



# LOWINFOOD

**Multi-actor design of low-waste food value chains  
through the demonstration of innovative solutions to  
reduce food loss and waste**

**GA No. 101000439**

## **D3.1 PROTOCOL FOR STAKEHOLDER DIALOGUE – BREAD**

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## Summary

This is the first deliverable of WP3 in the LOWINFOOD project (D3.1). The deliverable presents the process plan and the applied methodology behind the stakeholder dialogues held with actors in the bread supply chains in Finland, Italy and Sweden, conducted as part of task 3.2. The objective of these stakeholder dialogues is to produce a shared roadmap for the prevention of bread loss and waste, which will be submitted as a deliverable in October 2022 (D3.2). A background to some fundamental differences in the bread supply chains between the countries is provided before the description of the country-specific approaches to the task. The country-specific descriptions address the recruitment process of participants, in what format the dialogues are held, challenges that were encountered along the process as well as planned outlines for further activities.





## Introduction to the deliverable

LOWINFOOD is a project committed to co-design, together with actors of the food chain, low waste value chains by supporting the demonstration of a portfolio of innovations in a set of value chains particularly concerned by food loss and waste (fruits & vegetables, bakery products and fish), as well as in at-home and out-of-home consumption. Each of these value chains corresponds to a single Work Package (WP) of the project.

The innovations are selected among promising solutions that have already been developed and tested by some partners of the consortium, with the aim to provide the necessary demonstration and upscale to allow market replication.

The LOWINFOOD consortium comprises 27 entities, located in 12 different countries, and ranging from universities and research institutes to start-ups, foundations, associations, and companies working in the food sector. During the 52 months of the project, the partners are committed to complete 30 tasks and to deliver 60 outputs (deliverables).

This deliverable (D3.1) is part of WP3, which is dedicated to reducing loss and waste in the bread supply chain. D3.1 describes the process plan to the stakeholder dialogue delineated in task 3.2 (T3.2) of the LOWINFOOD project. It includes the approaches to recruitment of participants, how the discussion activities were conducted, issues and challenges that emerged during this process as well as plans for future discussions. The discussions are performed in accordance with the methodology in T3.2, described in the Grant Agreement (GA) contractual document, with some adaptations made for each participating country based on their respective prerequisites. The objective of T3.2 is to promote coordination amongst stakeholders in the bread supply chains in three EU countries (Finland, Italy and Sweden) through organizing discussions about key issues related to the loss and waste of bread as well as solutions to prevent it. The first discussion activities within each country took place in late 2021 or early 2022 and are planned to continue in 2022. The final output of the discussions of T3.2 will be a shared roadmap on how to prevent bread loss and waste in the supply chain and what steps are crucial to consider in doing so. This roadmap will be submitted as a deliverable in October 2022 (D3.2).



## 1. Introduction to the stakeholder dialogues

This chapter describes the content of the first deliverable in WP3 (D3.1), which has a primary focus on the methodology applied for conducting the stakeholder dialogue, and how it relates to the upcoming deliverable (D3.2). It also provides an overview of the preconditions to the discussion activities, explaining some key differences between the countries where the discussions are held as well as general issues that were encountered when conducting the discussion activities. More detailed outlines of each country-specific setting and approach to the discussions are described in the following chapters.

### Content of this deliverable

This deliverable, D3.1, is the first deliverable of WP3 and is dedicated to describing a protocol for the discussion activities of the stakeholder dialogue held with actors in the bread supply chains in Finland, Italy and Sweden. The protocol describes the process plan of how the research was conducted, including approaches and applied methodologies used to contact and recruit participants, how the initial activities were organised and what topics were covered in those discussions. It also accounts for issues that were encountered during the above-mentioned processes. Additionally, the protocol provides a context description of each country's bakery sector and how any differences between them might have influenced the approaches taken to conduct the discussion activities. This deliverable presents only the preparatory work and the initial aspects of the stakeholder dialogue, and it does not focus on the findings and outcomes of the discussions. The results from the discussions will later be presented in D3.2 when all planned activities have been held. This protocol includes timelines of each country's progression, indicating when upcoming activities will be held as well as if, and when, any additional activity will be arranged prior to the second deliverable.

