

D5.1: CROPS Transnational community online spaces

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Executive Summary

The CROPS transnational online community spaces will be developed to enhance collaboration and resource-sharing among citizen science practitioners, aiming to upscale projects from local to transnational levels in alignment with EU Missions. Led by IIASA and supported by Earthwatch and other partners, the space was designed to promote community and resource sharing in this specific context. Key features of the transnational online community space include dedicated pages within the CROPS website, curated resources with descriptions for upscaling citizen science in the support of the EU Missions, comment boxes for resource-specific engagement, a blog featuring highlights and success stories, and a sign-up form for continued engagement. The ongoing development of the spaces includes continuous content updates, quarterly newsletter features, and integration with existing citizen science networks, ensuring sustained engagement and impact.





1 Introduction

While both citizen science research and practice continue to gather attention, support and adoption to engage members of the public in contributing to scientific processes, there remains great potential for increased understanding and capacity to upscale citizen science projects and programs from local to transnational scales. To facilitate this growth and move from a state of potential to one of action and implementation of upscaling citizen science, it is essential to convene the most practical and relevant spaces and resources for successful upscaling. The creation of CROPS transnational online community spaces stems from the urgent need to enhance collaboration and resource-sharing among citizen science initiatives working towards the EU Missions. By providing a tailored, structured and engaging online space, this initiative aims to break down barriers to scalability, promote interdisciplinary cooperation, and amplify the impact of local and regional projects at the European level. The platform is designed to support practitioners, policymakers, and researchers by offering access to a variety of tools, resources, methodologies, and success stories that can facilitate the upscaling of citizen science efforts. Ultimately, the CROPS Community seeks to empower individuals and organizations to scale their work, contribute to scientific advancements, and drive meaningful societal change.

1.1 Linkages across the project

The development and introduction of the transnational community online spaces complements many other aspects of the CROPS project. Within WP5: Propagation: Creating transnational communities with shared EU Mission goals, the present deliverable (as part of T5.1: Development of transnational citizen science communities with aligned EU Mission goals) complements the activities of T5.4: Establishing collaboration with existing citizen science networks and actions, which is described in more detail in section 4.3. Additionally, the future members of the transnational community online spaces may be invited to participate in activities organized in T5.2: Working group on establishing societal coalitions to fully realise the benefits of citizen science to society, as mentioned in section 4.3.

The evolution of the transnational community spaces will occur in tandem with T2.5: Current and potential synergies with Horizon Europe EU Missions and Objectives, with activities aiming to identify existing and potential synergies between citizen science projects and EU Missions along with relevant resources within this context. Invitations to join the community



spaces via online signup form will also be extended to contacts associated with citizen science projects identified in activities associated with T2.1: Review of existing citizen science projects and initiatives and T2.2: Scalability potential assessment, which is described further in section 3.2.

2 Development Process

2.1 Format and features

The identification of the primary format and features of the transnational community online spaces took place between M10 and M12 (October to December 2024), although the task officially began in M12, led by IIASA with much support from Earthwatch in addition to all partners, particularly those involved in other tasks across WP5. Conversations between IIASA and Earthwatch in October helped to guide an initial proposal for the aims and features of the transnational community online spaces, which were presented to and discussed with the full consortium during the CROPS General Assembly meeting held in Camogli, Italy later that month. These ideas were further discussed and honed during subsequent WP5 and full consortium meetings held in December, which largely resulted in a consensus of the overall format and key features to be included. These features included: dedicated and easily identifiable spaces, which are webspaces focused on each EU Mission, on the CROPS project website, curated EU Mission-specific resources related to upscaling citizen science that could be filtered using “tags” based on the resource type and content focus, an online form to gather contact information for users and visitors of the space and resources that includes an opportunity to upload and share additional relevant resources, and a blog page to feature key content, resources, and story highlights from community members.

2.2 Initial content development

The organisation and generation of content to populate the transnational community online spaces was led by IIASA and began in M12 (December 2024) with most content being generated and refined in M14 (February 2025) with great support provided by Earthwatch in reviewing, editing and uploading content to the CROPS webpage. Some initial resources related to upscaling citizen science in the context of the five EU Missions were identified during the process of conducting a review of scientific and grey literature as part of T3.1: Development of user-centred design protocols for upscaling, also led by IIASA. Additional resources were sought to provide a

minimum of 2 to 3 resources related to each EU Mission within the initial set to be included and uploaded to the webpage for the launch of the online spaces. A short description of each resource and its relevance to upscaling citizen science and its associated EU Mission was generated to provide some additional guidance and context for visitors and users of the community spaces. Additionally, a brief overview description about the transnational community spaces was written to appear on its landing page with a more detailed description including its aims, purpose and features being drafted in the form of a blog post to be featured on a “Community Highlights” blog page within the space. An online form to solicit contact information and additional resources from visitors and users of the space was also created.

