhance the long-term impact of your interventions.

# 5. Additional resources and support to implement interventions

Have you now read the guidance and find yourself feeling inspired but not sure where to get started? Don't worry - in 2025 we are running a European capacity building programme designed specifically to help you put these words into action!

The online and physical workshops will provide you with practical skills, examples and tips to design your own behaviour change intervention using fresh findings from the CHORIZO project and the relevant tools to use social norms in the reduction of food waste.

Sound good? Sign up to the CHORIZO newsletter to hear about the latest information and capacity building registration.

Additionally, the CHORIZO Insighter Data Hub contains a whole range of data collected through the project's case studies and research on FLW and social norms. Feel free to request relevant data for use in designing your own interventions.

**CHORIZO Project Deliverables and resources**

- CHORIZO Deliverable 3.1 (2023), "*Conceptual framework for behavioural change understanding*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO Deliverable 1.2 (2023), "*Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions*", available at https://chorizoproject.eu/deliverables-repository/
- CHORIZO Deliverable 2.3 (2024), *Empirical Evidence Sensemaking*, available at https://chorizoproject.eu/deliverables-repository/. (Accessed 29 January 2025)
- CHORIZO project *Food Loss and Waste (FLW) Datahub and "Insighter"*, available at https://data.chorizoproject.eu/. (Accessed 29 January 2025)
- CHORIZO project *newsletter sign up form*, available at https://chorizoproject.eu/dissemination_and_newsletter/. (Accessed 29 January 2025)

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**Websites**


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CHORIZO PROJECT


# Deliverable 4.1

**ACTOR SPECIFIC GUIDANCE**

**ALL SECTORS**

D4.1

# D4.1 Actor specific guidance – All sectors

| | | | |
|---|---|---|---|
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## Table of contents



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## Glossary of terms and acronyms

| Acronym/Term | Description |
|---|---|
| **FLW** | Zero Food Loss & Waste |
| **Horeca** | Hotels, restaurants and caterers |
| **MOA** | Motivation, Opportunity, Ability (framework) |
| **SN** | Social norm(s) |

*Table 1: Glossary of terms and acronyms*

# 1. ABOUT THIS GUIDANCE: HOW TO WORK WITH SOCIAL NORMS TO REDUCE FLW

## 1.1 Background to the guidance

CHORIZO (Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO food waste) is a project co-funded by the Horizon Europe programme that aims to improve the understanding of the links between social norms, consumer behaviours, decisions of economic actors and food loss and waste (FLW) generation, and to use this knowledge to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. The project´s main goal is to address existing research gaps and enable actors to use its outcomes to deliver and advance innovations helping a range of actors to engage more effectively in food waste prevention and reduction activities.

**What are social norms?**

In the CHORIZO project, we understand social norms as the unwritten rules and expectations which guide people's behaviour within a society or group. In the context of food waste and loss, social norms influence individual attitudes, beliefs, and behaviours related to food consumption, preservation and disposal.

*Figure 1: What are social norms? Description from CHORIZO Deliverable 3.1 "Conceptual framework for behavioural change understanding" (2023), p15*

This document is the comprehensive guidance, bringing together a series of actor-, context- and gender-specific guidance resources which have been developed from the research findings in the project. It is aimed at supporting actors in different contexts to be equipped with the knowledge to work with social norms to reduce food loss and waste generated by related target groups. Findings from the CHORIZO project's research activities have been combined with wider knowledge and the Academy of Change approach[1] to produce this guidance aimed at actors in cities, food banks, school food, retail and the food services sector.

## 1.2 The purpose of this guide

Would you like to reduce food loss and waste (FLW) in your context? Do you have the motivation and the opportunities to do so? Do you already have plans for activities in your city, school or organisation that focus on sustainable food practices? Then you are in the right place! This document aims to assist you in your efforts to increase your capability to take action effectively, by providing you with knowledge on *social norms* in your context and a how to include this knowledge in a step-by step guide to implement a FW reduction intervention. Changing social norms, as you will read also further in this document, is an impactful tool in reducing food waste. Using social norms in your planning and implementation of interventions makes them even more effective in reducing FLW.

This guide will equip you with practical knowledge on how to work with **social norms** - unwritten rules which influence people's everyday behaviour - to reduce FLW, in a knowledge process illustrated in **figure 2**.

[1] The Academy of Change (AoC) (http://aochange.org/) is a capacity building programme first created by the Collaborating Centre on Sustainable Consumption and Production (CSCP) and Behaviour Change (https://behaviourchange.org.uk/), initially funded by the KR Foundation, to support organisations to develop behaviour change interventions.

**How to read this document**


*Figure 2: How to read this document - illustration of the structure of the guidance document.*

**Section 2** of this guide equips you with background information to **learn** about social norms (**section 2.1**) and how they affect FLW in the many different ways that food is part of everyday life in various settings (**section 2.2**).

**Section 3** provides a summary of the most relevant tangible examples of how social norms affect FLW in key sectors. Even better, you will learn how others have also designed interventions to change social norms and behaviour to save precious food. Then, you are ready to **identify** different kinds of social norms which are relevant to your context and start your own interventions!

**Section 4** is designed to support you to easily **plan, design, implement and evaluate** your own interventions to reduce FLW. The presented 8 step guide to reduce food waste includes insights into social norms. This includes **evaluating** your own interventions to understand the impact and improvement potentials to continue to tackle FLW with social norms

**Section 5** represents a resource library, sharing further insights on social norms and behaviour change approaches and interventions that might serve as an additional inspiration, as well as a full list of relevant social norms for each of the key sectors identified in this guidance.

**Where should I start reading?**

- For those *new to how to conduct an intervention towards food waste reduction*, the whole document should be of high interest to you.
- For those *new to the concept of social norms* and how to use them in a FLW context, we also suggest following the guide from start to finish to understand how to enrich your current practice with new insights. (You might already work with 6-steps to implement your FW intervention, look out for the additional 2 steps we have added in **section 4**!)
- If you *already have experience in using social norms* in your context, but would like to hear more about the findings of the CHORIZO project in your field, we suggest to start with **sections 2.2 and 3**. Also check the two additional tips in the 8-step guide presented in **section 4**

# 2 SOCIAL NORMS

## 2.1 What are social norms?

Social norms are unwritten rules which influence people's everyday behaviour. They can do so in two ways.

On the one hand, people might behave a certain way because they see other people doing a certain thing. For instance, a child may not eat their vegetables in the school lunch break, because they see other children leaving their salad on the plate as well. This behaviour of copying what most people do in the same situation is called a descriptive social norm.

On the other hand, people might behave a certain way because they think that others expect them to act like this. For instance, a person might no longer be hungry but still finish their plate, since they think that otherwise they might be perceived as being rude. These people thereby react to what they think is a rule of what is acceptable - which is called an injunctive social norm.

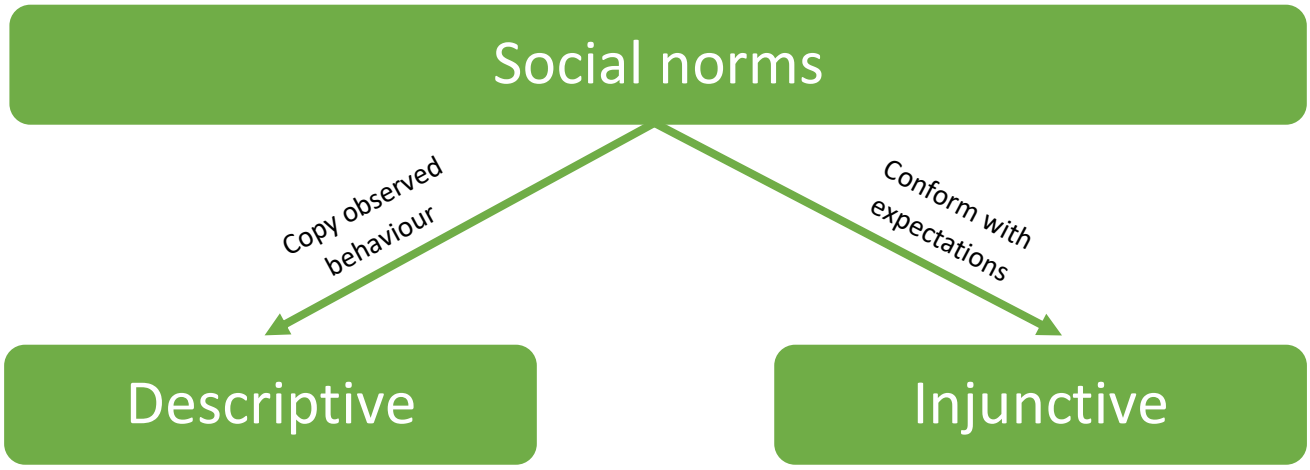


*Figure 3: Descriptive and injunctive social norms*

Norms can be static – based on a current situation – or dynamic – articulating a behavioural movement in one way or another.

Whichever type or combination - descriptive or injunctive, and static or dynamic - social norms can be seen as a powerful tool for change. The above examples - of a person eating more than they need to in order to finish their plate of food, and of a child not eating vegetables - show social norms that lead to more food waste. See **figure 4** for a range of different examples of social norms.