### Differences between the countries' bakery sectors

The bakery sectors of the three countries where the stakeholder discussions are held differ in certain aspects. Amongst others, more significant ones include the size of the typical bakery, how the bread is distributed and sold, types of typical bread and geographical scales at which the bakeries operate. This diversity implies different prerequisites for each country when conducting the discussion activities. Consequently, the countries' approaches to manage the discussions as well as the topics discussed are somewhat diverse. The Finnish, Italian and Swedish activities are all intended to facilitate discussions between participating actors with the aim to identify issues behind bread loss and waste and possible solutions to prevent it. The discussions are organised in different ways depending on the configuration of the country-specific system in which the participants operate.





However, in order to ensure a comparability between the country-specific activities, a joint list of topics to be discussed in the first round of discussion in all countries was formed. The choice of these topics was agreed upon among the LOWINFOOD partners participating in T3.2. The identified questions and issues were thought to be applicable to any bakery, regardless the configuration of their operations. In this way, the starting points of the countries' discussions were uniform, and general overviews from each country were obtained on how bread loss and waste is regarded and what topics could be of interest to include in further discussions.



## 2. Stakeholder protocol Finland

### Description of the bakery sector in Finland (based on Hyrylä, 2021)

The bakery industry sector in Finland is relatively diverse, both in terms of size and area of operation, and a majority of the bakery companies are family-owned. Measured based on the number of companies and personnel, it is also the biggest sub-industry within the food industry, providing jobs for approximately 7,000 people in 600 companies. In 2020, the estimated total turnover of the bakery sector in Finland was about 1.1 billion Euros (approx. 10% of the total food industry turnover). The biggest subsector under the bakery sector is “production of bread, fresh baked goods and cakes”, which accounts for 90% of the turnover of the bakery industry.

The bakery sector can be considered a highly competitive industry in Finland. Two thirds of bakery companies in Finland are micro-sized, employing less than 10 people. However, the sector also includes big and medium-sized companies, and some of the bakery actors are operating in several food industries at the same time. Geographically, the bakery sector is spread around the country. It is considered an important and stable employer in different parts of Finland, regardless of the economic situation of the country. In general, the food industry in Finland mainly operates within the country. During recent years, exporting food products especially to the Baltic Sea area has, however, increased with the bakery sector being one of the most active in this internationalisation process.

Since 2020, the global COVID-19 pandemic has had an impact on the Finnish bakery industry. While the larger, industrial bakeries have been able to increase their production, several smaller-scale bakeries have confronted losses (especially those also having their own cafes and selling to the HoReCa sector). In the Finnish supply chain of bakery products, the retail companies have a very central role. As the grocery retailer sector in Finland is very concentrated (two actors holding a market share of 82.9%), the negotiation power of the retailers is strong.

### Conducting the Finnish stakeholder dialogue (workshops)

The stakeholder dialogue was decided to be conducted as a discussion roundtable within joint workshops. At the beginning, the plan was to have the workshops organised physically, but due to COVID-19 the workshops were decided to be organised online. This decision made it possible to reach bakeries from different geographical locations in order to avoid direct competition between participants. Online workshops also provided a rather low-threshold way of participation for the busy bakery representatives, who are often actively involved in the bakeries' everyday work (especially in smaller bakeries where the number of personnel is small), as time does not have to be devoted to travel.



## *Contacting stakeholders*

The work started with contacting the Finnish Bakery Federation and organising an interview with their CEO in September 2021. This interview provided a general overview of the current matters connected to food waste within the Finnish bakery sector. The federation also provided support for the recruitment of bakeries. The Finnish Bakery Federation reached out to their 23 board and delegation members in October 2021, of which two bakeries expressed their interest in participating. In the second round of recruiting bakeries in November 2021, TAU reached out to 14 bakeries, of which three agreed to participate. Also, the Finnish Bakery Federation sent another inquiry to participation in November to the same 23 bakeries, resulting in one more bakery expressing their interest. Thus, in total, six bakeries expressed their interest to participate in the roundtables. Due to some bakery withdrawals at different stages of the process, contacting the bakeries was continued also after the first workshop in February 2022.

