wasteless

Waste Quantification Solutions to Limit Environmental Stress

Replicability and scalability roadmap

(User Guide)

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1. Introduction

1. Background

Supported by the European Union's Horizon Europe Research and Innovation program, WASTELESS (Waste Quantification Solutions to Limit Environmental Stress) aims to quantify and monitor food loss and waste across the European Union (EU) to mitigate their environmental impact.

The main challenge in mapping Food Loss and Waste (FLW) reduction strategies is the lack of cost-efficient, easy-to-implement, robust tools and harmonised methodologies adopted by Food Supply Chain (FSC) actors. WASTELESS tools, at varying stages of maturity, provide raw data through direct measurements, digital models, apps, and decision support. Interaction between these tools and the crowdsourced toolbox (WP6 – Task 6.2) encourages operators to adopt innovative solutions to scale Lansink's ladder. Additionally, WASTELESS case studies supply best practices, definitions, methodologies, and FLW valorisation streams to the toolbox.

As one size doesn't fit all, the decision support toolbox enables all FSC actors to engage in FLW measurement and monitoring using personalised digital tools and methodologies tailored to their specific food commodities, supply chain stages, and geographical locations. The solutions will be described and documented in a unified way, be easy to implement, and be presented through a user-friendly interface to enable widespread use and maximise uptake. Finally, WASTELESS will support the simple, broad replication of solutions within the replicability and scalability roadmap, providing a foundation for all FSC actors to create a customised toolkit of solutions that best suit their needs.

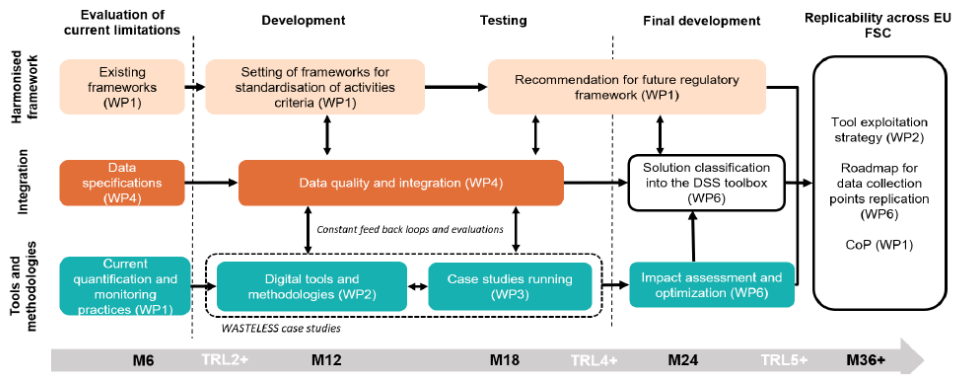

Figure 1 – WASTELESS methodology

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2. Purpose

This document provides a step-by-step guide to navigating the web platform developed to support the "Replicability and Scalability Roadmap" and the "Decision Support Toolbox", including a module for insertion and cataloguing of abstracts on practices for reducing food waste. The platform is designed to facilitate the structured input, management, and dissemination of case study results, ensuring that relevant stakeholders can access and utilise key findings effectively. This guide outlines the platform's key functionalities, roadmap and toolbox navigation, authentication process, and data entry procedures to help users understand and interact with the system efficiently.

The second chapter introduces the part of the roadmap and toolbox available without login, enabling users to find solutions suited to their profiles. Chapter 3 covers the data entry section, providing an overview of its fields and features, followed by the administration section.

2. Web Platform Presentation

1. Homepage

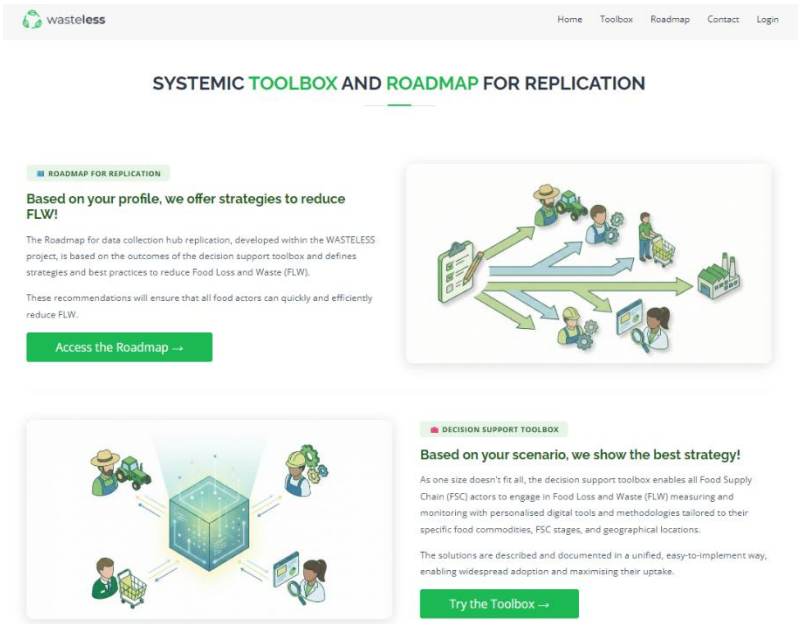

Figure 2 – Homepage (Top)

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The homepage introduces the platform and includes direct links to the roadmap and toolbox, as well as a section encouraging registration and the submission of results (figure 3).

