UPSCALE

UPSCALING THE BENEFITS OF PUSH-PULL TECHNOLOGY FOR
SUSTAINABLE AGRICULTURAL INTENSIFICATION IN EAST AFRICA

D8.6:
Knowledge Exchange Hub

April 2022

UPSCALE

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Abstract:	This deliverable presents UPSCALE's web-based Knowledge Exchange Hub (KEH), falling under the framework of Work Package 8 and the first iteration in the execution of Task 8.2. The KEH report is a living document that is to be revised and updated throughout the project (M18 and M48) in line with updates of the KEH itself. The report aims to summarize the strategy and concrete actions to follow by the consortium in the scope of knowledge exchange efforts. In order to support these efforts, the KEH report contains the concept, description and technical specification of the online content.

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PU	Public Deliverable	✔
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
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CA	Consortium Agreement
DC	Dissemination and Communication
EC	European Commission
EU	European Union
GA	Grant Agreement
GDPR	General Data Protection Regulation
IPR	Intellectual Property Rights
KEH	Knowledge Exchange Hub
KPI	Key Performance Indicator
SCDP	Strategic communication and dissemination plan
MAC	Multi-actor communities
WP	Work Package
Q&A	Questions and Answers

1 Summary

This deliverable D8.6 introduces the UPSCALE Knowledge Exchange Hub (KEH), which is a comprehensive online platform for effective dissemination of knowledge and project results among stakeholders, collecting feedback and ensuring transfer of sustainable intensification practices and relevant push-pull technology and related market information to farming, research and policy communities and wider society. The KEH has been structured in a way that is informative, easy to navigate and can target all different types of stakeholders. It is linked to UPSCALE social network channels that have been providing up to date information about the project since the project was launched. The KEH functions as an online repository for advocacy knowledge resources through compilation of success stories, scientific papers, policy briefs and best practice reports. Moreover, the KEH provides regular updates on the status of the project to all stakeholders, as well as targeted development of information sharing and capacity-building materials (posters, pamphlets, technical advisory notes, brochures, etc.) and media outreach for different stakeholder audiences (farmers, policymakers, businesses). KEH content will be migrated and regularly edited and uploaded on https://upscale-hub.eu/; the web page itself will be improved, and more sections added gradually as the project evolves. This deliverable aims to complement the online platform by providing a written report describing the technical architecture and main functionalities of the KEH.

This deliverable consists of the following sections:

• **Chapter 1**:
This chapter summarises the aim of this deliverable and provides a summary of this document.
• **Chapter 2**:
The second chapter provides a brief introduction to the UPSCALE project and its KEH related objective.
• **Chapter 3**:
This chapter introduces main KEH categories, their functionalities and KEH technical specification.
• **Chapter 4**:
The fourth chapter gives a short conclusion and outlines the further steps.

2 UPSCALE Project Introduction

2.1 UPSCALE Project in Brief

UPSCALE is an H2020 Research & Innovation project worth €7.66 million, which started in November 2020 and will last for 5 years. The project aims to take key steps to realize the transformative potential of push-pull technology by expanding its scope and applicability from individual fields to whole landscapes and regions, and from cereal to other important crops and cultivation systems. The overall goal is to address food security, livelihoods and climate change resilience in the sub-Saharan region of East Africa, while reducing the environmental impact of agricultural practices. The project activities are conducted in five main study regions within East African countries (Ethiopia, Kenya, Uganda, Rwanda, Tanzania), each of these regions being selected to encompass different biophysical (including climate, soils, topography) and farming system characteristics.

2.2 UPSCALE Project Objective number 7

The UPSCALE project aims to achieve the high-level objectives by developing solutions for targeted optimal implementation and dissemination of push-pull technology, evaluate the cross-scale impacts

of push-pull expansion, improve, expand and integrate push-pull principles across cropping systems and identify pathways to overcome barriers to push-pull adoption. This will be managed through active engagement of multi-actor communities that participate in the case study activities. The Knowledge Exchange Hub is a direct result of achieving Objective 7 presented below.

O7	Establish a knowledge exchange hub and communities of practice for optimal flow of information between stakeholders at all levels for active communication, coordination, dissemination and facilitation of sustainable intensification methods including push-pull in different systems and regions of East Africa.

2.3 UPSCALE Dissemination and Communication Objectives

UPSCALE dissemination and communication strategies directly translate to KEH objectives. The Key Performance Indicators (KPIs) are closely related to both UPSCALE stakeholders' engagement and the exploitation activities with specific dissemination and communication objectives (DCO) presented below in Table 1.