## *Bakery workshops*

The bakery roundtables are organised as workshops for bakery representatives and a representative from the Finnish Bakery Federation. TAU researchers facilitate the discussion between the participants. Each workshop's length is two hours. The topics of the workshops vary and are to be amended based on the discussions in the earlier workshops. A timetable of the planned activities in the Finnish stakeholder dialogue is shown in Table 1.

The first workshop was organised in January 2022, and it gathered representatives from four bakeries of different sizes (small to medium-sized) and geographical locations. The workshop started with introducing the project and its activities and the participants' expectations towards the project. The discussion in this first workshop revolved around the bakeries' general perceptions of food and bread waste, the current measures they have in place for food waste prevention, and their views on measuring and monitoring food waste. After the workshop, the bakeries were provided with an Excel sheet to help with their monitoring efforts.

The second workshop was organised in March 2022. With one withdrawal, there were participants from three bakeries. The discussion in this workshop focused on the 'journey of bread' and looked in more detailed manner what kinds of challenges can be identified in the current supply chain regarding food waste reduction and how these challenges could be solved. The discussion focused on the following phases: 1) purchase of raw materials and estimation of production quantities; 2) production process; 3) packaging; 4) logistics; 5) selling at retailers; 6) bread at home. Furthermore, the participants discussed their experiences in monitoring the amount of bread waste after the first workshop. All three participants had started to monitor their bread waste after the first workshop was held. However, each had their own method and approach to measurement, as they had chosen the most relevant way for their businesses.





### *Additional, complementary interviews*

To complement the data from the workshops, it was decided to gather some additional interviews. After the first workshop, a one-on-one interview (45 minutes) was in February 2022 organised with one bakery. This small-bakery owner was initially interested in participating, but could not attend the first workshop, and after the workshop informed that they need to withdraw from the project. After the second and third workshops, some complementary interviews with other bakeries as well as additional interviews with other stakeholders, such as retailer and logistics company representatives, are planned.

*Table 1. Timetable for Finnish stakeholder dialogue and expected output of each step.*

<p><b>Interview with the representative of Finnish Bakery Federation (FBF) (September 2021)</b></p> <p>Contacting the bakeries (directly and with the help of FBF) (October–November 2021)</p>
<p><b>FIRST WORKSHOP (January 2022): Introduction, perceptions of food waste, current action, monitoring and measurement</b></p> <p>Excel file to help in bread waste measurement and monitoring (February 2022) Additional interview with one drop-out bakery (February 2022)</p>
<p><b>SECOND WORKSHOP (March 2022): ‘The journey of bread’ – a detailed look into why bread waste occurs and what could be done to prevent it</b></p> <p>Additional interviews with other bakeries, retailers or logistics companies (if required) (April–May 2022)</p>
<p><b>THIRD WORKSHOP (May 2022): Solutions to zero food waste in the bread supply chain</b></p> <p>Additional interviews with other bakeries, retailers, or logistics companies (if required) (May–June 2022)</p>
<p><b>FOURTH WORKSHOP (August 2022): Feedback on the initial roadmap for Finland</b></p> <p>Participating bakeries are able to give feedback on the draft of the roadmap for Finland</p>

### *Challenges along the way*



In the process of recruiting bakeries for the workshop, some challenges were confronted. As already known beforehand, the bakery actors are busy and reaching them was often difficult. One possible reason for bakeries' hesitance to participate might also be the lack of direct gratification for the participation (e.g., a technological tool that they can use or other concrete reward). To evaluate the innovation in LOWINFOOD project, the participating bakeries were asked to commit to the measurement of food waste in order to provide data for the researchers. This request – even though not compulsory for participation in the workshops – could have been perceived as troublesome for some. Furthermore, three bakeries withdrew their participation either before or after the first workshop. Two of these did not see their needs to match with those of this project, and one participant was about to sell their business.

Although having clear advantages, organising the dialogue as a series of workshops with several bakeries present at the same time means that not all discussion topics can be raised up. These include, for instance, topics that are directly connected to the competitive aspects of the bakeries that are not to be shared among competitors.