2.3 Webpage setup

Earthwatch created the transnational community online space webpages within the CROPS project website under the heading “Community” in M14 (February 2025) as shown in a mock-up version in Figure 1.

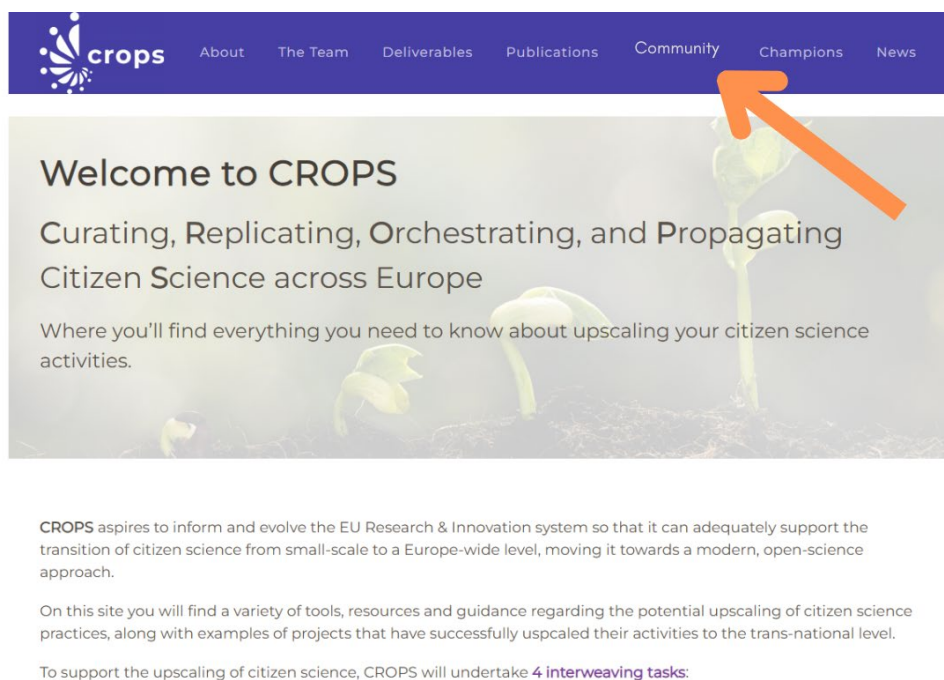


Figure 1: Mock up of the link to the transnational online community spaces under the “Community” heading on the CROPS website.

3 Online community content

3.1 Landing page

The landing page of the transnational online community spaces, as shown in a digital draft in Figure 2, will feature a brief description of each space’s purpose and aims along with a menu of links to other spaces and webpages within the structure, which refers to the umbrella design of the online spaces and associated webpages, on the lefthand side. This menu will include links to all the curated resources with five EU-mission specific webpages of resources, a link to the online sign-up form and a link to the blog page. The body of this landing page or “Community Home” page will feature two sections, which are distinct areas or parts of a specific space or page, promoting newly added resources as well as the most recent blog post along with associated icons and links to those resources and webpages.

