



CitiObs

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

DELIVERABLE 1.1

The “Leave No One Behind” Toolkit (2/2)

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Abstract:	<p>This deliverable report describes the Beta version of the CitiObs ‘Leave No One Behind’ (LNOB) Toolkit, which will be tested by the Frontrunner Cases and further co-developed with relevant stakeholders. The purpose of the LNOB Toolkit is to provide tools and methods to foster diverse and representative inclusion of people across the dimensions of gender, sociocultural origin, religious affiliation, literacy levels, social status, dis/ability and age in the activities of the COs to be formed and/or supported within the CitiObs project.</p>		

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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 citizens and marginalised 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 document describes the Beta version of the CitiObs ‘Leave No One Behind’ (LNOB) Toolkit, which will be tested by the Frontrunner Cases and further co-developed with relevant stakeholders. The LNOB Toolkit seeks to support Citizen Observatories (COs) in the diverse and representative inclusion of participants across dimensions of gender, sociocultural origin, religious affiliation, literacy levels, social status, dis/ability and age.

The pledge to “Leave No One Behind” (LNOB) arose in connection with the United Nations Sustainable Development Goals (SDGs) to work towards a world in which all members of society will benefit from the efforts to end poverty and other deprivations, to improve health and education, to reduce inequality, and to spur economic growth, without excluding individuals or groups of people from those benefits.

A recurrent challenge for Citizen Science projects and initiatives is the lack of diversity amongst participants. The causes for this can relate to limited capacity or reach on the part of project leaders, and a lack of resources on the part of potential participants such as time to participate, or the money to acquire equipment. However, the causes can be much more complex and intersectional with regard to gender, age, socio economic status, literacy levels, religious affiliation, dis/ability, and other factors. The LNOB Toolkit provides advice on how to reflect on this lack of diversity and engage with new groups of people in the activities of the COs, at different stages of the project lifecycle (i.e. before, during and after), with the aim of making participation more equitable, diverse, and inclusive.

Iterative improvements will be made while this Beta version is tested in practice with the Frontrunner Cases in response to their needs and feedback, and further fine-tuned in collaboration with the Alliance Cases, leading to the final version that will be incorporated into the CitiObs Cookbook for broad use by the Fellow Cases and others.

TABLE OF CONTENTS

Acronyms.....	11
Glossary of LNOB Terms	12
Introduction	15
The purpose of this document	16
The structure and purpose of the LNOB Toolkit.....	16
Integration of the LNOB Toolkit into the CitiObs Cookbook.....	17
The Pledge to “Leave No One Behind”	18
Toolkit Development Methodology	21
Content gathering and curation	21
Early Starting Points	21
Literature Review	21
Key Existing Resources shaping the LNOB Toolkit	22
Collaborative Resource Gathering.....	23
Collaborative Workshops	26
Structuring the Toolkit Content.....	30
Preliminary Interface Design	31
Next Steps	32
The Beta Version of the LNOB TOOLKIT.....	34
1. LNOB Workshop Materials.....	34
1.1 Workshop Slide Deck.....	34
1.2 Suggested Workshop Structure.....	35
1.3 Workshop Guidance	38
2. Reflective Workshop Facilitation Methods.....	39
2.1 Consideration for Lived Experience and Living Environment	39
2.1.1 The 'Sensitise' collection of methods in the Waag Co-Creation Navigator.....	39
2.1.2 The Shadowing Method Template	40
2.1.3 The Story World Method Template.....	41

2.1.4 The Empathy Timeline Method	41
2.1.5 The Experience Mapping Method	42
2.2 Consideration of the Geographical Context	43
2.2.1 The Geographical Mapping Method.....	43
2.2.2. The Painted Layers on the Map Method	44
2.3 Consideration of Roles and Inequities	44
2.3.1 The Stakeholder Roles & Responsibilities Map.....	44
2.3.2. The Equity Compass	45
3. Sign-Posted Guidance for Tools & Methods.....	46
3.1 Introduction - What does ‘Leave No One Behind’ (LNOB) mean? [before]	46
Why is it relevant?.....	46
How can this be done?	48
Example case studies.....	49
Useful resources.....	49
You may also be interested in.....	50
References.....	50
3.2 How can we engage with the concepts of Equity, Diversity, and Inclusion (EDI)? [before, during] ..	52
Why is it relevant?.....	52
How can this be done?	53
Case study	54
Useful resources.....	54
You may also be interested i	56
References.....	56
3.3 How can we ensure our outreach and engagement activities are ethical? [<i>before, during, after</i>] ...	58
Why is it relevant?.....	58
How can this be done?	58
Case study	58
Useful resources.....	59
You may also be interested in.....	59

3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive (EDI)?
[before, during, after] 60

 Why is it relevant? 60

 How can it be done? 60

 Case study 62

 Useful resources 62

 You may also be interested in 65

 References 65

3.5 How do we engage specific communities/groups in our Citizen Observatory? *[before, during, after]*
 67

 Why is it relevant 67

 How can this be done? 67

 Case study 68

 Useful resources 68

 You may also be interested in 70

 References 70

Bibliography 72

Annexes 76

 Appendix I - Literature Review Bibliography 76

 Appendix II – Adaptation of the Pro-Ethics ‘Ethics Framework’ to the context of Citizen Observatories 84

 Appendix III – Guideline for DHH 91

 Appendix IV – Guideline for a diverse and inclusive project 93

SUMMARY 95

INDEX OF FIGURES

Figure 1. Frontrunner Cases 15

Figure 2. Five factors of LNOB: assessing who is left behind and to what degree (based on UNICEF, 2021) 18

Figure 3. The shared EIE Taskforce Zotero library 25

Figure 4. The LNOB resources-gathering Trello Board 26

Figure 5. CitiObs Plenary Workshop in Barcelona to provide input and feedback to the LNOB Toolkit.....28

Figure 6. ECSA2024 Conference joint workshop on Diversity and Inclusion29

Figure 7. The online version of the ECSA2024 session run with the ECSA EIE WG30

Figure 8. The online interactive proxy-interface to the LNOB Toolkit in the CitiObs SharePoint environment32

Figure 9. Slidedeck of the LNOB workshop.....34

ACRONYMS

Acronym	Full name
CO	Citizen Observatory
CSO	Civil Society Organisation
D	Deliverable
DoA	Description of Action
EC	European Commission
EDI	Equity, diversity, and inclusion
LNOB	Leave No One Behind
SDG	Sustainable Development Goal
RRI	Responsible Research and Innovation
RFO	Research Funding Organisation
WP	Work Package

GLOSSARY OF LNOB TERMS

Accessibility – Openness, the quality of being approachable, available in practice. The term also describes the ability to comprehend the language of a service or activity, and the distance between service or activity and potential users due to various resources such as time and money. (Porta, 2023).

Consent – Agreement by choice, made freely without duress or deception, and with sufficient capacity and legal competence to give it. (Law, 2022).

Bias – A conscious or unconscious attitude towards people or the interpretation of a phenomenon that can lead to (positive or negative) prejudice, discrimination, and/or representation. (Chandler & Munday, 2020).

Diversity – The existence of variations of different characteristics in a group of people. These characteristics could be anything that makes us unique, such as our cognitive skills and personality traits, along with the things that shape our identity (e.g. race, age, gender, religion, sexual orientation, cultural background). (Hinsenkamp et al., 2020).

Digital Literacy – Having the skills necessary to access information and participate online such as using a computer keyboard, navigating to a website, or using a search engine. (McArthur et al., 2018).

Disability – An umbrella term covering impairments, activity limitations, and participation restrictions that are not just related to health but are also complex reflections of the interaction between features of a person’s body, and features of the society in which he or she lives. Walking, seeing, hearing and cognition are all considered essential in determining disability. (Hinsenkamp et al., 2020).

Dis/ability – A term used by dis/ability studies academics and activists to counter the word ‘disability’ (spelled without the slash). Some argue that the use of the term ‘disability’ (spelled without the slash) suggests that a person is represented, or identified, by what they cannot do, rather than what they can do; and it ignores the various individual and collective processes that intersect with disability. (Goodley, 2018).

Discrimination – In its most current use, it refers to the differentiation between people based on gender, colour, sexuality, dis/ability or class. (Rai, 2018).

Empowerment – To increase the ability of an individual or community to do things for themselves. (Park & Allaby, 2017).

Engagement – Forms of one-way or two-way information exchange between stakeholders and researchers/innovators. This may include forms of communication, consultation, or participation. (Giannelos et al., 2021)

Environmental equity (environmental justice) – The extent to which all groups of people in a region or country (regardless of race, ethnicity, economic status, or income) receive equal treatment and protection under environmental statutes, regulations, and practices. (Park & Allaby, 2017).

Ethics – The philosophical study of moral values and rules, that inform decisions about wrong and right. (Park & Allaby, 2017).

Ethnicity – The term ethnicity was coined in contradistinction to race, which is often seen in biological terms. Members of an ethnic group may be identifiable in terms of racial attributes, but they may also share other cultural characteristics such as religion, occupation, language, or politics. Individuals who consider themselves, or are considered by others, to share common cultural characteristics that differentiate them from the other collectivities in a society, and from which they develop their distinctive behaviour, form an ethnic group. (Scott, 2014).

Exclusion – A process by which individuals or households experience deprivation, either of resources (such as income), or of social links to the wider community or society. (Scott, 2014).

Equity – Fairness arising from the equal use and allocation of resources. (Park & Allaby, 2017).

Equality – The state of being the same in terms of quantity, value, or status. (Park & Allaby, 2017).

Feminism – The view that women and men should be treated equally and the advocacy of women’s rights. Feminism encompasses a wide range of political and social movements, theories, and positions which share the focus on women and women’s rights from diverse perspectives. (Griffin, 2017).

Gender – Gender refers to the characteristics of woman, man, or other identities that are socially constructed. This includes norms, behaviours and roles associated with being a woman, man, or non-binary gender identities, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time. Gender interacts with but is different from sex, which refers to the different biological and physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs. Gender and sex are related to but different from gender identity. Gender identity refers to a person’s deeply felt, internal, and individual experience of gender, which may or may not correspond to the person’s physiology or designated sex at birth. (WHO, n.d.).

Inclusion – The action or state of including or of being included within a group or structure. (Mayhew, 2015).

Intersectionality – A perspective of power relationships that considers the various social variables (such as sex, age, ethnicity, dis/ability, immigration status, nationality, and physical/mental/emotional conditions) that have an effect on individuals' spheres of influence, perceptions, and actions. (Kuran et al., 2020).

Justice – Fairness, the quality of being fair or just. (Park & Allaby, 2017)

Representation – The substitution of an individual or class in place of a person (such as a sibling of a severely ill person who is not able to express her/his own preferences). Representation needs to be fair, but the precise meaning of fairness is context dependent. This may mean that some contexts require additional efforts to include particular stakeholders. (Giannelos et al., 2021)

Social exclusion – Exclusion from the prevailing social system and its rights and privileges, typically as a result of poverty or the fact of belonging to a minority social group. (Hinsenkamp et al., 2020).

Socio-economic groups – Different groups of persons where the members of a particular group are, on the one hand, reasonably homogeneous and, on the other hand, fairly clearly distinguished from members of other groups in respect of their social, economic, demographic and/or cultural circumstances and behaviours. (Hinsenkamp et al., 2020).

Socio-economic status (SES) – An economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others. When analysing a family's SES, the household income, earners' education, and occupation are examined, as well as combined income, whereas for an individual's SES only their own attributes are assessed. (Hinsenkamp et al., 2020).

Vulnerability – the susceptibility of suffering risk and damage due to relative disadvantage that is the result of an intersection between different factors such as social class, race, gender, sexual identity, age, and disability among others. Vulnerability is not a static condition, nor will it be the same to all members of a social group. Finally, it is important to note that social vulnerability is not a natural condition but the result of systemic inequalities and oppression. (Kaijser & Kronsell, 2014; Kuran et al., 2020; Tierney, 2019)

INTRODUCTION

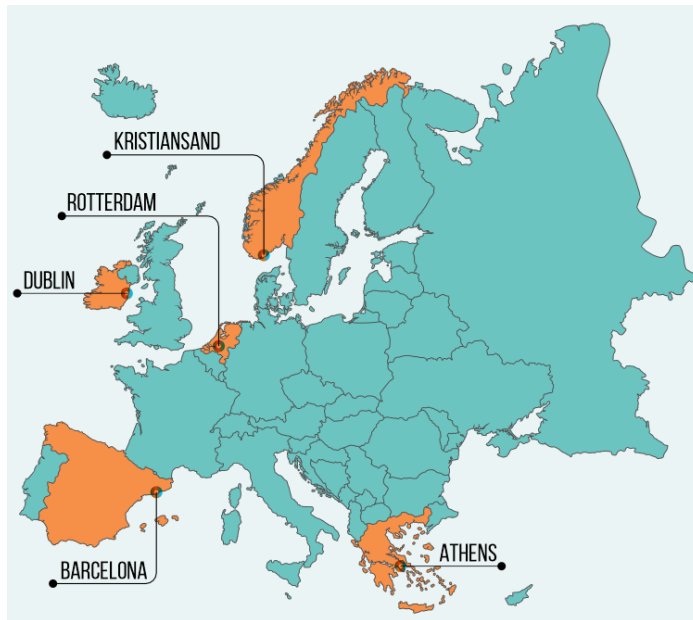


Figure 1. Frontrunner Cases

The tools being developed within the first phase of the CitiObs project are consolidating practice-based knowledge for co-creating data, knowledge and local action via Citizen Observatories (COs). The main objective of these tools is to support the diverse and inclusive engagement of people in the activities of the COs, adding value to environmental observations in the urban context, increasing and validating people’s observations of the urban environment in compliment to existing in-situ Earth Observation systems – with the ultimate

aim of co-creating inclusive local actions for sustainability and ensuring that CO data contribute to research and policy development towards the objectives of the European Green Deal and the UN Sustainable Development Goals.

Work Package 1 (WP1) within the CitiObs project sets the foundation for the societal dimensions of COs by drafting the first versions of the tools, toolkits, and guidelines that will subsequently be tested and refined in practice in collaboration with the Frontrunner Cases, fine-tuned with the Alliance Cases, and operationalized by the Fellow Cases.

The first task (T1) within WP1 has been to identify existing recommendations, tools, and approaches for inclusive multi-stakeholder engagement, to enable the diverse and representative inclusion of people across cultures, gender, disciplines, sociocultural origin, religious affiliation, literacy levels, social status, age, and dis/ability. These are being consolidated into a ‘Leave No One Behind’ (LNOB) Toolkit that is being developed in two stages: the Beta version for testing and further improvement, contained in this deliverable, and the final version for operationalization, which will be included in the CitiObs Cookbook.

The purpose of this document

The purpose of this document (Deliverable 1.1) is to describe how the Beta version of the ‘Leave No One Behind’ (LNOB) Toolkit is being developed, how it will be further tested and fine-tuned in collaboration with the Frontrunner Cases, and to share the current state of content development at time of submission. These activities are taking place in WP1 Task 1, whereas finalisation of the Toolkit for inclusion in the CitiObs Cookbook will take place in WP3.

An interim deliverable (D1.5) describing the initial development and draft content of this Toolkit was submitted in the first year of the project, and this second final deliverable (D1.1) describes the ongoing progress to date and the upcoming testing and mentoring phase in collaboration with the Frontrunner Cases.

The structure and purpose of the LNOB Toolkit

The LNOB Toolkit consists of **(1) LNOB workshop materials** that introduce the concepts of Justice, Equity, Diversity and Inclusion (JEDI) and the pledge to "Leave No One Behind" along with guidance on running this workshop with internal stakeholders; **(2) a description of workshop facilitation methods** to reflect and discuss how these concepts might be relevant in the context of one's own Citizen Observatory (CO) along with guidance on running such workshops; and **(3) sign-posted guidance regarding tools or methods** to enable or improve diverse and representative inclusion throughout the activities and lifecycle of the CO.

Rather than focusing on groups of people according to specific characteristics that could signal that they are marginalised, such as their gender, ethnicity, or mobility, the Toolkit seeks to encourage awareness of different vulnerabilities and factors that can cause people to be 'left behind'. A contextual understanding of the ways in which these factors intersect allows more effective measures to be designed and taken to bridge these gaps and shortcomings.

Depending on the scope and intention of any given CO, different communities could be contacted and invited to participate actively, and ways can be found to ensure that the unequal impacts of the environmental factor under investigation are being taken into account (such as poorer air quality in disadvantaged zones of the city), such that the needs of people thus affected are addressed. It should be emphasised that **it is not possible to engage all groups in the activities of any given CO** (let alone all COs), **nor should that be the aim**. It may not be possible for people to engage in the core activities of the CO for a variety of reasons, such as lack of time and resources, or much more urgent issues in their day to day lives. Guidance on how to ensure that their voices and needs are also represented is thus also contained within the Toolkit.

The main objectives for achieving diverse engagement within urban COs include (1) raising awareness of and interest in environmental issues amongst residents from across more areas of the city, (2) involving a diverse and representative range of people in observing their environment and sharing these data and insights towards more robust and effective action taking, and (3) enabling diverse and representative involvement in citizen-led actions. When opportunities for such actions are created or facilitated by the CO itself, they should have attention for enabling the inclusive co-design and co-creation of solutions to tackle environmental issues (such as by reducing air pollution) in a way that can meet the needs and objectives of a wide and diverse range of participants (such as improved health or mobility). Particular attention should be paid to the needs of minoritized groups who may be inequitably impacted by environmental issues and have a stake in the outcomes of any actions taken to address those issues.

This Beta version of the LNOB Toolkit will be tested via mentoring sessions with the CitiObs Frontrunner Cases to trial the reflection and discussion facilitation methods and ascertain the usability and relevance of the guidance contents of the Toolkit. Together with the leaders of those COs and selected local city partners (such as community leaders and Civil Society Organisations (CSOs)), the LNOB Toolkit will be refined and further developed for use by the Alliance Cases in the middle stage of the project. After further fine-tuning with the 30 Alliance Cases, the final LNOB Toolkit will be produced and shared with the 50 Fellow cases in the final stage of the project and published online in the CitiObs Cookbook.