### 3. Stakeholder protocol Italy

#### Description of the bakery sector in Italy

In Italy, the bread supply chain is mostly made up of small-scale bakeries that directly sell fresh bread to consumers. According to estimates published by AIBI (Associazione Italiana Bakery Ingredients), 1.4 million tonnes of bread were sold in the Italian market in 2021, among which 84.1% is artisanal bread made by craft bakeries, while 15.9% is industrial bread<sup>1</sup>.

In general, all the small-scale bakeries have the same type of business model where the business is mainly conducted within the family, with a maximum of 10 employees. The production is made in separate small-scale production facilities (bakehouses), where different types of bread and other bakery products are produced every day. Raw materials, for example flour, are stored at the production facilities while baked bread is not: indeed, the production of bread is mostly dedicated to fresh bread that is sold on the same day of the production. This reflects a well-established habitude among Italian consumers to buy fresh bread almost every day.

After the production phase, the fresh bread is transported to the bakeries' own stores and/or directly to their clients, for example grocery stores or supermarkets. When bakeries have several own stores, the cost of transport may vary as, during the day, the bread may get moved from one store to another in case of need (surplus in one store and demand of bakery products in another). While this practice is not economically sustainable, the bakeries do so to avoid wasting bread and to satisfy the requests of their customers as far as possible. Some bakeries may have take-back agreements in place, especially when they supply supermarkets. However, the occurrence of these contracts is more frequent among larger bakeries than smaller ones, especially after the adoption of the EU directive 633/2019. This directive, which was transposed in the Italian legislation in November 2021, defines the conditions required for the take-back agreements to be considered an acceptable practice and not an unfair trading practice. This has pushed many small bakeries to get out of these agreements that were no longer acceptable.

#### Conducting the Italian stakeholder dialogue

##### *Contacting stakeholders*

For the stakeholder dialogue the CNA (National Confederation of Crafts and Small and Medium Enterprises) of Viterbo and Civitavecchia identified and contacted a group of 12 bakeries to start

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<sup>1</sup> This data has been presented in March 2022 during the "The dolce world Expo", Rimini, Italy. Link to the news: <https://www.assitol.it/aibi-pane-alimento-rifugio-anche-nei-momenti-di-crisi/>

the discussions. These bakeries are all located in the area covered by the CNA, that is, the northern part of Lazio Region in the Centre of Italy. The CNA, one of the partners in the LOWINFOOD consortium, is an organization that represents and protects the interests of craft businesses, small and medium enterprises, and all forms of self-employment in Italy. The CNA of Viterbo and Civitavecchia, situated in Central Italy, is active in a territory of more than 7,500 km<sup>2</sup> where more than 500,000 citizens live, and where there are more than 36 thousand enterprises.

### *The stakeholder dialogue*

The stakeholder dialogue was decided to be organised through discussion roundtables in physical meetings with the participants. The discussions started with 12 small-scale bakeries located in the province of Viterbo. The first meeting was held in November 2021 at the CNA headquarters in Viterbo. The second meeting was held in March 2022. Plans are made to have two more roundtable discussions with these same bakeries, with dates to be scheduled in May and June. The plan is also to start additional individual meetings with 5–6 large-scale bakeries that supply supermarkets and have take-back agreements in place in April. The timeline of the Italian stakeholder dialogue is illustrated in Figure 1.

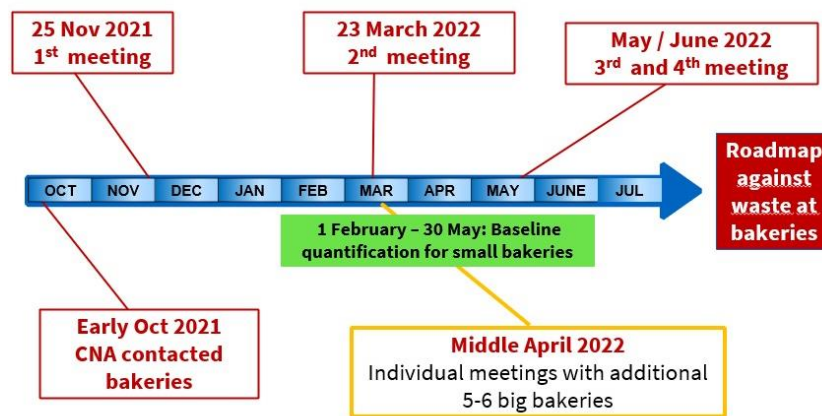


Figure 1. Timeline for Italian stakeholder dialogue.

