

Stakeholder Engagement in the Co-design of Nature-based Solutions: Experiences from the CLEVER Cities project

Key Points

- A roadmap can outline and capture a city's This brief presents results from the stakeholder engagement activity in the co-design phase of selected Nature-based Solution (NbS) cases from the CLEVER Cities project, in particular regarding the choice of stakeholders, strategies, approaches, and tools utilized for their engagement.
- Key factors informing the choice of stakeholders to be engaged in the co-design of NbS included the required expertise and/or skills, motivation, and financial and/or material resources of stakeholders. Conversely, the choice of participation tools was primarily guided by their cost-effectiveness, stakeholder characteristics, and existing participation practices from the local context.
- Success in stakeholder engagement throughout the NbS co-design relies on understanding context-specific enabling factors for the engagement of key stakeholders, as well as on the flexibility and resilience of the stakeholder engagement activity to adapt to internal process dynamics and/or changing landscape conditions.
- The end-users of NbS interventions, such as the inhabitants of a housing block or the pupils of a school, are key actors for the co-design process. Their continuous and tailored engagement (even beyond the co-design phase) can increase their sense of ownership and identification with the interventions, enhancing the impact and success of the NbS interventions.
- The choice of participation tools should be consistent with the overall engagement strategy and adaptable to the specific needs and goals of stakeholders. It is important to carefully assess the effectiveness of the tools themselves at an early stage and align them, where possible, with existing participation practices from the local context.
- Integrating «co-design experts» into project teams can facilitate capturing a broad range of perspectives from stakeholders, making them a determining factor in achieving the stakeholder engagement and co-design objectives.



Aim & Background

This brief presents learnings from the stakeholder engagement activity throughout the co-design phase of selected Nature-based Solutions (NbS) cases from the Front Runner (FR) cities of the CLEVER Cities project, namely London, Hamburg, and Milan. The concept of “co-design” is defined within the CLEVER Cities project as the primary activity for the CLEVER Action Labs (CALs) in the three FR cities: it involves the collaborative design of NbS interventions by engaging local stakeholders and citizens, emphasizing a highly inclusive approach and communication effort (see Morello et al., 2018a).

The evidences informing this brief are investigated in the context of the CLEVER Exchange programme, an integral activity of the CLEVER Cities project aiming at fostering peer-to-peer exchange and promoting dialogue between the cities involved in the project. The scope of the information presented therein this brief extends to and covers the topics of stakeholders’ choices, strategies and approaches as well as tools utilized for their engagement during the co-design of NbS. Various factors were identified and afterwards assessed to analyse and determine their influence on different aspects of the stakeholder engagement process. These factors were informed from empirical research on co-creation and living labs,

London “South Thamesmead Garden Estate”

The project focused on developing a green corridor in the London neighbourhood of Thamesmead. The objective of the project was to enhance the area’s ecological value and address issues related to social justice by implementing various NbS interventions. The London team wanted to use co-design as the key process to explore how to challenge conventional power dynamics by meaningfully involving community participants. This reflects the growing desire to give more agency and influence over project outcomes to the communities they represent. The project engaged various organizations, schools, and established a group of residents who were paid and trained to formally be part of the design / client team. The funding scheme will



