



The role of strategic communication in successful establishment of urban nature-based solutions

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Summary¹

Urban Nature-Based Solutions (NBS) have emerged over the past decade as a key approach to addressing complex urban challenges. Promoted at the European policy level by the European Commission, NBS are understood as multifunctional interventions that integrate natural systems into urban planning in order to strengthen resilience, sustainability, and social well-being. The NBS are not solely technical or ecological projects, but socio-ecological transformations that require public understanding, stakeholder alignment, and continuous engagement.

This document examines the role of strategic communication in ensuring the successful establishment and long-term sustainability of urban NBS.

¹ This document is in part a synthesis of two scientific research presentations and papers

- Trajkoska Z. and Arsovski K. (2024) The role of strategic communication in successful establishment of urban Nature Based solutions – A review, International Seminars Overarching Issues, University of Porto, Porto, Portugal – conference paper and presentation
- Arsovski K. and Trajkoska Z. (2025) Strategic communication models for effective urban NBS deployment in European cities. – 2025 Interim conference of ECREA's Science and Environment Communication section



1. Understanding urban nature-based solutions and the imperative of communication

Urban Nature-Based Solutions (NBS) are planning, design, and management approaches that work with natural systems to address pressing urban challenges while enhancing environmental quality and human well-being.² Rather than relying exclusively on conventional grey infrastructure, such as concrete drainage channels or mechanical cooling systems, NBS integrate ecological processes into urban environments.³ Things as restored wetlands for flood mitigation, urban forests for temperature regulation, green roofs and walls for insulation and biodiversity, permeable surfaces for stormwater management, and multifunctional green corridors that reconnect fragmented ecosystems. Over the last decade, NBS have gained prominence as a transformative concept in European and global sustainability policy. The European Commission has positioned NBS as central to achieving climate resilience, biodiversity restoration, and sustainable urban development.⁴ Cities across Europe and beyond increasingly recognize that natural systems provide essential ecosystem services cooling overheated neighborhoods, improving air quality, enhancing mental and physical health, and strengthening social cohesion.

² "Principles for Urban Nature-Based Solutions." *Ambio*, vol. 51, no. 6, 17 Jan. 2022, <https://doi.org/10.1007/s13280-021-01685-w>.

³ "Nature-Based Solutions for Urban Sustainability." *Proceedings of the National Academy of Sciences*, vol. 122, no. 29, 14 July 2025, <https://doi.org/10.1073/pnas.2315909122>.

⁴ European Commission. "Nature-Based Solutions." [Research-And-Innovation.ec.europa.eu, research-and-innovation.ec.europa.eu/research-area/environment/nature-based-solutions_en](https://research-and-innovation.ec.europa.eu/research-area/environment/nature-based-solutions_en).

Yet urban NBS are not simply environmental interventions; they are socio-ecological transformations.⁵ Their implementation intersects with land-use planning, governance systems, financial structures, property rights, cultural identity, and social equity.⁶ As a result, their success depends not only on ecological expertise and technical design but also on strategic communication.⁷ Strategic communication in the context of urban NBS refers to a deliberate, structured, and long-term process of engaging stakeholders, shaping public narratives, facilitating dialogue, and aligning expectations throughout the lifecycle of a project.⁸ Communication is not an accessory to implementation; it is an enabling condition. Without it, NBS risk misunderstanding, resistance, political neglect, or underutilization. With it, they gain legitimacy, public ownership, and long-term viability.

⁵ Pan, Haozhi, et al. Nature Based Solutions in Supporting Sustainable Development Goals. Elsevier, 1 Aug. 2024.

⁶ Larrinaga López, Jon, et al. "Assessing Conditions for NbS Transformation in a Mediterranean Urban Context: Policy Expectations, Emerging Networks, and Collaborative Capacity in Madrid." *Journal of Environmental Management*, vol. 396, 25 Nov. 2025, p. 128057, [www.sciencedirect.com/science/article/pii/S0301479725040332](https://doi.org/10.1016/j.jen-man.2025.128057), <https://doi.org/10.1016/j.jen-man.2025.128057>.

⁷ Basnou, Corina, et al. "Enabling New Informational Landscapes for Resolving Nature-Based Solutions Literacy and Planning in Barcelona Metropolitan Area." *Urban Forestry & Urban Greening*, vol. 105, Mar. 2025, p. 128719, [www.sciencedirect.com/science/article/pii/S1618866725000536](https://doi.org/10.1016/j.ufug.2025.128719), <https://doi.org/10.1016/j.ufug.2025.128719>. Accessed 24 Feb. 2026.