The meetings are held in presence, complying with the rules due the Covid-19 pandemic. During the meetings, the researchers act as moderator, directing the conversation through the different discussion points in the agenda. Having the possibility to listen to the participants talk to each other allows for a clear understanding of what their points of view are, and what problems they are facing.

## *The first meeting*

In the first meeting, the 12 participating bakeries were all small-scale bakeries located in Viterbo and in small villages near Viterbo. Most of the participants have a family business conducted with one single point of sales, normally close to the bakehouse, especially for those located outside Viterbo. Other bakeries may have two to four small-scale shops.

The purpose of the first meeting was to introduce the bakeries to the project and to explore with them solutions to avoid food waste. The following point in the agenda was for them to give a description of the bread market and of their business model. In Italy bakery products are traditional types of food which are always present during a meal. It is possible to distinguish between common and typical bread, and also traditional bakery products that may be requested during festivities like Christmas or Easter.

According to this description, the market of bread fluctuates between seasons. Moreover, the sales are strongly influenced by external factors like the weather or a particular event. In general, the sales of bakery products fluctuate between the days of the week, increasing from Monday to Sunday. According to the bakeries, production forecasting is difficult due to all these factors, and they observe almost every day a surplus of production. It is important to underline that in their idea the surplus of food is not wasted, since they consider waste only the food disposed in a trash bin – which rarely happens, as described below. The possible destinations of this surplus bread are listed in the following section. Bakeries in general pointed out that higher quantities of food waste can be observed at other stages of the food supply chains, for example at canteens, hospitals and at big retailers, and not in their activities.

The commitment of the participants in this project is high but it is important to underline that the main driver for being part of the project is to increase the overall efficiency of their business, reducing losses and tackle the crisis that they are facing since the Covid-19 pandemic. Since the pandemic started, the bakeries have faced a strong reduction of their profit, while the costs have keep raising.

## *Bread waste reduction strategies*

Following the initial discussion, participants were asked if they can quantify the surplus of bakery products on their daily production. They think that the surplus of bread is 2-3% of the daily production, and focaccia bread is the most wasted product. However, they have never measured the losses of bread and the wasted bread with an analytic approach.



To reduce the surplus and avoid throwing anything away, the participants apply some strategies:

- *Animal feed*: the bread is used to feed farm animals (for example broilers and pigs). The surplus bread is stored and given away for free to the farmers. Generally, the surplus bread is stored in bags of mixed bakery products (mainly bread and pizza). The bread must be stored for 2–4 days before being given away. If they wait only 1 or 2 days after its production, people may use it for human consumption which may lead to different problems (e.g., safety). The Italian law does not allow this type of practice and, if the bread cause human-related health problem, the responsibility is of the bakery.
- *Production of breadcrumbs*: the surplus bread may be transformed into breadcrumbs. The bread is dried inside a carton bag, after 2–3 days it gets milled and then put in plastic bags ready to be sold. The unit price of breadcrumbs is higher than bread, but the production cost is higher.
- Surplus is given away for free to charities.
- Sometimes, apps are used to sell the surplus bread through channels different from the traditional store before its expiry date, e.g., the “Too Good To Go” app.
- Surplus is given away as promotional gift to loyal customers near to the closure time.

### *Measuring bread waste*

To measure the surplus of bakery products, a baseline quantification was started. The quantification is focused on the three products which represent the higher amount of waste according to the bakeries’ observations:

- Focaccia bread
- Common bread
- Typical Italian bread: for example, *Rosette/sfilatini/panini all’olio*

A diary (Annex 1) was provided to each bakery’s shop, in order to note the different parameters:

- Daily production of bakery products (kg)
- Selling price (€/kg)
- Surplus of bakery products (kg)
- Destination of product surplus (with the possibility to choose different destinations)
- Number of receipts per day

The measurement period is from the 1 February to 31 May 2022. The bakeries are contacted by the CNA and UNITUS staff every 15 days, either by telephone or by a physical visit in their stores.