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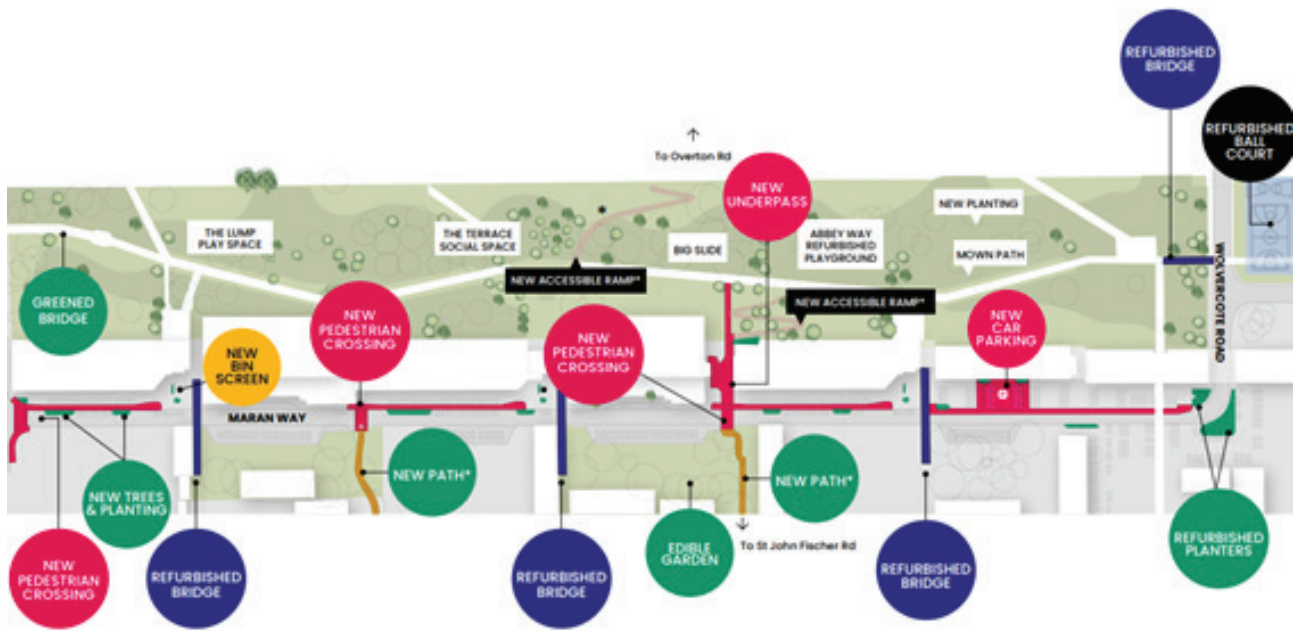
primarily from the work of van Geenhuizen (2018), whereas the data collection has been conducted through the documentation of the experiences and workshops with the involved organizations in the selected NbS cases. Through a qualitative and comparative case study analysis of the selected experiences from the CLEVER Cities project, patterns of success factors and challenges were identified, and recommendations formulated.

The three investigated exemplary “NbS co-design” cases from the CLEVER Cities project were selected as successful examples of co-design of NbS interventions through enhanced participatory and collaborative approaches, one per FR city.

see a greatly improved green corridor to support active travel, new rain gardens, play, food growing, and social spaces. All working towards making Thamesmead a more equitable, healthy and climate resilient neighbourhood.



Image by Rudy and Peter Skitterians from Pixabay



Final design of CLEVER Action (Credit: Peabody / Moyo)

Hamburg «Mobile garden for the elementary school Neugraben»

The project focused on creating moveable raised beds, seats, and storage containers for three schools to be used in the schoolyards. The restructuring measures were co-created with the involvement of pupils. The project was realized through a novel collaboration between the local partners of the CLEVER Cities project, school officials, pupils, and the parents' council. The raised beds and benches were made through a guided workshop by a local carpenter, with participation from the school pupils. As a result, the schools gained four raised beds and four storage benches, and the construction manuals were revised to be used as a replication tool.



Mobile garden solutions (Grundschule Neugraben, 2022)



Image by Rudy and Peter Skitterians from Pixabay



Mobile garden solutions (steg mbH, 2022)

Milan «Green roofs and walls of the towers of via Russoli»

The project focused on redesigning the green roofs of the tower buildings in the Via Russoli 18 area in Milan. A co-design approach was taken, where over 40 stakeholders from various industries, residents, and the local government collaborated in designing, testing, and implementing (NbS) packages. The roofs comprise a total area of 3,500 square meters and feature orchards, vegetable gardens, flowers, meadows, and photovoltaic panels. The project aimed to improve energy efficiency, enhance water management, and provide better living conditions for the inhabitants of social housing in the area. The project also



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aimed to promote the practicality and usefulness of NbS in urban areas and serve as an example for others to follow.



The rendering of the green roofs and walls of the towers of via Russoli (RiceHouse srl., 2021)



The rendering of the green roofs and walls of the towers of via Russoli (RiceHouse srl., 2021)

Experiences from the Stakeholder Engagement in the Co-design of Nature-based Solutions

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Image by
Vanessa Loring
from Pexels

workshops with the involved organizations in the selected NbS cases. Through a qualitative and comparative case study analysis of the selected experiences from the CLEVER Cities project, patterns of success factors and challenges were identified, and recommendations formulated.

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Key factors informing the choice of stakeholders

The main identified factors informing the choice of stakeholders to be engaged in the NbS co-design, without differentiating on their levels of engagement or roles in this process, were: expertise and skills; motivation; and, financial and/or material resources.