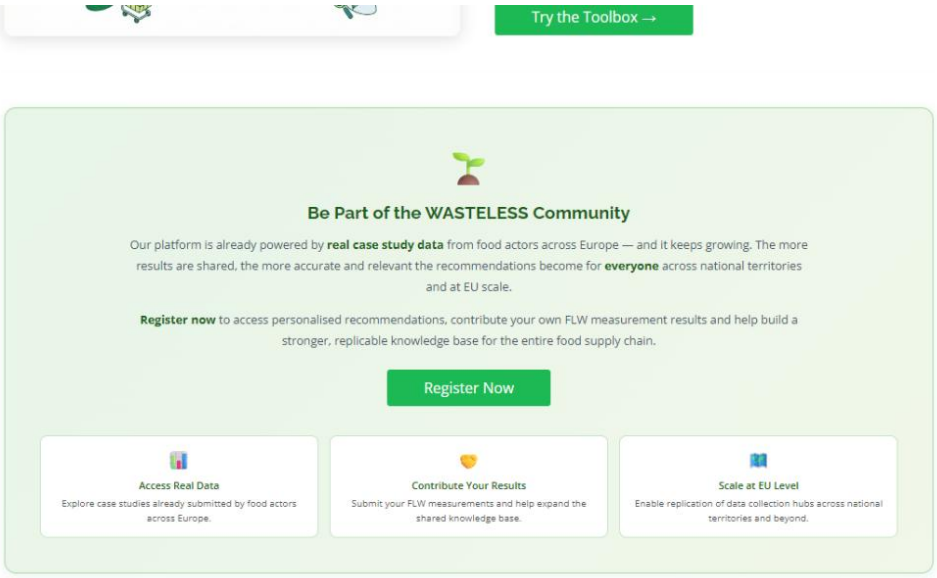

Figure 3 – Homepage (Bottom)

2. Roadmap

The Platform features a persistent top menu that enables easy navigation across all pages. In addition to the home page link, it provides direct access to the Roadmap, Toolbox, and the contact and login pages. Once logged in, users can also access the results entry section (see chapter 3). Figure 4 shows the top section of the Roadmap, where users can select values that best match their profile. At least one value must be selected before proceeding to the ranking. If no option is selected, the Roadmap displays an error message and prevents progress.

An option is available to include external case studies outside the Wasteless project in the results, with all of them appearing in the ranking. Sorting is based on how well they match the selected options; the more options chosen, the higher the likelihood that a practice will align with the user's profile. Each option also displays the total number of corresponding solutions in parentheses.

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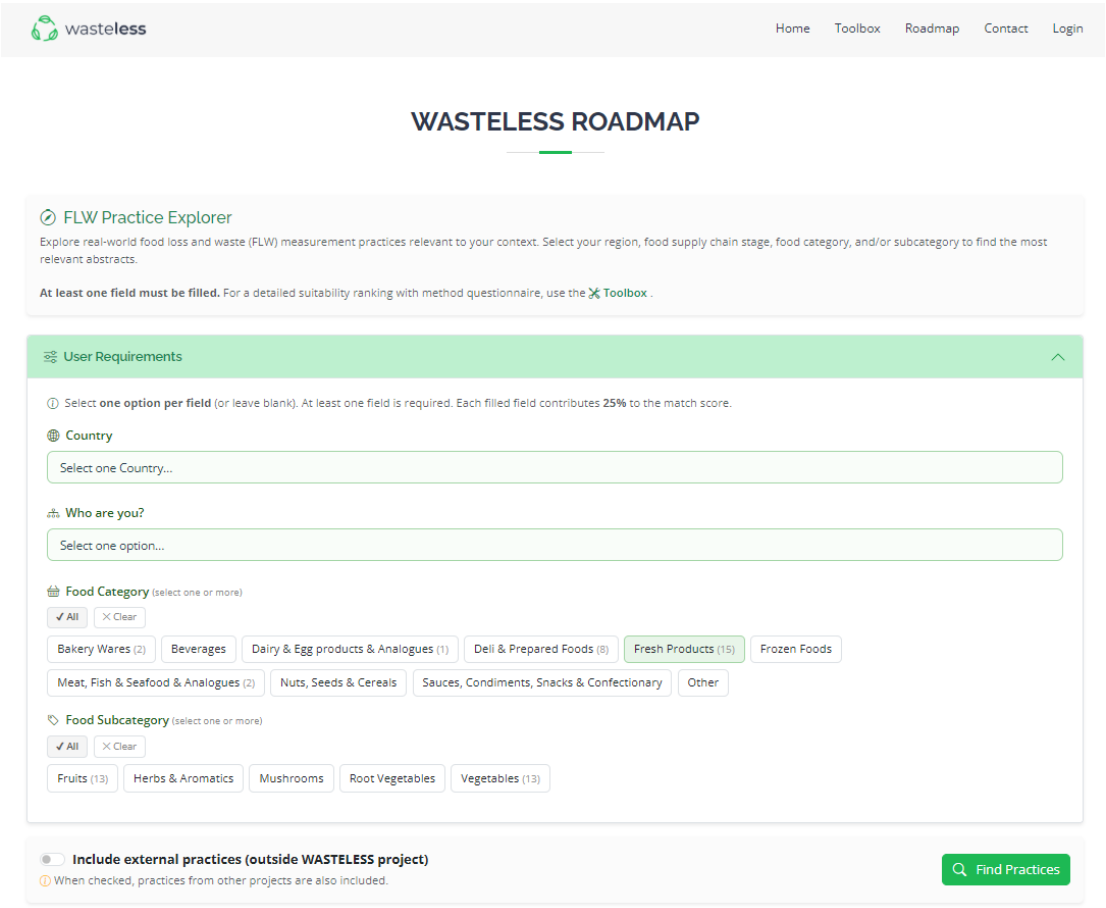

Figure 4 – Roadmap search form

After clicking Find Practices, the solutions are ranked below in order of how well each matches the selected options. Figure 5 shows the top of the ranking, highlighting the solutions that correspond to the selected options (in this case, the food category "Fresh Products").