It is important to underline how visiting the bakeries and their stores is essential during the baseline quantification since it establishes a sense of trust and collaboration with the researchers. This allows to overcome initial barriers and reluctance to the activity. This type of approach may be replicated in other supply chains where operators are facing problems in the stakeholder engagement process. The aim is to collect the participants' feedback and to continue with the other parts of the agenda. The received information from the dialogue will be elaborated in order to create and validate a shared roadmap against bread waste, applicable to all bakeries participating in the dialogue.

### *The second meeting*

The second meeting reflected the need to share the advancements and feedbacks on the first months of baseline quantification of bread waste. All the 12 bakeries already involved in the first meeting joined the second one. The discussion focused on the first data retrieved from the baseline quantification, highlighting the relevance of this data and the issues encountered in their recording. Then, the participants were free to share any issues they found while compiling the diaries.

In general, all the bakeries successfully reported the daily data without major issues. During the discussion, it was agreed to put more effort in recording the economic data (number of receipts and sales price) which were missing in several diaries. It was also agreed to add more categories to the "destination of product surplus" section of the diary, namely by adding the 'Too Good To Go' and the 'sold for animal feed' options. Some bakeries also recorded the losses of flour for some days, so that an estimation of the loss of raw materials could also be done.

During this second meeting, the discussion about solutions to prevent bread loss and waste was not deepened, and it will therefore represent the core of the agenda of the next meeting, scheduled in April 2022.



## 4. Stakeholder protocol Sweden

### Description of the bakery sector in Sweden

In Sweden, the bread supply chain primarily relies on larger bakeries that deliver packaged bread to retailers, who sell these to the consumers. Geographically, the three largest bakeries operate across the entire country while the smaller bakeries operate at a regional to local level depending on the size of the bakery. The three largest bakeries together account for 80% of the market for pre-packaged bread in Sweden, and the rest of the market share is comprised of retailers' private labels and other smaller bakeries (Brancoli et al., 2019). Altogether, the pre-packaged bread accounts for about 80% of all bread sold in Sweden.

Along with some other bakeries, the three largest bakeries operate in accordance with the take-back agreement (TBA) business model, meaning that the bakeries are responsible for forecasting, ordering, delivering, placing and removing their products. The TBA also holds the bakeries responsible for unsold products, both from an economic and a waste management perspective. This business model has in previous research been considered as a main risk factor related to waste in the Swedish bread supply chain. The efficacy of the TBA business model has, along with other issues related to the bread supply chain and the reduction of waste within it, been discussed amongst involved stakeholders, and has been found to be a source of polarizing concerns.

### Conducting the Swedish stakeholder dialogue

#### *Contacting stakeholders*

The stakeholder dialogue with actors in the Swedish bread supply chain were conducted as one-on-one conversations between SLU and each participating stakeholder. Additionally, with the main bread waste occurring at the supplier-retailer interface, both bakeries and retailers as well as partnering logistics companies were considered as important stakeholders to involve in the discussions and were therefore all invited to participate. After reaching out to 20 bakeries, differing in size from the three market leaders to a one-person operation, four bakeries responded and agreed to participate. These bakeries together account for the majority of the Swedish bread market, with three of them being the three lead bakeries operating across the country and the fourth being a medium sized company operating at regional level in South-West Sweden. At retail level, SLU contacted people working at the headquarters of each company or retail group and invited them to participate. Altogether, the five largest retail groups active on the Swedish market were contacted, out of which all five responded accepting to participate. Additionally, two companies working with logistics and assortment for the bakeries or retailers were also contacted, both accepting to participate.