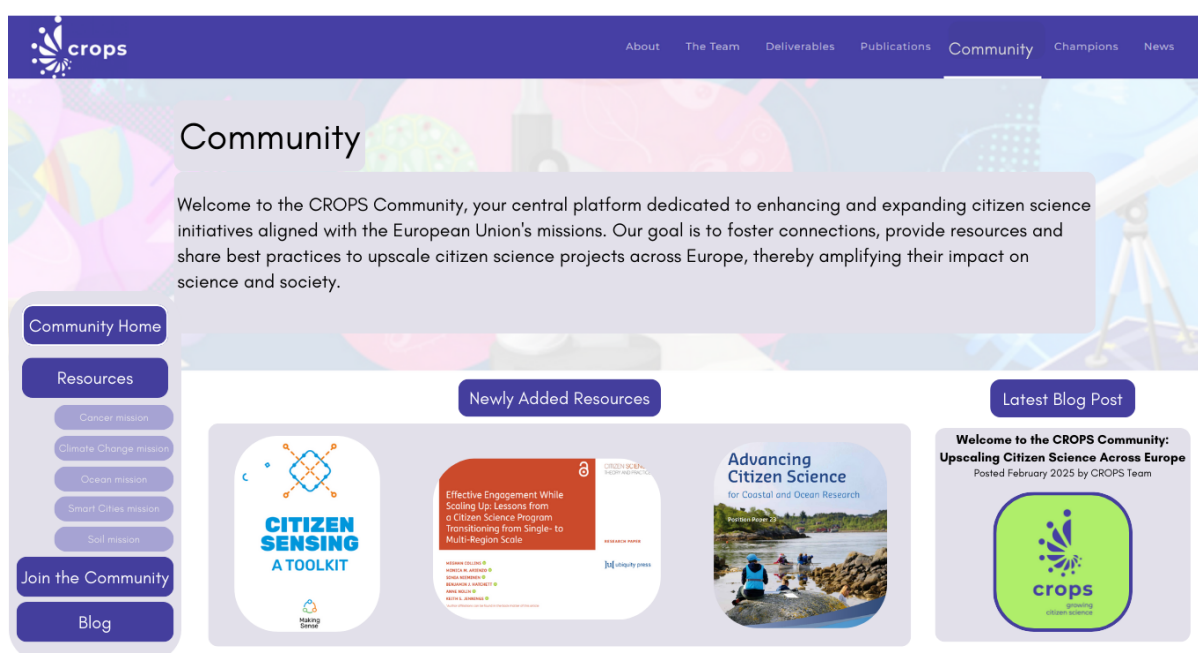


Figure 2: Mock up of the transnational online community spaces landing page.

3.2 Signup form

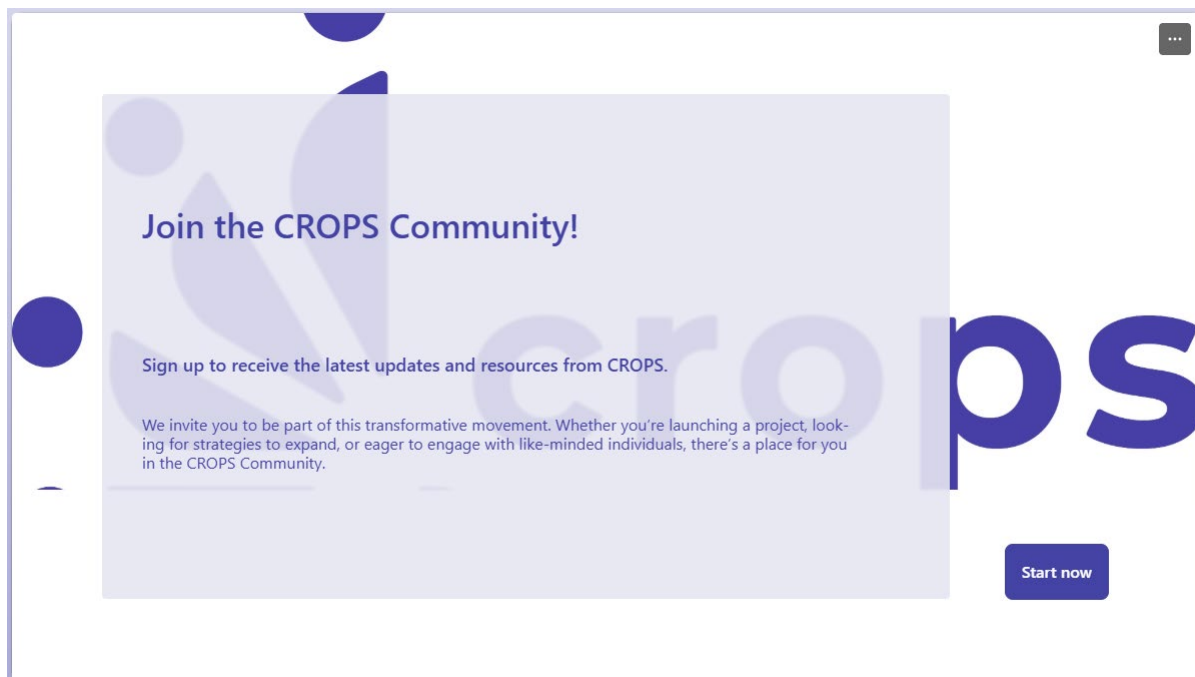


Figure 3: Landing page of online form to join the community mailing list.

[An online form](#) currently hosted using Microsoft Forms will be used to capture the contact and affiliation information of individuals interested in utilising the community online spaces and resources in accordance with the General Data Protection Regulation (GDPR)¹ and the CROPS privacy notice² and data management plan³. As shown in Figure 4 below, the form will request the name, email address, organisation/institution affiliation, citizen science project affiliation, and include an upload link for individuals to share additional relevant resources to be added to the growing collection shared in the community online space. Additionally, there will be a text box requesting any additional information such as upscaling success stories, lessons learned, best practices, and/or links to other relevant resources or citizen science projects. The information captured from this text box may be used to draft blog posts within the community online space in addition to sharing a periodic digital newsletter with the community contact list generated from contact information collected by this form.

