

Deliverable 3.5

FLW RAPID APPRAISAL/VISUALIZER TOOL



D3.5

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Glossary of terms and acronyms

Acronym/Term	Description	
OFLW	Zero Food Loss & Waste	
CA	Consortium Agreement	



Executive summary

The CHORIZO project, "Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO Food Waste", aims to reduce food waste (FW) by enhancing our understanding of the influence of social norms on FW. A central component of this effort is the development of two simulation models: the Establishment Diner model, which focuses on social food consumption in hospitality settings, and the Home Cook model, which explores behaviours and routines in the household context.

To make the insights from these simulations accessible to a broader audience, the project developed the CHORIZO FLW Rapid Appraisal/Visualizer Tool, an interactive, web-based platform that translates complex modelling outputs into engaging, narrative scenario descriptions. The tool allows users to explore the effects of different behavioural and contextual variables on FW generation in two contexts: buffet-style restaurants and households.

This report is intended as a guide accompanying the web-tool, introducing its objectives, intended users, functionalities, and technical structure. It explains how the tool supports policymakers, researchers, educators, and food system stakeholders in identifying and evaluating food waste interventions. Users can compare scenarios, understand behavioural patterns, and draw practical lessons — all without needing technical expertise in modelling.

By transforming model-based results into intuitive and actionable insights, the CHORIZO FLW Rapid Appraisal /Visualizer Tool contributes to bridging the gap between behavioural science and real-world decision-making for more sustainable food systems.



1 INTRODUCTION

The CHORIZO Project, "Changing practices and Habits through Open, Responsible, and social Innovation towards ZerO Food Waste" is a Horizon Europe project, aimed at improving the understanding about how social norms influence behavior linked to the generation of food waste (FW). The overall objective is to improve the effectiveness of supply chain actors' decisions in relation to FW reduction actions and interventions, towards the goal of reaching zero FW. This report presents the objective, functionalities, intended users and scope of application of the CHORIZO FLW Rapid Appraisal/Visualizer Tool, developed to present and make accessible the results of two computer simulations developed within the project.

To investigate how individual and contextual factors influence FW generation, earlier project activities focused on developing a conceptual framework (see <u>D3.1 Conceptual framework for behavioural change understanding</u>). This framework formed the basis for the development of two models:

- The Establishment Diner model, an agent-based model, which investigates food consumption and FW generation in a social context, integrating both descriptive and injunctive social norms.
- The Home cook model, a micro-simulation, that explores food consumption and waste at the household level, a private setting in which injunctive social norms are particularly relevant (see D3.3 Case-independent changing social norms predictive model).

Additionally, a series of "what-if" scenarios were developed and tested within these models to explore strategies for FW reduction. The results of these scenarios have been presented in <u>D3.4 OFLW impact scenarios</u>, but in a highly technical terms, not suitable to communicate them with a wide set of stakeholders.

The aim of this deliverable is to briefly present the CHORIZO FLW Rapid Appraisal/Visualizer Tool, which is accessible online at: scenarios.chorizoproject.eu.

1.1 Purpose of the CHORIZO FLW Rapid Appraisal/Visualizer Tool

The CHORIZO FLW Rapid Appraisal/Visualizer Tool is a web-based tool designed to make the results of CHORIZO's two simulation models – the Establishment Diner and the Home Cook models - accessible, understandable, and actionable for a wide range of users. The tool presents the effects of different interventions and population characteristics on FW generation in public (e.g., buffet restaurants) and private eating environments (i.e. households).

The goal is to communicate modelling results in a simplified and user-friendly way, to make them usable for stakeholders such as policy makers, practitioners, educators and consumers. In earlier project reporting, only a few explanatory scenarios were chosen and described. These were used to highlight key trends emerging from the simulations. In the CHORIZO FLW Rapid Appraisal/Visualizer Tool, however, all 37 scenarios from the Establishment Diner model and 12 scenarios from the Home Cook model are described in a narrative way. Additionally, the tool compares each scenario with similar or contrasting ones in terms of FW results, to help users understand how individual parameter changes affect outcomes in the amount of FW generated.

