

Network Nature

Roadmap for Citizen Action on Nature-based Solutions (NbS)

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15/10/2025	v.0	Daniela Rizzi, Kassia Rudd, and Adriana Duarte	Two-pager
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12/03/2026	v.2	Bettina Wilk David Maddox	Contents for designated chapters (Executive Summary, Introduction (Background, etc), Methodology, Results, Reflections).
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02/06/26	v.7	Experts interviewed	Added citizen action examples from Latin America. Adjusted experts' names.

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Snapshot

This document is a practical roadmap for promoting citizen action on Nature-based Solutions (NbS). It is designed for civil society organisations (CSOs), practitioners, intermediaries[1], policymakers, and municipalities, seeking to bridge the gap between existing, but fragmented community action, and the systemic support needed to scale and sustain it.

The roadmap is structured around four stages of NbS uptake—Understanding, Recognising, Integrating, and Sustained Use—and operationalised through six strategic pathways. These pathways translate evidence into concrete directions for action, identifying what needs to change, who is responsible, and how inclusion can be embedded at every step.

The six strategic pathways in the roadmap are: (1) Craft place-based narratives; Define collective learning goals; (3) Deploy alternative and creative methodologies; (4) Shift toward the “commons” and co-governance; (5) Advocate for decentralised funding; (6) Foster nature-based enterprises.

The evidence base draws on three complementary streams of research: (1) a systematic desk review of 31 deliverables from 16 EU-funded NbS projects and four expert reports; (2) a self-selected global survey of 445 respondents on citizen action for nature; and (3) 20 semi-structured interviews with practitioners across Africa, Asia, the Americas, and Europe (▸ *Full methodological detail in Annex B; instruments in Annex D)*.

Key findings emphasise the necessity of the vital role of intermediary "civil brokers," the challenge of misaligned language, "silo-busting" within municipal governance, and the strategic shift from episodic funding to sustained micro-grants. The analysis identifies eight core findings and six strategic pathways for action. These include reframing narratives through culturally meaningful communication, linking NbS to social justice, and establishing the structural, legal, and financial conditions necessary for long-term stewardship.

[1]Intermediaries (“civic brokers”) connect formal institutions with informal community networks. Trusted and embedded locally, they are essential for reaching marginalised groups who often distrust official channels. Examples include social workers, socio-cultural mediators, NGOs, academic institutions, and even civic spaces like public libraries.

Socio-cultural activation

Structural & economic empowerment



3

Meet People Where They Are

6

Make Nature Work as a Livelihood

2

Learn Together, Build Together

5

Sustain the Stewards, Not Just the Structures

1

Speak the Language of Communities

4

Share Power, Share Responsibility

Citizen engagement progression

Executive Summary

This roadmap provides an evidence-based framework to support the uptake and mainstreaming of Nature-based Solutions (NbS) by recognising and strengthening existing citizen action for nature. It outlines practical pathways to move from fragmented, often unrecognised local practices toward integrated, sustained, and systemic implementation across governance, policy, and communities. Citizen action for nature already exists. Communities around the world are already engaging in practices that protect, restore, and sustain ecosystems. Yet, these efforts are rarely recognised as NbS. People speak of “restoration,” “green space,” “food sovereignty,” and “neighbourhood care”—not “NbS.” The term “NbS” itself is often perceived as abstract, technocratic, and disconnected from the everyday language of communities.

Civil society organisations and citizens are essential actors in bringing NbS to life at the local level. This report examines what enables — and what prevents — them from doing so effectively.

The primary challenge lies not in citizen motivation, but in the absence of enabling conditions: accessible communication, inclusive governance, and sustained institutional and financial support. Structural barriers—including limited access to long-term funding (cited by 63% of survey respondents), insufficient communication tools (56%), and weak connections with local authorities (52%)—prevent grassroots action from being scaled, recognised, or maintained (▸ *See Annex C.2 — Global Survey Results — for the full breakdown of barriers by region and respondent type).*

> *“There is ecological knowledge and people who care in every single neighbourhood in the city. It’s recognising the already existing civic capacity rather than starting from scratch every time.”*
>
> *— Interviewee 9, Research Social Scientist, USA*

Evidence Base and Methodology

The roadmap is grounded in a mixed-methods evidence base combining three complementary data streams: (1) a systematic desk review of 31 deliverables from 16 EU-funded NbS projects and four expert reports; (2) a self-selected global survey of 445 respondents across 43 countries; and (3) 20 semi-structured interviews with practitioners in Africa, Asia, the Americas, and Europe. The survey was distributed through NetworkNature partner networks and TNOC’s communities using snowball sampling, so respondents were self-selected and already engaged with nature or civil-society action; the sample is therefore not statistically representative of European citizens, or of any national or regional population, and its results are reported as indicative evidence, triangulated with the desk review and the interviews rather than relied on alone (see Annex B.2 for sampling and limitations). The synthesis followed an adapted PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, combining expert-led thematic analysis with AI-assisted tools (NotebookLM) to process and triangulate data across streams. All AI-generated outputs were reviewed, refined, and contextualised by the research team to ensure interpretive depth and accuracy. Data handling followed strict GDPR compliance and EU guidelines on AI transparency.
(▸ *See Annex B methodology, B.1–B.6) and Annex D (instruments: questionnaire, topic guide, transcript example).*

The Four Stages of NbS Uptake

In this context, the uptake and mainstreaming of NbS are conceptualised as a process comprising four critical stages: Understanding, Recognising, Integrating, and Sustained Use.

Despite a growing body of evidence demonstrating their effectiveness, the transition of NbS from experimental pilot projects to widespread, mainstream implementation remains fragmented and inconsistent[2][3][4]. This acts as a major barrier because it leaves very little room to adapt engagement formats, build genuine trust[5], or sustain community involvement once the immediate project funding ends[6]. The methodological approach underpinning the development of this roadmap—namely, desk research, surveys, and interviews—explicitly aligns with this four-stage framework (▸ *Full theoretical grounding of the four stages, with literature references, is Annex A.)*

Stage	What it means in practice
Understanding	People already act for nature, but their practices are not framed as NbS. Language, culture, and lived experience shape how communities relate to nature—often outside formal frameworks.
Recognising	Citizen action gains legitimacy, language, and visibility. Communities and institutions begin to see grassroots practices as valid contributions to nature-based approaches.
Integrating	NbS are embedded in planning, policy, governance, and institutional systems. Cross-sector collaboration replaces siloed approaches.
Sustained Use	Long-term funding, stewardship, ownership, and economic models ensure NbS endure beyond project cycles and political terms.

The Six Pathways

From this research, we distilled six strategic pathways to drive citizen action on NbS. These pathways ensure that engagement strategies evolve hand in hand with the project, addressing the unique social and institutional actions of each phase from initial understanding to long-term sustained use. Each is mapped to the stages of the NbS uptake cycle — though in practice they overlap and can be applied flexibly depending on context, actor, and scale (▸ *The synthesis logic that produced the six pathways from the evidence is documented in Annex C.4 — Reflections).*

Detailed implementation steps, with targeted recommendations for civil society organisations (CSOs) and intermediaries, policymakers and authorities, and municipalities, are provided in the Roadmap for Citizen Action.

[2] Catalano, C., Campiotti, A., & Baldacchini, C. (2021). *MS69: Possible ways to foster the uptake of knowledge on Nature-based Solutions*. The European Biodiversity Partnership.
[3] European Commission. (2023). *Harnessing the power of collaboration for nature-based solutions: Lessons from European and Chinese case studies.*
[4] NetworkNature. (2023). *Nature-based solutions for climate change adaptation* [Policy Brief]. EU Horizon 2020 Project NetworkNature+ (Grant Agreement No. 101082213)
[5] Morello, E., Mahmoud, I., Gulyurtlu, S., Boelman, V., & Davis, H. (2018). *CLEVER Cities Guidance on co-creating nature-based solutions: PART I - Defining the co-creation framework and stakeholder engagement.* (Deliverable 1.1).
[6] GrowGreen. (2021). *D4.1: Report on strategies for scaling up NbS at the city level*. EU Horizon 2020 Project GrowGreen (Grant Agreement No. 730283).

#	Pathway	Stage(s)
1	Craft place-based narratives that celebrate local pride, values, and on-site practices	Understanding, Recognising
2	Define collective learning goals to build skills, cohesion, and local development	Recognizing, Cross-cutting
3	Deploy alternative and creative methodologies	Integrating, Cross-cutting
4	Shift toward the “Commons” and co-governance	Integrating → Sustaining
5	Advocate for decentralised funding	Sustaining
6	Foster nature-based enterprises	Sustaining

How to Navigate this Document

This document combines two complementary components:

- **The Roadmap:** The core of this document is the roadmap itself—structured around four stages and six pathways, and operationalised through practical action cheat sheets. Each pathway concludes with a checklist-style Action Check-Off designed as a quick-reference tool to support decision-making, programme design, and on-the-ground implementation. These Action Check-Off sheets follow a “prepare → engage → reflect” structure, with concrete questions and practical tips for each step.
- **The evidence base (Annexes):** Supporting the roadmap is a synthesis of research, including a desk review of EU-funded projects, a global survey on citizen action for nature, and in-depth interviews. These provide the evidence and context behind the pathways and are presented in the main text and annexes.

Across all audiences, the roadmap is designed to be flexible and adaptable. Users can engage with individual pathways, specific cheat sheets, or the full framework depending on their needs and entry point.

The roadmap can be used as a standalone practical tool, particularly through its pathways and action-oriented cheat sheets. At the same time, the evidence that the annexes provide the supporting evidence, context, and methodological grounding for those seeking a deeper understanding of how the roadmap was developed and the insights that underpin it.

Different audiences may engage with the roadmap in different ways, depending on their role, mandate, and context:

- **If you are a citizen or community member:** Start with Pathways 1 and 3 — no prior knowledge of NbS required. The tools and examples are drawn from practices just like yours. Use this roadmap to find language for what you already do, connect with others, and identify what support you can claim.
- **If you are a CSO or intermediary:** Use the pathways as a practical guide for programme design, advocacy, and community mobilisation. Pay particular attention to the tools and examples sections, which draw directly from successful EU and global initiatives.
- **If you are a policymaker or public authority at any level:** Focus on the "Who does what" sections within each pathway to identify concrete policy actions, governance reforms, and

funding mechanisms. The four-stage framework will help you understand where current efforts stand and what systemic shifts are needed — with recommendations differentiated across national, regional, and municipal scales. The inclusion lens within each pathway will help ensure that engagement strategies reach beyond the "usual suspects."

- **If you are a researcher or knowledge institution:** The annexes contain the full evidence base, including *Annex A (framework), Annex B (methodology), Annex C (results), Annex D (instruments), Annex E (full quote repository)*. These materials support further analysis and replication.

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Finally, we acknowledge the broader NetworkNature community, whose ongoing work continues to advance the understanding and practice of Nature-based Solutions across Europe and beyond.

Introduction and Background

Rapid intensification of climate-related threats, coupled with accelerating biodiversity loss and urban degradation, has positioned nature-based solutions (following NbS) as a pivotal instrument for transformative change. NbS—defined by the UN and IUCN as actions that protect, sustainably manage, and restore ecosystems to address societal challenges—offer a multifunctional alternative to traditional grey infrastructure. They simultaneously address stormwater management, heat island effects, public health, and biodiversity.

Despite a growing body of evidence supporting NbS effectiveness[7], the transition from experimental pilots to systematic mainstream implementation remains fragmented and inconsistent[8]. NbS research in Europe has increased significantly, with NetworkNature[9] now encompassing a portfolio of 100+ projects across Horizon Europe Cluster 6 and the EU Missions. Yet, effectively engaging the wider public remains a critical implementation challenge.

This document responds to this gap by providing an evidence-based framework for promoting and strengthening citizen action on NbS in support of mainstreaming across society. It outlines practical pathways to move from fragmented, often unrecognised local practices toward integrated, sustained, and systemic implementation across governance, policy, and communities.

The underlying research forms part of the Horizon Europe project NetworkNaturePLUS, specifically addressing its ambition to raise awareness with and engage segments of the wider public, citizens, and new audiences with NbS - not only as recipients of knowledge, but as active contributors to the uptake, implementation, and stewardship of NbS.

The 16 projects included in our review demonstrate a wide range of approaches to citizen engagement: from digital tools and participatory methods to institutional arrangements and governance models. However, structural barriers persist, limited long-term funding; fragmented governance across municipal departments, language and cultural disconnects between institutional frameworks and community practices, and persistent exclusion of marginalised voices (▸ See *the full list of 16 EU-funded projects and 31 deliverables reviewed is in Annex D.1 — Desk Review Database)*.

This roadmap intends to help close this gap by examining how citizens contribute to NbS in practice and by identifying the key enabling factors, constraints, and strategic directions needed to move from fragmented action to systemic support.

[7] Chausson, A., Turner, B., Seddon, D., Chabaneix, N., Girardin, C. A. J., Key, I., Roe, D., Smith, A., Woroniecki, S., & Seddon, N. (2020). Mapping the effectiveness of nature-based solutions for climate change adaptation. *Global Change Biology, 26*(11), 6134–6155. https://doi.org/10.1111/gcb.15310

[8] Martin, J. G. C., Scolobig, A., Linnerooth-Bayer, J., Irshaid, J., Aguilera Rodriguez, J. J., Fresolone-Caparrós, A., & Oen, A. (2025). The nature-based solution implementation gap: A review of nature-based solution governance barriers and enablers. *Journal of Environmental Management, 388*, 126007. https://doi.org/10.1016/j.jenvman.2025.126007

[9] https://networknature.eu/

> *"The fact that people care says something. This care and the values that are behind it—of stewardship, or partnership, or inspiration, or love—needs to matter for policymakers."*
>
> *— Interviewee 12, Sustainability Consultant, Belgium*

This roadmap uses the term "citizen" broadly to include all people who engage with, or could engage with, nature in their communities. This is not a legal definition. It is a recognition that the people shaping the future of urban and rural ecosystems are far more diverse than formal frameworks typically acknowledge.

In practice, "citizens" in this roadmap encompass:

- Individual residents, including migrants, youth, elderly people, indigenous communities, informal workers, and low-income groups
- Members of grassroots and community organisations
- Civil society organisations (followed by CSO) and NGOs acting as intermediaries between citizens, communities and institutions
- Informal stewardship networks whose care often goes unrecognised, e.g., community gardeners, river caretakers, seed-savers, neighbourhood cleaners
- Citizens as knowledge producers, through participatory science, environmental monitoring, and lived experience

▸ *The list of practitioners interviewed (anonymised by region and role) is in Annex D.4).*

In many contexts, the people doing the most for nature do not call themselves "citizens" at all. They speak of neighbours, caretakers, ancestors, defenders. And what institutions label "nature-based solutions" is often simply how communities have always lived — rooted in ancestral knowledge, cultural practice, and daily survival.

> *"Nature-based Solutions is a very Western concept. For many communities, this is simply ancestral knowledge—a way of living."*
>
> *— Interviewee 16, Urban Planner, Colombia*

> *"In our culture, the mountain is our God, and technically, it's not allowed to climb the mountain. It's a very British mindset to come and say, 'We want to conquer Mount Everest.'"*
>
> *— Interviewee 13, Community Campaigner, Nepal*

Crucially, this roadmap moves beyond the top-down model, in which citizens are (perhaps) consulted but are not co-creators, toward a model of practical authority, shared ownership, and knowledge co-production. The pathways that follow are built on this premise: that citizen action already exists, and that the task is not to teach communities about nature, but to build systems that recognise, support, and sustain the knowledge and care they already hold.[10]

[10] There is a vast popular literature of self-help books and websites that are related or adjacent to NbS: for example books on gardening with native plants and attracting birds to backyards. This literature is valuable but not the core subject of this research.

The Roadmap for Citizen Action on NbS

This roadmap is an evidence-based framework to support the uptake and mainstreaming of Nature-based Solutions by recognising and strengthening existing citizen action for nature. It outlines practical pathways to move from fragmented, often unrecognised local practices toward integrated, sustained, and systemic implementation across governance, policy, and communities (▸ *For the conceptual framework underpinning this roadmap, see Annex A)*.

The roadmap presented here was built from three complementary data streams: (1) a systematic desk review of 31 deliverables and research papers from 16 EU-funded NbS projects and four expert reports; (2) a self-selected global survey of 445 respondents exploring awareness, barriers, and support needs; and (3) 20 semi-structured interviews with practitioners across four continents (▸ *Methods in Annex B; results in Annex C; full source material in Annex E.)*.

It is structured through four stages of NbS uptake—Understanding, Recognising, Integrating, and Sustained Use—and operationalised through six pathways. Each pathway follows a consistent template: what is happening now, why it matters, what needs to change, recommendations for action, an inclusion lens, and tools and examples drawn from the evidence base.

The evidence from the results and reflections chapters of the original research has been embedded directly into the pathways. This means the roadmap is simultaneously an evidence synthesis and an action guide—designed not to describe problems, but to enable responses.



Figure 1: *Six pathways for Citizen Action and Increased Uptake of NbS.*



Pathway 1:

Speak the Language of Communities

Craft place-based narratives that celebrate local pride, values, and on-site practices

Stage: Understanding, Recognising

This pathway begins where most citizen action already lives — unrecognised and unlabelled. Before you can engage communities, you need to discover what they already care about and why they act. As that action gains visibility and language, this pathway also supports the shift into Recognising: the stage where grassroots practices start to be seen as valid contributions to nature-based approaches by institutions and communities alike.

What is happening now

The general public, grassroots organisations, and local citizens often perceive the term "Nature-based Solutions" as an abstract, Western, and technocratic buzzword. Yet these same communities—particularly in the Global South, among migrant populations, and within grassroots initiatives—are already engaging in nature-based practices rooted in culture, survival, and identity. In non-English speaking contexts, practitioners prefer terms like "nature-inclusive architecture," "restoration," or "landscape regeneration." The gap is primarily in terminology, not in local action, but it creates confusion and, in some cases, frustration. Survey responses also point to the "Childhood Effect": many people's connection to nature is rooted in early memories of play, family, sensory experience, and everyday contact with local ecosystems. Their use of NbS adjacent terms reflects this (▸ *see Annex C.2 (Childhood Effect — quantitative and qualitative analysis) and Annex E, Pillar 1 (verbatim quotes on language and code-shifting)*.

> *"With the community, we use much simpler language, because technical languages often alienate people, creating a distance—as if to say 'I know more and I have a strange term.'"*
>
> *— Interviewee 4, Architect/Urban Planner, Colombia*

> *"We want a tree, we want a garden, we want little animals, birds, we want butterflies. With the community, we rarely use the term 'nature-based solutions' because it doesn't make sense for someone in a context of vulnerability."*
>
> *— Interviewee 17, Institute Founder, Brazil*

> *"It's less about bringing it to them than finding it within our communities and ourselves."*
>
> *— Interviewee 20, Research Social Scientist, USA*

Why this matters

Without accessible, culturally resonant language, NbS as an approach (and its supporting research) remains invisible to the communities already practising them. The disconnect between institutional frameworks and lived experience creates barriers to recognition, funding, and support. If engagement is framed only in technocratic terms, it alienates rather than empowers. Or, they don't recognise the technical knowledge base of NbS as being relevant to their work.

What needs to change

- Translate NbS into tangible, everyday concerns such as public health, safety, economic opportunities, and local job creation.
- Replace technical jargon with locally relevant, accessible language.
- Frame NbS through lived challenges: heat stress, flooding, food insecurity, energy bills, or mental well-being.
- Capitalise on "trigger events" such as climate shocks as windows of opportunity to build momentum.
- Reconnect NbS communication with early nature memories, using childhood experiences, family stories, and sensory relationships with place as entry points for engagement.

Recommendations for action

For policymakers and authorities:

- Develop communication strategies that connect NbS to immediate community priorities rather than abstract biodiversity or other metrics.
- Fund the translation of NbS into multiple local languages and culturally appropriate formats.
- Utilise focusing events (e.g. heat waves, storm surges) as catalysts for political and public support.
- Embrace alternate, locally valid terms for NbS, and make attempts to place them in relative glossaries.

For municipalities:

- Embed accessible language and place-based framing into all public communications about green infrastructure and urban nature.
- Partner with local cultural organisations and community leaders to co-develop neighbourhood-specific messaging.

For CSOs and intermediaries:

- Act as knowledge brokers, translating technical planning language into relatable concepts and navigating bureaucratic hurdles.
- Build emotional connections through storytelling, community arts, and cultural heritage to evoke local pride and belonging.
- Enable expression beyond technical language through creative and visual methodologies—especially vital for migrants and marginalised groups.

Inclusion lens

- Ensure narratives reflect the experiences, priorities, and languages of vulnerable groups, not only dominant communities.
- Centre spatial justice, food sovereignty, and human dignity in communication for highly vulnerable populations.
- Use arts-based practices (poetry, body mapping, performance) to help migrants and minority backgrounds safely express their relationship to nature.
- Children and intergenerational pathways: Engaging children can activate wider family and community involvement, especially where adult participation is limited.
- Recognise children and intergenerational relationships as pathways into wider household and community engagement, especially where adults face time poverty or participation fatigue.

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID
Future Scenario Workshops	These workshops utilised creative, future-thinking approaches like serious play, collaging, and photovoice to help participants envision new democratic possibilities through narratives based on lived experiences.	EUARENAS, 959420
Cultural Mapping	This interdisciplinary approach identifies intangible community assets, such as local stories, values, memories, and traditions. While it provides a deep understanding of the territory, it can be complex to implement	URBiNAT, 776783
Photovoice	This combines photography with group discussions to highlight the perspectives of marginalised voices. It is an intuitive, highly engaging tool (especially for youth), though it can be time-consuming for organisers.	URBiNAT, 776783
Walkthroughs	This involves observing, interviewing, and brainstorming directly in the physical locations where residents live. It builds strong local knowledge and proximity to the community, but it is best suited for small groups.	URBiNAT, 776783
Art-based Approach	The process uses creative methods like "memory work," storytelling, body-mapping[11], and immersion in nature to help participants reconnect with their surroundings and share their emotions and vision.	ConnectingNature, 730222
NbS lexicon	Illustrated dictionary for NbS terminology.	NetworkNature, 887396

[11]In A Coruña, migrant and minority participants involved in urban gardens took part in a body mapping exercise. Following an immersive visit to the gardens and nearby fields—where they collected natural objects for inspiration—they returned indoors to create individual body maps using provided templates. *Connecting Nature Framework A Coruña: An Urban Gardens Green Network*, p.59

Agent-Based Modelling (ABM)	Used by stakeholders to simulate how specific NBS interventions (like rain gardens or green roofs) will impact the well-being and behaviours of different demographic groups.	NATURE4CITIES, 730468
Intergenerational storytelling	In Cyprus's Troodos Mountains, terrace restoration succeeded by framing it as cultural heritage preservation, with elders leading dry-stone walling workshops as community gatherings.	More than green, 101084628
Open-Source Database for Citizen Action[12]	A database built via NotebookLM that brings together all data produced throughout this roadmap development process into a structured and searchable resource for researchers, civil society organisations, policymakers, and practitioners.	NetworkNature, 887396



ACTION CHECK- LIST

Pathway 1: Speak the Language of Communities

1	When preparing NbS communications and engagement materials

[12] https://notebooklm.google.com/notebook/2e93f566-4b0e-48ce-80c8-bfbab2002a36

☐	**Have you replaced NbS jargon with locally meaningful language?** ▸ *Test your materials with 3 community members who are not NbS professionals.* ▸ *Use terms people already use: gardens, trees, clean water, green spaces, fresh air.*
☐	**Have you framed NbS around immediate community priorities (health, safety, jobs, food)?** ▸ *Connect every NbS benefit to a daily-life concern the audience already cares about.* ▸ *Avoid leading with biodiversity metrics—lead with human well-being.*
☐	**Have you involved local storytellers, artists, or cultural leaders in co-developing the narrative?** ▸ *Partner with community reporters, poets, visual artists, or cultural associations.* ▸ *Use Photovoice or cultural mapping to let citizens define the story themselves.*
☐	**Is your communication available in all relevant local languages?** ▸ *Go beyond translation—adapt concepts to cultural context.* ▸ *Use visual and oral formats (video, audio, illustration) alongside text.*

2.	When engaging with diverse communities
☐	**Have you identified existing nature-based practices already happening in the community?** ▸ *Map what people already do: planting, cleaning rivers, seed-saving, urban gardening.* ▸ *Start from recognition, not from a knowledge deficit.*
☐	**Are you using "trigger events" (climate shocks, floods, heatwaves) as windows of opportunity?** ▸ *Prepare rapid-response communication kits that connect crises to NbS.*
☐	**Have you ensured that narratives reflect the voices and priorities of vulnerable groups?** ▸ *Centre spatial justice, food sovereignty, and dignity—not abstract ecology.* ▸ *Use arts-based practices (poetry, body mapping) for groups facing language barriers.*

3.	When reflecting on your communication efforts
☐	**Did your communication reach beyond the "usual suspects"?** ▸ *Track who engaged and who did not. Adjust channels and language accordingly.*
☐	**Did community members feel the narrative represented their reality?** ▸ *Gather feedback through informal conversations, not just surveys.*



Pathway 2:

Learn Together, Build Together

Define collective learning goals to build skills, cohesion, and local development

Stage: Recognising, Cross-cutting

This pathway is rooted in Recognising — the stage where shared learning turns individual action into collective capacity, and where communities begin to see their own knowledge as legitimate and valuable. But because learning never stops, this pathway is also cross-cutting: building skills, trust, and cohesion remains relevant at every stage of the NbS journey, from first engagement to long-term stewardship.

