



CitiObs

CitiObs - ENHANCING CITIZEN OBSERVATORIES FOR HEALTHY, SUSTAINABLE, RESILIENT, AND INCLUSIVE CITIES

Deliverable 3.5

CitiObs Co-Design (2/2)

AUTHORS: Tova Crystal & Uta Wehn (IHE Delft)

DISCLAIMER

This document contains material, which is the copyright of certain CITIOBS beneficiaries, and may not be reproduced or copied without permission.

The information appearing in this document has been prepared in good faith and represents the views of the authors. Every effort has been made to ensure that all statements and information contained herein are accurate; however, the authors accept no statutory, contractual or other legal liability for any error or omission to the fullest extent that liability can be limited in law.

This document reflects only the view of its authors. Neither the authors nor the Research Executive Agency nor European Commission are responsible for any use that may be made of the information it contains. The use of the content provided is at the sole risk of the user. The reader is encouraged to investigate whether professional advice is necessary in all situations.

No part of this document may be copied, reproduced, disclosed, or distributed by any means whatsoever, including electronic without the express permission of the CITIOBS project partners. The same applies for translation, adaptation or transformation, arrangement or reproduction by any method or procedure whatsoever.

COPYRIGHT MESSAGE

© **CITIOBS Consortium, 2023**. This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both. Reproduction is authorised provided the source is acknowledged.

ACKNOWLEDGEMENT



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them

DOCUMENT DESCRIPTION

Delivery date:	30/06/2026		
Type*:	R- Report	Dissemination Level**:	PU - Public
Contributing WP:	WP3		
Lead Partner Organisation:	IHE Delft Institute for Water Education		
Lead author(s):	Tova Crystal (IHE) Uta Wehn (IHE)		
Contributor(s):	n.a.		
Reviewer(s):	José Gómez Barrón (UCD) Georgia Simadi (Draxis)		
Abstract:	This deliverable presents the finalised methodologies, processes, and refinements for the co-design and evaluation of key CitiObs outputs, namely the CitiObs Toolkits, the CitiObs CookBook, and the CitiObs Knowledge Platform (KP), developed under Task 3.5 in Work Package (WP) 3. It builds on and complements the first version of this deliverable (D3.11), focusing on methodological consolidation, iterative improvements, and validation activities undertaken during the later stages of the CitiObs project.		

VERSION LOG

Version	Date	Partner	Content and changes
0.1	03/02/26	IHE	Screenshots & descriptions of recent activities for the CitiObs CookBook
0.2	14/04/26	IHE	Section 2- Updated information based on the F2F Oslo meeting & added narrative of co-design
0.3	20/04/26	IHE	Section 1 & Section 2—Details added Added section 3 with details
0.4	06/05/26	IHE	Refining of writing and annexes added
0.5	13/05/26	IHE	Executive Summary & Conclusion
0.6	8/6/26	IHE	Edited version, ready for review

CITIOBS

CitiObs is a four-year project funded under Horizon Europe by the European Commission. CitiObs will consolidate and apply tools and practice-based knowledge for co-creating data, knowledge and local action via Citizen Observatories (COs): these tools will enhance existing and new citizen observatories to engage people from a diverse range of communities, add value to environmental observations in the urban context, increase and validate citizen observations of the urban environment as part of the existing in-situ Earth Observation systems, co-create inclusive local actions for sustainability and ensure that CO data contributes to research and policy development towards the objectives of the European Green Deal. To ensure broad use, the CitiObs tools and approaches will be developed in co-creation with COs in 5 Frontrunner cities, finetuned with 30 Implementer cities and showcased to 50 Fellow cities.

CitiObs will support citizen observatories in distinct cities to create/enhance/or scale up inclusive and diverse citizen observatories, fostering in particular an active role of citizens in the observation of the urban environment using low-cost sensor technologies and wearables, with a particular focus on air quality and related environmental measures. CitiObs will formalise, valorise and legitimise the role of citizen observations.

The CitiObs methodology of using a large-scale demonstration, co-design and coaching approaches with CO stakeholders (citizens, scientists, policy/decision makers) in 5+30+50 cities in Europe explicitly builds on the Responsible Research & Innovation (RRI) dimensions as founding principles. Ethics consideration will be addressed consistently across all Work Packages.

- WP1. Social dimensions of Citizen Observatories for transition governance
- WP2. Tools, Technologies, and Data Services for Citizen Observatories
- WP3. Co-creation of data and actions for healthy, sustainable and resilient cities with Citizen Observatories
- WP4. Impact creation, Communication, Dissemination and Exploitation
- WP5. Project management
- WP6. Ethics

EXECUTIVE SUMMARY

This deliverable presents the finalised methodologies, processes, and refinements for the co-design and evaluation of key CitiObs outputs, namely the CitiObs Toolkits, the CitiObs CookBook, and the CitiObs Knowledge Platform (KP), developed under Task 3.5 in Work Package 3. It builds on and complements the first version of this deliverable (D3.11), focusing on methodological consolidation, iterative improvements, and validation activities undertaken during the later stages of the project.