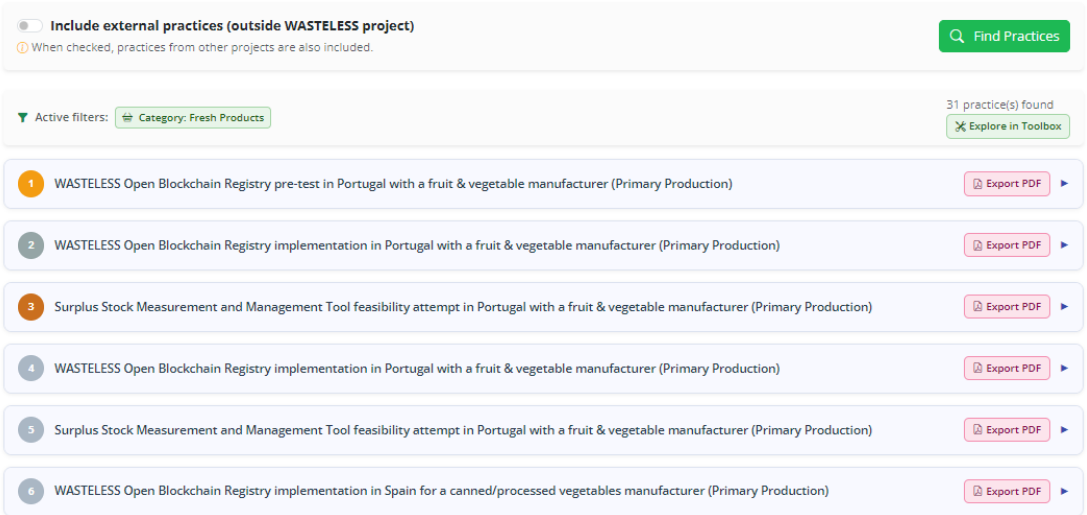

Figure 5 – Roadmap ranking

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Each solution is presented in a summary form in the ranking. However, it can be expanded by clicking the result, which allows access to the solution details (Figure 6). It is also possible to export that result in PDF format by clicking the "Export PDF" button available on each result. For more detailed results, there is the 'Explore in Toolbox' option, which allows re-presenting the ranking with additional filters, as we will see in the next subchapter.

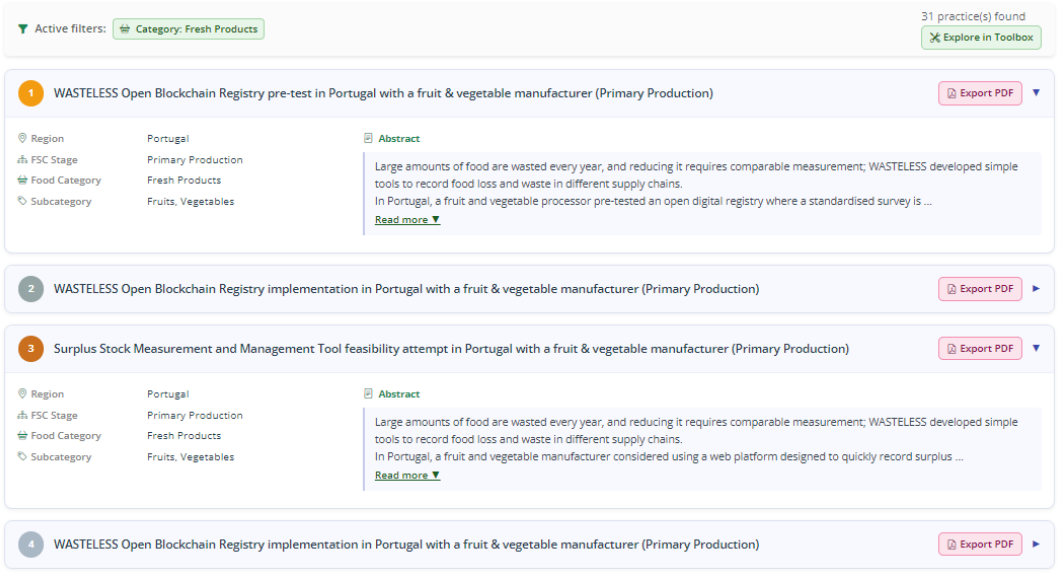

Figure 6 – Roadmap ranking with solutions expanded

3. Toolbox

The Toolbox can be accessed directly from the homepage, the top menu, or the Roadmap. When accessed via the Roadmap through the "Explore in Toolbox" button, the Roadmap selections are propagated to the Toolbox and pre-selected when the page opens. However, they can be changed, and the ranking can be generated afterwards.

In addition to the 4 options available in the Roadmap (Country, FSC Stage, Food Category, and Food Subcategory), there are also 2 more options in the Toolbox: the waste quantification methods questionnaire and the accuracy (inferred from response 2 of the questionnaire). These 6 items, when completed, are used to calculate the suitability of the solutions. If an item is not selected, it does not affect the

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calculation of the others. If the questionnaire is not answered, default values are applied to all questions.

Figure 7 shows the top part of the Toolbox, which is very similar to the Roadmap and has the same options. Figure 8 shows the method questionnaire.

