



Deliverable 2.1

CASE STUDIES' STRATEGIC PLAN

Case Studies' Strategic Plan

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Glossary of terms and acronyms used

Acronym/Term	Description
CS(s)	Case Study(ies)
WP(s)	Work Package(s)
GA	Grant Agreement
M	Month
H	High (risk level)
M	Medium (risk level)
L	Low (risk level)
FLW/ FW	Food Loss and Waste/ Food Waste
D	Deliverable
SP	Strategic Plan
FGI	Focus Group Interview
IDI	In-depth-Interview
RIA	Research and Innovation Actions
NGO	Non-governmental Organisation
T	Task
PR	Public Relations
CSR	Corporate Social Responsibility
QA	Quality Assurance
SC	Supply Chain
B2B	Business-to-Business
B2C	Business-to-Consumer
NA	Not Applicable
TBD	To Be Decided

Executive summary

This document outlines the formal strategic plan for each case study in the CHORIZO project. The strategic plan is aimed at refining each case studies' objectives, give a detail description of scheduled actions and data collection techniques, possible risks in the implementation of these actions, mitigation measures as well as periodic assessment procedures to determine the extent to which each case study advances toward its objectives.

The document starts with an introduction on the overall project objectives and structure, and highlights the essential components of case studies strategic plans. In the next chapters (2 to 6), each component of the strategic plan is explained with information specific for each case study. The document ends with a conclusion and steps to follow in the management of the case study to ensure timely attainment of case study objectives.

1 INTRODUCTION

1.1 Overall Structure of CHORIZO

Preventing and reducing Food Loss and Waste (FLW) has been (and still is) at the epicentre of many initiatives, with their focus gradually evolving from (i) measuring FLW at an aggregate level, to (ii) exploring operational actions that can prevent/reduce FLW, and (iii) to understanding better the drivers behind FLW. CHORIZO, being a Research and Innovation Actions (RIA) type of project, takes a step further with aims to improve the understanding of how social norms influence behaviour and FLW generation. This knowledge will be used to improve the effectiveness of decision-making and engagement of food chain actors, towards zero food waste. This global objective of CHORIZO will be achieved through clearly defined and interrelated tasks (Figure 1) to be carried out by case studies (CS) and work packages (WPs) in the project.

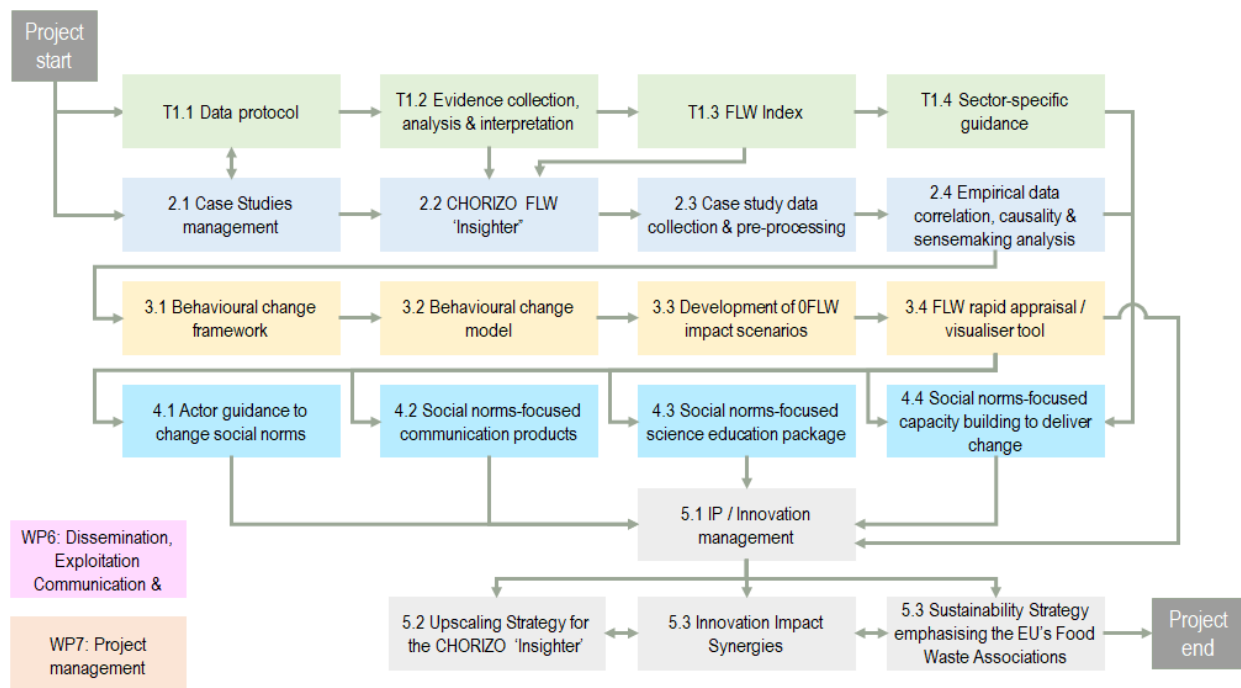


Figure 1: Interrelations between the different work components

CHORIZO will implement six CSs. These CSs spread across Europe (Figure 2), to have representative information will serve three interlinked purposes;



Figure 2: Case Study location

- i. To provide information and data on the context and impact of previous FLW prevention/reduction actions undertaken by the Case Study members, thus enriching the evidence-based analysis on previous FLW actions;
- ii. To generate new evidence on the interaction between social norms, behaviour and food waste, to feed into the project’s FW models and innovation products;
- iii. To validate the communication and science education packages of the project.

A formal CS Strategic Plan (SP) is a high-level strategic document prepared by each CS demonstrating the strategic direction of the CS’s work. The document is aligned with the Grant Agreement (GA) and provides additional information on the project’s strategy for a successful management of the CSs. It achieves this by examining the *status quo*, including its objectives and targets.

1.2 Components of the Strategic Plans for Case Studies

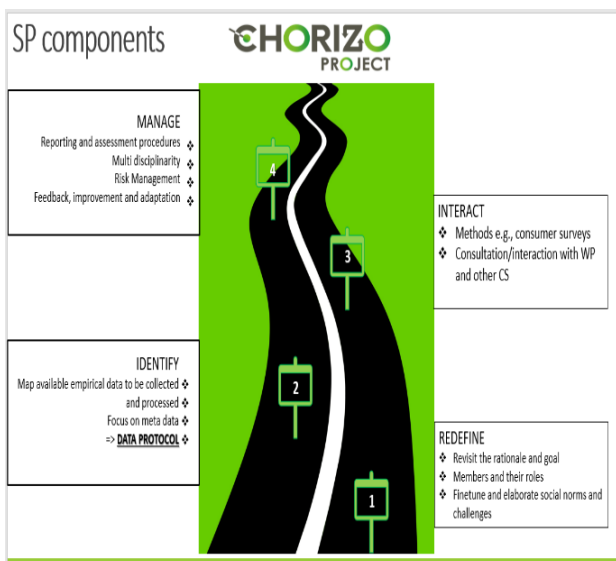


Figure 3: Case Study Strategic Plan components

Strategic planning in the context of CSs aims at **redefining** the objectives of the CSs, **identifying and mapping** out empirical data to be collected using well defined data collection techniques, and processed, paying relevant attention to meta data. The SPs also outline all interactions with other partners in and out of CHORIZO consortium and **guides** scheduled actions. It also enhances the **management** of the CSs by addressing potential risks, shortcomings and obstacles in a timely manner. Figure 3 summarizes the components

essential for elaborating the SP.

2 REDEFINE

This section features the overall description of the CSs. It includes the main contact point(s)/person(s) for each CS, location, the rationale of the CS, finetunes and elaborates the key social norms the CSs will tackle. With these elaborated, the CS goals and objectives can then be redefined.

2.1 General Description of CSs

CASE STUDY 1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS	
CS co-leads	<p>1. EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW- EN VISSERIJONDERZOEK (EV ILVO)</p> <p>Name: Bart Van Droogenbroeck</p> <p>Email: bart.vandroogenbroeck@ilvo.vlaanderen.be</p> <p>2. ASOCIACION PARA LA INVESTIGACION DESARROLLO E INNOVACION DEL SECTOR AGROALIMENTARIO – AIDISA (CTIC CITA)</p> <p>Name: Ixone Alonso Miquélez</p> <p>Email: ialonso@cticcita.es</p>
CS Members	<ul style="list-style-type: none"> • EV ILVO • CTIC CITA
Location of CS	<p>Country1: Belgium</p> <p>City/region: throughout Flanders</p> <p>Country2: Spain</p> <p>City/region: throughout Spain and vulnerable groups in Logroño</p>
Rationale of the CS	<p>Around 50% of the FLW in the EU occurs at the household level, making households a key target for intervention. Furthermore, although FW generation by individual household members has received considerable attention, the combined interactions with other household members or with other entities external to the household (e.g. retail marketing actions) remain largely unaddressed, and as a result actual behaviour is only partially accounted for. In addition, as evidence on the impact of COVID-19, indicates a combination of factors (reduced income, personal time availability, disrupted supply chains, interruption of food services, lifestyle changes, restrictive measures, etc.) led to a behavioural shift in relation to household FW. Examining the COVID-19 induced shift will provide valuable knowledge on: (i) its medium-term impact on social norms and FW behaviours (almost two years after the COVID outbreak, when the project starts); (ii) the processes & dynamics leading to social norm and behavioural changes.</p>

FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input checked="" type="checkbox"/> FW and convenience food</p> <p><input checked="" type="checkbox"/> FW at households</p> <p><input type="checkbox"/> FW at food services</p> <p><input type="checkbox"/> FW, obesity and malnutrition</p> <p><input checked="" type="checkbox"/> FW and crisis response</p> <p><input checked="" type="checkbox"/> Value of food</p> <p><input checked="" type="checkbox"/> Portion sizes</p> <p><input type="checkbox"/> Corporate policies/strategies with supply chain (SC) actors</p> <p><input type="checkbox"/> Date marking Sustainable/ Smart packing</p>
Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> Processing</p> <p><input type="checkbox"/> Retail</p> <p><input checked="" type="checkbox"/> Consumption</p>
CASE STUDY 2: HOSPITALITY FOOD WASTE	
CS lead	<p>NORDIC CHOICE HOSPITALITY GROUP AS (NCH)</p> <p>Name: Sigve Eliassen</p> <p>Email: sigve.eliassen@choice.no</p>
CS Members	<p>NORDIC CHOICE HOSPITALITY GROUP AS (NCH)</p> <p>Charlotte Haavik (charlotte.haavik@choice.no)</p> <p>NORCE RESEARCH AS (NORCE)</p> <p>Patrycja Antosz (paan@norceresearch.no),</p> <p>Ernesto Carrella (ernc@norceresaerch.no)</p>
Location of CS	<p>Country: Norway</p> <p>City(ies): TBD –</p> <p>More important is hotel type. Three types will be studied</p> <ul style="list-style-type: none"> • Premium (n = 2 to 3) vs