- **Expertise and skills** were perceived as essential to achieve the co-design objectives, especially in those areas where technical know-how was needed, informing consequently the choice on engaging certain stakeholders satisfying these prerequisites in the process. For instance, expertise in the form of carpentry skills was a key integral part of the wooden garden elements design in Hamburg; whereas technical farming knowledge was employed for the green roof design in

Milan. Yet, in this context it is also important to consider the value of “lived experiences” for the co-design process i.e., engaging someone who holds deep knowledge about the project site, something that the technical experts might not necessarily possess.

- The **motivation** played a significant role in targeting local stakeholders, in particular citizen groups, with a strong interest towards the NbS projects. This was in particular dominant in the contexts of Milan and Hamburg where the residents and the school community respectively showed a high motivation since the initial phases of the projects. Yet, this aspect played a role also in those cases where citizens from the project area were initially hesitant towards the projects, for instance in London. To overcome this, the local project team took ad hoc trust-building measures to trigger citizens’ interest and motivation and effectively engage them in the co-design process.
- Along with the recognized necessity for adequate funding allocation for the whole stakeholder engagement activity, it was widely confirmed that the ability of certain organizations to mobilize **financial and/or material resources** necessary for the implementation of the interventions was another crucial factor for their engagement in the co-design activity. For instance, in Milan, the engagement of a retail chain was imperative for selling the products from the rooftop farming after the implementation phase. In contrast, the local project team in London enabled citizens from the project area to actively engage in the co-design process through the provision of financial incentives.

However, the **type of NbS** in hand was also recognized as an important variable informing the choice of stakeholders engaged in the co-design of the interventions, but as a cross-cutting and underpinning variable of the three above factors. **Local policies and regulations** were instead recognized to have hardly played a role with regard to the choice and role of stakeholders in the co-design process, but their relevance in other contexts of NbS projects is not to be excluded. Yet, engaging the project site owners in the

process, although not directly in the co-design phase, was recognized in most cases as a crucial enabling factor for the NbS projects.

The **participation culture and previous practices** from the local context were also identified as particularly influential. In these regards, the availability of local co-creation expertise with a deep knowledge on the local project contexts, as well as the presence of existing local stakeholder networks engaged in comparable projects in the past, played a significant role in facilitating the choice of stakeholders and the extent of their engagement in the process. The pre-established stakeholder networks facilitated the identification and engagement of certain organizations perceived as crucial for the co-design objectives from the local project teams, thereby helping local project teams also to save time and resources.

Engagement of the NbS end-users

The CLEVER Cities experiences showed that the engagement of residents and citizens from the project areas, referred in this context as the end-users of the NbS interventions, was critical to the success of co-design objectives, consequently requiring careful consideration of the overall engagement strategy and approaches. The local project teams adopted various approaches to engage the end-users at different stages of the co-design process, with



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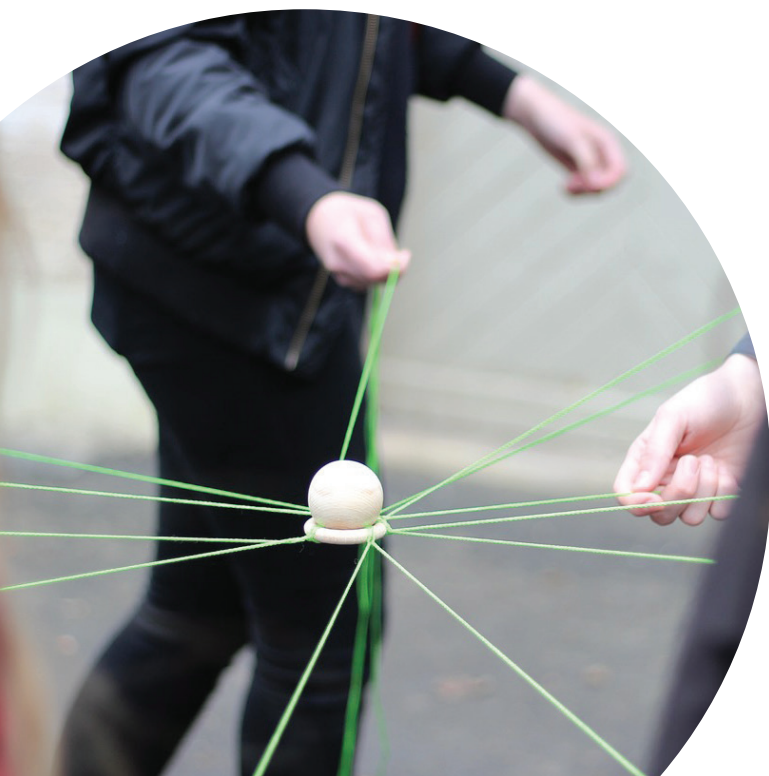
a particular focus on ensuring their continuous commitment even after the co-design phase. Keeping end-users as well as other key stakeholders engaged in the co-design process and throughout the whole co-creation of the NbS was widely recognized as crucial to enhance the sense of ownership and identification with the interventions, as well as a measure to save resources for the participatory process overall.

