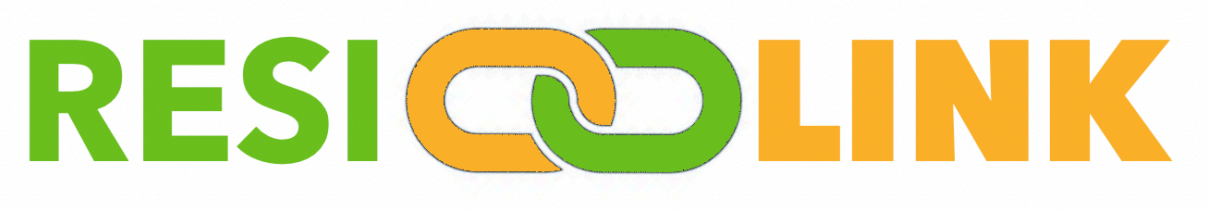

Increasing Resilience of Smallholders with Multi-Platforms Linking Localized Resource Sharing

Deliverable D5.3b

Synthetic Report on 2 years of Smallholder Living-Lab Piloting Program and Large-scale Evaluation

Responsible Editor:	ARC
Contributors:	INRA, USMS, UMCM, UPPA, ORANGE
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DOCUMENT REVISION HISTORY

Version	Date	Changes
V1.1	Sep 10th, 2025	PUBLIC RELEASE
V1.0	Aug 27th, 2025	FIRST DRAFT VERSION FOR INTERNAL APPROVAL
V0.1	July 15th, 2025	FIRST RELEASE FOR REVIEW

EXECUTIVE SUMMARY

This deliverable D5.3b is planned at M36 and should have been preceded by 3 deliverables presenting the launching of the Living-Lab: D5.3a entitled "First report on Smallholder Living-Lab Piloting Program in Egypt"; D5.4a entitled "First report on Smallholder Living-Lab Piloting Program in Morocco" and D5.5a entitled "First report on Smallholder Living-Lab Piloting Program in Algeria". Due to delays in launching the Living-Lab program, we decided to merge all the Living-Labs activities at M36 into D5.3b. Note that prior to the Living-Labs activities, RESILINK did run a preliminary Evaluation Program that is described in D2.4a “First report on test and validation of the full RESILINK framework”.

Table of Contents

1. Introduction

RESILINK develops a distributed digital resource management platform for real-time exchange of information on territorial resources and supplies & demands; connecting smallholders to new supply, sharing opportunities and distribution channels. RESILINK will develop a mobile application, referred to as **RESILINK mobile app**, that will be the main interface to simply, quickly and intuitively manage resources.

The document reviews the main steps of the Evaluation Program and the preparation of the Living-Labs Piloting for the large-scale evaluation of the RESILINK framework.

Related main deliverables already released:

D2.1b "Final report on user requirements, user interface and co-design of the RESILINK generalized resource sharing digital platform"
https://resilink.eu/wp-content/uploads/2024/07/D2.1b.pdf

D2.2b "RESILINK resource sharing digital platform – v2"
https://resilink.eu/wp-content/uploads/2025/07/D2.2b.pdf

D2.4a "First report on test & validation of the full RESILINK framework"
https://resilink.eu/wp-content/uploads/2025/04/D2.4a.pdf

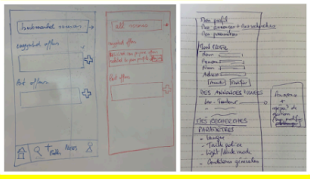
D5.6a “First report on the large-scale RESILINK mobile app evaluation program”
https://resilink.eu/wp-content/uploads/2024/07/D5.6a.pdf

2. The Evaluation Program

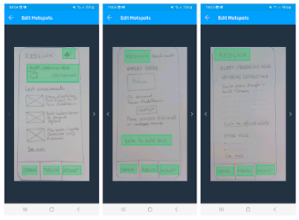
2.1. Starting with a mockup and interviews

Meetings & design thinking sessions led by Orange have been organized since May 2023 to discuss functionalities, mockups and how to collect & analyse the first feedback.

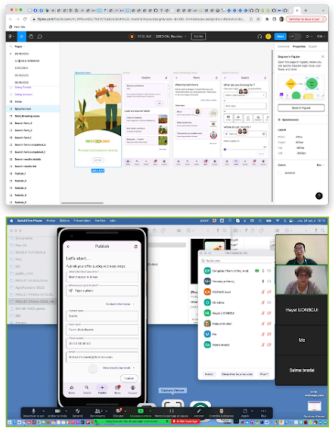
First concepts

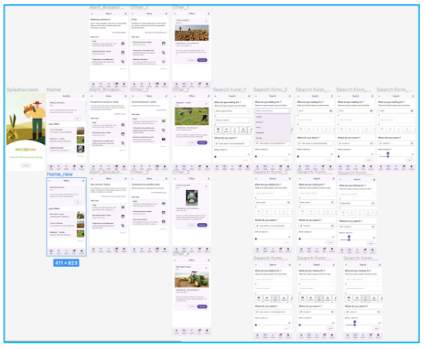


First mockup with MarIvelApp



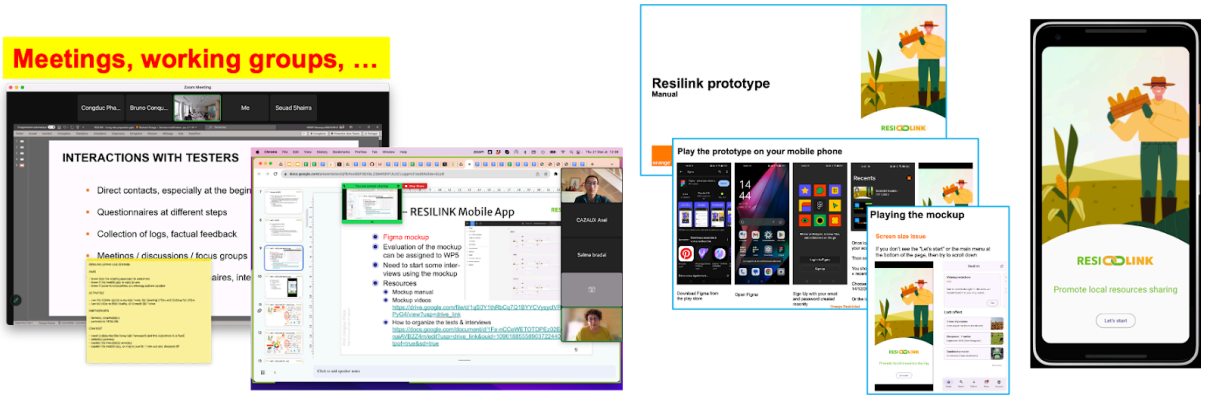
Oct. 2023. Design of an elaborated mockup with Figma





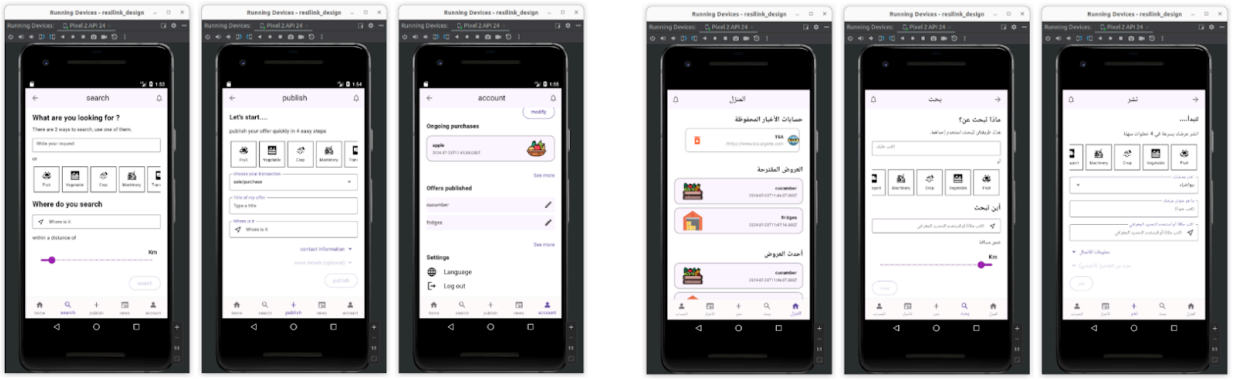
Then, several interview sessions with smallholder farmers have been planned and various documents have been prepared.

- A video playing the mockup https://resilink.eu/wp-content/uploads/2024/05/resilink-new-mockup.mov
- A manual explaining how to use the mockup https://resilink.eu/wp-content/uploads/2024/05/resilink-new-mockup-manual.pdf
- A document describing how to conduct the interviews with the mockup https://resilink.eu/wp-content/uploads/2024/05/RESILINK-How-to-organize-tests-of-the-mockup.pdf



From January 2024 to May 2024 in Algeria, Egypt and Morocco, the interviews were conducted, mobilizing a large staff from partners.

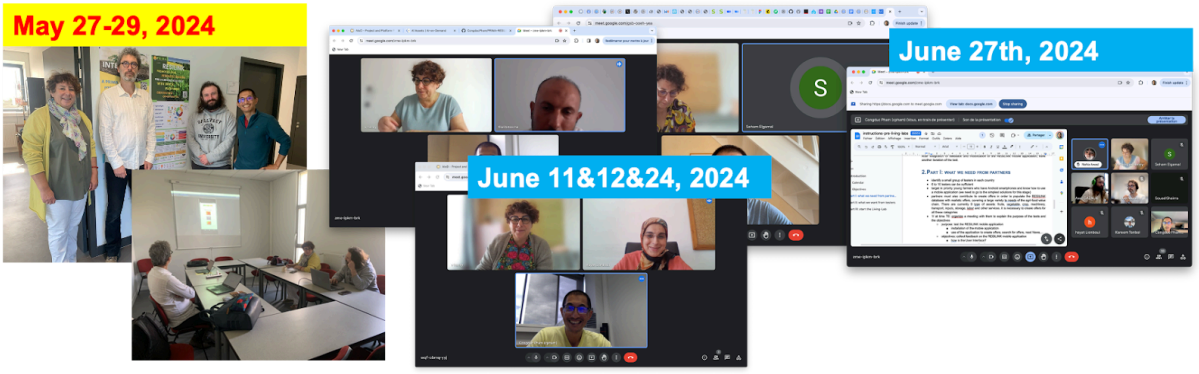
The feedback of these interviews were used to improve the development of the RESILINK mobile application and in June 2024 a first version of the RESILINK mobile app was ready for first internal tests, including the multi-language support.



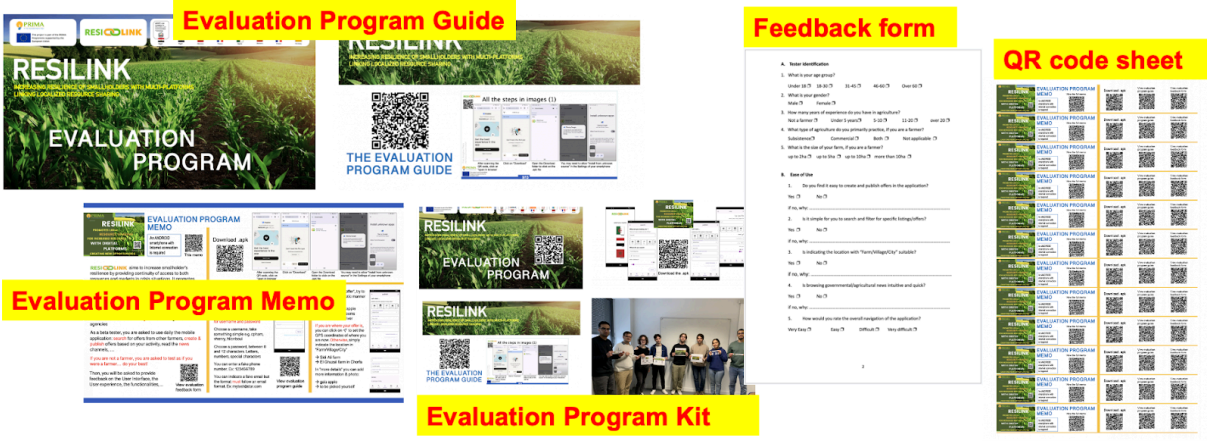
2.2. Preparation of the Evaluation Program