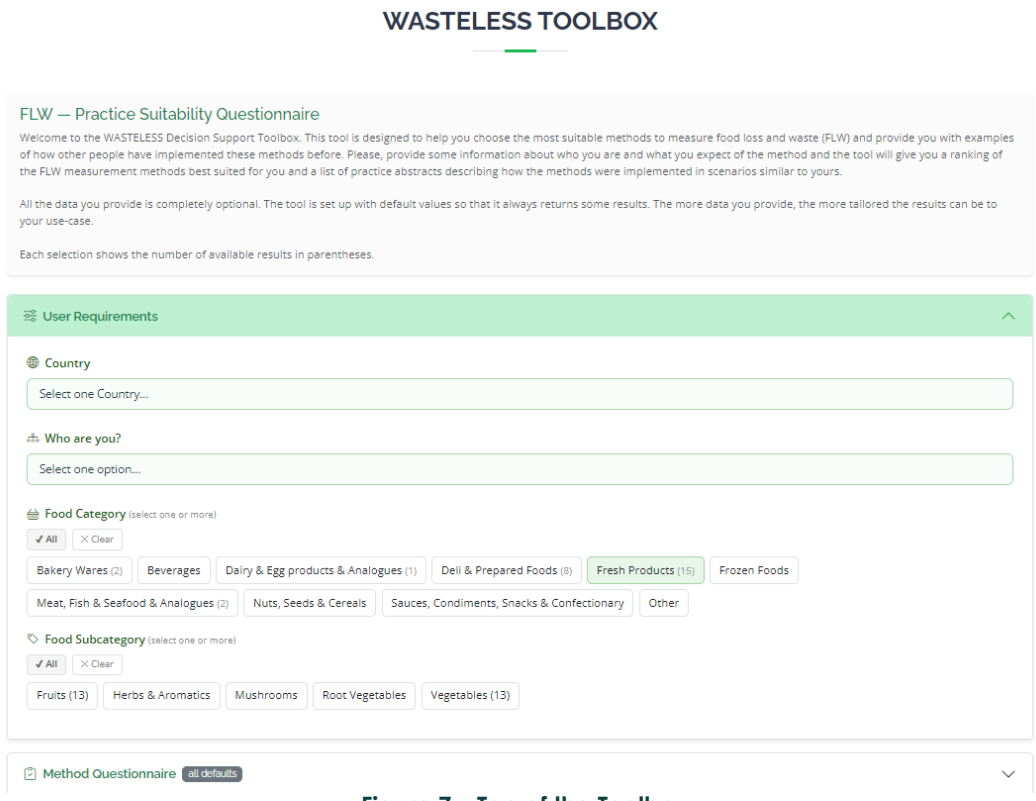

Figure 7 – Top of the Toolbox

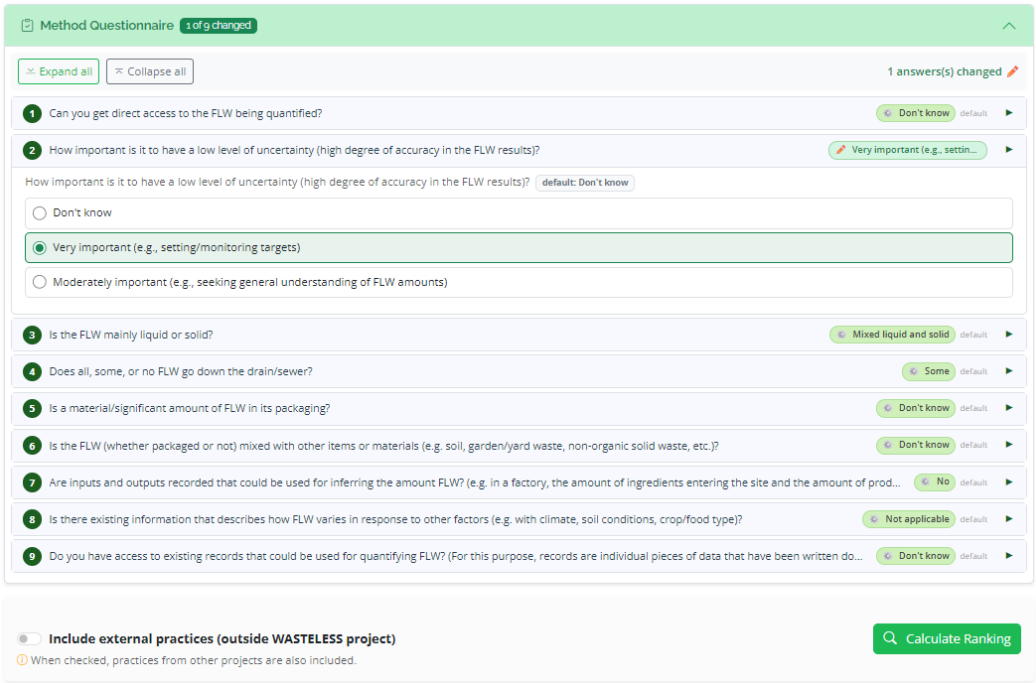

Figure 8 – Method Questionnaire

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After clicking on "Calculate Ranking", the selected options and the score of each method are displayed (Figure 9). Below is the ranking of the solutions, ordered as in the Roadmap from most suitable to the chosen profile, highlighting, in this case, the percentage of correspondence with the profile. As in the Roadmap, the details of each solution can be viewed by expanding the respective line (Figure 10).