¹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) (OJ L 119 04.05.2016, p. 1, ELI: <http://data.europa.eu/eli/reg/2016/679/oj>)

² Available at: <https://www.crops-cs.eu/privacy>

³ Available at: <https://www.crops-cs.eu/deliverables>

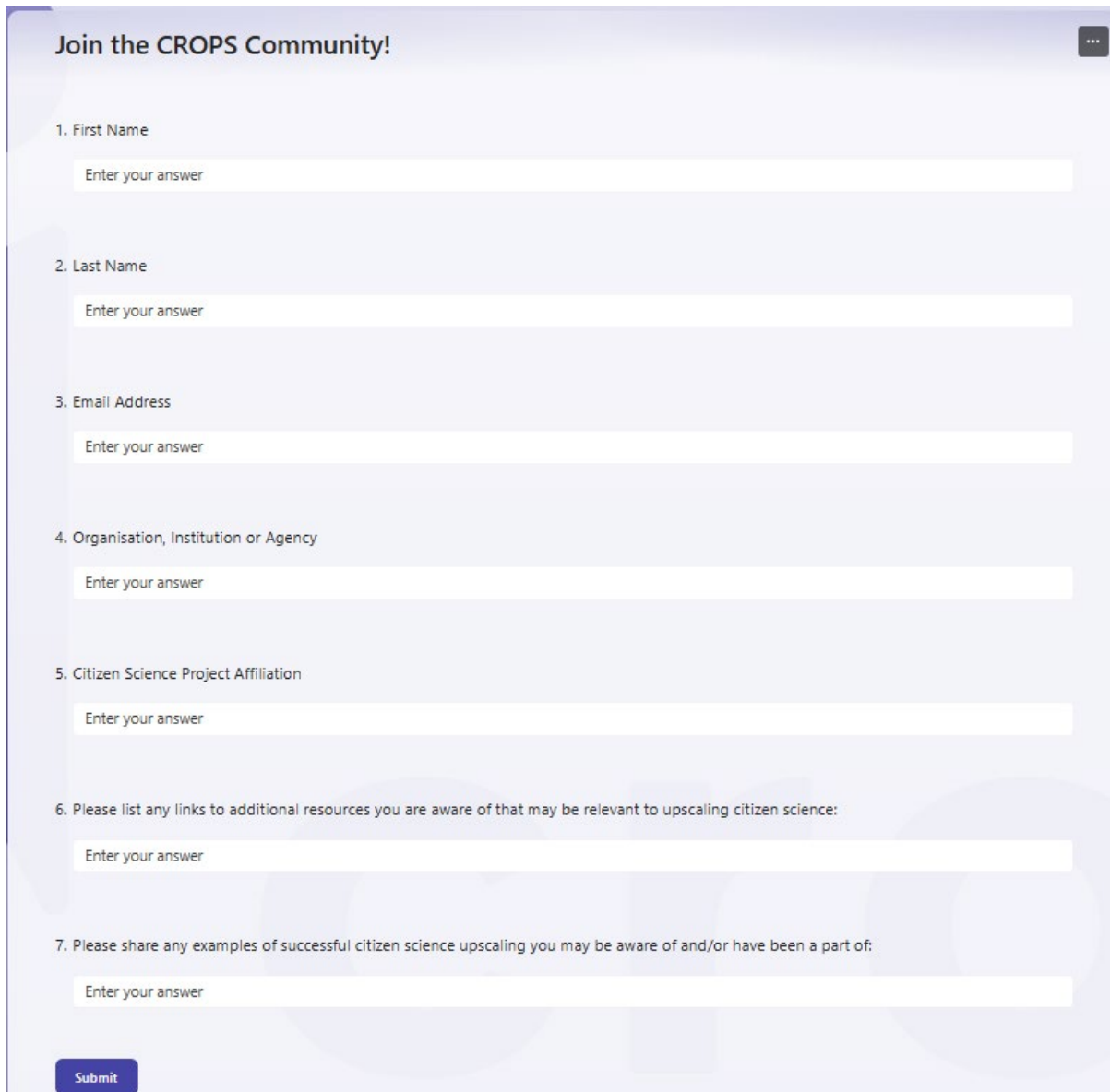
The image shows a screenshot of a web form titled "Join the CROPS Community!". The form is set against a light purple background with a faint image of people. It contains seven numbered input fields, each with a placeholder text "Enter your answer". The fields are: 1. First Name, 2. Last Name, 3. Email Address, 4. Organisation, Institution or Agency, 5. Citizen Science Project Affiliation, 6. Please list any links to additional resources you are aware of that may be relevant to upscaling citizen science:, and 7. Please share any examples of successful citizen science upscaling you may be aware of and/or have been a part of:. A blue "Submit" button is located at the bottom left of the form area.