Integration of the LNOB Toolkit into the CitiObs Cookbook

The activities within Work Package 1 to develop the LNOB Toolkit have included the gathering and consolidating of a coherent collection of useful resources such as recommendations, methods and templates, and guidance for use by people who are organising CO initiatives or activities and want to improve the diversity of their participants.

These will not be contained in one physical or digital document (although that is the form of this deliverable describing this work), nor will they be solely hosted on the CitiObs website, but rather they will be described and sign-posted via an interactive interface to the LNOB Toolkit that will be incorporated into the online CitiObs Cookbook and Knowledge Hub, with the intention of enabling the user to navigate and find the resources that are most useful and relevant to them. The user-interface and user-experience (UI/UX) design of this interface to the contents of the LNOB Toolkit will be performed in WP3 as part of the designing and building of the CitiObs Cookbook, in

collaboration with other Toolkit owners from across all Work Packages (thus ensuring a consistency of design and the interlinking of relevant resources).

In this Beta version of the LNOB Toolkit we continue the focus on content development, and the curation of useful resources, and seek to organise these in a way that makes them easy to embed within the resulting user interface design.

The Pledge to “Leave No One Behind”

In 2015, the 193 Member States of the United Nations pledged to ensure “no one will be left behind” and to “endeavour to reach the furthest behind first” when they approved the 2030 Agenda for Sustainable Development (UN, 2015a & 2015b). The intention of this pledge is for Member States to take explicit action to eradicate poverty in all its forms, end discrimination and exclusion, and reduce the inequalities and vulnerabilities that leave people behind and undermine the potential of individuals and humanity as a whole, as well as to fast-track progress for those furthest behind.

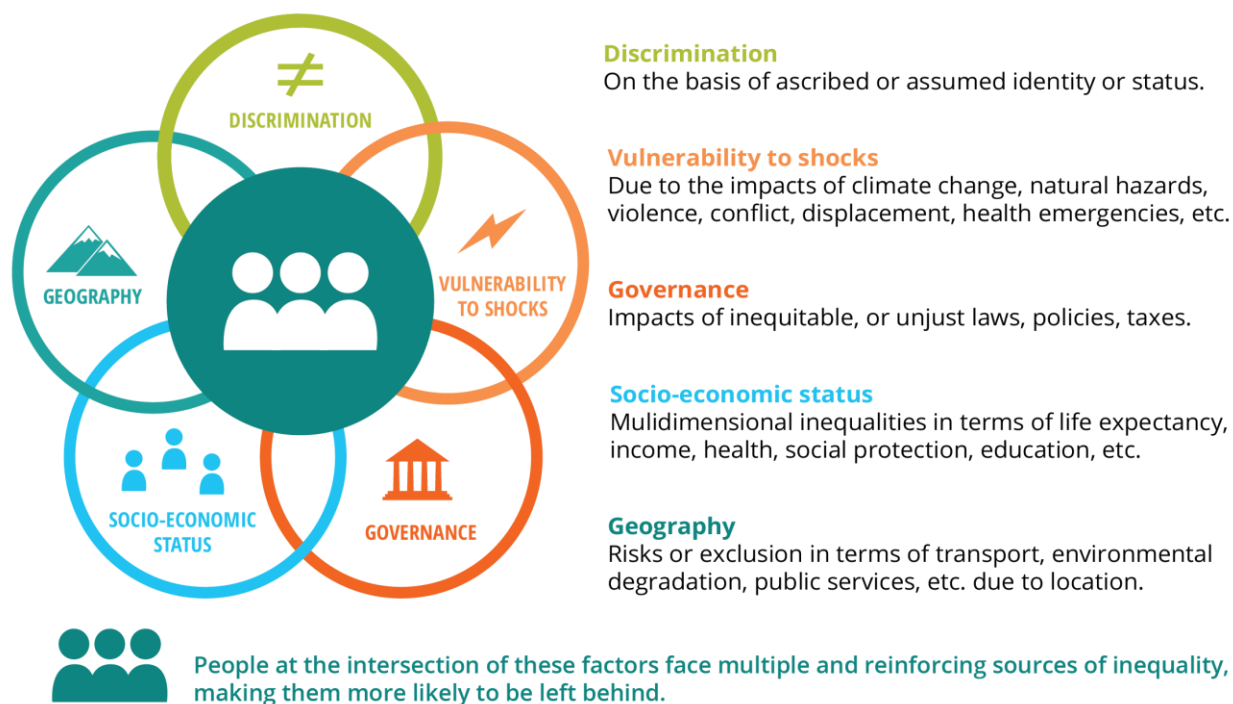


Figure 2. Five factors of LNOB: assessing who is left behind and to what degree (based on UNICEF, 2021)

The United Nations Development Programme (UNDP), which works with countries to implement the 2030 Agenda, has defined five key factors that help to understand who is being left behind and why: (1) Discrimination, (2) Vulnerability to shocks, (3) Governance, (4) Socio-economic

status, and (5) Geography. People at the intersection of these factors, as illustrated in Figure 2 above, face reinforcing and compounding disadvantage and deprivation that can cause them to be among the furthest behind (UNDP, 2018):

"People get left behind when they lack the choices and opportunities to participate in and benefit from development progress. All persons living in extreme poverty can thus be considered 'left behind', as can those who endure disadvantages or deprivations that limit their choices and opportunities relative to others in society". (UNDP, 2018, p 3.)

The concept of ‘Leave No One Behind’ recognises that to achieve the UN Sustainable Development Goals (SDGs) defined in the 2030 Agenda (UN, 2015a & 2015b), it is necessary that the people who are being left behind become full and equal agents in achieving these goals, with meaningful participation in decision making, underpinned by safe and inclusive mechanisms for their engagement.

The UNDP furthermore defines three mutually reinforcing “levers” that UN member states, local leaders, and change agents can deploy to ensure that no one is left behind, namely (UNDP, 2018):

1. **Examine:** disaggregated and people-driven data and information,
2. **Empower:** civic engagement and voice, and
3. **Enact:** integrated, equity-focused SDG policies, interventions, and budgets.

Given the urgency of achieving the SDGs, the UNDP encourages countries to implement approaches to move all three “levers” forward simultaneously by improving what is known about who is left behind, where they are, and why. They furthermore encourage leaders in all walks of life to become agents of change, challenging and disrupting business as usual, building national consensus on the policies the pledge requires, making hard choices and finding innovative ways around trade-offs.

Taking inspiration from these levers to translate Examining, Empowering and Enacting to the scope of city-based Citizen Observatories, we see alignment with the aim of the CitiObs project to support, strengthen, and scale the ability of change agents withing COs to:

- (1) **gather, analyse, and use data** and evidence of the environmental factors that impact peoples' lives;

(2) **expand the opportunities** to engage as city residents and members of civil society with local and regional decision makers who can act on that data towards the achievement of the SDGs; and

(3) to **co-develop and co-promote** policies and interventions that will improve both their living environment and opportunities for the furthest behind people, groups and communities.

TOOLKIT DEVELOPMENT METHODOLOGY

We have followed a qualitative approach to gathering, evaluating and consolidating resources for inclusion in the Toolkit by drawing on the resources identified during the proposal development phase as a starting point; performing a review of the literature on the themes of equity, diversity, inclusion, and empowerment; investigating tools and resources that are under development in the current generation of Horizon Europe-funded projects; and collaborating with the European community of Citizen Science practitioners via the ECSA Empowerment, Inclusiveness & Equity working group. Each of these methods is described in more detail in the sub-sections below.

Content gathering and curation

Early Starting Points

Several sources provided a starting point for the development of the CitiObs aims and approach during the proposal-writing stage, and contributed, to our thinking and development of the LNOB Toolkit framework, namely:

- The [OCSDnet Framework for Open Science](#) towards social and environmental well-being - from the RRI domain for Gender Equality, Diversity and Inclusion (as gathered in [SUPER MoRRI](#) and further developed in [NewHoRRizon](#)),
- The work of fellow CS practitioners defining and developing best practice via the COST Action CS and Women Working Group (Paleco et al., 2021),
- The work of the [ECSA Empowerment, Inclusiveness & Equity Working Group](#), and
- The stakeholder engagement approaches consolidated by the WeObserve Engagement CoP (such as the practical stakeholder management tool developed in [Ground Truth 2.0](#)), many members of which are also members of the CitiObs consortium.

Literature Review

We conducted a preliminary review of the scientific literature to look for linkages between CS and inclusiveness using various international databases accessible from the Leiden University library, undertaken between April and May 2023. The initial search filters used were language (only English), title (Booleans, such as “citizen science AND equity”), subject (Booleans, such as “citizen science AND inclusion”) and type of content (only full-text peer-reviewed publications).

The keywords used included: inclusive practice, inclusivity, equity, empowerment, inclusion, diversity, and vulnerable. These were mixed with: collaborative research, community science, citizen science, tool, toolkit, air quality, and air pollution.

This search resulted in more than 300 records, which were assessed according to their relevance on the subject of ‘citizen science’ (as a more widely used term in the literature than ‘citizen observatories’) and the specific aims of this toolkit (particularly inclusiveness) by reading their abstracts. Results deemed better suited for one of the other two toolkits (i.e., CO participation dynamics (D1.6) and citizen-led action in COs (D1.4)) were shared with those responsible for those toolkits.

We also expanded this search to look specifically for case studies that focused on inclusivity in CS projects, however no useful additional literature was found. Thirty records were selected for inclusion in the draft version of the toolkit and have been whittled down to twenty-nine for the Beta version, in many cases extracting recommendations with appropriate citation for inclusion in our own guidance rather than sign-posting the entire text. While these records are not always tools or guidelines, they serve as background information for specific topics such as on the concept of ‘Leave No Behind’ or how to include knowledge from specific communities. All of these resources have been recorded in a LNOB Zotero library, those specifically related to inclusivity can be found in Appendix I.

Key Existing Resources shaping the LNOB Toolkit

The EU-funded [GlobalSCAPE project](#) came to an end just as the CitiObs project was kicking-off, enabling us to take part in the training developed for Science Communicators to consider the concepts of justice, equity, diversity and inclusion (JEDI) in the context of Science Communication activities. The GlobalSCAPE JEDI workshop was developed to highlight the imbalance in different publics’ access to and participation with science and aims to show how inclusive Science Communication practices have a key role in redressing that imbalance. Although the target audience for these materials are Science Communicators, the strong synergies between activities to engage the public with scientific topics and those to invite their participation in scientific processes are strong enough for the focus on bringing attention to various social injustices across the world are highly relevant to CS practitioners as well. We have therefore adapted the GlobalSCAPE JEDI workshop content and materials to the context of Citizen Observatories, which forms the first part of the LNOB Toolkit.

The EU-funded [PRO-Ethics project](#), which had its final year of operation during the first year of the CitiObs project developed an Ethics Framework that offers a useful structure for designing a guidance document for using the LNOB Toolkit. Although the targeted user-group of the PRO-Ethics project is research funding organisations (RFOs) who want experiment with novel participatory methods to engage citizens and societal actors in the design, execution, and evaluation of research and innovation funding programmes, the range of ethical considerations presented are highly relevant for participatory practices in other contexts. The ProEthics guidance is also robust - nine research funding organisations (RFOs) tested the Ethics Framework in practice during their multi-stakeholder participation processes. The ‘lessons learned’ during these pilots have related to the recruitment of participants, managing commitment and expectations, fostering dialogue and equal participation, the accommodation of vulnerable groups, the creation of funding themes with participants, lack of expertise in participatory ethics, and planning, flexibility, and resources. As such, it is a useful tool for safeguarding the effectiveness, ethics, and justification of stakeholder engagement in Citizen Observatories as well. We have therefore adapted the ProEthics Ethics Framework and Guidance to the context of Citizen Observatories as useful guidance to be included in the LNOB Toolkit, and this is presented in Appendix II.

The EU-funded [UrbanReLeaf project](#), which was funded by the same programme as CitiObs, has developed a Blueprint for Inclusive CS Engagement Strategies to be used in their six pilot cities to address the critical issue of inclusive engagement. Divided into four phases (Preparing, Planning, Interacting, and Monitoring for inclusion) and eight steps (Explore, Understand, Organise, Design, Recruit, Communicate, Engage, and Assess), the blueprint guides the cities through the process of engaging non-traditional citizens, especially those from vulnerable and marginalised groups, in CS activities. The blueprint is a comprehensive guide, detailing considerations and guidelines for each step. This forms an important resource for us to sign-post within the CitiObs Toolkit and will also inform the development of our own guidance content as we engage in mutual learning with each other over the lifetimes of both projects.

Collaborative Resource Gathering

To learn from and collaborate with the wider European community of practice we joined the European Citizen Science Association (ESCA) working group on [Empowerment, Inclusion & Equity](#) (the EIE-WG). This working group was setup at the ECSA General Assembly in Geneva in 2018, in cooperation with the Living Knowledge Network for science shops and community-based research. The founders and members of the EIE-WG recognise that participation in Citizen

Science is still quite homogenous, and so their overall aim is to broaden the reach of Citizen Science initiatives such that more people from more diverse backgrounds engage in participatory research activities, shape those initiatives according to their own aims and motivations, and generate impacts that address their needs and concerns. The working group currently consists of over 60 members with diverse backgrounds across a broad spectrum of fields, who meet regularly to share learning and experience from practice.

Within this working group, we have setup an **EIE Toolkit Taskforce** that meets every 6 to 8 weeks with practitioners from other current CS projects, including the CitiObs sister projects UrbanReLeaf and Greengage, who all wish to more actively apply EIE principles in their work. Together we are gathering useful EIE literature, guidance and other resources, and storing them in a shared database on Zotero where all can access and use them, as shown in Figure 3 below. We are also sharing experiences and best practices on how to diversify the participation in the various projects, as well as preparing a centralised overview of existing tools on empowerment, inclusion, and equity, and gathering a shared vocabulary. The overview of existing tools is being arranged by type of tools (questionnaires, checklists, workshop material, etc) with the aim of releasing a version for the wider EIE WG of ECSA. This work is ongoing.

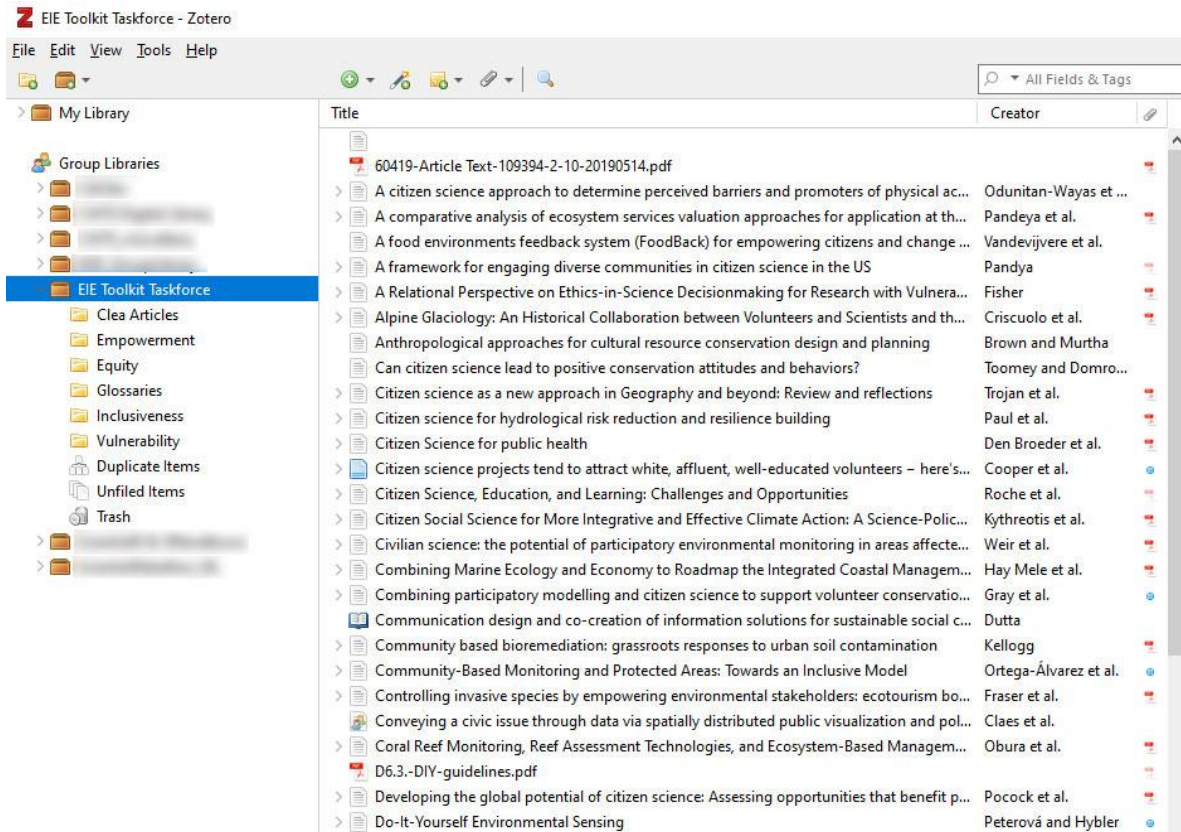


Figure 3. The shared EIE Taskforce Zotero library

Next to the literature review and the sharing of resources with the EIE working group, we have also been experimenting with ways to collectively gather resources with other practitioners. To enable this, we created an open and collaborative Trello board as an online location for signposting useful resources and guidance that relate to various aspects of EIE and organised them according to the stages of a participatory initiative. The Trello Board functionality allowed for the easy moving and re-arranging of the cards describing the identified resources, and the collaborative development of a range of ‘How do I’ questions to guide the user to the content. that they help to address, as shown in Figure 4 below.