Now imagine the possible impact by changing behaviours of several people towards creating social norms which favour less FLW. Learning about social norms can support you in developing different interventions to achieve a more desirable behaviour.

This guidance will help you to design your own interventions to drive change using social norms.

**Examples of different types of social norms**

To illustrate different types of social forms, here are some examples of social norms communication about how to deal with leftovers in a household context:

- "75% of households reuse leftovers" is a **descriptive norm**.
- "Reusing leftovers for other dishes is regarded as good housekeeping" is an **injunctive norm**.
- "Most people reuse leftovers" is an example of **static framing**.
- "More people reuse leftovers every year" is an example of **dynamic framing**.

*Figure 4: Examples of different types of social norms*

## How do social norms fit within human behaviour overall?

Besides social norms, there are many other aspects influencing human behaviour. To better understand the degree to which social norms influence our behaviour, the CHORIZO Project has combined an agent-based decision model (HUMAT) with a behavioural psychological model (MOA). The MOA framework, first designed for marketing purposes (Rothschild, 1999), was adapted to analyse Motivation, Opportunity and Ability (MOA) factors affecting food waste behaviour for the EU Refresh project[2]. The HUMAT model is used for modelling actor decision making and so is not referred to in this document. If you would like to learn more about the model and how it is used in the CHORIZO research, this can be found in the project's Conceptual framework for behavioural change understanding[3].

The MOA framework is used throughout the CHORIZO project and in this document to understand on the one hand what hinders behaviour change, and on the other hand how interventions to reduce FLW can overcome these barriers.

In the MOA framework, aspects of motivation, opportunity and ability combine to determine if and how a person behaves in any given situation. In line with behavioural change scientists, we believe, that behavioural change is based on an interplay of these three factors. In this model, social norms come under the motivations category, meaning that, combined with attitudes and awareness, the level of motivation of an individual will be developed. For example, in the case of using up leftover food, if someone is aware that leftovers can safely be eaten (awareness), believe that they should reuse leftovers in order to save food (attitude), and see others cooking with leftovers (social norm), overall they are likely to have a strong *motivation* component towards their behaviour. In order for the person to actually behave in this way, however, there will also need to be the *opportunity* for them to do so (e.g. time to prepare the leftovers, the right cooking/storage equipment) and the *ability* to enact the behaviour (e.g. knowledge of a recipe to re-use the leftovers they have and the appropriate cooking skills to successfully prepare the meal). **Figure 5** sets out a visualization of the model and its components.

[2] See https://www.eu-refresh.org/
[3] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

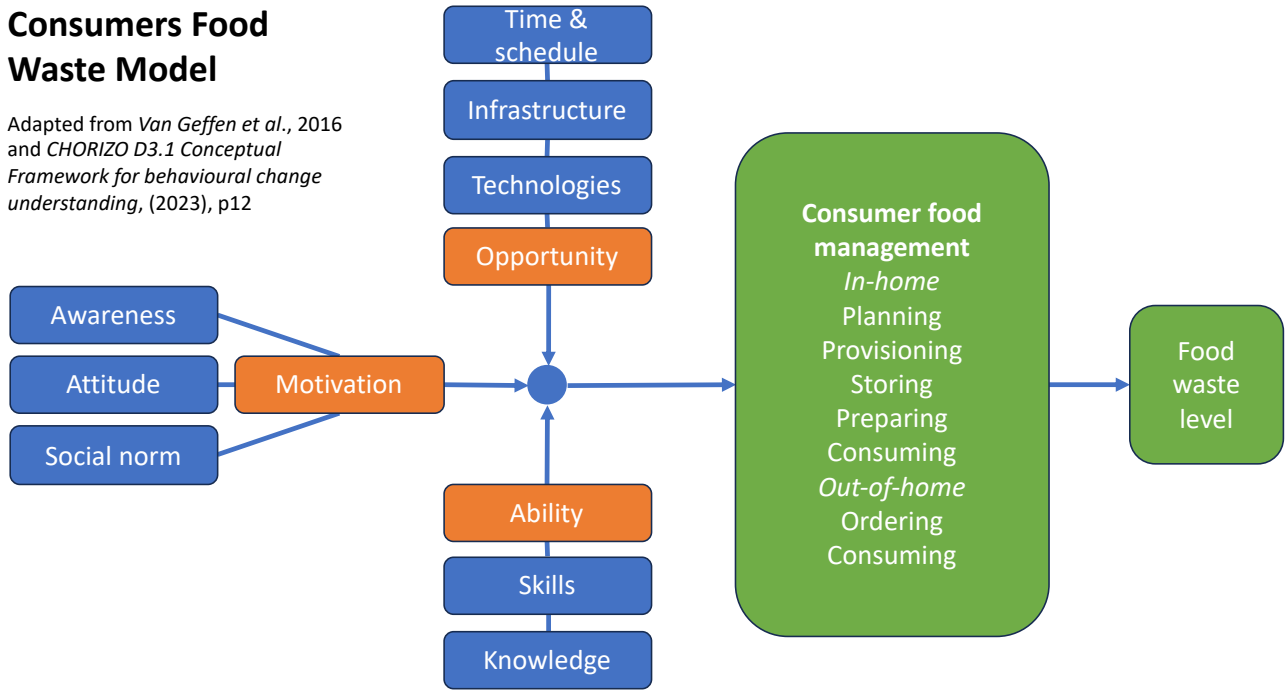


*Figure 5: Consumers Food Waste Model, illustrating the MOA framework (including social norms) in the context of food waste behaviours (source: see figure)*

Aspects of background, demographic or identity may affect the factors influencing behaviour of your target group members. In particular, gender may have an impact on the MOA. While CHORIZO research on FLW prevention actions did not find any existing interventions specifically designed to systematically incorporate the gender dimension (see Chapter 6 in Deliverable 1.2 *Evidence-based Analysis of Food Loss and Food Waste (FLW) Prevention Actions* for further information), we know that social norms can be differently developed or perceived by individuals depending on their gender. For example, there may be social norms in which gender affects who is expected to conduct food shopping, meal planning and cooking in the household. Additionally, CHORIZO case study research has identified some differences between genders in terms of perceived social norms and behaviours around food loss and waste. Relevant findings on gender are further discussed in **section 2.2**.

Of course, human behaviour is not deterministic. The existence of social norms does not necessarily mean that we also behave to conform with these norms. While some norms are helpful, others can lead to unhelpful outcomes (leading to negative societal, environmental or for other impacts).

If you would like to learn more about the models used in the CHORIZO project research, we suggest reading the Conceptual framework for behavioural change understanding[4].

## 2.2 Why are social norms relevant to food loss and waste?

Reducing food loss and waste globally is essential for achieving sustainability goals, mitigating environmental impacts, and addressing food insecurity. Social norms play a pivotal role in shaping how food is consumed, handled, and disposed. Understanding and influencing these norms can significantly contribute to reducing food waste across various sectors.

[4] CHORIZO Deliverable 3.1, available at https://chorizoproject.eu/deliverables-repository/

**What is the impact of reducing food loss and waste in Europe?**

Around **1.05 billion tonnes** of food are wasted annually, of which Europe contributes approximately **59 million tonnes**. In the EU, households are the largest source of food waste, accounting for about **53%**, while food service contributes **11%**, and retail adds **5%** (European Commission, 2022; EUFIC, 2022). Globally, food service waste makes up about **28%** of the total, highlighting its critical role in both regional and worldwide contexts (FAO, 2021).

*Figure 6: What is the impact of reducing food loss and waste in Europe?*

Social norms can either enable or hinder efforts to reduce food loss and waste. To drive change, it is essential to challenge unhelpful norms—such as the obsession with aesthetic perfection or the stigma around leftovers—while reinforcing positive behaviours like meal planning, food sharing, and valuing sustainability. In the following, main social norms per sector and their potential for change are summarised.

### Helpful Social Norms in Reducing Food Loss and Waste

- **Valuing Imperfect Produce**
  - *Sectors*: Cities, Retail, Schools, Food Service
  - Encourage the use and promotion of "ugly" produce to reduce aesthetic-based waste (e.g., school meals, supermarkets, city procurement).
- **Normalizing Food Donation**
  - *Sectors*: Cities, Retail, Food Service Food Banks
  - Make food donation a routine practice through incentives and regulations (e.g., tax breaks, mandatory donation laws).
- **Taking Leftovers Home**
  - *Sectors*: Food Service, Households
  - Provide free or reusable containers to encourage leftover reuse and reduce plate waste.
- **Using Sub-Optimal Food Creatively**
  - *Sectors*: Food Service, Processers, Schools
  - Train chefs and staff to incorporate leftovers or imperfect ingredients into meals (e.g., soups, specials).
- **Buying Discounted Near-Expiry Food**
  - *Sectors*: Retail
  - Normalize purchasing near-expiry products to reduce waste and stigma around such items.

### Unhelpful Social Norms Contributing to Food Loss and Waste

- **Preference for Perfect Produce**
  - *Sectors*: Cities, Retail, Schools

- Aesthetic standards lead to rejection of imperfect produce in procurement, retail, and public meals.