For example, Hamburg involved school pupils in gathering ideas and preferences for the solution even before and after the co-design phase, while London's "deep engagement" (i.e., community empowerment) strategy focused on the financially incentivised and continuous engagement of smaller community groups consisting of residents' representatives from the project area. Milan had a very active end-user group engagement through the residents' association, a crucial actor not only in the co-design process but also in the other phases of the project development.

Coordination & management

The coordination and management of stakeholder engagement in the three NbS co-design processes was predominantly horizontally organized in network typologies, with

Image by Andre Grunden from Pixabay



unique management structures (local project teams) evident in each case. Yet, such structures should be seen as an integral part of the broader co-governance models emerging from the deployment of a robust co-creation methodology within the CALs in the course of the CLEVER Cities project (see Bradley et al., 2022).

Milan, for instance, relied primarily on a very active residents' association and the local project partners for the stakeholder engagement activity, supported by an architecture office in charge of the NbS design; whereas London presented a strong bottom-up engagement structure consisting of representative boards of civil society and project area residents, supported by a loose network of other local organizations, and an architecture office responsible for the NbS design. Hamburg on the other hand involved a local urban planning and development agency and a public university (both project partners) in charge of stakeholder engagement and the NbS co-design, altogether supported by the other local project partners.

Challenges with stakeholder engagement

Engaging stakeholders in co-design processes presented also unique and common challenges across the three cases. In London's experience, the main burden in these regards was the pre-existing context of scattered



Co-designing the school garden model with the pupils in Hamburg (steg mbH, 2019)

representative organizations of local communities as well as residents' general apathy and lack of trust towards public authorities. These challenges were tackled with tailored trust-building measures, including enhanced communication and incentives. Meanwhile, COVID-19 restrictions hindered the interaction with residents in Milan and the school participants (pupils, parents, teachers) in Hamburg, but face-to-face formats were reintroduced as soon as possible due to the particular motivation of these stakeholder groups. In the end, it was widely recognized the need for specialized expertise in capturing and integrating a broad range of perspectives into the design of the solutions, and finding organizations with such capacities might also be a challenge for NbS project initiators.

Key factors informing the choice of participation tools

The co-design of NbS also involved the deployment of various participation tools across the three cases. Based on the tools' catalogue provided in advance to the local project teams through the CLEVER Co-creation Guidance (Morello et al., 2018b), the CLEVER Cities experiences showed that the main factors informing the choice of tools were: cost-effectiveness; characteristics of the stakeholders; and, existing participation practices from the local contexts.



Community co-design event in South Thamesmead London (Heald, 2021)

- **Cost-effectiveness** was considered essential, with many digital participation tools being used primarily also due to the impact of COVID-19. The assessment on the cost-effectiveness showed that digital tools and holding events in existing facilities were found to be the most effective approaches, significantly contributing to the overall efficiency of the deployed tools. In the case of Milan, the participatory process through digital tools, such as the MIRO board and excel sheets, was associated with very low costs. In Hamburg and London, events such as roundtables and festivals being held in existing venues and as part of existing events and activities also proved to be very cost-effective.
- The **characteristics of the stakeholders** to be engaged also informed the choice on the most suitable participation tools on a case-by-case basis. For example, the involvement of school pupils in Hamburg led to the choice of most suitable workshop formats for such a target group (see Arlati et al., 2021).
- The local **existing participation practices** also played a significant role. For example, it was crucial in the London case to choose the right mix of participatory tools – from communication- and awareness rising- to incentive-based – to overcome the residents’ apathy and lack of trust towards public authorities as a result of previous participation practices in the project area.

While other framework variables such as **local policies and regulations** had minimal impact on the choice of participation tools, the **engagement of public agencies and other key stakeholders** as part of local project teams was vital in legitimizing the selection of the tools. This way, novel participation tools were piloted as an answer to the various framework conditions of each NbS project. For instance, beside the communication and awareness rising campaigns, the London project team relied extensively on an incentive-based participatory approach through the establishment of the representative boards of civil society from the project area, a crucial measure to overcome the pre-existing context of scattered representative organizations of local communities and residents’ general apathy and lack of trust towards public authorities.