Figure 4: Online form to join the community mailing list.

In addition to including the form as a webpage within the community online space, it will be shared directly with contacts affiliated with citizen science projects identified as part of T2.1 and T2.2. Additionally, the form will be shared with other relevant citizen science organisations and networks, such as ECSA and EU-Citizen.Science to distribute among their contacts and members.

3.3 Resource descriptions, comments and blog

The resources shared within the spaces can be found from a centralised “Resources” landing page that will include a brief description of the

collection of resources and provide links to the mission-specific spaces as shown in a digital mock-up in Figure 5.

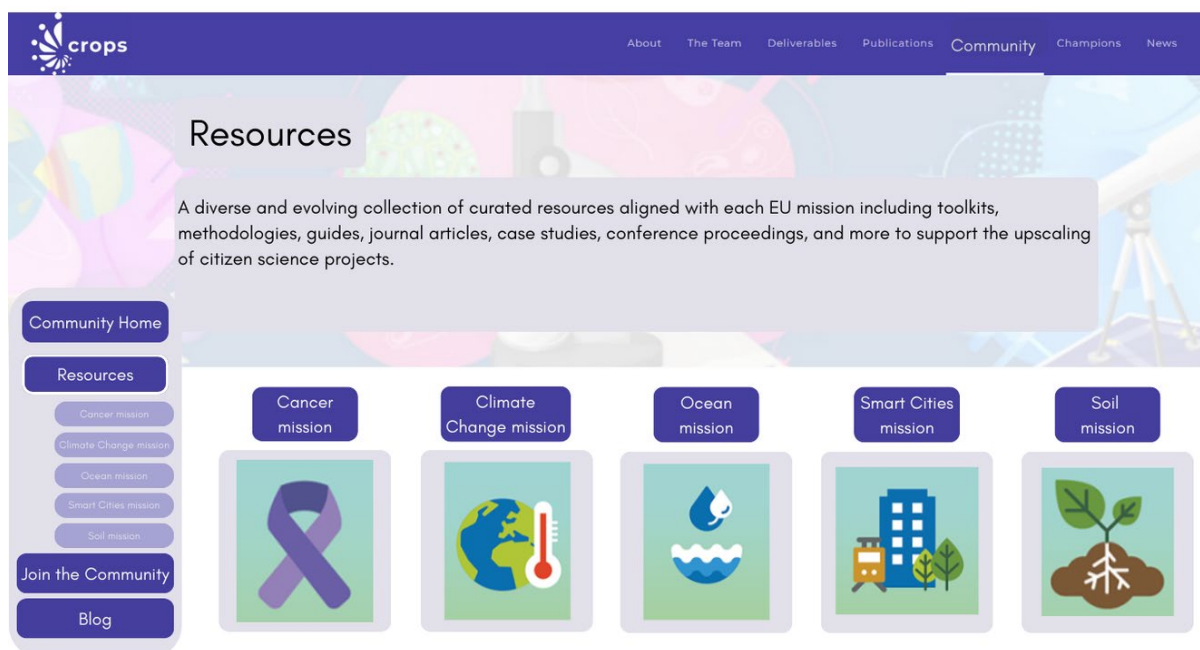


Figure 5: Mock up of the Resources landing page.

For each resource shared on these pages, a brief description including the kind of resource, how it relates to upscaling citizen science and the topical or content focus will be included and displayed as “pop-up” text when a visitor hovers over the icon link of the resource with their cursor. In addition to the resources made available in the community online spaces, there will also be elements to promote engagement among and between community members. For each resource shared there will be a comment box located directly underneath the resource link or icon, which will allow members to pose questions, add thoughts or insights, and/or share additional relevant information or related resources. These description and comment features, along with the “tags” for sorting resources mentioned above in section 2.1, are depicted in Figure 6, a digital mock-up of the webpage for resources relevant to the EU Mission focused on oceans.