The co-design of the CitiObs Toolkits is not newly developed in this deliverable, as the primary methods and processes were previously documented in D3.11. Instead, this report highlights the continued evolution of the CitiObs toolkits as “living documents,” informed by ongoing interactions with CitiObs cases and integrated within the Knowledge Platform. While all toolkits have undergone iterative refinement through workshops and stakeholder feedback, the Environmental Monitoring toolkit will receive a formal second update in Deliverable D2.2. These processes ensure that the toolkits remain relevant, practical, and grounded in real-world citizen observatory experiences.

The co-design of the CitiObs CookBook advances through the introduction of an innovative hashtag-based navigation system, developed collaboratively by project partners. This system complements the original structured format by enabling users to navigate content thematically across toolkits, improving accessibility and usability. The hashtags were co-created during consortium workshops, iteratively refined by toolkit leaders, and validated for consistency and appropriate granularity. Following technical adaptation by WP4, the system was integrated into the CitiObs Knowledge Platform, allowing users to access interconnected content through intuitive, cross-cutting themes.

The co-design of the CitiObs Knowledge Platform reached its final phase, focusing on testing, validation, and preparation for launch of its third and final version. The seven-step co-design process reported in D3.11 was completed and this deliverable emphasises the iterative refinement stages (testing and finalisation). A structured feedback protocol was developed to guide user interactions with key platform components, including the CookBook, chatbot, and web interface. Validation was conducted through three complementary approaches: engagement with Communities of Practice, roadshow-based testing with CitiObs cases, and targeted user interviews. These methods ensured comprehensive and diverse feedback, supporting improvements in usability, navigation, and overall user experience prior to final launch.

In addition to co-design activities, this deliverable reports on the evaluation of CitiObs demonstration activities. While no further developments were made to the process evaluation elaborated in D3.11, outcome evaluation methods were refined. The previously developed instruments, based on the WeObserve CSISTA, were reviewed and adjusted to maintain relevance. Furthermore, a revised interview guide was created to capture holistic case

experiences within CitiObs, recognising that most cases engaged with multiple CitiObs toolkits simultaneously.

Overall, this deliverable demonstrates how iterative co-design, continuous stakeholder engagement, and structured validation have shaped the final CitiObs outputs. The combined approach ensures that the Knowledge Platform, CookBook, and toolkits are accessible, user-oriented, and responsive to the needs of diverse citizen observatory communities, supporting their long-term usability and impact beyond the project lifetime.

TABLE OF CONTENTS

1	INTRODUCTION	11
1.1	Background.....	11
1.2	Purpose of the document.....	12
1.3	Scope of the document	12
1.4	Structure of the document.....	13
2	METHODS FOR CO-DESIGNING CITIOBS OUTPUTS.....	14
2.1	Co-design of the CitiObs Toolkits.....	14
2.2	Co-design of the CitiObs CookBook	14
2.3	Co-design of the CitiObs Knowledge Platform.....	17
3	EVALUATION OF THE CITIOBS DEMONSTRATION ACTIVITIES.....	21
3.1	Process Evaluation.....	21
3.2	Outcome Evaluation	21
4	CONCLUSION.....	22
	REFERENCES	23
	ANNEXES	24
	Annex 1: Protocol for feedback on the CitiObs Knowledge Platform.....	24
	Annex 2: Consolidated Interview Guide	27

INDEX OF FIGURES

Figure 1 Overview of CitiObs co-design and evaluation.....	11
Figure 2 Hashtag development example 1	15
Figure 3 Hashtag development example 2	15
Figure 4 Hashtag development example 3	16
Figure 5 Hashtag development example 4	16
Figure 6 Preliminary version of CookBook on KP	17
Figure 7 CitiObs Knowledge Platform timeline.....	17

INDEX OF TABLES

Table 1 Toolkit Deliverables	14
Table 2 Co-design of the CitiObs Knowledge Platform (Steps).....	18
Table 3 CitiObs Knowledge Platform validation - instrument example.....	19

ACRONYMS

Acronym	Full name
CO	Citizen Observatory
CoP	Communities of Practice
CSISTA	Citizen Science Impact Storytelling Approach
D	Deliverable
DoA	Description of Action
EC	European Commission
KP	Knowledge Platform
WP	Work package
FRC	Frontrunner Case
AC	Alliance Case
ECSA	European Citizen Science Association

1 INTRODUCTION

1.1 Background

The CitiObs project aims to enhance existing and new citizen observatories (COs) to engage citizens and marginalised communities, add value to environmental observations in the urban context, increase and validate citizen observations of the urban environment. To do so, the project develops tools and resources to support COs, namely four CitiObs toolkits, a CitiObs CookBook and a CitiObs Knowledge Platform (KP).