Table 1 List of Dissemination and Communication Objectives

DCO1	Transfer knowledge and project results among key stakeholder groups (agricultural extension, farmer groups, policymakers) on the benefits of the push-pull technology for sustainable agricultural intensification with particular focus on women and youth;
DCO2	Ensure that the wider farmer community of East Africa as well as Europe, other agro-environmental actors such as policy- and decision-makers, and the public are informed and enabled to use UPSCALE results, experiences and lessons learnt.
DCO3	Foster synergies with other EU-Africa initiatives, capitalising on existing dissemination channels and networks.
DCO4	Support further dissemination of the push-pull technology in Africa and Europe, as well as dissemination of the project results and outputs in research, public policy and new market-driven initiatives.

These specific dissemination and communication objectives are crafted to influence behaviour, develop opinion and to raise awareness of specific target groups. Through the collection of feedback during Multi-Actor Community (MAC) meetings and active engagement with the stakeholders, practical experience and the best practices that emerge are then shared on the KEH.

3 Knowledge Exchange Hub

3.1 Objectives and progress

The main KEH objective is to serve beyond the project phase for long-term, optimal flow of information between stakeholders at all levels for active communication, coordination, dissemination and facilitation of sustainable intensification practices, including, but not limited to push-pull practices in different systems and regions of Eastern Africa. More specifically, the KEH aims to:

• Serve as an umbrella hub to harmonize and increase the visibility of various sustainable intensification efforts and their synergies in East Africa, in collaboration with stakeholders and existing projects identified in MACs.

Progress: Contacting organisations and stakeholders outside UPSCALE consortium to sign memorandums of understanding for easier dissemination and visibility of project results and SI practices. Current/Expected results: 1/20 MOU signed.

- Receive a regular flow of content input from MACs' participative knowledge-building materials and updates prepared with MAC stakeholders, relevant for a broader community and the general public.
  Progress: Partners are regularly sending dissemination materials; communication is ongoing as the national and regional MAC meetings spur interest from the community. More dissemination material is expected later in 2022 due to the seasonality of the work (planting and harvest) including how-to videos and photos from field visits.

- Enable further exchange between MAC members and other interested parties beyond project events and the project's runtime, thus enhancing the sustainability and long-term follow-up and snowball potential of the MACs.
  Progress: As the project is still in the phase of establishing and supporting the multi-actor communities, we are currently focused on introducing the interested parties to our content and practice.

- Represent an online repository for communication and dissemination of materials, as well as an interactive platform with strong regional and local links for knowledge exchange and dissemination directly at the level of communities, farmers, local NGOs, and extension agencies.
  Progress: In addition to sharing related content on social media channels, we currently host materials produced predominantly by UPSCALE consortium partners. The vision of KEH near the end of the project contains feeds from other websites and more local community knowledge exchange content (including content in local languages).

- Provide easy navigation and user experience on Android devices, smartphones in particular.
  Progress: The website is optimised for viewing on Android devices, but improvements are underway. Most importantly the layout change will contribute to greater ease of use and notable improvements regarding navigation.

KEH is divided into 8 categories according to the type of content. Table 2 below lists the categories as presented in Figure 1.
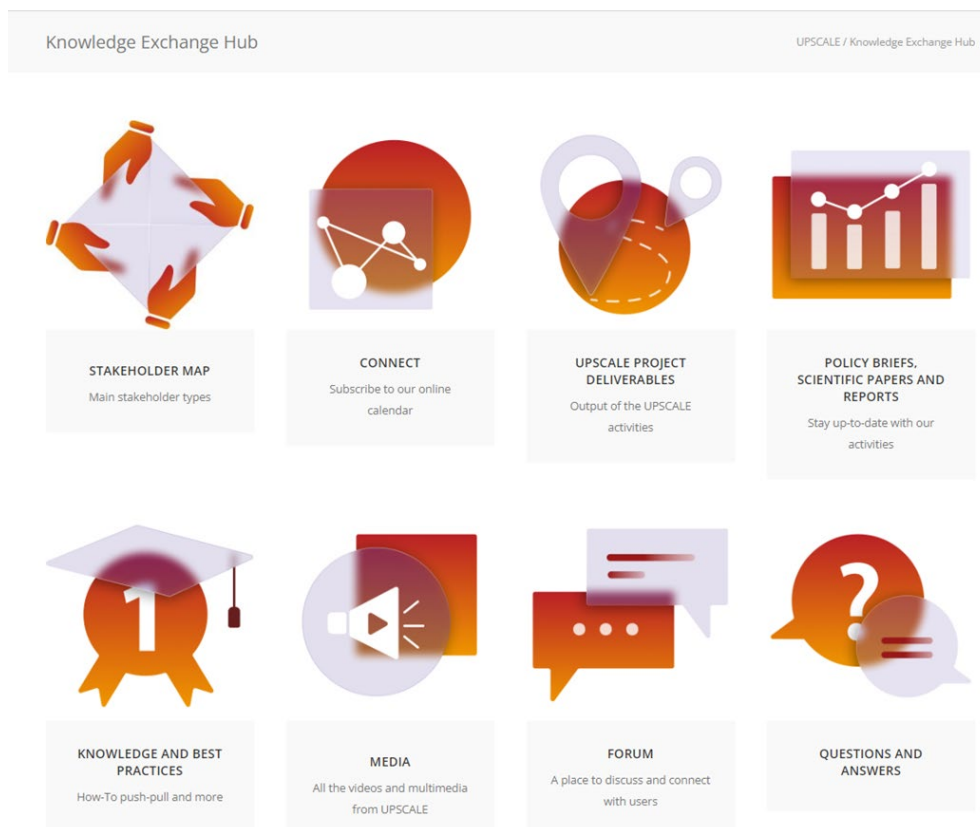