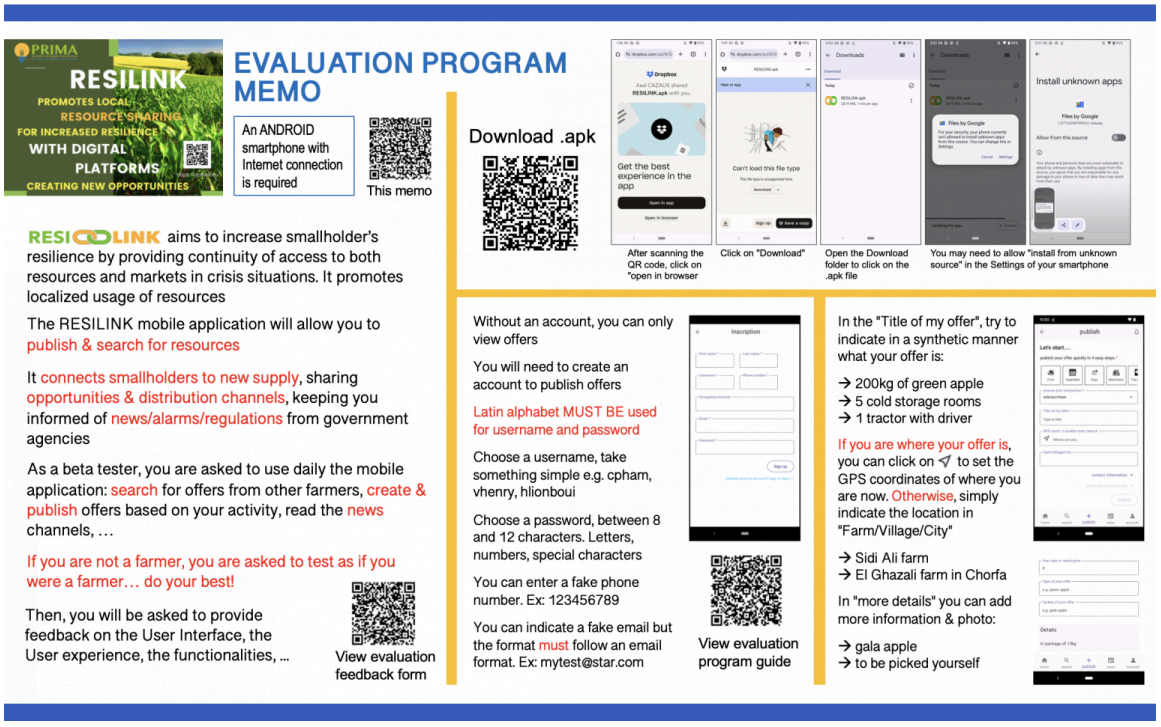
Starting from May 2024, the whole RESILINK team prepared the Evaluation Program of the RESILINK framework: both the functionalities of the RESILINK digital platform and the User Interface/User Experience of the RESILINK mobile application.

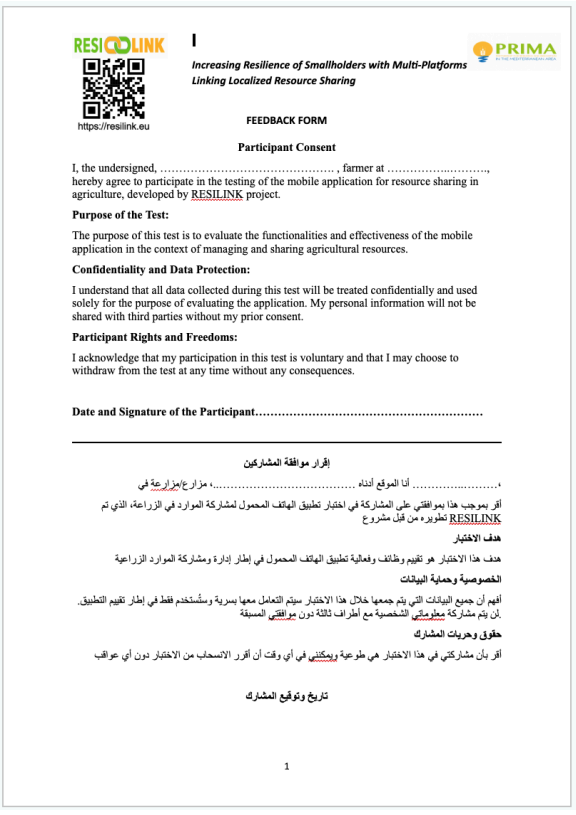
The RESILINK mobile application will first be internally tested by partners. Then, feedback will be collected and another round of development will take into account these feedback and improve the various interfaces and functionalities. Several meetings have been organized with partners to launch the Evaluation Program: Morocco partner: 11/06/2024; Algerian partner: 12/06/2024; Egyptian partner: 24/06/2024



Various documents have been produced to support the Evaluation Program. **They are all available on the project web site in the Piloting section**: https://resilink.eu/piloting







RESILINK
https://resilink.eu

Increasing Resilience of Smallholders with Multi-Platforms Linking Localized Resource Sharing

PRIMA

FEEDBACK FORM

Participant Consent

I, the undersigned, ……, farmer at ……, hereby agree to participate in the testing of the mobile application for resource sharing in agriculture, developed by RESILINK project.

Purpose of the Test:

The purpose of this test is to evaluate the functionalities and effectiveness of the mobile application in the context of managing and sharing agricultural resources.

Confidentiality and Data Protection:

I understand that all data collected during this test will be treated confidentially and used solely for the purpose of evaluating the application. My personal information will not be shared with third parties without my prior consent.

Participant Rights and Freedoms:

I acknowledge that my participation in this test is voluntary and that I may choose to withdraw from the test at any time without any consequences.

Date and Signature of the Participant……

إقرار موافقة المشاركين

أنا الموقع أدناه ……، مزارع/مزارعة في ……

أقر بموجب هذا بموافقتي على المشاركة في اختبار تطبيق الهاتف المحمول لمشاركة الموارد في الزراعة، الذي تم تطويره من قبل مشروع RESILINK

هدف الاختبار

هدف هذا الاختبار هو تقييم وظائف وفعالية تطبيق الهاتف المحمول في إطار إدارة ومشاركة الموارد الزراعية

الخصوصية وحماية البيانات

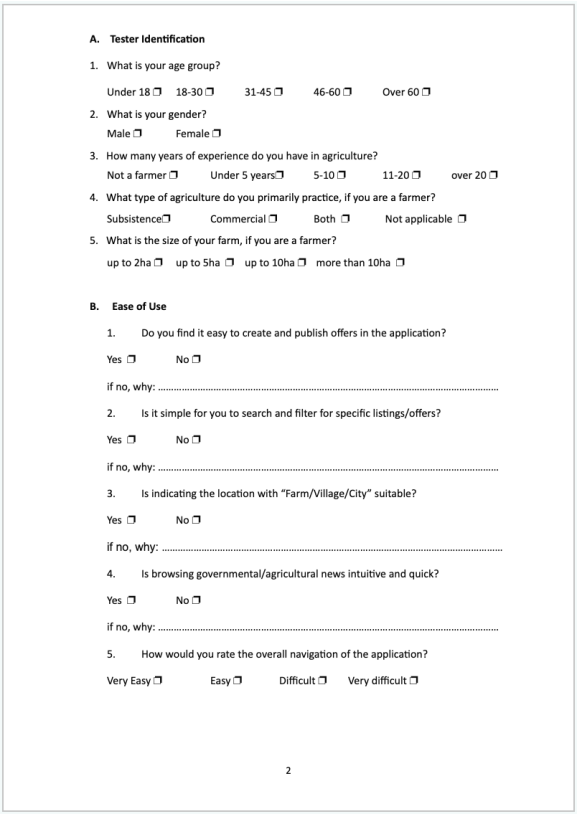
أفهم أن جميع البيانات التي يتم جمعها خلال هذا الاختبار ستتم التعامل معها بسرية وستُستخدم فقط في إطار تقييم التطبيق. لن يتم مشاركة معلوماتي الشخصية مع أطراف ثالثة دون موافقتي المسبقة.

حقوق وحريات المشارك

أقر بأن مشاركتي في هذا الاختبار هي طوعية ويمكنني في أي وقت أن أقرر الانسحاب من الاختبار دون أي عواقب

تاريخ وتوقيع المشارك

1



A. Tester Identification

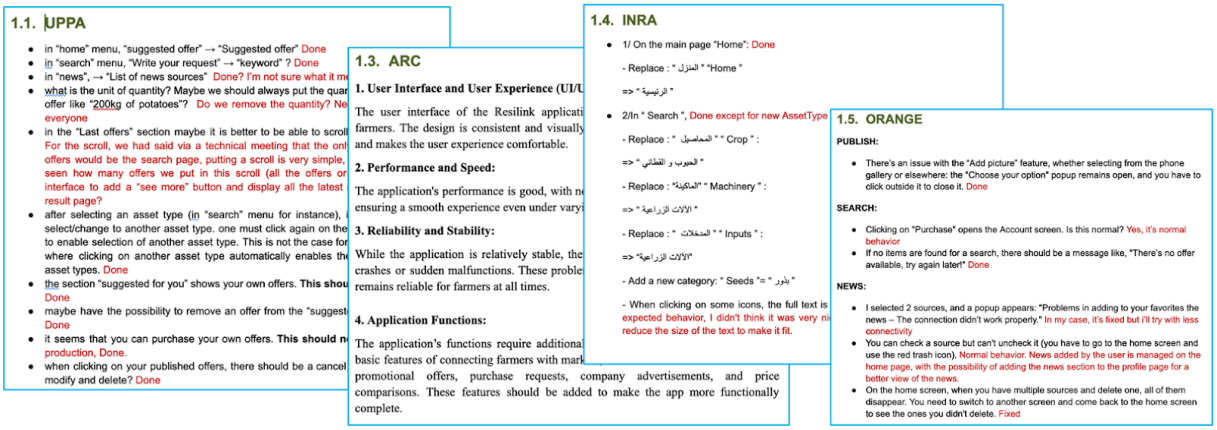
1. What is your age group?
   Under 18 ❒ 18-30 ❒ 31-45 ❒ 46-60 ❒ Over 60 ❒
2. What is your gender?
   Male ❒ Female ❒
3. How many years of experience do you have in agriculture?
   Not a farmer ❒ Under 5 years ❒ 5-10 ❒ 11-20 ❒ over 20 ❒
4. What type of agriculture do you primarily practice, if you are a farmer?
   Subsistence ❒ Commercial ❒ Both ❒ Not applicable ❒
5. What is the size of your farm, if you are a farmer?
   up to 2ha ❒ up to 5ha ❒ up to 10ha ❒ more than 10ha ❒

B. Ease of Use

1. Do you find it easy to create and publish offers in the application?
   Yes ❒ No ❒
   if no, why: ……
2. Is it simple for you to search and filter for specific listings/offers?
   Yes ❒ No ❒
   if no, why: ……
3. Is indicating the location with "Farm/Village/City" suitable?
   Yes ❒ No ❒
   if no, why: ……
4. Is browsing governmental/agricultural news intuitive and quick?
   Yes ❒ No ❒
   if no, why: ……
5. How would you rate the overall navigation of the application?
   Very Easy ❒ Easy ❒ Difficult ❒ Very difficult ❒

2

Internal tests were conducted from Sep. 2024 to Nov. 2024. RESILINK partners provided feedback to track bugs and improve the mobile application – test accounts were created.



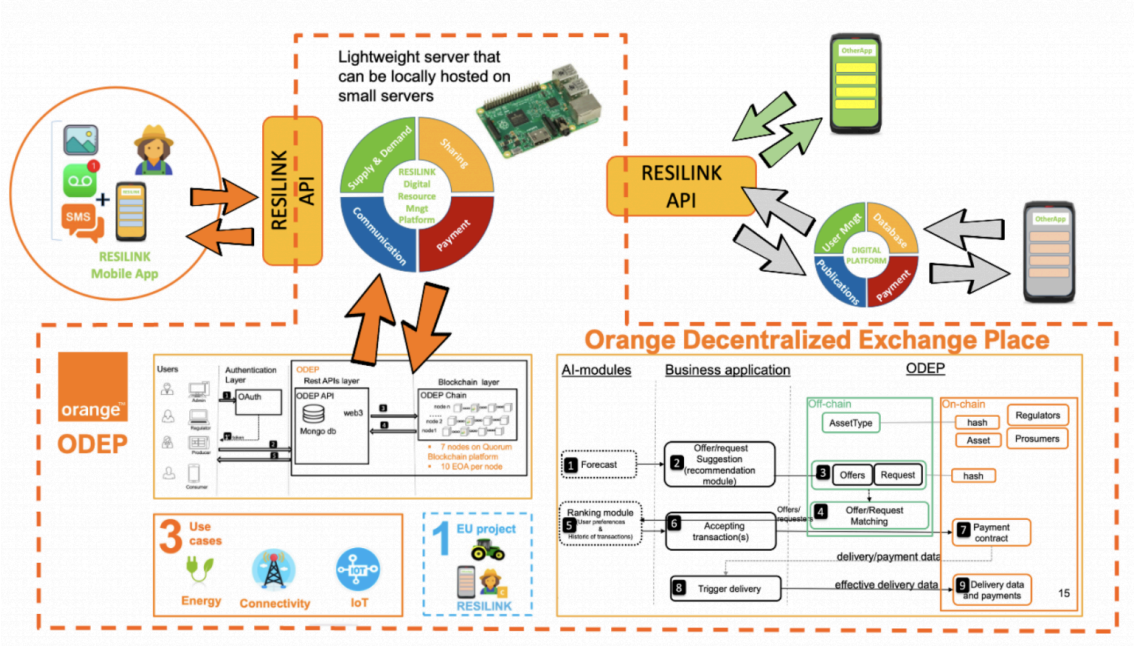
The external test started on Nov. 2024.