Co-design activity with the residents of the towers of via Russoli (RiceHouse srl., 2021)

Challenges with the deployment of participation tools

Challenges were also encountered in the deployment of the participatory tools, particularly due to the **COVID-19 pandemic**. However, the pandemic presented an opportunity to explore alternative ways of engagement, such as the use of innovative tools like the “Co-design Kits” in London – a digital tool embracing a mix of purposes such as connecting, learning, collaborating among the various local stakeholders. Additionally, digital tools proved also effective in reaching a larger group of stakeholders, although limitations were initially recognized in reaching out to elderly people which were later overcome through alternative digital co-design tools.

Keeping stakeholders engaged beyond the co-design phase

Finally, the relevance of establishing and maintaining local stakeholders’ network along the co-creation processes was widely recognized. In these regards, strategies and measures to keep stakeholders engaged beyond the co-design phase showed in all cases that the main approach was to involve them (where possible) in the implementation and/or management of the measures and deploy continuous communication about the NbS project developments.

For example, hands-on through co-implementation workshops was key to grasp peo-



Implementation of the mobile garden solutions in Hamburg (steg mbH, 2022)

ple's attention and integrate them into the development processes, such as in the Hamburg case (see Arlati et al., 2021). Moreover, a multifaceted approach was deployed in London, which included continuous engagement through events, social activities, and get-togethers, keeping online channels open even after the co-design phase – beside the incentive-based participatory programme supporting the continuous engagement of key stakeholder groups i.e., civil society and project area residents. Similar approaches were also employed in Hamburg and Milan (see Mahmoud & Morello, 2021). Overall, the co-design of NbS involved a flexible approach in selecting and deploying various participatory tools, considering the unique framework conditions of each project area.

Recommendations for future Co-design of Nature-based Solutions

Based on the CLEVER Cities experiences covered in this brief, the following recommendations on the stakeholder engagement activity are elaborated, targeting cities, public agencies, or non-state sector organizations responsible for developing and designing NbS interventions through enhanced participatory and collaborative approaches.

Project teams in charge of the co-design of NbS interventions should...

- Be aware of the local policy and regulatory landscape to navigate complex collaboration and engagement processes, both in terms of stakeholders to be engaged and participation tools.
- Carefully consider the flexibility and resilience of the stakeholder engagement process in a timely manner, particularly when trust among local stakeholders is scarce or formal policies do not govern the engagement process. The success of the stakeholder engagement activity along the co-design phase hinges on an understanding of the context-specific enabling factors for the engagement of key stakeholders as well as the willingness and ability to adapt to the process dynamics and/or changing landscape conditions (e.g., Covid-19 pandemic).
- Carefully assess and understand the different levels of relevance among stakeholders in terms of potential contributions to the co-design of the NbS and tailor their engagement strategies accordingly, including strategies for the less motivated stakeholders. End-users of NbS – like inhabitants or elementary school pupils – are key stakeholders for the co-design process. Their continuous engagement throughout the co-creation process can significantly contribute to increase the sense of belonging and identification with the interventions, thereby increasing also the impacts and success of the NbS.



- Ensure that the choice of participation tools is consistent with the overall stakeholder engagement strategy and adaptable to the specific needs and goals of the single stakeholders and the whole NbS project. The effectiveness of the participation tools should also be carefully and timely assessed, as well as aligned to existing participatory practices where possible.
- Consider each project's specificities and the team's skills in effectively managing stakeholder engagement in the co-design process, including specific stakeholder engagement needs and challenges. The integration of expert organizations able in capturing and integrating a broad range of perspectives into the design of the solutions, i.e., "co-design experts", as part of the project teams, may be a determining factor to the whole stakeholder engagement and co-design objectives.

Guiding Template for Stakeholder Engagement in the Co-design of Nature-based Solutions

The template was initially conceived and used as a descriptive tool for the stakeholder engagement activity of the selected Nature-based Solution (NbS) cases investigated in this brief. Yet, practitioners from the partner cities widely agreed on the usefulness of the template beyond the CLEVER Cities project as a **prescriptive (guiding) tool** for stakeholder engagement in the co-design of NbS interventions.

The "Guiding Template for Stakeholder Engagement in the Co-design of Nature-based Solutions" can be found following this link: Nextcloud link: <https://clevercities.msa.cloud/index.php/f/256145>

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