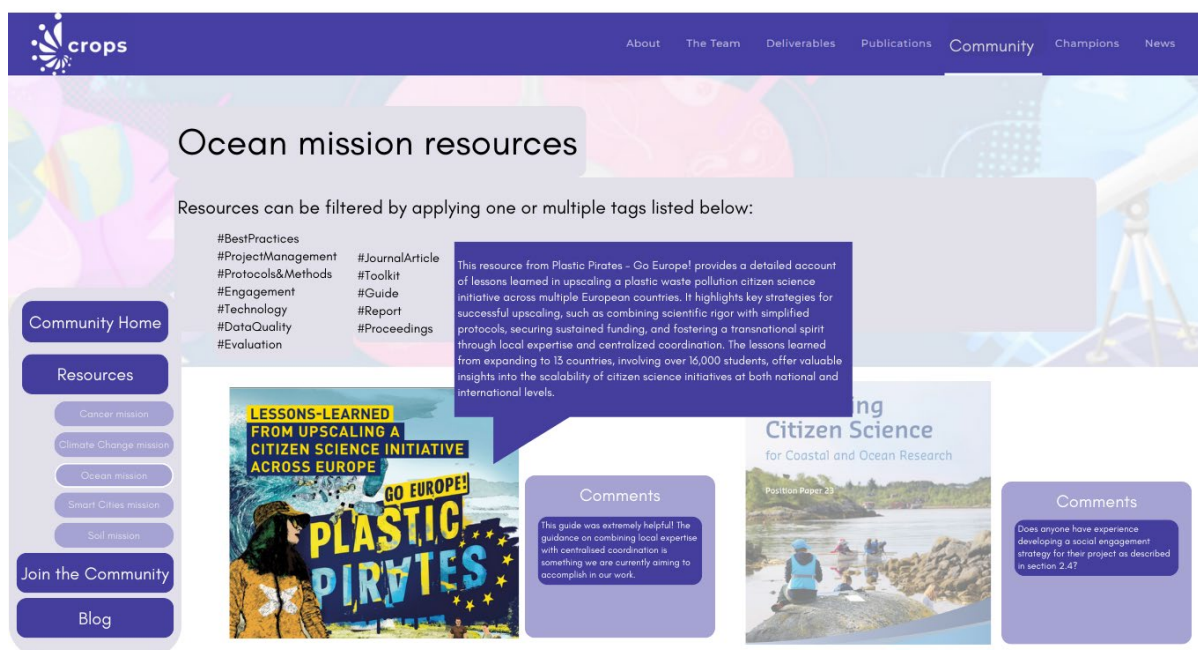


Figure 6: Mock up of the Oceans mission webpage of resources and highlighting the pop-up description and comment box features.

There will also be a webpage within the structure featuring monthly blog posts to highlight examples and stories from community members sharing how their projects have upscaled and highlighting the tools and approaches that helped them along the way. An initial blog post like the mock up shown in Figure 7 will be included at the time of the launch to orient visitors to the transnational online community spaces and invite them to join as community members via the online form described above.



Figure 7: Mock up of initial blog post to be included in the community spaces.

3.4 Initial resources

An initial set of 12 resources relevant to upscaling citizen science in the context of the EU Missions were identified with plans to include these at the time the transnational online community spaces are launched. The subsections below include the brief descriptions for each of these resources



that will accompany them and be displayed via pop-up text as described above.

3.4.1 Cancer mission resources

Engaging Families Affected by Ovarian Cancer

This journal article demonstrates how citizen science can be effectively scaled within the health sector by engaging families affected by ovarian cancer in developing genetic service outreach strategies. It outlines standardised methods for recruiting, training, and supporting citizen scientists to collect and interpret data, enabling broad, community-driven data collection in a relatively short timeframe. The approach showcases the scalability of citizen science beyond environmental fields, offering a model for applying participatory research in health promotion and genetic counselling initiatives.

PATIO Health Guide

This resource from conference proceedings highlights the scalability of citizen science by leveraging technology through the development of the PATIOSpots app, designed to support prostate cancer patients and caregivers. By employing a co-design and co-creation process with affected individuals, the project illustrates how citizen engagement can be expanded to create personalised, user-driven health resources. The approach demonstrates a replicable model for involving citizens in health research, with the potential to scale across different medical conditions and regions.

3.4.2 Climate change mission resources

Mountain Rain or Snow Engagement Strategy

This journal article outlines engagement strategies for scaling the Mountain Rain or Snow citizen science program from a single region to multiple regions. It details how replicating a consistent structure across locations, combined with place-based text messaging and localised partnerships, supported recruitment, training, and data collection at scale. The lessons learned from this multi-region expansion provide practical insights into effective participant engagement and retention when scaling up citizen science initiatives.

Season Spotter Plant Phenology

This journal article describes Season Spotter, a citizen science project designed to scale plant phenology research by integrating volunteer-generated data with near-surface remote sensing imagery. By engaging citizen scientists in tasks like identifying reproductive phenology, marking individual trees, and validating phenological transition dates, the project successfully bridges ground-based observations with large-scale satellite data. This approach demonstrates how citizen science can be effectively scaled to support environmental monitoring at regional and continental levels.

Mosquito Tracking Tools

This journal article highlights how climate change, along with increased global trade and human mobility, has facilitated the spread of invasive, disease-carrying mosquitoes like the Asian tiger mosquito. It demonstrates the scalability of citizen science through the Mosquito Alert system, which integrates public observations with expert validation to provide cost-effective, wide-ranging mosquito surveillance. This approach not only supports early warning systems for mosquito-borne diseases but also showcases how citizen science can be scaled to address public health challenges exacerbated by climate change.

