

Report on Mockups Questionnaire



**Eco
Ready**

AUTH



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201

Technical References

Project Acronym	ECO-READY
Project Title	Achieving Ecological Resilient Dynamism for the European food system through consumer - driven policies, socio-ecological challenges, biodiversity, data-driven policy, sustainable futures
Project Coordinator	Czech University of Life Sciences (CZU)
Project Duration	48 months

Report No.	4.1.2
Dissemination level ¹	PU
Work Package	WP4
Task	4.1
Lead beneficiary	AUTH

¹ PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)



Document history

Version	Date	Beneficiary	Author
1	15 January 2024	AUTH	Themistoklis Diamantopoulos, Dimitrios-Nikitas Nastos
2	25 January 2024	AUTH	Themistoklis Diamantopoulos, Dimitrios-Nikitas Nastos, Andreas Symeonidis



Executive Summary

This report summarizes the responses of the participants in the ECO-READY mockup review questionnaire. The aim of the questionnaire was to gather feedback about the mockups of the ECO-READY tools, specifically the dashboard, the interactive map, and the mobile app. Moreover, it was used to ensure that the partners of the project were aligned on the main requirements of the ECO-READY Observatory, including the features as well as the overall look and feel of the tools. The questionnaire is available at [this link](#) and full response data are available in [this document](#).

Disclaimer

This publication has been produced within the ECO-READY project which has been funded by the European Union Horizon Europe Research and Innovation Programme under grant agreement n° 101084201. This publication reflects only the views of the authors. The European Commission and Research Executive Agency cannot be held responsible for any use which may be made of the information contained therein.



Table of contents

1. Summary of responses	6
2. Detailed responses	7
2.1. Dashboard	7
2.1.1. Observatory Landing Page	7
2.1.2. Dashboard Overview	8
2.1.3. Dashboard Example Category	9
2.1.4. Dashboard Example Metrics	10
2.1.5. Dashboard Data View	12
2.2. Interactive Map	13
2.2.1. Interactive Map Overview Screen	13
2.2.2. Interactive Map Popup Screen	14
2.2.3. Interactive Map Categorical Layers Screen	15
2.2.4. Interactive Map Scalar Layers Screen	16
2.3. Mobile App	17
2.3.1. Mobile App Landing Page	17
2.3.2. Mobile App News Screen	18
2.3.3. Mobile App Calculator Example Screen	19
2.3.4. Mobile App Games Screens	21
3. Conclusion	23



1. Summary of responses

The questionnaire was distributed via Google Forms in the second project meeting in Rome, and is available online at [this link](#). The respondents included consortium partners and external focus group participants. Full responses are available in [this document](#).

The questionnaire was completed by **18 users** from **15 organizations**. Overall, the **look and feel of the mockups is positively commented**, while most suggestions focus on data usage and effective visualization. Respondents generally agreed that **metrics from the food security sector should be included in most pages**, with climate change and agriculture data also deemed useful in certain pages. Biodiversity information, being more specific, should mainly be connected to researcher-oriented screens. **The dashboard and the map could have a unified look and feel** and be oriented towards all user categories, with menu bars and dropdown options to select different areas/metrics/granularity of information. **The temporal element should also be present in these screens**, mainly using time windows. Concerning the mobile app, this should be **mainly oriented to end users** and should be **personalized** (e.g. through surveys and user preferences) and highly **interactive** (e.g. through games).



2. Detailed responses

Responses are discussed in three separate sections, one for each of the main tools of the ECO-READY Observatory, i.e. the Dashboard, the Interactive Map, and the Mobile App

2.1. Dashboard

2.1.1. Observatory Landing Page

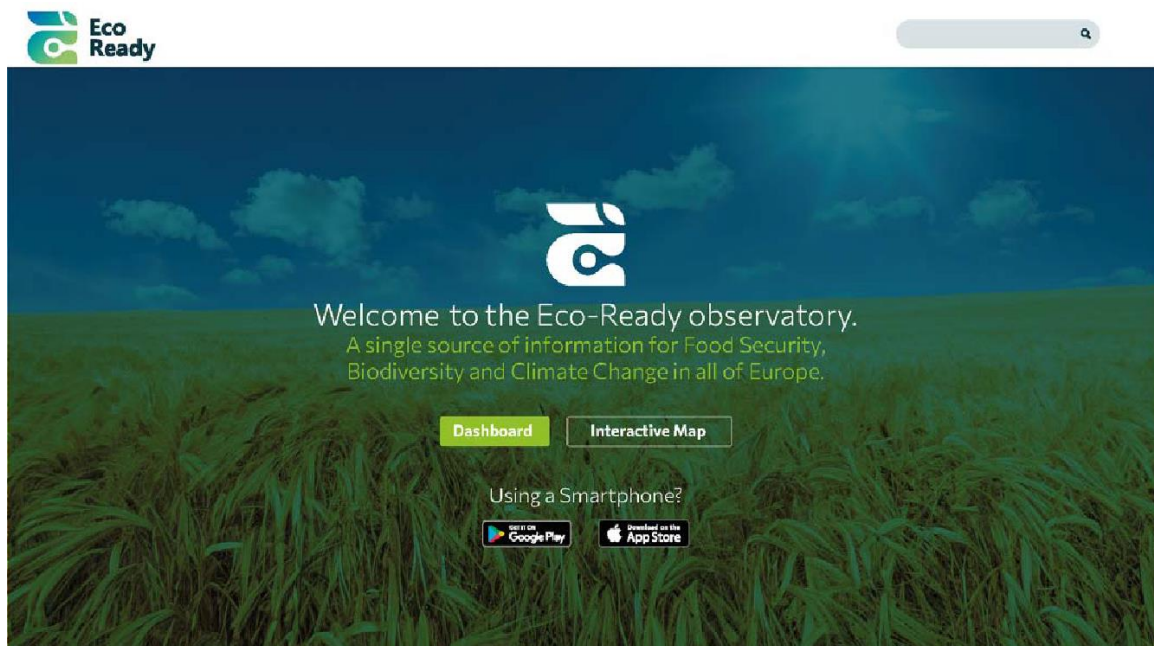


Figure 1 Observatory Landing Page

Around 80% of respondents had a positive feeling about this page. Any UI comments were directed towards the **choice of background image**. Most respondents agreed that the dashboard and the interactive map are going to be **used by all user categories**, with the exception of citizens (for which half of the respondents believe that they are only going to use the mobile app). Also, 7 out of 10 respondents believe that the dashboard and the interactive map should allow **unauthenticated access**.