⁸ Tran, J.H, et al. "Strategic Opportunities for Nature-Based Solutions: Lessons for Policy and Practice from Cross-City Comparisons." *Nature-Based Solutions*, vol. 5, 1 June 2024, pp. 100132–100132, <https://doi.org/10.1016/j.nbsj.2024.100132>. Accessed 12 Aug. 2024.



2. Strategic communication as a structural component of urban NBS

Urban environments are complex arenas of competing interests. Municipal authorities balance development pressures with environmental objectives. Residents may fear changes to their neighborhoods or question maintenance responsibilities.⁹ Private developers assess economic implications. Civil society organizations advocate for social and environmental justice. In this intricate setting, communication serves as connective tissue.¹⁰ Strategic communication performs multiple functions simultaneously. It raises awareness about the environmental and social benefits of NBS. It translates scientific terminology into accessible language. It builds trust between institutions and citizens. It fosters participation and shared ownership. Most importantly, it reduces the gap between policy ambition and community perception.

A review of literature, projects, and best practices demonstrates that communication patterns in successful NBS initiatives share common characteristics.^{11 12 13} Five aspects emerge repeatedly as decisive: participatory co-design, cultural contextualization, visualization of impacts, articulation of human–nature interdependence, and long-term stakeholder engagement. These are not isolated tasks but interrelated dimensions of a coherent communication strategy.

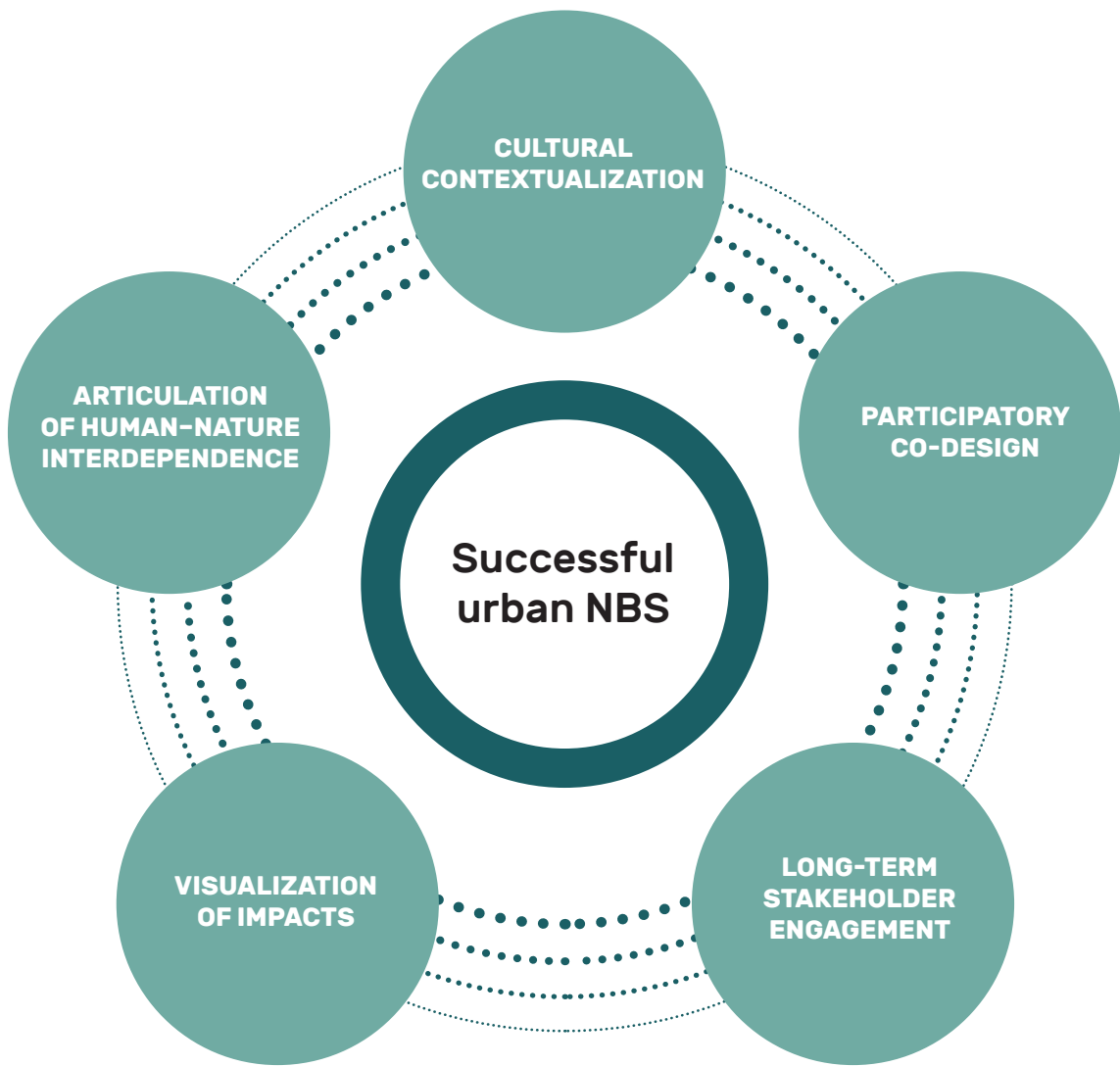
⁹ Kiss, Bernadett, et al. “Citizen Participation in the Governance of Nature Based Solutions.” *Environmental Policy and Governance*, vol. 32, no. 3, 14 Mar. 2022.