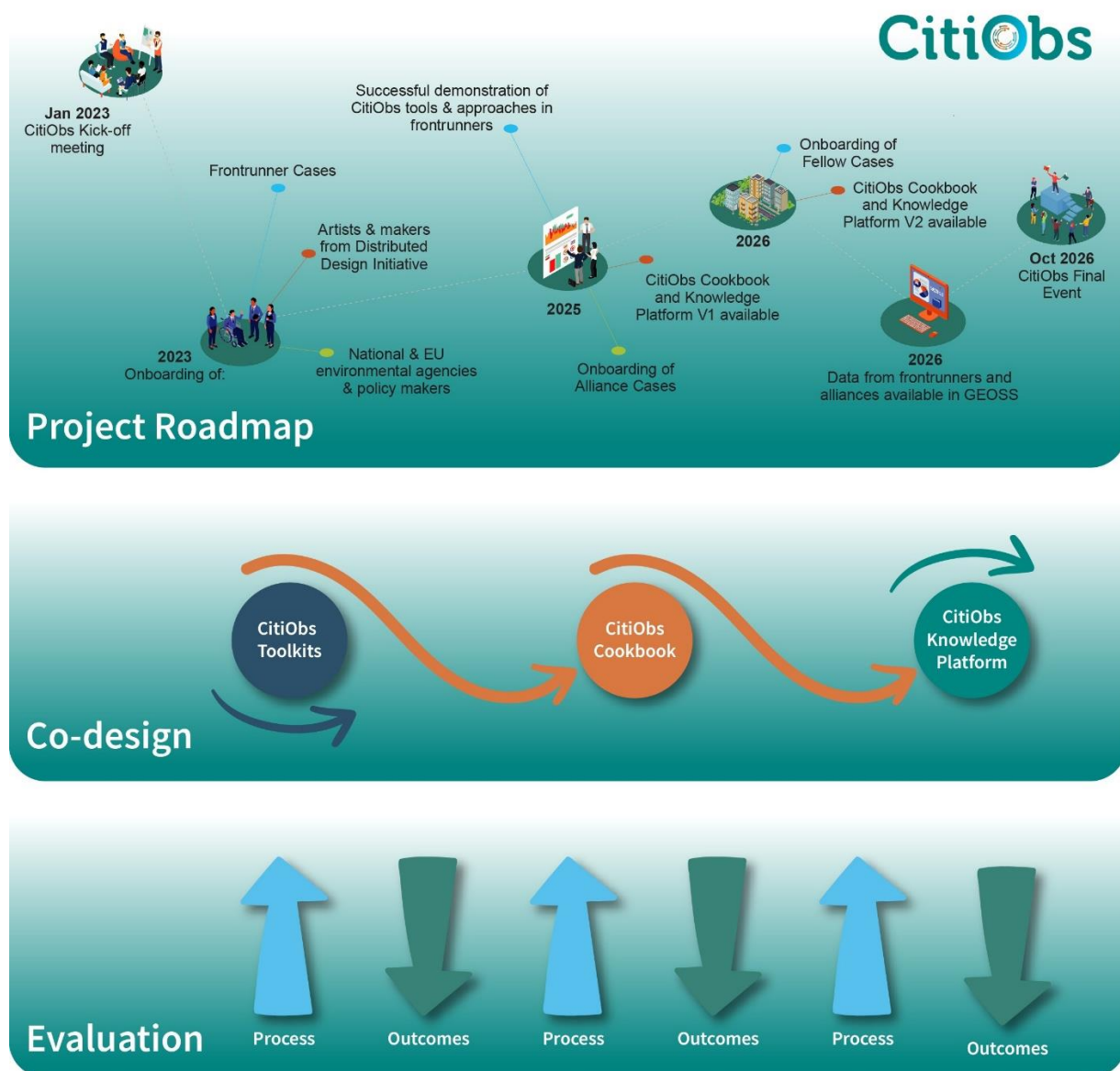


Figure 1 Overview of CitiObs co-design and evaluation

The co-design processes for each of these outputs with COs themselves work to ensure the project outputs are useful, accessible, and highly relevant, and they cut across work packages. WP1 *Social dimensions of Citizen Observatories for transition governance* and WP2 *Tools, technologies and data services for citizen observatories* produce the four toolkits that are co-designed with the Frontrunner Cases (FRCs) and Alliance cases directly (in WP3, *Co-creation of data and actions for healthy, sustainable and resilient cities with Citizen Observatories*). The planning and implementation of the co-design of the CitiObs Knowledge Platform and CookBook happens in T3.5 *Co-design of the CitiObs tools, CookBook and KP and evaluation of demonstration activities*. The CitiObs CookBook and the KP are both implemented by T4.2 *Packaging the CitiObs CookBook and Knowledge Platform*. These different co-design activities of the project are accompanied by evaluation activities to identify aspects for improvement in the CitiObs co-design methods and processes and to capture evolving project outcomes (see Figure 1).