2.1.2. Dashboard Overview

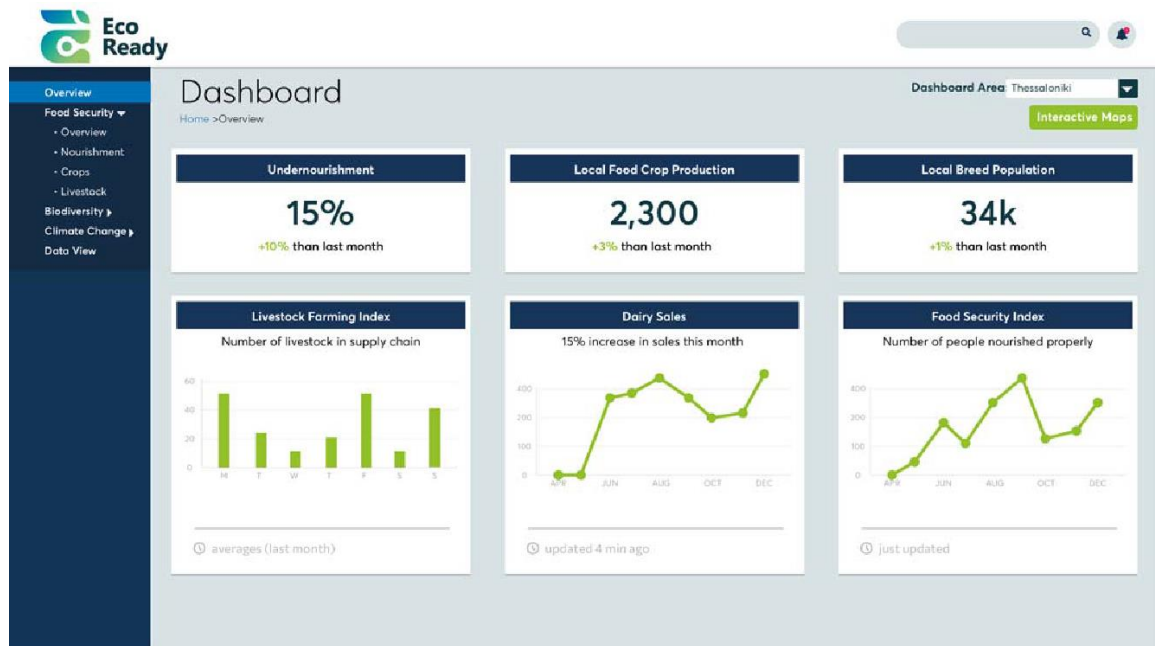


Figure 2 Dashboard Overview

Around 80% of respondents had a positive feeling about this page. Concerning the type of metrics proposed by the respondents (as examples in this screen), we may summarize the following:

- **Food security metrics**, including local food waste, food poverty, malnutrition, hunger, supply sufficiency of food banks, food supply adequacy, food loss
- **Agriculture metrics**, including yearly production of different crops (and yield predictions), crop health
- **Climate change metrics**, including temperature and precipitation, ocean metrics (acidification, temperature, oxygen level) CO2 emissions per region, as well as extreme events (heat waves, spring frost, spring/summer hail, storms)
- **Biodiversity metrics**, e.g. birds, insects, mammals, butterfly index (some are monitored at EU level), natural capital and of course the biodiversity data by the living labs

Respondents agreed that we may need to **extract the outputs from WP1**. Ideally, we would need **one key driver for each category (food security, biodiversity, climate change)** as well as an **overall definition for all three** in their respective pages. Also, a common concern was that **biodiversity factors are not straightforward to illustrate** (some are too

hard to be digested from users, such as eDNA, and in any case all must be connected to the food security scope, so we may have to describe this connection).

Concerning temporal information, most respondents considered the **use of time window** as the optimal solution for providing the metrics for different time periods. The use of shortcuts (e.g. last month) seems also useful. Furthermore, approximately 95% of respondents agreed that we should **show area information in the top right as a dropdown**. Concerning early warnings, they suggested **notifications through the web page and the app** (e.g. push notifications) and even threshold values inside the charts. A separate page/notification center with all warnings could also be an option.