¹⁰ Jean Pierre Wilken, et al. *Social Work and Social Innovation*. Policy Press, 28 June 2024.

¹¹ Puskás, Nikolett, et al. “Assessing Deeper Levels of Participation in Nature-Based Solutions in Urban Landscapes – a Literature Review of Real-World Cases.” *Landscape and Urban Planning*, vol. 210, June 2021, p. 104065, <https://doi.org/10.1016/j.landurbplan.2021.104065>. Accessed 4 Mar. 2021.

¹² Nunes, Nathalie, et al. “Guidelines for Citizen Engagement and the Co-Creation of Nature-Based Solutions: Living Knowledge in the URBiNAT Project.” *Sustainability*, vol. 13, no. 23, 3 Dec. 2021, p. 13378, <https://doi.org/10.3390/su132313378>.

¹³ Pereira, C., et al. “Engagement in Nature-Based Solutions: Insights from NBSINFRA Project.” *Life-Cycle Performance of Structures and Infrastructure Systems in Diverse Environments*, 14 July 2025, pp. 1779–1786, <https://doi.org/10.1201/9781003595120-216>. Accessed 24 Feb. 2026.





3. Communication and co-design with the local community

One of the defining strengths of urban NBS is their capacity to be shaped by the communities they serve.¹⁴ However, genuine co-design requires more than inviting residents to public meetings. It demands a structured communication process that values local knowledge, addresses concerns transparently, and integrates community input into decision-making.¹⁵ Effective co-design begins with listening. Communication strategies must create platforms both formal and informal where residents feel heard and respected. Workshops, participatory mapping exercises, interactive digital platforms, and neighborhood consultations allow diverse voices to influence design outcomes.¹⁶ This participatory communication fosters trust and increases legitimacy. The importance of co-design becomes particularly evident in socially vulnerable neighborhoods.¹⁷ Historically marginalized communities often experience environmental burdens such as heat stress, flooding, and limited green space. When NBS projects are introduced without inclusive dialogue, they risk being perceived as externally imposed interventions or, worse, as drivers of displacement and green gentrification.¹⁸ Strategic communication mitigates these risks by ensuring transparency about objectives, benefits, trade-offs, and maintenance responsibilities. Moreover, co-design strengthens long-term stewardship. When residents contribute to shaping a rain garden, community park, or green corridor, they develop emotional and social attachment to it. This sense of ownership increases the likelihood of community-led maintenance and advocacy.

¹⁴ Stijnen, C.A.E. "Co-Creating Socially Inclusive Urban Nature-Based Solutions: Towards a Framework for Socially Inclusive Co-Creation Processes." Studenttheses.uu.nl, 2021, studenttheses.uu.nl/handle/20.500.12932/39931, <https://studenttheses.uu.nl/handle/20.500.12932/39931>. Accessed 4 Mar. 2025.

¹⁵ Olbertz, Margot, et al. "The Quadruple Helix Model in Practice: Co-Creating NBS Requires Novel Governance Approaches." *Urban Transformations*, vol. 7, no. 1, 14 July 2025, <https://doi.org/10.1186/s42854-025-00077-7>. Accessed 19 Oct. 2025.