- **Overproduction to be a "Good Provider"**
  - *Sectors*: Food Service, Households
  - Excessive food preparation in buffets or meals to appear generous results in waste.
- **Stigma Around Food Donation and Reuse**
  - *Sectors*: Retail, Food Banks, Food Service
  - Businesses avoid donating surplus due to reputational concerns, and taking leftovers is stigmatized.
- **Concerns About Discounted Food Perception**
  - *Sectors*: Retail
  - Stigma around buying discounted items leads to unsold food waste in supermarkets.

## Gender and social norms

**Table 1** sets out some of the main findings on the relationship between gender and social norms from the CHORIZO case studies research (taken from CHORIZO Deliverable 2.3 Empirical Evidence Sensemaking).

| CASE STUDY SETTING | FINDINGS ON GENDER AND SOCIAL NORMS |
|---|---|
| Schools | There were no significant differences were found between boys and girls regarding the type of wasted food items and choice behaviours.<br><br>In Denmark, while there was no evidence of any significant difference between boys and girls in regards of food choices or wasting certain types of food items, it was noted by one headmaster that generally boys more readily went outside to play during recess. This consequently might entail that the boys do not take the time to eat a packed lunch. |
| Food services | Men prioritize larger portion sizes and tend to finish their plates, while women prioritize seasonal menu changes and are more likely to leave food uneaten when dining with company.<br><br>Males exhibit a greater tendency to struggle with over-eating when indulging in preferred foods.<br><br>The data suggests that a slightly higher percentage of females (61.1%) leave less than a quarter of the plate as leftovers compared to males (50.9%). Conversely, a higher percentage of males (36.6%) leave none of their food as leftovers compared to females (20.6%) (Figure 72). This suggests that, proportionally, more males tend to finish their entire meal without leaving any remnants. |

| | |
|---|---|
| | The majority (81%) foresees no change in the amount of food left on the plate when dining alone. Nevertheless, females show a slightly higher expectation of a decrease (12%) in the amount of food left on the plate compared to males (6.1%) when dining alone. This indicates that females may be more likely to leave more food uneaten when dining with company, compared to men.<br><br>Nonetheless, these gender-specific variations are minimal and could also be influenced by a range of factors such as individual preferences, cultural norms, or perceptions. |
| Hotels | The hotels case study did not identify any relevant gender or cross-sectional differences. |
| Food banks | Although the CHORIZO food banks case study did not explicitly address gender and intersectional differences, there is a potential impact of gender when it comes to systems of redistribution and donation. |
| Retail (date marking) | Men believe that they throw away slightly smaller amounts of food than women, but the difference is not significant.<br><br>Overall, distinguishing between the behaviours of male and female respondents doesn't reveal stark contrasts. Yet, an interesting observation surfaces: while the overall percentage of individuals completely convinced about the efficacy of smart packaging to extend food shelf life remains below 10%, a notably higher proportion of females fall within this confident group. |
| Households | A Gender Norms latent variable was identified for the Spanish subsample and not for the Belgian one.<br><br>Women in Spain are more likely compared to men to perceive that their food waste is very low compared to the average value of 1.7kg/week.<br><br>In Belgium gendered aspects in the statements "Fathers/mothers should eat the leftovers from their children's plates"; "mothers should eat the leftovers from their children's plates"; "boys/men should eat larger portions than girls/women" and "girls/women need to be skinny to be beautiful" were disapproved by the respondents<br><br>Gendered behaviours were disapproved by the Belgian focus group participants, however, at the same time they acknowledged that they happen |

*Table 2: Gender and social norms findings from CHORIZO case studies*

The next chapter provides you with examples of social norms at play in the respective sectors and how they can be tackled with interventions.

# 3 EXAMPLES OF RELEVANT SOCIAL NORMS

Throughout the different contexts some social norms stood out and showed significant impact. While you can find a collection of all relevant norms per sector in **section 5**, this chapter provides a summary of the most relevant ones overall.

In the table below you can find identified social norms, with a short explanation about the social norm and the respective setting. Further, ideas on interventions to reduce food waste are highlighted. If you are interested in a specific sector, please also take a look at the specific document for further details.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEENOR COULD BE USED TO REDUCE FLW |
|---|---|---|
| City | The good provider identity in public procurement | In public food service settings like school cafeterias, hospitals, or restaurants in public institutions like city hall, cities can establish procurement standards that reduce food waste, drawing on resources like the Manifesto for Establishing Minimum Standards for Public Canteens Across the EU and the best practices from SchoolFood4Change to shift kitchen staff norms around food preparation quantities. It could include training on accurate portion planning and celebrating kitchens that reduce waste while maintaining service quality. Procurement contracts could be preferentially awarded to companies that redistribute unused food. By working with food businesses, cities can encourage food redistribution as standard practice, helping shift norms about waste being unavoidable. |
| City | Visually "perfect" produce is preferable<br><br>(Sub-optimal Food/Undesirable Food Quality) | Cities can adopt policies to procure “ugly” produce whenever possible for public events and procurement, like for schools or municipal offices. Leading by example, cities can challenge the idea that only "flawless" produce is desirable.<br>Cities can build on examples like British chef Jamie Oliver's campaign celebrating irregular produce in supermarkets, helping shift perceptions that "ugly" produce is less valuable. Or run Disco Soup events use imperfect produce to cook community meals, reducing stigma of “ugly” produce quality in a fun, interactive setting. |
| City, Food Banks, Retail | Food donation is an optional charitable activity, not a standard business practice | Cities might have powers to adopt a regulation like the 2016 French law that requires supermarkets over a certain size to sign donation contracts with charities, or else face a fee. This regulation helped establish a norm of viewing food donation as a standard part of running a supermarket, not optional charity.<br>Milan offered a 20% discount on waste tax to businesses that donated surplus food, and gave them a special label. |
| Food Banks | Prioritizing financial benefits over non-financial benefits such as | If company decision-makers would receive detailed insights and feedback on where the donated food went and the impact it had on those who received it, the social impact would be more measurable. |

| | | |
|---|---|---|
| | social impact when donating food. | Like this, there is an opportunity for non-financial impacts to become more 'competitive' in executive decision-making. |
| Food Banks | Better for reputation and legal issues to stay on the safe side: never compromise on food safety! | The donated food has to be and has to remain suitable for human consumption through the donation chain. The fear of the companies that there is going to be complain about donated food quality can be reduced with more detailed and thorough communication regarding the applied food safety actions. |
| School Food | Sub-optimal Food/Undesirable Food Quality | The descriptive social norm of students to be reluctant to eat imperfect-looking fruits and veggies is best countered by showing that the food is still very tasty and edible, and secondly informing their parents about better food packaging practices, which will reduce the number of dents and brown spots. Teachers, peers, and parents can act as positive change agents here. |
| School Food | Good provider identity | Some parents tend to provide more food than necessary, or "healthy" food (e.g. which kids don't want to eat) because of the fear of being perceived as a bad host or parent.<br>On the other hand, it is reported to increase acceptance and reduce food waste if parents prepare lunch boxes together with their kids. |
| School Food | Students are likely to adapt peer behaviour | Especially younger students are likely to copy observed behaviour. In the food waste context, this may for instance be by throwing away still-edible food. However, peer behaviour can also be an opportunity. For instance, by planning group activities, entire groups of students can be motivated to take up more sustainable practices, using the peer pressure for something good. |
| Food Service | The good provider identity in food service | With self-service there was a tendency to feel the need to provide the guest with an extensive range of food options to be a "**good provider**". You might want to ask your customers how much variety they expect, or develop messaging around why you reduced the options at play and how much waste is reduced by this action. |
| Food Service | Sub-optimal Food/Undesirable Food Quality | The SN of not buying, utilizing food in meal preparations, or eating it, due to "**sensory deviations**" such as unusual shape or colour. The interviews demonstrated that all the chefs have a strong sense of honour associated with their profession and the quality of their work. Only the best is good enough for guests. For example, the chefs questioned what guests would think about using leftovers or food past expiry dates for meal preparation, and thus deferred from doing so. |
| Food Service | Establishing the norm to take leftovers home | A significant majority of respondents would **take leftovers home**, even if they had to pay for the container. However, by openly promoting this action, food service providers can reduce leftovers even more. You make it even more easy for your customers to take their leftovers home, if you provide boxes for free, or provide circular containers. |

| | | |
|---|---|---|
| Retail | The power of commitments to reduce FLW | In Germany, retailers signed a voluntary commitment to reduce food waste and this led to a 25% decrease in food waste over the past years.<br>In another example, actors signed a declaration to become part of a group that reduces food waste by following three directions: internal commitment, external communication and taking action. This is a tool designed to keep actors with some potential to become multipliers active by making them part of an in-group (WAW Brands Waste Warrior Brand). |
| Retail | Sub-optimal Food/Undesirable Food Quality | More and more supermarkets are selling imperfect foods and are promoting the consumption of those, sometimes in cooperation with NGOs |
| Retail | The established norm of mark down | It's an established norm by now, that retailers sell food near the expiration date with discounts and make them visible. There are differences in how these products are displayed, what impacts norms and concerns of being perceived as poor if people buy these products. |
| Other | Associations between Food Waste Behaviour and Socio-Economic Status | Associations that are made about one's socio-economic status based on their actions regarding food purchase (i.e. if go to food banks might be considered poor for example, or taking leftovers home), preparation, and consumption. |
| Other | Portion size and food affluence | Portion size is taken to indicate how much is considered socially acceptable to eat, without being considered excessive (although it might be excessive in reality). |

*Table 3: Summary of relevant social norms*

# 4 8 STEPS TO REDUCE FOOD WASTE WITH SOCIAL NORMS

Interventions, actions or just initiatives are words that is often used when organisations want to achieve more effective operations. For instance when they want to address food waste and when they want to move from one set of routines to a more effective one. Traditionally such attempts are organised as projects in order to make sure the participants know what to do what to achieve and how to measure whether the objectives are achieved. At research level such attempts are normally referred to interventions, but the approach can be used in practise as well and is a way for the organisation to make sure that goals are reached. An important part of interventions actions and initiatives is the inflation. Here we present a general model for that can be used as a recipe.