2.1.3. Dashboard Example Category

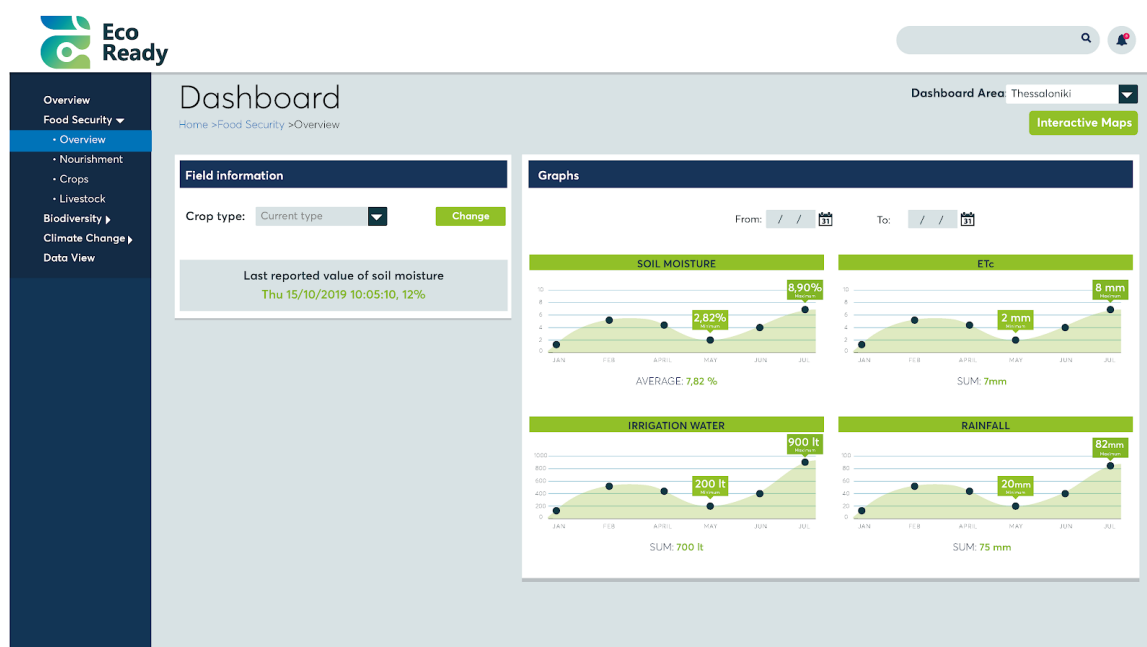


Figure 3 Dashboard Example Category

When users rated their satisfaction with the page, the majority of the responses were 4 and 5, indicating general approval. For content, users suggested a range of metrics tailored to each aspect. Regarding **food security**, suggestions included food price, disruptions to food supply, stability over time, dimensions of food security, drivers and effects of lack of food security. Other ideas were related to a region's main food production, prices in different regions, and natural disaster probabilities. Regarding **biodiversity**, respondents recommended metrics like species richness, drivers and effects of biodiversity loss, and IUCN Red List categories. Other suggestions included metrics for agrobiodiversity, ecosystem services (like pollination, climate regulation), and invasive species. Consistency

and harmonization of outputs from various tasks were again emphasized. For **climate change**, users favored metrics such as air quality, temperature fluctuations, weather patterns, climate change drivers and extreme weather events. The diversity of responses highlighted the users' desire for **detailed and specific data relevant to each thematic area**.

Users expressed a strong preference for **customizable data presentation**. The majority supported the option to select time windows for viewing metrics, indicating a need for dynamic and flexible data access. This suggests that users value **both current and historical perspectives** in understanding these complex issues. In terms of data visualization, **line charts (for showing change over time)** and **scatterplots (for correlation)** were highly favored, with users advocating for visualizations that effectively communicate uncertainty and complexity. A minor suggestion was to include easy-to-understand comments on findings and the availability of data at different geographical scales (EU level and per EU Member State). The feedback also hinted at **future improvements**, with a call for a list of specific factors to be refined at a later stage, underscoring the evolving nature of user needs in the context of this multifaceted subject matter.

2.1.4. Dashboard Example Metrics

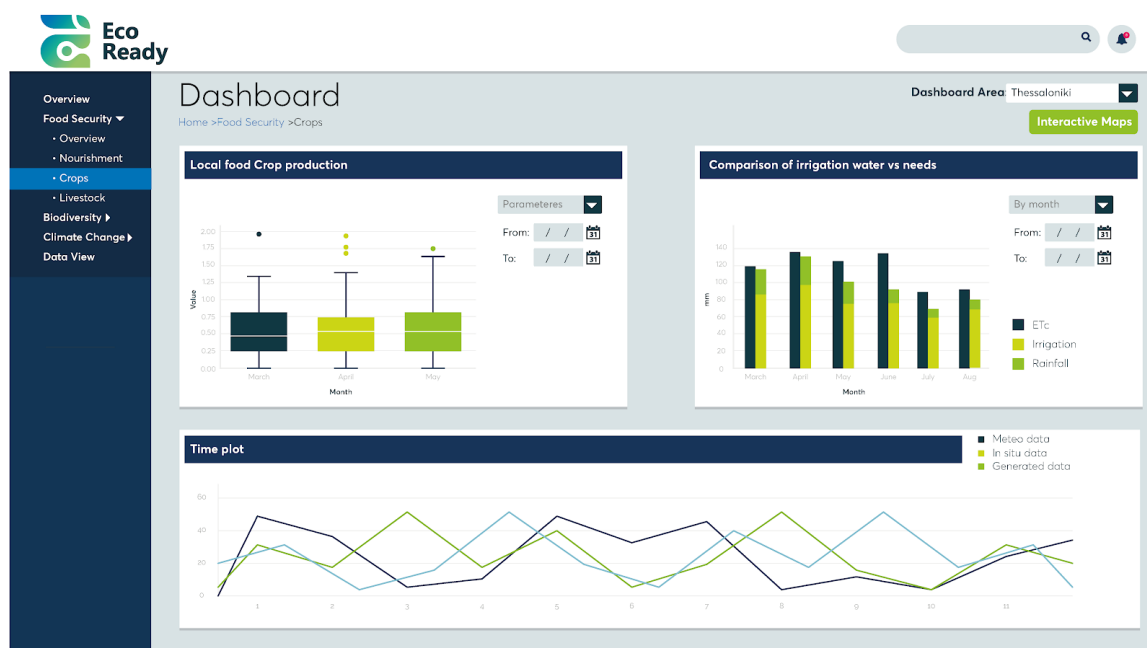


Figure 4 Dashboard Example Metrics

The majority rated the page favorably (more than 70% giving it a score of 4 or 5 out of 5). In terms of specific metrics for the **Food Security** metrics page, the responses emphasized the need for a **variety of chart types** including pies, lines, and histograms. The focus was on key aspects such as food availability, access, utilization, and stability. Suggestions also included metrics like yield forecasts for major crops, food commodity prices, and the importance of imports and exports. For the **Biodiversity** page, participants suggested comparing different crop types and focusing on ecosystem services like pollination and climate regulation. Tracking invasive species and understanding the drivers and effects of biodiversity loss were also highlighted as important metrics. In the context of **Climate Change**, the responses received suggested including metrics like scenario comparisons, temperature changes, extreme weather events, and greenhouse gas emissions. The overarching theme across these categories was the need for **coherence and harmonization with the outputs of tasks 1.1, 1.2, 1.3.**

Regarding the temporal characteristics of the information, the survey indicated a preference for **flexibility in time frames**, with most respondents advocating for a selectable time window feature. This flexibility would enable users to tailor the temporal analysis according to their needs. In addition to the metrics, the types of charts used for data presentation were a key focus. A significant majority of respondents (88.9%) preferred **change-over-time charts** such as line and area charts. **Bar charts, scatterplots, and heatmaps** were also favored, indicating a desire for diverse and informative visualization methods. The additional comments from 6 respondents pointed to a need for making the data more accessible and understandable to a general audience. Suggestions included adding simple comments or interpretations alongside the graphical representations to aid in comprehension.

