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GreenScape CE

# GREENSCAPE CE

Climate-proof landscape through renaturing urban areas in Central Europe

## HOW TO CO-CREATE URBAN NBS/GI PROJECTS WITH CITIZENS?

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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| CCI | Climate Change Initiative |
| CE | Central Europe |
| GI | Green Infrastructure |
| GIS | Geographic Information System |
| IAP2 | International Association for Public Participation |
| NbS | Nature-based Solutions |
| NGO | Non-Governmental Organization |

# 1. INTRODUCTION

Urban areas across Central Europe are increasingly exposed to the consequences of rapid urbanisation, land-use intensification, and climate change. The expansion of grey infrastructure and loss of natural surfaces have exacerbated heat-island effects, increased surface-water flooding, and deteriorated air quality, while reducing biodiversity and overall liveability. Addressing these interconnected challenges requires integrated approaches that reconnect urban systems with nature.

The GreenScape CE project aims to respond to these challenges by promoting the adoption of Nature-based Solutions (NbS) and Green Infrastructure (GI) as essential components of sustainable urban development. By integrating ecological principles into spatial planning and infrastructure design, the project aims to support cities in adapting to climate change, restoring ecosystem functions, and enhancing the quality of life for their residents.

The project brings together 12 partners from six Central European countries (Austria, Croatia, Hungary, Italy, Poland, and Slovenia) to strengthen multi-level governance and promote transnational collaboration, capacity-building, and participatory decision-making for NbS and GI implementation. GreenScapes' approach combines the development of five local NbS/GI Action Plans and pilot actions in the Metropolitan city of Milan, Ptuj, Szeged, Warsaw, and Zagreb, each testing innovative and replicable solutions that merge technical feasibility with co-creation and long-term sustainability.

Key project objectives include:

- Enhancing citizen engagement and co-creation with key stakeholders;
- Developing technical and tendering solutions to facilitate NbS/GI implementation;
- Exploring public, private, and community-based financing models;
- Strengthening policy and planning frameworks for mainstreaming NbS/GI in urban environments.

## About this handbook

This handbook brings together the knowledge gained from the GreenScape CE pilot experiences to offer a **practical framework** for public authorities to apply in the development and implementation of NbS/GI projects with citizens. It emphasizes the importance of actively engaging citizens and co-creating NbS/GI with them in urban environments, providing guidance applicable across various European regions and beyond. In particular, it highlights the role of co-creation across early planning and design, implementation and follow-up, and long-term management. Within the GreenScape CE project, the implementation phase of NbS/GI projects was not addressed. Instead, the focus was on co-creation and engagement during the early planning and design phases, and the monitoring of these processes. Accordingly, this handbook provides more detailed guidance on co-creation and engagement models than on implementation.

Although this document focuses primarily on participatory and co-creation models for community engagement, it is part of a broader and complementary set of outputs of the project:

- *Handbook for financing of NbS/GI for public project developers*, which explores financing models and investment mechanisms; and
- *How to co-create urban NbS/GI projects with citizens?* which provides guidance on participatory and co-creation models for community engagement.

Together, these handbooks create a comprehensive knowledge package supporting cities through all stages of NbS/GI development, from stakeholder engagement and financing to technical design, implementation, and long-term management.

## Who is it for?

Tailored for public authorities at all levels, this handbook builds on tested models and strategies supporting the process of NbS/GI initiatives in urban areas to help authorities effectively engage citizens and co-create NbS/GI projects with them.

These authorities operate at different levels of governance, including:

- **Municipal level**: relevant departments and authorities, e.g. urban and green planning, infrastructure, water and environmental management, etc.;
- **District or city level:** local councils, city councils, and neighbourhood administrations;
- **Regional or provincial level:** regional or provincial authorities responsible for territorial and environmental planning;
- **National level**: relevant ministries and national agencies.

Public authorities and decision-makers can gain multiple advantages from citizen engagement and the co-creation of NbS/GI. Section 2.2 of this handbook, “Key benefits of citizen engagement and co-creation processes,” presents some of these benefits.

# 2. CITIZEN ENGAGEMENT AND CO-CREATION OF NBS/GI: CONCEPTS AND VALUE

## 2.1 Defining citizen engagement and co-creation

For the purposes of this handbook on citizen engagement and co-creation, the following definitions of these terms will be used.

**Citizen engagement** refers to the process of engaging ordinary citizens in discussions and decision-making regarding issues that affect their lives[1]. This level of engagement can be determined following IAP2's Public Participation Spectrum, which ranges from "informing", "consulting", "involving", "collaborating", to "empowering" communities. Each of these levels represents a different degree of citizen participation based on the authority's public engagement goals and its desired message to communities. Another interesting resource is The Spectrum of Community Engagement to Community Ownership by Rosa Gonzalez and Movement Strategy Center, which highlights the activities to be conducted to reach the desired engagement level, along with the resource allocation ratios per level.[2]

Active citizen engagement emphasizes collaboration between citizens and policymakers/decision-makers to identify shared concerns and determine how best to address them. This two-way dialogue fosters transparency, trust, and a sense of collective ownership of the outcomes.

As described by Bason (2010), **co-creation** is the "systematic process of creating new solutions with people—not for them, involving citizens and communities in policy and service development"[3]. In this context, co-creation goes a step further by actively involving citizens as equal partners in the problem-solving and design process. Rather than simply being consulted or informed, citizens contribute their insights, expertise, and experiences to co-design and co-develop the final solutions.

### BOX 1
### Important citizen engagement and co-creation considerations for public authorities

- There's no *one-size-fits-all* for citizen engagement and co-creation in NbS/GI projects: selecting the level of participation and co-creation would be based on the NbS/GI project's scale, budget allocation, and sensitivity;

- Public authorities are encouraged to be transparent about the purpose of citizen involvement and the influence of citizen contributions in a certain process early on, helping to prevent unmet expectations and maintain trust between authorities and citizens;

- Citizen engagement and co-creation processes enable an inclusive governance, where citizens can influence decisions, though public authorities remain responsible for taking the final decisions.