### *The discussions*

The purpose of the first discussion with each participant (done via video link or by phone call upon the request of each participant) was to establish contact and acquire general knowledge of each participant's view on issues related to bread waste, along their thoughts on possible solutions to prevent bread waste. The length of each meeting varied between 30 and 60 minutes, depending on the participant's elaborations to the questions and interest in discussing further aspects related to the topic. The results of the initial discussions were later used as material for creating follow-up questions that were asked to the participants in a second round of discussions, intending to identify common or contradicting standpoints between the stakeholders on how bread waste could be reduced and what possible barriers or issues exist to achieve this reduction. A final round of discussions is planned to be held in August/September 2022 where the participants will be able to give their comments to the draft of the Swedish part of the roadmap. A timetable for the Swedish stakeholder dialogue is shown in Table 2.

*Table 2. Timetable for Swedish stakeholder dialogue and expected output of each activity.*

<b>Recruitment of participants</b>	<b>October 2021 – January 2022</b>
Contacting the bakeries, retailer chains and partnering companies	
<b>First round of discussion</b>	<b>November 2021 – February 2022</b>
Discussing issues related to bread waste and possible ways to prevent it	
<b>Second round of discussion</b>	<b>February 2022 – April 2022</b>
Discussing common and/or contradicting standpoints in bread waste reduction and how any improvement could be achieved	
<b>Third round of discussion</b>	<b>August 2022 – September 2022</b>
Participants are able to give feedback on the draft of the roadmap for Sweden	

### *Challenges along the way*

When contacting potential participant organisations some challenges were encountered. Due to the size of the participating organisations, the response time and the possible engagement from each participant varied. Many of them are busy and prioritise other tasks in their work before participating in this kind of projects. In some cases, several attempts to reach anyone in the organisation were required before getting a response. Additionally, contacting large organisations as the ones participating in the dialogue can require some attempts to also find



the person most suitable for representing the organisation in the matter, which in this case extended the time before any discussion could be held.

All these challenges resulted in a somewhat long timeframe of the initial conversation with each participant, the first discussion with participant no. 1 taking place in mid-November 2021, and the first discussion with the last participant taking place in early February 2022. However, since the discussions were held as one-on-one conversations, this was not considered to be an obstacle for obtaining any results. The approach rather provided an opportunity to include more participants in the dialogue since the discussions could be held at a time of convenience for each participant.



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## Annex 1: Bread waste quantification diary in Italy

Frontpage\* of the bread quantification diary, for each month



# LOWINFOOD

Multi-actor design of low-waste food value chains  
through the demonstration of innovative solutions  
to reduce food loss and waste


GA No. 101000439

**Bread waste quantification diary**  
WP3 Innovations against loss of bakery products  
Task 3.2 - Italy

**NAME OF THE BAKERY**  
\_\_\_\_\_

**POINT OF SALE**  
\_\_\_\_\_

**PERIOD**  
1st February 2022 – 28th February 2022

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Example of internal page\* of the bread quantification diary, one table for each day of quantification

Day \_\_\_/\_\_\_/\_\_\_ Bakery \_\_\_\_\_ Bakery's shop \_\_\_\_\_

Type of bread: 1. Common bread    2. Focaccia bread    3. Typical Italian bread (e.g. rosette/sfilatini/panini all'olio)

Type	Bread produced (Kg)	Selling price (€ / Kg)	Unsold bread (kg)	Destination of unsold bread	
1				<input type="checkbox"/> Reused (e.g. breadcrumbs) <input type="checkbox"/> Given away for free for animal feed <input type="checkbox"/> Disposed	<input type="checkbox"/> Given away for free to customers <input type="checkbox"/> Given away for free to charities <input type="checkbox"/> Other _____
2				<input type="checkbox"/> Reused (e.g. breadcrumbs) <input type="checkbox"/> Given away for free for animal feed <input type="checkbox"/> Disposed	<input type="checkbox"/> Given away for free to customers <input type="checkbox"/> Given away for free to charities <input type="checkbox"/> Other _____
3				<input type="checkbox"/> Reused (e.g. breadcrumbs) <input type="checkbox"/> Given away for free for animal feed <input type="checkbox"/> Disposed	<input type="checkbox"/> Given away for free to customers <input type="checkbox"/> Given away for free to charities <input type="checkbox"/> Other _____

\* The diary was originally produced in Italian, and then translated to English to provide an example in the context of this deliverable.