We used this Trello Board at various workshops (listed in the sub-section below) to receive feedback on the structure of the Toolkit and highlighting where gaps in the content might still exist. In early 2024, the company behind Trello introduced per-person subscription requirements for any board with more than 5 collaborators, so the Board has been switched to a read-only resource and all resources have now been moved to our Zotero collection.

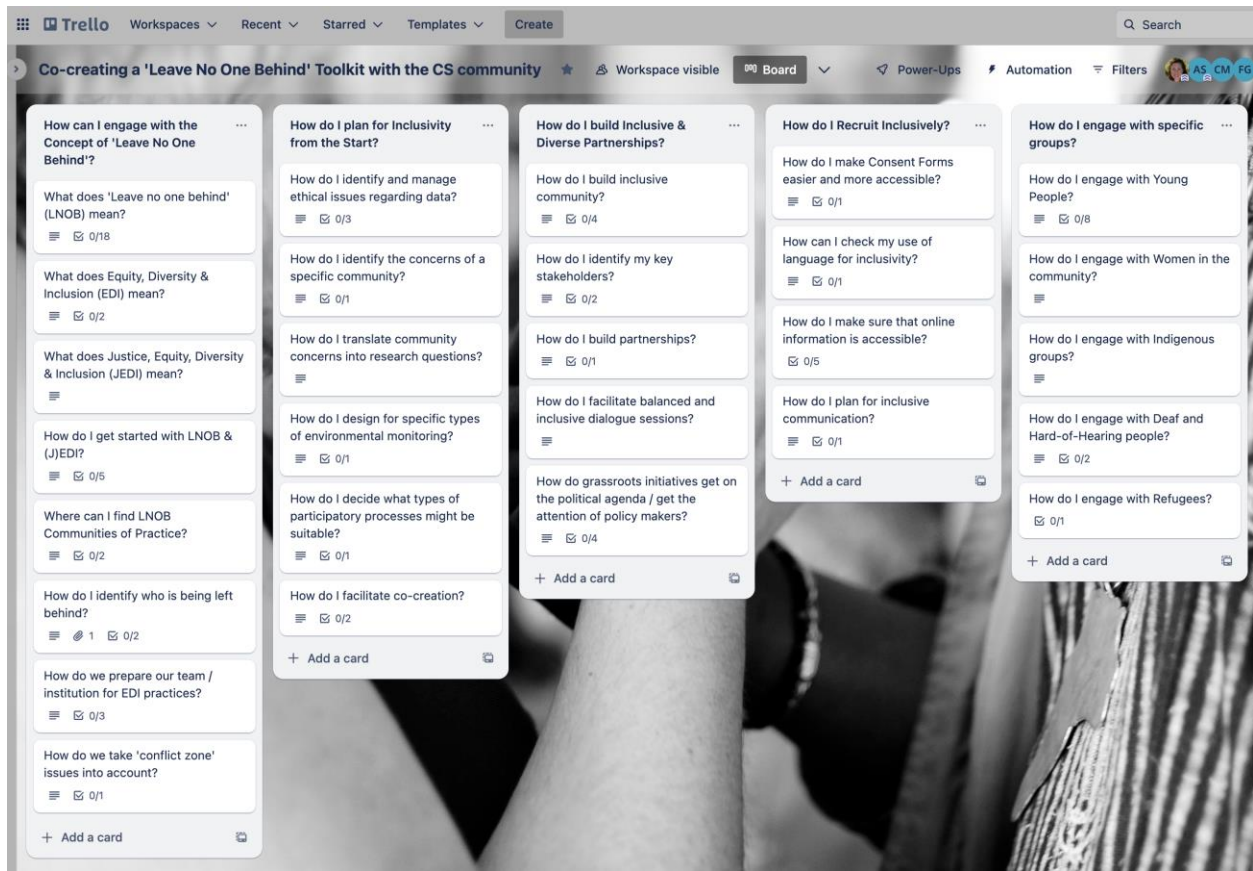


Figure 4. The LNOB resources-gathering Trello Board

Collaborative Workshops

Since the start of the CitiObs project, we have delivered several collaborative workshops both within and outside the consortium partnership. The goal of these workshops has been to gather insights, useful resources and feedback on the development of the LNOB Toolkit. These workshops are as follows:

The CitiObs Kick-off meeting – 24 January 2023, Oslo, Norway –At this meeting we introduced the concept of LNOB and the characteristics of the toolkit as described in the proposal, and gathered further inputs from consortium partners regarding the types of inclusion and diversity questions that will likely arise in the COs, as well as examples of useful resources known to the partners.

The ECSA EIE working group workshop – 28 March 2023, online – In this workshop we presented the aims of CitiObs and the LNOB toolkit more specifically, opened a discussion on how these might intersect with the aims of the ECSA EIE working group and what value the

CitiObs LNOB toolkit might offer others, and closed with an invitation to join the CitiObs-led EIE Toolkit taskforce and contribute to the LNOB Trello board

The European Citizen Science (ECS) Collaboration Group workshop – 2 May 2023, online - This workshop was held in collaboration with colleagues from the ECSA EIE Toolkit taskforce. In it we introduced the topic of “Inclusiveness practices in Citizen Science” with a joint presentation from the Socio-Bee, CitiObs, and European Citizen Science (ECS) projects, and the ECS Collaboration group led by ECSA. The ECS Collaboration group exists of 40+ Citizen Science initiatives across Europe and was set up in 2023 by the ECS project. Out of this group, 17 participants filled out a survey in advance of the workshop about their own inclusiveness practices. During the workshop, 24 participants were present to talk about inclusivity.

The 2nd CitiObs Plenary meeting – 20 June 2023, Barcelona, Spain - This workshop started with an introduction of the concepts of "Justice, Equity, Diversity, and Inclusion" (JEDI) in Citizen Observatories and the LNOB pledge during the 2nd face-to-face plenary meeting. The aim was to raise awareness of power imbalances, inequalities, and their own positionality in the project. (This workshop also met the requirements of Deliverable 6.1 to discuss measures to protect vulnerable groups). This presentation was followed by a World Café discussion of the types of questions that might arise in wanting to address ‘JEDI’ issues in the context of the city-based COs, using several facilitation methods. This World Café session was one of three held in parallel, to explore the “Social dimensions” of all three toolkits under development within WP1 on the first day of the plenary meeting with consortium members.

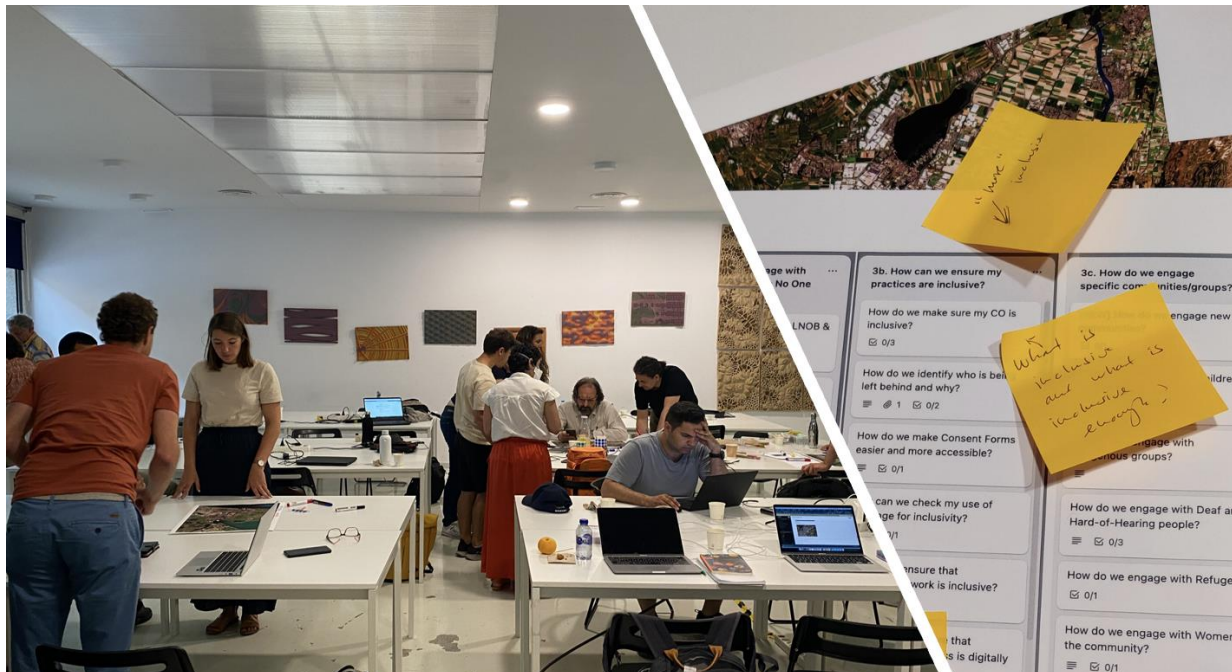


Figure 5. CitiObs Plenary Workshop in Barcelona to provide input and feedback to the LNOB Toolkit

The ECSA2024 Conference joint-workshop on Diversity & Inclusion 4 April 2024, Vienna, Austria – This workshop was run jointly with sister projects Greengage and Urban ReLeaf. It consisted of three tables run in World Café style, exploring ways to enhance diversity and inclusivity in citizen science. After a plenary introduction of the LNOB pledge and the factors that can cause people to be left behind, the CitiObs-led table presented several workshop methods for a discussion on their suitability for facilitating a reflection of one’s own context and the citizen science initiative; who is included or excluded; and what groups or communities’ risk being left behind. [A description of these methods can be found in Appendix III].



Figure 6. ECSA2024 Conference joint workshop on Diversity and Inclusion

ECSA EIE Working Group workshop – 24 April 2024, online – After the ECSA2024 conference we continued the testing of useful facilitation methods for discussion and reflection of the LNOB concepts in the context of one’s own CO or CS project, by introducing these to the EIE WG members and discussing their usability and relevance. To aid this discussion we created a Miro-board version of the workshop we ran at the ECSA 2024 conference. (See Figure 7 below). This online resource will be useful in supporting the continued development of the LNOB Toolkit with the Frontrunner Cases during online discussions.

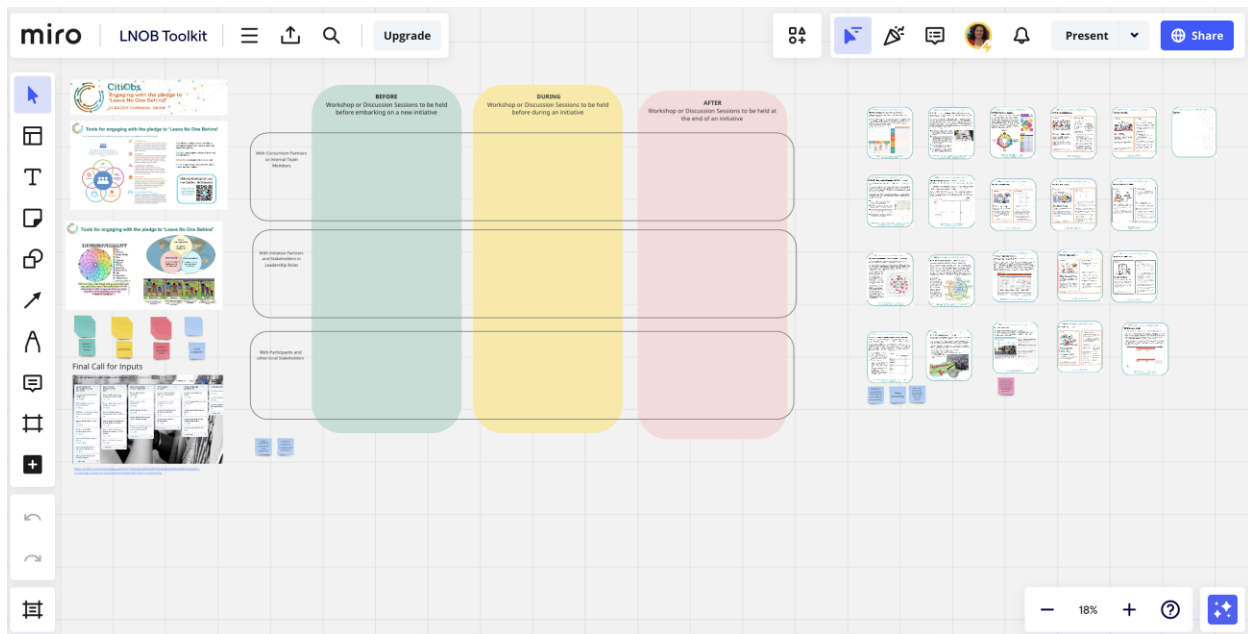


Figure 7. The online version of the ECSA2024 session run with the ECSA EIE WG

Structuring the Toolkit Content

This deliverable report (D1.1) contains the Beta version of the LNOB Toolkit, which is presented in the sections below. The LNOB Toolkit consists of:

1. **Workshop materials** introducing the concepts of Justice, Equity, Diversity and Inclusion (JEDI) and the pledge to "Leave No One Behind", in the form of a slide presentation, along with interactivity materials, and guidance for the use of both with key stakeholders at different stages of the CO lifecycle.
2. **Workshop facilitation methods** to reflect and discuss how these concepts might be relevant to the context of one's Citizen Observatory, in the form of descriptive documentation and guidance for their use with different stakeholder groups, at various stages of the CO lifecycle.
3. **Sign-posted guidance for tools and methods** to support and improve diverse and representative inclusion throughout the activities and lifecycle of the CO. The navigation interface to guide the reader / user to the underlying guidance and resources follows a question-based structure that is based on the design of the WeObserve Cookbook (WeObserve, 2021) which has received positive feedback regarding its ease of use.

The questions contained in the sign-posted guidance section of the LNOB Toolkit are:

1. Introduction - what does Leave No One Behind (LNOB) mean?

2. How can we engage with the concepts of Equity, Diversity and Inclusion (EDI)?
3. How can we ensure that our outreach and engagement activities are ethical?
4. How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive (EDI)?
5. How do we engage specific communities/groups in our Citizen Observatory?

The guidance for each question is organised in six sections addressing the issue and listing different resources and references:

1. Why it is relevant
2. How this can be done
3. Example case studies (when available)
4. Useful resources
5. Links to other sections of the Toolkit/Cookbook
6. References.

Further, each question is tagged according to the phases of the CO lifecycle, namely:

- **before** – the design phase of the CO and its activities
- **during** – the implementation phase of the CO and its activities
- **after** – feedback following the completion of an activity within the CO

Preliminary Interface Design

The work to design and develop the user interface to the CitiObs Cookbook will take place at a later stage of the project in Work Package 3. We have therefore created a proxy-interface for the content of the LNOB Toolkit (Figure 8) that will allow us to imitate the interactive user experience for testing and further development, and to easily make changes to the question-driven navigation.

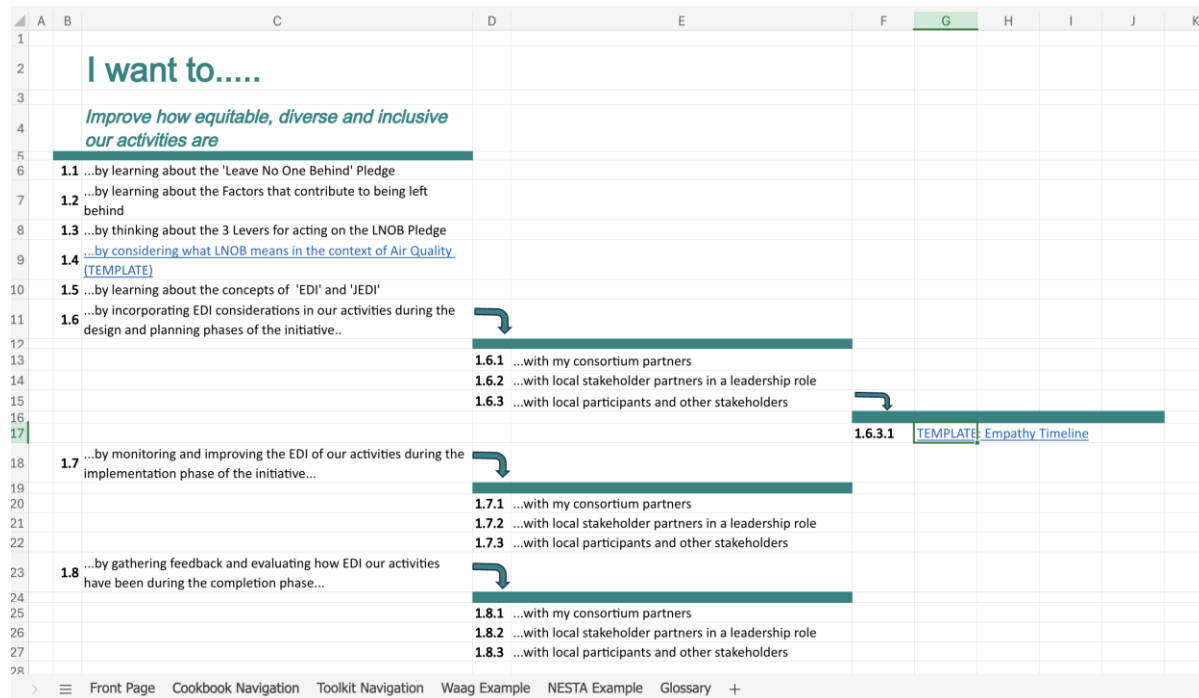


Figure 8. The online interactive proxy-interface to the LNOB Toolkit in the CitiObs SharePoint environment

Next Steps

We continue to collaborate with the European community of practice, primarily through the EIE WG Toolkit Taskforce and the Collaboration Group of the ECSA-led European Citizen Science project on the following activities:

- continuing to gather tools, guidelines and recommendations and curate these for inclusion
- continuing to identify case study examples of actions taken to improve diversity and inclusive representation with the activities of a CO or Citizen Science initiative
- continuing to extract useful guidance from the literature, presented in useable format such as checklists or flowcharts.
- continuing to shorten and simplify the language used - **It is important to note, that in the current version presented below, the transition to shortened and simplified text has not yet been fully made.**

At the time of submitting this D1.1 deliverable report (August 2024) we are entering into the phase of the CitiObs project where all toolkits developed in WPs 1 and 2 are being tested with the Frontrunner Cases (which is itself a combined task with our consortium partners in WP 3).