To further support users, each scenario includes:

- A "What we learn" section summarizing key takeaways.
- A "What can be done" section offering a short set of actions that can be undertaken to reduce FW at the household or restaurant level.



1.2 Intended users and scope of application

The CHORIZO FLW Rapid Appraisal/Visualizer Tool is designed to help a wide range of users better understand the drivers of FW and identify strategies for its reduction. In particular, it is intended to serve as a practical resource for:

- Policy actors and institutions looking to design evidence-based interventions or assess the potential impact of proposed measures;
- Researchers and analysts interested in behavioral modeling, without the need to run simulations themselves;
- Food system stakeholders, including NGOs, industry professionals, and campaign designers seeking inspiration for awareness initiatives or operational improvements;
- Educators and trainers aiming to raise awareness of food waste issues in schools, communities, or professional environments.

As described further in this document, users can explore a set of ready-made scenarios derived from two models — the Home Cook model and the Establishment Diner model — each simulating FW situations in households and hospitality settings. Each scenario highlights how different combinations of behavioral and contextual factors (such as awareness, storage practices, communication style, ...) influence food waste outcomes.

By interacting with the tool, users can:

- Identify effective (and ineffective) FW interventions
- Understand how individuals' behaviours and characteristics interact with the context
- Gain inspirations to design awareness campaigns or operational changes.

As no technical knowledge related to modelling is required, users can interact with pre-defined scenarios. However, for a more technical audience, the key methodological points are included in a specific section of the web-tool.

The tool supports informed, rapid appraisal of food waste strategies, helping bridge the gap between behavioral science and practical application across public and private sectors.

1.3 Structure of the guide

This guide is designed to help users understand and navigate the CHORIZO FLW Rapid Appraisal/Visualizer tool. It begins with an overview of the tool's purpose and target audience, followed by a section explaining where the scenarios and results originate from. It then introduces the types of research questions the tool can help explore. Subsequent sections provide step-by-step guidance for using the tool's interface, including how to browse scenarios, compare results, interpret scenario cards, and download comprehensive scenario summaries.



2 UNDERSTANDING THE TOOL

2.1 Where do the scenarios and results come from?

All scenarios and results presented in the CHORIZO FLW Rapid Appraisal/Visualizer tool are based on computer simulations. These simulations are based on two behaviourally grounded models developed within the CHORIZO project: the Establishment Diner model and the Home Cook model. Each model was designed to reflect realistic behavioural and contextual dynamics influencing FW in hospitality settings and households, respectively. Their structure, parameters, and logic were informed by a combination of academic literature, survey data, experimental findings, and expert input gathered during the project, as described in the previous reports¹.

The underlying modelling methodology is outlined in detail in the Methodology section of the web-tool. There, users can learn more about the assumptions, parameters, and logic that guide scenario generation and results interpretation.

2.2 What questions can be explored through the scenarios?

The tool is designed to help users explore how different behavioural and contextual factors contribute to FW in hospitality settings and households. By simulating realistic dining situations — such as buffet-style meals in hotels or everyday decision-making at home — the tool offers an intuitive way to understand which factors matter most, and why.

The scenarios are based on "what-if" simulations developed to address key research questions, drawn from behavioural science and food systems literature. These questions reflect the complex interplay of individual motivations, social norms, contextual constraints, and environmental cues. Users can explore the different scenarios to see if these hypotheses are reflected in the simulation results.

In the **Establishment Diner model**, users can explore the following questions:

- Does the size of the plate influence how much food guests waste?
 Plate size serves as a visual consumption cue. Larger plates may promote over-serving due to social norms or visual illusions, leading to more food waste.
- How does the type of guest (business vs. non-business) affect FW levels?
 Guest types differ in time pressure and conformism. Business guests may be more efficient due to tighter schedules and higher conformity, while leisure guests may serve larger portions and waste more.
- Does the tone of messaging (positive vs. provocative) make a difference?
 Communication strategies can either support pro-environmental behaviours or trigger psychological reactance. The model explores how message tone interacts with guest awareness and autonomy.
- How much does sustainability awareness influence FW?
 Guests with stronger environmental values are more likely to consume food intentionally and waste less. The tool examines how varying awareness levels impact actual FW behaviours.