1.2 Purpose of the document

The purpose of this document is to report on the final stage of co-design activities carried out within the CitiObs project for the development of the CitiObs tools, the CitiObs CookBook, and the CitiObs Knowledge Platform. Specifically, the document summarises the co-design methods, processes, and supporting tools and templates that were applied in Task T3.5 (*Co-design of the CitiObs tools, CookBook and Knowledge Platform*). This document builds on deliverable D3.11 Co-design (1/2) (Wehn & Crystal, 2025), which detailed the initial co-design processes, and reports on updates and new steps to the co-design methods and processes.

By documenting how co-design was planned and implemented across these three core CitiObs outputs, this deliverable aims to provide transparency on the participatory approaches used, capture methodological lessons learned, and support reflection within the project as well as knowledge sharing beyond it.

1.3 Scope of the document

The scope of this document encompasses the description of the co-design methodologies, step-by-step processes, and practical tools and templates used to collaboratively develop the CitiObs toolkits, the CitiObs CookBook, and the CitiObs Knowledge Platform with project partners and CitiObs cases. The detailed results and final versions of the CitiObs tools, the CookBook, and the Knowledge Platform are outside the scope of this deliverable. These are reported in separate, dedicated deliverables and outputs of the project. Accordingly, this document does not reproduce those results but focuses on explaining how they were co-designed, referring to other deliverables where appropriate.

In this way, the report provides a consolidated account of the CitiObs co-design process as carried out in Task T3.5, supporting internal learning, evaluation, and future uptake of the methods used.

1.4 Structure of the document

The remainder of this document is organised as follows. Section 2 describes the methods for co-designing project outputs (toolkits, CookBook and Knowledge Platform), while section 3 reports on the development of the instruments used for process and outcome evaluation. Conclusions are drawn in section 4.

2 METHODS FOR CO-DESIGNING CITIOBS OUTPUTS

2.1 Co-design of the CitiObs Toolkits

The co-design activities that informed the CitiObs toolkits were reported in the first version of this deliverable (D3.11). The CitiObs toolkits are living documents that will continue to grow beyond the official deliverable versions via the CitiObs Knowledge Platform. Therefore, the project interactions with the CitiObs cases continue to inform best practices and real-life examples with which to update the toolkits.

The Environmental Monitoring toolkit is the only toolkit that is still to be formally updated through the submission of D2.2 in month 42, the second version of the toolkit (see Table 1).

Table 1 Toolkit Deliverables

Toolkit	Workshop(s)	Deliverable 1 st version	Deliverable 2 nd version
Participation Dynamics	26 May 2025 6 November 2025	D1.6 submitted July 2023 (Wehn and Somerwill, 2023)	D1.2 submitted September 2025 (Wehn et al, 2025)
Leave No One Behind	11 June 2025 27 November 2025	D1.5 submitted July 2023 (Gold et al., 2023)	D1.1 submitted August 2024 (Gold et al., 2024)
Citizen-led Action	19 November 2025	D1.4 (internal version) July 2023	D1.4 submitted October 2025 (Guy et al., 2025)
Environmental Monitoring	22 October 2025	D2.6 submitted April 2024 (Castell et al., 2024)	D2.2 due M42

2.2 Co-design of the CitiObs CookBook

In the first version of this deliverable (D3.11), reporting focused on the initial co-design process during which the toolkit leaders worked collaboratively to integrate the four CitiObs toolkits into a single, consolidated structure, resulting in the first iteration of the CitiObs CookBook. During this process, it became clear that a linear or hierarchical structure alone would not sufficiently support user navigation across the interconnected content of the CookBook.

As a result, the decision was made to introduce a hashtag-based navigation system to complement the existing structure and improve user experience. This approach aimed to enable users to access relevant content across toolkits based on intuitive concepts and thematic interests rather than solely through predefined categories.

The hashtag system was created among the CitiObs consortium during an online plenary meeting with CitiObs partners, where partners collaboratively developed lists of hashtags for each

CookBook category (see Figure 2). These hashtags were intended to reflect recurring themes, user needs, and practical entry points relevant across multiple toolkits.

Creating and running a Citizen Observatory		Conducting an environmental monitoring campaign
Participation		Sensors
Inclusion		Citizen-generated data
Community engagement		Data quality
Co-design		sensing device
Frameworks		connectivity
Collaboration		mobile sensing device/mobile monitoring
Project planning		PM10
Measurement plan		PM2.5
Trust		particulate matter
Dialogue		Crowdsourced data

Figure 2 Hashtag development example 1

Following this joint plenary exercise, the initial hashtag lists were applied to the CookBook content. Each CookBook page was assigned between two and four hashtags considered most relevant for facilitating user navigation (see Figure 3). Toolkit leaders then reviewed this first iteration and refined the selection of hashtags associated with their respective toolkit pages. Any newly introduced hashtags were highlighted and systematically reviewed to determine whether they should be applied to other relevant pages, ensuring internal consistency.