Based on their feedback and suggestions, the LNOB Toolkit will continue to be updated and refined, and then tested again with the Alliance Cases who are starting to be recruited and will be

actively partnered with during the third year of the project. The work will move to the shared CitiObs SharePoint environment, where the content will be developed within the landing-page template structure, and linked to from the interactive proxy-interface, as described above.

After further fine-tuning with the 30 Alliance Cases, the final LNOB Toolkit will be produced and shared with the 50 Fellow Cases and incorporated along with the other CitiObs toolkits into the CitiObs Cookbook. This final integration work will take place in WP 3 in parallel with the work to design and build the online Cookbook itself.

THE BETA VERSION OF THE LNOB TOOLKIT

1. LNOB WORKSHOP MATERIALS

The CitiObs LNOB Workshop materials introducing the concepts of Justice, Equity, Diversity and Inclusion (JEDI) and the pledge to "Leave No One Behind" take the form of a slide presentation, along with interactivity materials, and guidance for the use of both with key stakeholders at different stages of the CO lifecycle.

1.1 Workshop Slide Deck

The current version of the workshop contains 84 slides to help people understand and engage with the concepts of Justice, Equity, Diversity, Inclusion, and ‘Leaving No One Behind’. These are not yet shared online to maintain version control, but are being shared with the Frontrunner Cases during the testing phase. The final version of these slides will be uploaded to Zenodo and contained in the LNOB Toolkit and CitiObs Cookbook.

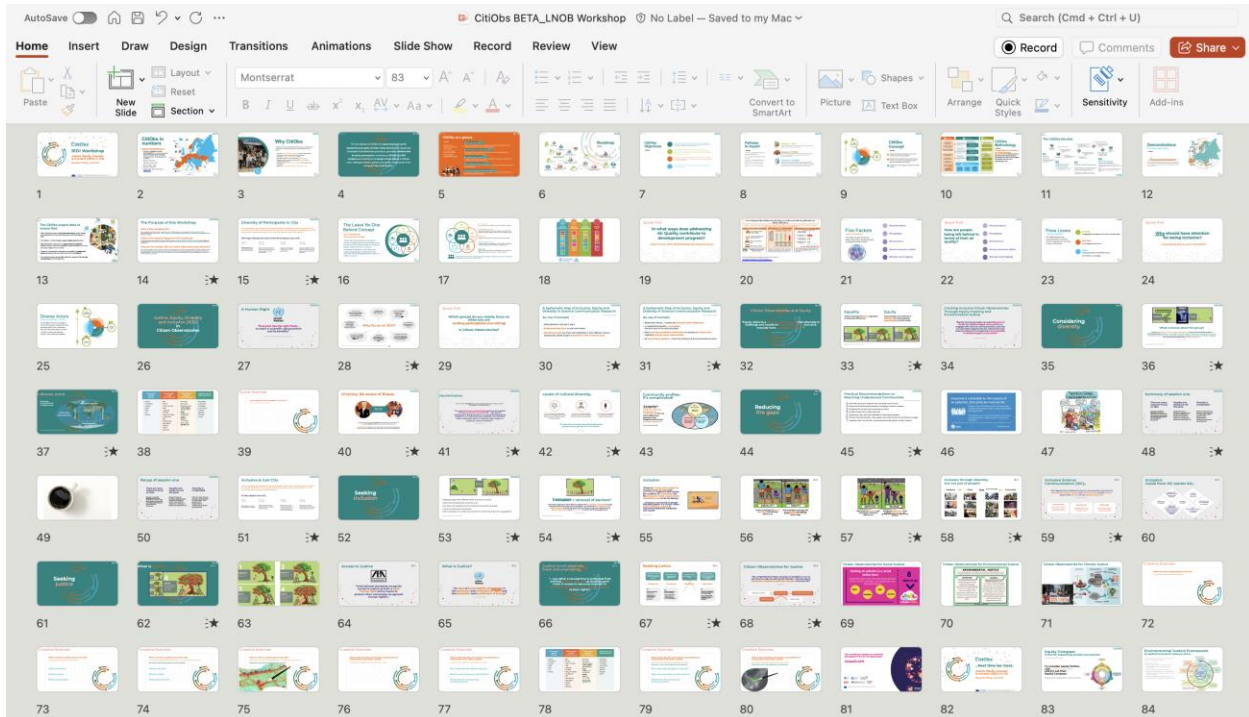


Figure 9. Sliddeck of the LNOB workshop

1.2 Suggested Workshop Structure

Practicalities:

The suggested time allotment for the workshop is 3 hours, to allow for reflection and discussion, and to leave time for interactive activities and a break in between. The objective of the workshop is to introduce key concepts around Justice, Equity, Diversity and Inclusion (JEDI) and the pledge to ‘Leave No One Behind’; to develop a shared vocabulary and understanding as a group; and to provide a foundation for further consideration of these concepts in the context of the Citizen Observatory or Citizen Science initiative. We recommend running the workshop in person, when possible, to aid connection and discussion, but recognise that this is not always possible, and therefore the materials are in a format that can also be used online. We additionally recommend that some light reading is provided to participants before the workshop, to already begin to familiarise themselves with the LNOB pledge and concepts, such as those contained in Section 1 of the Toolkit as an introduction to LNOB.

Materials:

- Presentation Slide Deck
- Facilitators Guide
- Workbook
- Potential background reading for workshop participants

Workshop objectives:

- To explain what is meant by the terms: justice, equity, diversity and inclusion (JEDI).
- To explain the ‘Leave No One Behind’ (LNOB) concept and pledge.
- To recognise the importance of prioritising JEDI in Citizen Science and participatory research practices.
- To explain of how diverse and equitable practices can increase inclusion in the activities of Citizen Observatories.
- To describe how the activities of Citizen Observatories can be used to address issues of social justice.
- To facilitate a reflection of their relevance to the specific case and context of the FRC and together discuss how these missing or under-represented groups of people might be engaged.

- As a result of these conversations, specific guidance and other resources within the LNOB Toolkit will be pointed to, or a plan made to address that gap in the Toolkit.

Workshop Structure:

Total session length: 2.5 hours (3 hours max), ideally in person but virtual is also possible

Agenda Item	Timing	Activities	Purpose and Desired Outcome	Facilitation	Materials
Intro & agenda	5	<ul style="list-style-type: none"> • Welcome • Brief overview of session objectives • Introduction of facilitators and attendees 	Review expectations/objectives of the session, introduce toolkit leaders.	Workshop Host	
Introduction of Tools	5	<ul style="list-style-type: none"> • Brief overview of all toolkits under development, their purpose, and how they might be applied in the case of this FRC in relation to the needs that they have identified. • If future Toolkit sessions have been scheduled, refer to those plans here. • Take any questions 	Brief overview of the aims of CitiObs and the tools we’re developing for higher-level context. Brief discussion of how the other Tools might be relevant and applied. Provide a sense of a continuum of mentoring/support events planned.	Workshop Facilitator(s)	PowerPoint containing generic description of all tools, and bespoke selection of tools against identified needs
Review of Prioritized needs	10	<ul style="list-style-type: none"> • Recap of the identified needs, which ones have been agreed on as a priority, and which ones relate to LNOB. • Time for discussion and clarification if necessary – have new priorities emerged? 	Start the workshop with a shared understanding of the specific needs of this FRC (especially for the LNOB Workshop Facilitator).	Workshop Host	PowerPoint
Energizer Session – What’s the Knowledge in the Room?	10 - 15	<ul style="list-style-type: none"> • What are your experiences with diversity? • What groups do you already work with or have knowledge of? 	<i>The goal is to find out who is in the room, what hats they wear, and their viewpoint on LNOB oriented topics is – but most importantly what knowledge and experience already exists in the group.</i>	Facilitator	
Introduction to EDI, JEDI & LNOB	30	<p>Presentation introducing the concepts of EDI, JEDI, and LNOB, and doing some small exercises to aid discussion of these concepts</p> <p><i>If any introductory reading is foreseen, it needs to be distributed to participants at least 1 week prior to the session. (It would need to be only 1 or 2 pages, just to start with some shared knowledge)</i></p>	Introduction of the core concepts, and what we mean when we say ‘Leave No One Behind’. Conversation aids to spend some time together considering these concepts.	Toolkit leader(s) / Facilitator	Workshop Slides. Pre-printed templates and other workshop materials where needed.
Break	10				
Facilitated discussions	20	<ul style="list-style-type: none"> • Toolkit leader/Facilitator explains the method for 	Introduce the reflection facilitation method,	Toolkit leader(s) / Facilitator	Sticky notes, Word

in Workshop format		<p>the workshop, and what is requested of the participants.</p> <ul style="list-style-type: none"> • Participants ask clarifying questions (5 minutes) • The workshop commences according to the method • METHOD WILL BE SELECTED IN DISCUSSION WITH FRC CONTACT POINT 	<p>experience in practice how the method works, and observe how the participants get on. Assess the suitability of the method for facilitating useful reflections.</p>		<p>document or Miro Board</p> <p>copies (digital or print) of the toolkits. Consider language needs.</p>
Second stage of facilitated discussions in Workshop Format	20	<ul style="list-style-type: none"> • Toolkit leader/Facilitator explains the next step to be taken in the workshop, and what is requested of the participants. • Participants ask clarifying questions (5 minutes) • The workshop commences according to the method • METHOD WILL BE SELECTED IN DISCUSSION WITH FRC CONTACT POINT 	<p>Takes a next step from reflection-mode to consideration of what can be done, how it might be done, how that can fit in the FRC planning, and what would be needed. Assess the suitability of the method for facilitating the move from reflections to action planning.</p>		
Break	10				
Feedback gathering	10	<p>Toolkit leader & Facilitator ask the participants:</p> <ul style="list-style-type: none"> • What stood out for you from these discussions? • What did you find confusing or maybe even confrontational? • What did you like about the workshop structure itself? • What did not work as well? Do you have some suggestions about how that could be addressed? • What would have liked to cover, that you feel is missing? • How should this workshop be ‘packaged’ to make it DIY? • Do you have ideas of another context or group that you would want to run this workshop with? Can we support you in planning that? (or facilitating again?) 	<p>Feedback gathering for ongoing improvements and fine-tuning.</p>	FRC Contact Point/Facilitator	
Wrap up & next steps	5	<p>Overview of timeline for FRCs, reminder about evaluation form, group photo.</p>	<p>Set expectations about next steps for FRCs and how this information will be used by CitiObs.</p>	FRC case contact point	

1.3 Workshop Guidance

As the CitiObs project enters the phase of testing and further developing the Beta version of the LNOB Toolkit via mentoring sessions with the CitiObs Frontrunner Cases, and trialling these workshop materials in practice, we will develop guidance for future users of the Toolkit to run these workshops themselves. This guidance material is therefore not yet developed.

2. REFLECTIVE WORKSHOP FACILITATION METHODS

We have selected a short-list of effective workshop facilitation methods to aid reflection and discussions of the relevance of the JEDI and LNOB concepts to the context of one's Citizen Observatory, based on our own experience of using them and the feedback of the European Citizen Science practitioner community gathered during the ECSA2024 Conference joint-workshop on Diversity & Inclusion in April 2024, and the online workshop with the ECSA EIE Working Group. The selection was made based on their suitability for facilitating a reflection of one's own context and citizen science initiative, who is included or excluded, and what groups or communities risk being left behind.

In the section below we briefly introduce and describe the selected methods, along with images of the Method Cards that were utilised during the method feedback selection workshops. Descriptive documentation will be developed during the upcoming testing phase with the Frontrunner and Alliance Cases. The final LNOB Toolkit will contain this more detailed documentation, along with guidance for the application of these methods with different stakeholder groups, at different stages of the CO lifecycle.

2.1 Consideration for Lived Experience and Living Environment

2.1.1 The 'Sensitise' collection of methods in the Waag Co-Creation Navigator

The aim of this collection is to develop empathy and understanding by gaining insights into the lives and contexts of others, to help you better understand the context of your participants and/or stakeholders before embarking on a co-creative process. It invites you to observe physical surroundings and consider whether and where your assumptions might need to be adjusted. Curated, tested, and further-developed by the Waag Smart Citizen Lab for inclusion in the Citizen Sensing Toolkit and online Co-Creation Navigator their objective is to help citizen science initiatives and citizen observatories gain a better understanding of the issues faced by their participants, local partners and stakeholders in the aims of the initiative, and how any barriers to participation might be removed.

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: SENSITISE

AIM: Develop understanding and gain insights into the lives of others
 Developing empathy and getting more sensitive to the plights of others will help you better understand what you can expect from stakeholders in your co-creative process, and where your assumptions might need to be adjusted. Sensitizing tools are in place to help you reach that understanding and empathic state of mind.

walk shop
 duration: 2:30 | facilitator/participant: 2 | difficulty: 2
 group size: 5-10 | online/offline: offline

guided tour
 Taking a Guided Tour through the home or workplace of the person you're designing for can reveal their habits and values.
 2:4 hr | 1:1 | 1:0.5 | online & offline

inspiration walk
 The inspiration walk is an immersive audio learning experience designed to help you see things differently.
 5:30 min | 1 | offline

collage
 Having the people you're designing for make and explain a collage can help you understand their values and thought processes.
 30:00 min | 1:20 | 1 | 0.5

empathy map
 Visualize your stakeholders' and users' needs.
 2

A workshop is an active workshop, designed to get inspired and to get a better understanding of the environment you are in. It is a useful method to explore the context and the people in it, as it gives a good and concrete idea of the case area.

SOURCE: WAAG Co-Creation Navigator
<https://ccn.waag.org/navigator/theme/sensitize>

Within this collection, the **Walk Shop Method** invites you to explore the context of a neighbourhood and the people in it, by taking a walk around it in a deliberate and observant fashion, to gain a better concrete idea of the case area. The **Photo Safari Method** is based on the principle of ‘shadowing’ by joining someone, or a group of people, as they live their everyday life, or go about their daily work to better understand the environment they are part of. Literally taking photos is optional, but recording your observations will allow you to capture the contextual details that can influence a person’s behaviour and

motivations. The **Guided Tour Method** gathers insights by asking a participant or community member to give you a Guided Tour of their home, workplace, or daily activities to not only reveal the physical details of the person’s life, but also their routines, habits and interactions with their environment and context. (Source: <https://ccn.waag.org/navigator/theme/sensitize>)

2.1.2 The Shadowing Method Template

The Shadowing Method developed by NESTA and contained in their Development Impact & You (DIY) Toolkit aims to gain insights into the daily realities of someone’s life by shadowing them (with permission) for the day. It is the same basic principle as the methods described in the Waag Co-Creation Navigator above, but also provides a useful template for capturing observations about the daily work, environment and contextual details of the person you are shadowing. Doing some shadowing at the start of a project can help you to familiarise yourself with a certain practice or group of people. People’s everyday life can be so habitual that some issues may not be as apparent to them - sometimes observing them can reveal hidden aspects that might be the core issue or even possible solution. These observations can act not only as inspiration but also a guide to help

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: People Shadowing 'A day in the life'

AIM: gain insights into the daily realities of someone's life by shadowing them (with permission) for the day.

Following someone, or a group of people, as they live their everyday life, or go about their daily work helps to understand the environment they are a part of. It also allows you to observe for yourself the contextual details that can influence a person's behaviour and motivations.

Often doing some Shadowing at the start of a project helps to familiarise yourself with a certain practice or group of people. People's everyday life can be so habitual that some issues may not be as apparent to them - sometimes observing them can reveal hidden aspects that might be the core issue or even possible solution. These observations can act not only as inspiration but also a guide to help reach the core of how your work impacts people.

I want to collect input from others
 (highlighting my own role in the process)

PEOPLE SHADOWING

Object & Effect Location Time Who What How Why How often	What How Why How often	What How Why How often	What How Why How often
Key findings	Actions	Objectives	Impact

SOURCE: NESTA, Development Impact & You (DIY) Toolkit.
 PRACTICAL TOOLS TO TRIGGER & SUPPORT SOCIAL INNOVATION
<https://www.nesta.org.uk/toolkit/diy-toolkit/>

reach the core of how your work impacts people. (Source: <https://www.nesta.org.uk/toolkit/diy-toolkit>)

2.1.3 The Story World Method Template

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: Story World

AIM: Collect input from others to ensure the initiative is relevant to the people participating.

Qualitative data collected through interviews and observations can be incredibly rich. A structured way of documenting this for analysis and communication is very important. The storyworld tool provides a useful way to highlight the most relevant insights from your research. It helps you do this without being overwhelmed with details, showing you how to structure your documentation so that the discussions you have afterwards are in tune with the learning requirements.

The tool enables you to bring part of a person's world with you once you start designing a solution that is addressed to them. It allows you to create stories that make people easier to relate to - often closely matching the colour and complexity of somebody's everyday life. These stories can be key triggers to inspire creative ideas

STORYWORLD

Context

Object and Plan

Perspective

Notes on things that need out

SOURCE: NESTA, Development Impact & You (DIY) Toolkit, PRACTICAL TOOLS TO TRIGGER & SUPPORT SOCIAL INNOVATION <https://www.nesta.org.uk/toolkit/diy-toolkit/>

The Story World Method developed by NESTA that is also contained in their Development Impact & You (DIY) Toolkit aims to gather insights from participants and community members along with qualitative data collected through interviews and observations. It is similar to the Guided Tour method described in the Waag Co-Creation Navigator collection, but also provides a useful template for documenting insights in a structured way, and highlighting the most relevant ones for the activities of the CO. It helps you do this without being overwhelmed with details, showing you how to structure your documentation so that the

discussions you have afterwards are in tune with further co-creation activities. The tool enables you to bring part of a person's world with you once you start designing the activities of the CO and allows you to create stories that make people easier to relate to. (Source: <https://www.nesta.org.uk/toolkit/diy-toolkit>)

2.1.4 The Empathy Timeline Method

Also developed by Waag Smart Citizen Lab for the Citizen Sensing Toolkit, the aim of the Empathy Timeline method is to gain insights into the complexities of the issue at hand by asking community members to collaboratively draw an empathy timeline.