We had to face many difficulties but partners in Algeria, Egypt & Morocco devoted a lot of efforts to reach smallholders, conduct interviews, organize workshops, raise awareness, collect feedback, discuss with stakeholders, increase trust, …

In addition to the preparation of the Evaluation Program, we also produced several technical and guideline documents, having in mind the next steps with capacity-building activities to demonstrate the platform-of-platforms approach.

Behind the scene, the RESILINK digital platform was continuously improved and its architecture designed to support all the functionalities that would make RESILINK an innovative approach:

- Light-weight server to be easily replicated for a geographical scope
- Open API
- Incremental deployment and automatic server discovery
- Platform-of-Platforms with interoperability between platforms

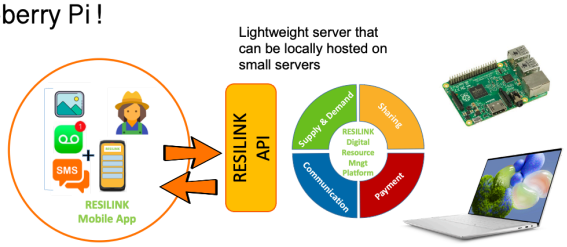


Deliverable D2.3a “First report on API and software connectors” described the RESILINK’s API & the lower level ODEP’s API. https://resilink.eu/wp-content/uploads/2025/04/D2.3a.pdf

WP5 D5.2b Evaluation technical framework – v2.
https://resilink.eu/wp-content/uploads/2024/02/D5.2b.pdf

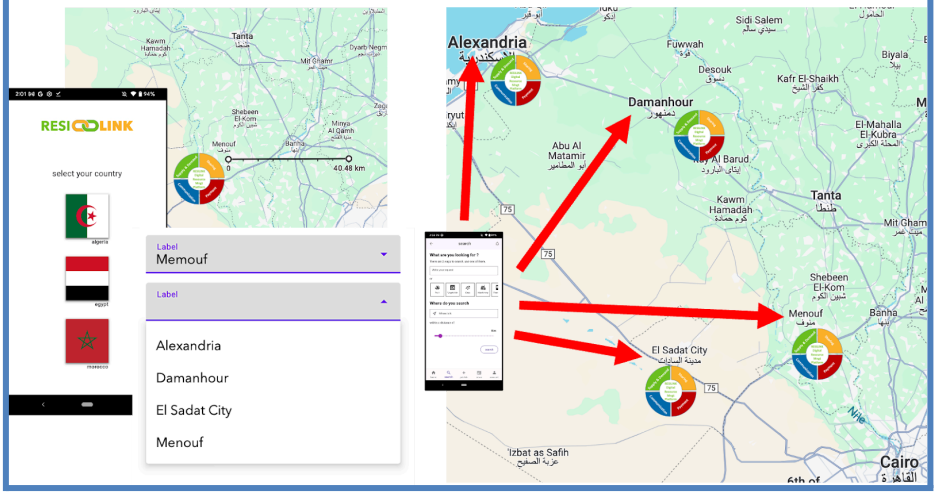
Light-weight servers & fast deployment

- The RESILINK digital platform server can run on a small server, even on a Raspberry Pi !



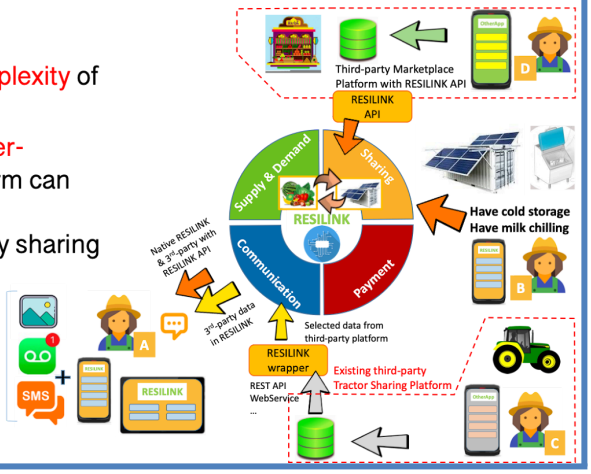
- A RESILINK server can be locally deployed by local city gouvernment agencies, agriculture cooperatives, agriculture services, … in 1 hour!

Incremental deployment



Stimulating local innovation?

- The open API will reduce development time & complexity of new platforms
- All platforms can fully inter-operate and a new platform can benefit from all the other platforms' communities by sharing users & contents
- RESILINK develops a consistent API to enable fast development and deployment platforms



3. Results from the Evaluation Program

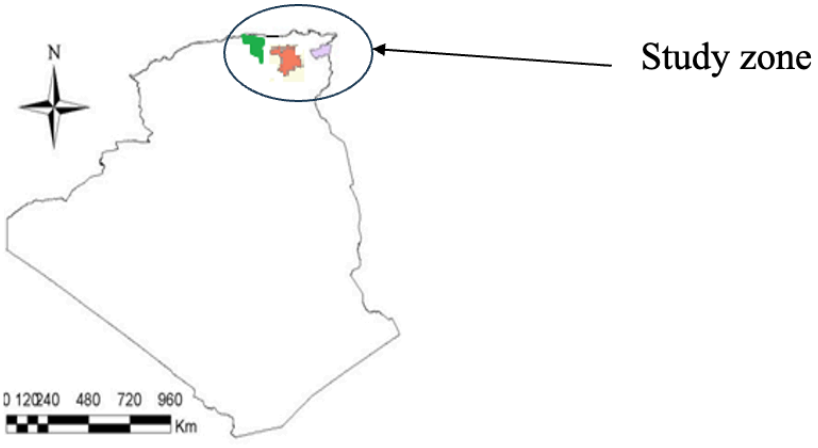
This chapter of the deliverable aims to provide a comprehensive analysis of the distribution of respondents who have used the RESILINK platform, presenting an overview of the characteristics of the user sample from various age groups, agricultural activities, and other related attributes. The platform offers advanced services designed to support farmers in ensuring continued operations and maintaining revenues in times of crisis, through the use of the RESILINK app on smartphones. The study seeks to highlight how farmers interact with this platform and whether their personal and professional characteristics influence their use of this modern technology. The report includes an analysis of data related to age, agricultural activities, experiences, and the agricultural regions engaged with the application. The focus is on providing a clear understanding of how the platform can be enhanced to meet the needs of diverse users and maximize its benefits. Through this analysis, we hope to provide valuable insights that will aid in the development and improvement of the RESILINK platform to better align with farmers' expectations and enhance its effectiveness in the field of digital agriculture.

The Evaluation Program with smallholder farmers run from November 2024 to end of April 2025. The Living-Lab Program started in March 2025. So, during the period March 2025 to end of April 2025, we had both the Living-Lab Piloting Program and the Evaluation Program running.

We describe in the following subsections the results of the Evaluation Program of RESILINK Platform by small farmers, mainly on the user satisfaction analysis and improvement recommendations.

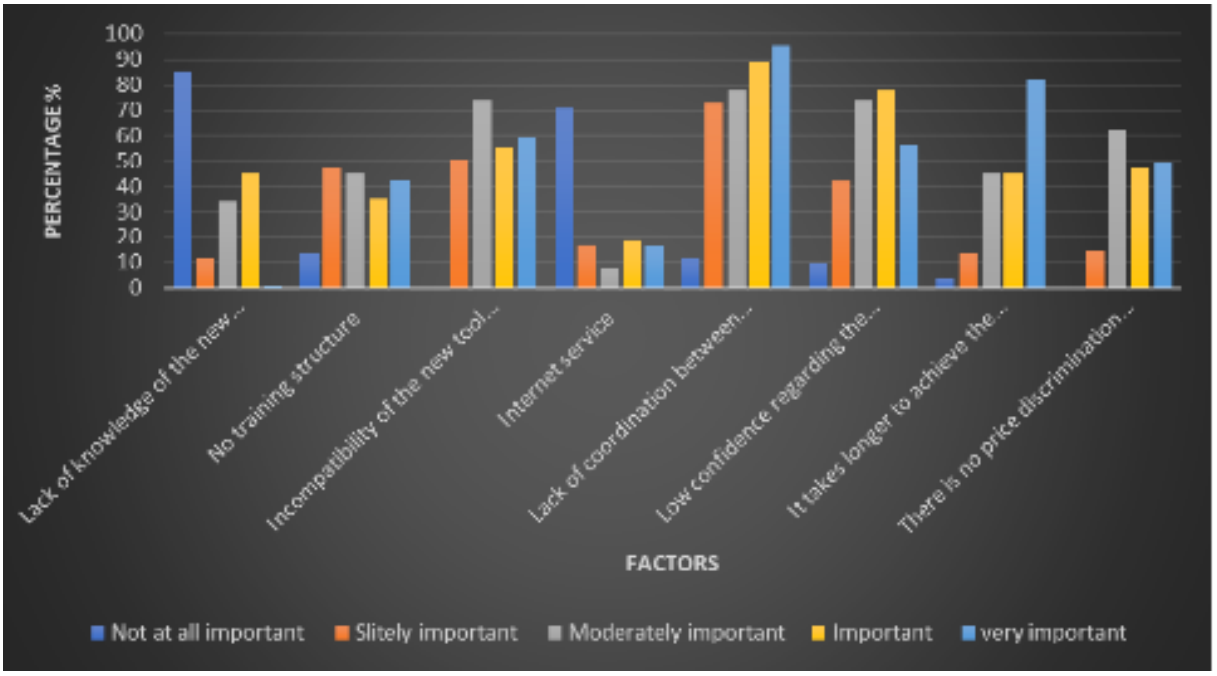
3.1. Algeria – Survey

The presentation of the RESILINK's aims and objectives was done during the Strawberry Festival and the national vulgarization days. Three regions were concerned by the sampling: Jijel (North of Algeria), Souk Ahras and Guelma (North East of Algeria). We have conducted a total of 81 interviews. Out of these, 57 interviews were carried out with farmers, 5 interviews were conducted with decision makers, and we engaged 13 and 6 interviews with consumer and seal points respectively.



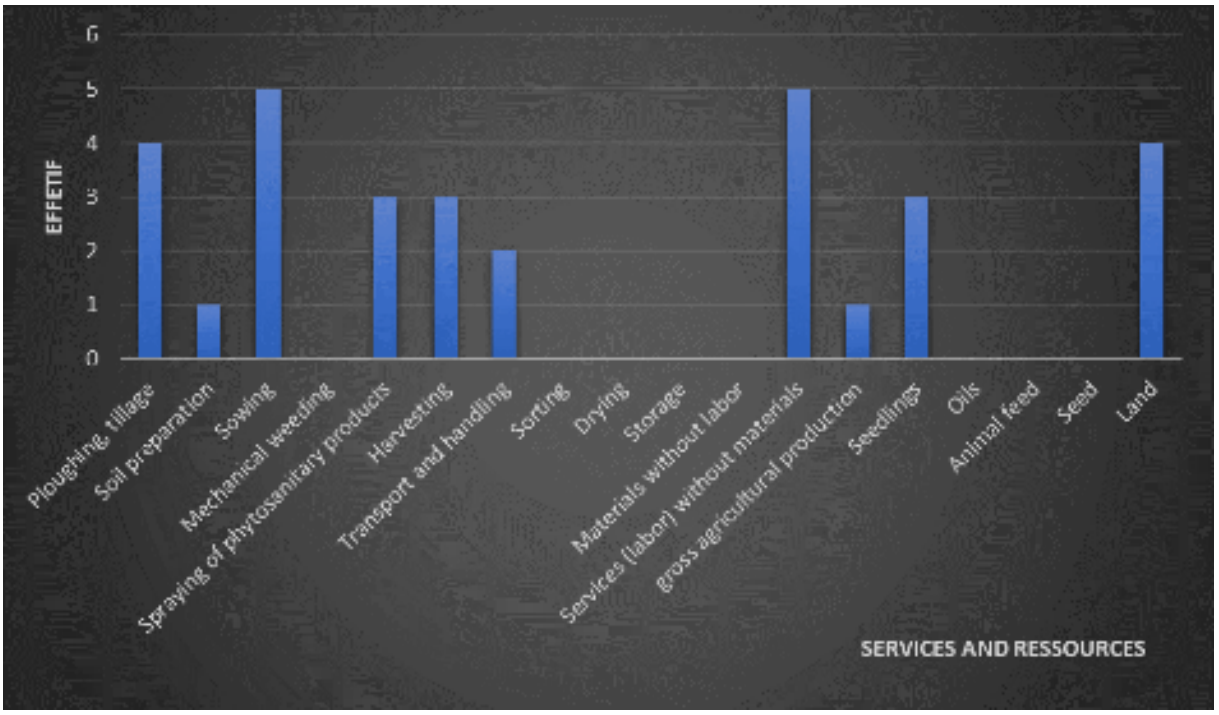
3.1.1. The most important barriers to the adoption of digital applications in agriculture

The results show that the most important constraints that may hinder the adoption of digital applications in the Algerian agriculture sector are the lack of coordination between actors and the lack of knowledge. Our results reveal that 85.25% of farmers identify a lack of knowledge and inadequate training opportunities as major barriers to embracing these new tools. Furthermore, 95.6% of farmers highlight the importance of improved coordination with extension agents to overcome adoption obstacles. We note also that the lack of coordination between farmers and extension workers, coupled with low confidence in the effectiveness of the new tools, slows down the achievement of expected results. Finally, the absence of price discrimination at both the platform and market levels adds to the obstacles faced but with low percentage.