¹⁶ Bradley, Sean, and Israa H. Mahmoud. "Strategies for Co-Creation and Co-Governance in Urban Contexts: Building Trust in Local Communities with Limited Social Structures." *Urban Science*, vol. 8, no. 1, 1 Mar. 2024, p. 9, www.mdpi.com/2413-8851/8/1/9, <https://doi.org/10.3390/urbansci8010009>.

¹⁷ Mahmoud, I, et al. "Integrating NBS in Cities through Co-Creation: A Practical Guidance for CLEVER Cities." *Polimi.it*, 24 Dec. 2019, re.public.polimi.it/handle/11311/1092211, <https://doi.org/10.13140/RG.2.2.35753.85604>.

¹⁸ Langemeyer, Johannes, and Francesc Baró. "Nature-Based Solutions as Nodes of Green-Blue Infrastructure Networks: A Cross-Scale, Co-Creation Approach for Prioritization in the Barcelona Region." *Nature-Based Solutions*, Oct. 2021, p. 100006, <https://doi.org/10.1016/j.nbsj.2021.100006>. Accessed 1 Nov. 2021.

4. Communicating within the local cultural context

Cities are layered with cultural meanings.¹⁹ Public spaces reflect histories, identities, and shared memories. Introducing NBS into these spaces requires sensitivity to local cultural narratives. Communication strategies must therefore be context-specific rather than standardized. Framing plays a crucial role. In some neighborhoods, NBS may resonate when presented as climate adaptation measures that protect homes from flooding. In others, the emphasis on public health, recreation, or biodiversity conservation may be more compelling. Cultural narratives shape how residents interpret change.²⁰ Strategic communication aligns environmental objectives with local values. Cultural adaptation also prevents aesthetic misalignment. Green infrastructure that ignores local preferences may be perceived as alien or inappropriate. Communication processes that involve storytelling, community heritage mapping, and dialogue with local leaders help ensure that NBS reflect the identity of place. Furthermore, cultural contextualization strengthens political support. Policymakers are more likely to endorse projects that visibly align with community priorities and cultural narratives. Communication thus becomes an instrument for aligning sustainability objectives with social legitimacy.

¹⁹ Coombes, Martin A., and Heather A. Viles. "Integrating Nature-Based Solutions and the Conservation of Urban Built Heritage: Challenges, Opportunities, and Prospects." *Urban Forestry & Urban Greening*, vol. 63, Aug. 2021, p. 127192, <https://doi.org/10.1016/j.ufug.2021.127192>.

²⁰ Panaro, Simona, et al. "Cultural Ecosystem Services and Opportunities for Inclusive and Effective Nature-Based Solutions." *Ecological Economics*, vol. 230, 4 Feb. 2025, p. 108525, [www.sciencedirect.com/science/article/pii/S0921800925000084](https://doi.org/10.1016/j.ecolecon.2025.108525), <https://doi.org/10.1016/j.ecolecon.2025.108525>.



5. Communicating before-and-after effects and making impact tangible

Nature-based solutions often produce gradual or indirect benefits that are not always immediately visible to the public. Without effective communication, these benefits risk remaining abstract. Strategic communication addresses this challenge by making transformation tangible. Visual tools such as comparative imagery, simulation models, and accessible infographics can translate scientific data into understandable narratives. Demonstrating how a restored wetland reduces flood risk or how tree canopies lower urban temperatures strengthens public confidence and political commitment. Equally important is evidence-based reporting. Monitoring data presented transparently reassures stakeholders that promised benefits are materializing. When cities share measurable outcomes reduced runoff volumes, increased pollinator populations, improved air quality they reinforce credibility. Beyond data, storytelling humanizes change. Personal testimonies from residents who experience improved quality of life create emotional resonance. Children playing in a newly shaded park or elderly citizens finding refuge from heat illustrate how NBS affect everyday lives. Communication that combines empirical evidence with lived experience bridges rational and emotional understanding.