3.4.3 Ocean mission resources

Advancing Citizen Science for Coastal and Ocean Research

This position paper explores various strategies to enhance the scalability of citizen science in marine and coastal research. It highlights the role of technology—such as smartphones, apps, and low-cost DIY sensors—in simplifying data collection, thus broadening participation across diverse populations. Additionally, the paper emphasises the importance of decentralised networks and standardised data management systems to efficiently aggregate and utilize large datasets, which are crucial for scaling up citizen science initiatives.

Plastic Pirates Lessons Learned

This resource from Plastic Pirates – Go Europe! provides a detailed account of lessons learned in upscaling a plastic waste pollution citizen science



initiative across multiple European countries. It highlights key strategies for successful upscaling, such as combining scientific rigor with simplified protocols, securing sustained funding, and fostering a transnational spirit through local expertise and centralised coordination. The lessons learned from expanding to 13 countries, involving over 16,000 students, offer valuable insights into the scalability of citizen science initiatives at both national and international levels.

3.4.4 Smart cities mission resources

Citizen Sensing Toolkit

This toolkit provides a comprehensive guide to scaling citizen science through participatory environmental monitoring. The toolkit emphasises the use of open-source software and hardware, digital maker practices, and community-led sensing strategies to empower citizens in addressing local environmental challenges. By outlining structured processes for community building, data collection, and action, it offers scalable methodologies adaptable to diverse social and geographical contexts.

Constraints on Urban Living Lab Experiments

This resource analyses constraints and opportunities for scaling up Urban Living Lab experiments, offering valuable insights for citizen science. It identifies barriers such as limited social inclusion, fragmented institutional frameworks, and underutilized learning potential, and provides strategies to overcome these challenges. By addressing these issues, the resource supports the broader adoption of citizen science practices in urban contexts, promoting inclusive and sustainable innovations.

Apollon – Urban Environmental Monitoring Platform

This journal article details the Apollon platform, a citizen science methodology for urban environmental monitoring that leverages mobile crowd sensing (MCS) and ICT technologies. It demonstrates how scalable citizen science initiatives can be achieved through the integration of low-cost sensors, mobile devices, and cloud computing, enabling widespread participation and real-time data collection. The platform's architecture supports both opportunistic and participatory sensing, making it adaptable



to diverse urban contexts and capable of engaging large communities in environmental monitoring efforts.

3.4.5 Soil mission resources

Citizen Science and Soil Connectivity

This journal article reviews over fifty citizen science initiatives focused on soil connectivity, illustrating the scalability of such projects through diverse global examples. The article emphasises how simplifying scientific methods, leveraging technology (like smartphone apps), and fostering continuous communication with participants can enhance engagement and data collection across varied demographics. The study demonstrates that these strategies not only expand participation but also contribute significantly to environmental education and policy development.

The Role of Citizen Science in Soil SDG Targets

This journal article reviews various citizen science methods and platforms that can complement traditional soil monitoring to meet Sustainable Development Goals (SDGs) related to soil health. By identifying cost-effective, accessible, and reliable tools for monitoring soil indicators like structure, organic carbon, and biodiversity, it highlights scalable approaches for engaging farmers and the public in large-scale data collection. This contributes to building comprehensive soil health databases that inform national and international policies.

4 Future development

4.1 Ongoing updates & engagement

Much of the details and drafted content described for the transnational community online spaces described in the sections above is focused on the establishment and launch of these spaces, however, this is merely the beginning of their potential. As illustrated in T5.1 running from M12 (December 2024) for the duration of the CROPS project through M36 (December 2026), the transnational community online spaces will receive regular attention, updates, and maintenance. All partners will continuously seek to grow the community membership by sharing the community (and especially the online form) with new audiences via direct contact, social media, and leveraging various networks, groups, and organisations with the



growing contact list of members being maintained by IIASA. IIASA will also coordinate the curation and organisation of newly shared and identified resources by adding the resources to the online space and generating a relevant description. Additionally, IIASA will manage the monthly blog posts and coordinate on a quarterly newsletter as described in the following section.

4.2 Newsletter

In coordination with project partners at OutBe leading activities within WP6: Dissemination, exploitation, and communication, a digital newsletter will be shared quarterly via email to the entire transnational community online spaces member contact list. The newsletter will include select blog posts, resources, and other current items of interest as related to upscaling citizen science and the EU Missions along with broader CROPS project updates. We aim to share the first newsletter sometime in M18 (June 2025).