The following 8-step guide is designed to break down the process of designing and implementing a food waste reduction intervention into manageable steps. Based upon tried and tested expertise from the behaviour change field, this approach is adapted from the Academy of Change framework[5] and combined with CHORIZO research findings, case study knowledge and examples from the wider food waste sector.

**Figure 6** shows the order of the steps to reduce food waste. The CHORIZO additions relate to the steps 3 and 4, enabling the inclusion of social norm insights in the intervention. Once you have put your intervention in place following step 1-7 and evaluated its impact, steps 4 to 8 can be followed again in order to refine the process for continual improvements in effectiveness. If you already have interventions in place and would like to refine the social norms elements in the process, we suggest that you focus on step 3 onwards.

[5] See http://aochange.org/

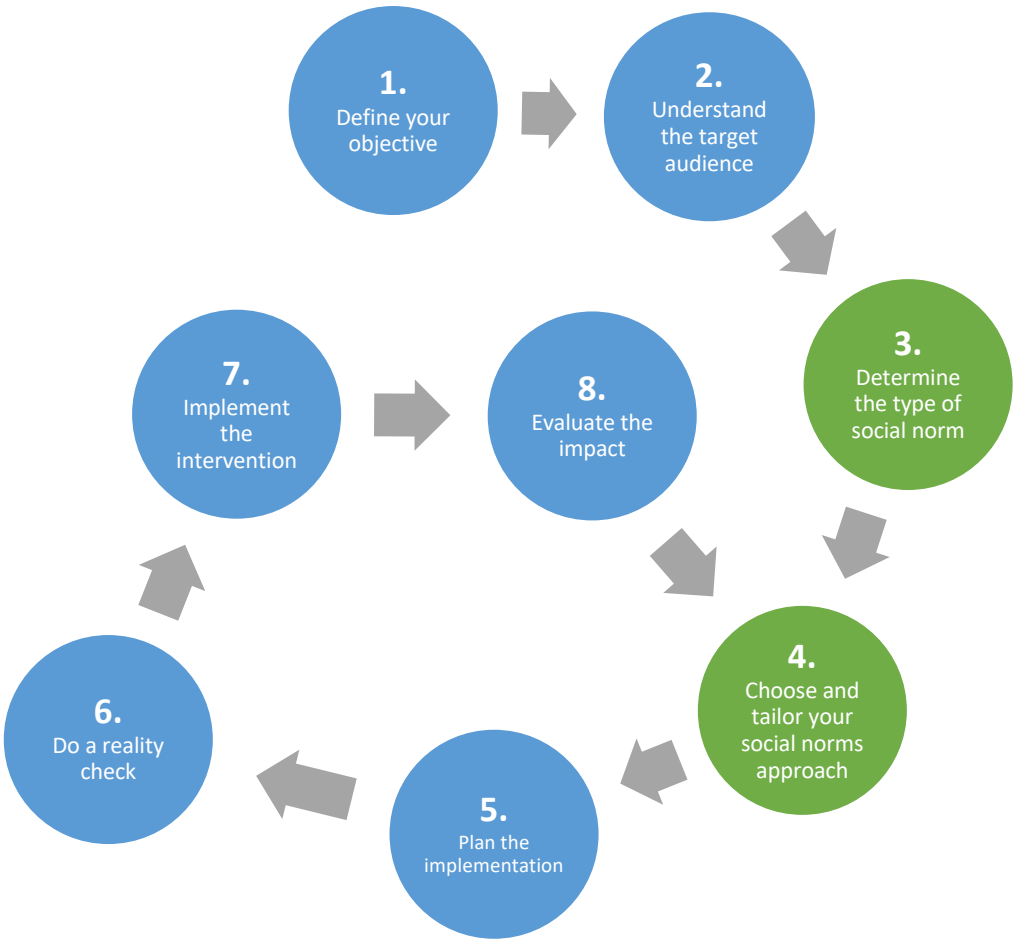


*Figure 7: 8 steps to reduce food waste, including social norms insights (steps shown in green)*

## 4.1 Step 1: Define your objective

In this first step, it's time to get clear about what exactly you aim to achieve with your intervention. To take action now, ask yourself the following critical questions:

**What is the specific, tangible behaviour you're targeting?**

Try to first focus on one specific behaviour you want to target as this makes designing an intervention more manageable, as the scale is not too big. It is easier to dive into the factors surrounding one particular behaviour, than to try to analyse a complex system of behaviours. To ensure that you are focusing on a behaviour rather than an attitude, see **Figure 7** for an overview of the differences.

**Attitude-Action-Gap of food waste activities**

Consider if you are thinking of a behaviour or an attitude. An attitude of believing that we should only take what we can eat in a hotel breakfast buffet is different to the actual behaviour of not overfilling the plate in practice. Attitudes may support behaviour but often are not enough on their own to reduce FLW effectively. For instance, someone might care deeply about sustainability but still choose convenience over environmentally friendly options (e.g. buying multipacks of food products because there is a deal in the supermarket, while believing that we should only buy what we need to avoid waste). This is called the "attitude-action-gap"— the reality that people's beliefs don't always align with their behaviours, due to

habits, social pressures, social norms or practical barriers. Recognizing this gap helps clarify whether influencing attitudes alone will achieve your goal or if your approach needs to address a behaviour directly.

*Figure 8: Attitude-Action-gap of food waste activities*

**What influences your targeted, specific behaviour?**

If you do have a specific, tangible behaviour in mind, then dive deeper—analyse the context around this behaviour. Map out the general influences, using a model like the MOA (see **figure 5** and **section 2.1**) to capture how various factors in the fields of motivation, opportunity and ability connect and impact upon your objective. Be specific and thorough; it will strengthen your intervention strategy. In this step, try to think in general terms about the MOA of this behaviour in society. In step 2, you will dive into the MOA of your target group more specifically.

**How would you like to change the behaviour with your intervention?**

Try crafting a clear, detailed objective: define exactly what you want to change in this behaviour and what the desired impacts should be. The more concrete you are, the easier it will be to follow the next steps effectively.

## 4.2 Step 2: Understand the target audience

With this second step we dive even deeper into the context of the targeted behaviour to define and understand the target group you have in mind.

**What do you know about your target group?**

Remember the MOA Framework introduced in **figure 5**? You can use the framework to understand the motivations, opportunities and abilities of the targeted group. The following questions may help you to navigate the MOA framework by adding in specific considerations which are of relevance to your target group:

- What is your target group's **motivation** to engage with a new behaviour or to elaborate a new social norm?
- Do the target group have the **opportunity** to take the action? Is there a supporting infrastructure in place, physically and socially?
- What **abilities** do they need in order to enact and establish the behaviour? Consider how existing skills and abilities may differ across a diverse target group.

If you are struggling to answer the questions above, further research on your target group may help. There may be existing evidence or knowledge from other actors in the sector (including, for example, CHORIZO project resources), or gathering your own additional data may support this understanding (e.g. through surveys or interviews with the target group).

**Knowing your guests: example from food services**

Insights from our case studies confirm that many factors influence guest and food waste behaviour in a buffet context. In order to reduce FLW, it's of great help to know your guests and if their behaviour changes over the year and week. Make sure to consider all potential influencing factors (e.g. month, hotel type, guest count, business or private stay, travelling alone or in group). Also, people tend to get inspired by other guests and copy their behaviour. This might amplify effects.

*Figure 9: Knowing your guests: example from food services*

**Targeting gender and age: example from schools**

"No significant differences were found between boys and girls regarding the type of wasted food items and choice behaviours. Teachers noticed that younger students tended to follow their parents' advice, ate more of whatever they had brought from home. In contrast, older students sought to assert their independence by making their own choices, often opting for unhealthy options as a form of rebellion against parental expectations." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 10: Targeting gender and age: example from schools*

## 4.3 Step 3: Determine the type of social norm

Social norms are both a reflection of common behaviours within a group and powerful tools for driving change. Observing norms helps reveal what people already do or value, and strategically highlighting these behaviours can encourage broader adoption. Understanding which type of social norm you are working with will help to tailor your approach and therefore bring a FW intervention to the next level of impact.