Conducting an environmental monitoring campaign
Wearables
Data Visualization
Adding context to data
industry
agriculture
microcontroller
WiFi
power supply
LoRa
FAIR
CARE

Figure 3 Hashtag development example 2

Particular attention was paid to maintaining an appropriate level of granularity: hashtags were designed to be broad enough to connect multiple pages, while avoiding terms that were either so specific that they applied to only a single page or so general that they applied indiscriminately across the entire CookBook (see Figure 4).

I want to set up a Citizen Observatory...
...by building a community
#CommunityEngagement
#Participation
#Inclusion
#Trust
...by identifying a shared issue
#Dialogue
#CommunityEngagement
#DecisionMaking
...through a suitable co-design process
#CoDesign
#Collaboration
#Frameworks
#Teamwork
...and need to find and secure funding
#ProjectPlanning
...and comply with ethics
#InterculturalCooperation
#Trust
#Inclusion

Figure 4 Hashtag development example 3

Once the hashtag system had been validated internally within WP3, the consolidated hashtag list was shared with WP4 partners. WP4 adapted the list to ensure technical compatibility with the Knowledge Platform infrastructure (see example in Figure 5). The resulting file was then returned to WP3, where links between hashtags and their corresponding toolkit and CookBook pages were confirmed and completed.

HASHTAG	ARTICLE TITLE	ARTICLE LINK
#CitizenObservatories	I want to understand what Citizen Observatories are by learning about their characteristics	https://creating.toolkit.citiobs.e
#OpenData	I want to understand what Citizen Observatories are by learning about their characteristics	https://creating.toolkit.citiobs.e
#EarthObservation	I want to understand what Citizen Observatories are by learning about their characteristics	https://creating.toolkit.citiobs.e
#Mapping	I want to understand what Citizen Observatories are by learning about their characteristics	https://creating.toolkit.citiobs.e
#CitizenObservatories	I want to understand what Citizen Observatories are by learning about the history of Citizen Observatories	https://creating.toolkit.citiobs.e
#CitizenScience	I want to understand what Citizen Observatories are by learning about the history of Citizen Observatories	https://creating.toolkit.citiobs.e
#Policy	I want to understand what Citizen Observatories are by learning about the history of Citizen Observatories	https://creating.toolkit.citiobs.e
#CommunityEngagement	I want to set up a Citizen Observatory by building a community	https://creating.toolkit.citiobs.e
#Participation	I want to set up a Citizen Observatory by building a community	https://creating.toolkit.citiobs.e
#Inclusion	I want to set up a Citizen Observatory by building a community	https://creating.toolkit.citiobs.e
#Trust	I want to set up a Citizen Observatory by building a community	https://creating.toolkit.citiobs.e
#Dialogue	I want to set up a Citizen Observatory by identifying a shared issue	https://creating.toolkit.citiobs.e
#CommunityEngagement	I want to set up a Citizen Observatory by identifying a shared issue	https://creating.toolkit.citiobs.e

Figure 5 Hashtag development example 4

The hashtag system was then implemented on the CitiObs Knowledge Platform, formally integrating the CitiObs CookBook as a core component of the platform (see Figure 6). The

validation of this system with the CitiObs cases is discussed in section 2.3 on the co-design of the KP as a whole.

Protected: Toolkit Navigation

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

- Lorem ipsum dolor sit amet
- Consectetur adipiscing elit
- Sed do eiusmod tempor incididunt
- Ut labore et dolore magna aliqua

Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

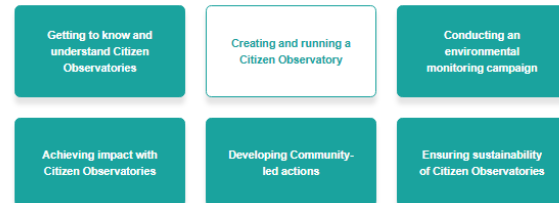


Figure 6 Preliminary version of CookBook on KP

2.3 Co-design of the CitiObs Knowledge Platform

Following the earlier stages of the co-design process, the CitiObs Knowledge Platform entered a final phase focused on testing, validation, and preparation for launch of its third and final version (see Figure 7).