¹ All project reports related to the modelling activities are accessible at chorizoproject.eu/deliverables-repository/



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By examining these scenarios, users can better understand which behavioural mechanisms are most impactful, and how targeted interventions — such as communication nudges, plate size adjustments, or awareness-raising campaigns — can be designed for specific guest profiles and settings.

The **Home Cook** section of the Visualizer allows users to explore how everyday food management practices affect household FW. Users can explore the following questions:

Do in-store promotions on near-expiry products increase FW?

What happens when households frequently buy discounted items near their expiration date? These promotions may be intended to reduce FW at the retail level, but can actually lead to overstocking and increased spoilage at home — especially if consumers lack the knowledge or tools to assess edibility beyond the best-before date.

Do preferences for fresh ingredients increase FW?

Scenarios explore how dietary preferences for fresh, perishable foods (vs. more stable, non-perishable items) affect household FW. While healthy and appealing, fresh foods spoil quickly, so a lack of meal planning or flexibility can increase waste.

Can better food storage practices cut household FW?

Improved storage — such as correct refrigeration, use of sealed containers, and food rotation — can extend shelf life and prevent waste. These practices can be especially important for perishable foods like fruits, vegetables, and dairy products.

What is the impact of ignoring expiration dates when deciding what to cook?

This question focuses on the difference between "strict" and "relaxed" consumption strategies. Some scenarios show how paying close attention to best-before dates can reduce waste, while others demonstrate that households who disregard these dates may stock more perishables and generate significantly more FW.

By exploring these scenarios, users can identify effective behaviours and interventions — such as shopping routines, storage improvements, or meal planning habits — that reduce FW. This helps individuals, educators, and policymakers promote more sustainable practices at the household level.



3 NAVIGATING THE TOOL

3.1 What does the homepage offers?

Upon arriving at the CHORIZO FLW Rapid Appraisal/Visualizer tool homepage, the user is presented with two distinct entry points - one for the Home Cook model (household setting) and one for the Establishment Diner model (hospitality setting), as shown in Figure 1. Each entry is displayed as a card with an EXPLORE button. By selecting one of these cards, the user immediately enters the corresponding model page.

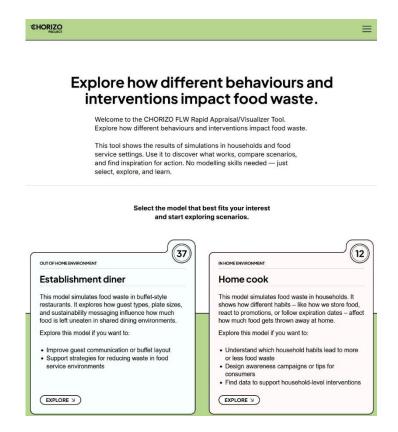


Figure 1: Home page with two entry points for the two modelling contexts

In addition to these entry cards, the homepage provides access to three resources that underpin effective use of the tool (Figure 2). A concise "About the Project" section explains the CHORIZO project's objectives and scope. "The Methodology" link leads to an explanation of how the Home Cook and Establishment Diner models were developed, calibrated, and validated, as well as how their scenarios were defined. Finally, the "Glossary" offers clear definitions of all specialized terms and acronyms employed in the Visualizer, ensuring that users share a common understanding of the tool's vocabulary.



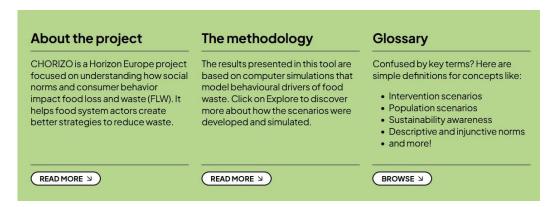


Figure 2: About the project, Methodology and Glossary links in the homepage

Together, these elements help users select the appropriate model and build a solid understanding of the project's context, the modelling framework, and the key terms used - before diving into the individual simulation scenarios.

3.2 What are the main sections of the tool?

3.2.1 What does the user find in each model page?

On each model's page — a context-specific overview for either Home Cook or Establishment Diner — the user is first presented with a concise description of that setting, summarizing what the model simulates (Figure 3). Directly beneath this introduction lie two primary action buttons: Explore Scenario and Compare Scenario.