Figure 1 KEH main menu

The current content will be updated as the project progresses, more importantly, it is the base for the next layout shift in the KEH. The main page will be a dynamic extract from each of the categories, with prominent items to draw the attention (e.g., posts, galleries) and side widgets for some of the content (e.g., forum, events calendar). The expected result is to reduce the time and effort spent on navigation, make the view more appealing to visitors and showcase and support the dynamism of the interactive Hub of activity. To accentuate the social component, we plan to add a twitter sidebar and the project news on top of the page with easy to share content, as well as a feed on upcoming news & events at EU – AU level involving sustainable intensification (SI). Further, an additional 9th category 'Sustainable Intensification Worldwide' with direct links to other projects on SI including clustered ones is planned to be included and in effect by June 2022.

Table 2 KEH main menu categories including current content description and planned updates

Stakeholder Map	A graphical representation of main stakeholder types identified in MAC meetings and dedicated work package deliverables. Planned updates: This section will be expanded by an accompanying table with relevant organization names listed with respective hyperlinks. The initial version of the table will be online in July 2022.
Connect	Online calendar with universal downloadable events and subscription option. Planned updates: We will add a subscription feature, main area contacts and an e-granary widget. Additional effort to map the upcoming events in due time will be in place as a means of continuous updating.
Deliverables	UPSCALE project work package objectives with accompanying deliverables and downloadable public content. Planned updates: We will upload deliverables as they are completed according to the schedule.
Policy Briefs, Scientific papers and reports	Online repository of relevant documents, categorized by type, country and topic. Planned updates: We will continue to populate the categories with UPSCALE produced content and plan to add external knowledge relevant to SI as well, beginning in June 2022.
Knowledge and best practices	Practice abstracts on dedicated topics available for download. Planned update: A continuous update with relevant materials is in plan for this section. The first batch of practice abstracts is due in M30, to be updated in M60.
Media	Online repository of communication materials. Planned update: A dispersion of material is planned next to relevant updates. The videos, infographics and posters will accompany the categories related to the topics covered by each material following the new layout due in June 2022.
Forum	Registration based forum for knowledge exchange. Planned update: A communication campaign is planned to promote the forum use as we currently have more than 600 users and less than 10 topics. The campaign is planned for the second half of 2022 as a follow up on the MAC meetings and fieldwork activities.
Questions and Answers	A Q&A section containing answers to most frequent questions. Planned update: A contact form for asking questions by visitors will be added in July 2022.

Throughout the lifetime of the project, all content and categories are expected to go through visual adjustments as we work on better design of the user experience.

3.2 Stakeholder Map

The key factor for sustainability and full impact lies in going beyond the borders of case study regions and expanding to a wider array of relevant stakeholders. We define stakeholders as those with an interest or concern in UPSCALE, who are both impacted by it and can have impact on the project themselves. Therefore, it is a broad group of individuals, groups, institutions, and organisations (non-exhaustive) who can affect the decision-making process in the project and more importantly, outcomes (Figure 2, Table 3).

Figure 2 UPSCALE Stakeholder Map

The initial list of the stakeholders accompanying the map will be comprised based on D1.1 Report on identity and structure of MACs, D1.3 Strategic plan for knowledge-sharing and capacity-building in MACs, Multi-Actor Needs Assessment Report from WP6 and information otherwise gathered from consortium partners as well as directly from MAC members.