*Descriptive norms* show widespread behaviours, such as "most households reuse leftovers" while *injunctive norms* reflect what a group considers the right action, like "our community values wasting less to protect resources". Deciding whether it will work best to use *static framing* around existing behaviours, like "Most people plan meals to avoid waste" versus *dynamic framing* around growing trends like "More people each year are joining the movement to reduce food waste" will make your message resonate even more.

Gather the information you have already brought together on the 1) target behaviour, 2) influences on the behaviour, 3) specific desired change in the behaviour through your intervention, and 4) the motivations, opportunities and (cap)abilities of your target group. With this information, consider the potential relation of social norms to each:

1) **Target behaviour** – is there already a relevant social norm mentioned in **section 3** which is known to relate to this kind of behaviour? If not, consider what else may be a norm in the context upon which you are focusing.

2) **Influences on that behaviour** – consider the environment in which the behaviour takes place. What are the factors which might affect whether someone behaves in this specific way or not?

3) **The desired change in the behaviour through your intervention** – consider whether the desired change is either a) a wish to make a certain behaviour itself a norm (e.g. taking home a 'doggy bag' of leftovers from a restaurant if you don't finish your meal), or b) influenced by social norms which exist around the behaviour and contribute to its uptake (e.g. the behaviour of over-providing for guests

when hosting a dinner party is influenced by the social norm of a good host being seen as providing multiple different options and more food than is needed).

4) **The motivations, opportunities and (cap)abilities of your target group** – map out the MOA of your target audience (those who do/would conduct the behaviour in question) especially focusing on what motivates the target group to perform certain behaviour related to food waste. The social norms are the influencing factors to the motivation. Social norms are most likely to be found in the motivation section (see CHORIZO Deliverable 3.1 *Conceptual Framework for Behavioural Change Understanding* for further information).

With this information, you should have been able to identify a specific social norm or norms with which you can work, in order to change the desired behaviour (whether directly or indirectly).

**Targeting staff or customer behaviour? Example from food services**

The "good provider identity" is a social norm in play among service providers and staff, whereas enforcing the norm of "taking leftovers home" is targeting customers, but boxes to take the leftovers home will be provided by the staff. It's always a good idea to make the desired behaviour as easy and as socially accepted as possible, for example by providing take-home boxes by default to every table without request.

*Figure 11: Targeting staff or customer behaviour? Example from food services*

**Suboptimal food/undesirable food quality: example from schools**

"The most prevalent and important social norm in the schools' case study was **suboptimal food/undesirable food quality**. In this respect, the following characteristics were key: appearance and consistency, texture, taste and quality, and social acceptance. […] Ultimately, the social acceptance of the food among peers also played a significant role. It was mentioned that foods that an individual was prone to like could be perceived as gross among their peers, leading the individual to throw it out, as well as changing their own taste preferences for these food items. Social context played a significant role in these decisions, with some foods deemed more "popular" than others." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 12: Suboptimal food/undesirable food quality: example from schools*

At this point it is also important to be clear on whether the norm(s) are *helpful norms* which you are looking to support to have a bigger influence (e.g. those which already contribute to lower FLW behaviours but are not yet routine or mainstreamed in your target group) or *unhelpful norms* which reduce the likelihood of the FLW behaviour taking place (e.g. something which influences individuals towards another behaviour than the socially desirable one, or which makes the FLW behaviour less likely or impossible). Examples are given in **section 2.2**. By identifying this, you know whether your intervention should seek to a) build and support an existing social norm or norms, or b) change or reduce the influence of an existing social norm or norms.

## 4.4 Step 4: Choose and tailor your social norms approach

Now that you have identified social norms that can influence behaviour, it's time to design your intervention plan by choosing your approach. Referencing **sections 2.2 and 3** for additional evidence-based insights as you create your intervention plan. Using varied communication strategies—whether static, dynamic, or changing the 'environment'—can help reinforce and spread desired behaviours (for more information see **section 4.5**).

To effectively use social norms to reduce food waste, consider these three approaches, how they can be used and the potential for tailoring, based on the CHORIZO project's learnings:

1. **Reinforce Existing Norms**: If an appropriate social norm around reducing waste already exists, emphasize it to strengthen commitment. Reminding people can for example happen like "most people in our community already avoid food waste" and can build on this established behaviour.

2. **Create New Norms Through In-Group Values**: When a norm is not yet present, it should be built by aligning it with in-group values. For instance, messaging like "In our community, we believe in reducing food waste to support sustainability" can shape waste reduction as part of the group's identity.

3. **Establish Norms via Environmental Cues**: Modify the environment to signal desirable behaviours. Visible prompts, such as signage promoting meal planning or providing compost bins, illustrate that reducing waste is common here, encouraging others to follow suit.

**Establish Norms via Environmental Cues - Take-home boxes: example from food services**

Taking leftovers home from a restaurant becomes more and more established. It's always a good idea to make the desired behaviour as easy and as socially accepted as possible, for example by providing take-home boxes by default to every table without request. Train the staff to make it a norm for them to ask all customers if they want to take their leftovers, or just put a box automatically to each table. With this, customers might feel less greedy, because more customers also take home their food.

*Figure 13: Establish Norms via Environmental Cues - Take-home boxes: example from food services*

**Ugly veggies and good providers: example from schools**

"Fruits and vegetables frequently appearing in lunch boxes were perceived as boring and consequently thrown out. In some cases, these attitudes were formed due to the belief that none of the other pupils consume such food items and that it was embarrassing thus to do so. […] The data also demonstrated that it was important to the parents to be **good food providers**. There were examples of parents who knew that the lunch was being thrown out but continued to provide the food because it was seen as the societal expectation of what a parent should do." (Chorizo Case Study 4, in D2.3 Empirical evidence sensemaking)

*Figure 14: Ugly veggies and good providers: example from schools*

By tailoring these approaches—reinforcing, creating, and establishing norms—to specific communities and behaviours, social norms can inspire and drive lasting change in achieving zero food loss and waste.

## 4.5 Step 5: Plan the implementation

Now it is time to devise a plan for implementing the intervention by considering the following three **key Steps for Designing an Effective Plan:**

1. **Define setting, delivery and timing**: Determine *where*, *how*, *when* and *by whom* your intervention will be communicated to the target group/audience. Find the best setting: in which location or situation can you get closest to the target behaviour? What is the right place and time to reach your target audience ? Interventions can be targeted communication at points of action, appealing to people's identity, or altering the choice environment (the space or set of conditions in which they make a decision). When is your target audience most receptive? What are their relevant moments of change

(e.g. is there a seasonal point when people already take action in this field)? Target locations where waste behaviours are most relevant—like meal prep areas or trash disposal points—and time your intervention when people are most receptive, such as before meals. How will you communicate your intervention? See **section 2.1** for the different ways in which norms can be expressed. Anticipate challenges and adapt plans as needed to overcome potential obstacles, such as practical barriers to running an intervention in a specific location, or the target group's lack of capacity to focus on something new at busy times of year.

2. **Identify Tools and Add Fun Elements**: Use tools like *nudging*, *self-commitments*, or *gamification* to engage participants. For instance, place reminders near waste bins or introduce rewards for reducing waste. Make the initiative fun and memorable—use engaging visuals, creative prompts, or interactive elements to boost participation.

3. **Collaborate for Greater Impact**: Team up with diverse partners to broaden reach and share resources. Collaborating with unexpected allies—like local businesses, schools, or community groups—can amplify the intervention's effectiveness and encourage a community-wide commitment to reducing waste.

**"I waste less than my neighbours": example from cities**

Research (see here and here) shows that most people think that their own household wastes less food than average, and that people align with their neighbours' behaviours. Bruges, Belgium trained 50 residents as ambassadors to influence their neighbours to reduce food waste, and they achieved an average of 65% less waste. With growing use of sensors that measure waste before or during collection, cities can collect data on the compost collected from each household, and send households reports that compare their separation rates or waste volumes with city averages.

*Figure 15: "I waste less than my neighbours": example from cities*

**Involve your students: example from schools**

Schools involve students in food waste reduction efforts, such as the monitoring of food waste, the evaluation of the menu, the design of an action plan, and the celebration of results. One example is the "We ate responsibly" campaign in a school in Riga, Latvia. Another example is "Love Food, Hate Waste / the really healthy school program" in the Czech Republic.

*Figure 16: Involve your students: example from schools*

By carefully coordinating these steps, your intervention can promote lasting change, making food waste reduction a shared, impactful effort.

## 4.6 Step 6: Do a reality check

Before launching your intervention, it's essential to do a reality check to ensure it is as effective and user-friendly as possible. This step helps identify any obstacles that could hinder participation and allows you to refine your approach for maximum impact.

1. **Make It Easy:** Simplify every step. Remove barriers, streamline interventions, and, if possible, eliminate unnecessary choices to guide participants naturally toward the desired behaviour.

2. **Choose Clear Language:** Use accessible, relatable language, avoiding overly technical or distant terms. Language should connect with the audience and reflect shared values, making it easy for others to support and spread.

3. **Did you think of everyone?** Consider whether your approach is truly inclusive. Are there potential biases, like assuming certain cultural norms or access to resources? Tailor your plan to include diverse perspectives (considering e.g. gender, disability, socio-economic background and other factors) and adapt it as needed to make sure no group is overlooked.