[1] European Commission. (2025, November 11–13). Training on citizen engagement in policymaking. Joint Research Centre. https://cop-demos.jrc.ec.europa.eu/events/training-citizen-engagement-november-2025
[2] Participatory Budgeting Project. (2023). Tools for participatory democracy: Spectrum of community engagement to ownership. Participatory Budgeting Project. https://www.participatorybudgeting.org/tools-for-participatory-democracy-spectrum-of-community-engagement-to-ownership/
[3] Bason, C. (2010). Leading public sector innovation (Vol. 11). Policy Press.

## 2.2 Key benefits of citizen engagement and co-creation processes

Citizen engagement and co-creation processes positively influence the project and its processes, and **offer benefits to governmental institutions, decision-makers, and local communities**.

By engaging citizens and involving them in the co-creation process, governments and relevant actors can tap into a wider range of perspectives, ensuring **policies and services are better aligned with public needs**. Co-creation can generate **durable outcomes that respond to social needs by reshaping relationships, roles, and rules** among stakeholders through open participation, interaction, and collaboration.

Giving citizens the chance to be co-designers of a project ensures that **the project will be relevant and responsive to the actual needs of the community**. Citizens bring local knowledge, lived experiences, and diverse perspectives that can highlight aspects often overlooked by external planners or decision-makers.

Moreover, engaging citizens early on **helps build trust and fosters a sense of ownership**, increasing their willingness to support site maintenance, events, and future initiatives. **A sense of stewardship** emerges from the collaborative process itself, as participants develop a deeper connection to the project and its goals.

Early engagement also offers **risk reduction opportunities**, such as fewer conflicts with citizens during project implementation, reduced opposition or redesigns by local communities, and smoother permitting and maintenance phases. It may reduce future corrective actions as well, helping to **ensure the long-term cost-efficiency** of an NbS/GI.

Engagement processes contribute to institutional learning by strengthening internal coordination and enhancing administrative capacities, as administrations collaborate across departments and develop skills in facilitation, communication, and participatory planning through repeated engagement.

It is **essential to highlight that engaging citizens should not only be on a project-by-project basis, but also part of a systemic approach**. Systemic engagement ensures that citizens are continuously involved in NbS/GI processes, fostering long-term awareness of the importance and benefits of NbS and GI. This approach embeds citizen participation in strategic action planning, and creates a well-informed, open network of stakeholders. Doing so not only improves the effectiveness of specific projects, but also builds trust and sustained support, which are crucial for the long-term success and growth of NbS/GI strategies.

[4] Open Government Partnership. (2021, November 24). OGP participation and co-creation standards. Open Government Partnership. https://www.opengovpartnership.org/ogp-participation-co-creation-standards/
[5] Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2014). A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. Public Management Review, 17(9), 1333–1357. https://doi.org/10.1080/14719037.2014.930505

Figure 1: Shrub planting volunteer event in the City of Vilnius, Lithuania[6]

[6] EU Covenant of Mayors. (n.d.). *Community planting initiatives in Vilnius, the greenest city in the making*. Retrieved from https://eu-mayors.ec.europa.eu/en/Community-planting-initiatives-in-Vilnius-the-greenest-city-in-the-making

# 3. CHOOSING THE RIGHT ENGAGEMENT TOOLS

A wide range of innovative tools is available to support a smooth and inclusive engagement process. Engagement tools refer to the activities used to involve the public, such as campaigns or workshops. Within these activities, facilitation or participatory tools are used to structure dialogue and collaboration, for example, through methods like World Café or Open Space Technology.

When choosing engagement tools, public authorities should consider the project context, its goals and phases, the characteristics of the target group(s) (such as age, type, and size), and available budget. Likewise, facilitation and participatory tools should be selected regarding the audience, the project phase, the purpose of the interaction, the facilitator's capacity, and budgetary constraints.

Public authorities are strongly encouraged to invest time and resources in training on engagement and participatory tools, as selecting the most appropriate tool under the above conditions leads to a more concrete and satisfying experience for both citizens and decision-makers. To learn more, explore the highlights from the 'Train the Trainers' seminar organized as part of the GreenScape CE project.

Table 1 presents a list of the engagement and facilitation tools tested in the GreenScape CE project, and a few more from literature (marked in orange) on what tools work best in cities. The tools marked with an Asterix are resource-intensive and require facilitation skills.

Table 1: List of engagement and facilitation tools

| Engagement tools | Description | Main engagement objective/s[7] | Suggestions on when/how to use tool in the NbS/GI process |
|---|---|---|---|
| Promotional Events | Events to promote/market a project. Examples include launch events, public awareness-raising events, door-to-door informational campaigns, and the like. | Inform | Preparation and scoping phase: to raise awareness, introduce the project, gather inputs, and establish a foundation for long-term cooperation. Implementation, management and maintenance phases: to launch the completed NbS/GI, inform on the values of the topics, and encourage continuity of cooperation. |
| Consultations* | Processes that allow exchange of information between stakeholders. | Consult | All phases: to understand the context and gather challenges, requests, ideas and to ask for feedback on approach, design, etc. |
| Workshops/ Participatory Sessions* | Sessions in which participants do and make more than they listen. | Consult, involve, collaborate | Problem and objective definition, the co-design and the implementation phases. |
| Hackathons* | Events that bring individuals together to solve a certain problem. | Collaborate | Co-design phase: to crowdsource ideas with different stakeholders. |
| Digital Communication Tools | Examples include online surveys, information platforms, competitions, and channels such as social media. | Inform, consult, involve | All phases. |
| Pop-up Events | When an initiative holds an event in a crowded public place to interact with citizens. | Inform, consult | All phases. |
| Memorandum of Understanding | A non-binding agreement between parties outlining intentions, roles, and objectives. It signifies a formal commitment to collaborate in good faith, often as a step toward a formal contract. | Collaborate, Empower | Co-design, implementation, management and maintenance, and monitoring, evaluation, and adaptive management phases. |
| Training Seminars | Examples include training for trainers, potential bidders, students and professionals, etc. | Inform | Co-design, implementation, management and maintenance phases. |