Table 3: UPSCALE Stakeholder types and profiles

Stakeholder Type	Targeted Stakeholder Profiles
UPSCALE consortium partners	research, technology and education institutions, farmers federations, NGOs, SMEs
Smallholder farmers, farmer federations and cooperative societies	including women and youth in eastern Africa, Europe and beyond

Stakeholder Type	Targeted Stakeholder Profiles
Agribusinesses	commodity traders, buyers, input suppliers, seed companies (seedling nursery businesses), food processors
Agricultural extension agencies	advisory providers, community development workers and NGOs involved in efficient technology and knowledge transfer
Federal and local government agencies	national government ministries and community leaders/local administration in the project countries, the EU and internationally, especially in areas of agriculture and land use
Agro-dealers/agro-vets	wholesalers, stockists (retailers), general shops in remote areas, hardware shops
NGOs	agro-environmental actors, professional associations
Research institutions, universities and schools	in the fields of agricultural, sustainability and environmental sciences; early stage and experienced researchers
Financial institutions and intermediaries	development and commercial banks, microfinance institutions
Risk management agents	insurance providers, agri-fin-tech
Farmer Self-Help Groups	
Religious (Faith-Based) Organisations	
Consumers and representative bodies	
EU-AU projects	sister projects funded under the same call, other related EU funded projects, global umbrella initiatives
Media	radio, television and social media platforms, scientific journals, educational blogs
General public	civil society, relevant public initiatives linked to farmers, policymakers (global environmental issues)
Multinational organizations	in Africa and in Europe, supporting the project and active in the project topical area

The list will be regularly reviewed throughout the project lifetime. Subsequent deliverables will include the updated list, if applicable.

3.3 Connect

In order to maximize the outreach of our dissemination efforts, supported by the growing habituality of online meetups, UPSCALE meetings are partially held online and shared online. The UPSCALE Connect section contains a calendar with universal downloadable events that interested stakeholders can use to add individual events to their calendars. The planned development will enable users to subscribe to the whole list of upcoming events and trainings, including information on location and contact points for their area. The calendar presents a clear overview of past and upcoming events, and allows accompanying materials to be included such as pdfs, links and other media (Figure 3).
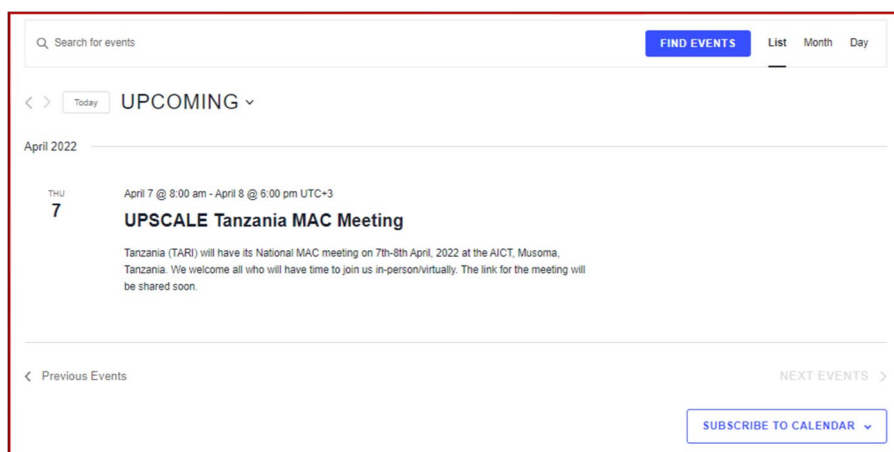
Figure 3 KEH Connect

The events calendar will be regularly updated throughout the project lifetime. Currently, the calendar contains MAC online meetings and we plan to also include date and location of push-pull dissemination events in all the countries as performed by the partners, as well as a subscription feature so people registered can receive alerts to events happening in their area. Additional widgets with main contact points according to the geographical area and topic will be added. A link to the e-granary platform will enhance this experience with further push-pull training information and networking.