**No messaging might be better than a wrong one: example from food services**

Analysis from our hotel case study reveals that while the control group (no message) aligns closely with the overall waste average, positive messages seem to lead to reduced waste per guest, whereas provocative messages seam to lead to increased waste per guest. Make sure to also consider other potential influencing factors (e.g. month, hotel type or guest count). The experiment underscores the importance of carefully framing messages to avoid triggering reactions. The results suggest that no message may be better than a poorly constructed one.

*Figure 17: No messaging might be better than a wrong one: example from food services*

**Cultural differences: example from schools**

In some cultures it is not polite to leave food on the plate, while in other cultures it is totally the opposite. Do you really know your target audience, or are there more aspects to consider?

*Figure 18: Cultural differences: example from schools*

Conducting this reality check ensures your intervention is clear, simple, and inviting, ultimately making it more likely to achieve meaningful change by many people.

## 4.7 Step 7: Implement the intervention

Now it's time to bring your plan to life! Implementation is all about making your intervention visible, accessible, and impactful. To ensure your plan reaches people effectively in the right place and at the right time, keep these steps in mind:

- **Prepare Your Resources**: Confirm locations, timing, and materials to make sure your messages and tools are available exactly where and when people need them.
- **Coordinate with Your Team**: Align everyone involved, so they're prepared to answer questions and make adjustments on the go. Plan in time for feedback talks.
- **Start with a pilot**: Testing in smaller settings first can reveal what works best, letting you refine and scale up smoothly.
- **Stay Flexible**: Watch how people respond, and be ready to adapt! If certain elements are more engaging than others, adjust your approach to enhance impact.

A well-implemented plan brings your ideas to action, helping people connect with the message and inspiring them to reduce food waste.

## 4.8 Step 8: Evaluate the impact

Evaluating impact is crucial to see if the action you took truly made a difference. This step focuses on measuring real behaviour changes and understanding the broader effects of your intervention.

Here's a guide to effective evaluation:

- **Define Key Metrics and Collect Evidence**: Set clear measures like waste volume reduction, participation rates, or uptake of new habits like meal planning. Combine this quantitative data with feedback to provide you a full picture.
- **Measure Behaviour, Not Just Attitudes**: Track real actions (like reduced waste) instead of relying only on survey responses. This helps address the *attitude-behaviour gap*, where people's stated values don't always align with their actions.
- **Monitor for Rebound Effects**: Monitor whether reduced waste in one area causes increased waste elsewhere, helping you avoid unintended consequences.
- **Tailor Evidence to Your Audience**: Think about who you need to convince—community members or stakeholders. Collect the evidence they'll find most compelling.

**"Separation Anxiety: Sorting waste is too complicated or time-consuming": example from cities**

Cities can learn about the social norms in a given context and use that to predict and pre-emptively address obstacles to implementing a new regulation or legislation. When piloting kerbside food waste collection, Auckland, New Zealand overcame perceptions that sorting waste was unreasonably complicated. They informed residents with postcards and door-to-door advisors, and distributed bins, caddies, bags, collection calendars and 'how-to' guides. The trial had an approval rating of 93%.

*Figure 19: "Separation Anxiety: Sorting waste is too complicated or time-consuming": example from cities*

**Collaboration in a holistic approach: example from schools**

Municipalities design interventions for their food services (nursing homes, kindergardens, …) to reduce food waste by having an awareness campaign and education programme for the staff, an interactive monitoring step, and an identification and implementation of the actions. This usually requires a collaboration of market actors, public actors, and academia. One example is the efforts with FoodOp by the Municipality of Gladsaxe in Sweden.

*Figure 20: Collaboration in a holistic approach: example from schools*

By tracking outcomes and refining your approach based on real-world results, you can enhance the long-term impact of your interventions.

# 5 ADDITIONAL RESOURCES AND SUPPORT TO IMPLEMENT INTERVENTIONS

Have you now read the guidance and find yourself feeling inspired but not sure where to get started? Don't worry - in 2025 we are running a European capacity building programme designed specifically to help you put these words into action!

The online and physical workshops will provide you with practical skills, examples and tips to design your own behaviour change intervention using fresh findings from the CHORIZO project and the relevant tools to use social norms in the reduction of food waste.

Sound good? Sign up to the CHORIZO newsletter to hear about the latest information and capacity building registration.

Additionally, the CHORIZO Insighter Data Hub contains a whole range of data collected through the project's case studies and research on FLW and social norms. Feel free to request relevant data for use in designing your own interventions.

## 5.1 Cities

The following section offers dozens of examples of how cities can (and already are) leveraging social norms to reduce food waste. Each table contains examples related to one area of cities' roles and power. Each example includes the social norm being addressed, and examples from cities across Europe or idea of approaches that cities could take.

### Examples: Strategy and multi-level governance

Cities can lead in reducing food waste, but they cannot act alone. Coordinated multi-level governance is essential because cities may not have the powers to enact certain regulations, legislation or taxes that could reduce food waste and create an enabling environment for city initiatives.

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Strategy Development<br>• City government | This cross-cutting role could relate to multiple social norms | Cities can develop a vision for a sustainable food system, embedded in strategies and roadmaps that leverage and address social norms. For example, Milan, Italy's widely acknowledged leadership in reducing food waste is anchored in the Milan Food Policy, which helped guide and align many pilots, projects and policies across the city. A city-level food policy or strategy can be made more effective by leveraging helpful social norms and deliberately tackling social norms that encourage wasteful practices. |
| Food Waste Analysis<br>• City government | This cross-cutting role could relate to multiple social norms | Cities could conduct or support an analysis of food waste in the city to understand where waste is being generated and by who. Data is key to policy design, so this analysis could inform strategy development and project planning. |
| Multi-level Governance | This cross-cutting role could relate | Many powers that influence food waste sit with regional or national levels of government, such as changing tax structure to incentivise food redistribution and penalise food waste like |

| | | |
|---|---|---|
| • City government<br>• Taxes | to multiple social norms | in France, Bulgaria or New York State. Cities can advocate to higher levels of government for policies that leverage or tackle social norms to reduce waste, which will support cities' local implementation of national or European policies like the legally binding EU food waste reduction targets adopted by the European Commission in July 2023. Cities can pilot voluntary schemes to showcase their potential impact, making a stronger case for regional and national action. The region of Catalonia's tax return system rewards municipalities that improve their management of recyclable or organic waste, by redistributing landfill and incineration taxes based on performance. |

*Table 4: Cities Examples - Strategy and multi-level governance*

### Examples: Procurement, legislation and regulation

Cities can design their public procurement tenders to disincentivize food waste among their contractors or select businesses that minimize waste, and use their regulatory and legislative power to require waste-minimizing practices.

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Public Procurement<br>• City government | Good planning or hospitality means preparing more food than you need / Food waste is an unavoidable cost of doing business | In public food service settings like school cafeterias, hospitals, or restaurants in public institutions like city hall, cities can establish procurement standards that reduce food waste, drawing on resources like the Manifesto for Establishing Minimum Standards for Public Canteens Across the EU (see page 12) and the best practices from SchoolFood4Change to shift kitchen staff norms around food preparation quantities. It could include training on accurate portion planning and celebrating kitchens that reduce waste while maintaining service quality. Procurement contracts could be preferentially awarded to companies that redistribute unused food. |
| Public Procurement / Public Events<br>• City government | Visually "perfect" produce is preferable | Cities can adopt policies to procure "ugly" produce whenever possible for public events and procurement, like for schools or municipal offices. Leading by example, cities can challenge the idea that only "flawless" produce is desirable. |
| Legislation and Regulation<br>• City government<br>• Food donation | It is risky or irresponsible to donate food because it could make someone ill | Cities could implement or advocate for laws that shield businesses from legal liability if someone becomes sick after eating donated food that was handled correctly. In the US, the Good Samaritan Food Donation Act provides liability protection for people who make good-faith donations of food and grocery products to organizations that feed the hungry. It also provides civil and criminal liability protection for institutions that distribute food and groceries, such as food banks. |

| | | |
|---|---|---|
| Legislation and Regulation<br>• City government<br>• Food donation | Food donation is an optional charitable activity, not a standard business practice | Cities might have powers to adopt a regulation like the 2016 French law that requires supermarkets over a certain size to sign donation contracts with charities, or else face a fee. This regulation helped establish a norm of viewing food donation as a standard part of running a supermarket, not optional charity. |

*Table 5: Cities Examples - Procurement, legislation and regulation*

### Examples: Cross-sectoral partnerships and private sector engagement

By partnering with specific stakeholder groups like markets, restaurants or caterers, cities can (co-)develop tailored interventions that have greater impact and smoother roll-out because they account for the group's social norms.