	<ul style="list-style-type: none"> • Low budget (n = 3) vs • Conference venues (n = 3)
Rationale of the CS	FW in the hospitality (hotel) sector occurs during food storage, preparation of meals, serving and consumption. Previous evidence has shown that considerable potential exists for reducing FW, resulting also in significant economic savings. This holds especially true for buffet leftovers and food overproduction. Although the hotel guests' hedonic, 'serve and eat endless' behaviour has been identified as a key driver of FW, the interaction with hotel business practices and employee behaviour, has not been explored.
FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> FW and convenience food</p> <p><input type="checkbox"/> FW at households</p> <p><input checked="" type="checkbox"/> FW at food services</p> <p><input type="checkbox"/> FW, obesity and malnutrition</p> <p><input type="checkbox"/> FW and crisis response</p> <p><input checked="" type="checkbox"/> Value of food</p> <p><input checked="" type="checkbox"/> Portion sizes</p> <p><input checked="" type="checkbox"/> Corporate policies/strategies with SC actors</p> <p><input type="checkbox"/> Date marking Sustainable/Smart packing</p>
Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input checked="" type="checkbox"/> Processing (preparation)</p> <p><input type="checkbox"/> Retail</p> <p><input checked="" type="checkbox"/> Consumption</p>
CASE STUDY 3: FOOD SERVICES FOOD WASTE	
CS lead	<p>ITC - INOVACIJSKO TEHNOLOSKI GROZD MURSKA SOBOTA</p> <p>Name: Sasa Straus</p> <p>Email: sasa.straus@itc-cluster.com</p>
CS Members	<ul style="list-style-type: none"> • Pomurje Chamber of Commerce and Industry • 14 Restaurants
Location of CS	Country: Slovenia

	City: Murska Sobota
Rationale of the CS	About 65% of FW in restaurants is considered as avoidable. The reasons behind this, are mostly in over-preparation, overfilled buffets, incorrect portions, no practice of consumers taking home their leftovers, preparation residues and over-ordering, overstocking and lack of adequate storage facilities. Consumers are generally not used to ordering food in advance, and restaurants are not providing this option either. Restaurants usually prepare meals largely based on personal estimation and past experience and fresh ingredients are mostly ordered one day ahead to retail. The use case deployed in the region of Pomurje, Slovenia, will build on past/existing initiatives for reducing FW in restaurants, investigating the processes and behaviour at three layers: (i) retail and short food supply chains – delivery of fresh ingredients to restaurants, (ii) restaurants – storing and preparing food, managing FW and leftovers, (iii) consumers – ordering, leftovers perception.
FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> FW and convenience food</p> <p><input type="checkbox"/> FW at households</p> <p><input checked="" type="checkbox"/> FW at food services</p> <p><input type="checkbox"/> FW, obesity and malnutrition</p> <p><input type="checkbox"/> FW and crisis response</p> <p><input checked="" type="checkbox"/> Value of food</p> <p><input checked="" type="checkbox"/> Portion sizes</p> <p><input checked="" type="checkbox"/> Corporate policies/strategies with SC actors</p> <p><input type="checkbox"/> Date marking Sustainable/ Smart packing</p>
Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> Processing</p> <p><input type="checkbox"/> Retail</p> <p><input checked="" type="checkbox"/> Consumption</p>
CASE STUDY 4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION	
CS lead	<p>KOBENHAVNS UNIVERSITET (UCPH)</p> <p>Name: Bent Egberg Mikkelsen</p> <p>Email: bemi@ign.ku.dk</p>
CS Members	<ul style="list-style-type: none"> • Lindevang School

	<ul style="list-style-type: none"> Nærheden School
Location of CS	<p>Country: Denmark</p> <p>City: Copenhagen</p>
Rationale of the CS	<p>Children are the consumers of the future and schools play a key role in both the intake of meals, and in nudging behavioural change. It is thus crucial to understand school children’s behavioural drivers to food waste and identify the potential trade-offs between FW and dietary quality, and by extension health, as habits at the young age may be difficult to change in adult life (e.g. low plate waste might occur due to overconsumption and obesity, or increased FW might be due to a high-quality diet including a large share of fruits and vegetables). As such there is a need to better understand food waste literacy and to develop educational interventions that can increase it. Moreover, as children’s behaviour develops in a social context, we need to understand the relevant interactions with their families, peers and the school learning environment which influence food waste and dietary decisions. This can help improve the design of effective education packages to address trade-offs among multiple objectives and to foster significant, long lasting behavioural changes by all involved stakeholder across generations. In particular there is a need to broaden the scope of food waste literacy training and education to not only take place in the school canteen and in home economics classes, but also to be integrated across the curriculum in the Science classes and in the teaching of the SDG’s, in particular 12.3 (FW).</p>
FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS’s work mostly addresses</i></p> <p><input type="checkbox"/> FW and convenience food</p> <p><input type="checkbox"/> FW at households</p> <p><input checked="" type="checkbox"/> FW at food services (Food canteen)</p> <p><input checked="" type="checkbox"/> FW, obesity and malnutrition</p> <p><input type="checkbox"/> FW and crisis response</p> <p><input checked="" type="checkbox"/> Value of food</p> <p><input checked="" type="checkbox"/> Portion sizes</p> <p><input type="checkbox"/> Corporate policies/strategies with SC actors</p> <p><input type="checkbox"/> Date marking Sustainable/ Smart packing</p>
Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS’s work mostly addresses</i></p> <p><input type="checkbox"/> Processing</p> <p><input type="checkbox"/> Retail</p> <p><input checked="" type="checkbox"/> Consumption</p>

CASE STUDY 5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN	
CS lead	<p>Hungarian Food Banks (HFBA)</p> <p>Name: Balázs Cseh</p> <p>Email: cseh.balazs@elelmiszerbank.hu</p>
CS Members	<p>ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA</p> <p>(UNIBO)</p>
Location of CS	<p>Country1: Hungary</p> <p>City1: Various</p>
Rationale of the CS	<p>Food banks play a key role between corporate actors, other NGOs and consumers, requiring the capability of effectively mediating the different food chain actors' motivations and behaviour. Moreover, there are two inherent conflicts food banks have to balance: (i) the increasing pressure towards preventing surplus food upstream the food chain and the need to address food insecurity through this surplus; (ii) the need to address food insecurity without contributing to malnutrition.</p>
FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> FW and convenience food</p> <p><input type="checkbox"/> FW at households</p> <p><input type="checkbox"/> FW at food services</p> <p><input type="checkbox"/> FW, obesity and malnutrition</p> <p><input type="checkbox"/> FW and crisis response</p> <p><input checked="" type="checkbox"/> Value of food</p> <p><input type="checkbox"/> Portion sizes</p> <p><input checked="" type="checkbox"/> Corporate policies/strategies with SC actors</p> <p><input type="checkbox"/> Date marking Sustainable/ Smart packing</p>
Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input checked="" type="checkbox"/> Processing</p> <p><input checked="" type="checkbox"/> Retail</p> <p><input type="checkbox"/> Consumption</p>

CASE STUDY 6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING	
CS lead	<p>ASOCIACION PARA LA INVESTIGACION DESARROLLO E INNOVACION DEL SECTOR AGROALIMENTARIO – AIDISA (CTIC CITA)</p> <p>Name: Ixone Alonso Miquélez</p> <p>Email: ialonso@cticcita.es</p>
CS Members	<p>Other members</p> <ul style="list-style-type: none"> FEDERACION ESPANOLA DE INDUSTRIAS DE LA ALIMENTACION Y BEBIDAS (FIAB)
Location of CS	Country: Spain
Rationale of the CS	<p>It is estimated that up to 10% of the FW generated annually in the EU is linked to improper date marking. Date marking is often confusing to consumers. Misinterpretations lead to earlier than necessary food disposal. Main product types consumers are likely to discard based on reading the date label on the pack, are: milk and yoghurts, fresh juices, chilled meat and fish. The use of ‘use by’ and ‘best before’ labels interchangeably in many EU countries further contributes to this confusion. Moreover, consumers’ perception of date marking validity can prevent the diffusion of new technologies (e.g. sustainable and smart packaging) that can extend product shelf life, when one would expect that such technologies would strengthen confidence in date marking. Furthermore, date marking is considered as a marketing element by food producers, who often shorten dates unnecessarily to minimise liability claims and retain the perceived quality of their products. Finally, smart packaging could extend the life of products, effectively reducing FW if clear directions and a timeline are provided in the packaging to preserve products once open.</p>
FLW related topics addressed by CS	<p><i>Please check the box(es) below the CS’s work mostly addresses</i></p> <p><input checked="" type="checkbox"/> FW and convenience food</p> <p><input checked="" type="checkbox"/> FW at households</p> <p><input type="checkbox"/> FW at food services</p> <p><input type="checkbox"/> FW, obesity and malnutrition</p> <p><input type="checkbox"/> FW and crisis response</p> <p><input type="checkbox"/> Value of food</p> <p><input type="checkbox"/> Portion sizes</p> <p><input type="checkbox"/> Corporate policies/strategies with SC actors</p> <p><input checked="" type="checkbox"/> Date marking Sustainable/ Smart packing</p>

Stage(s) of the value chain where FLW occurs addressed	<p><i>Please check the box(es) below the CS's work mostly addresses</i></p> <p><input type="checkbox"/> Processing</p> <p><input checked="" type="checkbox"/> Retail</p> <p><input checked="" type="checkbox"/> Consumption</p>
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Table 1: General description of Case Studies

2.2 Social Norms

This sections elaborates on the social norms closely related to the CSs’ objectives and research activities. Social norms are one of the ways consumers, organisations and organisational roles can be steered towards particular behaviours. They can be looked upon as the unwritten codes and informal understandings that define what we expect of others and what others expect of us (Young, 2015). Social norms are context dependent (for example, on gender, culture, region, situation), and their objective in interventions is to influence individuals’ behaviour by presenting them with the behaviour of others, often emphasising the behaviour that is practiced by most people (McDonald and Crandall, 2015).

One of CHORIZO’s tasks is to identify and improve the understanding of how social norms influence FLW behaviours. Hence, it is crucial for each CS to identify at an early stage which normative influences are important to consider in their context. To further align social norms in the context of CHORIZO, we focus on four commonly identified social norms related to food waste and consumption.

- Sub-optimal food / undesirable food quality (ICF et al. 2018, Stangherlin et al. 2020).
- Good provider identity (Graham-Rowe et al. 2014).
- Portion size and food affluence (Versluis and Papies, 2016, Zhao et al. 2019).
- Associations between FW behaviour and socio-economic status (Middleton et al. 2018).

See Table 14 for detailed description of these categories.

Table 2 shows the category of social norms and their examples for each CS.

CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS		
Social norm category	Examples in the context of CS	Other comments
Good provider identity	<ul style="list-style-type: none"> Parents purchase a variety and abundance of healthy foods, or cook more than what their kids/household members will eat (make sure they will be satisfied). 	
Sub-optimal food/undesirable food quality	<ul style="list-style-type: none"> Fruits and vegetables with unusual appearance are of inferior quality. It is acceptable to throw away disliked food. 	
Portion sizes	<ul style="list-style-type: none"> Excessive food intake is socially accepted. Dinners with guests often result in food waste because people are afraid of having too little food available for families/friends 	
CS2: HOSPITALITY FOOD WASTE		
Social norm category	Examples in the context of CS	Other comments
Portion size	<ul style="list-style-type: none"> Reduced portion size compromises the value perceived by hotel guests or consumers. 	
Food affluence	<ul style="list-style-type: none"> Food affluence (including visual) is key to driving hotel guest satisfaction. More food than required should be procured and kept 'on-hand' to ensure the availability of all menu items at all times. 	
Undesirable food quality	<ul style="list-style-type: none"> Belief that products close to expiration pose a high health risk. Belief that 'Best before' dates are equal to 'safe until' dates. Belief that date markings designating a long shelf life indicate a product of low quality. Habits: Food is not kept in the original packaging. 	<ul style="list-style-type: none"> Habits - "what we have always done". It is hypothesized that chef's formal education and abilities may affect these beliefs and habits; which may impact food waste.