2.1.5. Dashboard Data View

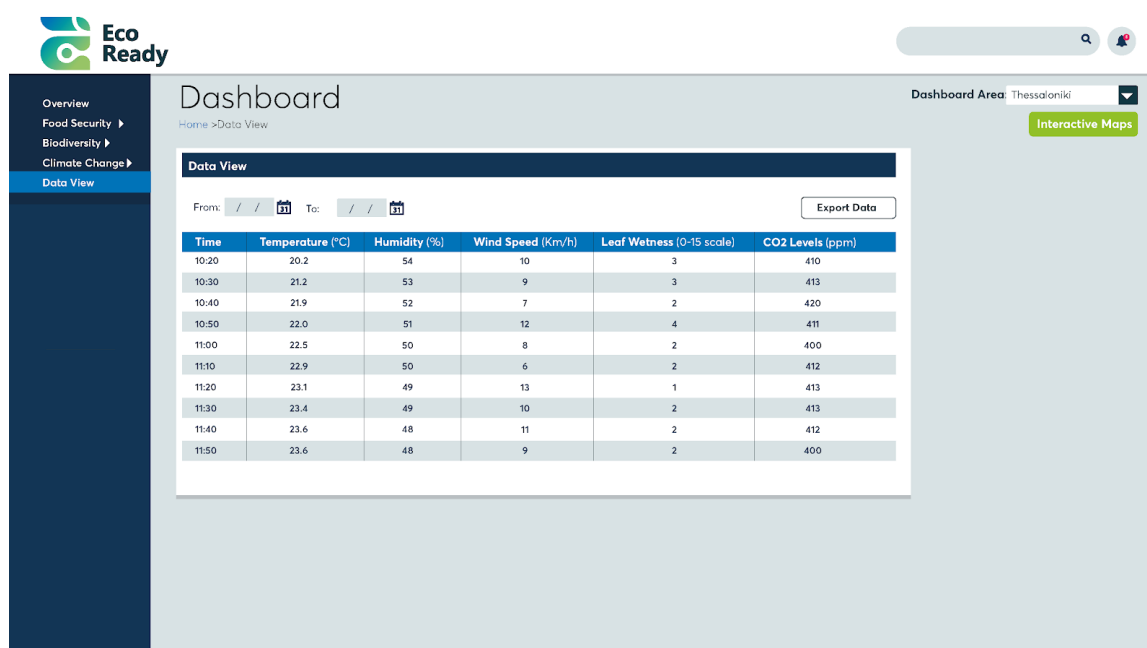


Figure 5 Dashboard Data View

Regarding the likability of the page, the responses were generally positive. A third (33.3%) rated the page a 3 out of 5, while an equal number (33.3%) gave it the highest rating of 5. Another 22.2% rated it 4, showing a generally positive but varied reception. On the functionality front, all 18 respondents (100%) agreed on the **necessity of a data export feature**. This unanimous opinion underscores the importance of allowing users to download and utilize the data outside the dashboard environment, highlighting a key functionality requirement for the page. The survey also explored the intended user base of the page. A significant majority (72.2%) indicated that the page would be used **primarily by researchers**, while 27.8% believed it would cater to multiple types of users. This suggests that while the page is seen as a research tool, there's recognition of its broader applicability.

In terms of expected metrics, the suggestions included the provision of tables or cubes, raw data for researcher use and the ability to select metrics based on specific times or regions. The need for a **summary view** of user-selected data for specific regions was also highlighted. Additionally, respondents expected raw data on factors like food security at different spatial and temporal scales, and many expressed interest in climate change and biodiversity drivers. The additional comments from some respondents suggested improvements such as **adding interpretations at the bottom of the screen** and **ensuring**

flexibility in data downloading. A specific suggestion was made for the inclusion of raw data with original measurements and uncertainties.