What is happening now

Recognition of NbS emerges through shared learning. Co-creation is not only a design process but a collective learning journey that builds capacity, trust, and long-term engagement. EU-funded projects have demonstrated that Urban Living Labs, citizen science programmes, and hands-on stewardship activities are among the most effective mechanisms for building community capacity around NbS. The “Childhood Effect” reinforces this: long-term environmental commitment often begins through direct, unstructured, and sensory experiences with nature (▸ *Empirical basis for the Childhood Effect in Annex C.2; verbatim quotes on multi-sensorial learning and play in Annex E, Pillar 6)*.

> *“We feed everyone these biodiverse potatoes, coated in seawater and seaweed, after spending the morning looking at the history of the potato… It’s very important to eat the world, and to gain trust and relationship through that process.”*
>
> *— Interviewee 7, Educator and Artist, Ireland*

> *“Everyone needs to be together, everyone needs to get involved to transform the territories. It starts to build relationships of care, relationships of enchantment, of curiosity.”*
>
> *— Interviewee 17, Institute Founder, Brazil*

Why this matters

Without structured opportunities for collective learning, communities remain dependent on external expertise. Knowledge asymmetries reinforce power imbalances between institutions and citizens. Shared learning builds the social cohesion and technical capacity needed for communities to lead their own NbS initiatives sustainably.

What needs to change

- Create safe spaces for co-learning where municipal authorities, researchers, businesses, and citizens can experiment together.

- Invest in citizen science programmes that empower participants as data collectors and environmental monitors.
- Use temporary interventions (pop-up gardens, pilot projects) to build communities of practice without rigid planning requirements.
- Ensure learning processes build toward long-term local development, not just project deliverables.
- Prioritise hands-on, outdoor, and intergenerational learning, especially for children and young people.

Recommendations for action

For policymakers and authorities:

- Fund and mandate accessible community spaces for co-creation, including Urban Living Labs, community hubs, and neighbourhood centres, as transparent, self-organised places for experimentation and dialogue.
- Support citizen science initiatives (e.g., BioBlitzes, environmental monitoring) as formal data sources for policy.

For municipalities:

- Establish physical “Info Centres” or community hubs as meeting places for co-learning workshops.
- Embrace temporary interventions to alter public perceptions and build communities of practice.
- Integrate NbS learning into school curricula and youth engagement programmes.
- Ensure schools, playgrounds, parks, gardens, and community spaces provide regular opportunities for children to experience nature directly.

For CSOs and intermediaries:

- Act as facilitators and capacity builders, providing training in local languages and culturally appropriate formats.
- Develop mentorship programmes pairing experienced practitioners with emerging community leaders.
- Support “taskscaping[13]” and “terrestrialisation[14]” approaches that encourage companion species relationships.

Inclusion lens

- Ensure learning spaces are accessible to people with varying educational backgrounds, language proficiencies, and physical abilities.
- Compensate participants for their time and expertise, especially those from vulnerable demographics.
- Design “zero-prerequisite” processes requiring no prior technical knowledge.

[13] Taskscaping refers to the practice of designing activities around nature — such as community gardening, river monitoring, or urban foraging — so that caring for ecosystems becomes embedded in people's everyday routines and sense of place, rather than framed as a technical intervention.
[14] Terrestrialisation describes the process of grounding abstract environmental concepts in specific, local landscapes and lived experiences — making nature legible and meaningful to people through the particular places, species, and practices they already know and inhabit.

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID
Urban Living Labs (ULLs)	Transparent, self-organised “safe spaces” for real-time co-creation (e.g., Zagreb Info Centre).	proGIreg, 776528
BioBlitzes	Rapid biological surveys bringing together scientists, businesses, and citizens to make biodiversity tangible.	Various / General
Experiential learning	Transect walks and sensory mapping (e.g., Tartu).	COEVOLVERS, 101084220
Game-based tools	Minecraft workshops engaging youth in urban planning (Chemnitz).	INTERLACE, 869324
Children's Vision Submission Campaign	The campaign "Mi lugar, listos, ¡Acción!" is a citizen-led, child-centered participatory campaign that invites children and young people to submit their visions and proposals for improving their place, street, neighborhood, or city — specifically oriented toward the Cerros Orientales of Bogotá. The campaign is not symbolic: children's drawings and videos feed into a public narrative directed at the city mayor.	Fundación Cerros de Bogotá (Colombia)
“Going to the Community”	Public spotting at markets, schools, and sports clubs instead of formal town halls.	Various / General
Intergenerational learning formats	Forest schools, community gardens, BioBlitzes, sensory walks, and family-based nature activities.	Various / General
Research Database of the Roadmap for Citizen Action on NbS	This open-source database consolidates all interviews, survey results, and desk research from the Roadmap for Citizen Action on NbS, allowing different people to consult, ask questions, and build upon the research already done regarding tools, methods, and co-learning case studies from 16 EU-funded projects.	NetworkNature, 887396



ACTION CHECK- LIST

Pathway 2: Learn Together, Build Together

1	When designing co-learning spaces
☐	**Have you created a familiar, welcoming space for co-learning (e.g., a community hub, neighbourhood centre, or Info Centre)?** ▸ *Ensure the space is physically accessible, welcoming, and non-institutional.* ▸ *Consider pop-up or temporary formats to lower commitment barriers.*
☐	**Does your learning programme include hands-on, outdoor, and sensory experiences?** ▸ *Use transect walks, sensory mapping, and foraging to engage all senses.* ▸ *At least 50% of learning should happen outside the classroom or meeting room.*
☐	**Have you included citizen science components (BioBlitzes, environmental monitoring)?** ▸ *Make participants data collectors and environmental monitors—not just recipients.* ▸ *Share results back with participants and show how their data influenced decisions.*

2.	When engaging participants
☐	**Is participation designed with "zero prerequisites" (no prior technical knowledge needed)?** ▸ *Use game-based tools (e.g., Minecraft) to lower barriers for youth.* ▸ *Provide visual starters rather than blank slates.*
☐	**Are participants compensated for their time and expertise?** ▸ *Budget for stipends, food, transport, and childcare—especially for vulnerable groups.*
☐	**Have you built in mentorship or peer-to-peer learning structures?** ▸ *Pair experienced practitioners with emerging community leaders.* ▸ *Peer influence is more powerful than expert-led instruction.*

3.	When reflecting on learning outcomes
☐	**Did participants gain skills, confidence, or connections they can use beyond this programme?** ▸ *Track social cohesion and capacity-building outcomes, not just attendance.*
☐	**Has the learning process led to any self-organised or community-initiated follow-up actions?** ▸ *The strongest indicator of success is when communities continue without you.*



Pathway 3:

Meet People Where They Are

Deploy alternative and creative methodologies

Stage: Integrating → Cross-cutting

This pathway becomes especially critical at the Integrating stage — when NbS moves from community practice into planning, policy, and governance, and the risk of excluding the most affected communities is highest. Conventional participation formats simply don't reach everyone. But creative and flexible methodologies are not a one-off fix — they are cross-cutting tools that strengthen inclusion at every stage, from first contact to long-term stewardship.

What is happening now

Traditional participation formats—formal consultations, town hall meetings, expert panels—often exclude those most affected by environmental degradation and climate impacts. Migrants, low-income communities, youth, and elderly populations may face structural barriers, including language, lack of available time, caregiving needs, mobility issues, and distrust of institutions.

Citizen participation is also influenced by individual-level factors, including confidence, motivation, and perceived relevance. Using targeted techniques to bring out participants' strengths and creativity through exploration and testing can help empower citizens.

Evidence from EU-funded projects shows that creative, flexible, and culturally embedded methods dramatically improve both the reach and quality of citizen engagement (▸ *See Annex C.1 for the comparative analysis of engagement methods across the 16 EU-funded projects)*.

> *"We try to deal with the strengths rather than trying to deal with the problem, because people don't like to talk about the problems. We amplify that strength in a way that helps to resolve the identical problem as well."*
> *— Interviewee 13, Community Campaigner, Nepal*

> *"Engaging citizens is not about letting citizens provide technical inputs. It's about understanding their perspectives, being more caring about their preferences, and using these co-creation processes also as an awareness-raising and capacity-building process."*
> *— Interviewee 11, Urban Consultant, Hungary*

> *"Recognising volunteers' motivations is essential. People need to feel that their time and contributions have meaning."*

> *— Interview 10, Community Campaigner, United Kingdom*

Why this matters

If engagement remains confined to conventional formats, NbS planning will continue to reflect the priorities of the "usual suspects" rather than excluded citizens and communities. Overcoming this requires rethinking not just who is invited, but how participation itself is structured—removing barriers rather than expecting communities to adapt to institutional norms.

What needs to change

- Move beyond formal and traditional consultations and bring participation directly into communities.
- Design processes with "zero prerequisites": no prior technical knowledge required.
- Work through trusted local actors who already possess community trust.
- Uncovered and strengthened participants' individual capacities through exploratory and iterative methods, recognising that creative expression varies across different life stages.
- Budget for practical support: translation, childcare, travel compensation, and stipends.

Recommendations for action

For policymakers and authorities:

- Mandate budgets for inclusion support (translation, childcare, compensation) in all NbS participation processes.
- Evaluate engagement processes by their inclusiveness, not just their efficiency.

For municipalities:

- Bring participation to the community: use "public spotting" at markets, schools, and sports clubs.
- Partner with socio-cultural mediators and social workers who already have community trust.
- Adapt engagement to diverse cognitive, linguistic, and social needs.
- Engage an external facilitator attuned to group power dynamics to ensure inclusive participation, create equitable conditions for all, and minimise bias.
- Gather and consolidate community goals and objectives across diverse formats and varying levels of detail to ensure comprehensive representation.

For CSOs and intermediaries:

- Act as translators between communities and institutions; bring residents' priorities into planning rooms, and bring municipal commitments back to the neighbourhood.
- Employ arts-based practices (storytelling, memory work, poetry, body mapping) to bypass verbal and technical barriers.
- Utilise digital participation tools with translation and text-to-speech features for remote engagement (as long as these are used with other approaches, so that digital literacy does not become an additional form of exclusion)
- Listen to and incorporate volunteers' motivations by offering opportunities that connect knowledge generation with hands-on participation. Volunteer engagement grows when learning, recognition, and meaningful contributions are supported.

Inclusion lens

- Centre the participation of migrants, the elderly, youth, and low-income communities—not as token participants but as co-designers.
- Provide visual starters, such as sketch maps, photo prompts, or draft diagrams that participants can react to and reshape — rather than blank slates, to reduce the intimidation of co-design processes.
- Ensure all materials are available in multiple relevant languages and accessible formats.

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID
Mobile citizen dialogue buses	Walk-in units at “footfall hotspots” to reach residents outside formal consultation (e.g., Nantes).	Various / General
Eastern Hills Public Lecture Series	363 sessions of the Cátedra Cerros de Bogotá were held over 8 years, with more than 35,000 attendees, offering free weekly education on topics including urban agriculture, sustainable mobility, green waste management, circular economy, ecological restoration, and water management.	Fundación Cerros de Bogotá (Colombia)
Digital participation platforms	Platforms equipped with translation and text-to-speech for reading disabled or time-constrained citizens.	Various / General
Minecraft workshops	Digital gaming to engage youth and immigrant communities in urban planning (e.g., Chemnitz).	INTERLACE, 869324
“Sarajevo Pathway”	Memory work and body mapping with migrant communities (e.g., A Coruña).	ConnectingNature, 730222
“Consensus methodologies”	Communities voting for the collective good over individual interests (e.g., Colombia).	Various / General
Volunteer and University Practice Network	Over ten years, the FCB has received approximately 7,000 volunteers, many of whom completed university internships or thesis projects at the Umbral Cultural Horizontes Reserve.	Fundación Cerros de Bogotá (Colombia); National Park City Rangers (United Kingdom)

Roadmap Research Database	Open-source database consolidates all interviews, survey results, and desk research from the Roadmap for Citizen Action on NbS, allowing different people to consult, ask questions, and build upon creative engagement methodologies and inclusive case studies.	NetworkNature, 887396



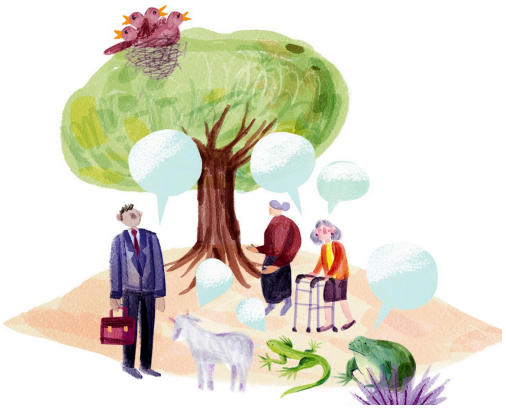
ACTION CHECK- LIST

Pathway 3: Meeting People Where They Are

1	When planning engagement activities
☐	**Are you going to the community rather than expecting them to come to you?** ▸ *Use "public spotting": set up at markets, schools, sports clubs, transit hubs.* ▸ *Consider mobile units (dialogue buses) or pop-up stands.*
☐	**Have you budgeted for inclusion support?** ▸ *Allocate funds for: translation services, childcare, transport vouchers, food, stipends.* ▸ *These are not extras—they are prerequisites for inclusive participation.*
☐	**Are you working through trusted local actors (mediators, social workers, community leaders)?** ▸ *Do not assume institutional trust. Partner with people the community already knows.* ▸ *Identify who already holds community trust before designing the engagement.*

2.	When designing the participation format
☐	**Is the format accessible to people with no prior technical knowledge?** ▸ *Avoid written surveys or technical workshops as the only format.* ▸ *Use visual, creative, and embodied methods: mapping, walking, drawing, performing.*
☐	**Have you considered creative or non-verbal methods for marginalised communities?** ▸ *Memory work, body mapping, poetry, and storytelling bypass language barriers.* ▸ *Digital and gaming tools (e.g., Minecraft for participatory urban design) can engage youth.* ▸ *Low-barrier digital channels (e.g., WhatsApp groups, voice notes) can sustain dialogue with remote or time-poor participants.*
☐	**Is the engagement designed around the community's schedule, not yours?** ▸ *Ask the target group what times and locations work for them—do not assume.* ▸ *Evenings, weekends, or during school pickups may work better than office hours.*
☐	**Is the format accessible across mobility, sensory, language, and timing needs?** ▸ *Check venues for step-free access, hearing loops, and quiet spaces.* ▸ *Provide materials in multiple languages and offer interpretation when needed.* ▸ *Vary the times of day so people with different work and care schedules can join.*

3.	When reflecting on who participated
☐	**Which groups were you expecting to participate? Which actually did? Which did not?** ▸ *Document gaps and adjust your methodology for the next round.* ▸ *Absence is data—investigate why certain groups did not show up.*
☐	**Did participants feel safe, heard, and respected?** ▸ *Gather this through informal feedback, not just formal evaluations.*



Pathway 4:

Share Power, Share Responsibility

Shifting toward the "Commons" and co-governance

Stage: Integrating → Sustaining

This pathway begins when citizen engagement needs to move beyond consultation into genuine shared decision-making and governance structures. But co-governance only delivers lasting impact when it carries through into Sustaining — codified into law, embedded in institutions, and resilient enough to outlast political cycles and project funding. Power-sharing that stops at integration remains fragile.

What is happening now

Public engagement and participation in NbS frequently remain tokenistic, rarely moving beyond information-sharing or consultation. Long-term NbS success requires moving beyond consultation toward genuine co-governance, where citizens are involved at the centre of decision-making and resource allocation. Evidence shows that NbS naturally cross administrative boundaries (water, parks, health) and often fail when managed by isolated departments.

Genuine co-governance therefore requires shifts on two fronts: opening institutions outward to communities, and breaking down silos within them. Communities are already acting as stewards, but this informal civic capacity is rarely acknowledged or supported by governance structures designed to keep nature, people, and policy in separate categories.

> *"It's this idea of the commons, enabling people to have usership in spaces. Usership, I think, is really important; when you have usership, you have a stake."*
>
> *— Interviewee 7, Educator and Artist, Ireland*

> *"Co-production is not necessarily saying the community knows it all or that the technical people know it all. I think it's a recognition that there is ignorance on both sides… we all need to come together."*
>
> *— Interviewee 5, Landscape Architect, Kenya*

> *"We visualise the nature-based solution, the design, the structure, the function, but we don't visualise the social network or the social infrastructure that gives life and energy to these spaces."*
>
> *— Interviewee 20, Research Social Scientist, USA*

Why this matters

Without structural power-sharing, citizen engagement remains dependent on political goodwill and project cycles. When administrations change, participatory gains are often lost. Co-governance mechanisms—codified into local law and institutional practice—ensure that citizen voice survives political transitions and becomes a permanent feature of urban environmental management.

What needs to change

- Break down institutional silos through cross-sector, transdisciplinary, polycentric governance arrangements.
- Establish long-term participatory structures (advisory boards, municipal committees) with real decision-making power.
- Embed participation into legal and policy frameworks so it survives election cycles.
- Recognise and integrate informal stewardship networks rather than imposing top-down solutions.
- Advocate for governance models that include non-human representation.

Recommendations for action

For policymakers and authorities:

- Codify co-governance into local legislation, ensuring participatory mechanisms are legally binding.
- Include mandatory co-creation clauses in public works tenders.
- Promote active community participants into formal government advisory roles.

For municipalities:

- Establish polycentric governance networks: ad-hoc, multidisciplinary working groups cutting across departments.
- Create co-management agreements between municipalities, private landowners, and community groups.
- Actively support “champions” within administrations who drive innovative engagement.

For CSOs and intermediaries:

- Act as “scale-crossing brokers” bridging marginalised communities and government institutions.
- Map and visualise community stewardship networks (STEW-MAP) to make invisible care work visible to policymakers.
- Advocate for legal and structural frameworks that recognise nature as a stakeholder.

Inclusion lens

- Empower marginalised communities in decision-making to prevent “green gentrification” and displacement.
- Adapt governance models to respect local realities in the Global South, where stewardship is a daily survival practice.
- Institutionalise youth involvement as active protagonists in long-term governance, not just short-term workshops.

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID
Citizens' assemblies and minipublics	Deliberative forums for policy co-development.	EUARENAS, 959420
Stewardship mapping (STEW-MAP)[15]	Surveying and visualising civic environmental care networks.	Various / General
Zoöp model[16]	Appointing a "Speaker for the Living" to represent non-human life in decision-making (Netherlands).	Various / General
Institutionalised participatory bodies	Integrating structured citizen input, such as Reggio Emilia's Neighbourhood Councils and City Science Office.	Various / General
Territorial Agreements	Aligning diverse stakeholders around a common vision for a watershed (Spain).	Various / General
Citizen-led policy Control	The FCB has 100% attendance in the verification committee of the State Council's ruling on the Eastern Hills — a court order that requires the Ministry of Environment, the regional environmental authority (CAR) and the District to jointly develop a management plan for what could be the largest protected urban area in Latin America, with 57 km.	Fundación Cerros de Bogotá (Colombia)
Public-Private Land Use Agreement	The reserve implemented a management model that allows public use of a privately owned property, demonstrating that nature restoration is possible from private territories with a public vocation — without requiring the city government to purchase all the land.	The Umbral Cultural Horizontes Reserve (Bogotá, Colombia)
Roadmap Research Database	Open-source database consolidates all interviews, survey results, and desk research from the Roadmap for Citizen Action on NbS, allowing different people to consult, ask questions, and build upon the research into governance models, stewardship mapping, and co-governance frameworks.	NetworkNature, 887396

[15] https://research.fs.usda.gov/projects/stew-map#stew-map-step-by-step
[16] https://nieuweinstituut.nl/en/projects/zoop/zoop-model



ACTION CHECK- LIST

Pathway 4: Share Power, Share Responsibility

1	When designing governance structures for NbS
☐	**Have you mapped existing formal and informal stewardship networks in the community?** ▸ *Use STEW-MAP or similar tools to make invisible civic care visible.* ▸ *Acknowledge that communities are often already acting as stewards.*
☐	**Have you established cross-departmental working groups for NbS?** ▸ *NbS cross administrative boundaries (water, parks, health)—governance must too.* ▸ *Create ad-hoc, multidisciplinary teams that cut across municipal silos.*
☐	**Have you codified participation into local law or policy frameworks?** ▸ *Ensure co-governance mechanisms survive election cycles and political changes.* ▸ *Include mandatory co-creation clauses in public works tenders.*

2.	When sharing power with communities
☐	**Are citizens participants in decision-making, or only have consultative roles?** ▸ *Establish formal advisory boards or municipal committees with binding influence.* ▸ *If participation is only consultative, be transparent about that limitation.*
☐	**Have you created mechanisms for non-human representation in decision-making?** ▸ *Consider the Zoöp model: appoint a "Speaker for the Living" to represent ecosystems.*
☐	**Are you actively supporting "champions" within your organisation?** ▸ *Identify individuals who drive innovative engagement and prevent their burnout.* ▸ *Provide institutional backing for risk-taking and experimentation.*

3.	When reflecting on governance equity
☐	**Are marginalised communities influencing decisions, or only participating?** ▸ *Influence means changing outcomes, not just being present.* ▸ *Monitor for green gentrification and displacement risks.*
☐	**Is youth involvement institutionalised beyond short-term workshops?** ▸ *Create pathways for youth to become long-term governance protagonists.*



Pathway 5:

Sustain the Stewards, Not Just the Structures

Advocate for decentralised funding

Stage: Sustaining

This is where most NbS initiatives quietly fail. Not from lack of community care — but from lack of financial structures that support it. Funding tends to flow toward building and planting, not toward the ongoing stewardship that keeps nature alive. This pathway is about changing that logic: shifting resources toward the communities and networks that do the long-term work.

What is happening now

A lack of financial resources is the primary barrier to citizen-led NbS. The vast majority of interventions rely heavily on public funding, as they primarily generate public goods without immediate financial returns for private investors. There is a profound temporal mismatch: funding is heavily skewed toward short-term capital expenditures (planning and "ribbon-cutting" phases) while neglecting long-term operational costs required for community maintenance. Without accessible, decentralised funding, public participation cannot be sustained—leading to high plant mortality and abandoned green spaces.

> *"Working with nature is a work, and it's not a project. Like, it's not gonna stop. And thinking about only funding projects and not the networks and communities… is just a big gap in policy."*
>
> *— Interviewee 12, Sustainability Consultant, Belgium*

> *"People say, 'If I am going to be a volunteer in a garden, I am using my time for free… it was good, but it's not generating any income.' So they can't continue, because they have to survive."*
>
> *— Interviewee 16, Urban Planner, Colombia*

> *"We need economic facilitation, like a small stipend to alleviate their everyday struggles for food and housing… so that these ecological justice defenders can continue with the Lord's work."*
>
> *— Interviewee 15, Legal Advocate, Kenya*

Why this matters

If funding structures remain centralised, complex, and short-term, grassroots groups will continue to be excluded from the resources they need. Bureaucratic hurdles prevent community organisations from accessing large European or national grants. The result is a system that funds the creation of NbS but not their care—undermining the very communities expected to maintain them.