[7] Engagement levels here are based on the IAP2 Spectrum of Public Participation

| | | | |
|---|---|---|---|
| Formal Maintenance Plans | A course of action that includes the roles and responsibilities of involved stakeholders in all maintenance, repair, and construction work. | Collaborate, empower | Early in the co-design phase, to clearly define the roles and responsibilities of municipal departments, local NGOs, and community volunteers to foster a sense of ownership. |
| Crowdfunding | Crowdfunding does not only finance projects, it also engages citizens. By financially contributing to an NbS/GI project, community members learn about the initiative and feel empowered, knowing their support directly helps implement and sustain the solution. | Inform, empower | Financing phase (see GreenScape CE Handbook for Financing of NBS/GI for Public Project Developers). |
| **Facilitation tools*** | **Description** | **Main engagement objective/s[8]** | **Suggestions on when/how to use tool in the NbS/GI process** |
| Focus Groups | A research method where a small, carefully chosen group of individuals engage in discussions to gather insights. | Consult | Problem and objective definition, co-design, monitoring, evaluation, and adaptive management phases |
| Open Space Meetings | Parallel working sessions, in which participants self-organize and manage their own agenda in their session, focusing on a central theme. | Consult, involve, collaborate | Problem and objective definition and co-design phases. |
| World Café | An approach that encourages dialogue among large groups by creating a café-like setting, where participants discuss in small groups at separate tables. | Consult, involve, collaborate | Problem and objective definition and co-design phases. |
| Space Audits | Systematic observations of public spaces that record how people move, interact, and use the environment, including activities, time spent, and perceptions of safety.[9] | Inform, consult, involve | Problem and objective definition and co-design phases. |
| Guided Walks | Short, facilitated tours of public spaces that engage citizens in observing, discussing, and shaping their local environment (residents can be the guides). | Inform, consult, involve | Problem-definition phase. |
| Online Tools | Tools used by facilitators to engage participants virtually. Examples include Miro, Mentimeter, Slido, etc. | Inform, consult, involve, collaborate | All phases. |
| Future Workshops[10] | Participatory, small-group method that enables participants to collectively imagine and develop future solutions to current problems. The approach moves from problem identification to creative idea generation and concrete action planning.[11] | Consult, involve, collaborate | Co-design phase. |
| Citizen Panels[8] | A broad, demographically diverse group of citizens engaged regularly to assess public opinions and preferences. | Collaborate | Co-design, implementation, and monitoring, evaluation, and adaptive management phases. |

The GreenScape CE project experimented with several co-creation models, which will be referred to in the following sections. To learn more, consult the GreenScape CE Report on Pilot Action - Citizen Engagement and Co-creation Model.

[8] Engagement levels here are based on the IAP2 Spectrum of Public Participation
[9] City of Melbourne. (2022, March 22). Place audits are helping us understand these open spaces. Participate Melbourne. https://participate.melbourne.vic.gov.au/emerging-tech-testbed/social-spaces/place-audits-are-helping-us-understand-these-open-spaces
[10] This tool is very helpful to municipalities implementing engagement processes, but it was not tested in the GreenScape CE project.
[11] Participedia. (n.d.). Future workshops. Participedia. http://participedia.net/method/future-workshop

## BOX 2
### Combining engagement tools or using a single tool?

GreenScape CE explored a **multi-level engagement approach**, where multiple tools were used to achieve project goals. This approach proved to be more effective than using them in isolation.

Pilot reference: in the Zagreb pilot, where the reconstruction of the Trnsko sports and recreational playground into a climate-resilient area was planned, stakeholders were engaged in the co-creation of the NbS as follows:

1. Key criteria for site selection (including regulatory, environmental, technical, and community priorities) was defined with the community via initial **consultations**;
2. The results of the GIS-based suitability analysis were reviewed by invited local stakeholders (district, municipal, and citizen actors), who provided direct input into preliminary design concepts for the pilot site;
3. Innovative ideas and solutions were generated at a **hackathon**, which had around 80 participants, including public authorities, local communities, students, and professionals;
4. Dedicated **workshops and meetings** were held with community residents, local NGOs and public bodies;
5. A **participatory session** was held with citizens in Trnsko to present and discuss the proposed pilot solution;
6. Digital communication tools were also used throughout the project development.

Engagement tools can also be chosen based on the challenges faced. For example, how to translate technical content into accessible language? Interactive public formats (e.g. workshops, public consultations, focus groups) proved to be effective mitigation tools in such cases.

Figure 2: GreenScape CE hackathon in Zagreb, Croatia

Figure 3: GreenScape CE hackathon in Zagreb, Croatia

# 4. A STEP-BY-STEP APPROACH TO CITIZEN ENGAGEMENT AND NBS/GI CO-CREATION

Stakeholder engagement is crucial from the outset and throughout all stages of a project[12].

The NbS literature often refers to the NbS project stages as defining (initiating), designing (planning), implementing (developing), monitoring, and evaluating[13]. Ibrahim et al., 2024 synthesizes these stages into five iterative phases of the NbS process: problem and objective definition, project design, project implementation, project management and maintenance, and monitoring and evaluation.

This section provides guidance on engaging citizens in the development and implementation of NbS/GI following the NbS process phases. It includes a focus on co-creation models based on the experience of the GreenScape CE project.