CS3: FOOD SERVICES FOOD WASTE		
Social norm category	Examples in the context of CS	Other comments
Sub-optimal food/undesirable food quality	<ul style="list-style-type: none"> It is acceptable to throw away disliked food. 	<ul style="list-style-type: none"> Serving of disliked food.
Good provider identity	<ul style="list-style-type: none"> Ordering in advance is considered abnormal by consumers and restaurants. 	<ul style="list-style-type: none"> Except for large groups, restaurants do not provide options for ordering lunch day ahead.
Portion size and food affluence	<ul style="list-style-type: none"> Reduced portion size compromises the value perceived by hotel guests or consumers. 	<ul style="list-style-type: none"> Big portions – satisfied guests
Associations between FW behaviour and socio-economic status	<ul style="list-style-type: none"> Taking leftovers home is making the consumer look poor. 	<ul style="list-style-type: none"> Not able to afford fresh second meal.
CS4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION		
Social norm category	Examples in the context of CS	Other comments
Sub-optimal food/undesirable food quality	<ul style="list-style-type: none"> Kids/pupils are highly influenced by food industry’s marketing and creation of norms about how foods should be like to be attractive. As a result foods that differ from these norms are considered of lower quality and – it can be speculated – more acceptable to throw away food. So it is highly likely that kids tends to reject food that does not have perfect size and look unattractive according to generally accepted norms. 	<ul style="list-style-type: none"> Underlying assumption here is that pupils understanding of food quality is based on and influenced by the external environments. It can also be assumed that school based food literacy training may contribute to changing this
Good provider identity	<ul style="list-style-type: none"> Parents tend to buy or send (to schools as a lunch pack for their kids) a variety of food items that are often more than their kids can consume to make sure they will be satisfied and not go hungry. 	<ul style="list-style-type: none"> Due to the parents' belief that if they send enough food, kids will consume enough. The underlying norm can be assumed to be that “there should always be enough”. And that there is a change potential here (“there should be

		just enough”). This could be looked in a similar way as the “Just in Time” principle.
Portion size and food affluence	<ul style="list-style-type: none"> Young people are influenced by their reference group – people and peers in their proximal social environment when it comes to setting a norm about how much is acceptable to eat – and how much is acceptable to be wasted. 	<ul style="list-style-type: none"> Portion size clearly have both a significance when it comes eating too much – and when it comes to wasting too much. In other words, normative belief on how much one should eat and how much it is okay to throw out.
Associations between FW and socio-economic status	<ul style="list-style-type: none"> When kids have to eat out of their home, especially in the fast-food setting, they might like to follow the norms hold by the peer groups, so that group thinking might spill over to all of the group members. 	<ul style="list-style-type: none"> Possible mechanism here could be to signal to other that you can afford! It could be speculated that “willingness to reduce food waste” would have a social gradient and that action should be taken to work on that kind of norms.

CS5: FOOD WASTE IN A FOOD BANKS’ MEDIATED SUPPLY CHAIN

Social norm category	Examples in the context of CS	Other comments
Sub-optimal food/undesirable food quality	<ul style="list-style-type: none"> Fruit and vegetables with unusual appearance are perceived as inferior quality . Belief that products close to expiration pose a high health risk. Belief that ‘Best before’ dates are equal to ‘safe until’ date. Customers expect not to have last minute products on the shelves. Food affluence (including visual) is key to driving hotel guest satisfaction. 	

	<ul style="list-style-type: none"> • More food than required should be procured and kept 'on-hand' to ensure the availability of all menu items at all times. • Second level quality food is "still good for the needy" versus people in need deserve same quality as others. • Food banks should accept any food, regardless of its nutritional value. 	
<p>Good provider identity – general identity of companies</p>	<ul style="list-style-type: none"> • To give 'is to show one's superiority'. • Food that is still good for consumption has to be sent to humans. • Companies always donate their (edible) food surplus. • FW is considered unavoidable in large scale food services. • Food donation makes employees feel better. • Customers like better companies that donate surplus food. • Government expects companies to donate surplus food. • Donating food surplus is a philanthropic act (not a "normal" business activity). • Non-governmental Organisations (NGOs) are referred as recipient of donations instead of "service providers" (no reason to pay any costs if there are any at all). • Food surplus donation has a significant environmental impact (+ customers, employees, general public, government expects companies to behave environment friendly). • Food donation has a high (mainly reputational) risk to the company (food safety + misuse). • NGOs are not reliable enough / professional organisations. • Food donation is a "playground of the big multitis". • Food donation is an expected behaviour of the "Head Quarters". 	

	<ul style="list-style-type: none"> • Transparency/data publishing is good/bad for the reputation. • Having food surplus is not “part of business as usual” but a “sign of inefficiency”. A zero waste can be reach by good management/processes. • Transparency shows honesty and efforts (in better results in later reports) so it increases brand value • Donated food can make a significant impact in the social integration work of NGOs. • Companies like keeping a “social distance” from people in need (no direct contact; only via mediators) (for example, restaurants do not want homeless people queueing at the door before closing times). 	
<p>Individual beliefs/preferences vs company strategy</p>	<ul style="list-style-type: none"> • Companies always make decisions along their profit interests. • Management members personal social norms are often more socially/environmentally responsible but these cannot be transferred to the corporate decisions. • Food surplus donations are correlated with efficiency, more donations show less professionalism in operations. • Social return on investment is hard to measure, therefore the impact of food donation on business results (via brand value) is questionable (leading to discounting food until the very last minute as a better solution). • Food surplus donation is a main task of PR/CSR/QA/logistics/etc. 	
<p>Perceptions on alternative uses</p>	<ul style="list-style-type: none"> • Animal feeding “equals” feeding people in need (by definition it is not waste either). • Biofuel/biogas “equals” donating. • Food donation is complicated (takes too much effort/cost). • Companies/people only act socially/environmentally responsible if it is; <ul style="list-style-type: none"> a) along their financial interest (cost savings/tax benefits/etc) or b) legally obligatory. 	

	<ul style="list-style-type: none"> • Food safety can NEVER be compromised (for example, a damaged box of cafe cannot be donated). • Food safety is a serious bottleneck in food surplus donations (especially in HORECA). • Food banks (and their networks) have unlimited logistics capacities. 	
Food affluence	<ul style="list-style-type: none"> • Using a food bank is like begging 	<ul style="list-style-type: none"> • Unlikely to be explored since it relates more to users of food banks while this CS will focus more on the providers
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING		
Social norm category	Examples in the context of CS	Other comments
Sub-optimal food/undesirable food quality	<ul style="list-style-type: none"> • Belief that products close to expiration pose a high health risk. • Belief that 'Best before' dates are equal to 'safe until' dates. • Belief that date markings designating a long shelf life indicate a product of low quality. • Habits: Food is not kept in the original packaging. 	<ul style="list-style-type: none"> • Date marking is often confusing to consumers, who misinterpret it, thereby leading to earlier than necessary food disposal. • At the same time, date marking is considered by food producers also as a marketing element and to minimise liabilities, thereby in many cases it is unnecessarily shortened. • The use of 'use by' and 'best before' labels interchangeably in many EU countries further contributes to this confusion. • Consumer needs to know that nowadays the industry has many options when it comes to technologies and packaging methods ensuring that products are of high quality and can still keep its properties for a long time. • Smart packaging could extend the life of packaged products once open, effectively reducing FW if clear directions and a timeline are provided in the packaging to preserve products once open. • But consumers perception of date marking validity can prevent the diffusion of new technologies.

Table 2: Category of social norms and examples related to the CS

2.3 Case Study objectives and research questions

Clearly defined objectives by the CSs are an important step towards proper planning and execution of tasks. Table 3 summarizes for each CS, their objectives or goals and associated research questions. The numbering style for the objectives takes into account the CS number, location, and objective number. This format will be used to name datasets from the CSs. This makes information regarding each CS unique, enhancing traceability and identifiability.

CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS		
Number	Objective/goal	Possible research questions
CS1-BEO1	<ul style="list-style-type: none"> To identify social norm related drivers of household FW. 	<ul style="list-style-type: none"> Which social norms impact FLW at the household level? Do social norms contribute to FLW at the household level? How do social norms impact FLW at the household level?
CS1-BEO2	<ul style="list-style-type: none"> To investigate the role of social network interactions and retail marketing practices on FLW. 	<ul style="list-style-type: none"> Do the interactions within the social network impact FLW? How do the interactions within the social network impact FLW? Do retail marketing practices impact FLW? What retail marketing practices impact FLW? How do these marketing practices impact FLW?
CS1-BEO3	<ul style="list-style-type: none"> To understand the behavioural changes in FW that occurred during the COVID-19 pandemic. 	<ul style="list-style-type: none"> Did the COVID-19 pandemic influence your FW intentions? How did the COVID-19 pandemic impact your behaviour towards FW?
CS1-BEO4	<ul style="list-style-type: none"> To understand the influence of contextual factors on household FW behaviour by comparing results in a Spain and a Flanders-Belgium. 	<ul style="list-style-type: none"> Do the above contextual factors impact FLW differently in Spain and a Flanders-Belgium?

CS1-ESO1	<ul style="list-style-type: none"> To understand which are the drivers of household FW, considering the interactions among individual consumers, other household members and retail marketing practices, among others. 	<ul style="list-style-type: none"> What are the different actions are that retail is taking to transform FW? Is there a common policy within households agreed among all members on FW? What is this policy based on?
CS1-ESO2	<ul style="list-style-type: none"> To identify the social norms underpinning these drivers. 	<ul style="list-style-type: none"> What is the real impact of the key social norms to avoid households waste?
CS1-ESO3	<ul style="list-style-type: none"> To understand the behavioural changes in FW that occurred during the COVID-19 pandemic. 	<ul style="list-style-type: none"> What behavioural changes in FW have originated in the wake of the COVID-19 pandemic? What new FW behaviours does the consumer have after COVID-19? Have consumer motivations changed about FW after COVID-19?
CS1-ESO4	<ul style="list-style-type: none"> To understand the influence of contextual factors on household FW behaviour by comparing results in a Spain and a Flanders-Belgium.. 	<ul style="list-style-type: none"> Do the above contextual factors impact FLW differently in Spain and a Flanders-Belgium?
CS2: HOSPITALITY FOOD WASTE		
Number	Objective/goal	Possible research questions
CS2-NOO1	<u>Study 1: Weighting food waste depending on communication strategy</u>	
	<ul style="list-style-type: none"> How communication about food waste affects consumption level waste. 	<ul style="list-style-type: none"> Does the content of communication (no communication, informative vs shaming) affect food waste at the breakfast buffet table? What is the interaction between communication strategy and hotel venue in relation to food waste?
CS2-NOO2	<u>Study 2 – In depth staff interview on food waste depending on communication strategy</u>	
	<ul style="list-style-type: none"> Identify through in-depth interviews with staff how does communication of food waste affect different groups of customers and waste in different food categories. 	<ul style="list-style-type: none"> Does the content of communication (no communication, informative vs shaming) affect food waste production of different types of customers/food categories?
CS2-NOO3	<u>Study 3 - Weighting food waste depending on serving type</u>	
	<ul style="list-style-type: none"> How does the form of serving affect food waste. 	<ul style="list-style-type: none"> Is there a difference between buffets and plated lunch in production of food waste in a conference venue?