Selecting *Explore Scenario* leads the user into the interactive scatter-plot interface, where every scenario is plotted according to its resulting food-waste level and may be filtered, hovered, and clicked for deeper inspection (see Section 3.2.4).

Selecting *Compare Scenario*, opens a parameter configurator in which the user can choose the parameters they want to explore; the tool then retrieves all scenarios matching that exact combination and displays them in a color-coded visualization, shading each card by its waste category to facilitate side-by-side analysis (see Section 3.2.2). Together, these two buttons serve as the entry points to the full spectrum of scenario analyses available within the CHORIZO Visualizer.



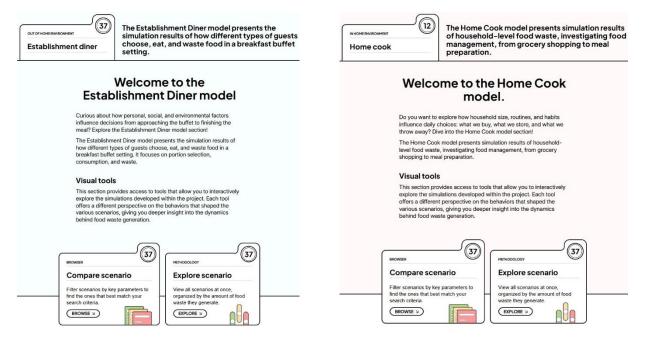


Figure 3: Establishment Diner (left) and Home Cook (right) model pages

In each model's page, users are presented with three brief paragraphs, suggesting how the results presented in the CHORIZO Rapid Appraisal/Visualizer Tool can help "Informing policies", "Supporting the research", and "Raising awareness" (Figure 4).

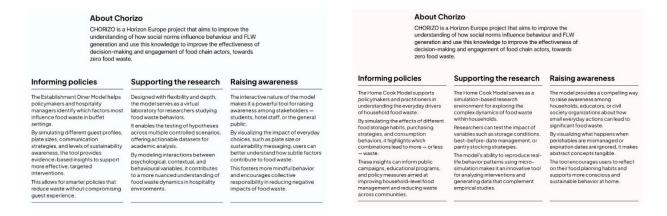


Figure 4: Brief summary of how results can support policy makers, researchers, and the general public.

3.2.2 How does the "Compare scenarios" function work?

The Compare Scenarios feature enables the user to view and compare multiple scenarios based on specific combination of experimental parameters. Upon activating the Compare function, the interface presents the parameter selectors - Plate size, Guest composition, Sustainability awareness level, and Message type for the Establishment Diner model, Storage Conditions, Eating preferences, and Consumption strategy for the Home Cook model - which the user configures to reflect the desired scenario profile (Figure 5). The user can decide to filter scenarios according to the parameter and combination of parameters of interest. Once the parameters have been specified, the tool dynamically retrieves every scenario matching that exact combination. Each



matching scenario is shown as an individual card, mirroring the layout and information hierarchy of the main Scenario Cards (Figure 6). Crucially, the cards are presented in distinct colours corresponding to their resulting FW level, thus allowing the user to understand at a glance which configurations yield lower or higher waste. This color-coding, together with side-by-side alignment of cards, facilitates rapid visual comparison and helps the user discern differences in outcome under identical parameter settings.





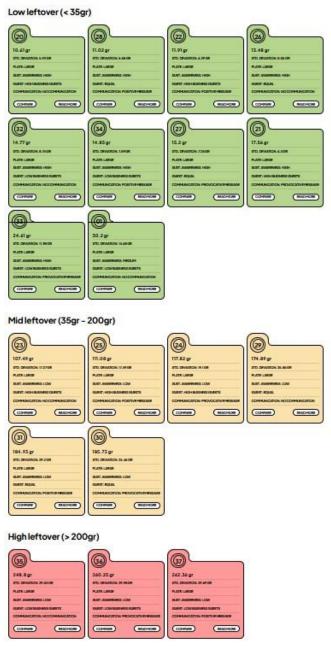
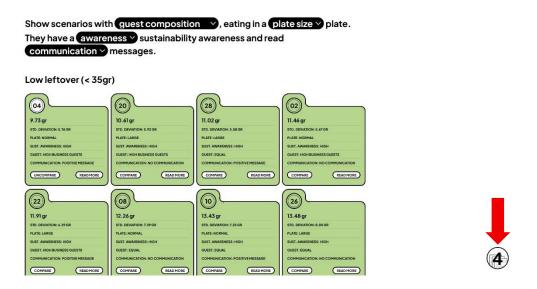