3.4 UPSCALE Project Deliverables

This section contains a brief overview of the project Work Packages, naming their objectives and listing the deliverables respectively (Figure 4). The deliverables in the public domain are downloadable in due delivery month.
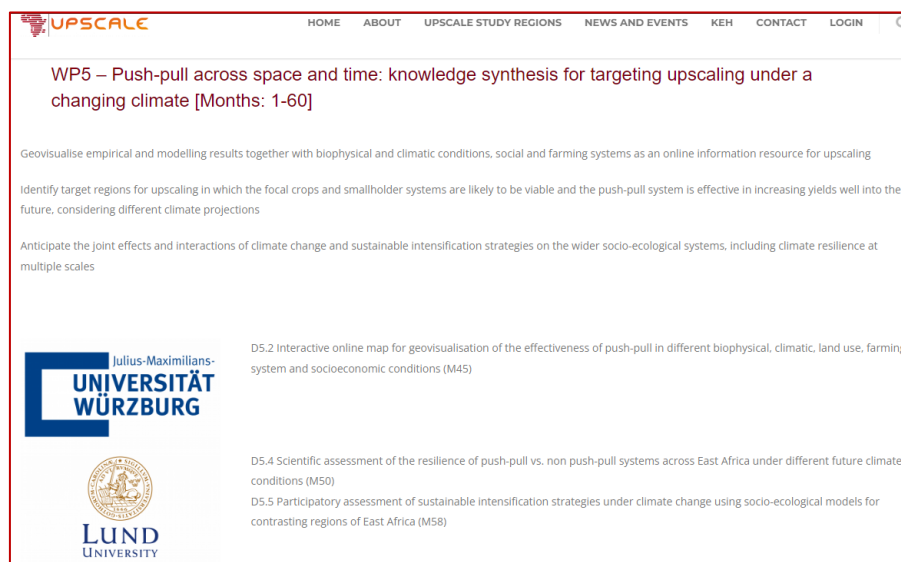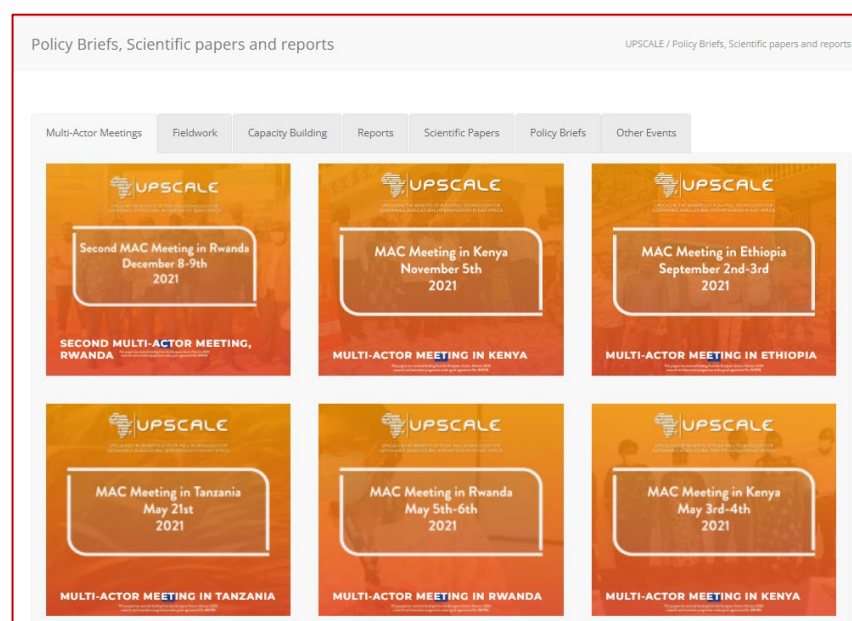

Figure 4 UPSCALE Project Deliverables

Only the public deliverables are listed on the website.

3.5 Policy Briefs, Scientific Papers and Reports

This section contains the documentation related to events organised by UPSCALE, categorised by type and topic, as well as reports from external events where UPSCALE was presented. The tabs are put in place to allow for easy navigation through the various types of reports available through UPSCALE (Table 4, Figure 5).

Table 4 UPSCALE Policy Briefs, Scientific Papers and Reports

MAC meetings	This tab contains the event reports following from MAC meetings in all five countries. They give details on the date and venue of the meeting, an overview of the discussion accompanied by participants testimonials and event photos. The reports are given in a blog form allowing for interaction like sharing on professional and social networks.
Fieldwork	This tab provides fieldwork summaries including preparatory meetings, executive summaries, filed protocols together with demonstration reports and photos from the field visits.
Capacity building	This tab gathers events aiming to increase the capacity of our stakeholders, including focus groups, presentations, public lectures.
Reports	This tab gathers relevant reports on UPSCALE breakthroughs, assessment reports and studies.
Scientific papers	List of published journal articles and conference presentations available for download.
Policy briefs	List of policy briefs and recommendations available for download.
Other events	This tab gathers reports from external events where UPSCALE has participated or was presented.

Figure 5 KEH Policy Briefs, Scientific Papers and Reports

The tabs containing scientific papers and policy briefs are expected to be filled as the project nears the end of its lifetime, while the MAC meetings and fieldwork reports list the most reports as the project planning and execution phase develops.

3.6 Knowledge and Best Practices

This section contains how-to information on push-pull technology and how to implement it, both from UPSCALE partners and external stakeholders. Most notably, the Practice Abstracts (batched deliverables D8.4: M30, D8.5: M60) will focus on knowledge created around introducing a novel application of ecological methods, modelling tools and participative approaches to transdisciplinary knowledge sharing. In the course of the project the development of data-driven, quantitative and qualitative tools to assess and improve social-ecological resilience of ecosystem services and farms will be documented. An additional batch will examine how push-pull technology integrates state-of-the-art scenarios of climate change, as well as key insights and how-tos from the MACs and integrated project activities for management, dissemination and policy decisions.