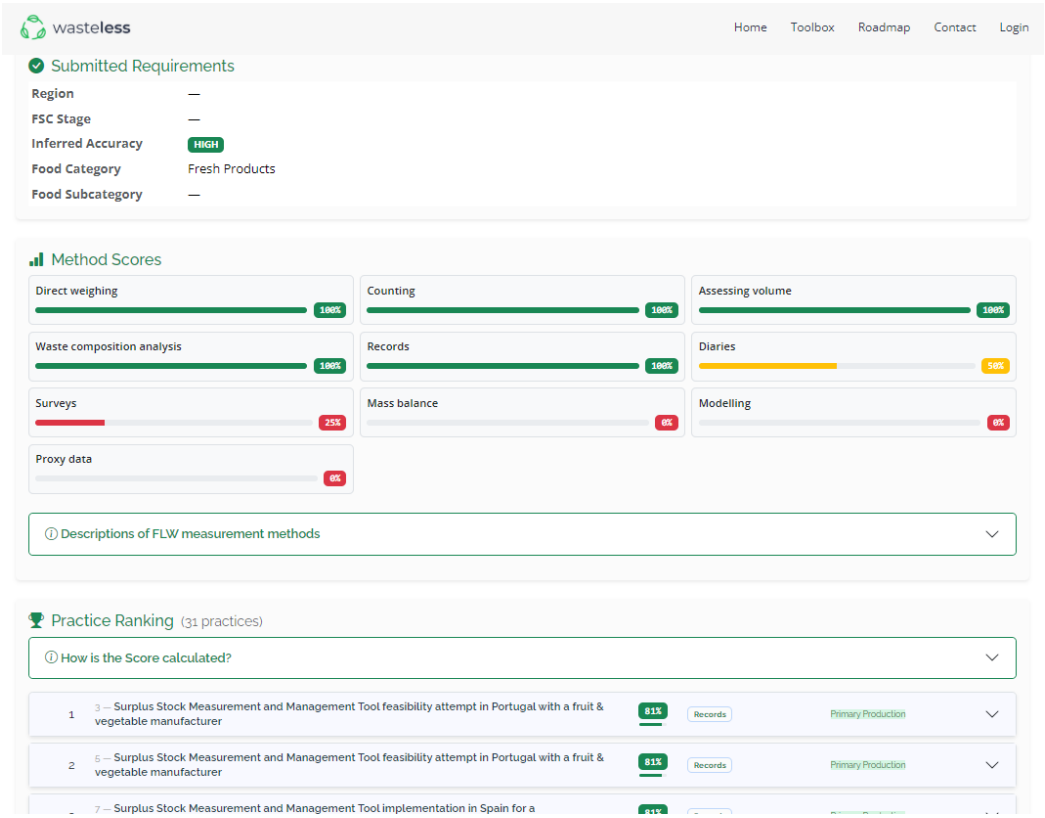

Figure 9 – Toolbox method scores and practice ranking

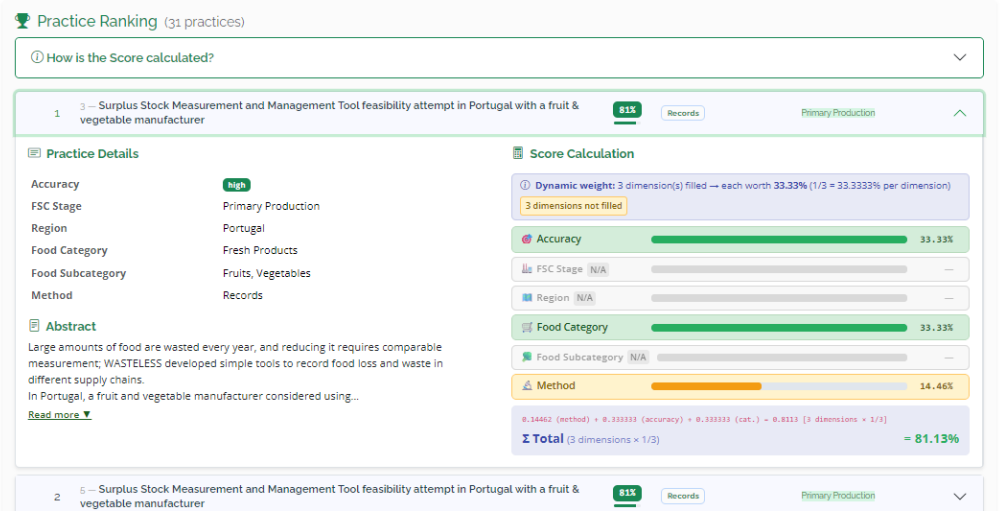

Figure 10 – Practice details

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3. Module for adding case studies

1. User authentication

To input data into the platform, users must first authenticate to reach the case study results submission screen. They can navigate directly to the login page using the "Login" link in the top menu. The login page (see Figure 11) allows existing users to log in and provides options to access the registration page (Figure 12) and the password recovery page (Figure 13). **All new registrations are subject to administrator validation before users can access the system.**