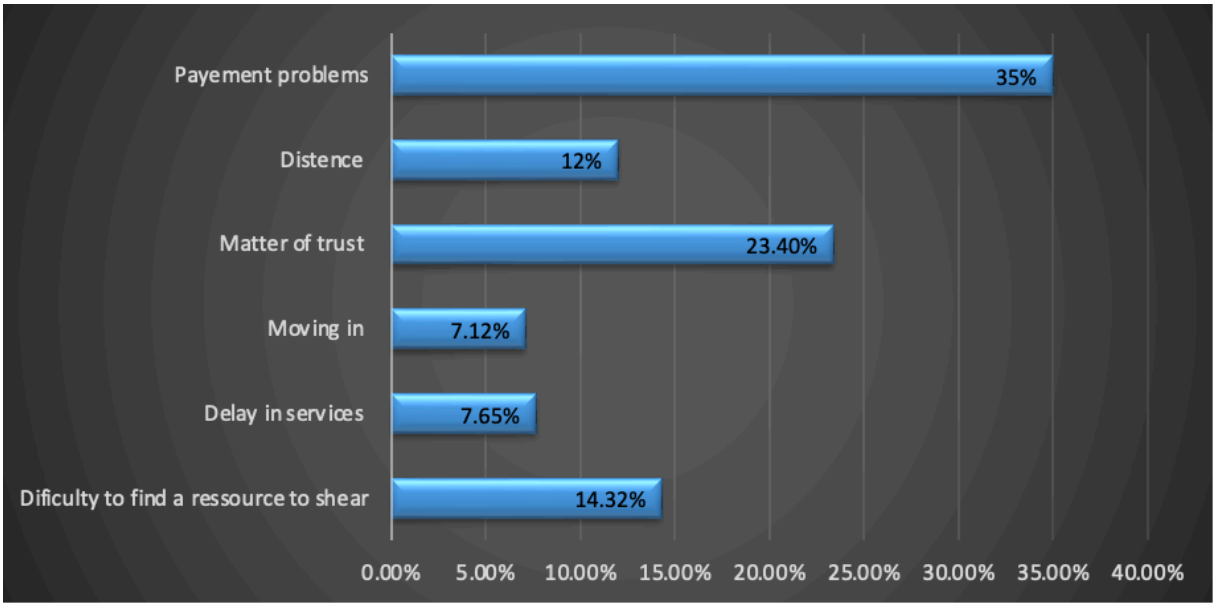
3.1.2. Willingness to share farm resources in the future

Survey results show that no resources or services were shared by farmers before. After our explanation of the interest of resources sharing with other stakeholders operating in the agriculture domain, their perception for sharing resource positively changed and their answers are summarized below:



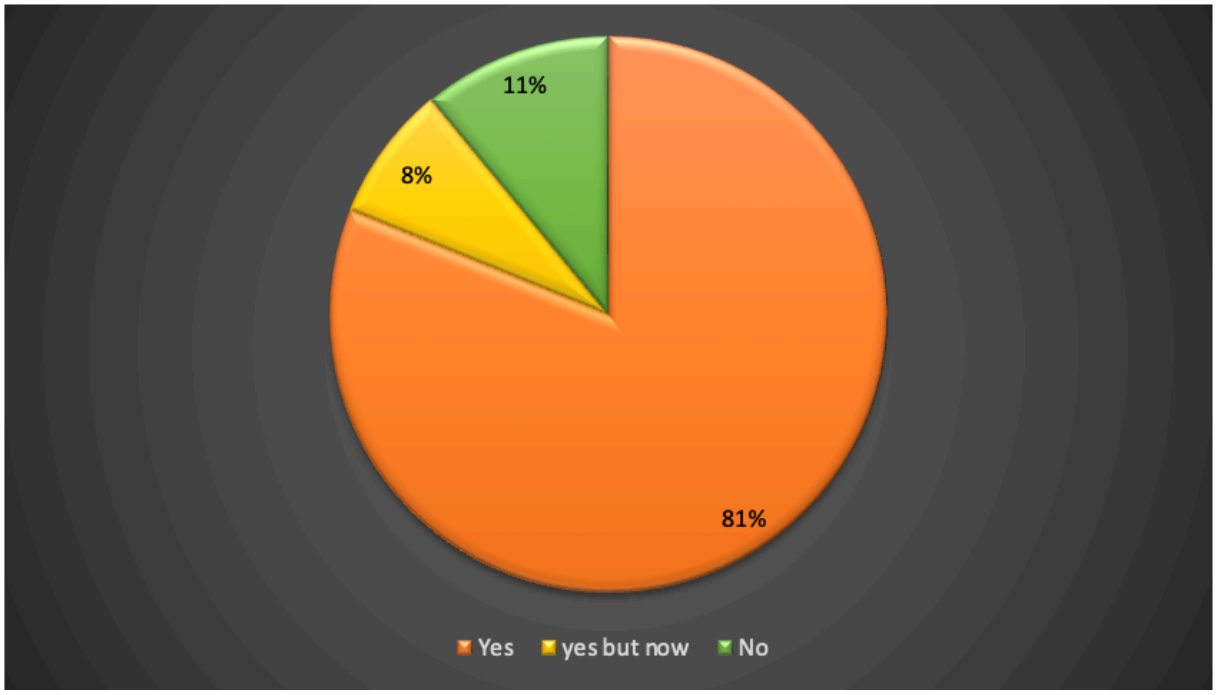
3.1.3. Factors affect the resource sharing

The problem of payment may be the first obstacle for resources sharing by smallholders. Trust also influences resource sharing.



3.1.4. Acceptability to adopt platforms linking local resource-sharing in the future

The majority of farmers are convinced by the idea of the project (81%), and they agree to install and try and test the application.



3.2. Algeria – Evaluation Program Session

The analysis and reporting of the Evaluation Program by the Algerian team has been delayed due to personal issues of the scientific coordinator of the Algerian team. It will be provided in the next deliverable.

3.3. Egypt – ARC – 1st Evaluation Program Session – Jan.2025

3.3.1. Users Age categories

The results presented in Table 1 indicate the distribution of age groups among users of the RESILINK application. The majority of respondents fall within the 30-49 age group, comprising 48.48% of the total sample. This suggests that a significant portion of farmers are middle-aged, often possessing agricultural experience and the ability to adopt modern technologies. Typically, individuals in this age group are more likely to adopt new agricultural technologies, and they likely form the primary user base for applications like RESILINK. On the other hand, the age groups 50-59 years and 60 years and older together make up 30.30%, indicating that older farmers are also showing interest, possibly driven by a desire to improve their agricultural productivity through modern technology. It is important to consider this demographic when developing the app's content or features to ensure they meet the needs of all age groups.

Table 1 Distribution of Respondents by Age **Categories**

Age categories	**Frequency (F)**	**%**
18-20	1	3.03
21-29	6	18.18
30-39	8	24.24
40-49	8	24.24
50-59	5	15.15
60 and above	5	15.15
Total	**28**	**84.85**

Note: Some respondents chose not to answer the age question.

3.3.2. Use of Mobile Applications in Agriculture

The data indicates that 78.79% of participants frequently or always use mobile applications for agricultural purposes, reflecting a broad adoption of this technology. In contrast, only 21.21% use them occasionally, with no participant completely abstaining from using agricultural apps. This result signifies a positive shift toward digitization in the agricultural sector, highlighting the potential for RESILINK to succeed in supporting farmers and enhancing productivity through technology.

Table 2: Frequency of Mobile Application Use in Agriculture

Frequency of Use	Frequency (F)	%
Always use	6	18.18
Frequently use	20	60.61
Occasionally use	7	21.21
Never use	0	0.00
Total	**33**	**100**

Field Data, 2025

3.3.3. Agricultural Activities of Users

The table reveals that all participants (100%) engage in agricultural activities, while 30.3% also participate in livestock farming in addition to their agricultural work. The absence of other activities suggests that the target sample is primarily focused on traditional crop production. This aspect should be considered when enhancing the app's functionalities to better address users' needs, such as supporting the integration of plant and animal production.

Table 3: Distribution of Respondents by Agricultural Activities

Agricultural Activity	%
Agriculture	33
Livestock Farming	10
Other Activities	0

Field Data, 2025

3.3.4. Distribution of Agricultural Land Holdings

The data reveals that 93.94% of participants own agricultural land of less than one hectare, while only 6.06% own land ranging from 1 to 5 hectares. The absence of participants with land exceeding 5 hectares suggests that the target sample primarily consists of small-scale farmers. These results highlight the importance of designing the RESILINK app to meet the needs of small landholdings by providing relevant information and techniques to optimize productivity on limited land.

Table 4: Distribution of Respondents by Agricultural Land Area

Land Area	Frequency (F)	%
Less than 1 hectare	31	93.94
1-5 hectares	2	6.06
6-10 hectares	0	0.00
More than 10 hectares	0	0.00

Field Data, 2025

3.3.5. Years of Agricultural Experience

The distribution of respondents by years of agricultural experience shows a diversity of experience levels. The largest group is those with 11-15 years of experience, making up 36.36% of the sample. This indicates that a significant number of farmers in the sample have moderate experience in the agricultural field. The second largest group includes farmers with 16-20 years of experience, representing 30.30%, reflecting another sizable portion of experienced farmers. Those with 6-10 years of experience make up 15.15% of the sample. The least experienced group (less than 5 years) and the most experienced group (more than 20 years) each represent 12.12% and 6.06%, respectively. This distribution shows a wide representation of various levels of agricultural experience within the sample, an important factor when developing the app. It suggests that the app should include features that support both experienced farmers and beginners, such as interactive guidance and training content on modern agricultural techniques.

Table 5: Distribution of Respondents by Years of Agricultural Experience

Years of Experience	Frequency (F)	%
Less than 5 years	2	12.12
6-10 years	5	15.15
11-15 years	12	36.36
16-20 years	10	30.30
More than 20 years	2	6.06

Field Data, 2025

3.3.6. Feedback on the RESILINK mobile application

3.3.6.1. User Interface Evaluation

The data reveals that 69.70% of participants rated the user interface as "Good," while 18.18% described it as "Very Good," with no participants rating it as "Excellent." This indicates overall satisfaction with the interface, but suggests there is room for improvement to make it more interactive and engaging, particularly as 12.12% of users rated it as "Acceptable" or "Poor." Improvements in visual design and user experience could help increase general satisfaction.

Table 6: Distribution of Respondents' Opinions on User Interface

User Interface Rating	Frequency (F)	%
Excellent	0	0.00
Very Good	6	18.18
Good	23	69.70
Acceptable	3	9.09
Poor	1	3.03

Field Data, 2025

3.3.6.2. Home Page Evaluation

The home page received a "Very Good" or "Good" rating from 66.66% of users, indicating a general acceptance of the overall design, though it is still short of excellence. With 24.24% rating it as "Acceptable" or "Poor," this highlights the need for a review of content organization and ease of access to essential features.

Table 7: Distribution of Respondents' Opinions on Home Page

Home Page Rating	Frequency (F)	%
Excellent	3	9.09
Very Good	10	30.30
Good	12	36.36
Acceptable	6	18.18

Poor	2	6.06

Field Data, 2025

3.3.6.3. Ease of Creating Offers

42.42% of users rated the ease of creating offers as "Good," while 27.27% rated it "Very Good," reflecting an acceptable level of usability. However, 30.30% rated it as "Acceptable" or "Poor," suggesting that some farmers may encounter difficulties using this feature, indicating a need for enhanced instructions or a simplified process.

Table 8: Distribution of Respondents' Opinions on Ease of Creating Offers

Ease of Creating Offers Rating	Frequency (F)	%
Excellent	0	0.00
Very Good	9	27.27
Good	14	42.42
Acceptable	9	27.27
Poor	1	3.03

Field Data, 2025

3.3.6.4. Adding Images to Offers

No participant rated the image addition feature as "Excellent." 39.39% rated it as "Acceptable," while 30.30% considered it "Good." These results indicate that the image addition feature may not be smooth or valuable enough for users, suggesting improvements such as support for multiple image formats or better loading and display experiences.