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Building Multi-Sectoral Partnerships<br>• City government | Food waste reduction is solely an environmental issue | Cities can create or support a Food Waste Alliance bringing together food-related businesses, anti-hunger charities, government agencies, community groups, and other stakeholders, helping establish a norm that food waste is a shared responsibility requiring collaborative solutions. In France, the RÉGAL networks fight food waste at the territorial level by convening all stakeholders in the food chain. This alliance can help shift the narrative from environmental compliance to social and economic opportunity. |
| Private Sector Engagement & Guidelines<br>• City government | Food waste is an unavoidable part of doing business / Good planning or hospitality means preparing more food than you need | Cities can partner with food service providers or public markets to standardise and disseminate food redistribution practices. Paris City Hall, with a working group of caterers, associations and logisticians, developed a guide for caterers to organize the redistribution of unsold goods to people in need, by systematizing the revaluation of surpluses. By working with food businesses, cities can encourage food redistribution as standard practice, helping shift norms about waste being unavoidable. Cities can also legislate or incentivise businesses to accept bring-your-own containers to take home leftovers, like Brussels' "Rest-O-Pack" initiative in restaurants. |
| Private Sector Engagement & Guidelines<br>• City government<br>• regulation | Bigger portions are more desirable or better value | New York City attempted to ban sodas larger than 16 oz (0.5 liters) to promote healthier diets. Cities can apply similar approaches like banning restaurant promotions that push people to eat supersized portions, or pursue voluntary approaches like engaging with restaurants to develop guidelines that normalise smaller portions, such as offering mini versions of menu items. Co-development ensures that the messaging will not ignore restaurateurs' norms, like that large portions indicate a welcoming environment. |

| | | |
|---|---|---|
| Building Multi-Sectoral Partnerships / Communications Campaigns<br>• City government<br>• Plattform | It's easier to discard food than to redistribute it / Donated or surplus food is lower quality or undesirable | Apps like Too Good to Go allow consumers to buy surplus food from businesses at a discount, shifting businesses' norms towards seeing food redistribution as easy. Cities could promote similar apps or develop their own like in Almada, Portugal. Offering surplus food in a widely visible, publicly sanctioned app can shift residents' norm of perceiving unused food as low quality or associated with "dumpster diving." |

*Table 6: Cities Examples - Cross-sectoral partnerships and private sector engagement*

### Examples: Communications, public events and awareness-raising

When communicating with residents through campaigns or events, cities can identify what social norms connect to their topic, and then reinforce or counteract the norms themselves - not just the behaviors they produce. For example, to address people's preference for "perfect" produce at markets, cities campaigns can use norm-focused slogans like "Delicious, No Matter the Shape."

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Data Collection and Monitoring / Awareness-Raising<br>• City government | I waste less than my neighbours | Research (see here and here) shows that most people think that their own household wastes less food than average, and that people align with their neighbours' behaviours. Bruges, Belgium trained 50 residents as ambassadors to influence their neighbours to reduce food waste, and they achieved an average of 65% less waste. With growing use of sensors that measure waste before or during collection, cities can collect data on the compost collected from each household, and send households reports that compare their separation rates or waste volumes with city averages. |
| Communications Campaigns / Public Events<br>• City government | Visually "perfect" produce is preferable | Cities can build on examples like British chef Jamie Oliver's campaign celebrating irregular produce in supermarkets, helping shift perceptions that "ugly" produce is less valuable. Local chefs and could highlight imperfect produce, while supermarkets to set up discounted "ugly produce" areas within campaign signage. For example, Banquet des 5000 organisers led volunteers to cook 5,000 meals using irregular or surplus food, and Disco Soup events use imperfect produce to cook community meals, reducing stigma of "ugly" produce quality in a fun, interactive setting. |
| Public Events<br>• City government<br>• Food donation | Donated or surplus food is lower quality or undesirable | Cities can host events or initiatives that highlight high-quality surplus or donated food. At Refettorio Paris, high-end guest chefs cook meals for homeless or precarious residents with surplus ingredients. Associating surplus food with luxury gastronomy is a great way to shift public perception. |
| Public Events and Festivals / | Celebrations or hosting events | Cities can develop sustainable event guidelines that include responsible portions and sharing practices. Encouraging |

| | | |
|---|---|---|
| Communications Campaigns<br>• City government | requires excessive amounts of food | "thoughtful hosting" practices, including for hosting at home, shifts the norm from associating large quantities of food with event success to viewing responsible portions as the new standard. |

*Table 7: Cities Examples - Communications, public events and awareness-raising*

### Examples: Waste management and asset management

Most city governments have direct control over their waste collection system and manage a significant body of assets, making these low-friction areas for municipal governments to implement innovative measures to reduce urban food waste.

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Waste management<br>• City government | Separation Anxiety: Sorting waste is too complicated or time-consuming | Cities can learn about the social norms in a given context and use that to predict and pre-emptively address obstacles to implementing a new regulation or legislation. When piloting kerbside food waste collection, Auckland, New Zealand overcame perceptions that sorting waste was unreasonably complicated. They informed residents with postcards and door-to-door advisors, and distributed bins, caddies, bags, collection calendars and 'how-to' guides. The trial had an approval rating of 93%. |
| Waste management<br>• City government<br>• Taxes & Fees | Food waste is not penalized so it must not be a problem | City governments are usually responsible for waste management. The incentives in a city's waste fee structure, and municipal systems for waste sorting and collection, can reflect and reinforce norms about which practices are desirable or harmful. "Pay as you throw" (PAYT) schemes like in Parma, Italy charge residents more for waste collection if they produce more waste, especially mixed waste that is not compostable or recyclable. By embodying the "producer pays" principle, PAYT establishes a norm that producing excessive household waste is problematic and gives financial incentives to reduce food waste. Milan offered a 20% discount on waste tax to businesses that donated surplus food, and gave them a special label. |
| Asset Management<br>• City government<br>• the use of publicly owned assets | Unused space is wasted space / Public assets should serve social and environmental goals | In many cities, including Galdakao, Spain and the Danish cities of Aarhus, Kolding and Copenhagen, local groups have introduced community fridges in public spaces to encourage residents to donate and take excess food freely. Cities can run their own community fridge, like Hernani, Spain's Zero Zabor fridge to share food from school canteens, or can provide accessible public space for NGOs to install them. This helps normalize the idea that public space should be used for communal goals while drawing attention to the twin issues of food waste and hunger. Porto supported the creation of new vegetable gardens using locally generated compost. |

*Table 8: Cities Examples - Waste management and asset management*

## 5.2 Food Banks

The table below sets out a number of social norms which are found in food redistribution and donation settings and examples of how these have been or could be used to reduce food loss and waste.

| SETTING/CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEEN/COULD BE USED TO REDUCE FLW |
|---|---|---|
| Quality of donated food<br>• Food donation | Better for reputation and legal issues to stay on the safe side: never compromise on food safety! | The donated food has to be and has to remain suitable for human consumption through the donation chain. The fear of the companies that there is going to be complain about donated food quality can be reduced with more detailed and thorough communication regarding the applied food safety actions. |
| Redistribution to people in need<br>• Food donation | Businesses are cautious about collaborating with NGOs due to variability in reliability | By presenting the organizations involved in the distribution and explaining the processes, accountability, and control mechanisms in place, we can reduce the perceived risk and increase the willingness to donate |
| What to do with food surplus?<br>• Food donation | All edible surplus food should be donated to people in need | Individual beliefs can influence decisions about donating food surplus within a company. Identifying and contacting the persons at companies who are committed to food donation can help accelerating the donation process |
| Business considerations<br>• Food donation | Decision makers prioritize financial benefits over non-financial benefits such as social impact when donating food. | Decision-makers should receive detailed insights and feedback on where the donated food went and the impact it had on those who received it. If we can make social impact more measurable, there is an opportunity for non-financial impacts to become more 'competitive' in executive decision-making. |
| Alternative usage of food surplus<br>• Food donation | Utilizing food surplus for animal feed or biofuel production is equally beneficial as donating it. | Surplus food can be used not only for human consumption but also for feeding animals or producing biofuel. By widely promoting the hierarchy of food waste management and emphasizing that higher levels yield greater social impact, we can create opportunities to 'guide' efforts from lower levels toward donation. |