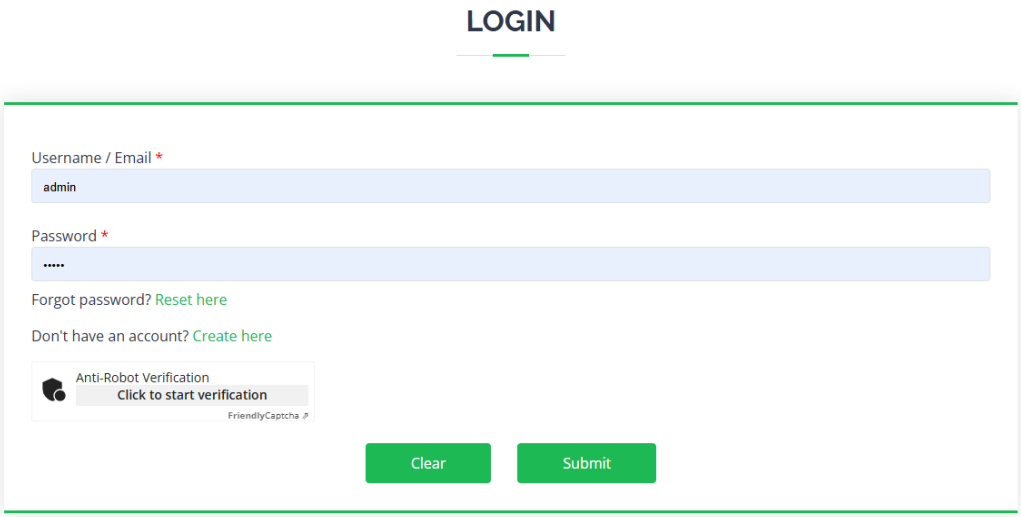

Figure 11 – Login page

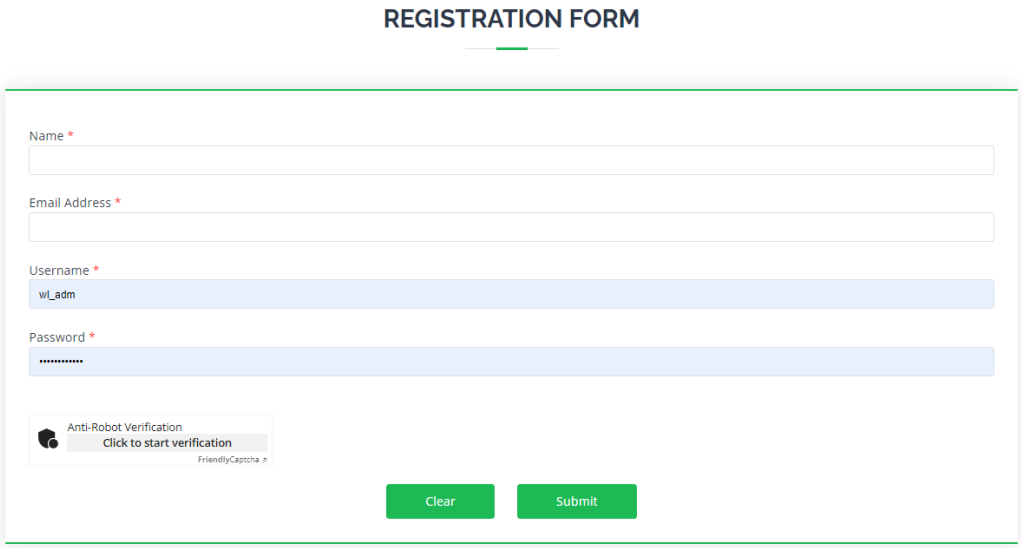

Figure 12 – Registration page

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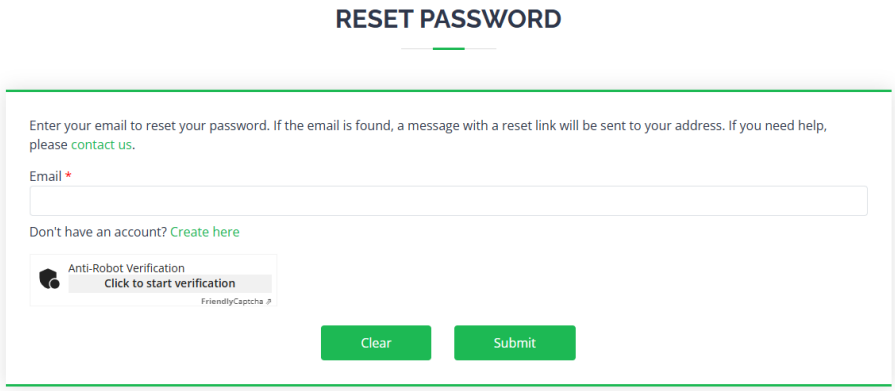

Figure 13 – Reset Password page

2. Case Study Results

Once a user is authenticated, the top menu now includes additional options: the "Add CS" button, the "Account" button, which allows users to modify profile settings (e.g., personal details and password), and the "Admin" button, visible only to administrators. Most users will not see the "Admin" button. The "Add CS" button opens the case studies page, as shown in Figure 14 below.

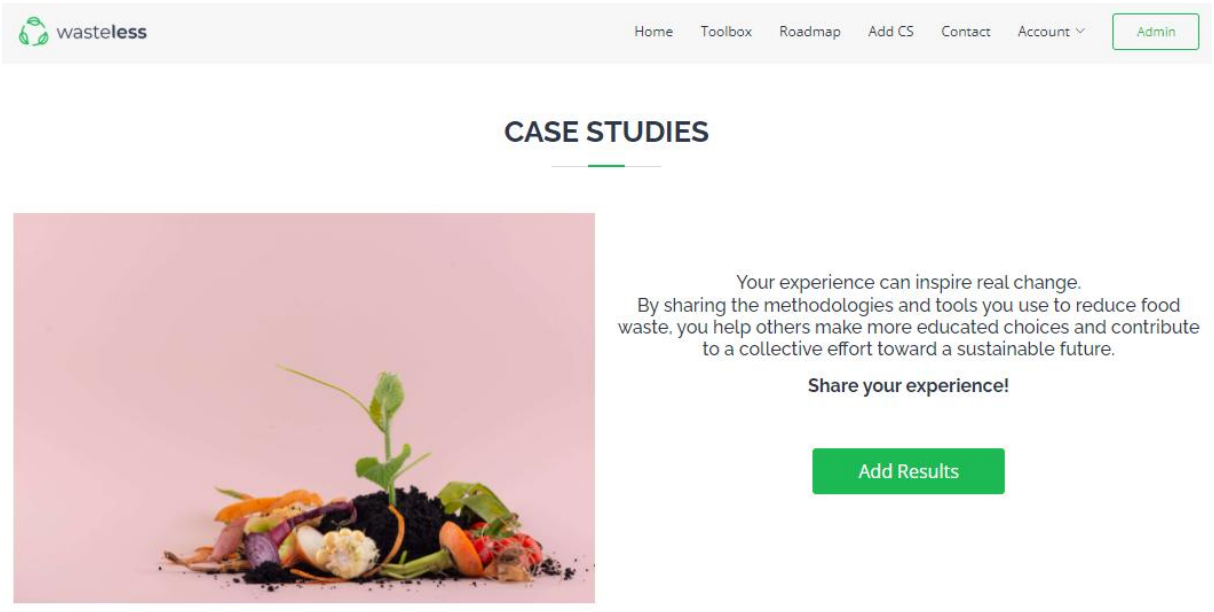

Figure 14 – Case Studies Page

Clicking "Add Results" on the previous page or at the bottom of the homepage opens the "Case Study Results" page, where you can fill out a form with all case study details.

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Although the form has three tabs, only the "General Data" tab is initially accessible, allowing users to write an abstract, specify the case study ID, and select base options. When uploading an abstract via JSON or PDF, the system extracts available information to automatically populate the fields. This system is connected to an AI that infers relevant data from the text to help complete the first tab, as shown in Figure 15 below, and to pre-fill other tabs, which are then ready for user validation. **The user remains responsible for all entered data**, whether they accept or reject the AI suggestions.