2.2. Interactive Map

2.2.1. Interactive Map Overview Screen

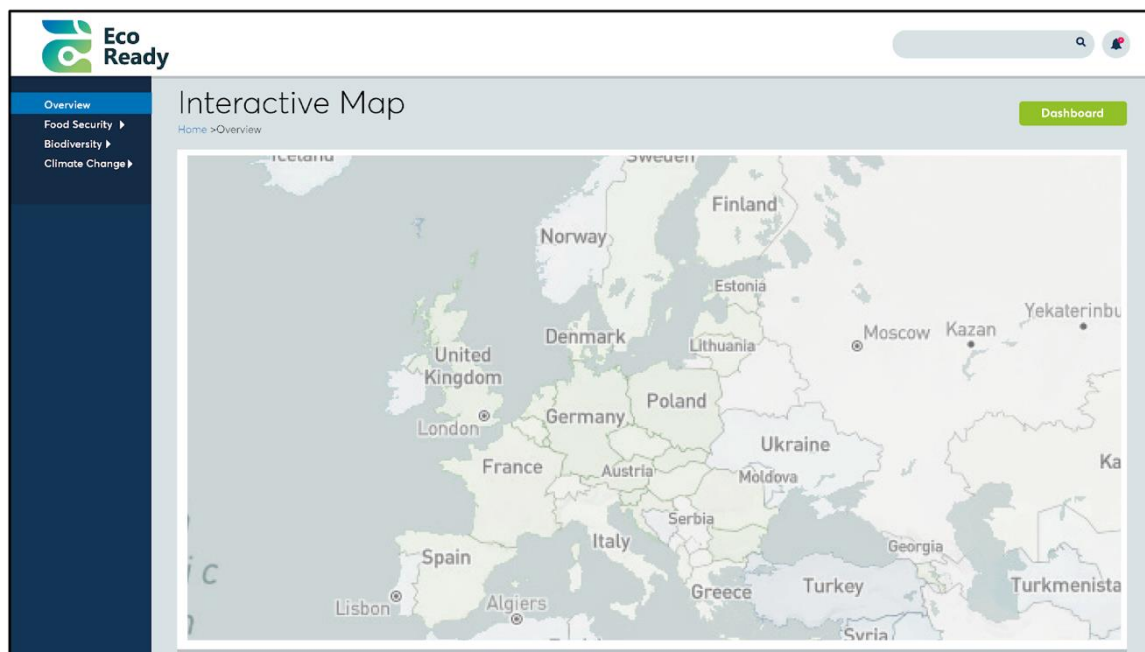


Figure 6 Interactive Map Overview Screen

Approximately 80% of the respondents rated the page with 4 or 5, which indicates high approval of the map page. Regarding the navigation bar placement on the page, a vast majority (88.9%) agreed that **having the navigation bar on the left** is a good choice. When asked if the page should be accessible to all users, including guests, an overwhelming majority (94.4%) agreed that it should be **open to all**. This suggests a preference for inclusivity and wide accessibility of the page. The responses to how the Living Labs should be depicted on the page varied. The majority (66.7%) preferred **using pins to represent the Living Labs**. Highlighted areas were favored by 16.7%, and a few other suggestions included links to more detailed pages and a mix of approaches. This shows a clear preference for using pins as the primary method of depicting Living Labs. When asked for additional comments or suggestions, responses included ideas like adding **comments at the bottom**, incorporating **short videos explaining each Living Lab project**, and considering adding a **legend with filters based on region types or agricultural practices**.

2.2.2. Interactive Map Popup Screen

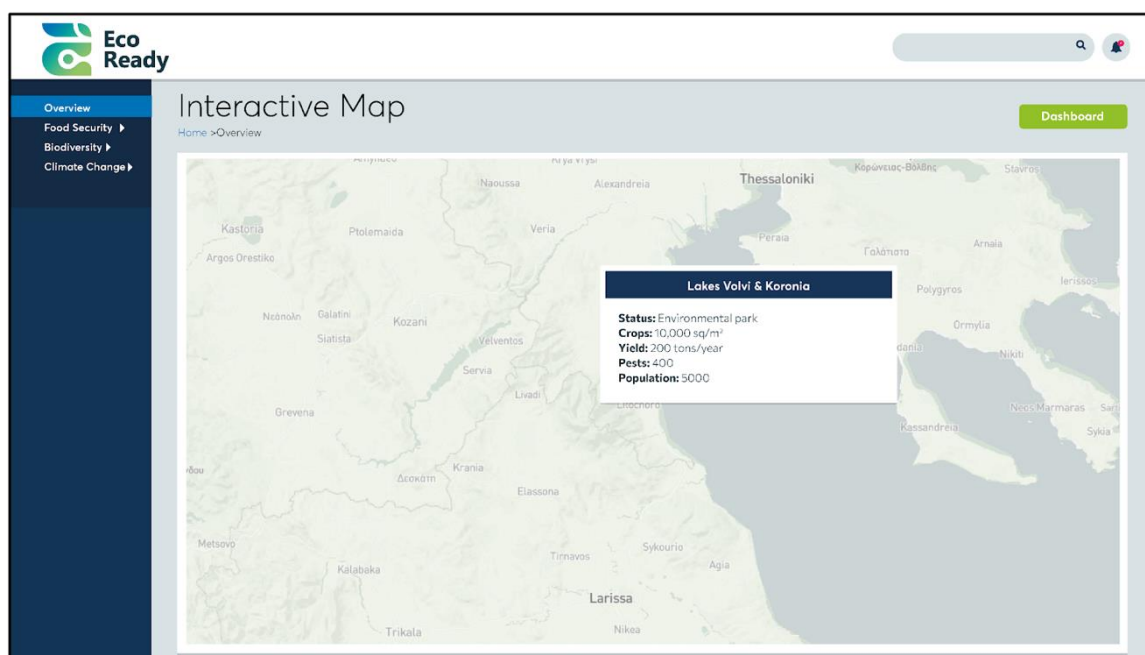


Figure 7 Interactive Map Popup Screen

For the likability of the page, the survey showed a generally positive response, with more than 70% rating it 4 or 5 out of 5. In terms of the content for the **popup information**, the respondents provided varied suggestions. These included thematic content, videos explaining Living Lab (LL) activities, general project metrics specific to the area, and information on food, biodiversity, and climate. The idea of **showing trends over time**, such as changes in species or climate measures, was also mentioned. Some suggested including website links for the LLs and making comparisons with previous years' data for crops and yields. The diversity of responses highlights a desire for comprehensive and informative popups with a mix of general and specific data.

Regarding the relevance of the popup information with the main aspects of the project, the responses were fairly evenly split. About 55.6% believed the info should be more generic, while 44.4% thought it should relate specifically to Food Security, Climate Change, and Biodiversity. This suggests a **split in user preference between detailed, category-specific information and more general content**. When asked about other UI ideas, some respondents suggested enhancements for interactivity and user-friendliness. Ideas included a **dropdown menu for selecting specific metrics**, an **explanatory glossary for the metrics**, and the **ability to select domains and metrics**. This indicates a preference for customizable and explanatory features to enhance user experience and understanding.

Some additional comments offered suggestions such as including simple explanations. This points to a desire for clarity and ease of understanding in the information presented.