*Table 9: Food Bank Examples - Relevant social norms*

## 5.3 School Food

Through the schools' case study, alongside research on FLW actions within the sector, the CHORIZO project has been able to compile a collection of social norms present in the school setting. In the table below you can find identified social norms, with a short explanation about the social norm and the respective setting. Further, ideas on interventions to reduce food waste are highlighted.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEENOR COULD BE USED TO REDUCE FLW |
|---|---|---|
| Adapting food waste in school canteens<br>• canteen interface | Plate size influences the amount of food waste | For a long time it was assumed that a reduced plate size also leads to less food waste, with people eating smaller portions at once, and thus reducing the overall leftovers. However, in the Chorizo project, the intervention was tested with mixed results. Instead, it was found that increasing the size of the plate lead to less food waste. The reason was that in the tested scenario, people were more likely to take more portions in total with smaller plates, often taking more rounds than they could eat. Thus, we recommend testing this in the case of the school cafeteria. When testing, it is worth paying attention to queues and time limits, as they may impact group behaviour. |
| Making imperfect-looking food more appealing to students<br>• peer interface,<br>• household interface,<br>• education | Students are often focused on the external appearance of their fruit and vegetables and reject them, if they show spots or signs of browning | The descriptive social norm of students to be reluctant to eat imperfect-looking fruits and veggies is best countered by showing that the food is still very tasty and edible, and secondly informing their parents about better food packaging practices, which will reduce the number of dents and brown spots. Teachers, peers, and parents can act as positive change agents here. |
| Targeting the social norms that influence parents<br>• household interface | Good provider identity | Some parents tend to provide more food than necessary, or "healthy" food (e.g. which kids don't want to eat) because of the fear of being perceived as a bad host or parent.<br>On the other hand, it is reported to increase acceptance and reduce food waste if parents prepare lunch boxes together with their kids. |
| Peer behaviour can be a challenge and opportunity<br>• peer interface,<br>• canteen interface | Students are likely to adapt peer behaviour | Especially younger students are likely to copy observed behaviour. In the food waste context, this may for instance be by throwing away still-edible food. However, peer behaviour can also be an opportunity. For instance, by planning group activities, entire groups of students can be motivated to take up more sustainable practices, using the peer pressure for something good. One example is to eat packed lunches together, to reduce the amount of imperfect-looking food which is thrown away. In canteen settings, group interventions can be used to pack leftovers of the canteen meal. Students can be invited to bring their own boxes from home to take some school canteen leftovers home with them. It's important to have in mind that the interventions do not work for every case. Testing it therefore very important! |
| Food waste education can help | Awareness about food loss and waste | Implementing education about sustainable practices and skills around food waste can reduce the amount of food waste |

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|---|---|---|
| reduce food loss and waste substantially<br>• education interface | and how to reduce it can have a substantial impact on food-related behaviour. | significantly. Especially, knowledge about the impacts of food waste, better packaging, storing, and interpreting of date markings can reduce food waste. |

*Table 10: School Food Examples - Relevant social norms*

## 5.4 Food Service

Through the food service (HORECA) case study, alongside research on FLW actions within the sector, the CHORIZO project has been able to compile a collection of social norms present in the food service setting. In the table below you can find identified social norms, with a short explanation about the social norm and the respective setting. Further, ideas on interventions to reduce food waste are highlighted. If you are running a canteen, please also take a look at our schools' guidance document, since you might want to draw parallels from these insights.

The following table indicates in column 1 the area of action mentioned in the chapter above (service providers), as well as indicating social norms and approaches targeting specific contexts, where applicable.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEENOR COULD BE USED TO REDUCE FLW |
|---|---|---|
| Buffet behaviour<br>• customer interface<br>• canteen context | Plate size influences the amount of food waste<br>• descriptive | For a long time it was assumed that a **reduced plate size** also leads to less food waste, with people eating smaller portions at once, and thus reducing the overall leftovers. However, in the Chorizo project, the intervention was tested with mixed results. Instead, it was found that increasing the size of the plate lead to less food waste. The reason was that in the tested scenario, people were more likely to take more portions in total with smaller plates, often taking more rounds than they could eat. Thus, we recommend testing this in the case of your specific context. When testing, it is worth paying attention to queues and time limits, as they may impact group behaviour. |
| Buffet behaviour<br>• customer interface<br>• restaurant context | Charging for leftovers in a buffet restaurant<br>• descriptive | A social norm of **charging for leftovers** emerging in some buffet restaurants in Germany, such as Yuoki in Stuttgart and Okinii in Düsseldorf. |
| Buffet Behaviour<br>• service provider interface<br>• buffet context | Good provider identity<br>• injunctive, unhelpful | With self-service there was a tendency to feel the need to provide the guest with an extensive range of food options to be a "**good provider**". You might want to ask your customers how much variety they expect, or develop messaging around why you reduced the options at play and how much waste is reduced by this action. |
| Messaging at breakfast buffet | SN Messaging on breakfast waste | Analysis reveals that while the control group (no message) aligns closely with the overall waste average, **positive** |

| | | |
|---|---|---|
| • customer interface<br>• hotel & buffet context | • static, dynamic, injunctive, descriptive | **messages seem to lead to reduced waste** per guest (31.85g), whereas provocative messages seam to lead to increased waste per guest (51.76g). Make sure to also consider other potential influencing factors (e.g. month, hotel type or guest count). The experiment underscores the importance of carefully framing messages to avoid triggering reactions. The results suggest that no message may be better than a poorly constructed one. (CS2 – Hotels) |
| Table reservation and preordering<br>• customer interface<br>• restaurant context | Social acceptance of pre-ordering or repurposing ingredients<br>• helpful norm still to be established | Changing the social norm to **normalize reservations and pre-orderings** in restaurants allows more precise meal preparation which would reduce FLW.<br>This could be increased by giving price reductions and incentives in case of pre-ordering. |
| Take left-overs home in boxes<br>• customer interface<br>• restaurant & hotel context | Establishing the norm to take leftovers home<br>• descriptive (providing boxes)<br>• injunctive (feeling judged, unhelpful SN) | A significant majority of respondents would **take leftovers home**, even if they had to pay for the container. However, by openly promoting this action, food service providers can reduce leftovers even more. You make it even more easy for your customers to take their leftovers home, if you provide boxes for free, or provide circular containers.<br>The social norms at play, such as being ashamed to take leftovers home or **being judged to be greedy** by other customers, is an unhelpful norm that reduces willingness to take home leftovers and increases food waste. (CS 2 & 3 Hotels & restaurants) |
| Using leftovers in meal preparation<br>• service provider interface<br>• hotel context | Sub-optimal Food/Undesirable Food Quality<br>• injunctive | The SN of not buying, utilizing food in meal preparations, or eating it, due to "**sensory deviations**" such as unusual shape or colour. The interviews demonstrated that all the chefs have a strong sense of honour associated with their profession and the quality of their work. Only the best is good enough for guests. For example, the chefs questioned what guests would think about using leftovers or food past expiry dates for meal preparation, and thus deferred from doing so. |

*Table 11: Food Service Examples - Relevant social norms*

## 5.5 Retail

Reducing food waste in retail companies is widely discussed by now. The CHORIZO project has been able to compile a collection of social norms present in the retail setting. In the table below you can find identified social norms, with a short explanation about the social norm and the respective setting.

| SETTING OR CONTEXT | SOCIAL NORM | EXAMPLE OF HOW THIS HAS BEENOR COULD BE USED TO REDUCE FLW |
|---|---|---|

| | | |
|---|---|---|
| Donating Food<br><br>Retail context | Establishing the norm of donating food | The European Commission's Food Use and Waste Hierarchy positions food donation as a top-tier environmental solution emphasizing the crucial role of donation in facilitating the recovery and redistribution of safe, edible food to those in need.<br><br>The "Don't Throw It Away" campaign asks consumers to demand that supermarkets and hypermarkets donate safe food they can no longer sell (No lo tires – Campaña de FACUA).<br><br>Regulations like the 2016 French Garrot law requires supermarkets over a certain size to sign donation contracts with charities, or else face a fee. This regulation helped establish a norm of viewing food donation as a standard part of running a supermarket, not optional charity.<br><br>Milan offered a 20% discount on waste tax to businesses that donated surplus food, and gave them a special label. |
| Commitment to reduce FLW<br>• Retail context | The power of commitments to reduce FLW | A review of voluntary agreements to reduce food waste gathered from 13 EU Member States as well as Norway and the UK underlines that the collaborative approach creates a culture of innovation and empowers stakeholders along the value chain to develop tailored solutions suited to their specific circumstances.<br>In Germany for example, retailers signed a voluntary commitment to reduce food waste, and could showcase a a a 24% reduction in 2023.<br>In another example, actors signed a declaration to become part of a group that reduces food waste by following three directions: internal commitment, external communication and taking action. This is a tool designed to keep potential multipliers active by making them part of an in-group (WAW Brands Waste Warrior Brand). |
| Passing on sub-optimal food<br>• Retail context | Appreciation of food not meeting aesthetic expectations | Unusual appearance and approaching expiration dates of food result in purchase refusals. In order to support the appreciation of food independent on (smaller) aesthetic defects, Slowly, more and more supermarkets are selling imperfect foods and are promoting the consumption of those, sometimes in cooperation with NGOs. In social media, the FW community also starts to promote the slogan “stop bodyshaming of fruits and vegetables” to foster less sceptical purchasing decisions. |
| Passing on sub-optimal food | Social norm of passing on surplus | More and more retailers participate in platforms where they can sell their surplus products (e.g. near the expiration date, |

| | | |
|---|---|---|
| • Retail context<br>• Plattforms | products to customers | leftovers, short-life products or overstocked food) to make food loss and waste visible, by facilitating access to the items and making them attractive, by reducing the price or give consumers benefits (e.g. SISTERS project, Too Good To Go) |
| Passing on sub-optimal food<br>• Retail context | The established norm of mark down | It's an established norm by now, that retailers sell food near the expiration date with discounts and make them visible. There are differences in how these products are displayed, what impacts norms and concerns of being perceived as poor if people buy these products. |
| Valorisation of sub-optimal food<br>• Retail context<br>• food processing companies | The growing norm of processing leftovers into new food items | In increasing number of retailers and companies develop and market safe products that are made of leftover foods, also called "upcycled" products, challenging the norm of "good provider" of only offering "perfect" products. |

*Table 12: Retail Examples - Relevant social norms*

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