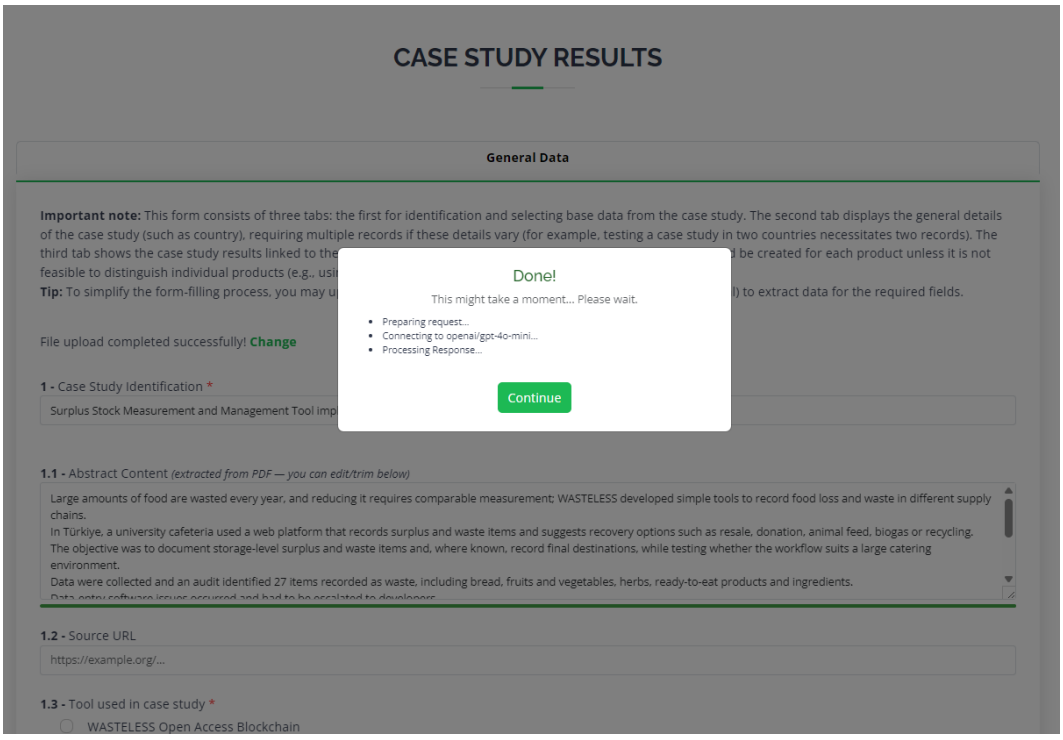

Figure 15 – Form tab filled with extracted data

Once all data is confirmed, users can move to the second tab. The "Case Study: Results" tab includes fields for country, region, food chain area, and food supply chain stage. If these details are mentioned in the abstract, they are automatically filled in. Of these four fields, only the region is optional. In the example shown in Figure 16, the region was not identified from the abstract, so it remains empty. Sometimes it is difficult to determine the NUTS3 region in which the case study occurred, so this field is optional.

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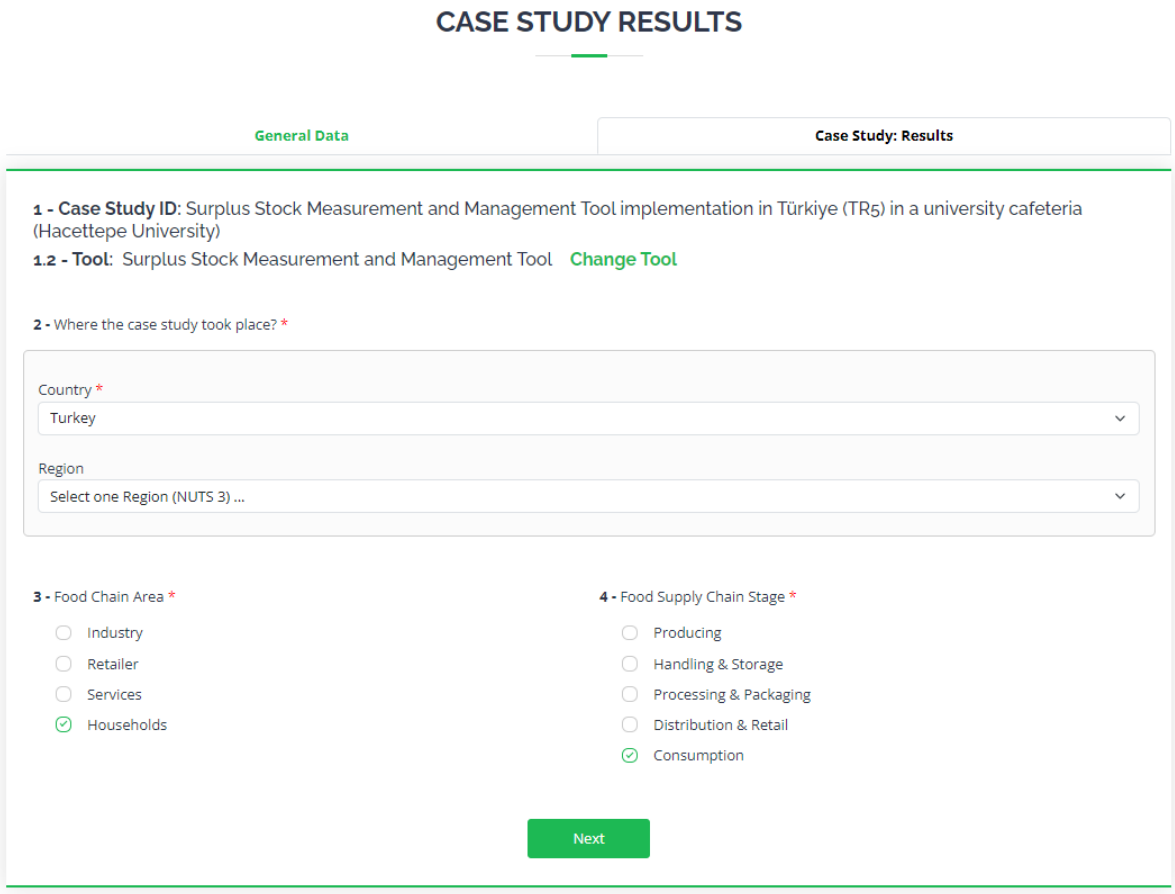

Figure 16 – Case Study: Results tab

Clicking "Next" opens the third tab, which automatically updates the food category field if a food is detected in the abstract (see Figure 17). Users can choose subcategories and categories from different levels of the "Codex GSFA," with only pertinent options shown based on the initial category choice. This category, like any other field, can be edited if incorrect. The reason for loss or waste is also automatically filled if inferred by AI.