Figure 6 Practice Abstract example

The practice abstracts will be continuously uploaded and become available for download as research and implementation progress and the UPSCALE project compiles the information during its lifetime.

In upcoming versions this section will be enlarged to include practical information and links for other sustainable intensification practices and how these may be combined with push-pull practices in line with project networking and with the outcomes of WP6.

3.7 Media

This section of the website contains all multimedia materials produced to promote the UPSCALE project and its tangible results. The tab Media kit is targeted at other media inquiring about UPSCALE and it contains the press releases, presentations, posters, infographics, brochures and a press kit (PowerPoint presentation) specifically designed to carry all information for online publishing and communication purposes. The tab for videos hosts the material originally available on our YouTube channel, promoting greater visibility in this way. The tab

UPSCALE in other media is a repository of content published about our results hyperlinked to original publications in other media.
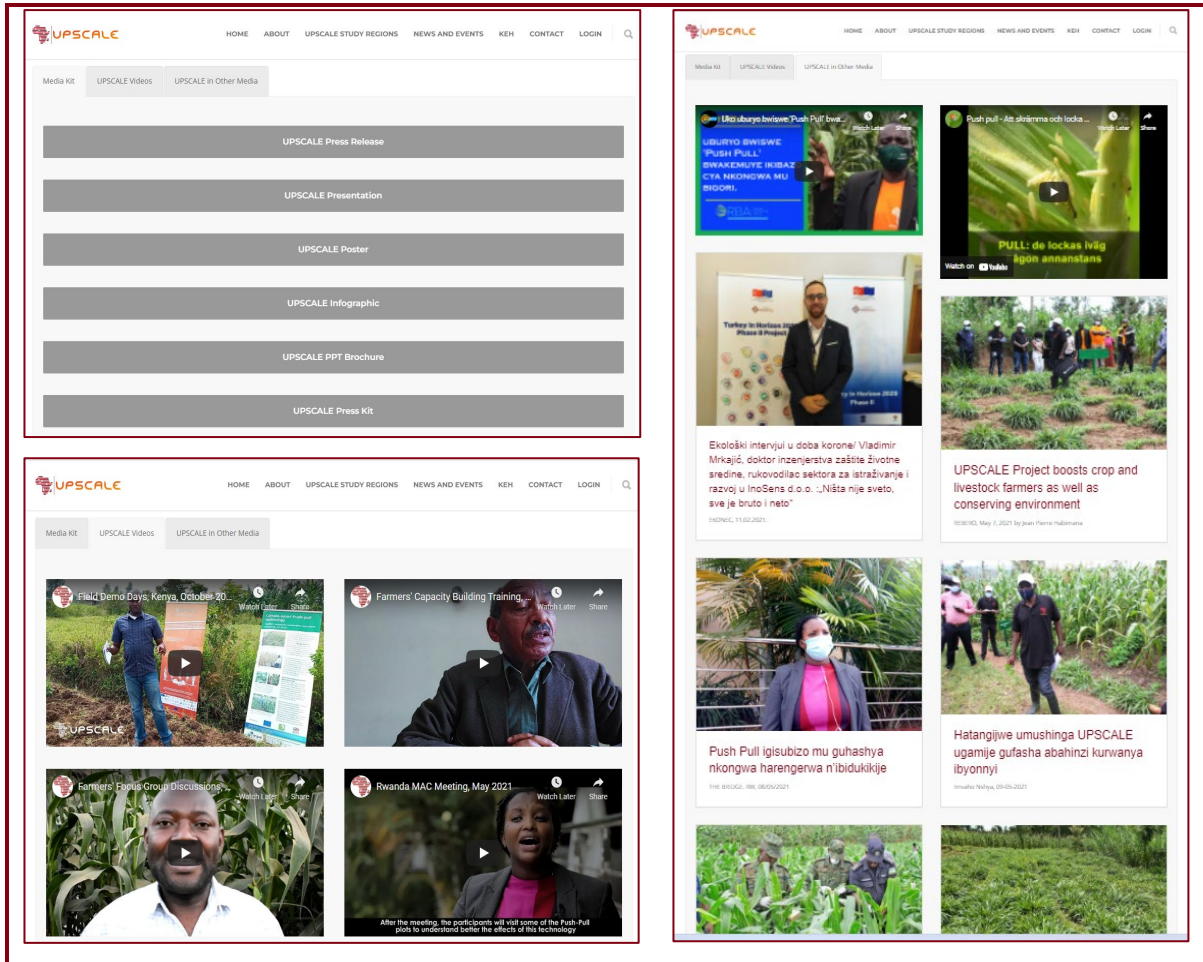