Table 9: Distribution of Respondents' Opinions on Adding Images to Offers

Image Addition Feature Rating	Frequency (F)	%
Excellent	0	0.00
Very Good	7	21.21
Good	10	30.30

Acceptable	13	39.39
Poor	3	9.09

Field Data, 2025

3.3.6.5. Ease of Searching for Offers

51.52% of users rated searching for offers as "Good," while 39.39% rated it as "Acceptable." No users rated it as "Excellent." This suggests that the search functionality needs significant improvement, either by enhancing filters, providing smart suggestions, or improving search speed for a smoother user experience.

Table 10: Distribution of Respondents' Opinions on Ease of Searching for Offers

Search for Offers Rating	Frequency (F)	%
Excellent	0	0.00
Very Good	2	6.06
Good	17	51.52
Acceptable	13	39.39
Poor	1	3.03

Field Data, 2025

3.3.6.6. Preferred Method for Searching for Offers

The data shows that 96.7% of participants prefer searching by selecting a category, which reflects a strong preference for guided search that narrows down options and makes the process more precise and user-friendly. Only 3.3% prefer typing keywords, which may suggest that this method is less favored or seen as more time-consuming.

Table 11: Distribution of Respondents' Preferred Search Method for Offers

Preferred Search Method	Frequency (F)	%
Typing Keywords	1	3.30
Selecting Category	32	96.70

Field Data, 2025

3.3.6.7. Ease of Searching for News Channels

The results show that 48.48% of users rated the news channel search feature as "Very Good," while 30.30% rated it as "Good." 15.15% rated it as "Excellent," indicating that the news channel search feature is generally well-received. There were no "Poor" ratings, reflecting the system's success in meeting the needs of users searching for news content. However, there's still room for improvement to make this feature more seamless and efficient, especially for users who prefer quick access to news.

Table 12: Distribution of Respondents' Opinions on Ease of Searching for News Channels

News Channel Search Rating	Frequency (F)	%
Excellent	5	15.15
Very Good	16	48.48
Good	10	30.30
Acceptable	2	6.06
Poor	0	0.00

Field Data, 2025

3.3.6.8. Usefulness of Links to News Channels

The usefulness of links to news channels was rated positively by 54.55% of participants, who rated it as "Very Good." Additionally, 21.21% considered the links "Good," and 9.09% rated them as "Excellent." 15.15% rated them as "Acceptable." These results suggest that the integrated links within the app are generally useful, but there is room to enhance the overall benefit of the content by offering more diverse or personalized links to better meet users' interests.

Table 13: Distribution of Respondents' Opinions on Usefulness of Links to News Channels

Usefulness of Links Rating	Frequency (F)	%
Excellent	3	9.09
Very Good	18	54.55

Good	7	21.21
Acceptable	5	15.15
Poor	0	0.00

Field Data, 2025

3.3.6.9. Summary

This study aims to analyze the distribution of users of the RESILINK platform based on their demographic and professional characteristics, examining how these factors influence the use of the application in the agricultural sector. Data was collected from participants and categorized according to influencing factors, such as age, use of mobile applications in agriculture, agricultural activities practiced, and farm size. The results revealed that the most frequent users of the application were in the 30-49 age range, accounting for 48.48% of all users, followed by the 50-59 and 60+ age groups, which together represented 30.30% of the users. Younger users showed lower engagement with the application, with only 3.03% in the 18-20 age group and 18.18% in the 21-29 age group.

Regarding the use of mobile applications in agricultural activities, the data indicated that 78.79% of users rely on these applications frequently, either often or always, while only 21.21% use them occasionally. No users reported never using mobile applications for agriculture. This suggests widespread digital technology adoption among farmers, with variations in usage based on personal and professional factors. In terms of agricultural activities, all participants (100%) were engaged in farming, while 30.3% also practiced livestock farming. No other agricultural activities were reported.

Concerning land ownership distribution, most users owned small agricultural plots, with 93.94% of participants having land smaller than one hectare, and 6.06% owning between one and five hectares. No participants owned land larger than five hectares. These results suggest that the platform primarily serves small-scale farmers, which may require tailored strategies to support their needs and enhance their use of agricultural technology.

These findings underscore the importance of understanding the demographic and professional characteristics of users to develop the RESILINK platform in a way that meets the needs of the target groups, with a focus on offering content and services that cater to different age groups, technical expertise levels, and agricultural contexts.

In terms of evaluating the preliminary version of the application, user feedback indicated general satisfaction, with areas requiring improvement. Regarding the user interface, 69.70% of participants rated it as "good," 18.18% as "very good," and no participants rated it as "excellent." Although there was general acceptance, 12.12% of users who rated it as "acceptable" or "poor" indicated opportunities for improving the visual design and enhancing user interactivity. The homepage received a "very good" or "good" rating from 66.66% of users, showing positive acceptance but falling short of excellence. Additionally, 24.24% of users rated it as "acceptable" or "poor," highlighting the need for reorganizing content and improving access to core features.

Regarding the ease of creating presentations, 42.42% rated it as "good," while 27.27% rated it as "very good," indicating general acceptability. However, the 30.30% who rated it as "acceptable" or "poor" highlight potential challenges that some users may face, requiring better guidance or simplified processes.

The feature for adding images to presentations received no "excellent" ratings, with 39.39% of users rating it as "acceptable" and 30.30% as "good," suggesting difficulties in using the feature or its limited value for users. This necessitates improvements in the image upload and display experience, along with support for multiple formats.

Search functionality was generally rated as "good" by 51.52% of users, with 39.39% rating it as "acceptable." No users rated it as "excellent," indicating the need for improvements in filters, smart search suggestions, and search speed for a better experience.

When evaluating the preferred method for searching offers, 96.7% of users preferred category-based search, while only 3.3% preferred keyword-based search. This reflects a preference for guided search, which may be more accurate and easier. Regarding the news channel search feature, 48.48% of users rated it as "very good," 30.30% as "good," and 15.15% as "excellent." No "poor" ratings were given, suggesting effective functionality, though there is room for improvement by enhancing speed and access to content.

3.3.7. Recommendations for Improving and Enhancing the RESILINK Platform

3.3.7.1. Enhance User Experience and Interface

- Redesign the interface to make it more engaging and interactive, improving contrast, colors, and ease of navigation.
- Improve the homepage by organizing content more clearly and ensuring easier access to core features.
- Provide interactive guidance within the app to assist users in navigating and utilizing all features efficiently.

3.3.7.2. Enhance Search and Offer Filtering Functions

- Accelerate the search process and improve the algorithm for classifying results based on user preferences.
- Provide the option for keyword-based search alongside category-based search to meet the needs of all users.

3.3.7.3. Improve Image Upload Feature

- Support uploading images in multiple formats and improve upload speed.

- Offer clear instructions for users on how to correctly add images to maximize this feature.

3.3.7.4. Tailor Content and Services Based on User Characteristics:

- Develop training and educational content targeted at different age groups, focusing on the older demographic to increase their use of technology.
- Customize services to cater to small-scale farmers, who make up the majority of users, such as providing tailored agricultural advice suited to small holdings.
- Enhance integration between farming and livestock management within the app, as a significant proportion of users engage in both sectors.

3.3.7.5. Improve News Channel Functionality

- Enhance the speed of news loading and provide customized alerts on relevant agricultural news.
- Allow users to personalize news content based on their interests and fields of work.
- Improve the user experience when browsing news links by organizing content to be more visually appealing and easier to read.

3.3.7.6. Encourage Younger Age Groups to Use the Application

- Develop interactive features aimed at younger users, such as short educational videos and discussion forums on the latest agricultural technologies.
- Collaborate with universities and agricultural institutions to promote the app among students and young farmers and encourage its use in research and training.
- Offer incentives such as reward points or certificates to active users to enhance engagement among the youth.

3.3.7.7. Improve Presentation Creation Experience

- Simplify the presentation creation process by adding ready-made templates and quick editing options.

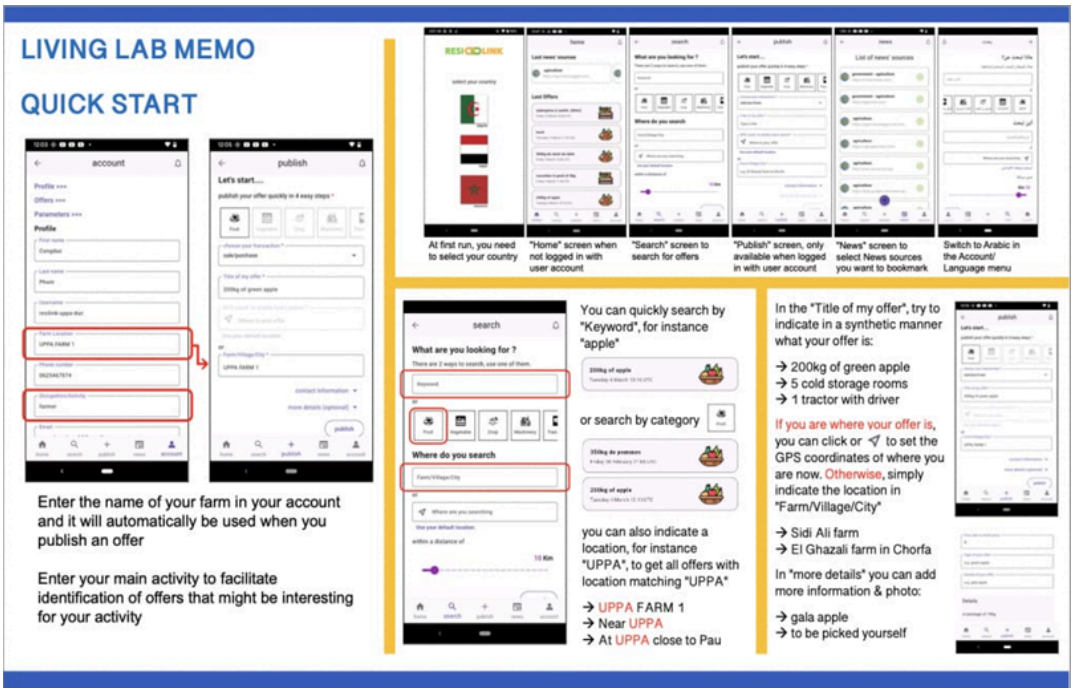
- Provide visual tutorials or user guides for new users to facilitate data entry and presentation creation.
- Improve integration with other apps to make data entry and importation from external sources easier.

These recommendations will help enhance the user experience, increase app adoption among diverse user groups, and improve the efficiency of the services provided through the RESILINK platform.

3.4. Egypt – ARC – 2nd Evaluation Program Session – Mar.2025

3.4.1. Introduction

The campaign focused on the evaluation of the RESILINK Platform, particularly on User Satisfaction Analysis and Improvement Recommendations. Data for this report were collected and analyzed through living labs with the participation of six active farmers who were involved in the first phase session of the Evaluation Program. Their input provided deeper insights into their direct experience with the platform and their actual needs. The report covers various data points including age, nature of agricultural activities, farming experience, and the geographic areas where the app is used. The goal is to present a clear picture that helps improve the platform's performance to better meet the diverse needs of users. Through this analysis, we aim to derive practical insights that contribute to the development of the RESILINK platform in line with farmers' aspirations, enhancing its efficiency in serving digital agriculture.




PRIMA

3.4.2. Study Summary & Key Findings

This report aims to provide a comprehensive analysis of the respondents' distribution who used the RESILINK platform and their evaluation of various features and services it offers. Data was collected through living labs involving six active farmers who participated in the first phase of the evaluation. The report focuses on several aspects, including the user interface, search ease, image uploading for listings, and news channel integration.

3.4.2.1. Demographics and Agricultural Experience

- Most participants (50%) have between 16 to 20 years of farming experience.
- All participants regularly use mobile applications for agricultural purposes.

3.4.2.2. Positive Evaluations of the User Interface

- The user interface and home page received high satisfaction ratings, with 66.7% and 100% of participants rating them as excellent, respectively.
- The ease of creating listings and uploading images was rated as excellent or very good by the majority.

3.4.2.3. Search and News Channel Accessibility:

- 83.3% of respondents found it very easy to search for listings and news channels.
- Links to news channels were found to be highly useful, with 83.3% rating them as excellent.

3.4.2.4. Recommendations

- Maintain and further develop the high-quality user interface in line with user needs
- Improve the search process by introducing additional filters or categorization features
- Provide notifications or customizable news channel options to meet varied user preferences

3.4.2.5. Conclusion

The RESILINK application serves as an effective tool to enhance agricultural productivity through digital technology. The findings reflect general user satisfaction regarding ease of use and the usefulness of various features, contributing to an enriched and more engaging user experience.

3.4.3. Recommendations for the Development and Improvement of the RESILINK Platform

3.4.3.1. Enhancing the User Interface (UI/UX)

- **Increase interactivity and clarity:** Although highly rated, interactivity can be improved by adding elements like animations or interactive guidance to support new users.

- **Support customization:** Allow users to personalize their interface (e.g., favorite menus, theme color adjustments).