2.2.3. Interactive Map Categorical Layers Screen

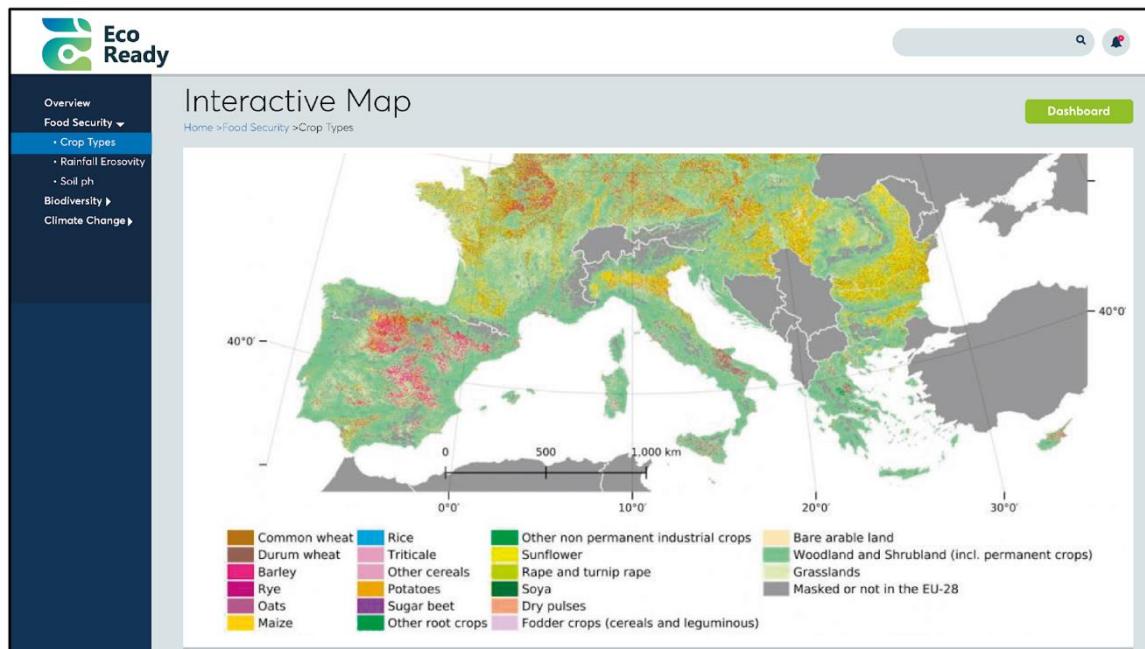


Figure 8 Interactive Map Categorical Layers Screen

The majority (44.4%) rated the page with 4, showing general approval, and a significant portion (33.3%) gave it the highest rating of 5, indicating strong approval

Regarding Food Security-related categorical metrics for map layers, the respondents suggested various metrics. The respondents said that the main metrics should be decided by the project and they should include **food security** measures, filtering based on indicators, and incorporating prices. There was a mention of using all Global Food Security Index (GFSI) data, with a focus on local data from municipalities and food banks. For **Biodiversity**-related metrics on map layers suggestions included using main metrics from the ECO-READY project and IUCN-related maps of species threat status. There was also a recommendation to consider filtering based on biodiversity indicators. Regarding **Climate Change**-related metrics responses highlighted the need for showing scenarios, anomalies of rainfall and temperature, and filtering based on climate change indicators. The idea of using GFSI data with a narrowed time scale and local data integration was also mentioned.

When asked if the information would be available throughout Europe, the majority (66.7%) believed it would be, while 33.3% thought it would only cover Living Lab areas. This suggests a preference for broader geographical coverage. In cases where data is not

available for all Europe, 15 responses indicated different approaches to representing missing data. The majority (66.7%) suggested **representing these areas with a neutral color or graying them out on the map**. There was also an idea to allow user-contributed data through a feedback mechanism.

Additional comments from the respondents included various suggestions, such as the need for clear comments, focusing on data originating from the project, and the idea of **showing areas where food, climate, and biodiversity metrics intersect positively or negatively**. One respondent suggested that maps available to all users should be more generic, while subscribed members could access more detailed maps focused on the Living Labs.

2.2.4. Interactive Map Scalar Layers Screen

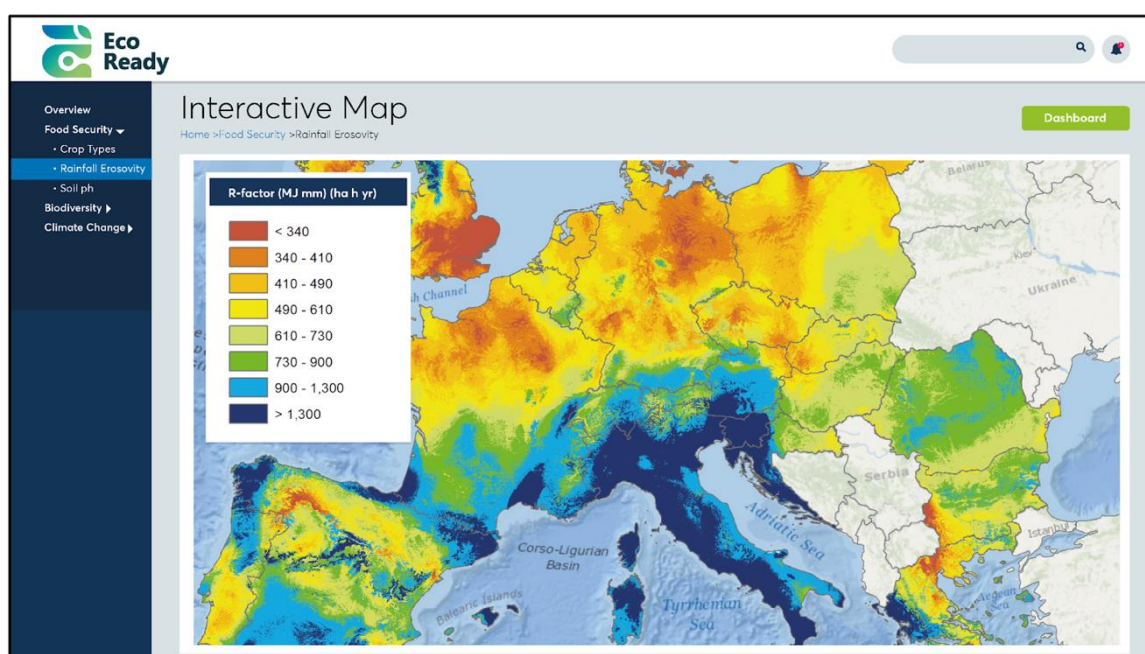


Figure 9 Interactive Map Scalar Layers Screen

The page's likability received positive rating from the vast majority, with 44.4% giving it a 4 and 33.3% awarding the highest rating of 5. Regarding the specific scalar metrics for Food Security, Biodiversity, and Climate Change to be shown as map layers, the respondents pointed to their answers in similar questions of the previous sections.