Figure 7 KEH Media - Media kit upper left, Videos lower left, UPSCALE in other media right

3.8 Forum

This section provides an interactive place for forum users to exchange ideas on a more personal level and give details about their experience, offer advice and best practice tips. The forum is complementary to e-granary and live MAC communities and includes direct links to facilitate further information search and networking.
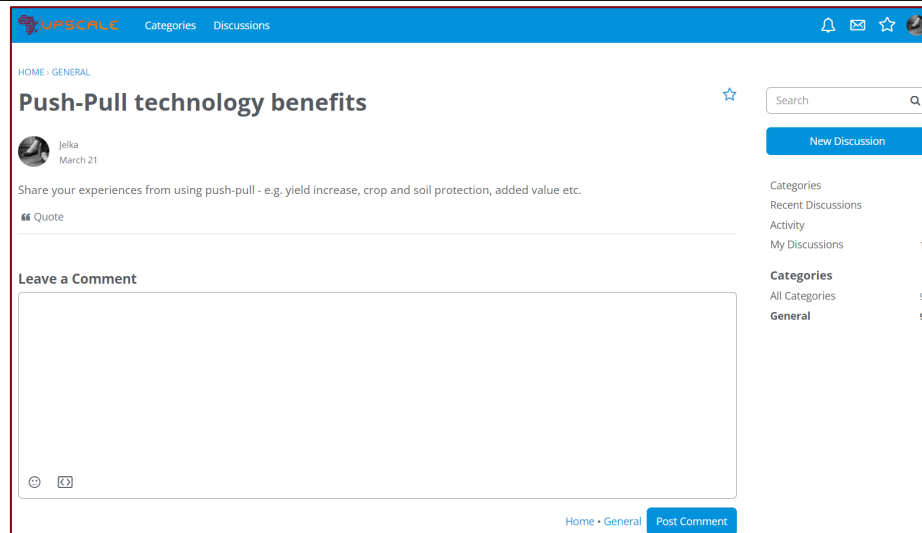
Figure 8 KEH Forum

Access to the forum is public and anyone may view the discussion topics and threads, while registration is mandatory in order to post and reply. The moderation of discussions is intentionally kept loose so as to provide ease of engagement until otherwise proven necessary.
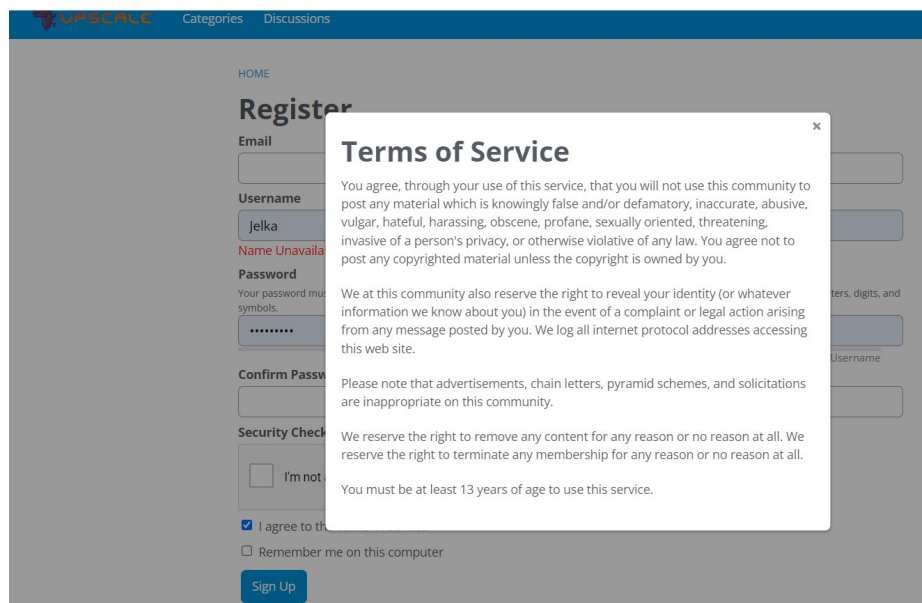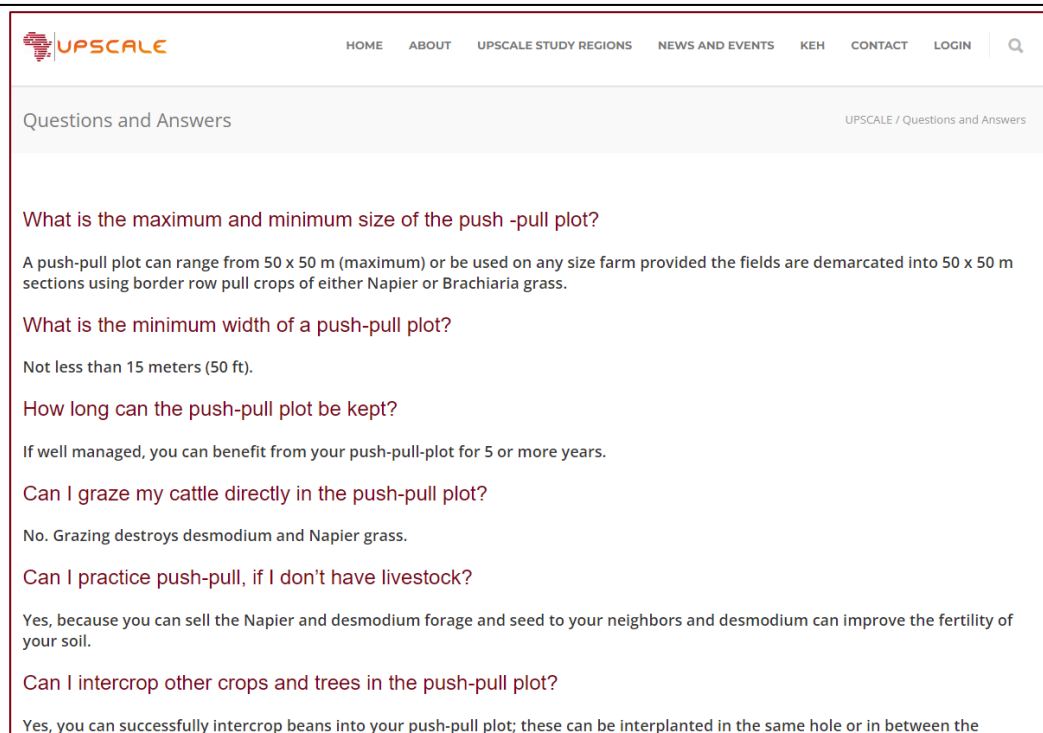