Drawing an empathy timeline helps stakeholders to better understand each other and to look at different sides of the problem and how it is experienced. Using this method helps community members to become aware of their own subjective viewpoints on environmental problems, to think about their own personal perceptions, and to consider what their own role in the issue might be. This reflexivity can be achieved by having community members talk about the ways that they are affected by the issue, but also the ways that they contribute to it. An empathy timeline facilitates community building by bringing people together to discuss issues and consider them in a way that they perhaps have not often done before. (Source: <https://waaq.org/sites/waaq/files/2018-03/Citizen-Sensing-A-Toolkit.pdf>)

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: Empathy Timeline 'What is at stake for who?'

AIM: gain insights into the complexities and understanding of the issue at hand, by asking community members to draw an empathy timeline.

A little empathy can go a long way when aiming for change in the public domain. Drawing an empathy timeline helps us better understand the issue at hand, as it encourages us to look at both sides of the problem and how we might understand our role in it.. Community members can become aware of their own subjective viewpoints on environmental problems, as this approach allows participants to think about their own personal perceptions. This reflexivity can be achieved by having community members talk about the ways that they are affected by the issue, but also the ways that they contribute to it. An empathy timeline facilitates community building by bringing people together to discuss issues and consider them in a way that they perhaps have not often done before

STEPS

- 1 Using A1 sheets of paper, draw two parallel lines horizontally across each sheet. At the ends of both lines, mark out a 24-hour timeline (midnight to midnight). Also, in preparation, cut out different icons or images related to the issue at hand. Include some abstract shapes too, adding anything that might spark creative thought.
- 2 Have the community members form small groups, and ask them to fill in the timelines. In the first half of the exercise, the first line represents the ways that the participants were affected by the problem in the previous 24 hours. Ask them to consider what they encountered throughout the day in relation to the issue, specifying that they include positive things as well as negatives. Then switch to the second timeline, asking the participants to repeat the process to represent how they contributed to that issue, and the times they did so.
- 3 Once the groups have populated the timeline with all their activities, ask the community members to use green and red sticker dots to identify which things they consider to be positive, and which negative.
- 4 Ask each group to present their findings back to the other participants, with particular attention paid to their discussions and the insights that they had during the task. This is a truly eye-opening activity, and phenomenal for building relationships between community members!



SOURCE: Citizen Sensing, Woods, Melanie, Mara Balestrini, Sihana Bettulalahu, Stefano Bocconi, Gijs Boerwinke, Marc Boonstra, Douwe-Sjoerd Boschman et al. "Citizen sensing: a toolkit." (2018). <https://waaq.org/sites/waaq/files/2018-03/Citizen-Sensing-A-Toolkit.pdf>

2.1.5 The Experience Mapping Method

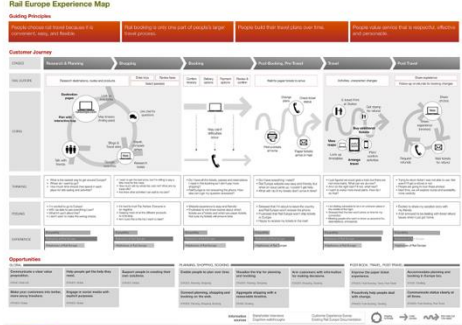
CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: Experience Mapping

AIM: gain insights into the experience of a group of people or neighbourhood with regard to the issue under investigation, and the complex factors at play.

The process of experience mapping is just as important as the actual artifact and should be conducted collaboratively with key stakeholders in the project and representatives of the relevant group or neighbourhood. The discussions experience mapping fosters, the consensus it builds, and the shared reference it creates will be critical to push your initiative toward embracing new insights and taking action.

(1) The lens is an overriding filter through which you view the journey, such as a persona, more general experience principles, or a value proposition. (2) The customer journey model depicts the range of interactions customers have across channels, touchpoints, time, and space in pursuit of satisfying one or more needs. (3) The takeaways summarize key findings from the experience mapping process



SOURCE: Adaptive Path (2013) ADAPTIVE PATH'S GUIDE TO EXPERIENCE MAPPING https://obgyn.ucsf.edu/sites/obgyn.ucsf.edu/files/Adaptive_Paths_Guide_to_Experience_Mapping_0.pdf

This method developed by Adaptive Path aims to gain insights into the experience of a group of people or neighbourhood regarding the issue under investigation, and the complex factors at play. The process of experience mapping is just as important as the outcome and should be conducted collaboratively with key stakeholders in the project and representatives of the relevant group or neighbourhood.

The discussions experience mapping fosters, the consensus it builds, and the shared reference it creates will be critical to push your initiative toward embracing new insights and taking action: The method incorporates three

main components: (1) 'The lens' is an overriding filter through which you view the journey, such

as a persona, more general experience principles, or a value proposition, (2) 'The customer journey model' depicts the range of interactions customers have across channels, touchpoints, time, and space in pursuit of satisfying one or more needs, and (3)'The takeaways' summarize key findings from the experience mapping process. (Source: https://obgyn.ucsf.edu/sites/obgyn.ucsf.edu/files/Adaptive_Paths_Guide_to_Experience_Mapping_0.pdf)

2.2 Consideration of the Geographical Context

2.2.1 The Geographical Mapping Method

The aim of this method contained in the Citizen Sensing Toolkit is to gain new insights about the location and geographical context of a citizen science initiative or citizen observatory by visually mapping out issues of concern in collaborative workshops.

In the early stages of an initiative this method helps identify the nature and location of problem hotspots, which can then be cross-referenced with helpful data, such as proximity to resources, schools, hospitals and neighbourhood associations, as well as to the participants themselves.

At the stage of initiating monitoring activities, the collaboratively created map can help devise a sensing strategy by visually representing the location of the sensors to be deployed or measurement activities to coordinate. The key with geographical mapping is to make it a hands- on affair, with a diverse range of participants and stakeholders discussing and mapping the issues themselves, so that they too can highlight issues and concerns, while also coming to a more complete picture of the issue at hand. (Source: <https://waag.org/sites/waag/files/2018-03/Citizen-Sensing-A-Toolkit.pdf>)

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: Geographical Mapping 'WHERE is the issue?'


AIM: discover what you might have missed by visually mapping out issues of concern in collaborative workshops.

There are many reasons why you might choose to use geographical mapping, depending on which stage of the campaign you have reached. In the early stages, you might want to find out anecdotally the nature and location of problem hotspots. Perhaps you might also want to cross reference these hotspots with helpful data, such as proximity to resources, schools, hospitals and neighbourhood associations, as well as to the participants themselves.

At a sensing stage, a map can help you devise a sensing strategy by visually representing the location of the sensors you will deploy. The key with geographical mapping is to make it a hands- on affair, with participants discussing and mapping the issues themselves, so that they too can fully understand the magnitude of the issue at hand

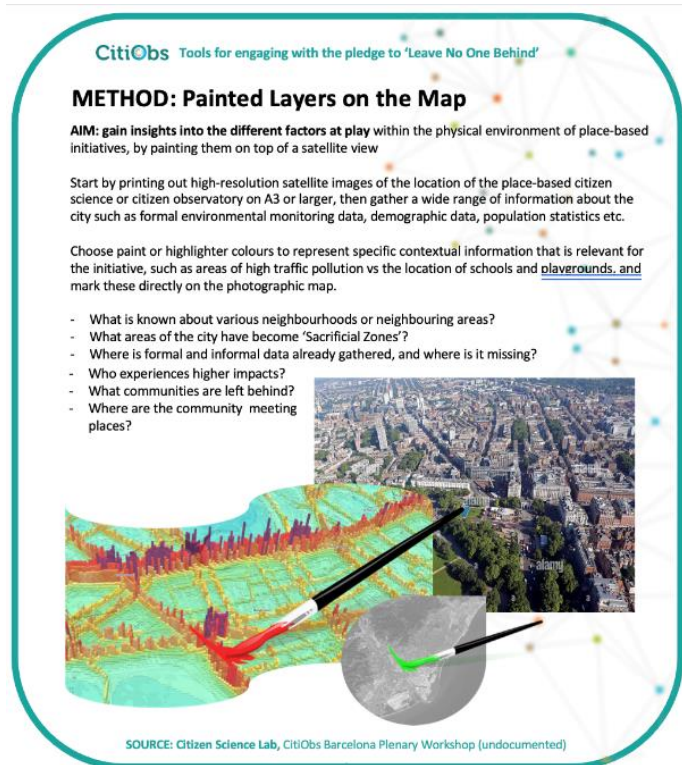
STEPS

- 1 Divide the community members into groups. Give each group an A3 map (minimum size), sticker dots of different colours, and several A4 icon sheets containing icons relevant to the subject. These can be supplemented with other icons (e.g. Lego figures).
- 2 Have groups discuss their questions and concerns regarding the issue(s) of concern, thinking about the location(s) which seem(s) to affect them the most, before using the map and icon sheets to map out their findings.
- 3 Additionally, map out resources and other factors that contribute to the problem, as well as those that might help solve the problem. It is very useful to have the participants add brightly coloured sticker dots to locate themselves on the map to see exactly how the community is organised.
- 4 Present and discuss findings to make sure everyone is of one mind. If working with multiple groups, collate the findings onto a larger map, and keep this visible when developing sensing strategies.



SOURCE: Citizen Sensing, Woods, Melanie, Mara Balestrini, Sihana Bettullah, Stefano Bocconi, Gijs Boerwinkel, Marc Boonstra, Douwe-Sjoerd Boschman et al. "Citizen sensing: a toolkit." (2018). <https://waag.org/sites/waag/files/2018-03/Citizen-Sensing-A-Toolkit.pdf>

2.2.2. The Painted Layers on the Map Method



The aim of this method, developed by the Citizen Science Lab at Leiden University for the CitiObs project, is to gain insights into the different factors at play within the physical environment of place-based initiatives, by drawing, marking or painting them on a map of the city. After printing out a high-resolution satellite images of the location of the place-based citizen science or citizen observatory on A3 or larger, gather a wide range of information about the city such as formal environmental monitoring data, demographic data, population statistics etc, and also provide this in visible form (printed or otherwise). Choose paint or highlighter colours to represent specific contextual

information that is relevant for the initiative, such as areas of high traffic pollution vs the location of schools and playgrounds, mark these directly on the map, and consider questions such as:

- What is known about various neighbourhoods or neighbouring areas?
- What areas of the city have become 'Sacrificial Zones'?
- Where is formal and informal data already gathered, and where is it missing?
- Who experiences higher impacts?
- What communities are left behind?
- Where are the community meeting places.

2.3 Consideration of Roles and Inequities

2.3.1 The Stakeholder Roles & Responsibilities Map

The aim of this method, developed by Waag Future Lab and the Citizen Science Lab at Leiden University, is to make (needed) relationships and degrees of involvement visible by mapping who the stakeholders are, how they relate to each other, and their degree of involvement.

The method guides you through visualising these relationships and connections as a way to discuss the roles and involvement of various actors, which helps offer clarity within an existing cooperation, and highlight who is missing. Collaborations are often not based on contracts or formal agreements that define roles and involvement, and the number of involved is sometimes large. The circles on the map help distinguish between the more and less intensively partners involved and highlight who might be missing.

(Source: (in Dutch) <https://waag.org/en/article/toolkit-public-civic-collaboration/>)

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

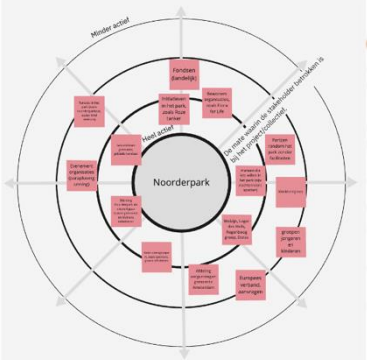
METHOD: Stakeholder Roles & Responsibilities Map

AIM: make (needed) relationships and degrees of involvement visible by mapping who the stakeholders are, how they relate to each other, and their degree of involvement.

Visualise these relationships and connections as a way to discuss the roles and involvement of various actors, offer clarity within an existing cooperation, and highlight who is missing. Collaborations are often not based on contracts or formal agreements that define roles and involvement, and the number of involved is sometimes large. The circles on the map help distinguish between the more and less intensively partners involved and highlight who might be missing.

Start by discussing and writing down all of the people and organisations involved in the collaboration: these are the stakeholders. There are usually very active and less active partners, and parties who mainly support and not actively participating. Also (potential) funders you can name, local communities or networks that you support or want to reach out to.

Once everyone who is involved to some extent is noted, place the sticky notes on the circle according to degree of engagement - the farther away from the center, the less actively involved. The axis can represent specific aspects of the activity, to show varying engagement levels. This gives insight into who has what role and responsibility in the collaboration.



SOURCE: Public-Civic Collaboration Toolkit. Waag Future Lab & STDBY. (in Dutch) <https://waag.org/en/article/toolkit-public-civic-collaboration/>

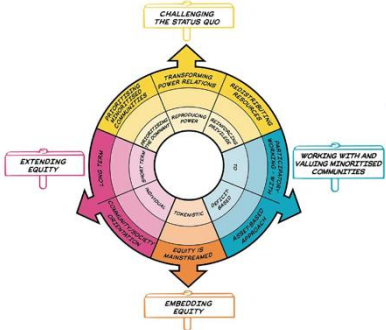
2.3.2. The Equity Compass

CitiObs Tools for engaging with the pledge to 'Leave No One Behind'

METHOD: The Equity Compass

AIM: reflect on your current practice and develop social justice mindset.

The Equity Compass is a framework that comprises eight dimensions of equity, each designed to apply a different lens to improve equitable experiences. Each axis has a set of associated Guiding Questions to help you to reflect on your policy and/or practice. You can apply the Equity Compass either generally or specifically, using it to consider anything from an organizational top level policy down to a single session within a programme. Equitable practice is not just about what you do, but how and why you do it. The stance taken and the principles underlying a particular programme or activity will profoundly shape its potential for either reinforcing or transforming social inequalities.



SOURCE: Youth Equity & Stem (YESTEM) Project Team (2021). The Equity Compass: A Tool for supporting socially just practice. <https://yestem.org/tools/the-equity-compass/>

The Equity Compass developed by the Youth Equity & Stem project (YESTEM) is a framework that aids reflection on the ethics of your current practice and helps develop social justice mindset. It comprises eight dimensions of equity, each designed to apply a different lens to improve equitable experiences. Each axis has a set of associated Guiding Questions to help you to reflect on your policy and/or practice. You can apply the Equity Compass either generally or specifically, using it to consider anything from an organizational top level policy down to a single session within a programme.

(Source: <https://yestem.org/tools/the-equity-compass>).

3. SIGN-POSTED GUIDANCE FOR TOOLS & METHODS

3.1 Introduction - What does ‘Leave No One Behind’ (LNOB) mean?

[before]

Why is it relevant?

In today's world, air pollution has emerged as a significant global challenge due to expanding urbanisation, intensive agriculture, and increasing industrialisation. The adverse effects of poor air quality on human health¹ and the environment demand urgent action and collective efforts. In this context, the United Nations' concept of 'leaving no one behind' becomes crucial when inviting community participation in air quality monitoring. This principle, promoted under the Sustainable Development Goals (SDGs) emphasizes inclusivity, equity, and equal access to participation and benefits, ensuring that the most vulnerable and marginalised populations are not overlooked when engaging people and communities in COs and therefore that their needs are considered for policy and decision making.

Equity in Exposure and Vulnerability

Air pollution affects people from all walks of life, but its impacts are disproportionately borne by marginalised communities. The exposure to air pollution is closely linked to poor housing conditions, closeness to polluting industries, and road infrastructure, thus also linked to socio-economic inequalities and discrimination (Buzzelli et al., 2003; Corburn et al., 2006; Mullen et al., 2022, Turbridy et al., 2022). Vulnerable groups, including residents in low-income neighbourhoods or informal settlements, those with lower levels of education, ethnic minorities, dis/abled people, religious minorities, and gender nonconforming individuals, tend to face higher exposure to pollutants due to discriminating housing policies which result in greater exposure to pollution sources and limited access to green spaces (Kaÿmierczak, 2018, 6).

Not only are these communities more exposed to air pollution, a study by Mullen et al. (2022) revealed that the number of PurpleAir air-quality sensors (a community system of PM (10, 2.5,

¹ There are strong linkages between air pollution exposures and human health effects and the World Health Organization (World Health Organization, 2021) estimates that annually, air pollution causes 7 million deaths and other health issues worldwide. Air pollution 'increases morbidity and mortality from cardiovascular and respiratory diseases and from lung cancer, with increasing evidence of effects on other organ systems' (WHO, 2021, p. xiv). Common sources of air pollution include emissions from combustion using fossil or biomass fuels for transportation and energy production. Domestic heating is also a major source of air pollution in many parts of the world (WHO, 2021). According to the WHO, "more than 90% of the global population in 2019 lived in areas where concentrations exceeded the 2005 WHO air quality guideline" (WHO, 2021, p. 6).

1.0) low-cost sensors measuring particulate matter) per capita were significantly reduced in areas with higher percentages of Hispanic, Black, and lower income residents in Los Angeles County, making a double burden for these marginalised communities. By incorporating the principle of 'leaving no one behind,' community participation in air quality monitoring can ensure that these groups are not overlooked, and their concerns and experiences are adequately addressed.