What needs to change

- Shift financial power to communities through participatory budgeting.
- Provide highly accessible micro-grants directly to vulnerable neighbourhoods.
- Compensate participation: stipends, transport, food, and childcare during co-creation events.
- Provide long-term, legal access to public land as a financial enabler for grassroots greening.
- Use economic valuation frameworks (e.g., Total Economic Value) to justify NbS investment.
- Recognise and fund existing stewardship networks: the informal carers of nature who are rarely visible in official planning or funding frameworks.

Recommendations for action

For policymakers and authorities:

- Allocate a dedicated portion of municipal budgets to citizen-led greening through participatory budgeting.
- Create micro-grant schemes (£250–£2,000) accessible without complex application processes.
- Shift from punitive measures to financial incentives (subsidies, tax reductions) for stewardship.

For municipalities:

- Provide communities with free, long-term access to unused public land for community greening.
- Bundle design, construction, and maintenance into single tenders to incentivise long-lasting solutions.
- Compensate participants for their time and costs during co-creation processes.

For CSOs and intermediaries:

- Act as trusted intermediaries: receive larger institutional funds and distribute them as accessible micro-grants.
- Diversify income through crowdfunding, philanthropic donations, and local sponsorships.
- Help communities build viable business cases that speak the language of finance departments.
- Act as supportive nodes of stewards and networks of stewardship organisations.

Inclusion lens

- Ensure funding mechanisms do not require formal legal status or language proficiency that excludes migrants.
- Channel funds through trusted, informal community networks to lower administrative barriers.
- In the Global South, ensure NbS funding simultaneously supports livelihood generation (food sovereignty, sustainable harvesting).

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID
Participatory budgeting	Citizens proposing and voting on local projects (e.g., Gdańsk; Chicago's 49th ward $1.3M fund).	EUARENAS, 959420
Micro-grant schemes	"Natural Choices for Health and Wellbeing" (Liverpool) provided £38,000 in grants to disadvantaged neighbourhoods.	Various / General
Crowdfunding	Crowdfunding.gent (Belgium) for climate adaptation ideas; "City Forest" (Sofia) planting 60,000+ trees.	Various / General
NbS Business Model Canvas	Structuring value creation and demonstrating financial sustainability.	NATURVATION, 730243
Financial Support Search Engines	Interactive tools for finding blue-green infrastructure funding (e.g., Krakow).	INTERLACE, 869324
Sustainability Agreement with Environmental Authorities	Through a Sustainability Agreement signed with the Secretaría Distrital de Ambiente in 2022, the FCB provided technical support to the "Mujeres que reverdecen" program, contributing to garden strengthening, invasive species control, and capacity building among participants.	Fundación Cerros de Bogotá (Colombia)
Roadmap Research Database	This open-source database consolidates all interviews, survey results, and desk research from the Roadmap for Citizen Action on NbS, allowing different people to consult, ask questions, and build upon research covering funding mechanisms, micro-grant models, and participatory budgeting case studies.	NetworkNature, 887396



ACTION CHECK- LIST

Pathway 5: Sustain the Stewards, Not Just the Structures

1	When designing funding mechanisms for citizen-led NbS
☐	**Have you allocated a portion of the municipal budget to participatory budgeting for greening?** ▸ *Even small allocations (€5,000–€50,000) can activate significant community action.* ▸ *Let citizens propose and vote on how funds are spent.*
☐	**Have you created accessible micro-grant schemes?** ▸ *Keep application processes simple: 1–2 pages, no jargon, in local languages.* ▸ *Target €250–€2,000 grants to empower immediate, localised action.* ▸ *Channel funds through trusted intermediaries (CSOs, community groups).*
☐	**Are you funding maintenance (OPEX), not just construction (CAPEX)?** ▸ *The biggest funding gap is long-term care, not initial installation.* ▸ *Bundle design, construction, and maintenance into single tenders.*

2.	When compensating and supporting participation
☐	**Are you compensating participants for their time and costs?** ▸ *Budget for stipends, transport, food, and childcare at every co-creation event.* ▸ *Participation without compensation is a privilege only the wealthy can afford.*
☐	**Are you providing access to public land for community greening?** ▸ *Free, long-term legal access to "unused" land is a massive financial enabler.* ▸ *Barcelona's Pla Buits scheme is a strong model.*
☐	**Have you explored alternative funding streams beyond public budgets?** ▸ *Consider crowdfunding, philanthropic donations, local sponsorships, and corporate partnerships.* ▸ *Help communities build business cases for finance departments.*

3.	When reflecting on funding equity
☐	**Can migrant and informal communities access your funding without formal legal status?** ▸ *Channel funds through community networks that do not require legal documentation.*
☐	**Does funding simultaneously support livelihoods (especially in Global South contexts)?** ▸ *Link NbS funding to food sovereignty, urban farming, or paid maintenance roles.*



Pathway 6:

Make Nature Work as a Livelihood

Foster nature-based enterprises

Stage: Sustaining

For NbS to outlast any single project or funding cycle, caring for nature needs to become economically viable — not just morally compelling. This pathway is about building the conditions where communities can make a living from nature, not just volunteer for it. When ecological restoration becomes a source of income and livelihood, stewardship stops being a burden and becomes a stake.

What is happening now

For NbS to endure, ecological health must be linked to economic viability. In many contexts—especially in the Global South—nature-based action is inseparable from economic survival and daily livelihoods. Because NbS primarily generate public goods, they often lack immediate and direct financial returns for private investors. To sustain community participation and overcome the "maintenance burden," it is crucial to foster nature-based enterprises (NBEs) and develop business models that merge ecological restoration with local economic development.

> *"You can outsource some of the maintenance to nature-based enterprises, or work with community groups and look at the governance structures. It's all about doing that internal silo-busting as well."*
>
> *— Interviewee 8, CEO of Not-for-Profit, Ireland/Europe*

> *"Environmentalism, without dealing with the social justice and economic question, is just gardening. If you're protecting nature, you must ask, why is it that people can own acres upon acres of land while other people are living in shanties?"*
>
> *— Interviewee 15, Legal Advocate, Kenya*

Why this matters

Without economic models that sustain NbS, green spaces become liabilities rather than assets. Communities cannot be expected to maintain NbS through volunteerism alone. Linking ecological restoration with dignified livelihoods creates a virtuous cycle where economic and environmental health reinforce each other.

What needs to change

- Treat NbS as an innovation ecosystem by establishing Sustainable Local Enterprise Networks (SLENs).
- Reform public procurement to value environmental criteria over the lowest cost.
- Shift from punitive measures to financial incentives for stewardship.
- Support the professionalisation of volunteer efforts through incubators and accelerators.
- Design NbS projects that simultaneously generate nature-positive livelihoods.

Recommendations for action

For policymakers and authorities:

- Develop policy frameworks that support NBEs through tax incentives, green procurement reform, and startup support.
- Bundle design, construction, and maintenance into single procurement tenders.
- Provide subsidies, tax reductions, or direct payments for ecosystem services.

For municipalities:

- Establish local enterprise ecosystems connecting businesses, communities, and municipal services.
- Create green job training programmes linked to NbS maintenance and stewardship.
- Provide institutional support for community-based enterprises to access markets and investment.

For CSOs and intermediaries:

- Act as incubators for NBEs: provide capacity-building, business coaching, and access to networks.
- Develop models linking ecological restoration with economic opportunity: eco-tourism, agroecology, bio-based goods.
- Connect supply and demand: help NBEs build business cases that speak the language of finance.

Inclusion lens

- In the Global South, recognise that “working with nature” is often an ancestral survival practice, not imported technology.
- Ensure NbS provide dignified income opportunities (urban farming, paid maintenance roles) so participation is not a privilege.
- Capitalise on green jobs to empower youth through skills training and accelerator programmes.

Tools and examples

Tools	Examples	Project Name, Grant Agreement ID

Connecting Nature Enterprise Platform	Online forum for NBEs to showcase practices and connect with municipalities.	ConnectingNature, 730222
Sustainable Local Enterprise Networks (SLENs)	Integrating businesses, NGOs, and governments around shared natural assets.	Various / General
Performance-based PPP models	Government compensating private enterprises based on assessed outcomes (e.g., Ningbo lake restoration).	Various / General
Pla Buits scheme	Municipalities providing free access to unused public land for community-led greening (Barcelona).	Various / General
“Sponsor a tree-pit”	Local sponsorship models for urban greening (Valladolid).	URBAN GreenUP, 730426
Roadmap Research Database	Open-source database consolidates all interviews, survey results, and desk research from the Roadmap for Citizen Action on NbS, allowing different people to consult, ask questions, and build upon the research into enterprise models, business canvases, and livelihood-generating NbS projects.	NetworkNature, 887396



ACTION CHECK- LIST

Pathway 6: Make Nature Work as a Livelihood

1	When developing nature-based enterprise ecosystems
☐	**Have you mapped local nature-based enterprises (NBEs) in your area?** ▸ *Use chambers of commerce, incubators, universities to identify who works with nature.* ▸ *Include landscape architects, water managers, agroecologists, eco-tourism operators.*
☐	**Have you reformed procurement rules to level the playing field for green suppliers?** ▸ *Traditional procurement favours lowest-cost "grey" solutions over NBEs.* ▸ *Add environmental and social criteria to tender evaluation, not just cost.*
☐	**Are you providing financial incentives for stewardship (subsidies, tax reductions)?** ▸ *Shift from punitive measures to "carrots": direct payments for ecosystem services.* ▸ *Treat green space maintenance as a public good worth investing in.*

2.	When supporting community-led enterprises
☐	**Are you compensating participants for their time and costs?** ▸ *Budget for stipends, transport, food, and childcare at every co-creation event.* ▸ *Participation without compensation is a privilege only the wealthy can afford.*
☐	**Are you providing access to public land for community greening?** ▸ *Free, long-term legal access to "unused" land is a massive financial enabler.* ▸ *Barcelona's Pla Buits scheme is a strong model.*
☐	**Have you explored alternative funding streams beyond public budgets?** ▸ *Consider crowdfunding, philanthropic donations, local sponsorships, and corporate partnerships.* ▸ *Help communities build business cases for finance departments.*

3.	When reflecting on enterprise equity
☐	**Are green jobs accessible to youth, low-income communities, and marginalised groups?** ▸ *Create green job training and accelerator programmes targeting underserved communities.*
☐	**Does your enterprise model recognise ancestral and indigenous knowledge?** ▸ *In many contexts, "working with nature" is an ancestral survival practice, not imported technology.* ▸ *Honour and compensate traditional knowledge rather than extracting it.*



HOW TO USE THIS ROADMAP

This roadmap is built on the premise that citizen action for nature already exists — the task is to build systems that recognise, support, and sustain it. The framework below combines four stages of NbS uptake, six strategic pathways, and a recurring action cycle. Together, they provide a flexible structure for any actor — policymaker, municipality, CSO, or practitioner — to navigate from understanding to sustained impact.

Below are five key ways the roadmap can be used:

1. ***Guide programme and project design:*** *It provides practical pathways and action-oriented tools (e.g., checkoff sheets) to help CSOs, intermediaries, and practitioners design and implement initiatives that support citizen-led NbS.*
2. ***Inform policy and governance reform:*** *Policymakers and public authorities can use it to identify concrete actions, enabling conditions, and institutional changes needed to better integrate NbS into planning and decision-making systems.*
3. ***Support community engagement and mobilisation:*** *It helps actors recognise, frame, and strengthen existing grassroots action for nature, making it more visible, legitimate, and connected to broader NbS frameworks.*
4. ***Assess and advance NbS uptake:*** *The four-stage framework (understanding → recognising → integrating → sustained use) allows users to diagnose where they are and identify next steps toward mainstreaming.*
5. ***Provide an evidence base for research and learning:*** *Researchers and institutions can draw on the underlying mixed-methods evidence (desk review, survey, interviews) to support further analysis, replication, and knowledge development.*

The Framework at a Glance: the living infographic below visualises the roadmap's three interconnected components: the four stages of NbS uptake, the six strategic pathways, and the recurring action cycle (Prepare → Engage → Reflect). It is not a linear process—it is an adaptable guide. You can identify where you currently stand and jump directly into the pathways and tools that best fit your context and needs.

THREE COMPONENTS, ONE FRAMEWORK

1 Four Stages of NbS Uptake

Where are you in the journey?

STAGE 1	STAGE 2	STAGE 3	STAGE 4
Understanding	**Recognising**	**Integrating**	**Sustained Use**
Communities already act for nature — but their practices aren't framed as NbS	Grassroots action gains legitimacy, language, and visibility	NbS are embedded into planning, policy, and governance systems	Long-term funding, stewardship, and ownership ensure NbS endure

2 Six Strategic Pathways

What needs to change?

PATHWAY 1
Speak the Language of Communities
Craft place-based narratives that celebrate local pride, values, and practices
UNDERSTANDING + RECOGNISING

PATHWAY 2
Learn Together, Build Together
Define collective learning goals to build skills, cohesion, and local development
RECOGNISING, CROSS-CUTTING

PATHWAY 3
Meet People Where They Are
Deploy alternative and creative methodologies for inclusive participation
INTEGRATING, CROSS-CUTTING

PATHWAY 4
Share Power, Share Responsibility
Shift toward the "Commons" and co-governance models
INTEGRATING SUSTAINING

PATHWAY 5
Fund the Care, Not Just the Construction
Advocate for decentralised, long-term, and accessible funding
SUSTAINING

PATHWAY 6
Make Nature Work as a Livelihood
Foster nature-based enterprises that link ecology to economy
SUSTAINING

3 The Action Cycle

How to work within each pathway

Prepare	Engage	Reflect
Assess your context. Map existing action. Plan inclusive, accessible processes before you begin.	Act with communities — not for them. Use the pathway's tools, methods, and "who does what" guidance.	Evaluate what worked, who was missed, and what must shift. Feed learning back into the next cycle.

Stages set your position
Locate where your context stands in the uptake journey — this helps prioritise which pathways to activate first.

Pathways drive your action
Each pathway works across stages. Pick the ones that match your barriers. Pathways 2 & 3 are cross-cutting — they apply everywhere.

The cycle structures your work
Every pathway's cheat sheet follows Prepare → Engage → Reflect. Use this rhythm to plan, act, and learn iteratively.

Start anywhere. Combine freely. This roadmap is not linear — it is a flexible framework designed to meet communities where they are. Use individual pathways, specific cheat sheets, or the full framework depending on your needs, role, and entry point.

Figure 2: *An interactive version of the roadmap framework visualising the four stages of NbS uptake, six strategic pathways, and the action cycle. Designed as a flexible, non-linear navigation tool: https://claude.ai/public/artifacts/f939f9c0-ab5b-4222-a0bd-0d818eeca266*

Conclusion

Citizen action for nature already exists. Across continents, communities are protecting ecosystems, restoring landscapes, growing food, and caring for green spaces—often without institutional support, formal recognition, or access to funding. The challenge is not to create engagement where none exists, but to build the systems, structures, and conditions that allow this action to thrive.

This roadmap demonstrates that the primary barriers to scaling citizen-led NbS are not motivational but structural: fragmented governance, inaccessible funding, technocratic language, and the persistent exclusion of the most vulnerable communities from decision-making processes.

The six pathways presented here offer a practical framework for response—grounded in evidence from 16 EU-funded projects, 445 survey respondents, and 20 expert interviews. Each pathway identifies what is happening, what needs to change, who is responsible, and how inclusion can be embedded at every stage.

> *"If you bring a houseplant home… Do you set it on your desk and never water it again? Of course not. We have to think about that same sort of attention to care as not a burden… that we're always going to have to maintain."*
>
> *— Interviewee 20, Research Social Scientist, USA*

> *"Community work exists because people are driven to solve a need in their environment and their daily life. If we had institutional support, there would be more motivation to continue because they wouldn't feel alone."*
>
> *— Interviewee 16, Urban Planner, Colombia*

▸ *The complete evidence base supporting these conclusions is presented in Annexes A–E; the full repository of practitioner voices is in Annex E.*

This roadmap is an invitation to act: for policymakers to reform, for municipalities to open their processes, for CSOs to bridge, and for all actors to recognise that the future of Nature-based Solutions depends on the people already doing the work.





Annexes

The following annexes contain the full analytical, methodological, and evidentiary detail supporting the roadmap. They preserve the rigour and transparency of the original research while being organised for easy reference.

Annex A — Conceptual Framework

The four-stage theoretical framework for NbS uptake (Understanding, Recognising, Integrating, Sustained Use), grounded in the literature.

Annex B — Methodology

Data collection design, synthesis process, adapted PRISMA approach, AI-assisted analysis, and the open-source database. Closes with a cross-reference table to the roadmap (B.7).

Annex C — Results and Reflections

Full evidence base from the desk review, the global survey of 445 respondents, the 20 expert interviews, and the integrated synthesis.

Annex D — Research Instruments

The verbatim instruments used to collect the evidence: desk review database, survey questionnaire, media pack, anonymised interviewee list, topic guide, and an example transcript.

Annex E — Full Interview Quote Repository

120 verbatim interview quotes organised across six analytical pillars, providing the full source material behind the quotes embedded in the roadmap.

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Annex A – Conceptual Framework

This annex presents the full conceptual framework underpinning the roadmap, including the detailed theorisation of the four stages of NbS uptake and their grounding in the literature.

The rapid intensification of climate-related threats, coupled with accelerating biodiversity loss and urban degradation, has positioned NbS as a pivotal instrument for transformative change. Defined by the United Nations and the International Union for Conservation of Nature (IUCN) as actions that protect, sustainably manage, and restore ecosystems to address societal challenges effectively and adaptively, NbS offer a multifunctional alternative to traditional grey infrastructure.

Despite the growing body of evidence supporting their effectiveness, the transition from experimental pilots to mainstream implementation remains fragmented and inconsistent. This section develops a conceptual framework for citizen action, defining the uptake and mainstreaming of nature-based solutions through four critical stages: Understanding, Recognising, Integrating, and Sustained Use. By synthesising findings from publications across the NbS project portfolio and diverse case studies, this analysis provides a strategic framework for scaling NbS through collaborative governance and inclusive action.

The imperative for mainstreaming NbS stems from their unique ability to deliver simultaneous co-benefits across social, environmental, and economic domains. Unlike single-objective engineered solutions, NbS such as urban wetlands, green roofs, and restored floodplains address complex, interrelated crises, including stormwater management, heat island effects, and public health. However, as highlighted by the NATURVATION project, the emergence of these innovations occurs within complex institutional structures that often default to path-dependent grey infrastructure.

Mainstreaming, therefore, is the process of embedding NbS into the core logic of land use planning, sectoral policies, and community practices. This requires overcoming "sectoral silos," where different agencies operate with conflicting mandates, and "projectification," where interventions are limited to short-term, externally funded experiments. The proposed roadmap facilitates this transition by providing a structured pathway for citizen engagement and institutional reform.

Stage 1: Understanding — Familiarity, Prior Knowledge, and Cognitive Foundations

The first stage of the roadmap involves the cultivation of a deep, shared understanding of what NbS represent and how they function. Because NbS projects address complex environmental and social challenges, stakeholders often arrive with vastly different levels of familiarity and expertise. This stage goes beyond simple awareness, focusing on the cognitive and cultural foundations necessary for uptake. It requires bridging the "know-do" gap by aligning scientific definitions with local, traditional, and indigenous knowledge. Citizens possess vital "local spatial knowledge", such as historical context, cultural values, and everyday observations of their environment, that external experts often lack. Treating residents as essential knowledge-holders from day one ensures the final design is tailored to actual community needs.

A critical component of "Understanding" is the recognition of plural knowledge systems. Mainstreaming is hindered when NbS are framed solely through Global North scientific lenses, ignoring the "pluriversal epistemology" of the Global South[17][18]. In Nairobi, for instance, residents in informal settlements often practice grassroots urban greening—such as sack gardening and riparian stabilisation—without using the formal terminology of NbS. In the informal settlements of Kibera (Nairobi) and Villa 20 (Buenos Aires), residents initially viewed NbS as "superficial greening." Recognition grew only when interventions were co-designed to address basic service provision, such as waste management and flood control[19]. A successful roadmap must leverage these pre-existing practices, recognising them as valid forms of innovation grounded in traditional and practical knowledge.

Box 1. How are NbS understood by diverse groups?

- What do stakeholders already know about these challenges?
- What values, interests, and everyday practices shape their relationship with this place?
- How familiar are they with the approaches being considered?
- What words or narratives do they use to describe working with nature in their own context?
- Who may face barriers to engaging, such as limited resources, knowledge, or access?

[17] "Most reviews highlight a strong geographical bias in knowledge production, as well uneven distribution of evidence of efficacy and social–ecological performance of NbS, which hampers implementation and wider adoption." McPhearson et al. (2025) Global synthesis and regional insights for mainstreaming urban nature-based solutions, *Proc. Natl. Acad. Sci. U.S.A.* 122 (29) e2315910121, https://doi.org/10.1073/pnas.2315910121 (2025).

[18] Caroline Kibii, Flávia Guerra, Philip Bonera Bananayo, Simone Sandholz, Nature-based solutions for climate change adaptation and resilience in urban informal settlements: Insights from Kibera, Kenya and Villa 20, Argentina, Nature-Based Solutions, Volume 7, 2025, 100216, ISSN 2772-4115, https://doi.org/10.1016/j.nbsj.2025.100216.

[19] Nature-based solutions for climate change adaptation and resilience in urban informal settlements: Insights from Kenya and Argentina - weADAPT. Retrieved on March 13, 2026, https://weadapt.org/knowledge-base/cities-and-climate-change/nature-based-solutions-for-climate-change-adaptation-and-resilience-in-urban-informal-settlements-insights-from-kenya-and-argentina/

Stage 2: Recognising — Legitimacy, Standards, and Effectiveness Metrics

This phase focuses on establishing NbS as a viable, evidence-based alternative to conventional infrastructure. General awareness of NbS effectiveness is frequently low. Stakeholders often express scepticism when comparing NBS to familiar "grey" infrastructure like concrete flood walls. This doubt is largely driven by complex terminology, a lack of visible immediate results, and the natural "time-lag" required for plants and ecosystems to mature before providing full protective benefits.

For example, NbS success is often framed in terms of disaster risk reduction and cost-effectiveness compared to grey solutions in Global North contexts[20]. The OPERANDUM *Public acceptance of nature-based solutions for natural hazard risk reduction: Survey findings from three study sites in Europe* found "A high public demand for evidence of NbS effectiveness for risk reduction. While most respondents believe risk can be reduced and NbS will have reasonable success, a range of attitudes, from cautious optimism to outright scepticism, was expressed. Recognition is contingent upon the development of robust metrics and the application of global standards.

A key challenge in the recognition phase is the quantification of NbS co-benefits. While conventional infrastructure is typically assessed using narrow, single-purpose metrics, NbS require a more integrated approach to evaluation. This involves measuring effectiveness across multiple Key Performance Indicators (KPIs), including climate resilience, social equity, and economic benefits.

Practical examples illustrate this need. In Wrocław (Poland), the city monitored both ecological and social outcomes in newly greened courtyards and streets, tracking indicators such as the number of plants introduced (over 26,000 shrubs and herbaceous species) and changes in public space use. The share of adults using these spaces increased from 43% to 83%, and 63% of residents reported increased trust in local authorities' ability to collaborate on housing improvements.

At a broader level, evidence from the NATURVATION project, based on 54 case studies, shows that when NbS are recognised for their multifunctionality, they are more likely to attract diverse funding streams and sustained institutional support.

Box 2. How can communities recognise NbS?

- How are these discussions grounded in the everyday realities people face (e.g., heat, flooding, food security, mental well-being)?
- What evidence can demonstrate NbS benefits in practice? For example: Climate adaptation (e.g. reduced heat, better water management); Socio-economic outcomes (e.g. jobs, income opportunities, local development); Public health (e.g. improved well-being, reduced illness); Biodiversity (e.g. increased species and habitat quality)

[20] https://unece.org/sites/default/files/2025-11/NbS%202515391E_WEB.pdf

- What role do local narratives, trust, and shared experiences play in building acceptance and support?
- What are the existing policies, practices, and business models, including NbS?