3.4.3.2. Strengthening the Search Feature

- **Add advanced filters:** Filters by agricultural category, location, price, and time would enhance search accuracy.

- **Voice search:** Integrate a voice search function for users who prefer or require an alternative to typing.

3.4.3.3. Improving Media Support (Images & Videos)

- **Image editing tools:** Enable in-app editing features like cropping, text overlay, or watermarking to help farmers present their products professionally.

- **Video support:** Allow uploading of promotional videos, which can significantly boost customer engagement.

3.4.3.4. Enhancing News Channels and Educational Content

- **Specialized news channels:** Develop a system that recommends news based on user interests or agricultural activity, with push notifications.

- **Educational content:** Provide tutorials, training videos, and interactive farming lessons to support users, especially beginners.

3.4.3.5. Improving Listing Creation

- **Pre-designed templates:** Offer professional templates for listing creation to simplify the process.

- **Interactive features:** Include features such as ratings and user comments to boost trust and engagement.

3.4.3.6. Integrating with Other Platforms

- **Social media integration:** Facilitate sharing of agricultural listings on platforms like Facebook, Instagram, and Twitter.
- **Third-party app integration:** Link with apps for weather forecasting or market news to provide real-time, relevant agricultural information.

3.4.3.7. Enhancing Technical Support and User Interaction

- **Live support:** Offer real-time assistance via chatbot or live agents.
- **Feedback system:** Introduce an easy-to-use mechanism for collecting user feedback and suggestions.

3.4.3.8. Expanding Agricultural Tools

- **New management features:** Add tools for inventory management or crop planning to help farmers better organize their work.
- **Data analysis tools:** Provide features for analyzing field data, such as soil analysis or crop yield estimates based on user inputs.

These recommendations aim to make RESILINK a more comprehensive and efficient tool, boosting user engagement and increasing its adoption in the agricultural sector.

3.5. Morocco – INRA – Evaluation Program Session – Rabat-Salé-Kénitra Region – Apr.25

3.5.1. Methodological approach

3.5.1.1. Identification of Agricultural Stakeholders

We identified various agricultural stakeholders who could benefit from the RESILINK application, including small farmers, agricultural cooperatives, and some decision-makers from the Moroccan Ministry of Agriculture, such as the National Office for Agricultural Advisory Services.

Subsequently, we compiled a list of potential stakeholders and assessed their level of interest and engagement in participating in the Evaluation Program and the Living-Lab Piloting Program.

3.5.1.2. Planning the Sessions

We planned the Evaluation Program sessions based on the number of agricultural stakeholders to be involved and the availability of resources. We set the dates and locations of the sessions while considering the participants' availability and logistical constraints.

Initially, a session was organized with six researchers and technicians at the National Institute for Agronomic Research. Later, we conducted an Evaluation Program session at a "Service Station Farm" in the village of Labrachoua, in the Rabat-Salé-Kénitra region of Morocco, to stay as close as possible to farmers and their working environment.

3.5.1.3. Preparing Presentation Materials

We developed a structured questionnaire for Evaluation Program sessions. This questionnaire included open-ended and specific questions to encourage participants to share their opinions, experiences, and suggestions for improvement.

We also prepared presentation materials, including an oral presentation in the local language and a demonstration video to introduce the RESILINK application to participants and explain its functionality, features, and objectives.

3.5.1.4. Inviting Participants

We identified potential participants for each Evaluation Program session and sent them personalized invitations.

During the invitation process, we clearly explained to participants the purpose of the Evaluation Program and the next Living-Lab Piloting Program and the importance of their contribution to improving the RESILINK application.

3.5.1.5. Facilitating the Sessions

Four researchers and one technician from the National Institute for Agronomic Research in Morocco acted as facilitators to lead the Evaluation Program sessions, ensuring that all participants had the opportunity to express themselves and share their perspectives. We worked both indoors and outdoors to make the experience more enjoyable and reduce fatigue. This setting also helped strengthen our bond with the participants to retain them for future testing phases. We made sure to foster an open and collaborative atmosphere where participants felt comfortable sharing their opinions and asking questions.

3.5.1.6. Collecting and Analyzing Feedback

We carefully recorded participants' proposals and observations throughout the day. To allow them to explore the application at their own pace and test it further, we gave them a two-week period. After 15 days, we synthesized their feedback.

We documented all collected comments, suggestions, and emerging ideas during the Evaluation Program sessions.

To facilitate feedback collection, we also shared an online questionnaire with participants who could fill it out. The link to the questionnaire is as follows: Google Forms Questionnaire

3.5.1.7. Ethics

Informed consent forms are signed by the participants. All data were anonymized to ensure confidentiality and adherence to ethical principles in research.

3.5.2. Main results from feedback of participants

3.5.2.1. Profile of the Participants

The participants came from diverse backgrounds and held various professional statuses. To ensure balanced and relevant representation, we made sure to include individuals from different fields, including farmers, decision-makers, and researchers. Additionally, the selection of participants also considered gender to promote diversity of viewpoints and experiences.

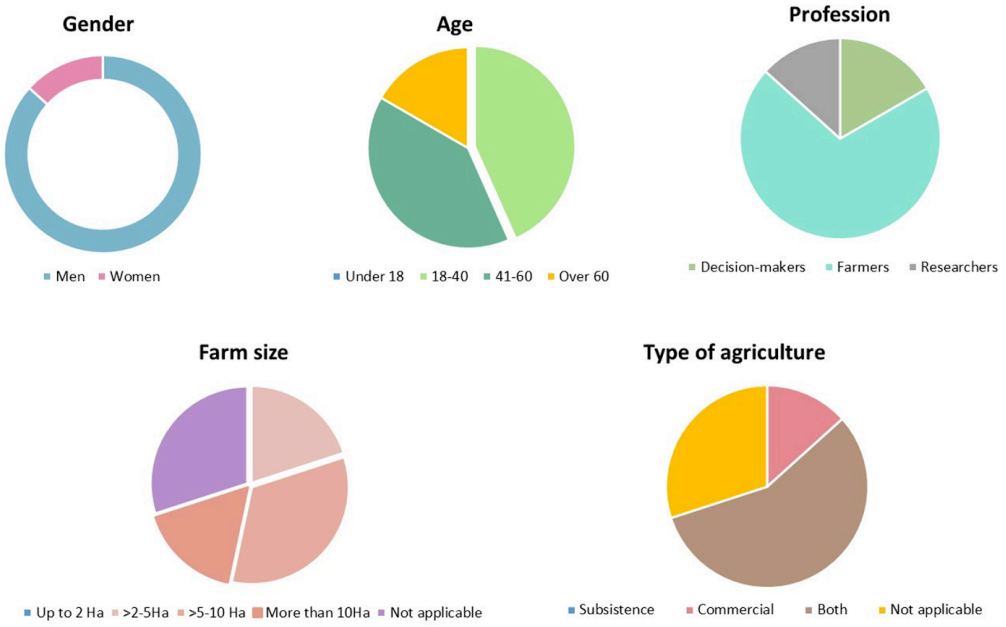


Figure: Profile of the Evaluation Program Participants

A total of 30 people participated in the Evaluation Program sessions, including 4 women and 26 men. The participants were from different age groups, reflecting a generational diversity that encouraged intergenerational exchanges and enriched discussions. This heterogeneous panel allowed for a cross-section of varied perspectives and fostered constructive debates on the topics addressed in the Evaluation Program.

Photos Taken During the Evaluation Program Held in Had Labrachoua town, in Rabat-Salé-Kénitra Region, Morocco.

3.5.2.2. Ease of Use

Feature	Participants Feedbacks
General Design and Ergonomics	- Participants felt that the application lacked visual appeal and could benefit from improvements in design and ergonomics to make it more pleasant and intuitive. A more modern and aesthetically pleasing interface could encourage faster adoption and greater user engagement.
Search Function	- Participants found the search functionality easy to use, which enhanced their experience.
Location Determination and Viewing Results	- Most participants found it easy to determine the location of offers and view the corresponding results.

Language Accessibility	- The Arabic version faced issues, and there was a recurring request for better language support. - Additionally, participants suggested allowing visitors to change the application's language without needing an account.

3.5.2.3. Usefulness

Feature	Participants Feedbacks
Access to Agricultural Information	-Participants appreciated having access to current events in the agricultural sector. - They suggested incorporating more detailed industry updates, such as meteorological data and alerts from organizations like ONSSA regarding phytopathologies or active ingredient resistance.
Offer Display and Additional Categories	- The offer display was found to be satisfactory and well-illustrated - But there were suggestions to add categories such as livestock products or storage options to make the platform more comprehensive.
Sharing Information	-Participants highlighted the importance of integrating a feature for sharing information between farmers, advisors, and researchers, as well as allowing decision-makers like the National Agricultural Advisory Office and SONACOS to publish news and events directly on the platform
Account Access and Security	-The requirement for a confirmed account was appreciated as it adds a layer of trust and security, enhancing the platform’s utility for users.

3.5.2.4. Reliability and Performance

Feature	Participants Feedbacks
Technical Issues	- Participants reported several technical issues, including the malfunction of the Arabic version, difficulties in publishing offers, and problems when creating new accounts. - Additionally, there were concerns regarding the functionality of the password recovery feature.
Payment Issues	- There were concerns about payment confirmation via WhatsApp, and a preference for cash payments was noted
System Enhancements	- Participants suggested the integration of features such as a user rating system, comments, and tracking the number of transactions per service provider or seller to improve the performance and reliability of the platform.

3.5.2.5. Overall User Experience

Feature	Participants Feedbacks
Application Launch	No specific feedback was noted regarding the launch phase of the application
User Interaction	The overall user experience could be improved by enhancing the design and providing more visually appealing elements. A streamlined, modern interface was seen as a key factor in making the application more engaging.

Posting an Announcement	- Several suggestions were made to improve the announcement posting process, such as introducing a pre-publication validation system to ensure the quality of announcements. - Additionally, there was a proposal to allow sponsored content from companies like fertilizer producers, phytosanitary product suppliers, and agricultural equipment providers to boost platform visibility.

3.5.2.6. Conclusion

Farmers and decision-makers greatly appreciated the concept of RESILINK. However, some criticisms emerged, particularly regarding the interface and user experience.

On one hand, they feel that the application lacks visual appeal and that improvements in its design and ergonomics are necessary to make it more pleasant and intuitive. A more modern and aesthetically pleasing interface could encourage faster adoption and greater user engagement. On the other hand, although the application seems easy to use for us, farmers face technical difficulties that make it more complex and time-consuming for them. These obstacles could hinder their engagement, especially since the agricultural community relies heavily on experience-sharing and word-of-mouth. A negative first impression could therefore impact the overall perception of the tool.

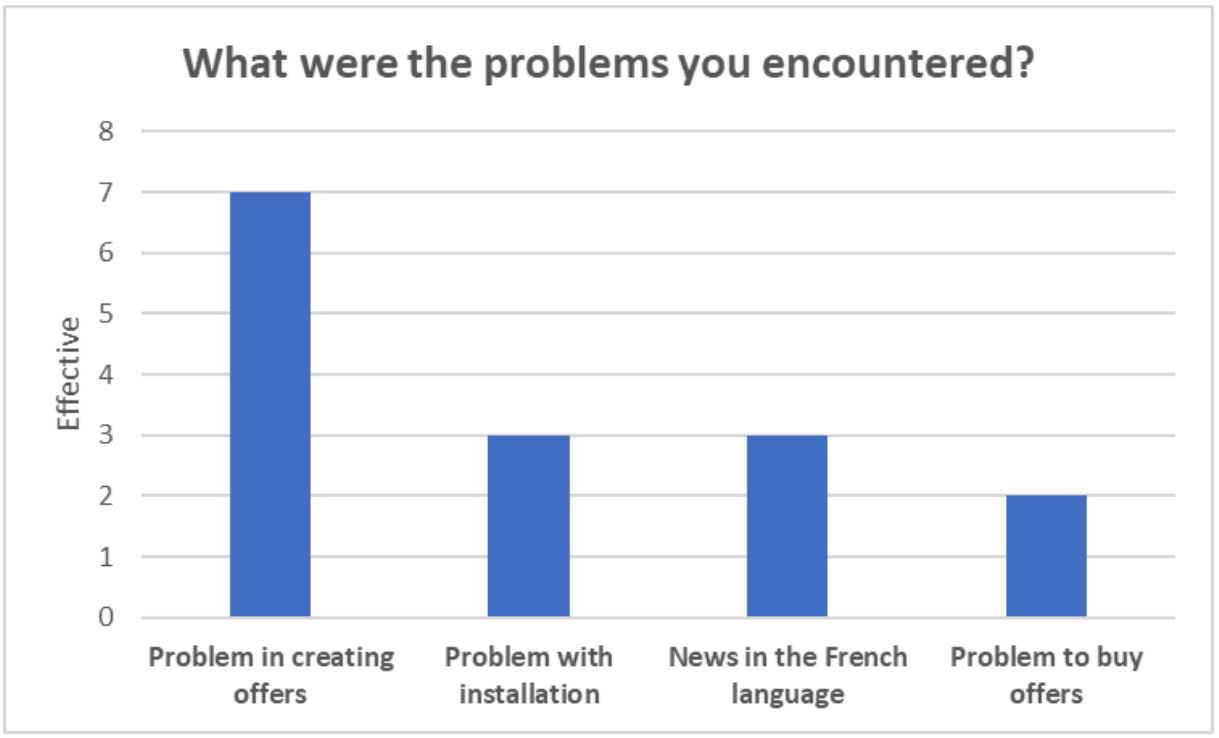
Thus, it is crucial to enhance the application's appearance and resolve technical issues from the outset. Providing a smooth and enjoyable user experience from the very first uses is a key factor in encouraging the adoption of RESILINK and preventing negative feedback from spreading within the farming community.