Tools for visual impact:

- Before-and-after imager
- Infographics showing temperature reductions
- Flood risk comparison maps
- Testimonials from resident
- Monitoring data presented in accessible format



6. Demonstrating the co-dependence between people and nature

Urban societies often perceive nature as ornamental rather than foundational.²¹ Strategic communication challenges this misconception by emphasizing interdependence. Human well-being, economic stability, and urban safety are deeply linked to ecosystem health. Educational campaigns, interpretative signage, school programs, and media engagement can illustrate how trees regulate temperature, how wetlands filter pollutants, and how biodiversity supports food systems. By clarifying these ecological functions, communication transforms NBS from optional enhancements into essential infrastructure.²² Highlighting co-dependence also fosters behavioral change. When residents understand that improper waste disposal can undermine a rain garden's function or that community care sustains biodiversity, they are more likely to act responsibly. This educational dimension is crucial for the longevity of NBS. The narrative of mutual benefit rather than environmental sacrifice—strengthens engagement. People are more receptive to sustainability initiatives when they perceive direct and shared gains.

²¹ Welden, E. A., et al. "Leveraging Nature Based Solutions for Transformation: Reconnecting People and Nature." *People and Nature*, vol. 3, no. 5, 3 May 2021, <https://doi.org/10.1002/pan3.10212>.

²² Luis Valença Pinto, et al. "Green and Blue Infrastructure (GBI) and Urban Nature-Based Solutions (NBS) Contribution to Human and Ecological Well-Being and Health." *Oxford Open Infrastructure and Health*, vol. 1, 1 Jan. 2023, <https://doi.org/10.1093/oaih/quad004>.



7. Creating a long-term communication plan for stakeholders

Communication must not end at project inauguration. Urban NBS evolve over time, requiring adaptation, maintenance, and continuous public engagement. A long-term communication plan ensures sustained dialogue. Regular updates about project progress, maintenance schedules, and monitoring results maintain transparency. Feedback mechanisms allow stakeholders to report issues and suggest improvements. This ongoing exchange reinforces trust and adaptability. Institutionalizing communication within municipal governance structures is equally important. Dedicated communication professionals or cross-sector coordination mechanisms help maintain coherence across departments. When communication responsibilities are clearly defined, projects are less likely to suffer from fragmentation or misinformation. Evaluation of communication effectiveness further strengthens policy outcomes. Surveys, participation metrics, and media analysis provide insight into public perception and engagement levels. By integrating these insights into adaptive management processes, cities enhance both ecological and social resilience.

A long-term communication plan includes:

- Regular progress update
- Transparent maintenance reporting
- Continuous stakeholder meetings
- Adaptive feedback mechanisms



8. The communication continuum in urban NBS

The communication continuum conceptualizes communication as a dynamic and cyclical process rather than a linear event. In urban NBS, this continuum unfolds across several interconnected stages: awareness, engagement, implementation, demonstration, and stewardship. During the awareness stage, communication introduces the concept of NBS and clarifies the challenges they address. In the engagement stage, dialogue deepens through participatory design and consultation. Implementation requires transparent updates and expectation management. Demonstration focuses on showcasing results and reinforcing legitimacy. Finally, stewardship emphasizes long-term involvement and adaptation. Crucially, these stages are not isolated. Feedback loops connect them, ensuring that insights from implementation inform future planning. The continuum fosters institutional learning and social adaptation. It embeds communication into governance rather than treating it as an auxiliary activity.

By adopting a communication continuum approach, urban NBS become living systems shaped by ongoing dialogue. This dynamic model strengthens resilience not only ecologically but socially and institutionally.

The communication continuum

- Awareness Phase – Introducing the concept of NBS and identifying urban challenges.
- Engagement Phase – Facilitating dialogue and co-design.
- Implementation Phase – Providing transparent updates and managing expectations.
- Demonstration Phase – Showcasing outcomes and benefits.
- Stewardship Phase – Maintaining long-term participation and adaptation.



Conclusion

The establishment of urban Nature-Based Solutions represents a transformative shift in how cities address climate change, biodiversity loss, and social vulnerability. However, the success of these interventions depends as much on social processes as on ecological design. Strategic communication functions as a catalyst that connects stakeholders, aligns expectations, and fosters trust. Urban NBS must be co-designed with communities to ensure legitimacy and ownership. Communication strategies must respect cultural contexts and adapt narratives accordingly. Demonstrating measurable and lived impacts reinforces political and public support. Emphasizing the interdependence between people and nature nurtures ecological literacy and responsible behavior. Finally, long-term communication planning ensures sustained stewardship and adaptive governance.

In essence, communication is infrastructure. It shapes perceptions, mobilizes collaboration, and sustains commitment. Investing in strategic communication capacity is therefore an investment in resilient, inclusive, and sustainable urban futures.



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