Evidence underpinning the legitimacy of Nature-Based Solutions (NbS) extends beyond quantitative data to include *normative evidence*, such as stakeholder narratives, cultural alignment, community ownership generated through co-creation, and the integration of NbS into existing business models and governance structures.

The PHUSICOS deliverable *Opportunities and barriers to NbS at EU, national, regional, and local scales* highlights that, in the absence of robust quantitative data, qualitative evidence on NbS co-benefits plays a critical role in supporting uptake. Furthermore, the use of standardised frameworks, such as the IUCN Global Standard for NbS, provides a structured approach for validation, thereby strengthening both institutional credibility and public trust.

Stage 3: Integrating — Planning, Design, and Regulation

The third stage, "Integrating," is where conceptual recognition translates into formal adoption within the machinery of urban and regional governance. This involves the systematic inclusion of NbS into spatial planning, sectoral policies, and regulatory frameworks.

Based on our desk review, one of the primary barriers to integration is the prevalence of "sectoral silos," where different government departments fail to coordinate on NbS design and implementation. Integration requires a transition toward "polycentric governance," where decision-making authority is dispersed across multiple organisations, including those responsible for water quality, urban planning, waste management, and recreation.

In the Global North, polycentric governance arrangements have emerged, dispersing decision authority across organisations. Such is the case of the Isar-Plan project dedicated to NBS design and implementation in the Isar River, which falls into several overlapping jurisdictions and their legal mandates—mainly at the State (Bavaria) and City (Munich) scales[21].

The US Biden-Harris Administration's "Nature-based Solutions Roadmap" (2022) provides a model for this stage, outlining five strategic areas for integration: updating policies, unlocking funding, leading with federal facilities, training the workforce, and prioritising research and innovation. This systemic approach ensures that NbS are not treated as peripheral "add-ons" but as a core component of the national infrastructure strategy.

Integration must also address "socio-spatial factors" to ensure that NbS implementation does not reinforce existing inequalities. In Cape Town, South Africa, a spatial decision-support framework was developed to match the demand for ecosystem services with social vulnerability,

[21] PHUSICOS - IIASA PURE, March 13, 2026, https://pure.iiasa.ac.at/id/eprint/17250/1/D5_1_NBS-in-depth-case-study-analysis_Final.pdf

prioritising NbS in areas that are historically green-deprived and economically marginalised[22]. This "justice-oriented" integration is essential for maintaining the social legitimacy of NbS and ensuring equitable distribution of their benefits.

According to the *Realising urban Nature-based Solutions* (ruNbS) project, pilot projects in Nairobi and Dar es Salaam proved schools to be strategic testing grounds for integration, providing clear boundaries and opportunities for environmental learning in dense urban contexts[23]. Evidence of community-led knowledge transfer was visible, such as at Mapinduzi Primary School, where teachers use the NbS infrastructure as an environmental education resource on water recycling[24].

Box 3. How can NbS be integrated into practice?

- Co-design: Craft tailored approaches that align with stakeholder needs and contexts.
- Policy updates: Revise regulations (e.g., building codes) to include green roofs or permeable surfaces
- Sectoral integration: Embed NbS targets in key plans, such as water management and disaster risk strategies
- Innovative finance: Use tools like resilience bonds or green investment mechanisms
- Legal safeguards: Ensure social equity through mandatory impact assessments.

Stage 4: Sustained Use — Knowledge, Funding, and Local Engagement

The final stage, "Sustained Use," focuses on the long-term viability and adaptive management of NbS. Sustainability in this context is defined as the ability of an intervention to continue delivering its intended benefits over time, even after external support has terminated.

Sustaining NbS requires continuous capacity building to equip stakeholders with the necessary skills for long-term stewardship[25]. This involves providing ongoing training, deploying citizen science tools, and utilising "knowledge brokers" (such as local NGOs) to bridge technical gaps so communities and local contractors can adaptively manage the ecosystems over time[26].

A primary reason NbS fail over time is the reliance on short-term capital grants that neglect ongoing operational and maintenance costs (the "maintenance burden)[27],[28]. Securing sustainable financial support requires transitioning to blended financing models. This includes establishing dedicated maintenance endowments, forming public-private partnerships, or

[22] Supporting justice in cities with nature-based solutions: a spatial decision-making framework applied to Cape Town - Taylor & Francis, last accessed: March 13, 2026, https://www.tandfonline.com/doi/full/10.1080/07900627.2025.2606344
[23] Realising urban nature-based solutions in Nairobi and Dar es Salaam, last accessed: March 13, 2026, https://african-cities-database.org/urc-record-index/ruNBS/
[24]Diep, L., Parikh, P., dos S Duarte, B. P., Bourget, A. F., Dodman, D., & Martins, J. R. S. (2022). “It won’t work here”: Lessons for just nature-based stream restoration in the context of urban informality. *Environmental Science & Policy*, 136, 542–554.
[25] NATURE4CITIES, Citizen engagement tools
[26] INTERLACE D5.4 Report Engagement Program
[27] NATURANCE Enablers
[28] URBANGREENUP D7.10 Lessons

implementing user fees (like water utility tariffs) to guarantee a steady revenue stream for continuous care[29].

The long-term survival of an NBS relies heavily on cultivating a profound sense of local ownership and community stewardship[30]. This is fostered by institutionalising co-governance, where citizens actively participate in the physical maintenance and ongoing decision-making processes[31]. Maintaining transparent feedback loops and aligning the NBS with local cultural identities ensures the community remains actively invested long after the project's initial launch[32],[33].

Box 4. Key Enablers for NbS to stay over time

- Knowledge: Provide ongoing training and resources to stakeholders
- Funding: Secure financial support to sustain initiatives
- Local Engagement: Foster community involvement to strengthen ownership and long-term impact.

[29] NATURANCE Enablers
[30] NATURE4CITIES, Citizen engagement tools
[31] URBiNAT methods for citizen engagement
[32] TRANS_lighthouses_2025_Local Democracy Labs
[33] Deliverable 4.1 Governance archetypes framework for NBS Deliverable

Annex B – Methodology

This annex describes the full data collection and synthesis methodology, including the desk review process, survey design, interview approach, AI-assisted analysis, adapted PRISMA framework, and the open-source database.

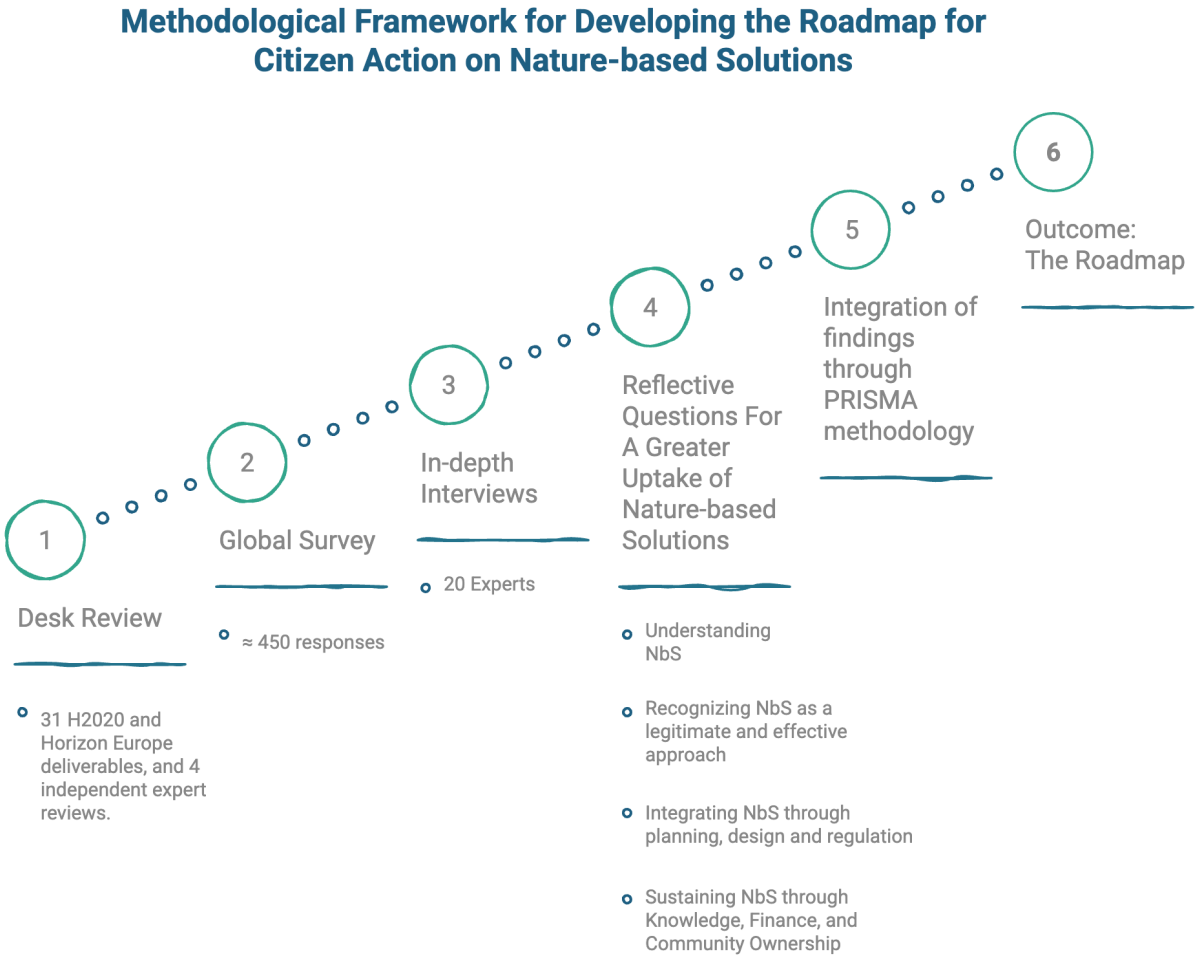

Figure B.0. *Roadmap conceptualisation and methodology*

B.1 Desk Review

Lessons were extracted from 31 deliverables and research papers from 16 EU-funded NbS research and innovation projects focusing on participation and NBS, relevant NbS expert and state-of-the-art synthesis reports[34]. We first queried the CORDIS database (https://cordis.europa.eu/) using the search function under *Thematic Packs*. Within the collections, "Result Pack" was selected, while the domains of application included "Climate Change and Environment" and "Society". The programmes selected were "Horizon Europe" and "H2020". We then applied the following search terms: "citizen engagement", "citizen participation", "co-governance models", and "participation models". Outputs from each iteration were exported and cross-referenced to determine the frequency of project occurrences across the various datasets.

Projects appearing in multiple iterations (frequency of three or two) were prioritised for qualitative analysis. Projects were evaluated based on the maturity and "actionability" of their outputs. Preference was given to initiatives providing **practical toolkits, evidence-based recommendations, and validated lessons learned** over those focused solely on event reporting or dissemination activities. To ensure the transferability of findings, projects with a highly specialised technical focus—such as those exclusively targeting *Energy Communities*—were excluded from this primary analysis. These specialised cases remain identified as potential resources for secondary, niche-specific research.

In addition, the NetworkNature Research and Innovation Database (RIDB) was consulted (https://knowledge.networknature.eu/ridb). A search was conducted using the term "nature-based solutions" in the Text Search field, "Participatory Planning and Governance" under the Societal Challenge category, and both "Horizon Europe" and "H2020" under the Five projects were found for Horizon Europe and two for H2020.

Finally, the catalogue of *EU-funded NbS research projects: Tackle the climate and biodiversity crises*[35] (2024) was consulted. This catalogue consolidates 88 projects[36] and groups them under themes such as inclusive urban regeneration, inclusion and co-governance, among others.

To ensure the additionality of this study and avoid analytical redundancy, projects already covered by previous Independent Expert Reviews—such as *CLEVER Cities*, Connecting Nature, *UNALab*, and *GREEN SURGE*—were excluded from this specific selection phase.

Following this multi-stage screening, we finalised a core sample for analysis consisting of four reports, 16 projects, and 31 deliverables (**see Table in Annex D.1)** for the comprehensive list.

[34] The DG reviews were identified through targeted consultations with Task lead organizations—such as IUCN, ICLEI Europe, as well as the NBS Hubs— leveraging their dual expertise as NbS expert organizations and NetworkNature members.
[35] European Commission: European Research Executive Agency, *Nature-based solutions – EU-funded NbS research projects tackle the climate and biodiversity crises*, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2848/2744053
[36] *https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/eu-funded-nbs-research-projects-tackle-climate-and-biodiversity-crisis_en*

	Author or Project	Type	GA	Report Name or Citation	Year	CORDIS[37]	NNRIDB[38]	Catalogue	Task Lead
Relevant EC Expert Reports									
1	DG Research and Innovation	Report	n/a	Co-creating nature-based solutions with commonly excluded stakeholders – Insights from practice and research, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2777/4288584	2025				●
2	Joint Research Centre	Independent Expert Report	n/a	BiodiverCities Atlas – A participatory guide to building biodiverse urban futures, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2760/18849	2023				●
3	DG Research and Innovation	Independent Expert Report	n/a	Guidelines for co-creation and co-governance of nature-based solutions: Insights from EU-funded projects (I. Ferreira, G. Lupp, & I. Mahmoud, Eds.). Publications Office of the European Union. https://doi.org/10.2777/157060	2023				●
4	DG Research and Innovation	Independent Expert Report	n/a	Nature-based Solutions: State of the Art in EU-funded Projects. Publications Office of the European Union. ISBN 978-92-76-17334-2.	2020				●
Past EU NbS Projects									
1	TRANS-Lighthouses	Horizon Europe D.	101084628	Local Democracy Labs. Public engagement strategies for NBS. (D3.6)	2025		●	●	
2	COEVOLVERS	Horizon Europe D.	101084220	Searching for the Common Ground - Exploring the LL sites together using participatory and art-based creative methods (D3.1)	2024		●	●	
3	EUARENAS	Horizon Europe D.	959420	Citizen Participation Toolkit (D6.10)	2024	●			
4	NATURANCE	H2020 Deliverable	101060464	Governance/policy enablers/barriers for scaling NbS (D3.1)	2024	●		●	
5	INTERLACE	H2020 Deliverable	869324	From ideas to action. INTERLACE impulses for successfully implementing NbS in cities. D2.4 INTERLACE City Impulse Papers.	2024			●	●
6	INTERLACE	H2020 Deliverable	869324	Report on implemented engagement programmes (D5.4)	2024			●	●
7	URBiNAT	H2020 Deliverable	776783	Second Assessment Report on Progress, Results, and Insights for the Combination of Methods, Citizen Engagement, and Usage of Digital Tools (D3.8)	2024			●	
8	URBiNAT	H2020 Deliverable	776783	Community-Driven Processes to Co-Design and Co-Implement Nbs (D3.2)	2019			●	

[37] The European Commission's primary public database for EU-funded research and innovation projects. (Note: It is spelled CORDIS, though your table header says CODIS).
[38] NetworkNature Research and Innovation Database.

9	JUSTNature	Journal article	101003757	Towards more equitable urban greening: A framework for monitoring and evaluating co-governance. Urban Planning, 9, Article 8184. https://doi.org/10.17645/up.8184	2024			•	
10	JUSTNature	H2020 Deliverable	101003757	State-of-the-art report on good practice for Co-governance of NbS (D7.1)	2022/23			•	
11	JUSTNature	Research Paper	101003757	Strategies and tools for collaborative planning of nature-based solutions. In Proceedings of the 58th ISOCARP Congress: From Wealthy to Healthy Cities. https://doi.org/10.47472/BfDVVsX5	2022			•	
12	proGIreg	H2020 Deliverable	776528	Living Labs impact at the district level (D4.8)	2023			•	
13	proGIreg	H2020 Deliverable	776528	Living Labs impact at the NBS level (D4.9)	2023			•	
14	proGIreg	H2020 Deliverable	776528	Implemented Living Lab in Zagreb, Croatia	2023			•	
15	proGIreg	H2020 Deliverable	776528	Living Lab Turin-Mirafiori Sud, Italy: Green corridor and local natural heritage enhancement.	2023			•	
16	URBAN GreenUP	H2020 Deliverable	730426	Report on Lessons Learned for the Large-Scale Deployment of NbS and Guidelines on How to Overcome Them - URBAN Green-UP mini-handbook (D7.10)	2023	•		•	
17	ACTION	H2020 Deliverable	824603	Policy brief on citizen science mainstreaming (D6.5)	2022	•			
18	Phusicos	H2020 Deliverable	776681	Opportunities and barriers to NBS at the EU, national, regional, and local scales, with suggested reforms and innovations (D5.2)	2023			•	
19	Phusicos	H2020 Deliverable	776681	Lessons learned with the Living Labs Experience (D3.5)	2021			•	
20	Phusicos	H2020 Deliverable	776681	NBS in-depth case study analysis of the characteristics of a successful governance model (D5.1)	2019			•	
21	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages, and lessons learned from the demonstration pilot in Manchester (D1.4)	2022	•		•	
22	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages, and lessons learned from the demonstration pilot in Valencia (D1.5)	2022	•		•	
23	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages, and lessons learned from the demonstration pilot in Wroclaw (D1.6)	2022	•		•	
24	OPERANDUM	Journal article	776848	Public acceptance of nature-based solutions for natural hazard risk reduction: Survey findings from three study sites in Europe. Sustainability, 14(8), 4614. https://doi.org/10.3390/su14084614	2022			•	
25	OPERANDUM	Journal article	776848	A review of public acceptance of nature-based solutions: The 'why', 'when', and 'how' of success for disaster risk reduction measures. Ambio, 50(8),	2021			•	

				1552–1573. https://doi.org/10.1007/s13280-021-01502-4					
26	OPERANDUM	H2020 Deliverable	776848	Mapping, characterisation, and critical evaluation of existing NBS (D1.1)	2019			•	
27	OPERANDUM	Other	776848	Project Infographic	n/a			•	
28	NATURE4CITIES	H2020 Deliverable	730468	Report on Agent-Based Analysis: Approaches identifying citizen agents and their behaviours for Nature-based Solutions (D3.2).	2020	•	•	•	
29	NATURE4CITIES	H2020 Deliverable	730468	Citizen and Stakeholder Engagement strategies and tools for NBS Implementation (D5.2).	2018	•	•	•	
30	NATURE4CITIES	H2020 Deliverable	730468	NBS Implementation Models Typology (D1.2).	2017	•	•	•	
31	NATURVATION	Report	730243	Taking Action for Urban Nature: Citizen Engagement Handbook, NATURVATION Guide	2019	•	•	•	•

B.2 Global Survey

From November 2025 to mid-March 2026, the Global Survey on Citizen Action for Nature was conducted, gathering 445 completed responses.

The survey targeted citizens and representatives from civil society organisations across diverse sectors; it included 20 questions exploring awareness, everyday experiences, barriers, and support needs at the individual and grassroots levels. To maximise the global reach and inclusivity of the survey, it was hosted on the Typeform platform, which utilised AI-supported translation capabilities. For responses submitted in languages spoken fluently by the internal consortium team—specifically English, Catalan, Spanish, and German—researchers manually translated and verified the texts.

Questionnaire design

The questionnaire was structured to feed directly into our analytical dimensions. The questions were clustered to explore:

Understanding and Recognition: Questions designed to explore how nature-based interventions are understood, experienced, and valued by different actors on the ground.

Sustained Use and Stewardship: Questions identifying specific systemic and contextual barriers (e.g., funding deficits, governance hurdles, inclusion gaps, and organisational capacity).

Support Needs: Questions targeting the exact structural and financial tools civil society requires to effectively engage with nature. This directly helps prioritise the enabling conditions the roadmap must address.

The survey used adaptive branching logic, allowing respondents to answer only the questions most relevant to their experience, level of engagement, and interest. It was visually appealing, utilising custom illustrations that evoke a connection to nature to set a welcoming tone.

In accordance with The Nature of Cities (TNOC) data protection policies and GDPR compliance, a mandatory consent statement was included at the beginning of the questionnaire.

Pretesting and Pilot Phase

Based on feedback and challenges identified during the pre-testing phase, several key adjustments were made to improve the final survey:

Shorter survey and improved flow: The questionnaire was streamlined and the branching logic refined, resulting in a reduced completion time of approximately 4–12 minutes.

Integration of interview insights: For example, options were reframed to ensure consistency (e.g., replacing uneven categories such as “Too much heat” and “Energy cost” with harmonised formulations like “Too much heat/lack of shade” and “High energy costs”).

Incorporate the NbS typology and simplify it: For instance, “ecological restoration” was reframed as “bringing nature back”, with examples such as planting trees, creating pollinator gardens, restoring wetlands, or rewetting peatlands.

Accessible language: Technical or specialist terms (e.g., “surveying” or “planted verges”) were replaced.

Contextualised examples: Additional examples were provided where meanings may vary across contexts. For example, “traditional ways of coming together” was illustrated through practices such as Indigenous *mingas* in Latin America, *bayanihan* in the Philippines, or celebrations linked to the Celtic calendar.

Launch campaign

The survey utilised a "snowball" sampling approach through wide-reaching international networks. A dedicated **Social Media Pack** was developed and distributed to NetworkNature partners (mentioned in the *Acknowledgement* section of this document), enabling cohesive and amplified messaging across the consortium. The Media Pack is available in Annex D.3.

Challenges

Dropout rate: Of 2,362 survey views, 905 people started the survey, but only 445 completed it (49% completion rate). A likely reason is that the actual completion time (17:52) was much longer than the estimated 4–12 minutes. To address declining response rates, research suggests using incentives, shorter surveys, and better timing.

Regional representation: Africa, Asia & the Middle East, and Oceania were underrepresented in the sample with a participation rate of 6%, 10%, and 2%, respectively.

Sampling and representativeness: The survey used non-probability, self-selected sampling. Respondents opted in after encountering the invitation through NetworkNature partner networks, TNOC's communities and social media, which means the respondent pool consists of people who already have an interest in nature, NbS or civil-society action. People without that interest are largely absent from it, and no sampling frame or quota was used to correct for this.

The sample should therefore not be considered representative of European citizens, nor of any other national or regional population. The percentages reported in Annex C.2 describe the distribution of views within this self-selected group and are not population-level estimates; no weighting or post-stratification was applied. The regional shares likewise reflect the reach of the dissemination networks used rather than the global distribution of citizen action on NbS. For these reasons the survey is used in this roadmap as indicative and exploratory evidence, triangulated with the desk review and the 20 expert interviews, and no conclusion in the roadmap rests on the survey alone.

B.3 Semi-Structured Interviews from Global Experts

Between October 9, 2025, and March 18th, 2026, 20 semi-structured interviews were conducted by The Nature of Cities with experts covering the following regions: Europe (10), Africa (2), Asia (1), Latin America (3), and North America (2). The sample comprised 12 women and 8 men.

The list of experts was compiled by TNOC, drawing on its professional networks and communities, including representatives from NbS Hubs and NbS-focused Horizon 2020 and Horizon Europe projects such as *INTERLACE*, among others. See Annex D.4 for the anonymised list of interviewees.

Box. Criteria for expert selection



- Demonstrated experience in designing, implementing, or supporting nature-based or sustainability-related initiatives, particularly with a community or citizen engagement component.
- Active involvement in civil society organisations, grassroots initiatives, or intermediary organisations connecting communities with policy and practice
- Representation of diverse geographic, socio-cultural, and governance contexts, ensuring inclusion of perspectives beyond Europe
- Expertise spanning multiple sectors and disciplines (e.g., environment, social justice, planning, finance, education, arts and culture)
- Inclusion of both NbS-explicit and NbS-implicit actors, capturing practices that may not use NbS terminology but contribute to working with nature
- Ability to provide practice-based insights, including lessons learned, and enabling conditions for citizen action
- The selection process was designed to ensure gender balance.

The guiding questions invited experts to have a conversational exchange rather than a formal survey and were flexible to capture a range of perspectives — from those interested in but not yet engaged with NbS, to those who have already integrated nature as a core element of their work.