CS2-NOO4	Study 4 – In depth interviews with chefs	
	<ul style="list-style-type: none"> How strategies of food production and procurement differ due to staff’s formal education. 	<ul style="list-style-type: none"> How strategies of food production and procurement differ between staff with and without qualifications? How strategies of food production and procurement affect food waste at the preparation level?
CS3: FOOD SERVICES FOOD WASTE		
Number	Objective/ goal	Possible research questions
CS3-SLO1	<ul style="list-style-type: none"> Understand interactions between retail, restaurants and consumers, and their drivers (business, social) influencing food ordering, delivery, preparation and consumption. 	<ul style="list-style-type: none"> What are the goals of food services for different actors (supplier, food service, customer)? How do all actors interact and influence each other? What are the most important needs to be satisfied for customers in food services? What does food service actor need from the supplier and what do suppliers need from food service?
CS3-SLO2	<ul style="list-style-type: none"> Identify the social drivers and norms underpinning the interactions. 	<ul style="list-style-type: none"> Which social drivers influence behaviour of all 3 actors? How do these social norms identified influence the behaviour of the 3 actors? Which social drivers and norms impact FW? How do these social drivers and norms impact FW?
CS3-SLO3	<ul style="list-style-type: none"> Understand behavioural drivers that are preventing all three actors to perceive FW as a problem (lock-ins). 	<ul style="list-style-type: none"> What influences the amount of FW? How much FW is generated? Where are hotspots?

CS4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION		
Number	Objective/ goal	Possible research questions
CS4-DKO1	<ul style="list-style-type: none"> To identify Social Norms related drivers in relation to FW by young people (pupils). 	<ul style="list-style-type: none"> What are primary causes (motivations) that influences young peoples' food consumption behaviours (such as; food waste, over consumption)?
CS4-DKO2	<ul style="list-style-type: none"> To understand role of reference group that influence pupils' food behaviour (Motivation to reduce FW). 	<ul style="list-style-type: none"> How does pupils' reference group influence each other?
CS4-DKO3	<ul style="list-style-type: none"> To understand pupils' awareness level in relation to food waste and its consequence (him/herself and environment). 	<ul style="list-style-type: none"> What is the awareness level of pupils' regarding food waste and its social, economic and environmental consequence?
CS4-DKO4	<ul style="list-style-type: none"> To understand pupils' attitudes and values (personal belief, self-perceived behavioural control) toward topics of food waste and consumption-related health. 	<ul style="list-style-type: none"> What are the personal beliefs (positive or negative) that pupil hold on wasting food?
CS4-DKO5	<ul style="list-style-type: none"> To understand parent's strategies in relation to their kid's food consumption and FW behaviour. 	<ul style="list-style-type: none"> What kind of actions can parents consider in relation to their kid's food consumption and FW behaviour?
CS4-DKO6	<ul style="list-style-type: none"> To understand teachers' role on influencing pupils' behaviour especially on food consumption and FW. 	<ul style="list-style-type: none"> What kind of Influencing mechanisms and learning activities could consider influencing pupils' FW behaviour?
CS4-DKO7	<ul style="list-style-type: none"> To understand other school actors (such as; headmasters and school canteen operators) roles in changing pupils' behaviour on responsible food consumption. 	<ul style="list-style-type: none"> How can we design effective FW interventions with relevant learning activities focusing on pupil's social norms of FW?
CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN		
Number	Objective/ goal	Possible research questions
CS5-HUO1	<ul style="list-style-type: none"> Understand what drivers/social norms influence companies in choosing to donate food. 	<ul style="list-style-type: none"> What drivers/social norms influence companies' choices about food donations?
CS5-HUO2	<ul style="list-style-type: none"> Understand what are the barriers that prevent companies to donate food . 	<ul style="list-style-type: none"> What are the barriers that prevent companies to donate food?
CS5-HUO3	<ul style="list-style-type: none"> To understand the relationship and network between companies and NGOs. 	<ul style="list-style-type: none"> How does the supply chain structure help or hinder food donation?


CS5-HUO4	<ul style="list-style-type: none"> Understand context-specific elements influencing norms and modifying behaviours. 	<ul style="list-style-type: none"> How results can be adapted to other countries/contexts?
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING		
Number	Objective/ goal	Possible research questions
CS6-ESO1	<ul style="list-style-type: none"> To understand the context and impact of previous FLW prevention/reduction actions in which the case study members were involved. 	<ul style="list-style-type: none"> What is the real impact of the measures adopted and key social norms to avoid household's waste? How does the consumer understand the labelling of food to guarantee its use in the established period of consumption dates?
CS6-ESO2	<ul style="list-style-type: none"> To understand the rationale behind marking by food industries. 	<ul style="list-style-type: none"> What is the real reason of the industries when making a decision on the labelling of their products? How could food consumption dates be more accurately determined?
CS6-ESO3	<ul style="list-style-type: none"> To understand how date marking influences consumer behaviour to consume or waste food, and which are the social norms underpinning it. 	<ul style="list-style-type: none"> What guidelines does the consumer follow to decide whether or not to consume products that are outside the dates of consumption? How does the consumer behave in the face of information on consumption dates? What motivation do consumers have to discard food based on consumption dates?
CS6-ESO4	<ul style="list-style-type: none"> To understand the association between the length of shelf life (as reflected on date marking) and the perceived product quality by consumers. 	<ul style="list-style-type: none"> What perception is observed between the quality of a product and its duration? Does the consumer understand and discriminate against products because they are close to their date of consumption?
CS6-ESO5	<ul style="list-style-type: none"> To understand economic actors' practices towards returning, disposing or donating food past the 'best before' date, and which are the social norms underpinning them. 	<ul style="list-style-type: none"> What social strategies are most valued by the consumer to avoid food waste? What perception does the consumer have of the social actions developed to reuse food after its consumption date?
CS6-ESO6	<ul style="list-style-type: none"> To understand consumers and food industries' acceptance of sustainable 	<ul style="list-style-type: none"> If new packaging is developed that guarantees the durability of food, what

	and smart food packaging and the interactions with the perceived shelf life of products (consumer confidence on date marking), and ultimately FW.	<p>perception of quality would they have for the consumer?</p> <ul style="list-style-type: none"> • Will the consumer acquire new habits when it comes to avoiding food waste? • Will industries gain consumer confidence to change habits to avoid food waste?
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Table 3: Case Study objectives/goals and research questions


2.4 Case Study members, their roles and responsibilities



CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS	
Member 1:	<p>Logo:</p> 
Name	EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW- EN VISSERIJ- EN VOEDINGONDERZOEK (EV-ILVO)
Type of organisation	Research Institute
Role description/responsibilities	<ul style="list-style-type: none"> • Carry out survey interview on the Flemish population. • Carry out focus group interview with representatives of consumer associations in Belgium.
Country/region	Belgium
Address	Burg. Van Gansberghelaan 115 bus 1 - 9820 Merelbeke
Main contact point/person	<p>Name: Bart Van Droogenbroeck</p> <p>Email: bart.vandroogenbroeck@ilvo.vlaanderen.be</p>
Member 2	<p>Logo:</p> 
Name	ASOCIACION PARA LA INVESTIGACION DESARROLLO E INNOVACION DEL SECTOR AGROALIMENTARIO – AIDISA (CTIC CITA)
Type of organisation	Technology Centre


Role description/responsibility	<ul style="list-style-type: none"> Carry out survey interview on the Spanish population (surveys and MundoSabor surveys) aimed at understanding household trends on FLW. Execute an in-depth interview to understand FW household trends of the Spanish population including vulnerable groups. Perform a survey interview to understand the impact of COVID-19 on FLW on the Spanish population (surveys and MundoSabor surveys). Implement an in-depth interview, aimed at understanding the impact of COVID-19 on FLW on the Spanish population including vulnerable groups.
Country/region	Spain/La Rioja
Address	Ctra. Nacional 120, Km 22.8. 26315 Alesón, La Rioja, España
Main contact point/person	Name: Ixone Alonso Miquélez Email: ialonso@cticcita.es
CS2: HOSPITALITY FOOD WASTE	
Member 1:	Logo: 
Name	NORDIC CHOICE HOSPITALITY GROUP AS (NCH)
Type of organisation	Chain of hotels
Role description/responsibilities	<ul style="list-style-type: none"> Co-conceptualization of the study Sampling (selection of hotels, staffs and chefs) and recruitment of study subjects Data collection Data analysis
Country/region	Norway
Address	Fredrik Stangs Gate 22-24, 0264 OSLO
Main contact point/person	Name: Sigve Eliassen

	Email: sigve.eliassen@choice.no
Member 2:	Logo 
Name	NORCE – Norwegian Research Centre AS
Type of organisation	Research Centre
Role description/responsibilities	<ul style="list-style-type: none"> Assisting data collection and methodological studies; Guiding analysis
Country/region	Norway
Address	Nygardsgaten 112, Bergen 5838, Norway
Main contact point/person	Name1: Ernesto Carrella Email1: ernc@norceresearch.no Name2: Patrycja Antosz Email2: paan@norceresearch.no
CS3: FOOD SERVICES FOOD WASTE	
Member 1:	Logo: 
Name	ITC - INOVACIJSKO TEHNOLOSKI GROZD MURSKA SOBOTA
Type of organisation	Non-profit Institute
Role description /responsibilities	<ul style="list-style-type: none"> Coordination Surveys Analytics
Country/region	Slovenia
Address	Murska Sobota, Lendavska 5a, 9000 Murska Sobota

Main contact point/person	Name: Sasa Straus Email: sasa.straus@itc-cluster.com
Member 2	Logo: 
Name	Pomurje Chamber of Commerce and Industry
Type of organisation	Business Support Organisation
Role Description/responsibility	<ul style="list-style-type: none"> • Survey • Analytics
Country/region	Slovenia
Address	Murska Sobota, Lendavska 5a, 9000 Murska Sobota
Main contact point/person	Name: Roman Wolf Email: roman.wolf@gzs.si
Member 3	Logo: NA
Name:	14 Restaurants
Type of organisation	Food services
Role Description/responsibility	Respond to interviews and provide FW data.
Country/region	Slovenia
Address	
Main contact point/person	Name: Robert Grah (contact person for restaurant coordination) Email: robert.grah@gzs.si
Other comments	These restaurants/food services are not funded by the project, they are only participating.
CS4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION	
Member 1:	Logo: 

Name	KOBENHAVNS UNIVERSITET (UCPH)
Type of organisation	Academic Institute
Role description/responsibilities	<ul style="list-style-type: none"> • Carry out data collection on schools (pupils, parents, Teachers and school managers). • Perform data analysis. • Write report on case study data and analytics.
Country/region	Denmark
Address	Rolighedsvej 23, 1958 Frederiksberg C
Main contact point/person	Name: Bent Egberg Mikkelsen Email: bemi@ign.ku.dk
Member 2	<p>Logo:</p>  <p>Lindevangskolen</p>
Name	LINDEVANG SCHOOL
Type of organisation	Secondary school with focus on technology education
Role Description/responsibility	<ul style="list-style-type: none"> • Provide informants (headmaster, teachers, pupils, community leaders and parents) for data collection. • Facilitate communication with informants.
Country/region	Denmark
Address	P. G. Ramms Alle 26, 2000 Frederiksberg
Main contact point/person	Name: Lis Zachø, (Math teacher, Coding Pirates instructor, food coordinator) Email: lis.zacho@gmail.com
Member 3	<p>Logo:</p>  <p>Læringshuset</p>
Name	NÆRHEDEN SCHOOL (Læringshuset Nærheden)
Type of organisation	Secondary school with focus on project-based learning