Empowering Local Communities

Engaging communities in air quality monitoring processes and resulting actions can foster a sense of ownership and empowerment. Bottom-up approaches, starting at individual- and community-level, are as important as seeking policy-based approaches to reduce emissions and environmental injustice (Rickenbacker et al., 2019). However, Mullen et al (2022, p.9) argued that “the self-organizing nature of a non-governmental air quality monitoring network such as PurpleAir can be exclusionary and may reproduce patterns of environmental injustice.” Without the principle of inclusivity, certain voices may be marginalised or excluded, perpetuating existing power imbalances. Residents of low-income and racialised neighbourhoods also seem to have reduced access to information about local air pollution (Mullen et al., 2022). 'Leaving no one behind' ensures that all community members, regardless of their socioeconomic status or background, have equal opportunities to engage in decision-making processes, shaping policies that directly impact their lives. (For guidance on the participation dynamics aspects of these latter activities, see the *CitiObs D1.6 'Participation Dynamics Toolkit'*).

Enhancing Data Quality and Representativeness

Accurate and representative air quality data is crucial for informed decision-making and effective policy interventions. However, although appropriate to meet legal provisions, the concepts and indicators used by governments rarely resonate with the lived experience and local experiential knowledge of people living in polluted areas (da Schio, 2022; Gabrys, 2017; Ottinger, 2013; Turbidity et al., 2022). Without diverse participants, monitoring initiatives may fail to capture the full range of local conditions and experiences. Neglecting certain communities undermines the quality and representativeness of the data, potentially leading to skewed analyses and inadequate policies. By embracing the principle of 'leaving no one behind,' community-based monitoring initiatives can collect more comprehensive and representative data, providing a more accurate understanding of air pollution patterns and impacts.

Co-Designing Solutions

Community engagement is not limited to data collection; it should also extend to the co-designing

of solutions. Embracing the concept of 'leaving no one behind' ensures that decision-making processes consider the unique needs, priorities, and knowledge of all community members. Studies have shown that local communities engaging with researchers in a practice of perceiving and documenting air pollution are “responding to environmental problems and creating political capacities” (Pritchard & Gabrys, 2016, p. 368) and marginalised communities have been seen to create new knowledge about local effects of air pollution emissions (Ottinger, 2017, Mullen et al., 2022). By actively involving marginalised groups, air quality interventions can be tailored to address specific challenges faced by these communities, fostering more effective and sustainable solutions for everybody.

How can this be done?

Start by *familiarising yourself with the LNOB concept, and the factors that can lead to people being left behind.*

The UNDP document [‘What does it mean to leave no one behind?’](#) provides a framework to enable and accelerate progress towards achieving the Sustainable Development Goals (SDGs). It describes five factors that are key to understanding who is being left behind and why, namely: discrimination; place of residence; socio-economic status; governance; and vulnerability to shocks. The factors can be used as guiding notions to examine the disadvantages people face; empower those who are being left behind [or who are at risk of being left behind]; and to enact inclusive, far-sighted and progressive actions.

Take the time to consider which groups of people in your local context might be left behind and in what ways, and who among them is likely the most affected (UNSDG, 2022).

✓ Seek locally available data and statistics that might reveal these gaps. Your municipality can advise on where to find this data.

✓ Include data and information from a range of sources, including from national statistical offices, national human rights institutions, international human rights mechanisms, labour organisations, and civil society organisations (particularly organisations of marginalised communities such as women’s or migrants), as well as community-level data, and citizen science initiatives. You can also approach your local higher education institution and enquire whether similar projects are being carried out by them or if they can share literature from scientific journals.

✓ Seek feedback and input from diverse stakeholders, including vulnerable groups, throughout the process, from initial gathering of data to review and analysis.

Example case studies

(Not yet identified.)

Useful resources.

FRAMEWORK/PAPER: UNDP's **What does it mean to leave no one behind?** This paper proposes a framework that governments and stakeholders can use to take action to leave no one behind in a way that enables, reinforces and accelerates progress to achieve the Sustainable Development Goals (SDGs).

https://www.undp.org/sites/g/files/zskgke326/files/publications/Brochure_LNOB_web.pdf

FRAMEWORK/PAPER: The **Brookings Institute book 'Leave No One Behind'**, looks into the LNOB pledge and aims to translate that global commitment into an action-oriented mindset, focused on supporting specific people in specific places who are facing specific problems. <https://www.brookings.edu/books/leave-no-one-behind/> While the whole book is interesting, the most relevant chapters to become familiarised with the concept and some specific cases are:

- Chapter 1, **Getting Specific to Leave No One Behind on Sustainable Development**, introduces the LNOB concept, how it is used in some official documents, and describes indicators that are used to measure who is being left behind. https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter1.pdf
- Chapter 2, **Women on the Move. Can We Achieve Gender Equality by 2030?**, focuses on the challenges to achieve gender equality. https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter2.pdf
- Chapter 3, **Breaking Out of the Poverty Trap**, describes the microeconomic and psychological reality of what it means to be ultra-poor. While most of the chapter focuses on policies that can tackle this issue, the first part is relevant to advance an understanding of the complex set of interrelated causes of poverty. https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter3.pdf
- Chapter 4, **No Refugees and Migrants Left Behind**, looks into the vulnerabilities that

refugees and migrants face, and argues that including them in activities and policies can help achieve lasting sustainable and development goals. https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter5.pdf

- Chapter 13, **Left Behind or Pushed Behind? Redistributing Power Over the Sustainable Development Goals**, discusses various notions of power and proposes to use the approach of redistributable power. https://www.brookings.edu/wp-content/uploads/2019/09/LNOB_Chapter13.pdf

FRAMEWORK: The **UN's SDG 5-Factors Framework in What does it mean to leave no one behind?** is a framework that stakeholders can use to gather and analyse information within and across the five factors. The text suggests key foci of existing data and information to consider. Information across the five factors can show who is left behind, how, and to what degree. <https://www.undp.org/publications/what-does-it-mean-leave-no-one-behind>.

TOOLKIT: The **Leave No One Behind Partnership's toolkit** aims to equip civil society and other stakeholder organisations, groups, and individuals with relevant information and tools to enable them to understand and carry out campaigning and advocacy activities on the ‘Leave No One Behind’ commitment. Most relevant sections for understanding LNOB are Part 1 (Understanding the SDGs) and Part 2 (Examine: understand ‘Leave no One Behind’). https://www.bond.org.uk/wp-content/uploads/2022/03/civicus_Inbtoolkitfinal.pdf

You may also be interested in...

[3.2 How can we engage with the concepts of Equity, Diversity and Inclusion \(EDI\)?](#)

[3.3 How can we ensure that our outreach and engagement activities are ethical?](#)

[3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive \(EDI\)?](#)

[3.5 How do we engage specific communities/groups in our Citizen Observatory?](#)

References

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https://www.bond.org.uk/wp-content/uploads/2022/03/civicus_Inbtoolkitfinal.pdf

United Nations Development Programme. (n.d.). *What does it mean to leave no one behind? A framework for implementation.*
https://www.undp.org/sites/g/files/zskgke326/files/publications/Brochure_LNOB_web.pdf

United Nations Development Programme. (2018). *What does it mean to leave no one behind? A UNDP discussion paper and framework for implementation.*
<https://www.undp.org/publications/what-does-it-mean-leave-no-one-behind>

3.2 How can we engage with the concepts of Equity, Diversity, and Inclusion (EDI)?

[before, during]

Why is it relevant?

As citizen observatories continue to make important contributions to environmental monitoring and governance, it is crucial to embed equity, diversity, and inclusion into their fabric, such that the collaborative and participatory practices of COs can achieve long-lasting and sustainable outcomes that benefit all of society.

Equity

Unlike equality that limits itself to providing the same access to resources and opportunities to people, equity seeks to address the barriers that some people or groups face which impedes them of making use of the same resources and opportunities. Equity lies at the heart of building a fair and just society. Citizen observatories can promote equity by ensuring diverse groups have equal access to participation opportunities, resources, and benefits. To achieve this, observatories should actively seek to facilitate the engagement of diverse communities, including marginalised and vulnerable groups. Collaboration with community-based organizations, grassroots movements, and local leaders can help identify and address barriers to participation. Furthermore, the co-design of projects and the integration of diverse perspectives in decision-making processes can ensure that the outcomes reflect the needs and aspirations of all stakeholders.

Diversity

Diversity refers to the inclusion and recognition of different perspectives, knowledge systems, and experiences. Citizen observatories can embrace diversity by encouraging the involvement of individuals from various socio-cultural backgrounds, age groups, genders, ethnicities, and abilities. Efforts should be made to create inclusive spaces where participants feel safe and respected. By adopting flexible and inclusive activities, citizen observatories can tap into the wealth of local knowledge and enhance the quality and relevance of the data collected. Moreover, collaboration with diverse stakeholders can foster interdisciplinary approaches, enriching the understanding and interpretation of environmental issues.

Inclusion

Inclusion involves creating an environment where everyone feels valued, heard, and actively engaged. Citizen observatories can promote inclusion by adopting participatory methodologies

that empower people to co-create and co-govern projects. Emphasizing transparent and accessible communication channels can facilitate the exchange of ideas and ensure that information is disseminated in a manner that is understandable and relevant to diverse audiences. Building capacity and providing training opportunities can enable individuals from marginalised and vulnerable communities to actively contribute to monitoring efforts, data analysis, and decision-making processes. (For guidance on the participation dynamics aspects, see the *CitiObs D1.6 ‘Participation Dynamics Toolkit’*).

Benefits of Equity, Diversity, and Inclusion

By actively engaging with equity, diversity, and inclusion, citizen observatories can reap numerous benefits. Firstly, they can enhance the quality and reliability of data by capturing a broader range of perspectives and knowledge systems. This inclusive approach can uncover unique insights, improve the accuracy of findings, and inform more robust decision-making. Additionally, citizen observatories can foster social cohesion by facilitating interactions between diverse groups, promoting dialogue, and fostering mutual understanding. For example, inviting local residents from diverse backgrounds to co-facilitate the trainings and workshops were found by Rickenbacker et al. (2019) to be crucial in promoting environmental justice among peers and empower participants. In addition, according to Turbridy et al. (2022), there are important issues surrounding the measurement and production of knowledge about air pollution that directly connects with inequality and power.

How can this be done?

Start by seeking local *groups or communities in your location who are active on the themes of EDI, who you can engage with for insights and collaboration.*

- ✓ Seek local groups or Communities of Practice (CoP) in your city, location, or country to join where you can share ideas and learn about these topics.
- ✓ Seek international/global CoPs that you might want to join, such as the [ECSA EIE Working Group](#), the [Diversci CoP](#), the [Partos Platform Leave No One Behind](#), or the [Partos CoP on Inclusive Communication](#).

Prepare your CO and team for EDI practices.

- ✓ Organise a CO and team meeting to have structured conversations on Equity, Diversity and Inclusion through workshops.

- ✓ Select an online MOOC or video workshop to watch together as a team, such as the **GlobeScape “Justice, Equity, Diversity and Inclusion (JEDI) in Science Communication” workshop** listed in the resources below. [**N.B.** This section is a work-in-progress where more videos and MOOC materials will be referred to]
- ✓ Place equity and inclusion at the heart of your communication and engagement strategy and setting clear strategic priorities for overcoming structural inequalities when planning activities.
- ✓ Use the concept of centering racial equity to advance the CO strategy, build understanding, strengthen relationships, and support in reaching collective goals.
 - Examples (in resources):
 - The Diversci Spark Self Evaluation Workshop
 - The GlobeScape “Justice, Equity, Diversity and Inclusion (JEDI) in Science Communication” workshop
 - The DiverSci EDI Strategy Development Checklist
 - Racial Equity Toolkit

Case study

(Not yet identified)

Useful resources

COMMUNITY: The **Diversci Community of Practice** (CoP) provides opportunities for peers to share both good practice and failed attempts through a participative dynamic, in which everyone is welcome. The CoP meets regularly in an informal and open setting, discussing and sharing ideas, point of views and testimonies that allow each of the participants to find their own approach to an equitable, diverse and inclusive organisation. <https://www.diversci.eu/our-community>.

COMMUNITY: The **Partos Platform Leave No One Behind** from PARTOS consists of organisations and actors in the field of development cooperation. They develop, share and promote knowledge, innovative solutions and policies that contribute to ending poverty and exclusion. The Platform meets regularly to discuss several issues related to the topic Leave No One Behind. <https://www.partos.nl/werkgroep/leave-no-one-behind-platform>.

COMMUNITY: The **CoP on Inclusive Communication** from PARTOS is a community where participants can explore ways to make communication work more ethical, inclusive and equitable in all senses. Members and partners can explore the impact and value of inclusive communications relative to their vision, mission, goals, relations and target audiences, as well as concerning the sector through various activities. <https://www.partos.nl/werkgroep/community-of-practice-inclusive-communications>.

CHECKLIST: The **DiverSci EDI Strategy Development Checklist** consists of strategy indicators of progress in the organisation to place equity and inclusion at the heart of the organisation's strategy. It also contains direct actions that you can take with respect to your strategy and several resources for more in-depth reading. <https://www.diversci.eu/strategy>.

TOOLKIT: The **Racial Equity Toolkit** is designed to support backbone staff and partners to operationalize racial equity throughout their collective impact work. Through a mix of personal reflection exercises, conversations, and activities, this toolkit will help teams explore how centering racial equity can advance their strategies, build understanding, strengthen relationships, and support in reaching their collective goals. Please note that the website requires sign-up. <https://collectiveimpactforum.org/resource/racial-equity-toolkit>.

TOOLKIT: Bond's **Anti-racism and decolonising. A framework for organisations**. This framework maps out how racism cuts across all areas of our organisations and shows the necessity of an anti-racist and holistic approach to decolonising our organisations to create a fairer, more equitable and racially just sector. <https://www.bond.org.uk/resources/anti-racism-and-decolonising/>

TOOL: The **DiverSci First Aid Kit**. This short guide offers a quick fix for situations that have been encountered frequently: Do you need help right now? Where to start? How to convince your team on diversity and inclusivity? <https://www.diversci.eu/first-aid-kit/>

WORKSHOP: The **DiverSci Spark Self Evaluation Workshop** is a tool for collective reflection and internal evaluation. It helps organisations to have structured, yet difficult conversations on Equity, Diversity and Inclusion and to measure their institutional knowledge and practices regarding social justice. Spark is not just a self-evaluation tool: it is a means to committing to and implementing change. <https://www.diversci.eu/evaluation-workshop>.

WORKSHOP: The **GlobeScape “Justice, Equity, Diversity and Inclusion (JEDI) in Science Communication” workshop** is intended to be an opportunity for science communicators from different regions of the world to see how issues of justice, equity, diversity and inclusion can factor into their practices. This resource has formed the basis of our own LNOB Workshop slide-deck, adjusted to the context of Citizen Observatories and their activities rather than that of Science Communicators (as described in Section 1.1.). The original source material contains workshop templates to augment the workshop slides, and a complete filmed version of the workshop that can thus be followed online in one's own time.

<https://zenodo.org/record/7764990#.ZCG0UHZBxD9>.

You may also be interested in...

[3.1 Introduction - what does Leave No One Behind \(LNOB\) mean?](#)

[3.3 How can we ensure that our outreach and engagement activities are ethical?](#)

[3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive \(EDI\)?](#)

[3.5 How do we engage specific communities/groups in our Citizen Observatory?](#)

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3.3 How can we ensure our outreach and engagement activities are ethical?

[before, during, after]

Why is it relevant?

There is increased attention for improving the diversity of participants in citizen science initiatives and citizen observatories, and a general movement to engage with broader audiences across a range of demographic categories. This is especially the case when the topic under investigation in the CO particularly impacts certain groups of people inequitably or unjustly.

Such endeavours must necessarily start with actions to communicate with and reach out to currently under-reached groups of people and inviting them to participate in the activities of the project or initiative.

As citizen observatories aim to engage with a more diverse and representative range of participants and community members, it is crucial to consider how these outreach and engagement activities can also be conducted in an equitable and ethical fashion, such that people are not further disadvantaged or marginalised.

How can this be done?

During the planning and preparation stages of CS initiative or CO, it useful to turn to guidance that provides a framework for considering the ethics of these activities. One such guidance document is the PRO-Ethics Framework and Guidelines, which the CitiObs project has adapted to the context of Citizen Observatories and their activities. [This adapted ethics framework is contained in Appendix II of this deliverable, and will be further woven into the final LNOB Toolkit's sign-posted guidance].

Case study

(not yet identified)

Useful resources

FRAMEWORK & GUIDELINES: The **PRO-Ethics Framework and Guidelines**² provide structured guidance to support the ethical implementation of engagement and participatory processes in the activities of research funding organizations (RFOs), who wish to engage citizens and societal actors in design, execution and evaluation of research funding programmes. These guidelines were developed via an iterative process within the EU-funded PRO-Ethics project and tested in practice by 10 participatory pilots in different countries, incorporating best practices and insights identified along the way. The framework is structured to reflect different stages of the participatory process (i.e. before, during, and after) and aid RFOs in identifying and addressing the ethical challenges and limitations that might arise.

FRAMEWORK & GUIDELINES: The **CitiObs adaptation of the PRO-Ethics Framework and Guidelines**³ (see Appendix II)

(more resources pending)

You may also be interested in...

[3.1 Introduction - what does Leave No One Behind \(LNOB\) mean?](#)

[3.2 How can we engage with the concepts of Equity, Diversity and Inclusion \(EDI\)?](#)

[3.3 How can we ensure that our outreach and engagement activities are ethical?](#)

[3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive \(EDI\)?](#)

[3.5 How do we engage specific communities/groups in our Citizen Observatory?](#)

² Wiarda, Giannelos, Schuerz, Reber, & Doorn. (2023). Ethics Framework and Guidelines for Participatory Processes in the Activities of Research Funding Organizations. Zenodo. <https://doi.org/10.5281/zenodo.8089673>

³ Wiarda, Giannelos, Schuerz, Reber, & Doorn. (2023). Ethics Framework and Guidelines for Participatory Processes in the Activities of Research Funding Organizations. Zenodo. <https://doi.org/10.5281/zenodo.8089673>

3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive (EDI)?