4.3 Connecting with existing spaces & networks

The transnational community online spaces are intended to be distinct from other existing citizen resource-sharing spaces, organisations, and networks in their purpose and identity with the focus on upscaling citizen science projects in the context of the EU Missions. However, there is opportunity to engage with and complement other spaces, groups, and networks, which also support T5.4 aimed at establishing collaboration with existing citizen science networks and actions. It is anticipated that we will reach out to existing citizen science networks, including ECSA in addition to others, to share information about this community space and encourage the distribution of our online form among their contacts and members. Additionally, we aim to integrate CROPS and the community online space within the European Citizen Science Platform (EU-Citizen.Science) both as a Project and categorised under Resources with the resources linking directly to those shared in the community online space.

Beyond networks and spaces dedicated to citizen science, the transnational online community spaces could also be connected to communities and portals explicitly focused on the EU Missions, such as NCP4Missions, a networking project of National Contact Points (NCPs) for the five EU Missions. Connecting with this and similar spaces would facilitate increased engagement of actors and stakeholders closely working with the EU Missions more directly in the field of citizen science.



There is also a great opportunity to leverage synergies with a variety of working groups, both those established within the CROPS project and those functioning externally. The members that will join the transnational community online spaces may be invited to participate in the working group on establishing societal coalitions as part of T5.2, which will begin in M18 (June 2025). Additionally, we may coordinate with the ECSA Working Group on Citizen Science Networks on opportunities to support and engage members of citizen science-related networks across different foci or contexts and potentially organize a session or meeting to coincide with the ECSA 2026 to be held 4-7 March 2026 in Oulu, Finland. This event along with other planned activities surrounding the launch and continued engagement of the transnational community online spaces is shown below in Figure 8.

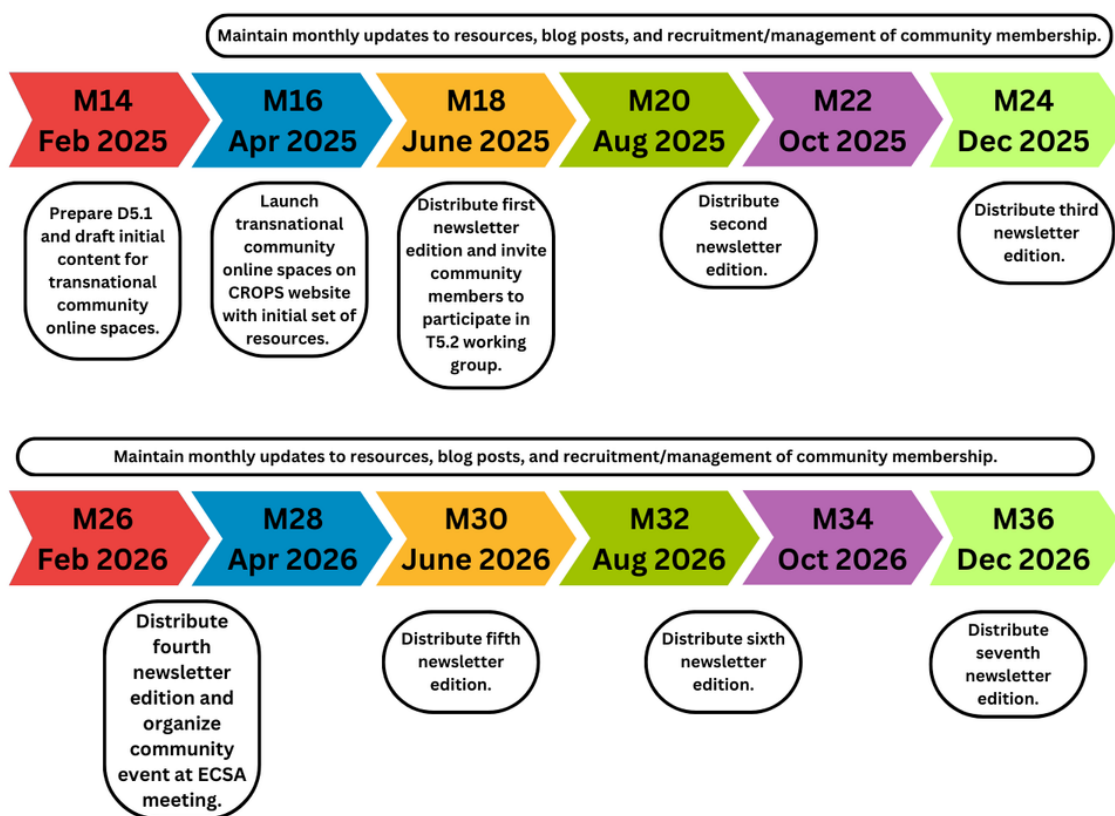


Figure 8: Timeline of planned activities for the transnational community online spaces.