Questions were clustered in five themes: (i) Awareness & Understanding of NbS – how the concept is framed, terms used, motivations; (ii) Experiences & Good Practices – case studies, stories, success factors; (iii) Barriers & Challenges – governance, funding, knowledge gaps, and inclusivity issues; (iv) Support Needs & Enabling Conditions – what civil society needs to strengthen NbS engagement; and (v) Recommendations & Future Directions – policy, tools, and network suggestions (see Annex D.5).

All interviews were conducted on Zoom with a transcription option to capture transcripts automatically. Transcripts were then manually anonymised for analysis purposes and were stored in a shared internal folder hosted by TNOC.

Excerpt from a semi-structured interview, illustrating the type of qualitative data collected and analysed for this roadmap.

All identifying information has been removed or replaced with placeholders (e.g., Person A, Organization A, Place A) to ensure confidentiality.

The excerpt is lightly edited for clarity, while preserving timestamps, meaning, and conversational flow.

Transcript Excerpt (WEBVTT format)

00:00:04 – 00:00:13
Interviewer:
To begin, we would like to ask: is there an experience in your life that changed the way you relate to nature—or to the world around you?

00:00:30 – 00:01:02
Person A:
I think it was the beginning of my work in the association. Before this, I was just a user of nature. Now I also feel like a protector. I work with nature, for nature—not only using it.

00:01:49 – 00:02:05
Interviewer:
Could you briefly introduce yourself, your role, and your organisation’s work?

00:02:05 – 00:02:41
Person A:
I am a manager at Organization A in Place A. Our organisation acts as a platform for joint projects, bringing together municipalities to address shared environmental challenges.

We collaborate on sustainable development and connect municipalities with research institutions and international networks.

Through Event B, we learned about the potential of nature-based solutions—this was a game changer for us.

Understanding NbS

00:04:16 – 00:04:21
Interviewer:
How would you describe nature-based solutions in your own words?

00:04:21 – 00:05:15
Person A:
Nature-based solutions are ways of solving city problems by letting nature do what it does best.

We use natural processes to slow stormwater, cool overheated areas, and increase biodiversity. They are often cheaper than traditional infrastructure and improve well-being at the same time.

They help cities become more resilient to climate change.

Recognising NbS

00:06:07 – 00:06:22
Interviewer:
When working with different stakeholders, do you use the term “NbS,” or adapt your language?

00:06:22 – 00:07:29
Person A:
We adapt our language depending on who we speak to.

With policymakers, we talk about infrastructure, risk management, and cost savings.

With citizens, we emphasise green spaces and health benefits.

This makes the concept easier to understand for different audiences.

Integrating NbS in Practice

00:10:40 – 00:10:54
Interviewer:
Can you share an example of a challenge and how you addressed it?

00:11:31 – 00:12:21
Person A:
Our metropolitan area faces both flooding and water shortages.

We developed a guide for municipalities on natural retention, including recommendations for planners and strategies.

00:12:21 – 00:13:12
We also created tools such as:

- a funding search engine
- project standards (“do’s and don’ts”)

00:13:12 – 00:13:44
We co-created rain gardens with school students. These are visible in public space and help people understand their function.

Engagement Approaches

00:15:52 – 00:16:29
Person A:
We implemented Minecraft workshops in schools.

This gamified approach made urban design accessible and engaging. The quality of ideas from students was very high.

00:16:29 – 00:17:05
It was easy to engage schools—there was strong interest in participating.

Collaboration and Governance

00:18:54 – 00:19:19
Person A:
We collaborate with universities often.

Sometimes formally through contracts, but also informally when there is no budget. Experts are usually willing to contribute.

00:20:32 – 00:20:44
We also organise thematic forums every three months to bring together municipalities and experts.

Barriers and Enabling Conditions

00:20:48 – 00:21:28
Person A:
Institutional embedding is key. If NbS are part of long-term strategies, they survive political changes.

00:21:28 – 00:22:24
Capacity building is also essential—training planners and local officials.

00:22:24 – 00:23:12
Funding is a major challenge, especially for smaller municipalities. Mechanisms are often unpredictable.

00:23:12 – 00:24:03
Other barriers include maintenance burden and limited staff capacity.

Recommendations

00:28:20 – 00:29:00
Person A:
Local authorities should involve citizens in co-creating solutions.

For example, asking where green spaces should be and how they should function.

00:29:00 – 00:30:18
NbS should be more visible. Many projects exist, but people don't recognise them as such.

Closing Reflection

00:35:06 – 00:36:01
Person A:
We are currently working on protecting a natural area shared by four municipalities.

If successful, it will be an important example of cross-territorial cooperation.

Note on Use

This transcript illustrates how:

- insights emerge through conversation
- language varies across actors
- practical experience informs the roadmap

In the report, excerpts like these are used as anonymised quotes to ground findings in real-world perspectives.

Full transcripts were analysed through thematic clustering and contributed to the development of pathways and recommendations.

B.4 Methodology for Data Extraction and Synthesis

To systematically process, extract, and synthesise the vast amount of qualitative and quantitative data gathered across these three streams, the research team utilised **NotebookLM**, an AI-assisted research and note-taking tool. A centralised digital notebook was created, containing the totality of the project's inputs: the 31 desk-review deliverables, the four EC expert reports, the aggregated global survey results, and the fully anonymised transcripts of the 20 semi-structured interviews.

Strict data protection and privacy protocols were maintained throughout this digital extraction process. In compliance with the General Data Protection Regulation (GDPR) and NotebookLM's privacy policies, no data uploaded to the workspace was shared externally or used to train public AI models. Before uploading, **all interview transcripts were manually anonymised to ensure no personal identifying information was linked to the automated analysis tools.** An example of an anonymised transcript can be found in Annex D.6. Emails and social media accounts voluntarily provided by responders in the survey were removed prior to uploading the survey results to AI tools.

The methodology and use of AI were handled transparently and in strict alignment with EU guidelines (e.g., Horizon Europe CSA application form guidelines). This compliance included taking full responsibility for all AI-generated content, explicitly disclosing the AI tools utilised, providing clear references for any AI-assisted synthesis, and remaining vigilant against potential plagiarism risks.

In addition to NotebookLM, the team utilised Napkin.AI for the generation of analytical graphs and the Gemini Deep Research function to identify and verify additional bibliographical references.

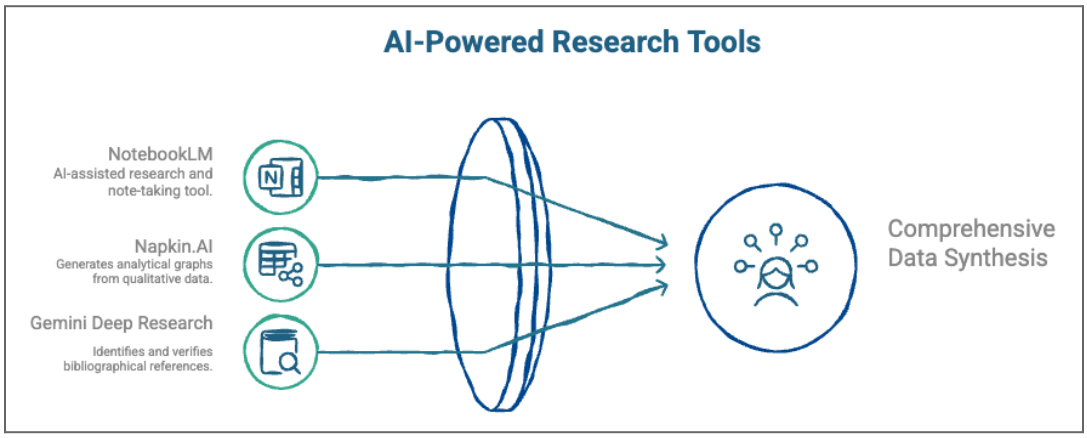

Figure B.1. *Overview of data collection methods*

The data extraction process was driven by targeted, expert-crafted prompts designed to interrogate the consolidated dataset. To systematically analyse the three different sources of information—the desk review, the global survey, and the interviews—we adapted the logic of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework.

This systematic flow ensured that insights were rigorously triangulated (see Figure B.2). The PRISMA Approach used, and Prompt-Guided Analysis are described in detail in

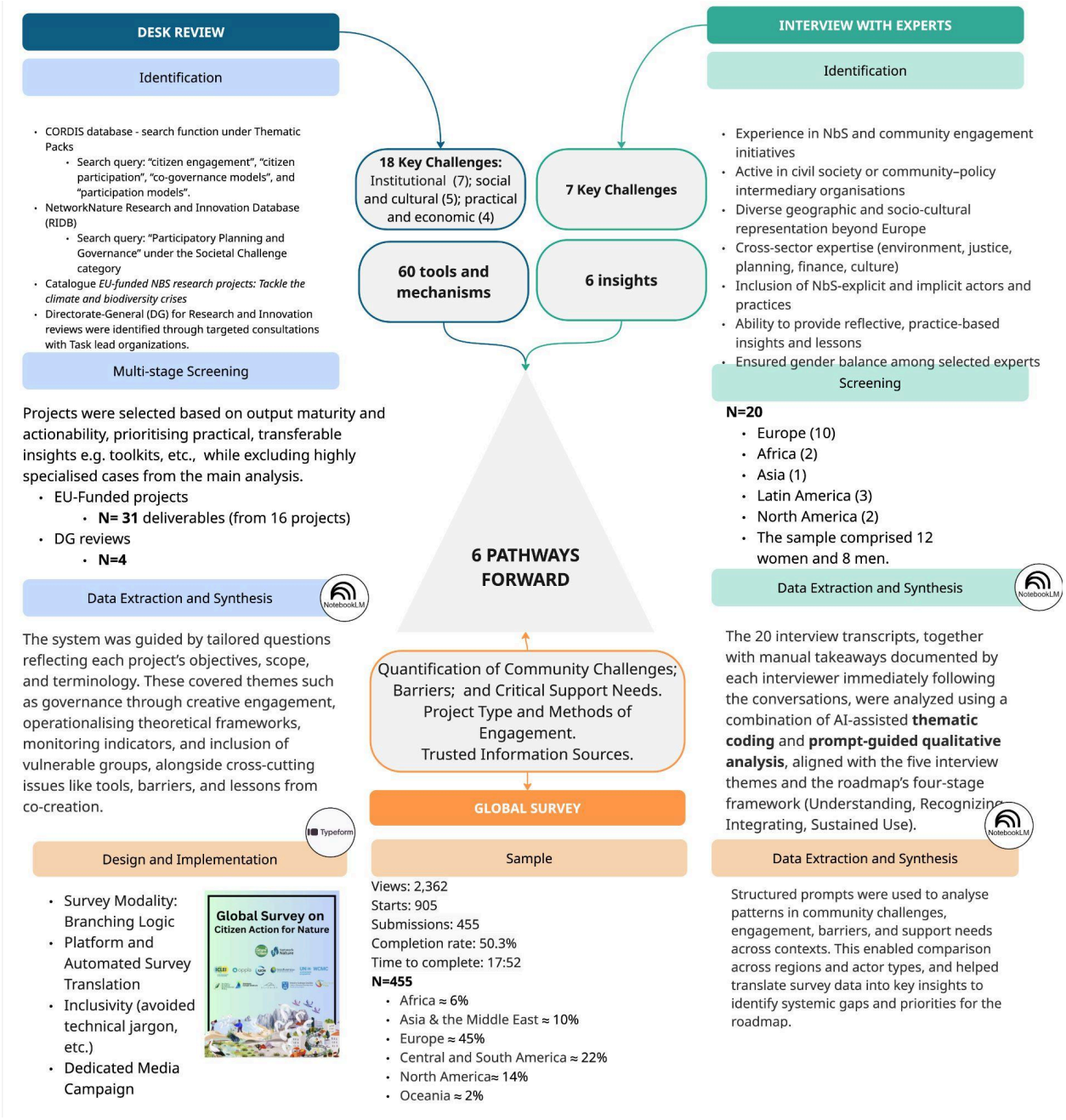

Figure B.2: *PRISMA diagram of the literature review on citizen action and community agency for the uptake of nature-based solutions (NbS). The diagram illustrates the search strategy, screening process (including inclusion and exclusion criteria), and final selection of sources, as well as the studies analysed to identify core challenges and opportunities.*

B.5 Prompt-Guided Analysis and Modified PRISMA Approach

The data extraction process was driven by targeted, expert-crafted prompts designed to interrogate the consolidated dataset. To systematically analyse the three different sources of information—the desk review, the global survey, and the interviews—we adapted the logic of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. This systematic flow ensured that insights were rigorously triangulated:

Identification: Raw data from the 35 reports, the survey datasets, and the 20 interview transcripts were consolidated into the secure NotebookLM workspace.

Screening: Using AI-assisted thematic coding, the data was screened to filter out redundancies and isolate specific findings related to policy recommendations, living lab tools, and participatory methodologies.

Eligibility: The screened data was interrogated using overarching and more specific research questions.

Desk Review: The system was prompted with guiding questions that took into account the specific objectives, scope, and terminology of each project. Examples include: *How did creative engagement processes contribute as a foundation for advancing governance models for the uptake of nature-based solutions (NBS)?* (COEVOLVERS); *Which theoretical frameworks are presented (e.g., participatory piano), and how can these be operationalised in practice?* (EUARENAS); *Which indicators are most relevant for monitoring and evaluating citizen engagement?* (JUSTNature); *In what ways were vulnerable or underrepresented groups involved in green or nature-based activities?* (JUSTNature, NATURANCE, EUARENAS, relevant European Commission expert reports). Overarching questions included *Which methods, tools, and mechanisms are mentioned to encourage citizen action? What structural, institutional, or social barriers limit engagement? What are the main lessons learned from co-creation with citizens?*. These prompts supported a consistent and comparative analysis across sources. Detailed research results, including the questions formulated for each project and/or report, can be found in Annex D.1.

Survey: The survey data were analysed using a combination of quantitative aggregation and prompt-guided qualitative interpretation, aligned with the roadmap's four-stage framework (Understanding, Recognising, Integrating, Sustained Use). Structured prompts were used to interrogate patterns in responses related to community challenges, levels of engagement, barriers, and support needs, allowing for systematic comparison across geographic and socio-economic contexts. Particular attention was given to identifying recurring trends in motivations, perceptions, and enabling conditions, as well as divergences between regions and actor types. This approach enabled the translation of raw survey data into analytically meaningful insights that directly inform the identification of systemic gaps and priority areas for action within the roadmap.

Interviews: The 20 semi-structured interview transcripts, together with interviewer takeaways documented immediately after each conversation, were analysed using a combination of AI-assisted thematic coding and prompt-guided qualitative analysis. Using the NotebookLM tool, initial thematic clusters were generated to identify recurring patterns, keywords, and insights across the dataset. These AI-generated themes were subsequently reviewed, refined, and contextualised by the research team to ensure interpretive depth and accuracy. The analysis was guided by targeted prompts exploring definitions and framings of NbS, forms of citizen engagement, key barriers, enabling conditions, and opportunities for scaling action, and was aligned with both the five interview themes and the roadmap's four-stage framework. In parallel, a curated selection of verbatim quotes was embedded across the analytical dimensions as storytelling anchors, ensuring that diverse perspectives and lived experiences are meaningfully represented throughout the findings.

Inclusion & Triangulation: For the desk research, the prompts focused heavily on the efficacy of policy recommendations and pilot project outcomes. Simultaneously, the survey and interview data were queried to identify commonalities, overlapping grassroots challenges, and distinct knowledge gaps. By focusing on points of agreement as well as differing key findings across the three streams, the team successfully identified the most critical challenges needing to be addressed.

Information Integration and Synthesis Framework

Once the core data was extracted, the findings from the desk review, survey, and interviews were integrated through a structured synthesis process. This synthesis was organised around four conceptual stages required for the successful uptake and mainstreaming of NbS:

Understanding: This stage analysed how familiar different stakeholders are with NbS approaches and evaluated the extent to which plural knowledge systems and pre-existing community practices are acknowledged in the data.

Recognising: The synthesised data was used to determine whether stakeholders recognise NbS as a legitimate approach within their specific local contexts. This involved extracting the evidence that supports this legitimacy, assessing stakeholders' awareness of NbS effectiveness, and identifying the metrics and outcomes used to measure success.

Integrating: This phase categorised the extracted insights into actionable systemic changes, focusing on:

Planning: Developing strategic plans based on justice-oriented frameworks.

Design: Crafting tailored approaches that directly align with localised stakeholder needs.

Regulation: Ensuring that local governance mechanisms comply with relevant standards and guidelines.

Sustained Use and Enabling Conditions: Finally, the synthesis identified the long-term prerequisites necessary to scale action. This included extracting recommendations on the knowledge (ongoing training and resources), funding (securing financial support), and local

engagement tools (partnerships and community involvement mechanisms) required to maintain initiatives and foster deep community ownership.

B.6 Open-Source Database for Citizen Action

This research is made available as an open-source database hosted on the NetworkNature platform, developed through an AI-supported workspace (NotebookLM). It brings together all data produced throughout the roadmap development process—including anonymised interview data, synthesised survey results, and desk research—into a structured and searchable resource for researchers, civil society organisations, policymakers, and practitioners.

The database enables users to access, explore, and build upon the evidence base, supporting ongoing learning, transparency, and collaboration around citizen engagement in nature-based solutions.

Link: https://notebooklm.google.com/notebook/2e93f566-4b0e-48ce-80c8-bfbab2002a36

Annex C – Results and Reflections

This annex presents the full evidence base synthesised from the three data streams. These results informed the identification of barriers, enabling conditions, and the six pathways for citizen action presented in the roadmap.

C.1 Desk Review Results

Across all data streams, a consistent pattern emerges: **citizen action** for nature is already widespread but **remains under-recognised, unevenly supported, and structurally constrained**.

Quantitative findings in the survey show that respondents are actively engaged in tangible practices such as “bringing nature back” (22%) and “protecting existing nature” (19%), yet face significant barriers, particularly limited access to long-term funding (63%), insufficient tools for communication and awareness-raising (56%), and weak connections with local authorities (52%). Qualitative insights from in-depth interviews and desk review reinforce these findings, revealing a persistent disconnect between institutional NbS frameworks and the everyday practices, language, and priorities of communities. Across the four stages of uptake: Understanding, Recognising, Integrating, and Sustained Use—the evidence consistently indicates that the **primary challenge lies not in citizen motivation, but in the lack of enabling conditions**, including accessible communication, inclusive governance, and sustained institutional and financial support necessary to scale and maintain impact.

Desk Review

This section provides a synthesis of the tools, methods, and successful interventions found across 31 deliverables and research papers from 16 EU-funded NbS research and innovation projects focusing on participation and NbS, and four EC expert and state-of-the-art synthesis reports. Detailed research results, including the questions formulated for each project and/or report, can be found in **Annex D.1.**

EC Expert Reports Suggest Moving From Command-and-Control to Trust-Based, Localised Partnerships

The data extraction process was driven by targeted, expert-crafted prompts designed to interrogate the consolidated dataset. Overarching questions included: *Which methods, tools, and mechanisms are mentioned to encourage citizen action? What structural, institutional, or social barriers limit engagement? What are the main lessons learned from co-creation with*

citizens?. These prompts supported a consistent and comparative analysis across sources. The table below summarises the results of this query.

Challenge	Strategic Approach	Tools, Methods, and Successful Interventions	To which stage of the uptake of NbS does this challenge refer?
Lack of Financial Resources	Direct Citizen Incentives & Compensation	• **Compensating Participation**: Overcoming the financial and temporal barriers of volunteering by compensating residents for direct and indirect costs, such as providing honorariums, transport support, food provision, and childcare services. • **Direct Financial Incentives**: Empowering citizens by offering direct financial incentives for community-based implementation and long-term monitoring of projects.	Understanding; Sustained Use
	Innovative Funding Models	• **Participatory Budgeting**: Allocating portions of municipal budgets directly to citizen-led decisions. • **Micro-Grants**: Providing targeted community grants to vulnerable neighbourhoods to improve local green spaces.	Sustained Use
Low Prioritisation & Lack of Political Will	Institutional Anchoring & Legal Frameworks	• **Mandatory Co-creation Clause**s: Including legally binding clauses in public works tenders to force contractors to engage the public, as successfully achieved in Palma. • **Permanent Institutional Anchorage**: Embedding projects directly into permanent municipal structures rather than relying on short-term political cycles, ensuring continuity after elections. • **Regulatory Frameworks**: Creating policies that legitimise citizen input, allocate dedicated funding, and promote the use of NbS through local incentives.	Integrating
	Polycentric & Collaborative Governance	• **Formal Advisory Boards**: Transitioning to polycentric governance networks by establishing formal municipal committees where citizens, local organisations, and politicians regularly negotiate and monitor resource allocation. • **Direct Policy Influence**: Promoting active participants into formal government roles, such as appointing a local expert as a council member in Regalbuto. • **Empowering "Champions"**: Actively supporting specific individuals within administrations who believe in innovative engagement to prevent their burnout.	Integrating
Significant Knowledge Gaps	Interactive Citizen Science & Monitoring	• **BioBlitzes**: Using rapid biological surveys to bring together scientists, businesses, and citizens, making biodiversity highly tangible and increasing environmental awareness. • **Community-based Monitoring**: Involving citizens in defining indicators and monitoring benefits to make them acutely aware of the advantages of the interventions. • **Curriculum Integration:** Institutionalising knowledge by embedding programs like the "Digital Biocitizen" directly into school curricula.	Recognizing
	Simplifying Communicatio n & Digital Platforms	• **Translating Technical Jargon**: Having municipal officers act as facilitators who translate complex planning and technical jargon into accessible language. • Digital & Analogue Tools: Utilising **Public Participation GIS (PPGIS)** to allow citizens to map their green space use, while also	Understanding

		relying on simple analogue field sheets to maintain near-zero barriers for less tech-savvy populations.	
Hurdles Related to Community Engagement	Targeted & Intermediary Outreach	• **Trusted Intermediaries**: Overcoming recruitment challenges and reaching the "unusual suspects" through active outreach by trusted local intermediaries, such as social workers, socio-cultural mediators, or libraries. • **Children as Gateways:** Engaging youth through logo design contests or school activities to serve as a "successful shortcut" to engaging their parents and the wider community.	Understanding; Sustained Use
	Arts-Based, Playful & Experiential Methods	• **Digital and Performative Play**: Bypassing verbal barriers using Minecraft workshops for youth and performative workshops for school children. • **Cultural Expression**: Utilising memory work, poetry, and body mapping for migrant backgrounds, and artistic performances for LGBTI and deaf participants to foster a safe space for ecological dialogue.	Understanding; Sustained Use
	Low-Barrier Entry Points & "Commoning"	• **Informal Gatherings**: Using everyday social structures like neighbourhood BBQs or asking multicultural community garden members to cater co-design events to make participants feel valued and relaxed. • **Providing Visual Starters:** Providing visuals or initial ideas rather than starting with an overwhelming "blank slate" during co-design. • **Embracing Temporary Interventions**: Using temporary pop-up community gardens to alter public perceptions and build communities of practice without rigid, permanent planning requirements.	Understanding

Insights from Past EU NbS Projects: Designing Inclusive Co-Governance

The system was prompted with guiding questions that took into account the specific objectives, scope, and terminology of each project. Examples include: *How did creative engagement processes contribute as a foundation for advancing governance models for the uptake of nature-based solutions (NBS)?* (COEVOLVERS) *Which theoretical frameworks are presented (e.g., participatory piano), and how can these be operationalised in practice?* (EUARENAS) *Which indicators are most relevant for monitoring and evaluating citizen engagement?* (JUSTNature) *In what ways were vulnerable or underrepresented groups involved in green or nature-based activities?* (JUSTNature, NATURANCE, EUARENAS, etc.).