## Step 1: Preparation and scoping

### 1.1 Early stakeholder identification and mapping

Early identification and mapping of potential stakeholders is a crucial step for the success of an NBS/GI project.

Identifying stakeholders means scoping organizations and individuals who either influence or are affected by a project, organization, or activity, or who hold a specific interest in them. Once stakeholders have been identified, stakeholder mapping provides a structured method for visually organizing information about these stakeholders by plotting their characteristics on a chart. This helps compare different stakeholders, identify their patterns or relationships, and group them according to shared attributes to support more informed analysis and decision-making[14].

> For the purposes of this handbook, stakeholders refer to actors other than public authorities, as this guidance is designed to help public authorities identify and engage different categories of the broader public.

There are several methods to conduct the above stakeholder analysis. Some of the methods traditionally used are[15]:

- The Salience Model: where stakeholders are prioritised according to influence, legitimacy, and urgency;
- The Stakeholder Knowledge Base Chart: where stakeholders are plotted by awareness and attitude toward the project;
- The Power/Interest Matrix: where each stakeholder is categorized by their influence and engagement level;
- The Power-Predictability Matrix: where stakeholders are mapped by influence and consistency of behaviour.

[12] Raymond, C. M., Frantzeskaki, N., Kabisch, N., Berry, P., Breil, M., Nita, M. R., Geneletti, D., & Calfapietra, C. (2017). A framework for assessing and implementing the co-benefits of nature-based solutions in urban areas. Environmental Science & Policy, 77, 15-24. https://doi.org/10.1016/j.envsci.2017.07.008
[13] Ibrahim, A., Marshall, K., Carmen, E., Blackstock, K. L., & Waylen, K. A. (2025). Raising standards for stakeholder engagement in Nature-based Solutions: Navigating the why, when, who and how. Environmental Science & Policy, 163, 103971. https://doi.org/10.1016/j.envsci.2024.103971
[14] Simply Stakeholders. (n.d.). Stakeholder mapping. Simply Stakeholders. https://simplystakeholders.com/stakeholder-mapping/
[15] Simply Stakeholders. (n.d.). Guide to stakeholder analysis. SimplyStakeholders. https://simplystakeholders.com/resources/guides/stakeholder-analysis/

Modern stakeholder analysis softwares have also been introduced to simultaneously evaluate multiple stakeholder criteria, including stakeholder influence, interest, impact, criticality, effort, and position (e.g. Multidimensional Stakeholder Mapping). Additionally, tools such as the Stakeholder Relationship Network Map visually identify relationships among stakeholders, as well as the level of influence stakeholders exert on one another and the strength of these relationships. Other platforms, such as Kumu, further support this process by enabling users to visually map stakeholders, social networks, community assets, and related systems.

Public authorities are advised to analyse and map stakeholders using multiple methods, considering the project context and desired outcomes. Stakeholders should be mapped based on the activities or processes they are involved in, rather than just their influence or power, for example.

**Benefits of stakeholder identification and mapping**

Identifying the right actors at the beginning of the process ensures comprehensive planning, as diverse perspectives would be considered for the planning and implementation of the solution. **Stakeholder mapping also helps in envisioning roles from the start**, lowering the potential for unmet expectations and role overlaps along the process.

The GreenScape CE project demonstrated that a **multi-level stakeholder approach** is key for the sustainability of NbS/GI projects and for enhancing project ownership. Therefore, public authorities would benefit from including actors that cover different categories in NbS/GI planning and implementation: municipal, district, national, academic & community actors. To learn more, consult the GreenScape CE Multi-stakeholders engagement roadmap.

> Citizen engagement can begin early in the stakeholder analysis stage, where public authorities collaborate with citizens and project partners to identify key stakeholders. Authorities might start with desk research to identify an initial group and then use “snowball sampling”, for example, to expand this list. The snowball sampling technique, where participants refer others, helps gather a more diverse range of perspectives. It can be done through online surveys or interactive methods like focus groups, ensuring that project partners and the broader public are involved from the start.
>
> A step further would be to select some stakeholders from the public as project partners. This would represent the highest level of public participation (“empower” according to the IAP2 Public Participation Spectrum) and a powerful move towards co-creating the solution.

**In the stakeholder analysis step, public authorities are advised to:**

- Internally align among their departments regarding their respective roles before engaging with external stakeholders (e.g. conducting an analysis of complex municipal structures and their overlapping responsibilities proved to strongly support this action);

- Identify and map both potential supporters and opponents to the NbS/GI initiative (e.g. NGOs as supporters and real estate companies as opponents);

- Note which stakeholders are essential for the long-term maintenance of the solution (e.g. environmental grassroots initiatives);

- Select an engagement level based on the Public Participation Spectrum for each stakeholder to

guide the interaction with them during the NbS/GI process (e.g. “empower” for landowners, “be involved” for local communities);

- Keep in mind that the prioritisation of stakeholders is dynamic: the ranking of stakeholders may be different in each phase of the project;

- Document the reasons why certain stakeholders were prioritised or excluded from the process. This shows transparency, which is needed for a positive long-term relationship between the public and authorities.

Table 2 presents a (non-exhaustive) list of examples of potential stakeholders with a focus on citizens, provided to guide public authorities in their identification. It’s important to note that the list needs to be adapted to the NbS/GI initiative’s context in terms of location, budget, thematic, and other relevant criteria.