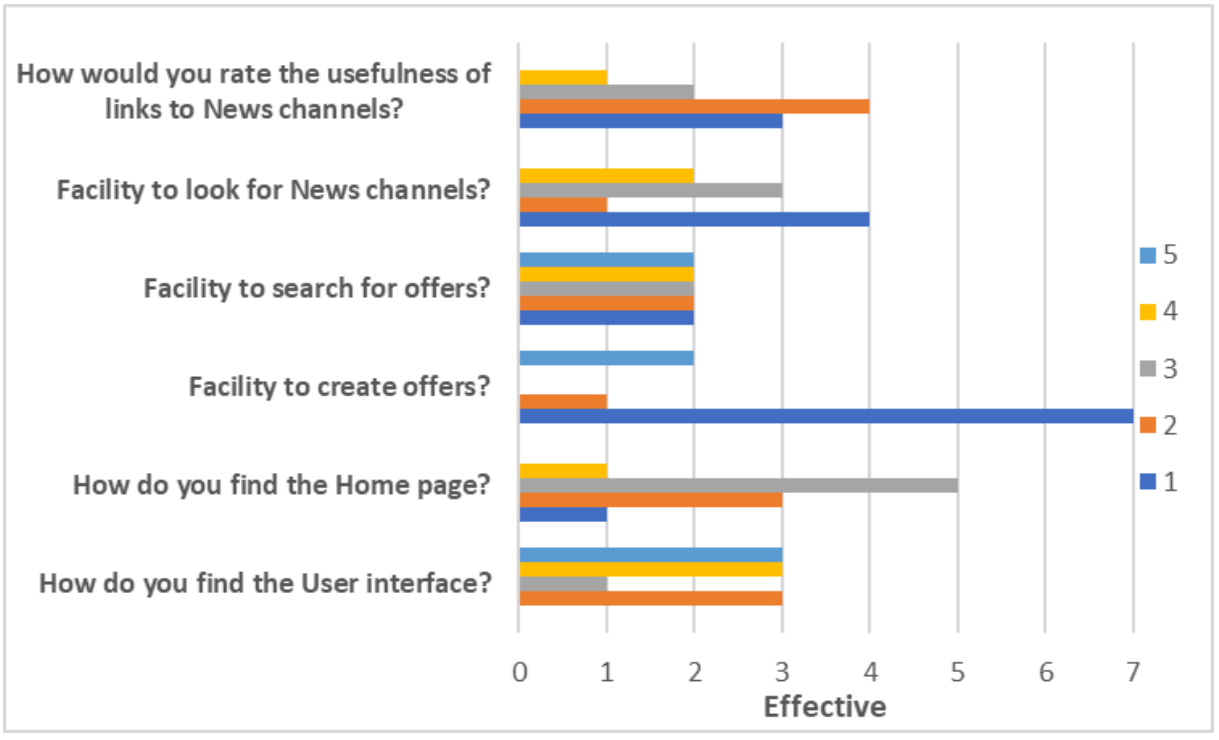
3.6. Morocco – USMS – Evaluation Program Session – Béni Mellal-Khenifra region

As part of the pre-test phase of the RESILINK mobile application, tests were carried out with PhD students and farmers from different age groups, ranging from 21 to 59.

3.6.1. Main results from feedback of participants

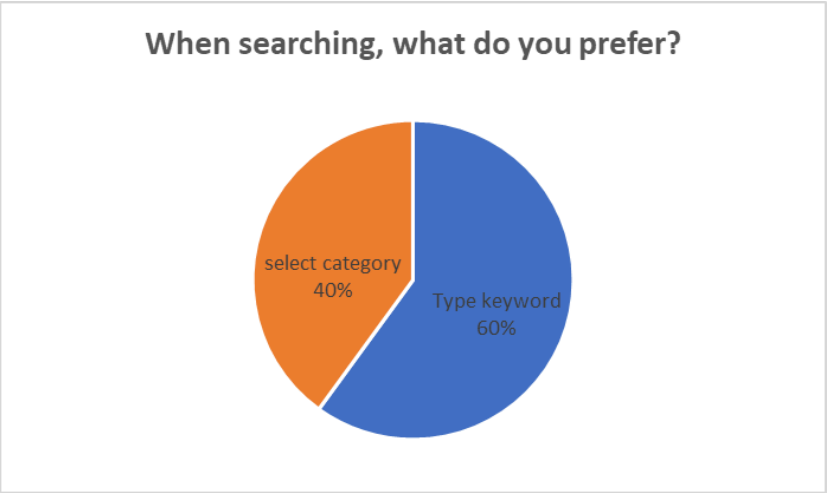
The testers, although accustomed to using mobile applications, encountered certain difficulties in using the application. Among the problems identified, obstacles in posting offers were frequently reported, as were difficulties in installing the application and creating accounts. Regarding the news interface, testers highlighted issues related to the language of the content, which is mostly in French, while most users only understand Arabic.



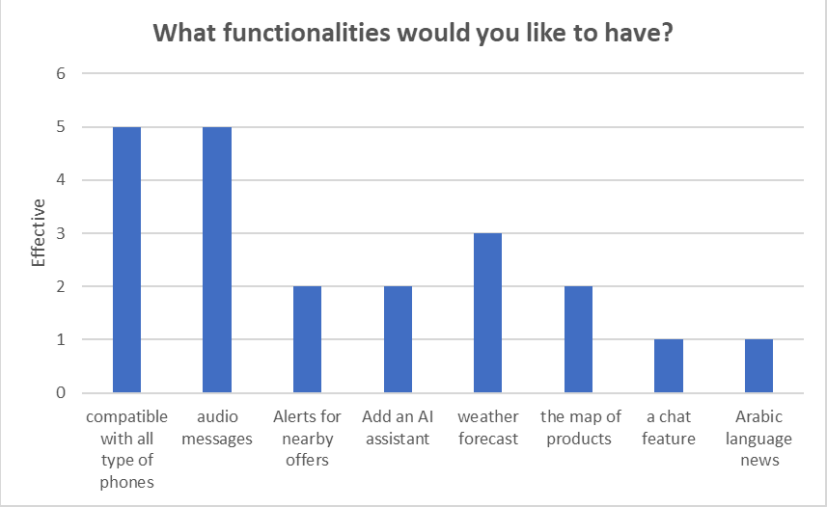


Several suggestions were made to improve the application. For the creation of offers, testers recommended optimizing the offer creation feature, particularly the section dedicated to details. They also proposed choosing more attractive colors and logos for the interface. To further simplify account creation, they suggested adding options such as registration via Gmail or phone number, in addition to manual registration. Regarding the search for offers, 60% of testers preferred using keyword search. They also expressed a preference for adding a voice search feature, which would be particularly useful for farmers who cannot write.

Additionally, they want the offers to be visible nationwide and the news to be available in Arabic.



In terms of additional features, testers expressed their desire to include weather forecasts, audio messages, alerts for new offers, and an AI-based assistant. They also requested that the application be compatible with all phones, whether running on Android or iOS. Finally, for news, a translation into Arabic would be essential to meet the linguistic needs of the majority of users. These feedback points highlight clear expectations regarding ergonomics, customization, and practicality, emphasizing the importance of adapting the application to the real needs of its end users.



4. First results from the Living-Lab Piloting Program

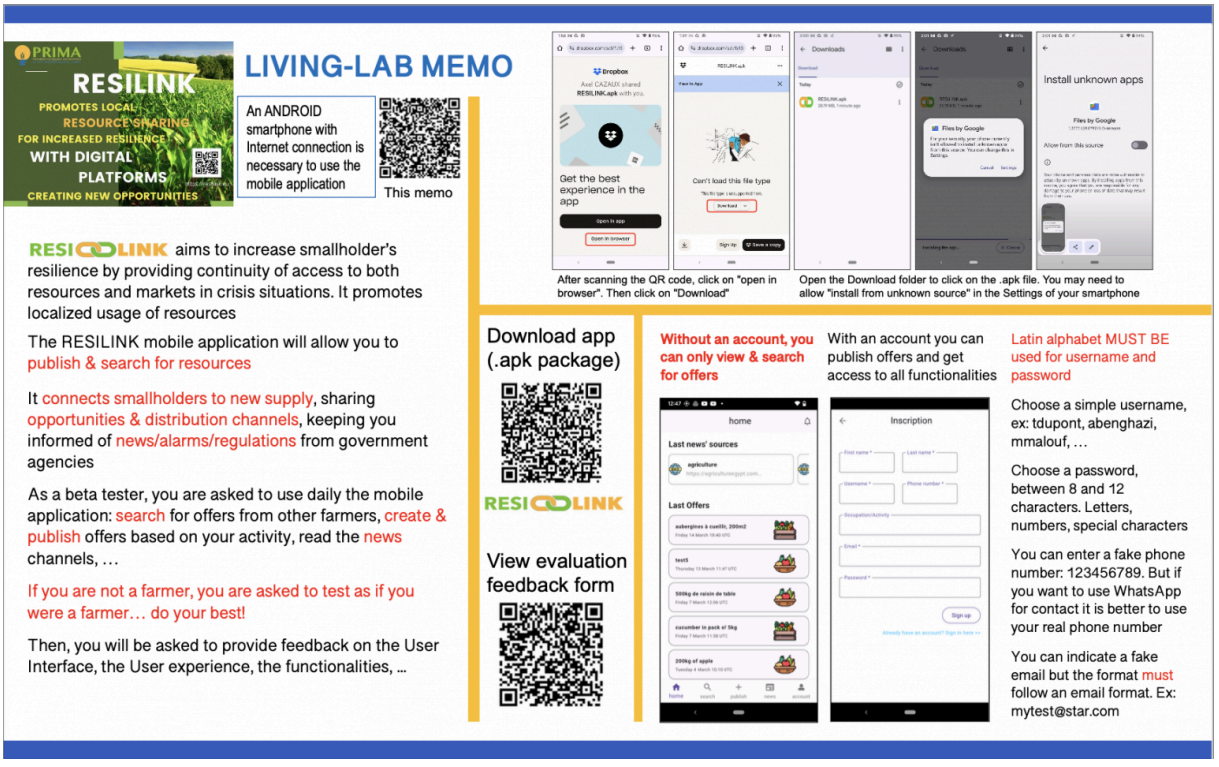
Starting from March 2025, RESILINK started the Living-Lab Piloting Program. Therefore, during the period March 2025 to end of April 2025, we had both the Living-Lab Piloting Program and the Evaluation Program running. We described in the following sub-sections the first results of the Living-Lab Piloting Program of RESILINK Platform by small farmers.