Figure 9 KEH Forum Registration Form

3.9 Questions and Answers

This section outlines the most commonly asked questions and answers regarding the push-pull technology and its application with the aim to provide quick advice. The section aggregates experiences from MAC meetings, the push-pull app and the forum, and welcomes additional questions from visitors.

Figure 10 KEH Questions and Answers

3.10 KEH Technical specification

The KEH is made using WordPress website builder in order to make an intuitive, user friendly, responsive and secure website with design optimization for different screen resolutions over a wide spectrum of web browsers. Most importantly, it is optimised for screens of personal computers, tablets and mobile devices (including telephones, which were recognized as primary means of obtaining information among our primary end users - smallholder farmers in Eastern Africa). All scripts are written in PHP programming language and it uses MySQL database. The entire website is hosted on Hetzner cloud in Germany. SSL certificates provide encrypted and secure access to all KEH content. The KEH is fully standardised for Search Engine Optimization (SEO). The complete KEH will be shared and available on GitHub, a cloud-based Git repository, for further usage beyond the project phase.

4   Conclusion and further steps

The launch of the KEH (Deliverable D8.6) brings the UPSCALE dissemination, communication and marketing plan into a live phase, accompanied by this comprehensive and living document, which outlines the tools, channels and activities that have been put in place.

This document outlines the content and functionality of the KEH as well as the outline and timing of the remaining activities foreseen in the near future, in addition to the regular updates towards the final results of the project. For the next immediate version of the KEH with ongoing updates and improvements, we will use the following implementation guidelines, notably:

- Uptake plan: After the project ends, we plan to preserve the knowledge generated and ensure further uptake of the project results. A dedicated workshop in M23 will be organized by INO with LUH and icipe, to define the format and content of KEH to be merged/transferred to chosen online repositories.

- Feedback loops: We plan to improve user friendliness, impact and interactivity based on testing and feedback from partners and external stakeholders throughout the project lifetime. Currently, the website traffic is mostly generated by the consortium partners and the changes outlined in this document aim to attract stakeholder visitors and ensure successful dissemination of our activities.
- Continuous reporting: Regular and coherent update of the content in existing categories and improved links and liaisons with relevant projects and initiatives.
- Geo-mapping: As the project progresses, more information will be available for successful geo-mapping. We will include spatial distribution of push-pull locations and provide nearest training points as developed by partners and stakeholders to local users.
- Include additional knowledge and exchange categories based on available information.

The Consortium plans a periodic review of this document to ensure it includes up-to-date contents and opportunities for disseminating and communicating project information. In addition, as strategies are evaluated, updates will be made as needed. The next version of KEH will be available on https://upscale-hub.eu/ after migration from https://upscale-h2020.eu/keh/.