Role description/responsibility	<ul style="list-style-type: none"> • Provide informants (headmaster, teachers, pupils, community leaders and parents) for data collection. • Facilitate communication with informants.
Country/region	Denmark
Address	Skolebakken 1, 2640, Hedehusene
Main contact point/person	<p>Name: Kirsten Vestergaard Hansen, (teacher of home economics, Food Lab manager)</p> <p>Email: kirs8000@htkskoler.dk</p>
CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN	
Member 1:	<p>Logo:</p> 
Name	Hungarian Food Bank Association (HFBA)
Type of organisation	Non-governmental Organisation (NGO)
Role description/responsibilities	<ul style="list-style-type: none"> • Developing the interview questionnaires, • Finding relevant interview partners, • Conducting the interviews, • Creating transcripts, • Translation into English, • Analysis of results, • Writing related deliverables.
Country/region	Hungary
Address	3 Lokator u. 1172 Budapest
Main contact point/person	<p>Name: Balázs Cseh</p> <p>Email: cseh.balazs@elelmiszerbank.hu</p>
Member 2	<p>Logo:</p>  <p>ALMA MATER STUDIORUM UNIVERSITA DI BOLOGNA</p>

Name	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA (UNIBO)
Type of organisation	University
Role description/responsibility	Supporting HFBA in all activities
Country/region	Italy
Address	Viale Giuseppe Fanin, 40-50, 40127 Bologna (Italy)
Main contact point/person	Name: Elisa Iori Email: elisa.iori5@unibo.it
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING	
Member 1	Logo: 
Name	ASOCIACION PARA LA INVESTIGACION DESARROLLO E INNOVACION DEL SECTOR AGROALIMENTARIO – AIDISA (CTIC CITA)
Type of organisation	Technology centre
Role description/responsibilities	<ul style="list-style-type: none"> Carry out survey interview on the Spanish population (MundoSabor platform or similar) and in 4 other EU Countries (Estonia, Greece, Netherlands and Hungary) to understand FW in relation to date marking and sustainable and smart food packaging. Execute in-depth interviews to understand FW household trends of the Spanish population including vulnerable groups. Carry out survey interview on the Spanish population from the MundoSabor Platform to identifying 7-8 household profiles. Execute in-depth interviews with food industry representatives to understand FW (with FIAB). Execute a workshop with food industry representatives to understand FW (with FIAB).
Country/region	Spain
Address	Ctra. Nacional 120, Km 22.8. 26315 Alesón, La Rioja, España
Main contact point/person	Name: Ixone Alonso Miquélez

	Email: ialonso@cticcita.es
Member 2	Logo: 
Name	FEDERACION ESPANOLA DE INDUSTRIAS DE LA ALIMENTACION Y BEBIDAS (FIAB)
Type of organisation	Federation of food and beverage industries
Role description/responsibility	<ul style="list-style-type: none"> • Execute in-depth interviews with food industry representatives to understand FW (with CTIC CITA). • Execute a workshop with food industry representatives to understand FW (with CTIC CITA).
Country/region	Spain
Address	Velázquez 64 – 3ª Planta 28001 Madrid
Main contact point/person	Name: Concha Ávila Email: c.avila@fiab.es

Table 4: Detailed description of the roles and responsibilities of case study members

3 IDENTIFY: EMPIRICAL DATA

This section allows the CSs to map out the empirical data they intend to collect, the aim of collecting the data (specifying the objective that will be addressed by a particular data collection technique). These data collection techniques will ensure the relevant data is available for other partners in the project such as other WPs for use (that is, for further processing and analysis). Collection of these data will follow strict guidelines outlined in the data protocol from task 1.1 and lays emphasis on the importance of meta data.

Data collection technique/method	Aim of collection (Please link to objective number for example CS#YYO#, where #: number, "YY": abbreviation of CS location and Ox: objective #)
CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIOD	
Survey interview	CS1-ESO1-4 and CS1-BEO1-4
Focus group interview	CS1-BEO2
In-depth interview	CS1-ESO1-4
CS2: HOSPITALITY FOOD WASTE	
In-depth interview	CS2-NOO2 and CS2-NOO4
Experiment	CS2-NOO1 and CS2-NOO3
CS3: FOOD SERVICES FOOD WASTE	
Survey interview	CS03SLO1-3
In-depth interview	
CS4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION	
Focus group interview	CS4-DKO1-4
In-depth interview	CS4-DKO5-7

CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN	
In-depth interview	CS5-HUO1-4
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING	
Survey interview	CS6-ESO1 ,CS6-ESO3, CS6-ESO4, and CS6-ESO6.
In-depth interview	CS6-ESO1, CS6-ESO3, CS6-ESO4, and CS6-ESO6
Workshop	CS6-ESO2, CS6-ESO5, and CS6-ESO6.

Table 5: Data collection techniques and alignment to objectives

4 INTERACT: CASE STUDIES' METHODS, SYNERGIES AND COLLABORATIONS

This section seeks to elaborate on the data collection techniques to be employed by the CSs, how the CSs relates with or depend on other actors in and out of the CHORIZO project.

4.1 Case Study methodologies

The goal of this sub-section is to ensure that the data collection techniques for all CSs are aligned, scientifically sound, relevant in answering the research questions and objectives of the CSs, WPs and the entire project. Therefore, these techniques need to be clearly described. Firstly, the CSs need to identify if and when they will need assistance or state if they have had help in shaping their data collection techniques.

CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS				
Method			If Yes, please specify	
			What kind of help	Urgency
Survey interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
Focus group interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
In-depth interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?

	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
CS2: HOSPITALITY FOOD WASTE				
Method			If Yes, please specify	
			What kind of help	Urgency
In-depth interview	Do you need help to develop this?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Adapting interview questions to trigger adequate and maximum information from respondents while ensuring they are aligned with the needs of other WPs.	
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
Experiment	Do you need help to develop this?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Properly setting up the experiment to be scientifically sound.	
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
CS3: FOOD SERVICES FOOD WASTE				
Method			If Yes, please specify	
			What kind of help	Urgency
Survey interview	Do you need help to develop this?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Adapting survey questions to align with the needs of the WPs;	
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA

In-depth interview	Do you need help to develop this?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Adapting survey questions to align with the needs of the WPs;	
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
CS4: SCHOOL FOOD WASTE AND RELATIONS WITH OBESITY AND MALNUTRITION				
Method			If Yes, please specify	
			What kind of help	Urgency
Focus group interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
In-depth interview	Do you need help to develop this?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Adapting interview questions to align with the needs of other WPs	
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN				
Method			If Yes, please specify	
			What kind of help	Urgency
In-depth interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?

	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE SMART FOOD PACKAGING				
Method			If Yes, please specify	
			What kind of help	Urgency
Survey interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
Focus group interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
In-depth interview	Do you need help to develop this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA
			What kind of help	From whom did you get help?
	Have you had help in developing this?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA	NA

Table 6: Nature of aid needed for CS methodology development

4.1.1 Detailed description of case studies data collection techniques and timeline

Here, CSs' data collection techniques are further elaborated. In detailing each method, and reflecting the specifics and context of each CS, the following are considered: the population/group to be considered for the data collection, the planned/effective sample size, the sampling process, the data

collection tools, the expected response rate, main variables to be considered and the CS partner responsible for executing the task.

CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS
<p>Survey interview</p> <p>CS1 will carry out survey interviews on the Flemish and Spanish populations. The planned sample size of the Flemish population to be considered will be 800 participants (to be executed by EV ILVO), 200 interviewees for the Spanish population aimed at understanding FW household trends and 200 entrants to understand the impact of COVID-19 on FLW (to be carried out by CTIC CITA). This gives a total of 1200 participants for the survey interviews.</p> <p>Focus group interview</p> <p>EV ILVO will implement one focus group interview with 5 participants. These participants will be representatives of consumer associations in Belgium.</p> <p>In-depth interview</p> <p>CTIC CITA will carry out in-depth interview on the Spanish population including vulnerable groups, to understand household trends, and the impact of COVID-19 on FLW with 15 participants each.</p>
CS2: HOSPITALITY FOOD WASTE
<p>In-depth interview</p> <p>Study 2 – In depth staff interview on food waste depending on communication strategy</p> <p>Sample nested design:</p> <ul style="list-style-type: none"> • Upper level: Three types of hotels (total number = 8/9) • Lower level: Hotel wait staffs <p>Sampling method: non-probability sampling</p> <p>Data collection tool: in-depth interview protocol</p> <p>Main variables: hotel type, message type (No display, Nice display, shaming display)</p> <p>Study 4 – In depth interviews with chefs</p> <p>Sample: Chefs with formal education (n = 4 to 5) and chefs without formal education (n = 4 to 5)</p> <p>Sampling method: non-probability sampling</p> <p>Data collection tool: in-depth interview protocol</p> <p>Main variables: food preparation routines, food planning, formal education (yes or no).</p>

Experiment

Study 1 – Weighting food waste depending on communication strategy

Sample nested design:

- Upper level: Three types of hotels (n total = 8/9)
- Lower level: Days in a month (a minimum of 7 days and a maximum of 30 days)

Comment: final or total number of days will depend on variation and power analysis.

Sampling method: non-probability sampling

Data collection tool: eSmiley

Main variables: kilograms of food waste per guest, hotel type, day type (working day vs weekend), guest number, message type (No display, Nice display, shaming display).

Study 3 - Weighting food waste depending on serving type

Sample: Week days in a month (a minimum of 7 days and a maximum of 30 days) in conference venues.

Comment: final or total number of days will depend on variation and power analysis.

Sampling method: non-probability sampling

Data collection tool: eSmiley

Main variables: kilograms of food waste per guest, hotel type, day type (working day vs weekend), guest number, serving type (plated lunch vs buffet).

Comment: If eSmiley offers such possibilities, food waste could be measured at the stage of production and at the stage of serving.

CS3: FOOD SERVICE FOOD WASTE

Survey interview

Consumers as a population will be targeted with a planned sample size of 800. The sampling process will take into consideration the entire population in the region and food service customers. Data collection tools will include online survey with an expected response rate of 80 %. The main variables to be considered are, but not limited to: gender, income, education. The partners responsible for this task are ITC and PGZ.

In-depth interview

Group considered will be made up of restaurant supplier and restaurant managers. A planned sample size of 5 restaurant suppliers, and 14 restaurant managers will be studied. The sampling process is partly done as restaurant are already chosen, and the suppliers will be chosen based on participating restaurant. The data collection tool will be an in-person-in-depth interview with an expected response rate of 100 %. The main variables to be considered include: gender, business size,. This exercise will be carried out by ITC and PGZ.

CS4: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION**Focus group interview**

UPCH will carry out a Focus group Interview with schools (Children) from 4 different classes at two school locations in Copenhagen, Denmark. Possibly CS4- will have separate FGI for each school, and each class considering their age and context.

In-depth interview

UPCH will carry out in-depth interviews with three different stakeholders related to school children (such as; parents, school managers and teachers) at two locations.

CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN**In-depth interview**

The target population will consist of retailers, workers in RECA sector, food processors and charity organisations that are involved in the food bank network in Hungary. A convenience sample from HFBA network will be selected and the planned sample size is the following: 5 interviews with retailers, 5 interviews with RECA sector workers, 10 with food processors and 10 with charities, for a total of 30 interviews. Data will be collected through audio recordings and then transcribed. The interviews will explore among various topics the drivers and social norms that influence companies' choices about food donations and the barriers that prevent companies to donate food. HFBA and UNIBO will be responsible for the development of the questionnaire, the interviews execution, the transcription and the data analysis.

CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING**Survey interview**

CS6- will carry out survey interviews on the Spanish populations and 4 other EU countries (Estonia, Greece, Netherlands and Hungary). This selection is based on a segmentation of Europe into 5 parts (north, south, east, west and centre), and taking into consideration the project consortium of partners. The planned sample size of the Spanish population to be considered will be 200 participants (to be executed by CTIC CITA), 200 interviewees for the each of the other 4 European countries aimed at understanding FW household trends. This gives a total of 1000 participants for the survey interviews. Additionally, 7-8 household profiles of the Spanish population will be identified (to be executed by CTIC CITA).

In-depth interview

CTIC CITA will carry out in-depth interview on the Spanish population including vulnerable groups, to understand household trends with 15 participants.

FIAB and CTIC CITA will carry out in-depth interview on food waste in relation to date marking and sustainable and smart packaging to 30 food industries.

Workshop

CTIC CITA and FIAB will organize a national workshop with 100 food industry representatives and consumers to analyse case study results.

Table 7 indicates a timeline of the CSs’ planned research activity and data collection technique. This gives the month according to the project calendar when the CSs intend to get a particular task done. This is relevant for the timely achievement of CSs objectives as well as for the proper management of the CSs.

Method/technique	Stage of research activity	M
CS1: HOUSEHOLD FOOD WASTE IN AND OFF CRISIS PERIODS		
Online survey	CS1-ES	
	First draft of questionnaire	M4
	Questionnaire developed	M6
	Starting interviews	M8
	CS1-BE	
	First draft of questionnaire	M4
	Questionnaire finalized	M6
	Starting interviews	M7
Focus Group Interview	CS1-BE	
	Representatives of consumer associations contacted	M4
	Guidelines/first draft questions for FGI	M4
	FGI points developed	M6
	FGI proper	M8
In-depth interview	CS1-ES	
	First draft of questionnaire	M4
	Questionnaire developed	M6
	Starting interviews	M9
CS2: HOSPITALITY FOOD WASTE		
In-depth interview	Study 2: In depth staff interview on food waste depending on communication strategy	
	Choosing the hotel locations	M4-M5

	Training staff	M4-M5
	In-depth interview protocol (end of Feb)	M5
	Data collection	M6-M9
	Data cleaning, preparation and analysis	M10-M12
	Study 4 – In depth interviews with chefs	
	Choosing the hotel locations	M4-M6
	In-depth interview protocol	M5
	Data collection	M7-M9
	Data cleaning, preparation and analysis	M10-M12
	Experiment	Study1: Weighting food waste depending on communication strategy and
Study3: Weighting food waste depending on serving type		
Choosing the hotel locations		M4-M5
Installation of eSmiley		M4-M5
Pilot measurements		M4-M5
Training of staff		M6-M9
Data collection		M6-M9
Data cleaning, preparation and analysis		M10-M12
CS3: FOOD SERVICE FOOD WASTE		
Survey interview	First draft of questionnaire	M6
	Questionnaire developed	M7
	Starting interviews	M8
In-depth interview	First draft of questionnaire	M6
	Questionnaire developed	M7
	Starting interviews	M8
CS4-: SCHOOL FOOD WASTE AND RELATION WITH OBESITY AND MALNUTRITION		
	First draft of questionnaire with CS objective in mind	M4

Focus group interview	Questionnaire finalized	M5
	Research ethics approval and adjust if needed	M5
	Recruiting informants through schools	M6
	Developing FGI guide	M6
	Performing interviews	M7-M8
	Transcription of interviews	M9
	Translation of transcription from Danish to English	M10
	Finalize interviews and make ready to analyse	M10
In-depth interview	First draft of questionnaire with CS objective in mind	M4
	Questionnaire finalized	M5
	Research ethics approval and adjust if needed	M5
	Recruiting informants through school (for parents) and with school (for school manager & teachers)	M6
	Developing IDI guide	M6
	Performing interviews	M7-M8
	Transcription of interviews	M9
	Translation of transcription from Danish to English	M10
	Finalize interviews and make ready to analyse	M10
CS5: FOOD WASTE IN A FOOD BANKS' MEDIATED SUPPLY CHAIN		
In-depth interview	First draft of questionnaire	Mid M4
	Final draft	End M4
	Interviews	M5-M7
	Transcript translation	M6-M9
	Cleaning the data	M9-M10
CS6: FOOD WASTE IN RELATION TO DATE MARKING AND SUSTAINABLE AND SMART FOOD PACKAGING		
Survey interview	First draft of questionnaire	M4
	Questionnaire developed	M6

	Starting interviews	M9
In-depth interview	Consumers	
	First draft of questionnaire	M4
	Questionnaire developed	M6
	Starting interviews	M9
	Industry	
	First draft of questionnaire	M4
	Questionnaire developed	M5
	Starting interviews	M6
Workshop	First draft of questionnaire	M4
	Questionnaire developed	M7
	Starting interviews	M9

Table 7: Timeline for CS research methods

4.2 Synergies and collaborations with other stakeholders

Synergies and collaborations between CSs and with WPs are an important aspect of the project’s smooth and timely execution. These interactions also enable and ensure the alignment of CSs and WPs, brings out clearly their interdependencies, linkages, and strengthens the systemic monitoring and follow-up of the project’s wide goals and objectives.

4.2.1 Synergies among CSs

CS1	CS2: Hospitality food waste and
	CS3: Food services food waste
	<p>Synergy identified</p> <p>Both CS2 and CS3 have an interest on similar social norms regarding portion sizes, as it is with CS1. It could be interesting to see how opinions vary in different consumer context that is as hotel guest, food service personnel or household members.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Collaboration to see that questionnaires address strictly the context of the CS.</p>
	CS4: School food waste and relation with obesity and malnutrition

	<p>Synergy identified</p> <p>CS1 and CS4 tackle the same social norms: (i) It is acceptable to waste disliked food; (ii) Portion size indicates how much is appropriate to eat, without being perceived as an excessive eater (e.g. with low self-control & attractiveness), carrying our survey on consumers at household levels.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Both will do consumer surveys, hence collaboration and harmonization of questions could enhance comparability of results.</p>
<p>CS2</p>	<p>CS1: Household food waste in and off crisis periods</p>
	<p>Synergy identified</p> <p>CS2 is comparing food waste in public versus food waste in the privacy of one’s home (CS1), this can help identify how much of the waste is due to social expectations and planning.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS1 focuses on surveys which are not part of CS2; when CS1 produces data/estimation on kg/person of waste in the household context it will be useful to compare with kg/person of waste in a public hotel setting.</p>
	<p>CS3: Food services food waste</p>
	<p>Synergy identified</p> <p>Both case studies refer to public consumption of food (restaurant versus hotels).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS3 produces surveys unlike CS2 but they both pertain to a public consumption of food and some of the attitudes and social norms identified in the two studies can be carried over. In particular it should be possible to link CS2 study 3 waste (plated lunch vs buffet) with the waste registered in a restaurant and identify if the context of “hotel” makes a difference compared to a similar method of consumption in a stand-alone restaurant.</p> <p>If CS3 is interested in measuring food waste at the stage of food preparation, this can also inform CS2 study 4 in-depth interviews.</p>
	<p>CS6: FW in relation to date marking and sustainable and smart food packaging</p>
<p>Synergy identified</p> <p>In CS2 study 4 we are analysing the behaviour of chefs with more or less formal education in the way they approach food waste. CS6 relates to common consumer mistakes regarding food labelling and “best before” dates.</p>	

	<p>Potential for sharing assets/data/approaches identified</p> <p>It is possible that the in-depth interviews carried out in our study 4 will be comparable with consumer survey results from CS6 and provide a good description of the difference between consumers and kitchen staff with and without formal education.</p>
<p>CS3</p>	<p>CS1: Household food waste in and off crisis periods</p>
	<p>Synergy identified</p> <p>Tackling the same social norms: “it is acceptable to throw away disliked food and portion sizes”. Research on customers.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS1 and CS3 will do consumer surveys, to some extent there could be coordination and harmonization of questions for more comparability of results.</p>
	<p>CS2: Hospitality food waste</p>
	<p>Synergy identified</p> <p>Tackling the same social norms: portion sizes, and dealing with food services as food storage, preparation of meals, serving and consumption.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS2 and CS3 will do consumer and managers surveys, to some extent we could coordinate and harmonize questions for more comparability of results. Also we can share results between ourselves to expand knowledge.</p>
	<p>CS4: School waste and relation with obesity and malnutrition</p>
<p>CS4</p>	<p>Synergy identified</p> <p>Tackling the same social norms: portion sizes and it is acceptable to throw away disliked food.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Extending knowledge on social norms.</p>
	<p>CS1: Household food waste in and off crisis periods</p> <p>Synergy identified</p> <p>CS4 and CS1 both are based on similar social norms in relation to FW initiated by parents (Good provider identity). CS4 mainly focuses on pupils/children in a school setting and its learning environments, while CS1 focuses on households, which is also a learning environment for pupils.</p>

	<p>Potential for sharing assets/data/approaches identified</p> <p>It could be crucial and insightful to have household interviews analytics from CS1 to understand the type of social environments that pupils/household members might be exposed to. CS4 could offer analytics from IDI of parents with school children mainly focused on the social norm; Good provider identity.</p>
	<p>CS3: Food services food waste</p>
	<p>Synergy identified</p> <p>CS4 and CS3 have synergies on their common social norms, especially in relation to young people.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS4 would like to hear CS3’s findings related young peoples’ social norms in relation to FLW. In addition, CS4 would like to understand the types of social and food environment young people might encounter. CS4 could offer analytics from FGI with school children mainly focused on their views on eating out of home (such as fast food setting).</p>
	<p>CS6: FW in relation to date marking and sustainable and smart food packaging</p>
	<p>Synergy identified</p> <p>CS6 is also working with social norm; “Sub-optimal food / undesirable food quality” which is interesting to CS4 in relation to school children and their understanding and beliefs of date marking, quality and packaging.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS4 will be interested to have insights from the analytics of CS6 especially young peoples’ understanding of food packaging, and information on the package. CS4 would intend offer analytics from FGI of school children focusing on attitude, belief and understanding of food marketing.</p>
	<p>CS5</p> <p>CS2: Hospitality FW</p> <p>Synergy identified</p> <p>Hotels are potential inputs for food donations. Interviews in CS5 and CS2 can share common questions to expand comparability of results in different countries.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Finetuning semi-structured interviews (in particular with hotel managers).</p> <p>CS3: Food services FW</p>

	<p>Synergy identified</p> <p>Food Services are potential inputs for food donations. Interviews in CS5 and CS2 can share common questions to expand comparability of results in different countries.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Finetuning semi-structured interviews (in particular retailers and restaurant food producers).</p>
CS6	<p>CS1: Household food waste in and off crisis periods</p>
	<p>Synergy identified</p> <p>Both cases we will do consumer surveys and in-depth surveys.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>We can coordinate questions to get the most information.</p>
	<p>CS3: Food services food waste</p>
	<p>Synergy identified</p> <p>Both cases we will do consumer surveys.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>We can coordinate questions to get the most information.</p>
	<p>CS5: Food services food waste</p>
	<p>Synergy identified</p> <p>Both cases we will do food industry surveys.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>We can coordinate questions to get the most information.</p>