When asked about the geographical coverage of the information, most respondents (72.2%) believe that the **information would be available throughout Europe**, while 27.8% thought it would only cover Living Lab areas. This suggests a preference for comprehensive geographic coverage. For areas where information might not be available, respondents were asked how these empty data areas should be treated. A majority (69.2%) supported

the idea of representing these areas with a neutral color or some form of indication, such as graying out. A smaller percentage (23.1%) suggested not showing these areas, while a few (7.7%) proposed using estimates. Additional comments from four respondents included suggestions for including comments at the bottom of the screen for better understanding.

2.3. Mobile App

2.3.1. Mobile App Landing Page

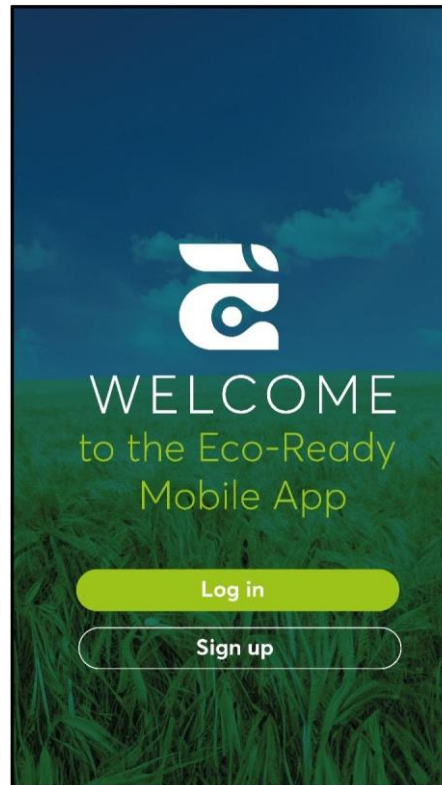


Figure 10 Mobile App Landing Page

The mobile app landing page likability was generally positive among the respondents. A significant majority (50%) rated the page a 4 out of 5, indicating good approval. Additionally, 27.8% gave it the highest rating of 5, while 22.2% rated it a 3. This suggests overall satisfaction with the page. Regarding the user base of the app, opinions varied. A majority (66.7%) believed the app would be **used by both citizens and researchers**, indicating an expectation for a broad user base. A smaller proportion (22.2%) thought it would be used only by citizens, while a few respondents considered its use by a diverse group including farmers and industry professionals. When asked about **personalization** features in the app, most respondents (66.7%) favored personalization, where users would **provide information about their habits** and receive relevant screens.

The type of information to be shown in the app garnered diverse responses. Suggestions included access to a wide range of metrics, from general to specific, and the inclusion of monetary metrics or those related to personal consumption habits. Some respondents highlighted the need for the app to provide incentives for download and use, such as **personalized reminders, rewards, or engaging content like seasonal eating tips or fun articles**. Regarding **data collection**, suggestions ranged from **tracking food habits and activities** to using official sources and **incorporating interactive elements like riddles** or online supermarket experiences. The idea of integrating health tracking features and small questionnaires was also mentioned, alongside a focus on citizen awareness and privacy concerns.

Additional comments suggested various improvements and considerations. These included the need for clear procedures and the importance of making the app interactive. The idea of **gamification** and its potential impact was also mentioned.

2.3.2. Mobile App News Screen

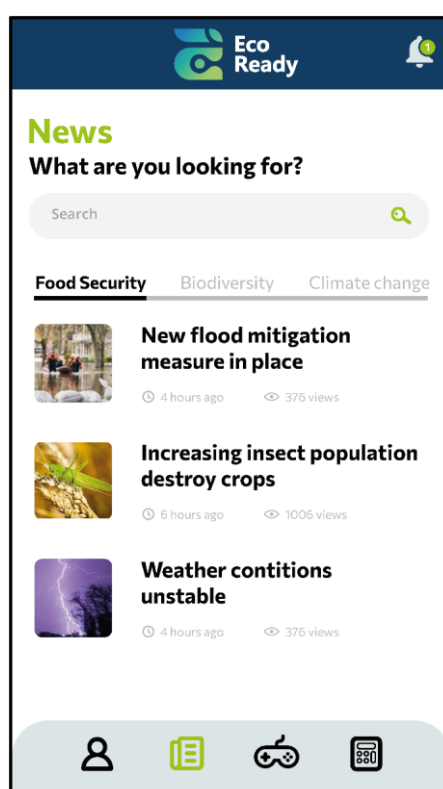


Figure 11 Mobile App News Screen

The overall likability of the mobile app's news page was positive. Among the respondents, a majority (55.6%) rated the page a 4 out of 5, showing strong approval. Additionally, 27.8% gave it the highest rating of 5.

When asked about the type of **news** to be included in the app, responses provided diverse suggestions. These included **weather conditions and alerts**, **extreme events**, **harvest and production updates from Living Labs (LLs)**, **relevant news with LL activities**, and both technical and business updates. The idea of categorizing news by the main driver related to the three categories (food, biodiversity, climate) was proposed, though one respondent noted the potential for confusion due to the interrelated nature of these issues. The importance of **sourcing from credible news venues** was also emphasized.

2.3.3. Mobile App Calculator Example Screen

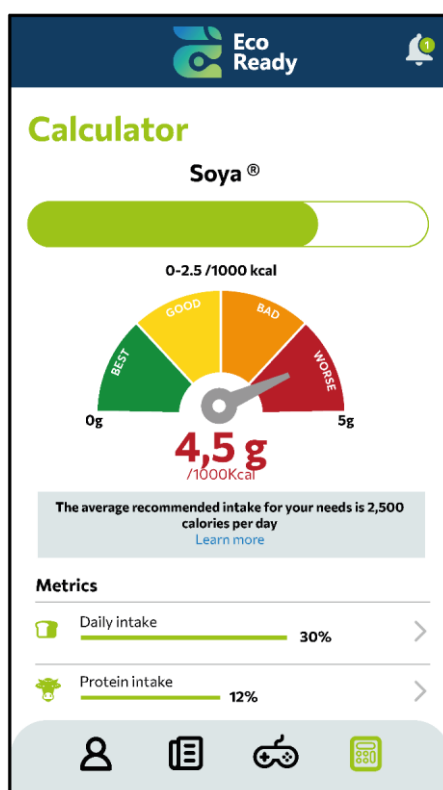


Figure 12 Mobile App Calculator Example Screen

Regarding the page's likability, the responses indicated general satisfaction. A third of the respondents (33.3%) rated the page a 5 out of 5, showing strong approval, and another third (33.3%) gave it a 4. When asked about potential calculators to be added to the app, respondents suggested a variety of functions. Ideas included **calculators for calorie intake**, **recommended daily intake**, **macronutrients**, **carbon and water footprints of food**

products, activities with carbon impact and price predictions based on various factors. These suggestions reflect a desire for calculators that **not only track nutritional aspects but also environmental impacts and economic factors**.