[before, during, after]

Why is it relevant?

EDI is not simply a buzzword or a box to be checked; it is a fundamental value that should underpin all the activities of a CO. Understanding and embracing the principles of EDI will contribute to the success and impact of the CO. By investing time and effort into these areas, communities can foster a culture of fairness, respect, and collaboration that enables them to jointly tackle complex challenges with greater effectiveness and create a more just and inclusive society.

Striving for equity means recognizing and addressing the systemic biases and barriers that exist within our society. By understanding and acknowledging these disparities, we can actively work towards creating a level playing field, where everyone has an equal opportunity to participate, contribute, and benefit from the initiatives of the CO. This involves promoting inclusivity and ensuring that marginalised voices are heard and valued.

Furthermore, embracing diversity enriches our collective experience and fosters innovation and creativity. By actively seeking out and welcoming individuals from diverse backgrounds, perspectives, and experiences we can tap into a wealth of knowledge and insights that would otherwise remain untapped. This leads to more robust decision-making, increased adaptability, and a greater capacity for problem-solving.

On a final note, it is important to keep in mind that the roots of inequity and injustice are systemic and cannot be solved with a single action. Nevertheless, being aware of the different issues and striving for equity and inclusion are some of the necessary steps to create a cultural change.

How can it be done?

Perform an EDI ‘health check’ within the CO

✓ One of the first steps is to examine how your CO is currently dealing with inclusivity. There are checklists that can support the team in reflecting how equitable and inclusive the current processes are. Other tools can help the team discuss key questions about user involvement and how they relate with priorities from the community.

✓ Discuss key questions with your team/CO to find out about your inclusive user involvement.

✓ Design the programme in line with community priorities.

✓ Examples (in resources):

- SOCIO-BEE Inclusion and Non-discrimination Checklist
- BTUS Practical Guide: Towards inclusive user involvement
- BTUS Electronic Guide: Some Key questions for inclusive involvement
- Pandya’s Framework for engaging diverse communities in Citizen Science

Review communications and activities for inclusive language and the removal of barriers

The language, design, and format used in your CO communication plays a significant role in accessibility. Using inclusive communication will increase awareness of barriers to inclusivity in general, which in turn will ensure your activities and development work are also inclusive.

Inclusive language goes beyond the use of different languages (such as Greek, Catalan, Spanish, English, Dutch and Swedish in the case of the CitiObs Frontrunners) and focuses also on registers and the vocabulary used. This is not only to appeal to different groups but to ensure no offensive or discriminatory language is used. Next to the contents of the text, the way in which it is presented can have a huge impact on inclusivity. The fonts and colours used should be accessible for different groups. For example, the colours should be chosen so that the design is accessible to colour-blind people; or having large fonts to facilitate reading for those who cannot read small letters. All communications must be fit for purpose, which entails considering the COs audience and the groups the team wants to reach out to.

COs can train their teams on inclusive communication and to be aware of the language used as well as accessibility considerations such as fonts and colours. This awareness on inclusiveness extends to how activities are organised and the work of the CO in general. Given that language plays such a big role in shaping our views and the world around us, focusing on it will aid the CO's team to become more aware of how inclusive the activities are.

✓ *Make your communication and activities inclusive*

- Train your team about inclusive (science) communication.
- Create consent forms that are easy and accessible.
- Check that your use of language is inclusive.
- Take into consideration accessibility issues (fonts, colours).
- Be mindful of the different backgrounds of participants when recruiting and onboarding.

- Organise activities (e.g. meetings, events, workshops, training) as inclusive as possible considering the physical space, the background knowledge that is assumed people have, and the language that is used.
- Examples (in resources):
 - The GlobeScape “Justice, Equity, Diversity and Inclusion (JEDI) in Science Communication” workshop
 - The SensJus Visual Consent Form
 - The OXFAM Inclusive Language Guide
 - The CitiMeasure Guidelines on Competencies for Digital Inclusion
 - The W3C Web Accessibility Initiative (WAI)
 - Making a Change: A guide to running successful and accessible workshops and training
 - BTUS Practical Guide: Towards inclusive user involvement
 - BTUS Electronic Guide 2: Making activities accessible
 - BTUS Electronic Guide 3: Positive meetings and get togethers

Case study

(Not yet identified)

Useful resources

CHECKLIST: The **SOCIO-BEE Inclusion and Non-discrimination Checklist** is designed to help Citizen Science projects reflect on inclusion processes and equality at all stages. The aim of this questionnaire is not only to encourage reflection and debate on the need to take into account the criteria of inclusion and equality in citizen science but also to help projects and the people involved in them to improve their dynamics of participation and management of the knowledge generated. *[Clarification on the missing link – the checklist is currently under its final review and will be published later this year in the SOCIO-BEE website. We will add the proper link in the online version of this toolkit].*

GUIDE: The **BTUS Practical Guide: Towards inclusive user involvement** is a report which purpose is to offer practical help to develop more inclusive involvement for the future so that everyone who wants to be involved has equal opportunities to do so.

<https://shapingourlives.org.uk/report/beyond-the-usual-suspects-guide>. This guide also includes several interesting electronic guides and other resources:

- The **BTUS Electronic Guide 1: Some Key questions for inclusive involvement** contains several key questions to ask yourself and discuss in relation to your CO. <https://shapingourlives.org.uk/report/beyond-the-usual-suspects-electronic-guide-1-some-key-questions>.
- The **BTUS Electronic Guide 2: Making activities accessible** contains recommendation about communication of the activity, travel, accommodation and the venue. <https://shapingourlives.org.uk/report/beyond-the-usual-suspects-electronic-guide-2-making-activities-accessible>.
- The **BTUS Electronic Guide 3: Positive meetings and get togethers** highlights important issues and experiences of involving a diverse range of services users during events. <https://shapingourlives.org.uk/report/beyond-the-usual-suspects-electronic-guide-3-positive-meetings-and-get-togethers>.
- The **Shaping Our Lives Venue Accessibility Checklist** helps ensure that rooms and facilities for meetings and gatherings are accessible to all - <https://shapingourlives.org.uk/report/venue-accessibility-checklist>.

GUIDE: The **PARTOS Inclusive Communication Guiding Principles** provides an overview of 10 principles to keep in mind to ensure the communication in your project is inclusive.

https://www.partos.nl/wp-content/uploads/2023/12/InclusiveCommunication_EN_Principles.pdf

FRAMEWORK/PAPER: The **Pandya’s Framework for engaging diverse communities in Citizen Science** is a framework for designing citizen-science programs that align with community priorities. The focus is on the US and the absence of alignment between community priorities and research objectives. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/120007>.

WORKSHOP: The **GlobeScape “Justice, Equity, Diversity and Inclusion (JEDI) in Science Communication” workshop** is intended to be an opportunity for science communicators from different regions of the world to see how issues of justice, equity, diversity and inclusion can factor into their practices. However, it can easily be adapted to other practices such as Citizen Observatories. <https://zenodo.org/record/7764990#.ZCG0UHZBxD9>.

TOOL: The **SensJus Visual Consent Form** is a tool where you can access and edit template forms that combine visuals and text for consent forms and for informing participants of the project. The aim is to address participants who may have a low literacy level, for whom the standard consent forms and information sheets might fail to achieve an aware participation and informed consent. The forms also illustrate to prospect participants their rights as (research) data subjects according to the GDPR. These forms, co-developed by the SensJus project with a visual artist, are available as non-commercial creative commons resources.

<https://sensingforjustice.webnode.it/l/our-visual-consent-forms-now-out-as-creative-commons>.

GUIDE: The **OXFAM Inclusive Language Guide** is a resource that helps us be aware of how the way we write can subvert or inadvertently reinforce intersecting forms of inequality that we seek to end. The recommendations are drawn from specialist organisations which provide advice on the language preferred by marginalised people, groups and communities, and by OXFAM’s staff and networks, to support you to make choices that respectfully reflect the way they wish to be referred to. <https://policy-practice.oxfam.org/resources/inclusive-language-guide-621487>.

TOOLKIT/INITIATIVE: The **W3C Web Accessibility Initiative (WAI)** is an initiative that develops guidelines, supporting materials and resources to make the Web accessible to people with disabilities and help you understand and implement accessibility. You can use W3C WAI resources to make your websites, applications, and other digital creations accessible and usable to everyone. <https://www.w3.org/WAI/roles/new>. A couple of examples:

- Introduction to Web Accessibility - <https://www.w3.org/WAI/fundamentals/accessibility-intro>
- Resources for Getting Started with Digital Accessibility - <https://www.w3.org/WAI/roles/new>
- Selecting Web Accessibility Evaluation Tools - <https://www.w3.org/WAI/test-evaluate/tools/selecting>
- Making Audio and Video Media accessible - <https://www.w3.org/WAI/media/av>
- Web Content Accessibility Guidelines - <https://www.w3.org/TR/WCAG21>

GUIDE: The **Making a Change: A guide to running successful and accessible workshops and training** is a guide based on the evaluation of a programme of workshops that were part of the Standards We Expect Project in 2007. The workshops were aimed at a wide range of service users taking part in the Project. The organisers wanted everyone to be able to take part equally but found it difficult to set up training and workshops. They also found that there was no pre-existing guidance on what to do when setting up training or workshops. This guide was put together to answer that absence. The guide includes all the stages of setting up a training programme: it starts with deciding on what training is needed and goes all the way through to evaluation. It gives general advice and examples of what was done in the Standards We Expect training programme and outlines how to ensure everyone is included in the training and everyone has an equal say. <https://shapingourlives.org.uk/report/making-a-change-a-guide-to-running-successful-and-accessible-workshops-and-training>

FURTHER READING: The **CitiMeasure's Guidelines on Competencies for Digital Inclusion** aim to advance the understanding of the issue of ‘competencies’ for inclusion in increasingly digitised Citizen Science initiatives. They are primarily developed to guide those who are interested in identifying, understanding, and enhancing capacities and competencies required for digital inclusion of different actors in Citizen Science projects. This includes cities, organisations, researchers, and practitioners who are involved in initiating a Citizen Science project or those who aim to study or improve current actor inclusion practices in existing Citizen Science initiatives. <https://citimeasure.eu/inclusion-guidelines/#page=2>.

You may also be interested in...

[3.1 Introduction - what does Leave No One Behind \(LNOB\) mean?](#)

[3.2 How can we engage with the concepts of Equity, Diversity and Inclusion \(EDI\)?](#)

[3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive \(EDI\)?](#)

[3.5 How do we engage specific communities/groups in our Citizen Observatory?](#)

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3.5 How do we engage specific communities/groups in our Citizen Observatory?

[before, during, after]

Why is it relevant?

Every person, regardless of their gender identity, dis/ability, nationality, and socio-economic or cultural background, has the right to participate in citizen science. The Universal Declaration of Human Rights states that "Everyone has the right freely (...) to share in scientific advancement and its benefits" (UNDHR, Article 27).

Reviews of and experiences from citizen science projects (Blake et al., 2020; Pateman et al., 2021), show that most participants tend to be homogenous in their demographics. In the context of environmental pollution issues such as air quality, when diverse communities are not represented, their voices and concerns are likely to be poorly represented within the city or region in question, and therefore any measures taken to address those issues may exclude them from the benefits of those actions.

Efforts need to be taken to redress this balance. Some people may face obstacles for joining a CO. They may not be aware of its existence as it has not been advertised through channels they use. Some may not be available to join when the CO holds its meetings. Others may find the technical aspects too complicated. Seeking to engage various communities will benefit the CO beyond impact. However, some people may not be able to join due to a lack of time. In that case, it is important to involve their voices in the CO; diversifying perspectives will make knowledge more accessible and share the benefits of the CO widely.

How can this be done?

A first step for engaging diverse communities is mapping the coverage of the CO: which areas are being covered through measurements, and which areas in the neighbourhood/region are not represented by participants or are not being measured? For this step we must be aware of not collecting personal data which can infringe on the privacy rights of people. The mapping should thus rely on local knowledge from participants aided by online map tools. Such as, which areas from the city/region are not covered by sensors? Do these areas overlap with areas which are known to have high air pollution (for example next to a road with heavy traffic)? Are the members of our CO as diverse as the members of the city/region?

The next step is to determine which communities the CO could seek to engage. This might result on a long list. The CO can prepare a strategy of which communities will be approached first, based on the resources available such as time and volunteers, and on whether said communities have their own organisations. Approaching community leaders can facilitate contact points, as they are aware of the needs and issues their communities face. An open and honest listening attitude is of high relevance during all the exchanges.

It is important to note that engaging diverse communities is an ongoing process that develops slowly. Building up connections with communities that are not yet participating takes time and requires dedicated attention. It is possible that the various communities will not be represented in a CO. However, it is important to stay open to all groups and make sure the interests and voices of the community at large are well represented in the CO.

On a final note, it is worth to note that it will be impossible for a CO to engage all the communities, however the toolkit offers various resources that cover specific groups which can be used when required.

Case study

(not yet identified)

Useful resources

TOOLKIT: The **CitSci4All Toolkit** contains a variety of tools for planning and constructing Citizen Science for climate change initiatives with **Deaf and hard-of-hearing adults (DHH)**. <https://citsci4all.eu/citizen-science-toolkit/> While the kit includes the basics on Citizen Science and Citizen Science for Climate Change in sign language, there are specific tools on DHH involvement:

- Unit 3: **Deaf and hard-of-hearing adults Involvement in Citizen Science projects**
<https://citsci4all.eu/deaf-and-hard-of-hearing-adults-involvement-in-citizen-science-projects/>
- Unit 4: **Technologies for Deaf and hard-of-hearing adults**
<https://citsci4all.eu/technologies-for-deaf-and-hard-of-hearing-adults/>

- Unit 5: **Engaging Deaf and hard-of-hearing adults with Citizen Science projects**
<https://citsci4all.eu/engaging-deaf-and-hard-of-hearing-adults-with-citizen-science-projects/>

TOOL: Roger Hart's **Ladder of Youth Participation** A tool to think about the levels of **youth voice** that programs incorporate.

https://higherlogicdownload.s3.amazonaws.com/ASTC/00e37246-8bd9-481f-900c-ad9d6b6b3393/UploadedImages/Ladder_of_Participation_1.pdf

GUIDELINE: The **CitSci4All** project has worked on guidance for Deaf and Hard of Hearing (DHH) engagement in citizen science projects based on the input and insights gathered from DHH trainers and citizen science experts. We have prepared a shorter version of their document with ways to facilitate inclusion OF DHH adults in citizen science projects. *[The document can be found on Appendix IV; it will be uploaded in the online version of this toolkit].*

GUIDELINE: Best practices for a diverse and inclusive project. This guideline has been extracted from a deliverable by the EU Horizon2020 project CSI-COP focusing on Guidelines for Diverse Citizen Science Recruitment. *[The document can be found on Appendix V; it will be uploaded in the online version of this toolkit].*

PAPER: In **The Politics of Tek: Power and the ‘Integration’ of Knowledge**, Paul Nadasdy reflects on power imbalances that can prevail when projects seek to integrate **aboriginal or indigenous knowledge**, and how communities are forced to express themselves in ways that conform to what policy makers and scientists see as useful data.
<https://anthropology.cornell.edu/sites/anthro/files/Nadasdy%201999%20Politics%20of%20TEK%20new.pdf>

PAPER: The **YouCount project's Inclusive & transformative Citizen Social Science with young people** report. The document summarises learnings from webinars on “Citizen Social Science with young people” in which co-creation, inclusiveness and transformative impacts were the guiding topics. It includes insights in the work of practitioners active in Y-CSS, and the presentation and discussion of co-created webinar topics as issues of concern to people active in the field. <https://www.youcountproject.eu/blog/10-key-learnings-from-our-webinars>

PAPER: Oxfam's **Beyond Consultation: Unpacking the most essential components of meaningful participation by refugee leaders.** This paper proposes actionable recommendations for community leaders on how to operationalize the concept of ‘meaningful refugee participation’ to go beyond tokenistic participation and to genuinely empower refugees.

<https://policy-practice.oxfam.org/resources/beyond-consultation-unpacking-the-most-essential-components-of-meaningful-parti-621363/>

FURTHER READING: CitiMeasure’s **Guidelines on Competencies for Digital Inclusion.** These guidelines unpack 27 clusters of skills, knowledge, and attitudes for digital inclusion of different actors in citizen science projects, as well as 32 specific recommendations on how to enhance those competencies better. <https://citimeasure.eu/inclusion-guidelines/#page=1>

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[3.2 How can we engage with the concepts of Equity, Diversity and Inclusion \(EDI\)?](#)

[3.3 How can we ensure that our outreach and engagement activities are ethical?](#)

[3.4 How can we ensure our Citizen Observatory practices are equitable, diverse and inclusive \(EDI\)?](#)

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ANNEXES

Appendix I - Literature Review Bibliography

The following contains scientific papers, thesis, books, videos, talks, and other publications that were deemed relevant for this toolkit. While not all resources were listed in the toolkit as such, many of these could become useful for creating specific guidelines and tools if needed by the COs.

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Appendix II – Adaptation of the Pro-Ethics ‘Ethics Framework’ to the context of Citizen Observatories

Background

As referred to in the section of this Deliverable describing the development of the LNOB Toolkit and the key existing resources that have shaped it, the Ethics Framework developed by the EU-funded PRO-Ethics project has provided us with a useful baseline for structuring guidance for using the LNOB Toolkit and considering the ethics of outreach and engagement activities in COs. Although the targeted user-group of the PRO-Ethics project is research funding organisations (RFOs) who want experiment with novel participatory methods to engage citizens and societal actors in the design, execution, and evaluation of research and innovation funding programmes, the range of ethical considerations presented are highly relevant for participatory practices in other contexts. In this appendix we share our adapted version of the ProEthics Ethics Framework to the context of Citizen Observatories.