All other fields on this tab won't be auto-filled, allowing users to enter data manually as needed. If no method is selected from the list on the first tab, submitting the form will generate an error. The options chosen on the second tab will be automatically pre-selected. The remaining fields are optional and can be completed if relevant data are available.

After submitting a case study, the user is informed (Figure 18), and the data are made available to the administrator for validation. After validation, the case study data

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become accessible on the Platform, and the user receives an email informing them that the data are available.

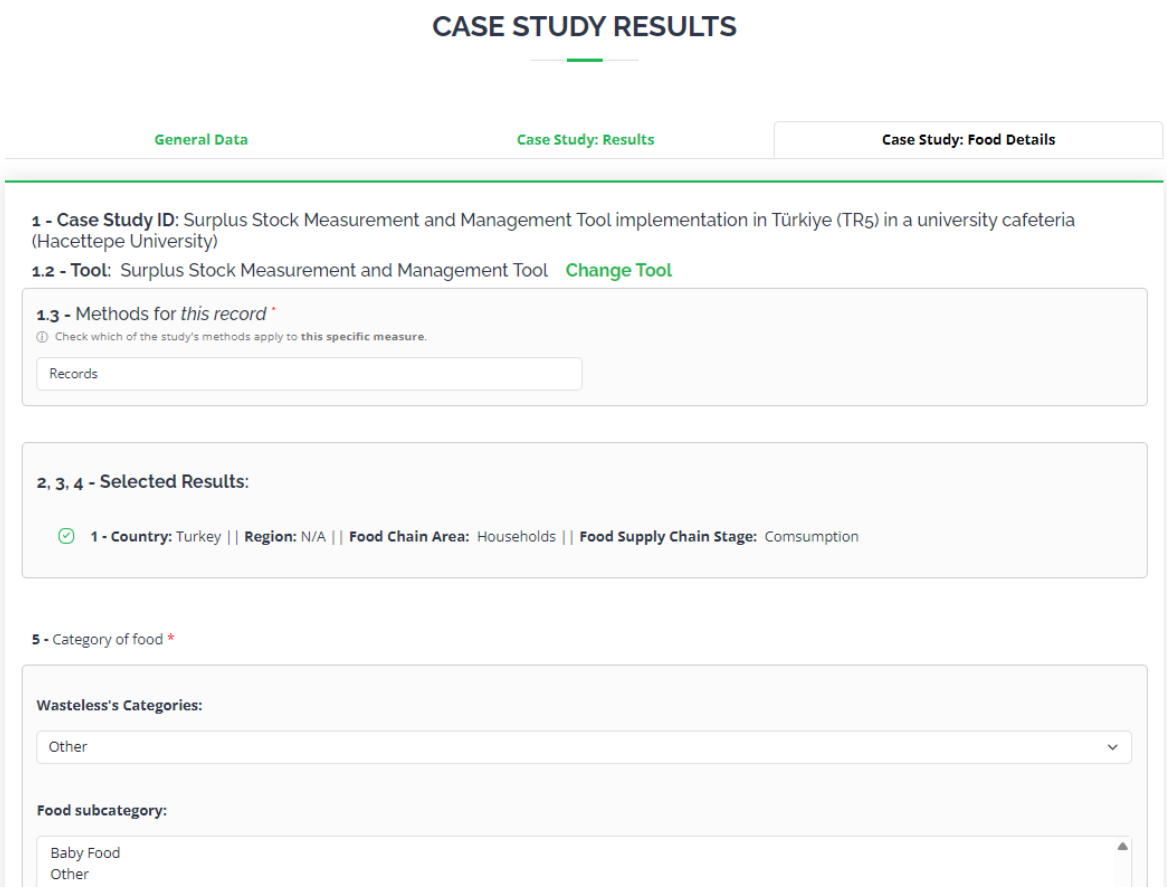

Figure 17 – Case Study: Food Details tab

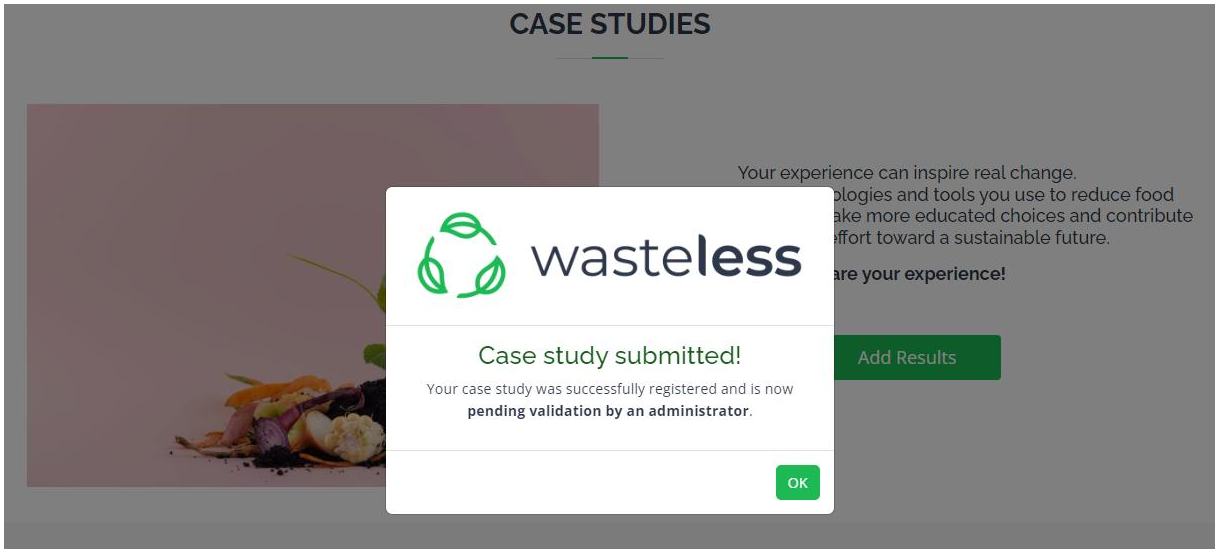

Figure 18 – Case Study submitted

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