Figure 6: Example of Scenario cards

In the Compare page, users can also select scenarios to compare, by clicking the "COMPARE" button of each card. Upon clicking the "COMPARE" button, the number of scenarios selected in shown in the bottom right corner of the screen. By clicking on the round icon, a pop-up with the selected scenario cards appears (Figure 7).





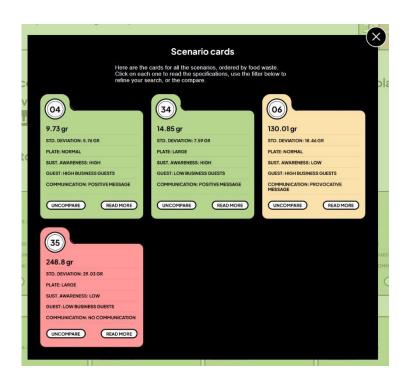


Figure 7: COMPARE function. Top: icon showing the number of scenarios selected for the comparison.

Bottom: pop-up showing the selected scenarios

By supporting targeted selection of multiple scenarios and clear, color-driven differentiation, the Compare Scenarios function becomes a powerful tool for isolating the impact of specific factor combinations on FW outcomes.

3.2.3 What are "Scenario cards" and "Scenario Descriptions"?

Each Scenario Card is designed to convey both the quantitative outcomes and the experimental conditions of a given simulation (Figure 8). Displayed in the upper left corner is the scenario identifier (scenario ID),



immediately followed by the two primary outcome metrics: the average FW and its standard deviation (STD. DEVIATION), which together communicate both the magnitude and variability of waste in that setting.

Directly beneath these figures, parameter labels highlight the factors tested allowing the reader to understand which combination of factors was tested. By clicking on READ MORE, the user accesses the full *Scenario description*:

For the Establishment Diner model these are:

- PLATE (plate size),
- SUS. AWARENESS (sustainability awareness level)
- GUEST (guest composition), and
- COMMUNICATION (type of message delivered) for the Establishment Diner model.

For the Home Cook model these become:

- STORAGE CONDITIONS (worse, normal, much better),
- EATING PREFERENCES (perishables first or proportional consumption),
- CONS. STRATEGY (consumption strategy, relaxed or strict).

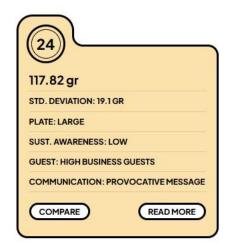




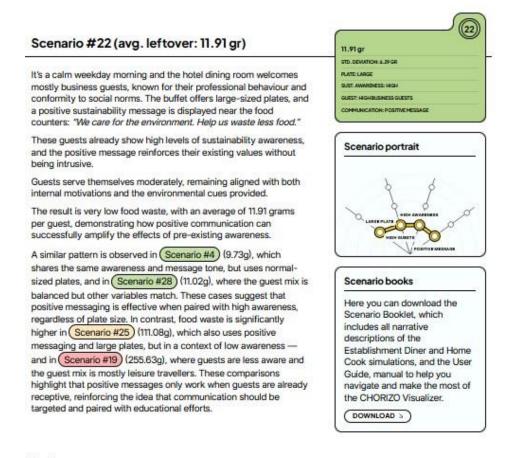
Figure 8: Example of Scenario Cards (Establishment Diner, left; Home Cook, right).

The Scenario Descriptions (Figure 9) expand each card into a short, narrative case study. Each scenario description is structured as a concise narrative portraying a realistic food consumption situation. It includes a brief contextual setting, highlights the key behavioral and contextual parameters, presents food waste outcomes, and concludes with a comparison to similar or contrasting scenarios to illustrate the influence of specific factors on waste generation.