Table 2: Examples of potential citizen stakeholders

| Level | Stakeholder |
|---|---|
| District | Residents’ associations |
| National | Public universities |
| Academia and research | Local universities actors (students, academic experts on the topic) |
| | Local school actors (students, teachers, etc.) |
| Local communities | Citizens |
| | Neighbourhood residents |
| | Users of the potential NbS areas (recreational users, tourists, commuters) |
| | Civil society organizations (local NGOs, grassroot initiatives, community gardens, etc.) |
| Private sector | Entities essential for future operation and maintenance of the site (e.g. private green space maintenance company, contractors) |
| | Land/resources owners targeted for NbS (e.g. private landowners, businesses) |
| | Professional experts on the topic |

Figure 4: A community garden and its users in Paris, France[16]

[16] Jardin partagé Crimée-Thionville, Fête des Jardins 2006. Image by jalb, 2006, Flickr (URL). Copyright 2006 by jalb via Flickr, CC BY-NC-ND 2.0.

## 1.2 Problem and objective definition

After having analysed and mapped stakeholders and obtained a final stakeholder selection, the next step is to identify the problems that the NbS/GI would aim to address to define the objective(s) of the solution. Results from the GreenScape CE project emphasize that co-defining the problems with citizens -not just the solutions- is a key element of NbS/GI co-creation.

By engaging the public at this stage, public authorities can understand the local challenges, needs, and expectations. The local knowledge that citizens can bring in is crucial for this step.

However, authorities need to remember that they should communicate to citizens early on whether and how (to what extent) their inputs will shape project planning to prevent disappointment. It is also advisable to provide citizens with the reasons for these decisions. To effectively co-define problems of an urban environment with citizens, public authorities can organize a variety of engagement activities, which also aid in translating technical language related to NbS and its objectives into understandable language.

Table 3 summarizes a few key activities used in problem definition in urban NbS/GI projects.

Table 3: Engagement activities used in problem definition in urban NbS/GI projects

| Activity | Aim in this Step | Added Value |
|---|---|---|
| Guided Walks | To identify the local challenges and everyday experiences of residents (e.g., pedestrian challenges when crossing roads.) | Gives residents the chance to guide a walking tour in the areas of interest to the project, enabling them to share their local knowledge. |
| Space Audits | To observe and map urban spaces to detect issues and opportunities (e.g., non-shaded squares that could be potential sites for NbS/GI interventions). | Helps capture physical and functional characteristics of spaces. |
| Structured Observations | To explore how observation can be used as a qualitative research method for gathering data for urban analysis (e.g. observing how soundscapes in a park affect visitors). | Captures context-rich data on complex interactions, preserving relationships and patterns for detailed analysis. |
| Workshops | To collect input and brainstorm urban challenges and solutions in a proactive way. | Provides a collaborative space for stakeholders to co-create solutions, integrate local knowledge, and build consensus. |

Figure 5: GreenScape CE study visit in Vienna, Austria

**BOX 3**
**Good practice pilot reference: Warsaw**

In Warsaw, the transformation of Wileńska Street through rain gardens and retention basins was guided by the placemaking principle of considering residents as experts of their own neighbourhoods. A research process undertaken in 2018 served as the foundation of the next analyses and concept design steps which were carried out during the GreenScape CE project. The research was conducted by the city of Warsaw and combined space audits, structured observations, guided walks, and stakeholder mapping. Together, these tools provided a comprehensive understanding of how the street functions and how it is experienced by diverse user groups. Placemaking, in this context, served not merely as a design methodology but as an approach rooted in empathy, observation, and shared decision-making. It acknowledges that residents, shop owners, pedestrians, and other everyday users possess insights that no external expert could fully replicate. They understand the area's unique rhythms, challenges, potentials, and limitations. Thus, involving them meaningfully in the research and design phases helped ensure that urban interventions were not only functional and aesthetically coherent, but also socially grounded and widely supported.

The space audit served as a detailed diagnosis of the existing conditions. Structured sociological observations were carried out several times a week over multiple days using a standardised observation form ensured methodological consistency, which made it possible to capture replicable and comparable data.

By systematically gathering both quantitative and qualitative insights, this process demonstrated how participatory methods can meaningfully inform urban design, strengthen local ownership, and support the creation of resilient, people-centred public spaces. A strong emphasis was placed on pedestrian-friendliness as a foundation for social interaction, neighbourhood cohesion, and long-term civic engagement. The research revealed that walkability depends not only on the balance between car and pedestrian traffic, but also on sidewalk conditions, lighting, accessibility, seating, traffic intensity, and integration with public transport.

## 1.3 Communication plan design

Once the relevant stakeholders are selected and key issues for NbS/GI are identified with them, public authorities should develop a communication plan to engage the wider community on different levels. This communication plan would evolve as the project progresses, and the initial contact with the public would change in nature as the project moves from one phase to the next. It is important to note the distinction between awareness raising (informing), engagement (dialogue), and co-creation (joint design), which should also be reflected in communication strategies.

Tailored communication channels should be used by public institutions to keep citizens engaged in plans aimed at improving the quality of life and making cities more liveable. These communication channels can serve multiple roles:

- **First point of contact** with the broader public;

- **Awareness-raising:** to inform communities of the problems the NbS/GI will help tackle, of upcoming NbS/GI plans and keep them updated on the project's progress[17];

[17] Clear communication of the outcomes of the NbS/GI initiative is crucial for citizen engagement, as it helps participants recognize the value of their contributions. Without effectively sharing the results or impacts, citizens might lose interest in participating in the initiative.

- **Engagement:** to engage with citizens, to invite the public to participate in informational sessions and dialogue exchanges regarding NbS/GI projects;

- **Co-creation:** to collect design inputs, to invite the public to participate in co-creation workshops regarding NbS/GI projects.

Examples for communication channels include:

- Social media, an effective way to reach urban residents. Ideas could include creating separate accounts for the public institution (e.g., @Municipality of Ptuj) and for specific NbS/GI initiatives (e.g., @name of park/rain garden);

- Targeted invitations (printouts or digital) to attend informative/participatory sessions;

- Door-to-door campaigns;

- Storytelling tools (e.g. informative illustrations/comics on NbS/GI);

- Knowledge platforms.