Challenge	Strategic Approach	Tools, Methods, and Successful Interventions	To which stage of the uptake of NbS does this challenge refer?
Lack of Financial Resources	Innovative Funding & Resource Sharing	• **Participatory Budgeting**: Allocating portions of municipal budgets directly to citizen-led decisions, such as a $1.3 million fund in Chicago used for community gardens. • **Targeted Micro-Grants**: Providing grants to vulnerable neighbourhoods to improve local green spaces, like the £38,000 grants in Liverpool. • Alternative Streams: Utilising off-budget instruments like crowdfunding platforms and local sponsorships (e.g., "Sponsor a tree-pit" in Valladolid). • **Publicly Provided Land**: Municipalities providing free access to unused public land for community-led greening (e.g., Barcelona's Pla Buits scheme). • **Financial Support Search Engines**: Digital tools developed to help local stakeholders easily find funding opportunities for blue-green infrastructure.	Impact participation in all stages
	Public-Private Partnerships (PPP) & Procurement	• **Performance-Based Compensation**: Using PPP models where governments compensate private enterprises based on performance assessments conducted by research institutions (e.g., lake restoration in Ningbo). • **Co-Management Agreements**: Creating legal templates for private landowners to finance structural elements while the city manages the vegetative elements. • **Procurement** Innovation: Bundling design, construction, and long-term maintenance into single municipal tenders to incentivise the creation of maintainable solutions.	Integrating
	Incentives & Valuation	• **Direct Financial Rewards**: Offering subsidies, tax reductions, volumetric bonuses, or direct payments to citizens for monitoring local environments (e.g., paying households to monitor forests in China). • **Economic Valuation**: Using frameworks like Total Economic Value (TEV) to mathematically justify spending by calculating hidden ecosystem benefits (e.g., improved health).	Recognizing; Integrating
Low Prioritisation & Lack of Political Will	Polycentric & Collaborative Governance	• **Cross-Sectoral Working Groups**: Breaking down municipal silos by establishing ad-hoc, multidisciplinary teams that unite diverse agencies (water, planning, conservation), such as the Working Group for Munich's Isar River restoration. • **Advisory Boards & Task Forces**: Creating formal municipal committees where citizens, local organisations, and politicians regularly negotiate and monitor resource allocation, ensuring continuity across election cycles.	Integrating
	Institutional Anchoring & Legal Frameworks	• Regulatory Frameworks for Democracy: **Enshrining participation into local law** to ensure co-governance mechanisms survive political shifts. • **Linking to Municipal Mandates**: Tying participatory efforts to regular council updates, planning cycles, and early-stage	Integrating

		agenda-setting so citizens see their input directly influence decision-making.	
	Strategic Framing & "Piggybacking"	• **Merging Agendas** (Piggybacking): Bundling NbS into existing, well-funded "grey" infrastructure mandates, such as integrating ecological restoration into mandatory flood protection budgets. • **Depoliticising and Value-Framed Messaging:** Framing NbS around tangible, everyday concerns (public health, safety, jobs, cost-efficiency) rather than abstract ideological or ecological goals. • **Seizing Focusing Events**: Utilising major disasters (like severe floods) as "windows of opportunity" to build political momentum for NbS when traditional grey infrastructure fails.	Recognizing
	Empowering Local "Champions"	• **Supporting Internal & External Champions**: Providing political and institutional backing to motivated individuals within the administration or charismatic community leaders who can push NbS onto the political agenda and overcome bureaucratic inertia.	Impacts participation across stages
Significant Knowledge Gaps	Simplifying Communication	• **Plain Language Policies**: Translating complex technical jargon into accessible language through summaries, checklists, and easy-to-understand "identity cards" for specific solutions. • **Knowledge Brokers**: Employing NGOs, social workers, and advocate planners to translate community needs into technical planning language and vice versa.	Impacts participation across stages
	Visual, Digital, and Modelling Aids	• **3D Modelling & Digital Twins:** Using virtual environments, animations, and tools like Minecraft or the SuperBarrio app to help laypeople envision complex environmental processes and gamify public space design. • **Participatory Mapping & GIS:** Utilising tools like Maptionnaire or layered map projections to allow citizens to encode their local knowledge directly onto spatial planning models. • **Agent-Based Modelling (ABM):** Simulating how specific NbS interventions will impact the well-being and behaviours of different demographic groups.	Understanding; Recognizing
	Citizen Science & Active Monitoring	• **Digital Data Collection:** Deploying mobile apps (e.g., Byhøst, Bio-App, Izmir Biodiversity Atlas) for residents to collect biodiversity data. • **Community-based Monitoring:** Involving citizens in defining indicators, conducting bat/bird censuses, and participating in BioBlitz events. • **Data "Quality Stamps":** Using independent scientific organisations to validate citizen-generated data, making it officially recognised for policymaking.	Recognizing
	Experiential & Hands-on Learning	• **Urban Living Labs & Info Hubs:** Creating dedicated "safe spaces" for the community to co-create knowledge, interact with experts, and test solutions. • **Place-Based Education:** Organising joint field trips, "Forest Schools," learning tours, and guided sensory walks to physically demonstrate NbS benefits.	Understanding; Integrating

Hurdles Related to Community Engagement	Direct Participation	• **Compensating Participation:** Overcoming the financial barriers of volunteering by providing stipends, childcare, transportation support, and meals during engagement events.	Impacts participation across stages
	Targeted & Flexible Outreach	• **"Going to the Community":** Abandoning formal town halls in favour of "public spotting" at high-footfall areas like weekend markets, sports clubs, or setting up pop-up units during school pickups. • **Zero-Prerequisite Methods:** Utilising highly inclusive participation methods that do not require any previous technical knowledge to ensure no one feels excluded.	Understanding
	Intermediaries & "Scale-Crossing Brokers"	• **Trusted Community Networks**: Employing NGOs, socio-cultural mediators, and local associations (e.g., Bread Houses Network) to build trust and engage vulnerable groups who distrust official government channels. • **Mobilisation Leaders**: Identifying individuals with high social capital (e.g., local rappers or athletes) to act as engagement leaders for youth and marginalised populations.	Integrating
	Arts-Based & Playful Methodologies	• **Bypassing Verbal Barriers:** Using urban art murals, poetry, body mapping, and digital word clouds to allow marginalised or immigrant groups to express their needs creatively without requiring formal technical fluency. • **Youth-Specific Engagement:** Engaging children through art contests, performative playground design, and integrating initiatives into school education to use the younger generation as a gateway to engage their families.	Impact participation across stages
	Conflict Resolution & Real Needs	• **Co-Diagnostic Approaches:** Inviting all conflicting stakeholders (e.g., NGOs, farmers, industry) to collectively define problems from the beginning to design "win-win" scenarios. • **Facilitated Compromise:** Actively negotiating immediate citizen concerns (e.g., introducing specialised parking zones to resolve tensions over green space replacing car parking) rather than forcing complete consensus. • **Future Workshops & Round Tables:** Utilising structured workshop phases (Critique, Fantasy, Implementation) to tackle complex, contradictory community views.	Understanding; Recognizing
	Tactical & Hands-On Engagement	• **Action-Oriented Activities:** Engaging citizens in immediate, hands-on tasks—such as urban gardening, planting events, litter-picking, and volunteer co-maintenance—to build confidence and protective ownership over green spaces. • **Continuous Feedback Loops:** Providing regular, transparent updates to keep the community informed about progress, proving their inputs are being honoured, and building profound institutional trust	Impact participation across stages

C.2 Global Survey Results

From November 2025 to mid-March 2026, the online Global Survey on Citizen Action for Nature gathered 445 completed responses, exceeding the goal by 11%.

The survey gathered responses from a diverse range of actors—including civil society organisations, practitioners, public institutions, and engaged citizens—across 83 megacities, cities, small towns, and remote rural areas throughout 43 counties in six regions. 56% of respondents explicitly provided their contact information to stay connected, be acknowledged, and receive the final results of this roadmap.

Note on interpretation: Respondents were self-selected, reached through open dissemination via NetworkNature partner networks, TNOC's communities and social media. The figures below therefore describe the views of this self-selected group of already-engaged respondents and should not be read as representative of European citizens or of any wider population. See Annex B.2 for the full statement of sampling.

The findings presented below combine quantitative trends (e.g., levels of awareness, types of actions, perceived barriers) with qualitative insights (e.g., narratives, interpretations, and lived experiences). Together, they reveal not only what citizens are doing in relation to NbS, but also how they make sense of their actions, and what conditions are needed to support and scale them. The full survey results, excluding participants' personal data, are in Annex C.2. A summary of the main findings follows.

The data reveal that while the motivation to protect, restore, and live with nature is not context-specific, but widely shared across geographies, the conditions under which it unfolds are highly uneven, shaped by local governance structures, access to resources, cultural relationships with nature, and exposure to environmental risks.

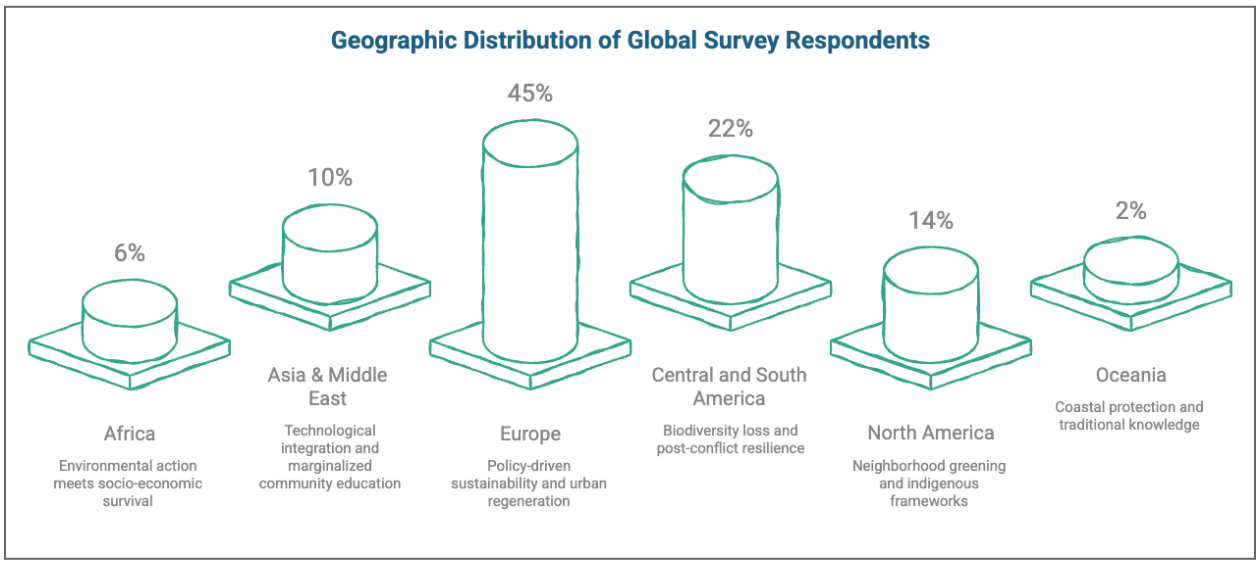

Figure C.1. *Geographic distribution of global survey respondents*

The following snapshot provides a quantitative overview of the geographic diversity captured in the survey:

Table C.1: Quantitative Snapshot of Global Representation

Region	Responses (%)	Examples of Cities & Countries Represented in the Data	Insight into Geographic Spread
Africa	≈ 6%	South Africa (Cape Town), Egypt (Cairo), Ghana (Accra), Nigeria (Asaba), Tunisia (Tunis), Burundi (Bujumbura), Mauritania (Sélibaby).	Highlights the critical intersection of environmental action with immediate socio-economic survival, basic needs provision, and grassroots community mobilisation across diverse African climates.
Asia & the Middle East	≈ 10%	India (Bengaluru, Delhi, Secunderabad), China (Beijing, Shenzhen, Chengdu), Japan (Tokyo, Kyoto), South Korea (Seoul), Taiwan (Taipei), Iran (Hamedan, Birjand), Azerbaijan (Baku), Saudi Arabia (Jeddah), and Malaysia.	Captures a wide spectrum of engagement, from rapid technological integration and "sponge cities" in East Asia to navigating severe heat, pollution, and marginalised community education in South Asia and the Middle East.
Europe	≈ 45%	UK (London, Glasgow, Dundee), Ireland (Dublin, Cork), Spain (Barcelona, Madrid, Burgos), Germany (Berlin, Hamburg, Munich), Italy (Rome, Milan, Turin, Padova), Romania (Bucharest, Tulcea, Brașov), Nordics (Copenhagen, Stockholm, Helsinki, Oslo), France (Paris, Concarneau), Belgium, Netherlands, Bulgaria, Greece, Croatia.	Shows dense participation across both Western and Eastern Europe, heavily focused on navigating complex municipal bureaucracy, urban alienation, and regenerating highly built-up environments.
Central and South America	≈ 22%	Colombia (Bogotá, Manizales, Cali, Cartagena), Brazil (Rio de Janeiro, São Paulo, Curitiba, Recife), Mexico (Monterrey, Querétaro, Puebla), Chile (Santiago, Puerto Varas), Argentina (Buenos Aires, Colón), Bolivia (La Paz), Peru (Urubamba), Dominican Republic, Guatemala.	A highly dominant region in the survey, featuring a strong mix of massive urban centres and vulnerable rural/agricultural communities dealing directly with biodiversity loss and post-conflict contexts.
North America	≈ 14%	USA (New York, Chicago, Los Angeles, Miami, Washington DC, Dallas, Baltimore), Mexico (Monterrey, Querétaro, Puebla), Canada (Montreal, Halifax, Esquimalt),	Representation ranges from major metropolitan hubs focused on neighbourhood greening and policy to practitioners focused on integrating indigenous (First Nations) frameworks into local conservation.
Oceania	≈ 2%	Australia (Melbourne, Sydney), New Zealand (Wellington, Tauranga).	Strong emphasis on coastal protection, combating extreme climate anxiety, and working deeply in tandem with Aboriginal and Māori traditional knowledge systems.

Profile of Respondents & Organisations

When asked to define their everyday roles, the data moves beyond formal organisational labels to reveal how these actors operate on the ground as highly active, relational, and hands-on civic leaders:

- **Knowledge Brokers:** The highest proportion of respondents identify as knowledge brokers, with 35% stating *"I create or share technical knowledge"* and 30% sharing *"knowledge based on lived or hands-on experience"*.
- **Visionaries and Connectors:** 31% of respondents identify their role as *"I connect people and build collaborations"*, while another 31% state *"I help set the vision, direction, or foundations of our work"*.
- **Hands-on Implementers and Advocates:** Many respondents are directly involved in execution and advocacy, noting they *"actively support causes, communities, or initiatives I care about"* (27%) or *"manage and execute activities directly in the field"* (23%). A smaller, yet critical, group helps their community *"understand and pursue legal rights or claims"* (5%).

To better understand the structural capacity of these actors, the survey asked respondents to categorise their affiliations, revealing a landscape dominated by micro-structures and civic networks rather than large institutions:

- **Independent Citizens:** 26% of respondents participated as private individuals, explicitly stating they do not represent any formal organisation.
- **Micro and Volunteer-based Entities:** Grassroots action is largely sustained by hyper-local teams, with 26% of all respondents belonging to groups with 0–5 staff members, followed closely by small organisations of 6–20 staff (18%).

  The largest group (36%) belongs to non-profits and civil society organisations (including NGOs, foundations, community groups, and neighbourhood associations).

- **Institutional & Private Sectors**: Only a minority represent universities or colleges (25%), government authorities (13%), or business/private companies (13%).

Global North and Global South

The Global Survey on Citizen Action for Nature aggregates data from 445 respondents worldwide, cross-referencing these global totals. The underlying geographic segments reveal clear quantitative differences between the Global North and the Global South. These differences are not only statistical—they reflect fundamentally distinct socio-economic contexts that shape how communities understand, engage with, and act on nature-based solutions (NbS).

While **"Biodiversity is not being protected"** was identified by approximately **56%** of respondents globally, the selection of human-centred challenges reveals clear distinctions between the Global North and the Global South.

- Global North Concentrations: The survey's highest-ranking human-centric challenges globally were "People are struggling with stress, anxiety, or mental well-being" (~55%) and "People don't always feel connected to the place they live in" (~47%).

- Global South Concentrations: A big segment of the quantitative data centres on physical and infrastructure deficits. Globally, "Polluted water, air or soils" received ~39%, "Poor waste management" received ~37%, and "Too many people don't have enough to get by" received ~32%.

- Global North Concentrations: Selections related to structured, institutional, or digital interventions yielded high global counts. "Workshops to understand the problem together" was the most utilised method globally, with ~45%, followed by "Data collection activities" (~33%) and "Social media and/or social media campaigns" (~32%).

- **Global South Concentrations:** The survey explicitly measured the use of "Traditional ways of coming together" (e.g., Indigenous Mingas in Latin America, Filipino Payamanihan), which received ~11% globally.

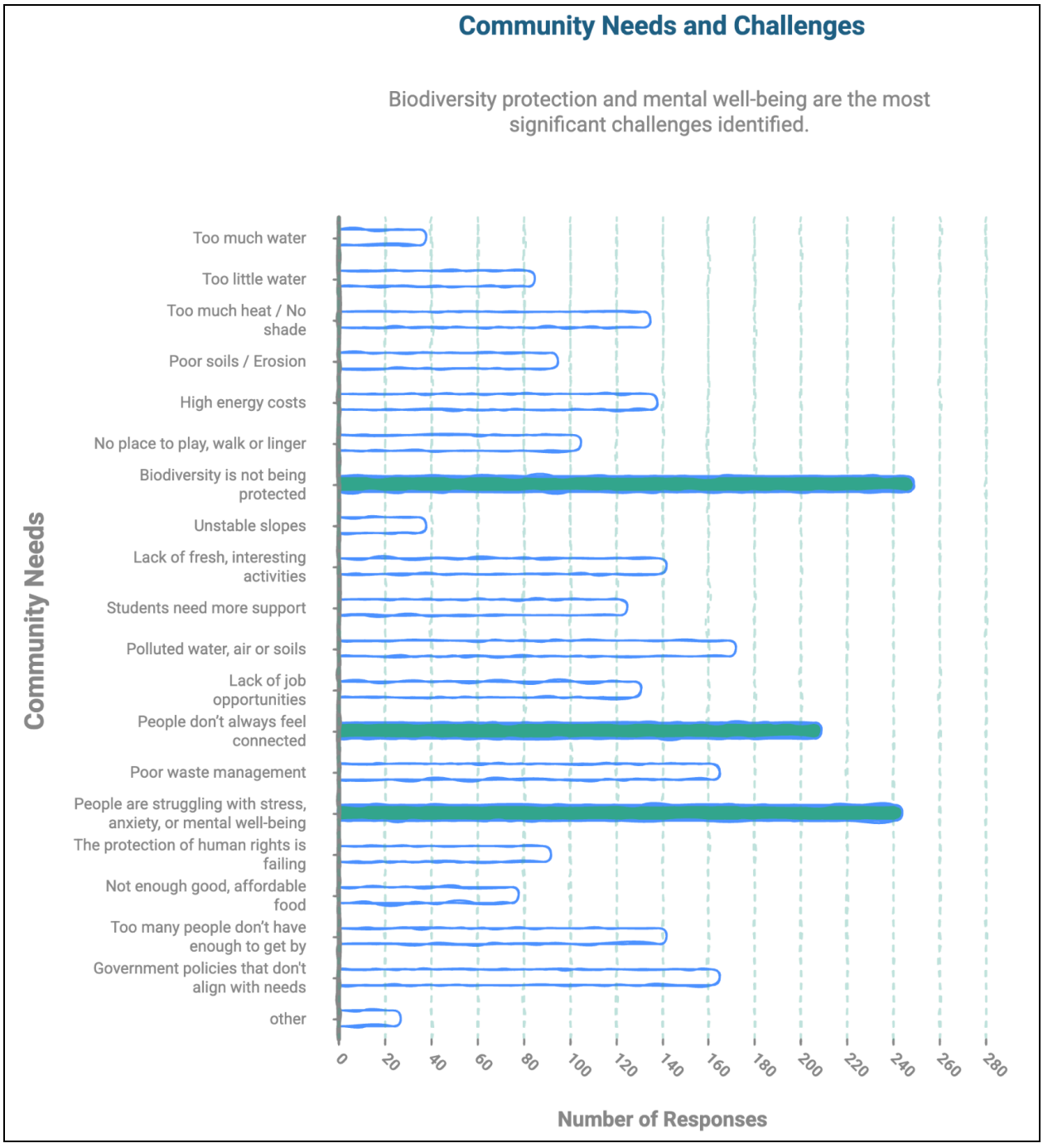

Figure C.2. *Community needs and challenges were identified through the global survey.*

Quantifying Barriers

While the Global Survey confirms a strong willingness to engage with nature-based initiatives, the data reveal that this readiness is constrained by significant systemic barriers. Cross-referencing the responses shows clear differences between the Global North and the Global South in the types of barriers reported.

- **Global North Concentrations:** Barriers are primarily linked to time constraints, engagement fatigue, and institutional disconnects. 56% — *Tools to engage citizens and communicate effectively.* 53% — *Stronger connections with local authorities.* Open-ended responses frequently highlight a lack of time and low perceived return on effort, with participation seen as difficult to sustain alongside work and daily responsibilities.

- **Global South Concentrations:** Barriers are strongly linked to socio-economic vulnerability, competing priorities, and lack of basic support mechanisms. 63% — *Access to funding and financial resources.* 30% — *Compensation.* 7% — *Childcare while participating in activities.* Open-ended responses emphasise that participation is often not feasible without meeting basic needs, with environmental action competing with income generation, safety, and access to services.

Quantifying Critical Support Needs

The need for "Access to funding and financial resources" was the universally dominant metric with 292 selections (~40% of all respondents). However, the secondary systemic needs split dramatically:

- Global North Concentrations: Support needs are primarily related to administrative capacity and communication tools.
    - 56% — Tools to engage citizens and communicate effectively.
    - 53% — Stronger connections with local authorities.
- Global South Concentrations: Support needs are more directly linked to financial and logistical conditions enabling participation.
    - 30% — Compensation.
    - 16% — Childcare while participating in activities.

Project Type and Methods of Engagement

Rather than relying solely on traditional top-down communication like public meetings, practitioners prioritise interactive, co-creative processes. Methods such as workshops, community walks, and emotional mapping are highly utilised, reflecting a desire to build trust, understand local problems collectively, and ensure that community members are treated as co-authors of the solutions rather than mere subjects.

- **Global North Concentrations:** Selections related to structured, institutional, or digital interventions yielded high global counts. "Workshops to understand the problem together" was the most utilised method globally, with ~45%, followed by "Data collection activities" (~33%) and "Social media and/or social media campaigns" (~32%).

- **Global South Concentrations:** The survey explicitly measured the use of "Traditional ways of coming together" (e.g., Indigenous Mingas in Latin America, Filipino Payamanihan), which received ~11% globally.