Each Scenario Description is followed by interpretive "What We Learn" insights – to provide a highlight of the key points – and operational "What Can Be Done" recommendations section.



On the right part of the screen, a concise visual Scenario portrait represents each parameter along its respective range, offering an intuitive snapshot of the scenario's profile. Below the Scenario portrait, users can find the button to download the Scenario booklet (section 3.2.5).



Findings

What we learn

When guests are already highly aware, a positive message acts as a supportive nudge, reinforcing mindful behaviour without needing to push change aggressively.

Message tone and audience alignment are crucial for maximizing impact.

What can be done?

At the hotel/restaurant level:

- Use positive, non-intrusive messaging to reinforce sustainability behaviours in professional contexts
- Design buffet layouts that facilitate mindful portioning without making guests feel restricted

What can be done?

At the policy/societal level:

- Support communication strategies that align message tone with audience awareness levels
- Promote hospitality sector standards encouraging subtle but effective sustainability communication

Figure 9: Example of Scenario Description

3.2.4 Explore scenario

In the *Explore scenario* section, all scenarios are displayed on a two-dimensional scatter plot that visually represents their food-waste performance (Figure 10). Each scenario appears as a discrete point whose colour indicates its waste category (for example, green for low leftover, yellow for medium, and red for high). Clicking a point opens a tooltip that displays the scenario card.



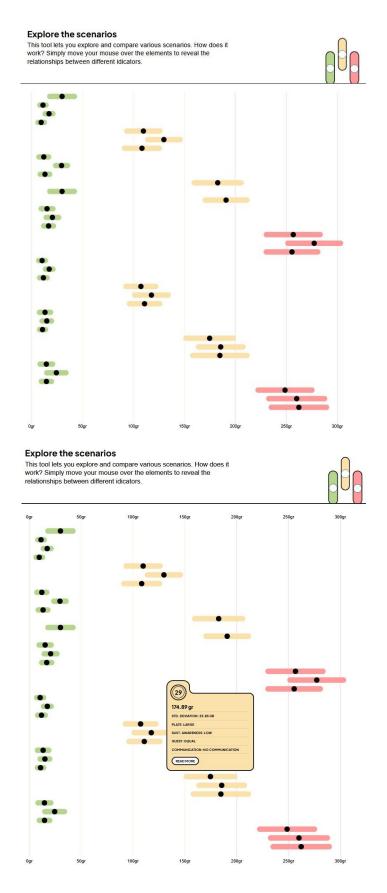
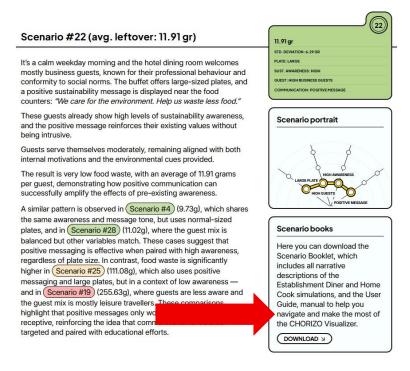


Figure 10: Scatterplot presented in the Explore page (example from the Establishment Diner model), with an open tooltip (example Scenario 29)



3.2.5 What's in the "Scenario booklet"?

The Scenario booklet feature enables users to download a file with the complete list of every long-form scenario description (Figure 11). Before initiating the download, the tool prompts the user to provide their geographical provenance, professional role, and field of interest. No personal information such as IP number are stored, and collected information are anonymous. Once submitted, the user receives a PDF containing each scenario's full narrative portrait, including detailed parameter settings, findings, and actionable recommendations. By consolidating all scenarios into a portable format, Scenario booklet can serve as resource for training sessions, stakeholder workshops, or any communication activity that requires clear, structured case studies of modelled FW outcomes.



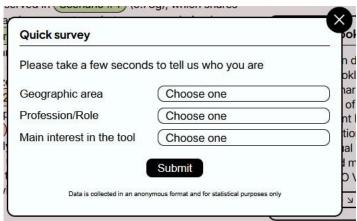


Figure 11: Download of the Scenario booklet (above), Quick survey before the download (below)