Figure 6: Flyers to invite the community to participate in the GreenScape CE Warsaw pilot in Poland

### BOX 4
### Good practice project reference: Budapest

In 2025, the Energiaklub Climate Policy Institute implemented a campaign in Budapest, an Associated Partner of the GreenScape CE project, with the aim of engaging citizens in efforts to expand the city's green areas and thereby enhance its climate resilience. The campaign included the following elements:

- An informative yet easy-to-understand series of articles published on social media and shared with local (district-level) governments' communication and/or green departments, enabling them to republish the content in local newspapers distributed free of charge to all households.

- Events organized for multipliers to introduce the campaign, encourage them to spread the message, and motivate them to implement their own related actions. Such actions included:

  • A gardening challenge for kindergartens in Budapest, accompanied by starter gardening kits and attractive prizes;

  • The "Life in the Jungle of Concrete" initiative, implemented by young volunteers of WWF Hungary and supported by Energiaklub. The initiative included a photo challenge as well as a closing event featuring, among other activities, a living library and a florarium workshop, the greening of a paved inner courtyard in an apartment building located in the city centre;

  • Printed one-page information sheets highlighting the key messages on the importance and practical aspects of biodiversity-friendly and climate-resilient gardening and greening. These materials were produced in two versions—one tailored to apartment buildings and the other to family houses—and were distributed to reach residents without access to digital content.

**Good practice when communicating about NbS/GI** with the public involves **translating NbS principles and concepts into clear, easy-to-understand language** with the use of illustrations to ensure inclusivity. It is also recommended to **primarily use the local language** for communication to engage the community more effectively. **Providing accessible guides**, such as the GreenScape CE Do-it-Yourself guideline for citizens, can further help facilitate communication and support the public in better understanding how to implement NbS.

## Step 2: Co-designing NbS/GI

This section provides suggestions, ideas, and examples on how to co-design NbS/GI with citizens, also by expanding the listed engagement and participation tools from Table 1 in Chapter 3.

> The communication plan will be key to ensuring the success of this step and the following ones in terms of inclusivity.

**Identifying who to co-design with**

An initial consideration which helps guide this step is to refer to the level of engagement given to each stakeholder when they were identified and mapped (see Step 1.1). Co-design activities can be done with stakeholders of the following engagement levels: "involve", "collaborate", and "empower".

**How to make the most out of co-design sessions?**

- The varying levels of citizen interest and availability should be considered to **know who to invite** and **when to plan** the co-design sessions. Pop-up events, online/offline surveys and online informational platforms, for example, can be used to assess general citizen interest and availability.

- **Ensuring inclusivity** must be a key component of co-design sessions to strengthen citizens' decision-making power. One way to achieve that is by empowering NGOs that work with vulnerable and marginalised groups[18] to co-design the NbS/GI. That way, the voice and needs of these individuals are heard by public authorities.

- Clearly defined **objectives, time-limits, and decision-making** rules should be established for each session and shared internally and externally to ensure alignment among organizers and participants.

- Having **skilled facilitators** design and guide co-creation activities is key for a successful process.

- **Technical NbS concepts should be made easy** to understand for the wider public.

Figure 7: Wilenska street visualisations as part of the Warsaw GreenScape CE pilot

Figure 8: Pop-up event as part of citizen engagement in the Warsaw GreenScape CE pilot

The co-design of NbS/GI projects with stakeholders should be a continuous and adaptive process. **Feedback loops** are crucial to continuously engage stakeholders and shape NbS design. This also helps motivate participants, as seeing the impact of their contributions on decision-making can be rewarding.

**Translating citizen input into design decisions**

In co-design activities, it is important to clearly explain how citizen input has influenced design decisions to foster public understanding and support of the design solution. Here are some practical aspects to keep in mind:

- Public needs may be translated into specific design choices, such as the selection of a material to be used in the NbS/GI. For example, citizens' concerns about street flooding may lead to the use of a certain material to construct a permeable rain garden on that street. It is important to explicitly explain this link to non-designers, so they understand how their input was taken into consideration.

- Skilled facilitators can help designers and public authorities in understanding citizen challenges, needs, and input.

- To avoid disappointment, public authorities should explain and disclose to citizens how their ideas

[18] Kiss, B., Sekulova, F., Hörschelmann, K., Salk, C. F., Takahashi, W., & Wamsler, C. (2022). Citizen participation in the governance of nature-based solutions. Environmental Policy and Governance, 32(3), 247–272. https://doi.org/10.1002/eet.1987

are assessed by decision-makers, designers, and other actors involved in the NbS/GI design process, including how priorities are set, how constraints are addressed, and how trade-offs are managed.

Figure 9: NbS design details in a green space in Warsaw

**Examples of co-design tools and models**

## BOX 5

### Good practice project reference: Metropolitan City of Milan

The pilot project in Milan focused on mapping accessible green areas and NbS in the metropolitan area of Milan. Stakeholder engagement in the co-design of this pilot followed a blended approach, combining structured institutional coordination and participatory outreach:

- A GreenScape Ambassadors program made up of students and PhD researchers was launched and hosted by Ambiente Italia. These ambassadors supported GI/NbS mapping, field checks, and awareness raising;
- Academia (Politecnico, Consiglio Nazionale delle Ricerche) ensured scientific robustness;
- Municipalities were involved through workshops, technical briefings, and shared GIS templates;
- Citizens were engaged via a mapping competition where they uploaded photos and details of local green assets;
- Co-design labs and a “Greenathon” hackathon mobilized students and professionals to ideate NBS solutions;
- Engagement visibility was amplified through national platforms such as the NbS Italy Hub Annual Meeting 2025.

One tool that highly impacted the co-design models of the GreenScape CE project is the Hackathon, as it sparked strong collaboration between citizens, professionals, and institutions.

To discover more, take a look at what was achieved during the Greenathons in Zagreb and Szeged.