Regarding the data source for the calculators, respondents provided diverse opinions. Suggestions included using online food-data sources and integrating data into the Eco-Ready database, with the possibility of using external sources such as OurWorldInData for initial data. There was also a discussion about whether the app should use dynamic or static data and whether it should serve only as an educational tool, with different opinions from the respondents to these aspects. In terms of personalization, most respondents (73.3%) favored **personalized calculators where users could input their habits and receive relevant metrics**. This indicates a preference for a more user-centric approach, allowing for customization based on individual user data.

Additional comments included the use of various methods and sources for the calculators, with one suggesting that the tool would be most useful if it interacted with food, biodiversity, and climate information. This points to a desire for integrated and multifaceted tools that provide comprehensive insights into various aspects of sustainability.



2.3.4. Mobile App Games Screens

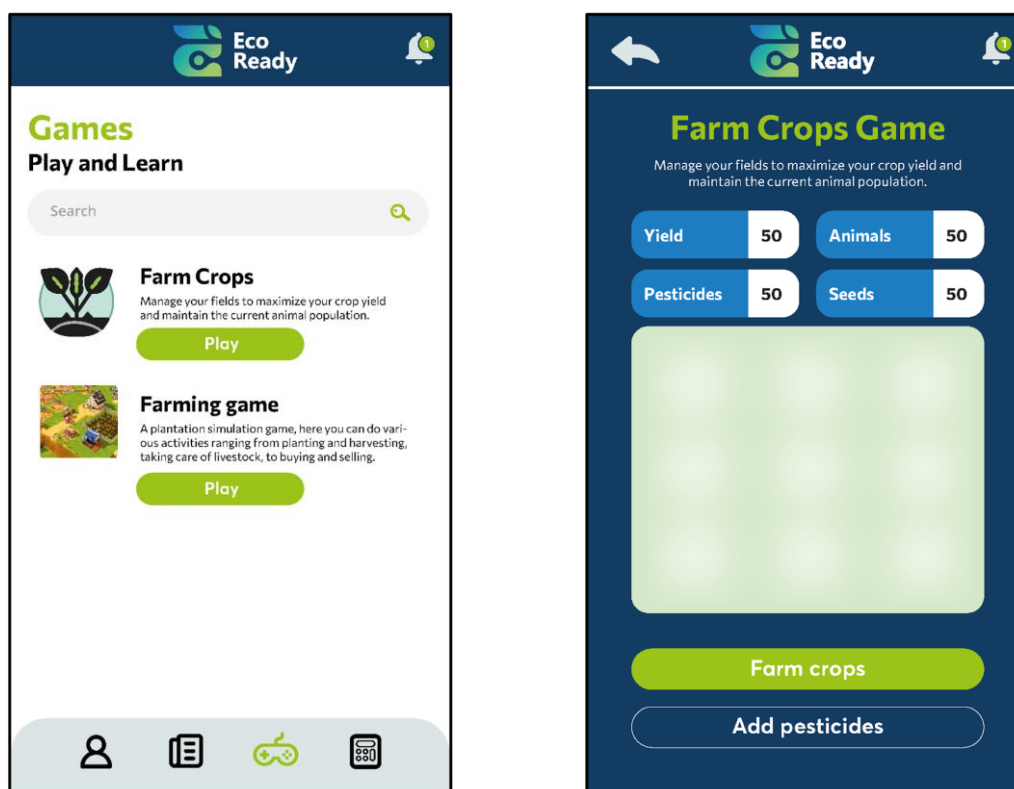


Figure 13 Mobile App Games Screens

The game pages' likability was highly positive among the respondents. A significant majority (55.6%) rated the page a 4 out of 5, showing strong approval. Additionally, 27.8% gave it the highest rating of 5.

When asked about the types of games to be added, responses provided diverse ideas. Suggestions included games focused on food waste, meal calorie calculators, environmental impact simulations, and challenges like going vegan for a set period. There were also ideas for simple, quick games that **educate on environmental policies or consumption impact**. Some respondents suggested the inclusion of educational videos about smart farming. **Memory games, quizzes, and games focusing on diet and nutrition** were also proposed. Regarding the competitive nature of the games, most respondents (75%) preferred **competitive games with features like leaderboards**. This suggests a desire for engaging and challenging elements that encourage user interaction and participation. In terms of data collection through games, the majority (66.7%) supported the idea of games that gather user information, such as **survey-like games to understand preferences**. This indicates a preference for games that not only entertain but also serve as tools for data collection and user engagement.

Additional comments from 5 respondents included suggestions for incorporating features that consider consumer choices, behaviors, and motivations. The importance of paying attention to **consumer privacy** was highlighted. A respondent also suggested enabling social sharing features to increase engagement and create a sense of community.



3. Conclusion

As an overall comment, the responses of the participants indicate that they are aligned towards the scope of the project. In the dashboard, the focus was given mainly on food security metrics, indicating the need to pinpoint the **nexus that connects climate change and biodiversity to food security**.

On the look and feel category, the comments were clearly positive. A major point extracted here is that participants feel that **the dashboard and the interactive map should be unified**, allowing one to switch back and forth between the two tools in a seamless manner.

Finally, focus was given on the temporal and spatial elements of the information. Participants in this case agree that we need metrics and charts that can **focus on specific time windows and areas**.

These key takeaways will be useful for designing co-creation actions and finally crafting the requirements of the ECO-READY Observatory.