Table 8: Synergies and collaborations between CSs

4.2.2 With WPs

CS1	<p>WP1: Evidence based analysis and sector-specific guidance</p>
	<p>Synergy identified</p> <p>Feeding WP1 with information necessary to build the T1.1: Data protocol which then flows to support T1.2: Evidence collection, analysis and interpretation, T1.3: FLW index and T1.4: sector-specific guidance.</p>

	<p>Potential for sharing assets/data/approaches identified</p> <p>Specification of meta data to collect, formats and naming styles of datasets.</p>
	<p>WP2: Empirical datahub</p>
	<p>Synergy identified</p> <p>Providing necessary information for the development of case study strategic plans (D2.1). WP2 ensures smooth running of CS1. CS1 contributes to data stored on the FLW “Insighter” of WP2. CS1 provides data for T2.4.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Provides data for T2.3: case study data collection and pre-processing to produce manageable data sets for other partners.</p>
	<p>WP3: Predictive analytics and modelling backbone for changing social norms towards OFLW</p> <p>Synergy identified</p> <p>Feeding WP3 models with data from CS1 and CS2 to obtain inference leading to better understanding of social norms and action on FW reduction.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Harmonize questionnaires with questions which will serve WP3 in building different models.</p>
CS2	<p>WP3: Predictive analytics & modelling backbone for changing social norms towards OFLW</p> <p>Synergy identified</p> <p>CS2 will produce quantitative estimates of food waste in an actual context which are extremely valuable to inform the simulation model and perhaps the scenarios as well Potential for sharing assets/data/approaches identified</p> <p>Opportunity to use quantitative changes in food waste as a result of messaging as a way to calibrate hidden parameters within the agent-based model.</p> <p>Data can be used for model specification together with calibration.</p>
CS3	<p>WP1: Evidence based analysis and sector-specific guidance</p> <p>Synergy identified</p> <p>Literature review on previous and ongoing actions to prevent/reduce FLW (T1.2).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Build on existing actions and knowledge to better understand social norms and drivers of FW.</p>

	WP3: Predictive analytics & modelling backbone for changing social norms towards OFLW
	<p>Synergy identified</p> <p>Feeding WP3 models with data from CS and getting models to better understand social norms and action on FW reduction.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Feeding WP3 models with data from CS and getting models to better understand social norms and action on FW reduction.</p>
	WP4: Actor-, context- and gender-specific change fostering
	<p>Synergy identified</p> <p>FLW reduction through social norms and validation of communication products.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Enhance food service actors and consumer to participate in capacity building activities.</p>
CS4	WP1: Evidence based analysis and sector-specific guidance
	<p>Synergy identified</p> <p>Literature review on previous and ongoing actions to prevent/reduce FLW (T1.2). Sector specific guidance to inspire CS data collection (T1.4).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS4 could be fed with inputs from T1.2 to better understand CS informant with previous or ongoing actions to curb FLW. Also, CS4 could be inspired to better develop their methodology by T1.4.</p>
	WP2: Empirical Datahub
	<p>Synergy identified</p> <p>Goal setting and guidance on CS with appropriate methodologies for data collection (T2.1).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Collaboration with WP2 (T2.1) to ensure social norms are perfectly translated into interview questions for other WPs that expect data from CS4.</p>
	WP3: Predictive analytics and modelling backbone for changing social norms towards OFLW

	<p>Synergy identified</p> <p>CS4 might inspire with behaviours change framework during data analysis (T3.1). Also, impact scenarios with all the information and analyses produced by different CSs in T2.3 and T2.4. (T3.3).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Feed WP3 models with data from CS and getting models to better understand social norms, and produce valuable guidance on changes.</p>
	<p>WP4: Actor-, context- and gender-specific change fostering</p>
	<p>Synergy identified</p> <p>Influence actor-, context-, and gender-specific guidance to change social norms (T4.1).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS4 would collaborate with WP4 make sure data collected is appropriate for T4.1, as T4.1 will be the foundation for fostering/implementing changes later on WP4.2 and WP4.3.</p>
	<p>WP6: Dissemination, Exploitation & Communication</p>
	<p>Synergy identified</p> <p>Collaborate with WP6 in T6.3 with City Interest Group 3 in changing social norms towards OFLW together.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>CS4 could cooperate, offer and share our their know-how on young people and school food environment. This could be in framing questions at the demand of T6.3.</p>
CS5	<p>WP1 - Evidence based analysis and sector specific guidance</p>
	<p>Synergy identified: Getting information from T1.2 Evidence collection.</p> <p>Potential for sharing assets/data/approaches identified: Questions can be built also upon results from T1.2.</p>
	<p>WP3 - Predictive analytics and modelling backbone for changing social norms towards OFLW</p>
	<p>Synergy identified: Providing info and getting inputs from T3.1 and T3.2</p> <p>Potential for sharing assets/data/approaches identified: Questions can be built also upon inputs from model requirements</p>
CS6	<p>WP1: Evidence based analysis and sector-specific guidance</p>

WP1: Data protocol and evidence-based analysis of FLW actions	<p>Synergy identified</p> <p>Input for T1.1 Data Protocol, and utilize the results of the evidence-based analysis of previous/ongoing FLW actions (T1.2).</p> <p>Potential for sharing assets/data/approaches identified</p> <p>We can use previous knowledge to better understand and construct questions.</p>
	WP2: Empirical datahub
	<p>Synergy identified</p> <p>Determining the appropriate methodologies for data collection will take into account the specificities of each Case Study (T2.1) and the kind of analysis that will need to be performed (T2.4) in cases where particular methods are necessary.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>Data collection.</p>
	WP3 - Predictive analytics and modelling backbone for changing social norms towards OFLW
	<p>Synergy identified</p> <p>All the information and analyses produced by the CSs in T2.3 and T2.4.</p> <p>Potential for sharing assets/data/approaches identified</p> <p>The questions will be defined based on the requirements of the models.</p>

Table 9: Synergies and collaboration with WPs

4.2.3 Wider stakeholder community involvement

This sub-section gives the CSs an opportunity to scan their environment and networks outside the CHORIZO project to ascertain if there are potential stakeholders whose activities can have an impact on the functioning of the CS.

ENVISAGED INTERACTIONS OUTSIDE THE CHORIZO PROJECT	
CS1	Organisation name: COMEOS
	Contact person (name + email): Gert Van Loock, Gert.VanLoock@comeos.be
	Envisaged collaboration: Impact by CS
	Description: Stakeholder recruitment, C and D

	Other comments: Establish collaboration with organisation: YES
	Organisation name: OVAM/VLACO
	Contact person (name + email): Eline Aerts, eline.aerts@ovam.be Ann Braekevelt, ann.braekevelt@ovam.be Envisaged collaboration: Impact by and on CS Description: Stakeholder recruitment, C and D, policy and regulations Other comments: Establish collaboration with organisation: YES
	Organisation name: TooGoodToGo
	Contact person (name + email): Sien Van den Broeke, svandenbroeke@toogoodtogo.be Envisaged collaboration: Impact by CS Description: Stakeholder recruitment, C and D Other comments: Establish collaboration with organisation: POTENTIALLY
	Organisation name: Flanders Food
	Contact person (name + email) : Marie Demarcke, marie.demarcke@flandersfood.com Envisaged collaboration: Impact by CS Description: Stakeholder recruitment, C and D Other comments: Establish collaboration with organisation: YES
	Organisation name: Foodwin
	Contact person (name + email): Jasmien Wildemeersch, jasmien@foodwin.org Envisaged collaboration: Impact by CS Description: Stakeholder recruitment, C and D Other comments: Establish collaboration with organisation: YES
	Organisation name: Dept L&V
	Contact person (name + email):

	<p>Kris Roels, kris.roels@lv.vlaanderen.be</p> <p>Envisaged collaboration: Impact on CS</p> <p>Description: Policy development</p> <p>Other comments:</p>
CS2	NA
CS3	<p>Organisation name: City of Murska Sobota and Pomurje touristic union</p> <p>Envisaged collaboration: Creating awareness, influence collaboration</p> <p>Other comments: collaboration already established</p>
CS4	<p>Organisation name: One-Third Denmark (Think Tank on Prevention of Food Loss and Food Waste)</p> <p>Contact person (name + email):</p> <p>“Mille” Emilie Müller, Emimm@fvm.dk</p> <p>Envisaged collaboration: Good for making connection on food industry. One-Third Denmark have a broad know how on FLW strategies which could be relevant for CS4.</p> <p>Other comments: Establish collaboration with organisation: YES Mille is a good candidate for Advisory Board.</p> <p>Organisation name: European Consumer Food Waste Forum (ECFWF)</p> <p>Contact person (name + email):</p> <p>Laura GARCIA HERRERO, Laura.GARCIAHERRERO@ec.europa.eu</p> <p>Envisaged collaboration: Young people and school food is on ECFWF’s radar. It could be hence, interesting to co-arrange a webinar or other outreach activities.</p> <p>Other comments: Establish collaboration with organisation: YES</p>
CS5	<p>Organisation name: European Food Bank Federation</p> <p>Contact person (name + email):</p> <p>Angela Frigo, Secgen@eurofoodbank.org, +3225389450</p> <p>Envisaged collaboration: Validate/update CS findings by using the network of FEBA, through Consultation(s)/workshop(s)</p> <p>Other comments: Establish collaboration with organisation: YES</p>
	Organisation name: PLENA INCLUSIÓN LA RIOJA (PI)

CS6	Contact person (name + email): Envisaged collaboration: PI is involved in recruiting interviewees (vulnerable group) Other comments: Already had a previous collaboration
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Table 10: Synergies with the wider stakeholder community

5 MANAGE: IMPLEMENTATION RISK, PERIODIC ASSESSMENT AND EXPECTED OUTCOMES OF RELATED CS RESEARCH ACTIVITIES

5.1 CS implementation risk

Table 11 highlights risks that might occur during the implementation of your CS’s research activities identified by each CS, including mitigation measures, as well as consequences on the CS due to these risks.