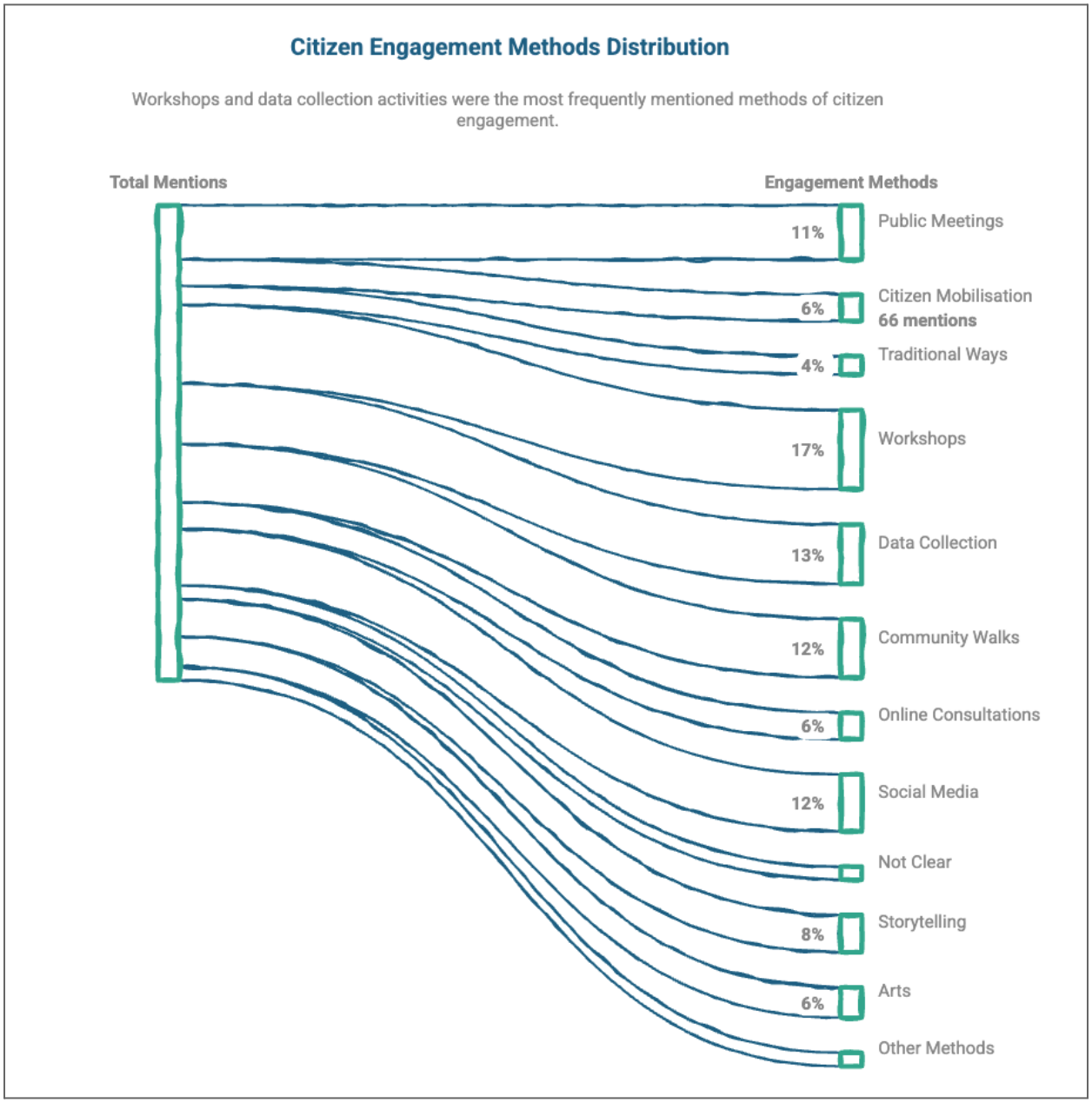

Figure C.3. *Methods of Engagement in Nature-Based Initiatives.*

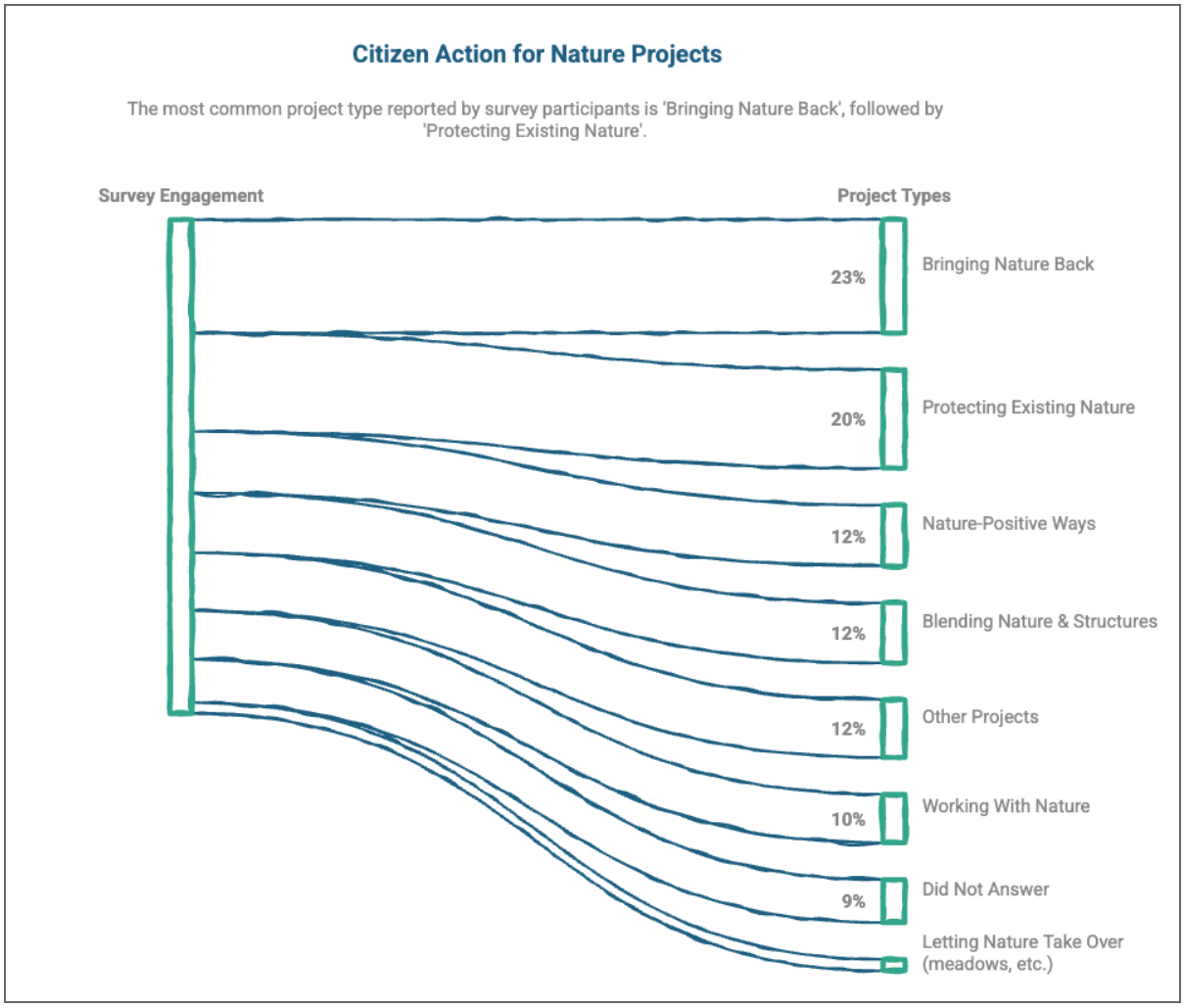

Figure C.4. *Citizen Action for Nature: Types of Projects Implemented*

Trusted Information Sources

While the motivation to act is high, this table exposes the severe systemic bottlenecks that hinder the scaling and sustainability of grassroots initiatives. To navigate these challenges and find reliable inspiration, practitioners look inward to their immediate circles. The data shows that "Community and friends" and "Professional networks" are the most trusted sources of information, far outpacing institutional guidance. This highlights the crucial role that peer-to-peer networks and community trust play in sustaining long-term environmental action. Cross-referencing the specific support mechanisms needed reveals clear regional differences:

- **Global North Concentrations:** Support needs are primarily related to administrative capacity and communication tools. 56% need *Tools to engage citizens and communicate effectively* to bridge the gap with the general public, and 53% need *Stronger connections with local authorities* to overcome bureaucracy.

- **Global South Concentrations:** Support needs are more directly linked to financial and logistical conditions enabling participation. The most critical gap by far is the lack of *Access to funding and financial resources*. This financial strain is compounded by the need for basic participation support, such as *Compensation* (30%) and *Childcare while participating in activities* (16%).

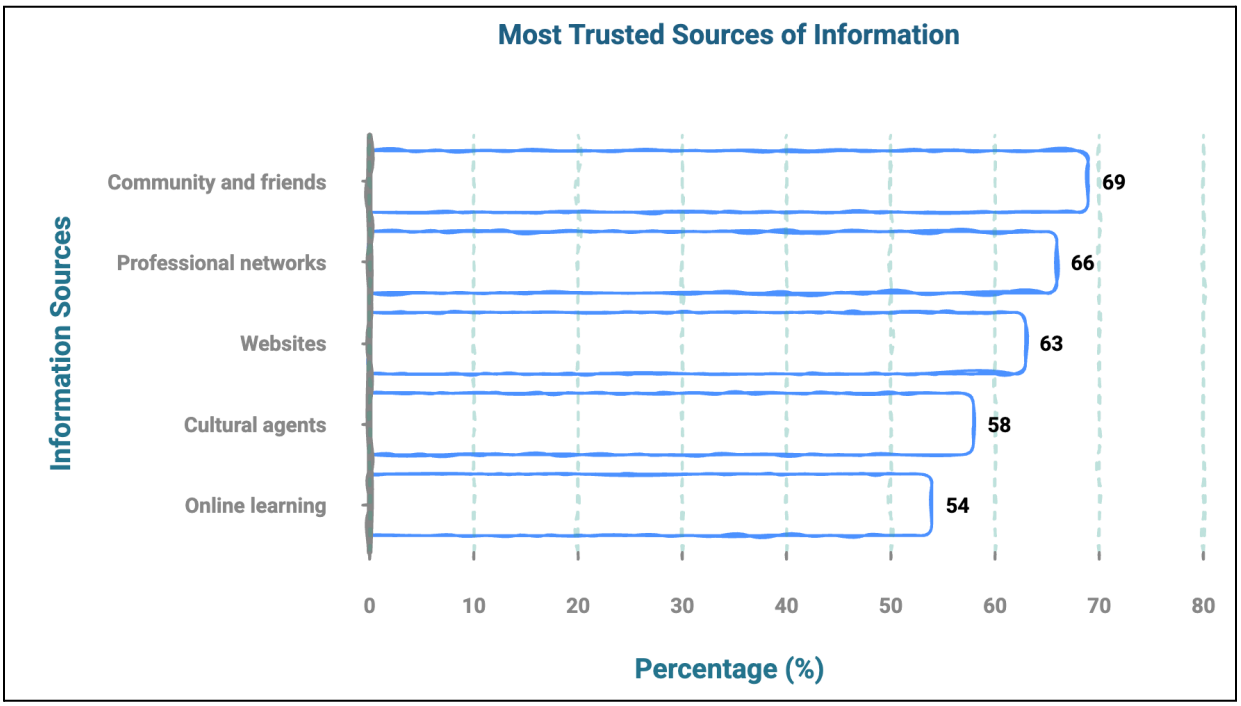

Figure C.5. *Most Trusted Sources of Information for Working with Nature*

The "Childhood Effect" and the Roots of Environmental Stewardship

To fully understand what drives citizen action on NbS, the Global Survey deliberately explored the personal origins of environmental motivation. By analysing the open-ended responses to the final survey question—*"And before we let you go, is there an experience in your life that transformed your relationship with nature — or with the world around you?"*—a profound and undeniable pattern emerged. The foundation of lifelong environmental stewardship is overwhelmingly rooted in early childhood experiences with nature.

Quantitative Patterns: The Universal Thread of Childhood

While the survey captured responses from 43 countries across vastly different socio-economic realities, the qualitative data from the open-ended responses revealed a striking quantitative trend. When asked to identify their transformative experience, a vast majority of respondents bypassed academic, institutional, or professional milestones. Instead, they recounted visceral, early-life memories.

The data shows that respondents heavily attribute their current environmental commitment to **unstructured play, family mediation, and direct sensory contact with local ecosystems.** This intrinsic motivation correlates directly with the survey's quantitative behavioural metrics, where an overwhelming majority of participants (286 respondents) enthusiastically selected "Yes, I'm all in!" when asked about their willingness to engage with nature-based challenges.

Qualitative Insights: From Sensory Memory to Civic Agency

The open-ended survey responses provide deep qualitative layers to this "Childhood Effect," showcasing how early exposure translates into adult stewardship across different cultures and languages:

- **Unstructured Play and Exploration:** Many respondents traced their dedication to free play in natural environments, highlighting the importance of unguided discovery.
    - *"Jugar y tener conexión con la naturaleza todos los días de mi infancia. Crecí y viví en un cerro lleno de árboles, pendientes, plantas."* (Playing and having a connection with nature every day of my childhood. I grew and lived on a hill full of trees, slopes, plants).
    - *"Gyerekkori játék a természetben, balatoni nádasokban, patakokban."* (Childhood play in nature, in the reeds of Lake Balaton, in streams).
    - *"Running free and growing up at the farm of my aunt (at least in summer)"*.
    - *"Climbing trees as a kid"*.
    - *"When I was little: Watching ants collaborate to carry a big bug. Simple but powerful"*.
- **The Critical Role of Family and Adult Mediation:** The data highlights that the "Childhood Effect" is often facilitated by adult caregivers who act as a bridge, creating safe opportunities for the child to engage with the environment.
    - *"My parents brought me up to appreciate nature"*.
    - *"My dad likes to plant flowers and vegetables, and I actually enjoyed helping him plant them. I was in charge of watering them and fixing their pots so they could be able to grow properly"*.
    - *"My grandmother gave me my relationship with nature"*.
    - *"Hiking in the Scottish forests with my family as a child"*.
    - *"My parents frequently took me on nature walks"*.
- **Awe, Empathy, and Lifelong Transformation:** Early encounters with wildlife and landscapes often instil a deep sense of empathy and awe that directly shape future career paths and volunteerism.
    - *"Camping in Yellowstone as a child opened my eyes to wildlife preservation completely"*.
    - *"El poder entender desde mi niñez cómo convivir con los animales"* (Being able to understand from my childhood how to coexist with animals).

- *"Con 12 años me impactó ver un documental de un parque nacional y eso creo que definió a que me iria a dedicar cuando fuera grande"* (At 12 years old, I was struck by seeing a documentary about a national park, and I think that defined what I would dedicate myself to when I grew up).

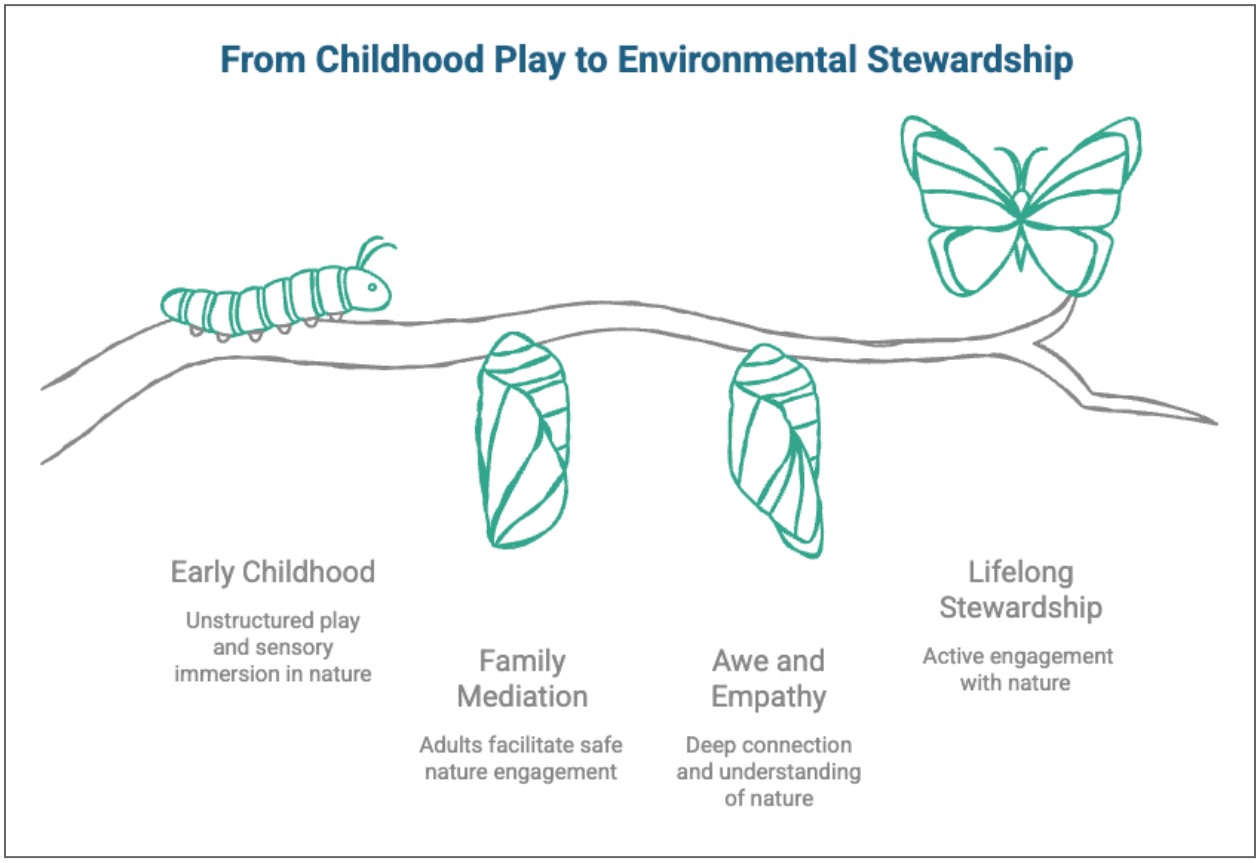

Figure C.6. *From Childhood Experience to Lifelong Environmental Stewardship*

C.3 Insights from Selected Global Experts

To deepen our understanding of how citizens and communities meaningfully engage with nature on the ground, this section presents the findings from 20 semi-structured, in-depth interviews conducted between October 9, 2025, and March 18, 2026. While firmly anchored in a European evidence base—featuring 12 European experts—the research explicitly adopted a global perspective to capture diverse socio-cultural, ecological, and governance contexts, incorporating insights from experts across Latin America (3), Africa (2), North America (2), and Asia (1).



Figure C.7. *Global Experts Contributing to the In-Depth Interviews*

The interviews reflect a wide spectrum of civil society perspectives, including coordinators and organisational leaders, community organisers working on the ground, advocates for climate and ecological justice, educators, and intermediary actors supporting grassroots initiatives through resources and capacity development. Across these roles, civil society organisations emerge as key intermediary actors, operating as trusted connectors between institutions and communities and often acting as extended arms of municipalities in reaching people on the ground. Their combined expertise spans multiple interconnected domains, from urban resilience, biodiversity conservation, and risk mitigation to civic engagement, finance, landscape architecture, and the arts.

Bringing together both actors who explicitly use NbS in their work and those whose practices align with working with nature in different terms, these conversations generate rich, comparable, and actionable insights. Moving beyond theoretical frameworks, they surface real-world systemic barriers and highlight emerging approaches to co-creation and co-governance. Throughout this section, direct quotes are embedded as “storytelling anchors”, bringing the data to life and ensuring the roadmap remains grounded in authentic and diverse civil society voices.

Through rigorous AI-assisted thematic coding and subsequent human analysis, the interview findings have been synthesised into six core points of analysis. These themes outline the priorities and enabling conditions necessary for sustained citizen action (see Fig. C8 Foundations for Sustained Citizen Action on Nature-Based Solutions).

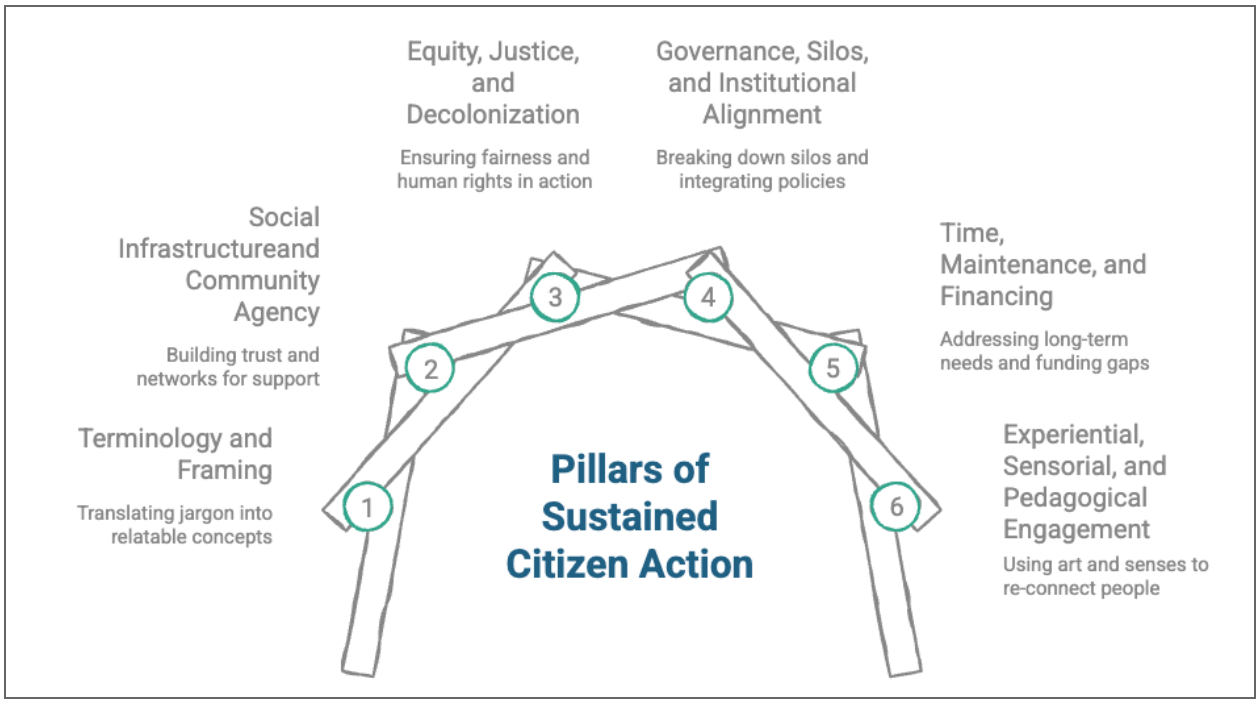

Figure C.8. *Foundations for Sustained Citizen Action on Nature-Based Solutions*

The figure above brings together what practitioners consistently pointed to as essential for sustaining action over time. These pillars are not abstract categories, but lived conditions that shape whether initiatives take root, grow, or fade.

The sections below explore these dimensions in depth, grounding each one in the experiences, challenges, and insights shared through the interviews.

NbS as institutional buzzword vs. code-shifting

Across multiple geographies, the term “NbS” is frequently perceived as a hollow, technical, Western, or institutional buzzword that alienates the general public. Practitioners consistently find themselves “code-shifting” or adapting their language depending on their audience. When speaking with citizens, they use tangible, relational, or emotional language (e.g., trees, rivers, gardens, protecting what we love). When engaging with policymakers, engineers, or infrastructure sectors, they often shift toward terms such as “green design,” “green infrastructure,” “risk management,” or “cost savings.”

> *“With the community, we use much simpler language, because technical languages often alienate people, creating a distance—as if to say ‘I know more and I have a strange term’.”*
> *— Interviewee 4, Architect/Urban Planner, Colombia*

This need to translate across audiences reflects a deeper tension between institutional framing and lived experience. For many practitioners, the term itself feels disconnected from how people relate to nature in everyday life.

> *"Nature-based solutions are a very technical language, which is anthropocentric... We would maybe call it work with nature, or live with nature, and learn from her, because the 'solutions' bit is very transactional."*
> *— Interviewee 12, Sustainability Consultant, Belgium*

In some contexts, the term loses meaning altogether when translated, reinforcing its perception as externally imposed or culturally distant.

> *"If you translate nature-based solutions to the Dutch... it evaporates, it's a hollow term. We have to think more about a regenerative ecosystem in which we see mankind as part of nature... solutions based on mutual well-being."*
> *— Interviewee 2, Landscape Designer, Netherlands*

At the same time, interviewees emphasised that many communities are already practising forms of working with nature, even if they do not identify these actions within the NbS framework.

> *"They already adapt their lifestyle to a nature-based one. You can't just say, 'Oh, I have a solution'; their life is already living those solutions, the only gap is that nobody comes to articulate or appreciate their lifestyle."*
> *— Interviewee 13, Community Campaigner, Nepal*

This suggests that the challenge is not a lack of action, but a lack of recognition and alignment between institutional language and existing practices. As one interviewee put it, NbS is not a fixed concept, but a way of approaching challenges.

> *"Nature-based solutions are an approach to problems. They are not a thing in themselves; it's how you approach them, how you understand them, and how you look at them."*
> — Interviewee 6, Agrobiologist, Spain

Keywords: *Code-shifting, Anthropocentric, Utilitarian, Hollow term, Green Infrastructure, Gentle Remediation Options (GRO), Ancestral knowledge, Multi-species buildings.*



Nature-based solutions are often already being practised by local communities, but they are framed as "ancestral knowledge," "livelihood initiatives," or simply a "way of living". Introducing NbS as a novel, imported concept can cause friction. Effective communication requires breaking down the jargon into everyday concepts and avoiding the utilitarian framing that suggests nature only exists to "solve" human problems.