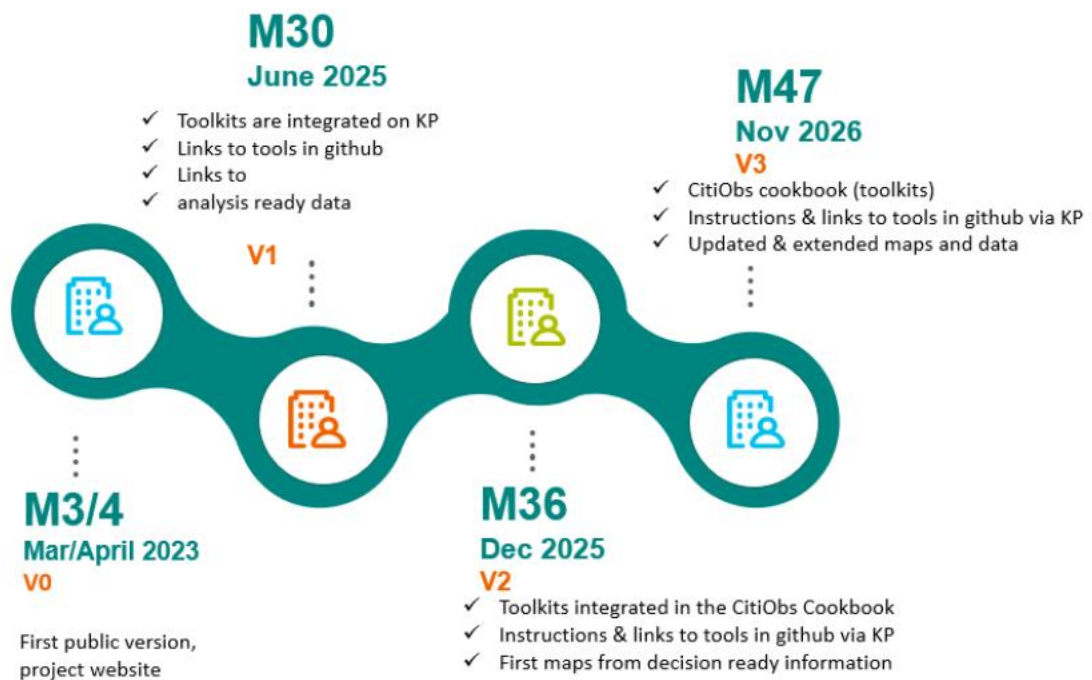


Figure 7 CitiObs Knowledge Platform timeline

During the face-to-face consortium meeting in Oslo in March 2026, project partners jointly reviewed progress to date and agreed on the final steps required to complete the co-design and validation of the CitiObs Knowledge Platform.

Steps 1–7 of the KP co-design process (see Table 2), covering user identification, user journeys, technical criteria, wireframing, mock-up, testing and launching of the first version of the KP, was reported on in the first version of this deliverable (D3.11) along with the iterative process for V2 of the KP. The discussions in Oslo therefore focused on this iterative process for the third and final version of the KP (i.e. step 8), mainly following steps 6 and 7.

Table 2 Co-design of the CitiObs Knowledge Platform (Steps)

Step	Description & related project tasks
1. Identify User Groups	Co-design with CitiObs partners
2. Map out User Stories & Journeys	- Co-design with CitiObs partners - Refine & enhance (T3.5 partners) - Analyse to produce user requirements
3. Technical Criteria & Selection	- Co-design with CitiObs partners (F2F, Oct 2024) - Analysis (T4.2 partners)
4. Map Out Wire Frames	- Draft a wire-frame - layout, structure, flow (T3.5 & T4.2 partners) - Feedback & validation
5. Create Mock-Ups	- Draft the mock up - design, feel (T4.2 partners) - Feedback & validation (CitiObs partners, FRCs, Alliance cases)
6. First Release Test	- Prepare the test & ways for capturing feedback - script, test environment (T4.2 partners) - Feedback & validation (CitiObs partners, FRCs, Alliance cases)
7. Finalisation & Launch	- Finalise based on feedback (T4.2 partners) - Launch (with T4.1 support)
8. Iterative process for versions 2 & 3	A similar process of testing the KP and improving based on feedback takes place for versions 2 & 3 of the KP.

Step 6 (for V3) entails:

- Preparation of the KP test environment and feedback mechanisms, including testing scripts and protocols (led by T4.2 partners); and
- Feedback collection and validation involving CitiObs partners, Frontrunner Cases (FRCs), Alliance Cases (ACs), and members of relevant Communities of Practice (CoPs) linked to WP1 and WP2.

A protocol instrument (Annex 1) was designed to structure the interactions with cases and CoPs that gather feedback and input about the KP. This instrument outlines steps that instruct

participants to navigate different aspects of the KP, namely the CookBook, the AI chatbot feature, and the KP webpages. The instrument has set questions for participants to answer depending on the aspect of the KP that they engaged with (see example in Table 3). There are also general questions about the layout of the KP.

Table 3 CitiObs Knowledge Platform validation - instrument example

Was the part of the KP you engaged with welcoming?	Was anything on the page distracting or misleading?	What parts of the page appealed to you?
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>

During the Oslo face-to-face consortium meeting in March 2026, three complementary feedback avenues were agreed to ensure broad and diverse validation of the KP. All three feedback avenues utilise the protocol (Annex 1), adapting it to the amount of people and format of interaction as needed.