CS implementation risk and mitigation measures				
CS	Description	Probability of occurrence (H, m, L):	Mitigation measures	Impact on the CS
CS1	Low consumer participation	L	Increase the actions of recruitment of consumers	Unrepresentative results
CS2	Low power of the experiment, this can happen if the measurement day-by-day are very noisy or the effect of messaging is small compared to the overall changes in the data.	M	Longer observation period, or removal of outliers or removal of days that staff considered unusual (in terms of number or type of guests).	Smaller statistical significance in terms of waste results and in worst case scenario the reduction in type of experiments ran.
	Number of chefs without formal education too small to identify systematic patterns in behaviour.	M	Increase sample size	Overall: might be difficult to determine the sole effect of formal education.
CS3	Lower respond rate for survey interview	M	Consumer marketing	Will adversely affect the survey tasks planned.
CS4	Low participation from school children and parents	L	Properly collaborate with school communication channel to create and maintain trust.	Unrepresentative and incomplete result
	Children do not express their views openly during FGI	L	Inclusion of other young people during the FGI and people they will feel comfortable with.	Possibility of biased responses or Lower quality on data that do not reflect true picture of young people social norms
CS5	Finding enough partners for the interview	L	Early start of recruitment, involvement of mediators is necessary	Less interviews would limit the amount of collected information

CS implementation risk and mitigation measures				
CS	Description	Probability of occurrence (H, m, L):	Mitigation measures	Impact on the CS
	Lack of honesty during the interviews (interviewee bias)	M	Providing anonymity, using good personal contacts where possible	“Official statements” can potentially hide real social norm-based motivations
	Possible biases due to sample selection (e.g. underrepresentation of small groups)	L/M	Vetting process of candidates and recruitment from different organisations and segments of the supply chain	More time to be allocated in the early stages of the CS execution
CS6	Low consumer and food industry participation	L	Increase the actions of recruitment to consumers and food industry	Unrepresentative results
	Lack of information from industry	L	Focus the engagement on sustainability, avoiding FLW	

Table 11: CS implementation risk and mitigation measures

5.2 Result: time line

Table 12 highlights the exhaustive list of expected outcomes for each CS and the month. That is, when the CSs expect to complete their planned research activities. This gives a first-hand knowledge to partners (WPs) whose tasks depend on inputs from CSs to better plan their activities and ensures the alignment of timelines to match availability of inputs from CS. This is also crucial in the identification of potential delays/risks and timely implementation of solutions.

OUTCOME TIMELINE			
CS	Obj. number	Outcome name	Expected date (M)
CS1	CS1-ESO1-4	Completed household Survey interviews	M9
	CS1-BEO1-4	Completed household Survey interviews	M9
	CS1-BEO2	Completed focus group interviews	M9
	CS1-ESO1-4	In-depth interview completed	M9
CS2	CS2-NO01	Raw experimental data collected	M9

OUTCOME TIMELINE			
CS	Obj. number	Outcome name	Expected date (M)
	CS2-NO02	Completed and collected in-depth interviews of waiting staff.	M9
	CS2-NO03	Raw experimental data collected.	M9
	CS2-NO04	Completed and collected in-depth interviews with chefs.	M9
CS3	CS3-SLO1-3	Survey completed and data gathered	M12
	CS3-SLO1-3	Interview completed and data gathered	M12
CS4	CS4-DKO1-4	Focus Group Interview with pupils completed	M10
	CS4-DKO5	In-depth interview with parents completed	M10
	CS4-DKO6	In-depth interview with school teachers completed	M10
	CS4-DKO7	In-depth interview with school managers completed	M10
CS5		TBD	
CS6	CS6-ESO1	Survey interview completed, IDI completed	M9
	CS6-ESO2	Workshop completed	M10
	CS6-ESO3	Survey interview completed, IDI completed	M9
	CS6-ESO4	Survey interview completed, IDI completed	M9
	CS6-ESO5	Workshop completed	M10
	CS6-ESO6	Survey interview completed, IDI completed	M9
Workshop completed		M10	

Table 12: CS related outcomes and expected date of completion

5.3 Periodic assessment of Case Studies

The clear definition of CSs objectives, assignment of roles and responsibilities to CSs members, a stated timeline for CSs research activities and expected outcomes give a solid foundation for the follow up and assessment of CSs' progress. To ensure these schedules are followed, WP2 will be at the centre to keep the link between CSs and WPs to ensure identified synergies are harnessed through WP-CS workshops for the smooth running of CSs research activities. This will boost CSs' chances to achieve maximum and timely results. WP2 remains available, and in collaboration with

other WPs, will respond to the needs/difficulties encountered by the CSs during the execution of their research activities.

In addition, WP2 will organize and coordinate monthly meetings with all CS. These meetings will serve as a platform for CS updates on their planned research activities, knowledge sharing, and for the provision of remedial measures should there be difficulties faced by any CS. A monthly report on CSs activities will be prepared by WP2 and presented during the monthly CHORIZO project steering committee meeting which is planned to take place a week after the CSs' monthly update and follow up meeting.

6 SCALE

This section allows the CSs to mention if they envisage any form of promotion or communication of their research related activities, and how they plan to achieve this.

CS promotion activities	
CS1	<p>Envisaged promotion: C&D activity</p> <p>How: News items, podcasts, video's</p> <p>Dissemination channel: http://www.dekostwinners.be</p> <p>Targeted audience: All actors and stakeholders interested in FLW reduction</p>
	<p>Envisaged promotion: Consumer awareness (B2C)</p> <p>How: Infographics, gathering best practices after evaluating consumers motivation and attitudes towards food waste.</p> <p>Dissemination channel: CTIC CITA's website and social media</p> <p>Targeted audience: Consumers with/out prior knowledge or awareness and concern on FLW.</p>
CS2	<p>Envisaged promotion: Press release</p> <p>How: written document prepared and released by NCH's communication team.</p> <p>Dissemination channel: MyNewsDesk (NCH news room) and LinkedIn page.</p> <p>Targeted audience: Subscribers of the news room – media, competitors</p>
CS3	<p>Research activity: CS3 - surveys and interviews</p> <p>Envisaged promotion: Pomurje chamber of commerce and Industry and Chamber of commerce and industry of Slovenia</p> <p>How will this be achieved: D&C to consumers, managers</p> <p>Dissemination channel: Social media channel, newsletter</p> <p>Targeted audience: 10.000 Chambers members</p>
	<p>Research activity: CS3 - surveys and interviews</p> <p>Envisaged promotion: Green Point Short food supply chain</p> <p>How will this be achieved: Through CMR</p> <p>Dissemination channel: Social media channel, newsletter</p> <p>Targeted audience: Costumers (Consumers, HoReCa)</p>

CS promotion activities	
CS4	<p>Research activity: SESAM2030</p> <p>Envisaged promotion: Young people, parents and teachers engagement.</p> <p>How will this be achieved: Through SESAM2030 event that will happen in the coming spring.</p> <p>Dissemination channel: Social media , and face-to-face at the upcoming event.</p> <p>Targeted audience: School kids, their parents and teachers.</p>
CS5	TBD
CS6	<p>Envisaged promotion: Industry engagement</p> <p>How: B2B through press release and posts.</p> <p>Dissemination channel:</p> <ul style="list-style-type: none"> • Meetings with associated companies and participating at food-related events. • Publications at CTIC CITA website and press release. <p>Targeted audience:</p> <ul style="list-style-type: none"> • 70 food companies associated with CTIC CITA. • 20 press partners with more than 1,500 monthly hits on the websites. <hr/> <p>Envisaged promotion: Consumer awareness</p> <p>How: B2C</p> <p>Dissemination channel:</p> <ul style="list-style-type: none"> • Press releases and CTIC CITA social media <p>Targeted audience:</p> <ul style="list-style-type: none"> • More than 2,000 followers. <hr/> <p>Envisaged promotion: Industry engagement</p> <p>How: Mailings, B2B, press release and publications</p> <p>Dissemination channel:</p> <ul style="list-style-type: none"> • FIAB working groups through meetings and conferences. • FIAB website and social networks. • Working groups of FoodforLife-Spain platform.

CS promotion activities	
	<ul style="list-style-type: none"> • FoodforLife-Spain website and social networks. <p>Targeted audience:</p> <ul style="list-style-type: none"> • 100 food companies • 44 food associations • 3,000 companies

Table 13: Envisaged promotion of CS research activities

7 CONCLUSION

D2.1 - Case Studies' Strategic Plans, a deliverable from T2.1 of the CHORIZO project is the result of the inputs and cooperation from CHORIZO CSs and WPs under the coordination of WP2. The CSs' SPs embodies CSs' refined objectives, detail description of scheduled actions, data collection techniques, synergies within and external to CHORIZO partners, possible risk associated to tasks, reporting as well as periodic assessment procedures.

With more precise CSs objectives outlined in CSs' SPs, clearly defined tasks and responsibilities have been assigned to members in each CS to ensure their timely execution. For most CSs, an initial draft of the questionnaires and structure of data collection techniques are to be made available by M4 (according to the project execution timeline). With adequate follow up and support from WPs, the CSs are expected to completely develop their methodologies, and start interviews by M8. Completion of these interviews, transcriptions and translations where needed are expected to be done by M9, M10 or M12 for some CSs.

Overall, most of the synergies between case studies cluster around CS1, CS2, CS3 and CS4. All of the case studies have reported strong potential synergies with WP1 and WP3. Most of the synergies between the case studies are assumed to be comparative in nature, with the goal of learning by contrasting similar results. This will hopefully be highlighted by task 2.4. Additionally, while most of the synergies between the case studies and WP1 also involve comparing results, most of the synergies between the case studies and WP3 revolve around providing data to the models. We will continue to monitor and analyse these synergies as the project progresses.

CSs have also identified potential risks that may occur during the execution of their activities. About 70 % of the stated risks were attributed a low probability of occurrence. However, CSs have proposed measures which will be taken into consideration during the execution of tasks in the life span of the CSs to mitigate these risks.

WP2 has put in place a reporting and progress assessment procedure for CSs. This will be a monthly activity which amongst others, will ensure CSs achieve their stated objectives in the time allocated.

To inform the public, and other stakeholders on the research activities of the CSs during their life span, the CSs have identified dissemination channels as well as targeted audiences to increase visibility of their research activities.

The SP will serve as a reference document, relevant amongst others to evaluate the extent to which each CS advances toward the attainment of their specific objectives and the global objectives of the CHORIZO project.

8 APPENDIX

Category of social norm	Description	Examples
Sub-optimal food/undesirable food quality	Due to sensory deviations, e.g. 'unusual' shape or colour	<ul style="list-style-type: none"> • Fruit & vegetables with unusual appearance are believed to be of inferior quality • Only food of premium quality can have excellent nutritional value • It is acceptable to throw away disliked food • Belief that products close to expiration pose a high health risk; belief that 'Best before' dates are equal to 'safe until' dates • Belief that date markings designating a long shelf life indicate a product of low quality • Habits: Food is not kept in the original packaging
Good provider identity	The desire to be a good parent, host, or other social role influences behaviour	<ul style="list-style-type: none"> • Parents purchase a variety and abundance of healthy foods, or cook more than what their kids/household members will eat (make sure they will be satisfied) • Ordering in advance is considered abnormal by consumers and restaurants • FW is considered unavoidable in large scale food services • Food banks should accept any food, regardless of its nutritional value
Portion size and food affluence	Portion size indicates how much is appropriate to eat, without being perceived as excessive eater (i.e. with low self-control & attractiveness)	<ul style="list-style-type: none"> • Excessive food intake is socially accepted • Reduced portion size compromises the value perceived by hotel guests or consumers; • Food affluence (including visual) is key to driving hotel guest satisfaction • More food than required should be procured and kept 'on-hand' to ensure the availability of all menu items at all times • In student restaurants, it is not accepted to ask for a doggy bag
Associations between FW behaviour and socio-economic status		<ul style="list-style-type: none"> • Using a food bank is like begging • To give 'is to show one's superiority' • Taking leftovers home is making the consumer look poor

Table 14: Detailed description of social norms and related examples

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The logo for the CHORIZO PROJECT. The word "CHORIZO" is in a bold, sans-serif font. The letter 'C' is dark grey with a small green dot and a thin grey line extending from its top-left. The letters 'O', 'R', 'I', and 'Z' are dark grey, while 'H' and the final 'O' are a vibrant green. Below "CHORIZO", the word "PROJECT" is written in a smaller, dark grey, sans-serif font, with the letter 'O' also in green.

CHORIZO
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