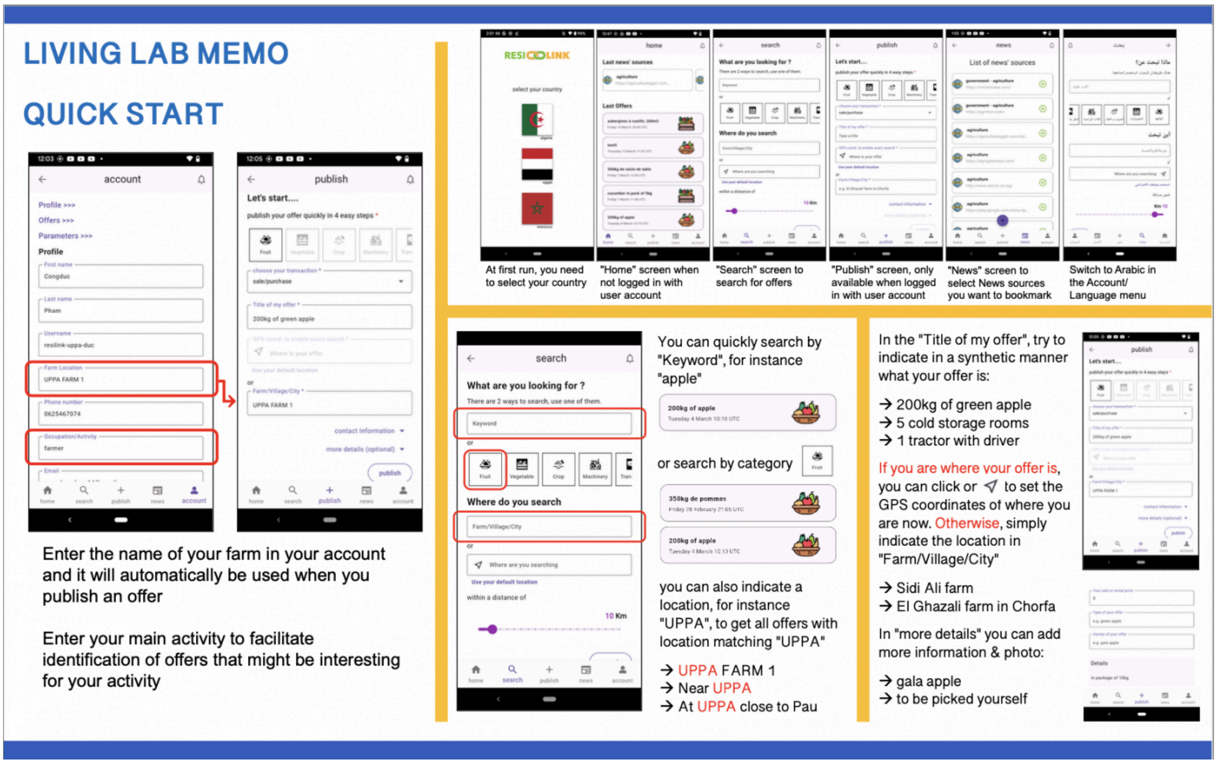
4.1. Preparation of the Living-Lab Piloting Program

2 preparatory meetings have been organized with partners in order to carefully plan the Living-Lab Piloting Program, the expected results and how to collect feedback.

Title	Date	Subject	Participants
TM-PRE-LIVING-LAB-JAN-25	23/01/25	Preparation of the Living-Lab	UPPA, ORANGE
TM-PRE-LIVING-LAB-FEB-25	20/02/25	Preparation of the Living-Lab	ALL

Several training and presentation materials have been produced to run the Living-Lab Piloting Program as well as News/Posts on the web site.




LIVING LAB MEMO
QUICK START
Enter the name of your farm in your account and it will automatically be used when you publish an offer
Enter your main activity to facilitate identification of offers that might be interesting for your activity
At first run, you need to select your country
"Home" screen when not logged in with user account
"Search" screen to search for offers
"Publish" screen, only available when logged in with user account
"News" screen to select News sources you want to bookmark
Switch to Arabic in the Account/ Language menu
You can quickly search by "Keyword", for instance "apple"
or search by category
you can also indicate a location, for instance "UPPA", to get all offers with location matching "UPPA"
→ UPPA FARM 1
→ Near UPPA
→ At UPPA close to Pau
In the "Title of my offer", try to indicate in a synthetic manner what your offer is:
→ 200kg of green apple
→ 5 cold storage rooms
→ 1 tractor with driver
If you are where your offer is, you can click or to set the GPS coordinates of where you are now. Otherwise, simply indicate the location in "Farm/Village/City"
→ Sidi Ali farm
→ El Ghazali farm in Chorfa
In "more details" you can add more information & photo:
→ gala apple
→ to be picked yourself


PRIMA
RESILINK
PROMOTES LOCAL RESOURCE SHARING FOR INCREASED RESILIENCE
WITH DIGITAL PLATFORMS
mobile app
simple to use
link with others
keep informed
distributed architecture
deploy when needed
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platform-of platforms
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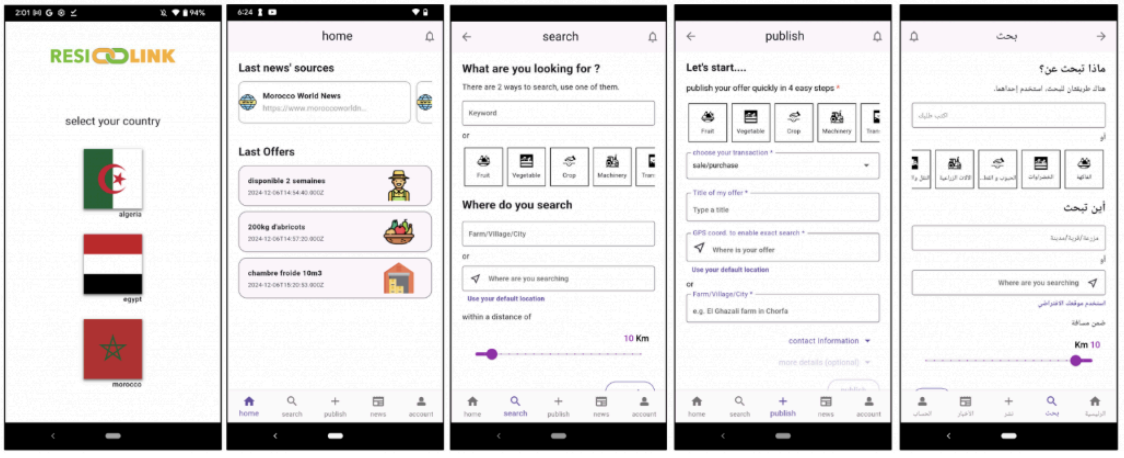
In the Piloting section of the web site: https://resilink.eu/piloting

IMPLEMENTING THE LIVING LAB EVALUATION PROGRAM – 2025

Starting in 2025, RESILINK is now implementing the Living Lab Evaluation Program where several groups of farmers will use on a longer time period, typically several weeks, the RESILINK Digital Platform and the RESILINK Mobile App, to provide feedbacks. Partners is Algeria, Egypt and Morocco are ready to launch the Living Lab program with their farmers & stakeholders partners. Updated documentations and posters supporting the Living Lab Evaluation Program are customized for each country.

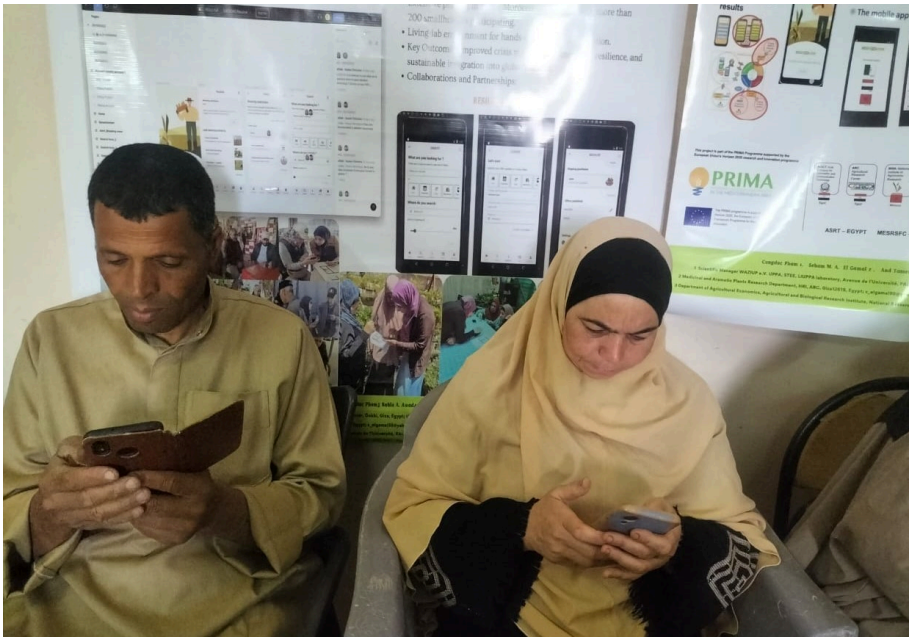
In the News section of the web site: https://resilink.eu/news

Feb. 24th, 2025. The RESILINK Mobile App and the RESILINK Digital Platform Server is ready for the Living-Lab Evaluation Program. Both the mobile application and the digital platform server developed by UPPA are much more robust and faster to support a larger number of users. Arabic translation has also been improved and a larger selection of news & information sources have been listed for users to bookmark them. Partners is Algeria, Egypt and Morocco are ready to launch the Living Lab program with their farmers & stakeholders partners.



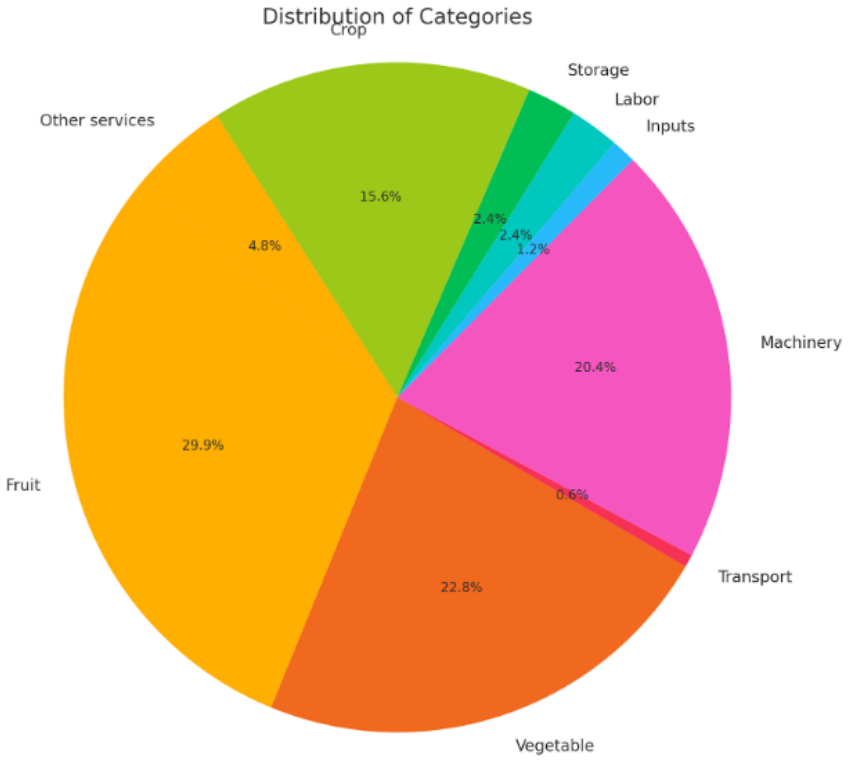
4.2. Launching Living-Lab Piloting Program

With feedback and synthesis from the Evaluation Program, RESILINK launched the Living-Lab Piloting Program in March 2025 (some partners still run additional Evaluation Program sessions though).



4.3. Creation of offers

On the date of Apr. 28th, and from March 1st, we had 168 offers from 20 users for the initiation of the Living-Lab Piloting Program.



4.4. GOVERNANCE, PUBLIC POLICY, LINK WITH STAKEHOLDERS AND LOCAL ACTORS

RESILINK's partners in Algeria, Egypt and Morocco have been working with local stakeholders for many years and those stakeholders have been invited to both the Evaluation Program sessions and Living-Lab Piloting Program.

Country	Stakeholder	Location/city
Morocco	National Agricultural Advisory Office	Rabat
Morocco	Regional Directorate of Agriculture in Rabat, Salé, Kenitra	Rabat
Morocco	Provincial Directorate of	Rabat

	Agriculture in Rabat	
Morocco	Rabat-Salé-Kénitra Chamber of Agriculture	Kénitra
Morocco	Agricultural Advisory Center of Zehiliga	Zehiliga
Morocco	Agricultural Advisory Center of Ain Sbit	Ain Sbit
Morocco	Agricultural Advisory Center of Khémisset	Khémisset
Morocco	Agricultural Advisory Center of Oulmès	Oulmès
Morocco	Agricultural Advisory Center of Roummani	Roummani
Morocco	Agricultural Advisory Center of Sidi Yahia Zayer	Sidi Yahia Zayer
Morocco	Agricultural Advisory Center of Skhirat	Skhirat
Morocco	Agricultural Advisory Center of Tiflet	Tiflet
Morocco	Chamber of Agriculture	AZILAL
Morocco	Provincial Department of Agriculture	AZILAL

Morocco	Agricultural Advisory Center (CCA)	AZILAL
Morocco	Agricultural Advisory Center in Tabant	Tabant, Aït Bouguemez (AZILAL)
Morocco	Regional Directorate of Agricultural Advisory	Beni Mellal
Morocco	Regional Chamber of Agriculture	Beni Mellal
Morocco	Provincial Directorate of Agriculture	Beni Mellal
Morocco	Regional Office for Agricultural Investment (ORMVAT)	Fquih ben Saleh
Morocco	Regional Directorate of Agriculture	Beni Mellal
Egypt	Agricultural Research Center (ARC)	Giza
Egypt	National Research Center (NRC)	Giza
Egypt	Egypt Academy of Scientific Research and Technology (ASRT)	Cairo
Egypt	Scientific Society of Agricultural Extension	Cairo
Egypt	Bani Sweif Agriculture Directorate	Bani Sweif
Egypt	Agricultural Administration of Biba	Bani Sweif
Egypt	Agricultural Association of Biba Island	Bani Sweif

REFERENCES

Acronyms List

Acronym	Explanation

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