See also the Zagreb pilot reference in Box 2 *Combining engagement tools or using a single tool?* in Chapter 3 of this handbook.

Figure 10: GreenScape CE hathaton in Ptuj, Slovenia


Figure 11: Co-designed boards during the GreenScape CE hackathon in Ptuj


Figure 12: Scale model of co-created streetscape during the GreenScape CE hackathon in Ptuj

## Step 3: Implementing NbS/GI

During the implementation phase of NbS/GI, public authorities can engage the wider public by inviting them to participate in implementation-related activities:

- Site preparation activities (e.g. de-weeding, litter cleaning);
- Planting days;
- Site visits (e.g. informative visits for school and university students, participants of NbS/GI training courses, etc.);
- Training sessions on the implementation process of NbS/GI.

Figure 13: GreenScape CE study visit in Vienna

Using multiple communication channels[19] in this phase will help inform the broader community about:

- The value that the NbS/GI is bringing to the area and to the local communities;
- Construction impacts on their everyday lives (e.g. noise, traffic deviations, loss of access to green spaces);
- Information on alternative routes or green areas;
- The scheduled participative preparatory activities for people who are interested in taking part in;
- General project progress updates (e.g. change in original plan in terms of timeline, the completion of a project implementation step);
- Invitations to celebrate small milestones as the NbS/GI project progresses

[19] Town hall meetings, online platforms, social media, and physical signage in affected areas.

**BOX 6**

**How to deal with frustrations during the disruptive activities of the implementation phase?**

The implementation of NbS/GI usually involves temporary changes and inconveniences for citizens. Public authorities need to manage any frustrations that might arise due to the disruptive implementation activities. This is important to keep citizens happy about the NbS/GI initiative. Below are some key actions for authorities to keep in mind to handle these situations:

- Engaging the public in the implementation of the NbS/GI;
- The early communication of where and when the disruptive activities will take place,
- Keeping the public informed on the status and progress of these activities;
- Using before-and-after visualizations to demonstrate how the NbS/GI will improve the area once the project is completed. This can help citizens look past short-term inconveniences and envision the long-term benefits;
- Offering the public alternative transportation options to alleviate frustration caused by road closures.

## Step 4: Managing and maintaining NbS/GI

Engaging citizens in NbS/GI management and maintenance is essential for the long-term sustainability of the initiative, as it strengthens awareness raising, education, stewardship, and capacity building.

Below are some ideas on how to ensure citizens are engaged in the management and maintenance of NbS/GI:

- Granting civil society organisations **a formalized community management role** within the NbS/GI project. Civil society's activities may include community gardening/water management, for example;
- Designing **co-management agreements**[20] between community gardeners and relevant city departments for the management of an NbS/GI;
- Organizing **volunteer campaigns** - through websites, social media, and flyers distributed at restaurants and shops near the NbS/GI sites - to encourage community participation in maintenance activities such as replanting, de-weeding, irrigation, clean-ups, and related tasks;
- Involving schools through **educational packages** and community service programs;
- **Short-term community development jobs for youth** to bridge volunteer gaps;
- Facilitating **community-based conservation jobs**, such as the participation of citizens in the maintenance of public parks[21];
- Encouraging **citizen science action** through tree inventory programs, biodiversity monitoring, and reporting systems.

Although citizens' volunteering activities can economically benefit municipalities by helping them save on some NbS maintenance costs, citizen volunteering must not be exaggerated, otherwise authorities run the risk of being perceived as exploiting citizens without giving them decision-making power.

[20] Kiss, B., Sekulova, F., Hörschelmann, K., Salk, C. F., Takahashi, W., & Wamsler, C. (2022). Citizen participation in the governance of nature-based solutions. Environmental Policy and Governance, 32(3), 247–272. https://doi.org/10.1002/eet.1987
[21] Nordic Council of Ministers. (n.d.). Involving citizens through community programmes for NBS. NbS Policy. https://www.nbspolicy.org/policy-landscape/information-guidance-and-other-voluntary-measures/involving-citizens-through-community-programmes-for-nbs

## Step 5: Monitoring, evaluation and adaptive management of NbS/GI

In this handbook, the monitoring, evaluation, and adaptive management phase considers both the *process* and the *outcomes* of an NbS/GI initiative. It therefore includes assessing the quality of the planning and implementation process—such as the level of stakeholder engagement, transparency, and inclusiveness in all project phases—as well as the perceived outcomes, including use, satisfaction, and benefits as experienced by users and local communities. The results from the monitoring and evaluation processes can then be used iteratively to adjust engagement approaches, refine governance procedures, and not only adjust physical NbS elements.

Given the focus on engagement and citizen co-creation in this handbook, public authorities are advised to view the monitoring of the selected engagement model for the development of their NbS/GI as a key and ongoing process in supporting the transition between project phases. This would capture lessons learned per phase, allowing for continuous refinement of the engagement model for broader application in other municipal NbS/GI projects.

When also done towards the end of an NbS/GI project process, this step is important to adapt engagement strategies, for example, improving inclusiveness in future phases, and justifying continuation of NbS/GI projects and their scaling.

To ensure that process monitoring is feasible and does not overburden local administrations, the handbook encourages the use of simple, low-cost, and easily replicable indicators. Where possible, these indicators should build on existing data sources, routine administrative practices, or light-touch data collection methods (e.g. short surveys, attendance lists, or workshop documentation). For monitoring outcomes, citizen science[22], as an interactive and co-creative approach, can be encouraged. For instance, authorities could promote community-based biodiversity monitoring through platforms such as iNaturalist[23], which offers a practical and cost-effective solution for data collection and public engagement.