1. Feedback through Communities of Practice (CoPs)

Drawing on the efforts of WP1 to connect with and promote CoPs, one avenue of feedback and validation is through sessions with Citizen Science and Citizen Observatory Communities of Practice. This includes internal testing within partner organisations (e.g. ULEI testing with colleagues) and/or engagement with external CoPs, such as relevant ECSA working groups where appropriate.

2. Roadshow-based validation with CitiObs cases

Feedback on the KP is gathered during one or more CitiObs roadshow events¹. A dedicated session (approximately 30 minutes) will be integrated into the roadshow agenda, during which participants—particularly newer Fellow cases—will be given specific tasks to perform on the KP and asked to assess whether they can efficiently locate relevant information. Structured feedback is collected and used to improve the KP.

3. Targeted user interviews

Partners with expertise in communications highlighted the role of structured user interviews in gaining valuable feedback about the KP. These interviews are with a selected group of participants from Frontrunner and Alliance cases. These interviews aim to

¹ 10 CitiObs Roadshow events are being implemented by T3.3 *Fellow Cases*. These events showcase the CitiObs tools and are tailored to the scope of the 50 Fellow cases that joined the project in 2026.

generate in-depth qualitative insights into usability, navigation, and perceived value of the KP, complementing broader feedback activities.

Step 7 for V3 entails:

- Finalisation of the Knowledge Platform based on the consolidated feedback (led by T4.2 partners); and
- The formal launch of the KP, supported by T4.1 communication and dissemination activities.

The final launch of V3 of the CitiObs Knowledge Platform will take place in November 2026.

Together, these steps ensure that the final version of the CitiObs Knowledge Platform is validated for practicality, accessibility, and functionality for real-world users, and responsive to the needs of the diverse communities it aims to support.

3 EVALUATION OF THE CITIOBS DEMONSTRATION ACTIVITIES

3.1 Process Evaluation

The instruments and activities developed for process evaluation (using logbook entries, participant evaluation forms, and discussions among project partners) focus on assessing and improving the efficiency and effectiveness of the CitiObs mutual learning and knowledge transfer activities and were reported in the first version of this deliverable (D3.11). These evaluations are conducted continuously throughout the demonstration activities; there are no additional developments to report on.

3.2 Outcome Evaluation

In D3.11, it was reported that interviews or surveys would be conducted with cases in order to assess the impact that CitiObs tools and support has had for the cases. D3.11 also reported on the CSISTA (Citizen Science Impact Storytelling Approach) instrument, which had been initially developed by the WeObserve project (Wehn et al., 2021) and adapted by CitiObs to capture the experiences of cases implementing the four CitiObs toolkits, one CSISTA instrument for each toolkit. During the Oslo face-to-face consortium meeting in March 2026, a session was held to review the tailored CSISTA instruments and make necessary changes. Four groups were formed, one for each instrument; a review was conducted, and suggestions made to ensure relevancy for how the project had developed. Minor changes were suggested to each CSISTA instrument and later approved by WP3.

Upon further discussion in WP3, it was agreed that the interviews needed to focus on the cases' experience working with CitiObs and strengthening their CO overall, rather than on only one toolkit as the tailored CSISTA instruments support. For this reason, an interview guide was created to explore the overall implementation experiences of the cases (Annex 2). This was deemed necessary since most cases that implemented toolkits, implemented more than one; isolating these experiences risks missing out on vital data, capturing the interactions of the toolkits. Microsoft's AI Co-Pilot was used to distill key questions from each tailored CSISTA instrument, and a 10-question guide was created from that. However, upon discussion of the guide during a WP3 meeting, it became clear that the project already had the answers to the majority of the questions from other surveys and exercises conducted previously. Therefore, a second version of the interview guide was created, focusing specifically on the experience of collaborating with CitiObs in trying to strengthen the work of the CO. This version includes an instruction for the interviewer to gather relevant information about the CO prior to the interview so as not to ask unnecessary questions.

4 CONCLUSION

This report has outlined the finalised approaches and iterative processes employed by the CitiObs project to co-design and validate key outputs: the four CitiObs Toolkits, the CitiObs CookBook, and the CitiObs Knowledge Platform (KP), as well as the refined methods for evaluating project outcomes. Building on earlier work reported in D3.11, this deliverable has focused on enhancement and validation of these co-designed outputs.

In the final phase of the project, the CitiObs toolkits continue to evolve as living resources, informed by ongoing engagement with cases and integrated within the Knowledge Platform. The CitiObs CookBook has been further strengthened through the implementation of a hashtag-based navigation system, improving accessibility and enabling users to explore interconnected content across toolkits in a flexible and user-oriented manner.

The CitiObs Knowledge Platform has undergone extensive testing and validation in preparation for its third and final version. Through structured feedback mechanisms including engagement with Communities of Practice, roadshow sessions, and targeted interviews, the platform is ensured to provide usability, relevance, and functionality for diverse user groups. The final version of the KP will consolidate project outputs, including the CookBook and supporting materials, into a coherent and accessible resource.