The Framework

The structure of the Ethics Framework is organized as a list of questions to prompt ethical considerations when preparing to engage with under-represented or minoritised groups, undertaking that engagement, and evaluating the effectiveness and impact of those activities. This can aid in the selection of tools or methods to ensure that no one is left behind. The question-prompt sections are:

- A. How should engagement and inclusion activities be planned for?**
- B. Which types of engagement and inclusion activities are being considered?**
- C. Which groups of people are being targeted for engagement and inclusion?**
- D. What are the ethical issues and risks?**
- E. How can equal and meaningful dialogue with these groups be fostered?**
- F. How should these engagement and inclusion activities be monitored and reflected upon?**

Each of these sections includes timeline indications that are visually highlighted in the box of each specific subset. These indications serve to identify when a specific action is to be undertaken: these timelines may be cumulative in the case of an iterative action (at different stages):

- **before** the activity or action (the design phase)

- **during** the activity or action (the implementation phase)
- **after** the activity or action (the feedback and evaluation phase)

A) How should engagement and inclusion activities be planned for?

Action A1: Identify and clarify the goals and expected contributions. [before] [during]

To achieve clarity on the expected goals and impacts of the CO, and the roles of everyone involved in the engagement and inclusion activities of the CO, identify why you and your existing partners, potential additional stakeholders, and participants in the activities of the CO are interested in engaging and including a more diverse group of participants, what roles each stakeholder might have in this, and what types of knowledge and perspectives are sought. Transparently co-creating and clarifying these from the beginning, and checking-in with these aims and expectations continuously throughout the lifetime of the CO helps align expectations on all sides, particularly regarding the impact of the activities and how interactions should be structured. This also helps frame, justify, and outline the engagement and inclusion activities for more focused, ethical, and appropriate implementation.

Action A2: Allow for flexibility when planning the engagement and inclusion activities.

[before] [during] [after]

The coordination of the CO and its activities will benefit from being organized in an agile and iterative way, to respond to unexpected issues and concerns that will undoubtedly arise due to the complexity of the urban context and factors in the daily lives of the people and groups being engaged with. Sufficient time and resources must therefore be allocated to these activities.

Action A3: Explore possible, probable, and desirable impacts [before] [during]

Explore the potential social, political, institutional, economic, environmental, or other impacts that the engagement and inclusion activities of the Citizen Observatory might have, including potential negative impacts that should be avoided. Be as comprehensive as possible in the inclusion of all potentially impacted stakeholder groups and the groups of people being engaged with, in a co-creative approach to identifying such impacts. Potential positive and negative Impacts should be listed and related to the design and outcomes of the engagement and inclusion activities of the CO, including steps to boost positive impacts and mitigate the risk of negative impacts.

B) Which types of engagement and inclusion activities are being considered?

Action B: Define the types of engagement and inclusion activities that will be undertaken. [before]

Consider the context, type of activities, and timing of activities within the CO. This can be reflected upon at the outset of any given activity, or during the first planning stages to cover a comprehensive range. Building on the aims identified in A1 and the potential impacts

identified in A3, consider which target groups should be engaged and included, in what ways, and what their role in the activities of the CO might be (i.e. what are you inviting them to do?). From this baseline, select the tools and methods for inclusive practices in the CitiObs Toolkit that will be relevant in support of these activities.

C) Which groups of people are being targeted for engagement and inclusion?

Action C1: Determine which groups of people to target for engagement and inclusion, and why, followed by interlinking the activities, context, and stakeholder types.

[before]

It is important to understand which groups of people should be engaged and included in the activities of the CO, and why. This could mean including people with specific knowledge of or experience with an issue, those being affected by the specific issue, or stakeholders with a concrete role or relative power within a system or process towards addressing that issue. It also entails a broader reflection on aspects such as gender, age, socio-economic background, dis/ability, geographic location, as well as peoples' overall proximity to the activities of the CO. These specifications allow for a better understanding of the local context and the identification of groups that may have been overlooked. It also helps to understand the potential needs of participants to meaningfully take part in the activities of the CO. Mapping potential groups of people as stakeholders in the issue, with an understanding of their interests and needs, ensures that the type of engagement and inclusion activities appropriately address both. Consider what type of representation is needed to obtain the desired outcomes. For instance, do participants need to reflect the diversity of that location, or should engagement activities focus on a specific stakeholder group? Matters of representation become important when the environmental issue under investigation impacts a specific group inequitably.

Action C2: Determine how people and groups should be engaged with, taking into account inclusive representation, selection bias, and feasibility *[before]*

After groups of people or issue-stakeholders have been identified as potential participants, it is crucial to consider how they should be engaged with, taking into account inclusive representation, selection bias, and feasibility. The planning and execution of recruitment efforts often takes more time and investment than expected and may be a prolonged, iterative process in longer-lasting inclusivity endeavours. Reflect on the benefits and drawbacks of the engagement and recruitment techniques (e.g. feasibility versus selection biases), and target your approach to people based on the considerations identified in C1. While engagement and recruitment can be challenging, people are more inclined to participate if the activities of the CO are in their direct interest. Timing can be a decisive factor. Consider, for instance, whether holidays or other periods obstruct peoples' involvement. Based on these considerations, make a selection of tools, methods and approaches contained in the CitiObs Toolkit.

D) What are the ethical issues and risks?**Action D: Identify ethical issues and tackle them appropriately. [before]**

With the clarity achieved in the above steps it becomes easier to assess potential ethical issues and determine where and how a process should be adapted. Ethics experts could help identify, understand, and mitigate ethical issues.

Consider the following potential issues in relation to the activities of the CO:

- When designing the data-gathering activities and protocols of the CO, issues of human dignity, power, intellectual property, privacy, and data protection, transparency, and biases (e.g., gender bias, bias towards the able-bodied, etc.) should be taken into account.
- When engaging in the data-gathering activities of the CO, issues relating to personal data; discrimination; stigmatization; fixation on technology acceptance; vulnerable groups; privacy; safety; social responsibility of researchers; informed consent; social roles in the application context; use of ethically sensitive findings; manipulation and guardianship through technology should be taken into account.
- When evaluating the data-gathered by CO participants and stakeholders, common ethical risks in relation to legitimacy, lack of ethical expertise; communication of outcomes; and conflicting interests should be taken into account.

Consider the following more general issues:

- *Informed consent:*
 - Informed consent procedures should be employed to build a baseline understanding of the process among all participants.
 - Ensure you choose an appropriate informed consent process and format for the target group.
 - Use accessible language, remain within a reasonable length, and consider creative methods such as movies and comic strips, or dynamic informed consent to address groups for whom formal language and constructs might be a barrier.
- *Financial compensation:*
 - Determine if, to whom, and how much financial compensation should be given.
 - Compensation should address removing barriers to participation. Avoid the case that financial compensation becomes an incentive in itself or puts the receipt of other benefits at risk.
- *Methods:*
 - Consider that if diverse participation is made a mandatory requirement for the participation of stakeholder partners such as local municipalities (for example in the open call for Fellow Cities), this might create a barrier to participation. Support and training could mitigate this risk.

- Identify the adequacy of the selected engagement and inclusion activity regarding i) if diverse representation is warranted in the given activity; ii) if those engaged with would benefit from additional support.
- *Knowledge / awareness:*
 - Consider what steps need to be taken to raise awareness and understanding of the issue under investigation, and the means of measuring or monitoring that issue. For example, participants in the activities of the CO can be given a thematic ‘warm-up’ and should be given enough time to process information.
 - Identify what knowledge is needed (scientific/technical background) for the activities of the CO; foresee what type of group dynamics may emerge as a result of information asymmetries or ‘digital divide’ issues; and ensure that potential ethical problems that have been spotted find the required expertise to address them.
- *Disadvantaged groups*
 - Identify if, who, and how those being engaged with and included in the activities of the CO may be disadvantaged. This should partly be determined on the basis of dialogue with those groups to gather insights and input.
 - Engage with disadvantaged groups prior to the activities of the Cos to understand their needs.
 - Customize engagement and inclusion activities to address these disadvantages or barriers in a meaningful way, such that all who wish to can participate in the activities of the CO.
- *Research integrity:*
 - Identify if (and how) the engagement and inclusion activities might affect the researchers’ integrity.
 - Align the engagement and inclusion activities with frameworks, standards, and/or codes of conducts on research integrity.⁴
- *Assess the overall risk to actors in the process, including*
 - physical (direct harm, long-term harm)
 - psychological (traumatizing methods, sensitivity of questions, ...)
 - social (stigmatization, discrimination, ...)
 - data protection, privacy, confidentiality
 - insurance status of participants

E) How can equal and meaningful dialogue with these groups be fostered?

⁴ Most prominently, this includes the ALLEA’s European Code of Conduct for Research Integrity. The most current version of this living document can be accessed via ALLEA’s website: <https://allea.org/code-of-conduct/>

Action E: Consider how equal and meaningful dialogue can be established and safeguarded in light of the characteristics and vulnerabilities of the groups being engaged with. [before] [during]

Ensure that the design and implementation of engagement and inclusion activities foster equal and meaningful dialogues with the members of the groups being engaged with. Consider hiring an experienced (external) moderator to facilitate discussion. Try to foresee what forms of representation, participant types, and reciprocal relationships are applicable, taking into account expected power imbalances and the desirability hereof. The following non-exhaustive list of considerations are important:

- **Representation:** Consider who is excluded and included by reflecting on the balance between diversity and representation (proportionality); composing a set of participants while taking into account the possible (over-)representation of minorities.
- **Power:** Make sure all those engaged with are heard and try to reduce power imbalances. These imbalances may result from the participants' differences in personality, capacity, knowledge, and resources. It can, for instance, help to reduce information asymmetries by providing or withholding information. In addition, try to identify (potential) conflicts that need to be navigated. A skilled neutral facilitator or ombudsman can play an important role.
- **Exploitation:** When including minorities and/or vulnerable stakeholders, ensure that they are not disproportionately burdened with the activities of the CO. If needed, provide forms of adequate (case-by-case) compensation either before, during, or after the process.
- **Vulnerability:** Recognize that there are many aspects to vulnerability that are often difficult to identify. Pay specific attention to aspects that give rise to vulnerabilities such as one's experiences, abilities, identity, resources, values and worldviews. Participants themselves are best positioned to recognize whether they are vulnerable. Trust their judgement and accommodate adequately for their vulnerability.

F) How should these engagement and inclusion activities be monitored and reflected upon?

Action F1: Monitor and collectively reflect on the engagement and inclusion activities and their outcomes. [before] [during] [after]

To safeguard ethical aspects of participating in the activities of the CO, it is important to monitor (possible) issues during the implementation and evaluation of an activity, as laid out in action-set D. This can be done using qualitative and quantitative performance indicators and through continuous feedback from those participating in the engagement and inclusion activities, or the activities of the CO. Continuously and collectively reflecting on (un-)expected impacts and outcomes helps improve current and future activities. Expectations may be adapted if needed, following a possible deviation from pre-set monitoring indicators.

This action is complementary to A2 and A3.

Action F2: Reflect on the following aspects. [during] [after]

- Verify if and how matters of representation and inclusion are/were addressed throughout the engagement and inclusion activities, and the activities of the CO.
- Consider (the weight of) input from participants in the activities of the CO, in the actions of the CO as a result of those activities (such as actions to address air quality issues).
- Determine whether the goal of the engagement and inclusion activity will be or has been achieved, and whether this is or will be reflected in the inclusion and diversity characteristics of the activities of the CO.

Action F3: Launch a transparent process allowing participants to interact and reflect [during] [after]

Depending on the scope of the engagement and inclusion activity and the organizational capabilities of the partner implementing it, a collective reflection on the engagement process helps to learn about the experiences of the people and groups engaged with. This may be done through a short focus group or survey. Such feedback should be used as the main assessment of the effectiveness and success of the activity, indicating potential needs for improvement.

Action F4: Communicate how the input of participants is used. [during] [after]

Reflect on the input of participants in the engagement and inclusion activities, their added value, and how this fed (or did not feed) into the activities of the CO. Why and how were certain recommendations or inputs acted on? Communicate this to those who participated in engagement activities, and ensure they feel valued and included.

Action F5: For purposes of ongoing development, all reflections on the Ethics Framework could be documented and saved. [after]

Future COs can learn from the observations and lessons-learned by Frontrunners undertaking the steps outlined in this Guidance, which should therefore be documented and archived in a way that makes them easy to access, share, and replicate, as well as contributing to the ongoing development of this Ethics Framework to guide the activities of the Implementer and Fellow Cases.

Appendix III – Guideline for DHH

Inclusive approaches for d/Deaf and Hard of Hearing

The following guidance to ensure accessibility for d/Deaf & Hard of Hearing (DHH) adults in citizen science projects was created by the CitSci4All project by interviewing 64 DHH trainers and nine citizen science experts. Their recommendations are presented below in a summarized version, the full report can be accessed [here](#).

Barriers for participation

Many DHH adults are not involved in citizen science projects. One of the main reasons is that they are often not aware of such projects. The main barriers for their participation are:

- Lack of access to information and education
- Absence of direct communication attempts targeting DHH
- Delays in relaying news of projects

Guidance to ensure accessibility for DHH adults

CitSci4All identified the following fundamental aspects to consider in order to provide accessibility to DHH adults: interpreters, visual accommodation, making use of appropriate vocabulary, and collaborating with DHH associations/centres.

1. Interpreters

Any information being communicated in a non-written or non-visual format will require the support of interpreters. It is important to note that sign language is language and country specific.

According to the UN's [Convention on the Rights of Persons with Disabilities](#), persons with disabilities have “the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice” ([Article 21](#)). Your municipality might have contacts with interpreters or the national association for the DHH. The World Association of Sign Language Interpreters ([WASLI](#)) may also be able to help you contact an interpreter.

2. Visual accommodation

Visual materials such as photos, pictures, infographics, or videos, are one of the preferred methods of communication of DHH people. Using visual elements can be challenging when they need to convey new concepts and information. It is therefore important to consider which material is the best to communicate certain concept. The best approach is to engage with DHH participants or a DHH trainer and learn from them whether a chosen visual element is fit for purpose.

When using videos, it is important to provide closed captions. Unlike subtitles which only provide a visual representation of the text spoken in a video, closed captions provide information of all the audio in the video such as music, sound effects, intonation, etc.

3. Using appropriate vocabulary

One of the inequity issues that the DHH community faces is the lack of specialised vocabulary that can introduce and explain environmental and climate change terms in Sign Language. This may be more prominent in Sign Languages with a smaller number of speakers. Tackling these inequities at a systemic level are out of the scope for most citizen science projects. However, each project can ensure that the information is provided in textual and visual form and through full engagement with the community.

4. Collaborating with DHH associations, clubs or centres.

A project does not need to reinvent the wheel, the DHH community has a strong solidarity network through associations, clubs and local centres. Successful inclusion and engagement with DHH participants can benefit enormously by contacting such organisations.

Finally, it is important to maintain an open communication with all participants. Make sure to allow for adequate feedback moments with the DHH participants. We all are learning.

About this document

This document was elaborated by the team of the ‘Leave No One behind’ (LNOB) toolkit for the [Horizon CitiObs](#) project (Grant agreement ID: 101086421), based on the ‘Guide on Deaf and Hard of Hearing Adults’ Engagement in Citizen Science Projects for Climate Change’ from the [ERASMUS+ CitSci4](#) project (Project Code:2021-1-FR01-KA220-ADU-000035221).

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[end of Appendix III]

Appendix IV – Guideline for a diverse and inclusive project

Best practices for a diverse and inclusive project

The following recommendations have been extracted from the CSI-COP project which created a compilation of various citizen science projects and their demographics in order to examine the various factors affecting participation in citizen science and voluntary activities.

Recommendations for diversity and inclusion in citizen science projects

The project should seek to reach out to participants of different genders, ethnic groups, socio-economic status, and abilities, this can be done by:

1. Targeting special events organized by different secular and religious organisations.
2. Exploring and target different circles of social media users.
3. Contacting institutions working with/for people with disabilities.
4. Inviting and involve health care institutions.
5. Targeting organisations that represent or work with refugees and migrants.
6. Considering which ways of communication are better suited for potential participants. Some people may not have access to meaningful digital connectivity, while others might benefit from different formats such as visual, textual or through audio.
7. Considering the language and register used for providing information to participants,
8. Considering the level of knowledge the participants have or may have when communicating with them.
9. Focusing on listening and getting to know the participants, avoid assumptions and be respectful to the different ways people can contribute to a project.
10. Organising accessible workshops and meetings, being mindful of the hours and accessibility needs of your participants.

Benefits of activities for participants

Based on their research, CSI-COP recommends highlighting the following benefits to potential participants, if they are available in your project:

- Participation is open, there is no need for certification.
- Remote participation is possible.

- here is flexibility concerning time and place to participate.
- The activities can be performed with children, family, friends, and/or neighbours.
- The activities can be an excellent occupation for those that have more free time.
- Participants can learn new skills.
- Participants can have access and contribute to scientific endeavours.

About this document

This document was elaborated by the team of the ‘Leave No One behind’ (LNOB) toolkit for the [Horizon CitiObs](#) project (Grant agreement ID: 101086421), based on [D 2.2](#) and [D 2.3](#) from the [Horizon CSI-COP](#) project (Grant agreement ID: No. 873169).

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[end of Appendix IV]

SUMMARY

This document contains the beta version of the CitiObs ‘Leave No One Behind’ (LNOB) Toolkit, which will be tested by the Frontrunner cases and further co-developed with relevant stakeholders. The LNOB Toolkit seeks to support COs in the diverse and representative inclusion of participants across dimensions of gender, sociocultural origin, religious affiliation, literacy levels, social status, dis/ability and age.

This beta version will be tested by the Frontrunner Cases and with their feedback, improved to arrive to the final version at the end of the project.