Stakeholder satisfaction with the consultation process can be monitored through a combination of qualitative and quantitative indicators, such as:

- participation rates across consultation activities;
- the diversity of participants (e.g. age groups, gender, user groups, local organisations);
- short feedback forms or post-event questionnaires capturing perceptions of fairness, clarity, and influence on decision-making.

To maintain trust with citizens, public authorities are recommended to communicate evaluation results and adaptive adjustments back to the community.

[22] See the Ten Principles of Citizen Science, developed by the European Citizen Science Association.
[23] Nordic Council of Ministers. (n.d.). Involving citizens through community programmes for NBS. NbS Policy. https://www.nbspolicy.org/policy-landscape/information-guidance-and-other-voluntary-measures/involving-citizens-through-community-programmes-for-nbs

Figure 14: Consultations with the public in Warsaw

## BOX 7
### Good practice pilot reference: Zagreb

User satisfaction and preferences regarding both the NbS/GI process and intervention can be assessed with a variety of tools. In the Zagreb pilot, citizen satisfaction and preferences for future uses of the climate-smart playground were evaluated through a combination of workshop **documentation and a citizen survey**, allowing both structured feedback and open-ended responses. The questionnaire included questions on how often residents use playgrounds, what they find unsatisfactory, which new facilities they would like to see, and which nature-based solutions they support.

**Inclusiveness of participation was also monitored** by tracking whether all key stakeholder groups were represented throughout the process and by identifying any groups that were underrepresented or faced barriers to participation.

Additionally, the Zagreb pilot helped identify successful local decision-making strategies and areas for improvement, particularly in relation to **legal and procedural constraints**. These insights guided the proposition of necessary changes to national policies and legislation, ensuring that future projects could better integrate NbS/GI into urban planning.

# 5. KEY TAKEAWAYS AND RECOMMENDATIONS

This section concludes with key lessons for public authorities, drawn from the GreenScape CE pilots. It highlights innovative tools and approaches that enhance citizen engagement and address core challenges in developing NbS/GI with citizens, fostering lasting impact.

**Key lessons learned**

1. Systemic engagement of citizens is crucial for the long-term success and growth of NbS/GI strategies.

2. Feedback loops are an essential part of the co-design process; they keep stakeholders engaged and motivated as they see their ideas shaping the NbS.

3. A lack of clarity on long-term maintenance roles may result in low public participation with time.

4. A high civil society participation attracts funding and support to an initiative.

5. Placemaking-based studies emphasize the importance of seeing residents as experts. Public authorities are strongly advised to use placemaking-based approaches for powerful and inclusive engagement.

6. In-depth dialogue with citizens about the eco-social challenges in their neighbourhoods can prompt public authorities to undertake deeper analyses that help anticipate, prevent, or address issues such as social inequality[24]. These insights can inform more inclusive NbS/GI interventions by better including marginalized communities, for instance. They can also be documented by the authorities to guide future improvements, such as avoiding green gentrification.

**Challenge Mitigation Recommendations**

Table 4: Challenges and mitigation measures derived from the experience of the GreenScape CE pilots

| Challenge | Mitigation recommendation | Evidence from pilot |
|---|---|---|
| Budget or time constraints may prevent full multi-stakeholder co-design | Use engagement tools—such as pop-up events, hybrid informative events, informative boards, or workshops to share and explain design decisions to citizens | In the Szeged pilot, pop-up events in busy public areas increased visibility and reach, and improved the understanding of planned NbS/GI interventions |
| Inconsistent municipal data and low public awareness of the NbS/GI | Strengthen institutional anchoring[25] and combine communication strategies with academic partnerships | The Metropolitan City of Milan addressed this through academic incentives such as NbS training/credits |
| Undefined maintenance roles lead to participation gaps and implementation bottlenecks/overlaps | Adopt formal maintenance plans with clearly assigned responsibilities during planning and tendering | The Szeged pilot adopted a formal maintenance plan early in the design phase to avoid long-term governance risks |
| Digital divides which limit the participation of older residents or digitally excluded groups | Complement digital engagement with door-to-door campaigns and offline outreach | In Szeged, door-to-door engagement ensured inclusion of elderly residents, while physical presence through pop-up events created opportunities for citizens to interact with the NbS/GI process |
| Citizens may be sceptical about NbS/GI initiatives | Move beyond consultation toward empowerment of stakeholders | In the Ptuj pilot, key stakeholders such as landowners were empowered through co-creation processes, increasing ownership and understanding of the NbS/GI |
| The structure/planning of a public consultation might negatively impact the results of the interaction | Standardise consultation processes with expert facilitators, or dedicate a unit within the public body to oversee public consultations | In the Warsaw pilot, all public consultations were overseen by the consultation dedicated unit within the City Hall, which regulates the duration, format, and procedural requirements of the interactions |

[24] Kiss, B., Sekulova, F., Hörschelmann, K., Salk, C. F., Takahashi, W., & Wamsler, C. (2022). Citizen participation in the governance of nature-based solutions. Environmental Policy and Governance, 32(3), 247–272. https://doi.org/10.1002/eet.1987

[25] Anchor institutions are "tied to a particular place by their mission, histories, physical assets and local relationships. Examples include local authorities, NHS trusts, universities, trade unions, large local businesses, the combined activities of the community and voluntary sector and housing associations" as defined by CLES, the national organisation for local economies.

By embedding participation, clear roles, and shared stewardship into every stage of NbS/GI development, public authorities can move from working in isolated silos to collaborative and lasting transformations. The lessons from the GreenScape CE pilots demonstrate that inclusive processes are not optional—they are essential to long-term success, guiding future initiatives that integrate nature, strengthen communities, and create more resilient urban spaces.

Figure 15: A vibrant scene showing people thriving with NbS in the city[26]

[26] McPhearson, T., Kabisch, N., & Frantzeskaki, N. (Eds.). (2023). Nature-Based Solutions for Cities. Cheltenham,UK: Edward Elgar Publishing.

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