Outcome evaluation methods have also been refined to better capture the holistic experiences of CitiObs cases, resulting in a streamlined interview approach for collective case experiences that focuses on collaboration and impact across implementation.

REFERENCES

- Castell, N., González, O., Volten, H., Riallant, D. (2024). The “Using Low-Cost Sensors” Toolkit. CitiObs Deliverable 2.6. Horizon Europe.
- Gold, M., Elizondo, R., Spelt, A. (2023). The “Leave No One Behind” Toolkit (1/2). CitiObs Deliverable 1.5. Horizon Europe.
- Gold, M., Elizondo, R., Spelt, A. (2024). The “Leave No One Behind” Toolkit (2/2). CitiObs Deliverable 1.1. Horizon Europe.
- Guy, J., González, O. (2025). “Citizen Led Action” Toolkit. CitiObs Deliverable 1.4. Horizon Europe.
- Wehn, U., Ajates, R., Fraisl, D., Gharesifard, M., Gold, M., Hager, G., Oliver, J. L., See, L., Shanley, L.A., Ferri, M., Howitt, C., Monego, M., Pfeiffer, E., Wood, C. (2021), Capturing and communicating impact of citizen science for policy: A storytelling approach, *Journal of Environmental Management*, 295, 113082, <https://doi.org/10.1016/j.jenvman.2021.113082>.
- Wehn, U. and Crystal, T. (2025) CitiObs Co-design (1/2), CitiObs Deliverable D3.11, December.
- Wehn, U., Mungekar, N., Crystal, T., Somerwill, L. (2025). CO Participation in Multilevel Governance Toolkit (2/2). CitiObs Deliverable D1.2. Horizon Europe
- Wehn, U., Somerwill, L. (2023). CO Participation in Multilevel Governance Toolkit (1/2), CitiObs Deliverable 1.6. Horizon Europe.

ANNEXES

Annex 1: Protocol for feedback on the CitiObs Knowledge Platform

Steps for guided exploration of the Knowledge Platform (KP):

1. Ask participants to think of a question or specific issue that they have themselves or assign them a task that has been preidentified as a common challenge among COs.
2. Ask them to navigate to the KP (share link)
3. Split them into three groups: (you can also choose to only test one of these groups)
 - a. Chatbot
 - b. KP webpage
 - c. CookBook (hashtags)
important: the hashtag group must have a "working with the community" challenge (not technical as the hashtags are for the cookBook only)
4. Ask them to look for information to help shed light on their question

Spend ~15 minutes allowing them to navigate the KP, searching for their answers. They are welcome to look for answers to other challenges/questions they think of as well.

Gathering feedback:

- Ask them to fill out the templates below with their feedback (~5 minutes). Option to engage in an open discussion and take notes of what is said
 - . Template can be transposed to Miro

Feedback templates:**Page layout (for all groups)**

Was the part of the KP you engaged with welcoming?	Was anything on the page distracting or misleading?	What parts of the page appealed to you?
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>

Chatbot users:

Did you know what to ask the chatbot?	Did the given response reflect the core ideas of your question?	Did the given response help you navigate the other relevant parts of the KP?	General feedback/suggestions?
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>

KP webpage users:

Did you know what to click on first to find information about your question?	Is what you found on each page what you were expecting?	Were you able to find relevant information to address your question?	General feedback/suggestions?
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>

CookBook (Hashtag) users:

Did you know which of the six categories to choose to find information about your question?	Were the hashtags that appeared with a given category what you expected/did they make sense?	When you chose a hashtag, did the pages provided offer relevant information for your challenge?	General feedback/suggestions?
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>
<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>	<i>Participant feedback</i>

Annex 2: Consolidated Interview Guide

General Guidance:

- Think of these questions as conversation starters, not a checklist. Your job is to keep the discussion flowing naturally, let the other person lead and follow their train of thought. The questions are there to help if the conversation stalls or to gently steer it back on track, not to be asked one by one in order.
- What the interviewee chooses to expand on is valuable data in and of itself, don't rush past it to get to the next question.
- Do your research before the interview: we already have information about the COs such as goals, stakeholders involved, data collection activities. Be aware of these details and avoid asking them questions we have already asked before.

Guiding Questions:

1. What was happening in the CO before it joined CitiObs? Think about what was going well, the challenges it was facing.
2. In what ways did you receive support from CitiObs?
3. In what ways did the interactions and/or tools from CitiObs help your CO? Consider:
 - o Trust in data or how it was used, or seen as meaningful by participants and other stakeholders (e.g. community members, experts, authorities).
 - o Realising there were groups that were missing, less visible, or dropped out over time. And in turn, engaging with those groups.
 - o Harnessing creativity to reach more people or sustain momentum.
 - o Noticing patterns or issues with participation and trying to resolve them.
4. Did connecting with the CitiObs network of COs impact the work of your CO? If so, how?
5. Is there anything else you would like to convey about your experience trying to strengthen the work of your CO?