From top-down solutions to strength-based approaches

Across multiple contexts, NbS interventions are often introduced as externally designed solutions to predefined problems. However, interviewees consistently highlight that communities are already actively organising, caring for, and maintaining their environments—responding to everyday needs through informal yet highly effective practices. Rather than a lack of action, what is often missing is recognition and support for this existing civic capacity.

> *"There is ecological knowledge and people who care in every single neighbourhood in the city. It's recognising the already existing civic capacity rather than starting from scratch every time."*
> *— Interviewee 9, Research Social Scientist, USA*

This reveals the presence of an underlying, often invisible **social infrastructure**—networks of care, trust, and stewardship that sustain places over time but remain largely unaccounted for in formal NbS planning and design processes.

> *"We visualise the nature-based solution, the design, the structure, the function, but we don't visualise the social network or the social infrastructure that gives life and energy to these spaces."*
> *— Interviewee 20, Social Scientist, USA*

A strength-based approach shifts the focus from identifying problems to amplifying what is already working. Instead of framing communities as lacking capacity, it recognises them as active agents with knowledge, relationships, and practices that can be built upon.

> *"We try to deal with the strengths rather than trying to deal with the problem... We amplify that strength in a way that helps to resolve the identical problem as well."*
> *— Interviewee 13, Community Campaigner, Nepal*

At the same time, this shift requires moving beyond superficial consultation toward deeper forms of engagement where communities actively shape, use, and sustain interventions. When people are involved in defining spaces, a sense of ownership and responsibility emerges.

> *"Ask them where they want a pocket park... so citizens would feel like the space is theirs; they would respect it, they would take care of it and replicate it in their own spaces."*
> *— Interviewee 1, Project Manager, Poland*

This sense of ownership—often described as **"usership"**—becomes a key condition for long-term stewardship, linking individual engagement with collective responsibility and care.

> *"It's this idea of the commons... when you have usership, you have a stake."*
> *— Interviewee 7, Educator and Artist, Ireland*



Engagement must move beyond superficial consultation to true "co-creation" and "usership" where citizens feel a sense of ownership over the space. Campaigns rarely work because of short attention spans; instead, a targeted "acupuncture" approach—finding key local allies and empowering them to lead—yields long-term stewardship. Furthermore, mapping these networks of care (e.g., through tools like StewMap) makes the invisible civic capacity visible to policymakers.

*more quotes related to From top-down solutions to strength-based approaches, (see the relevant pillar below).

Eco-gentrification vs. equity, justice, and decolonisation

Across multiple contexts, NbS are often framed as universally beneficial interventions that deliver environmental, social, and economic gains. However, interviewees consistently highlight that these benefits are unevenly distributed, and in some cases, NbS can reinforce or exacerbate existing inequalities.

> *"Making sure it's not perpetuating structural inequalities in communities is fundamental. You get a lot of maladaptation because of*

> *that shallow, project-level thinking where you say, 'okay, we'll hand it over to the community,' but who's actually gonna benefit from that?"*
> *— Interviewee 3, Climate Resilience Lead, UK/Global*

This raises a critical question: **who benefits—and who is excluded?** Greening interventions can increase land values, attract investment, and lead to displacement, particularly in already vulnerable communities. In such cases, NbS risk becoming mechanisms of **eco-gentrification**, where environmental improvements come at the cost of social justice.

> *"Nature-based solutions are not nature-based solutions if they are causing harm. You have people being evicted out of forests because of reforestation..."*
> *— Interviewee 5, Landscape Architect, Kenya*

These tensions reveal that NbS are not neutral or purely technical solutions, but deeply embedded in broader political, economic, and social systems. Addressing them requires moving beyond environmental outcomes toward a more **justice-centred framing**.

> *"Environmentalism, without dealing with the social justice and economic question, is just gardening."*
> *— Interviewee 15, Legal Advocate, Kenya*

At the same time, many interviewees emphasise that working with nature is not a new concept. In many communities—particularly in the Global South—these practices are rooted in long-standing relationships with land, culture, and survival. Framing NbS as a novel or imported concept risks overlooking and undervaluing these existing knowledge systems.

> *"Bringing concepts from the West is like forgetting that these knowledges already exist... how you live in your territory with your ecosystem."*
> *— Interviewee 16, Urban Planner, Colombia*

This points to the need for **decolonising NbS frameworks**, recognising that different worldviews shape how people relate to nature—not as a resource to be managed, but as a living system of which they are part.

> *"In our culture, the mountain is our God... It's a very Western mindset... to 'conquer' it."*
> *— Interviewee 13, Community Campaigner, Nepal*

Together, these insights call for a shift from NbS as standardised, universally applicable interventions toward approaches that are **context-sensitive, equitable, and grounded in local**

knowledge, values, and rights. Ensuring just outcomes requires not only technical design, but also attention to power, inclusion, and the distribution of benefits over time.

Keywords: *Ecological justice, Environmental justice, Maladaptation, Eco-gentrification, Decolonial context, Food sovereignty, Right to the city, Unequal access.*



Planting trees without addressing underlying social justice issues is "just gardening". True NbS must address historical marginalisation, offering economic opportunities and safe spaces for vulnerable groups (e.g., domestic workers, waste pickers, youth in informal settlements). Nature is used in these contexts not just for biophysical resilience, but as a tool for community healing, memory, and rehabilitation from violence.

Municipal silos vs. cross-departmental collaboration

Across multiple contexts, municipalities are traditionally structured into highly compartmentalised silos—such as parks, water, transport, and planning—each operating with separate mandates, budgets, and priorities. However, nature functions as an interconnected system, and implementing NbS requires coordination across these domains. This structural misalignment creates significant barriers to effective implementation.

> *"Our city administrative functions were created in a different era... we need more durable integration across these silos."*
> *— Interviewee 9, Research Social Scientist, USA*

In practice, this fragmentation limits collaboration and reinforces isolated approaches. Departments often operate independently, with limited communication or shared vision, making it difficult to develop integrated NbS strategies.

> *"We are lacking this kind of integrated approach... they're working in their own bubble."*
> *— Interviewee 18, NGO President, North Macedonia*

This disconnect is not only organisational, but also cultural. Different departments often operate with distinct priorities and ways of thinking, making collaboration difficult even when there is a willingness to engage.

> *"You talk with cities... they don't think about economics... It's like a foreign language... It's all about doing that internal silo-busting."*
> *— Interviewee 8, CEO of Not-for-Profit, Ireland/Global*

As a result, NbS projects frequently remain isolated pilots rather than being embedded within broader institutional frameworks. To overcome this, NbS must be integrated into long-term strategies, policies, and planning instruments.

> *"If nature-based solutions are integrated into long-term strategies... they're more likely to survive political changes."*
> *— Interviewee 1, Project Manager, Poland*

At the same time, successful implementation depends on aligning grassroots initiatives with institutional priorities and decision-making processes. Without this alignment, projects struggle to scale and secure resources.

> *"If you don't align with the people who make the decisions... it is much easier to scale the projects."*
> *— Interviewee 16, Urban Planner, Colombia*

Keywords: *Silo-busting, Cross-departmental, Institutional embedding, Procurement criteria, Transversalidad (cross-cutting), Metropolitan scale.*



NbS projects need to be institutionally embedded into long-term master plans and climate strategies so they can survive the short-term cycles of political elections. Establishing regular, cross-sectoral thematic forums and aligning grassroots actions with wider municipal goals ensures that projects can scale and secure necessary resources.

Project myopia vs. long-term funding needs

Across multiple contexts, there is a persistent mismatch between the short-term, project-based funding of NbS and the long-term reality of ecological processes. While nature requires time to grow, adapt, and deliver benefits, funding mechanisms are typically designed around short cycles that prioritise initial implementation over ongoing care.

> *"Working with nature is a work, and it's not a project. Like, it's not gonna stop. And thinking about only funding projects and not the networks and communities... is just a big gap in policy."*
> *— Interviewee 12, Sustainability Consultant, Belgium*

This disconnect creates a structural vulnerability. NbS are often funded as one-off interventions, with resources allocated to design and construction, but insufficient attention given to long-term maintenance and operational needs.

> *"If a project looks to implement a nature-based solution, and thinks that it's all capital costs and not operational costs... You have something great for the first year, and then maybe there's a drought, and you'll see high mortality rates."*
> *— Interviewee 3, Climate Resilience Lead, UK/Global*

As a result, many projects degrade over time, not because the concept fails, but because the necessary conditions for sustained care are not in place.

> *"There's nothing worse than a beautifully redesigned site with a ribbon cutting that then is disinvested or not cared for a decade or two later. It will make people think that the installation didn't work."*
> *— Interviewee 9, Research Social Scientist, USA*

At the same time, much of the ongoing work of maintaining and activating NbS falls on communities, often in the form of unpaid or underpaid labour. Without economic support, this creates a barrier to long-term engagement and reinforces inequalities.

> *"People say, 'If I am going to be a volunteer in a garden, I am using my time for free... it was good, but it's not generating any income.' So they can't continue, because they have to survive."*
> *— Interviewee 16, Urban Planner, Colombia*

This highlights the need to rethink maintenance not as a burden, but as an investment in **local livelihoods, community building, and long-term resilience**. Small, flexible funding mechanisms can play a critical role in enabling immediate, localised action and sustaining engagement over time.

> *"Provide easy access to small amounts of money. I know the EU is very good at big projects... but if you applied for a small budget of 750 euros, you could do quick, small things... That would really be helpful."*
> *— Interviewee 2, Landscape Designer, Netherlands*

Keywords: *Maintenance burden, Episodic funding, Micro-grants, Nature-based enterprises (NBEs), Business models, Life cycle.*



Maintenance should be viewed as an investment in local jobs and community building, not just a financial burden. Governments must facilitate easy access to micro-grants (e.g., €750-€2,000) for citizens to enact immediate, localised changes. Additionally, there is a pressing need to support the "supply side" of NbS—Nature-based Enterprises (NBEs)—by helping them develop viable business models and connecting them with local innovation ecosystems.

Nature alienation vs. multi-sensorial and emotional engagement

Across multiple contexts, interviewees highlight a growing disconnection between people and nature, particularly in urban environments. In response, NbS are often communicated through technical, data-driven, or purely cognitive approaches that fail to resonate with everyday experience.

However, intellectual arguments alone are insufficient to rebuild this relationship.

> *"It's no use being only mental, it has to be a multi-sensory experience... There are smells, there are sounds, how do we perceive temperatures, textures, shapes... and suddenly these people release like this: 'Wow, when I was a child, I ate this fruit, it reminded me now of her smell.'"*
> *— Interviewee 17, Institute Founder, Brazil*

Engagement with nature is fundamentally **sensory, emotional, and relational**. When people are invited to walk, touch, observe, and experience their environment, they begin to reconnect in ways that go beyond awareness and into lived experience.

Food, in particular, emerges as a powerful medium for connection—linking ecology, culture, and memory.

> *"We feed everyone these biodiverse potatoes, coated in seawater and seaweed, after spending the morning looking at the history of the potato... It's very important to eat the world, and to gain trust and relationship through that process."*
> *— Interviewee 7, Educator and Artist, Ireland*

At the same time, playful and creative tools can make NbS more accessible, especially for younger audiences, allowing them to engage with complex systems in intuitive and meaningful ways.

> *"Minecraft has proven to be a powerful tool for working with young people... this gamified approach made urban design accessible and fun."*
> *— Interviewee 1, Project Manager, Poland*

These approaches help shift perception, enabling people to see and experience their surroundings differently, often revealing forms of nature that were previously unnoticed.

> *"We share our urban nature map, which shows the city differently... creating a way that we can get them to open their eyes to something that they might not have noticed up until now."*
> *— Interviewee 10, NGO Director, UK*

Collective, shared experiences also play a critical role. Rather than top-down communication, moments of **joyful, participatory engagement** foster connection, trust, and a sense of belonging.

> *"We call on people to share their favourite places in nature... And the events that worked best were really the ones where we offered joyful nature connection... a hike through nature where it didn't come across as experts telling you how the world is, but citizens sharing."*
> *— Interviewee 12, Sustainability Consultant, Belgium*

Together, these insights suggest that reconnecting people with nature requires moving beyond information toward **multi-sensorial, participatory, and experiential approaches** that cultivate care, curiosity, and long-term stewardship.

Keywords: *Biophilia, Rewilding, Multi-sensorial, Gastronomy, Minecraft, Play, Experimental material cultures, Joyful nature connection.*



When citizens are invited to walk, touch, smell, and even eat the landscape (e.g., cooking biodiverse potatoes or foraging), they develop a profound, lived relationship with the environment. Using tools like Minecraft allows youth to gamify and safely co-design their urban spaces. Engagement processes should leave room for "planning for the unplanned," allowing spaces to evolve organically and cyclically alongside the community and the seasons.

C.4 Reflections: Bridging Gaps and Opportunities

Synthesis of Key Findings

- **The Language Disconnect:** A resounding finding from both the interviews and the survey is that nature-based action is already happening at the grassroots level, but it is rarely called "NbS" (Figure C.9). In non-English speaking contexts, the term can feel foreign. Dutch practitioners prefer terms like "nature-inclusive architecture" or "phytoremediation". Spanish and Colombian interviewees often speak of "restoration," "landscape regeneration," or "inspiration" rather than "solutions". In the heavy infrastructure sector (transport/energy), "green design" is often a more welcomed terminology than NbS. The gap is primarily in technical terminology, not a lack of local action. Communities organise around tangible, lived concepts—such as rivers, soil, trees, and food sovereignty—finding technical jargon alienating. Sustained engagement requires "re-enchantment" and "biophilia"—a love of life. Educational programs in Ireland focus on "taskscaping" and "terrestrialization," encouraging students to form companion species relationships and acknowledging the agency of the non-human world.

  Related NbS Uptake stage: Understanding

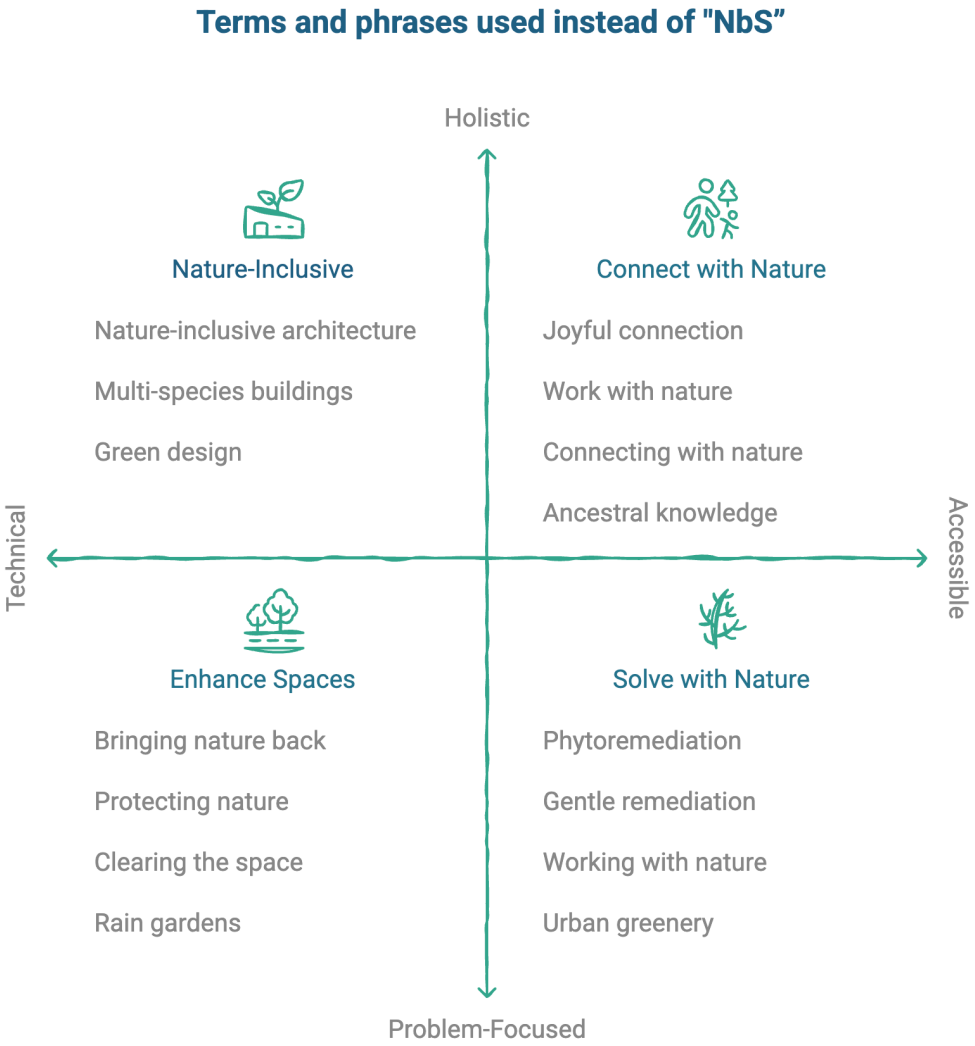

Figure C.9. *Terms and Phrases Used Instead of "Nature-Based Solutions"*

- **Active Citizenship and Agency:** Long-term care is maintained when citizens feel ownership. This is exemplified by the **Ranger program** in London, which empowers residents to lead local nature recovery, and the **Ecological Justice Network** in Nairobi, where creating parks helps youth rehabilitate from crime, creating a symbiotic relationship between social and ecological healing.

  Related NbS Uptake stage: All.

- **Alternative Narratives:** To legitimise these actions, organisations often pivot to more resonant framing. For instance, **Event N1** uses poetic narratives about "green and blue space" to foster emotional connections. In the Global South, recognition is often tied to indigenous wisdom and spiritual relationships with nature (e.g., mountains as deities in Nepal), shifting the focus from "solving problems" to "strength-based approaches". In Kenya, the discourse is reframed through Ecological Justice, emphasising that nature protection is inseparable from human rights and the fight against poverty.

Related NbS Uptake stage: Understanding.

- **Trust and Time are Non-Negotiable:** The desk review, particularly the JRC analysis of the BiodiverCities project, stresses that meaningful co-creation cannot be rushed or forced. Interviews reinforced that the most overlooked element of citizen engagement is the "process itself"—requiring time, care, and sustained presence to overcome historical trust deficits between marginalised communities and local governments.

  Related NBS Uptake stage: All

- **Competing Socio-Economic Priorities:** Survey respondents consistently highlighted that while communities value nature, engagement is severely hindered by immediate socio-economic pressures. The reality that "people are struggling to make a living" often supersedes long-term ecological goals, meaning NbS must be explicitly linked to tangible co-benefits like job creation, health, and affordable food to gain local traction.

  Related NbS Uptake stage: Integrating

- **The Vital Role of "Civic Brokers":** Civil society organisations (CSOs) act as essential "scale-crossing brokers". They bridge the gap between rigid municipal structures and informal neighbourhood groups, translating scientific data into accessible formats and providing the safe spaces necessary for genuine deliberation. The **Horizon Nua** platform creates a bridge between the supply side (entrepreneurs) and the demand side (municipalities). In Kenya, the **Rivers and People's Plan** facilitates negotiated approaches between residents and the government to integrate NbS into urban informal settlements.

  Related NBS Uptake stage: Understanding, Reorganising.

- **Strategic Embedding:** Integration is most effective when embedded in a high-level strategy. For instance, the **Metropolitan Climate Strategy** in Poland integrates NbS across 15 municipalities. In Hungary, a **"Green Infrastructure Jury"** provides expert review of project proposals before submission to ensure quality.

  Related NbS Uptake stage: Integrating.

- **Capacity Building and Knowledge Access:** Municipalities and citizens alike need access to data. Proposals include creating **"Knowledge Banks"** or granting access to university laboratories for soil testing.

  Related NbS Uptake stage: Integrating.

Identification of Major Gaps

Despite its value being widely recognised by global policy agendas, EU frameworks, and the research community, several structural and institutional barriers prevent civil society from fulfilling its potential:

- **Limited Systematic Analysis of CSOs:** Both scholarly research and current governance frameworks heavily bias the perspectives of public administrators and individual citizens. Consequently, the diverse roles of informal community groups and CSOs remain under-researched, making them "invisible" stakeholders and complicating efforts to map civic capacity and direct investment.

- **Short-Termism and Procurement Barriers:** A major obstacle identified in the interviews is that public procurement terms of reference (ToR) rarely mandate, budget, or allocate sufficient time for stakeholder engagement. Furthermore, funding cycles prioritise the short-term capital "build" phase of projects while completely neglecting the long-term maintenance and stewardship required to sustain NbS.

- **Exclusion of Marginalised Voices:** Standard participatory formats (like public hearings or town halls) typically attract the "usual suspects." Commonly Excluded Stakeholders (CES)—such as ethnic minorities, low-income groups, and youth—face systemic barriers to participation, including a lack of logistical support (childcare, stipends, transport) and intimidating, highly technical engagement environments.

- **The Role of Maintenance:** Proper maintenance is critical for public acceptance. In Spain, outdated municipal legislation often assigns the care of green infrastructure to city sanitation and street cleaning services. Because these urban cleaning crews lack specialised ecological training, they frequently do not know how to properly manage living systems or Nature-based Solutions, creating a major barrier to the long-term success of regenerative projects.

- **Legal and Policy Frameworks:** Legal empowerment is a vital tool; citizens need to understand land rights (e.g., riparian reserves are public land) to confidently defend and restore green spaces. Policy must also evolve to allow for **"planning for the unplanned," creating flexible regulatory environments that allow com**munities to adapt spaces over time.

Opportunities for Civil Society to Foster Engagement

To transition from isolated, tokenistic consultation to sustained co-governance, civil society can leverage several strategic opportunities:

- **Deploying Alternative and Creative Methodologies:** CSOs are perfectly positioned to move beyond traditional surveys by employing culturally resonant tools such as storytelling, photovoice, emotional mapping, and community walkthroughs. These methods value tacit, local knowledge equally with scientific expertise, capturing the authentic needs of the community. Successful integration often involves distinct methodologies that go beyond consultation. Examples include **Minecraft workshops** to engage youth in Poland, "consensus methodologies" in Colombia, where communities vote for the collective good over individual interests, and **mapping of stewardship networks (STEW-MAP)** in the US and elsewhere to visualise civic capacity. In Spain, a

"Territorial Agreement" was used to align diverse stakeholders (farmers, neighbours, NGOs) around a common vision for a watershed.

- **Advocating for Decentralised Funding:** Survey respondents overwhelmingly cited "access to funding" as their top need. Civil society can advocate for and help manage decentralised financial mechanisms, such as participatory budgeting and highly accessible micro-grants (£250–£1000), allowing citizens direct control over local NbS investments. Conversely, scaling requires **business cases** that speak the language of finance departments, using tools like the **NbS Business Model Canvas** to map beneficiaries and value capture.

- **Shifting toward the "Commons" and Co-Governance:** There is a profound opportunity to move beyond the public/private dichotomy by framing urban nature as a "commons". CSOs can empower citizens legally and structurally, advocating for permanent institutional anchorage—such as citizen-based advisory groups or community steering committees—that give residents a formal, long-term stake in the stewardship of their environments. Innovative governance models ensure nature has a permanent voice. The **Zoöp model** in the Netherlands appoints a "Speaker for the Living" to the board of an organisation to represent non-human life in decision-making.

- **Fostering Nature-Based Enterprises:** Civil society can support the professionalisation of volunteer efforts by acting as incubators for "nature-based enterprises," helping grassroots initiatives secure sustainable business models that combine ecological restoration with local economic development. Public procurement processes need reform to value environmental criteria over the lowest cost, levelling the playing field for nature-based enterprises.

Pathways for Citizen Action

Based on the synthesis of EU-funded Nature-based Solutions (NbS) projects, global survey data, and expert interviews, fostering genuine citizen action requires moving beyond superficial consultation. The barriers identified across all three data streams—language disconnects, exclusionary participation formats, institutional silos, short-term funding cycles, and the absence of economic models for stewardship—are not isolated problems. They are interconnected and systemic.

The six pathways presented here translate these barriers into concrete actions and enabling measures, tailored to policymakers, intermediaries, municipalities, and civil society actors. Each pathway responds to a specific cluster of barriers, while recognising that real change requires working across multiple pathways simultaneously.

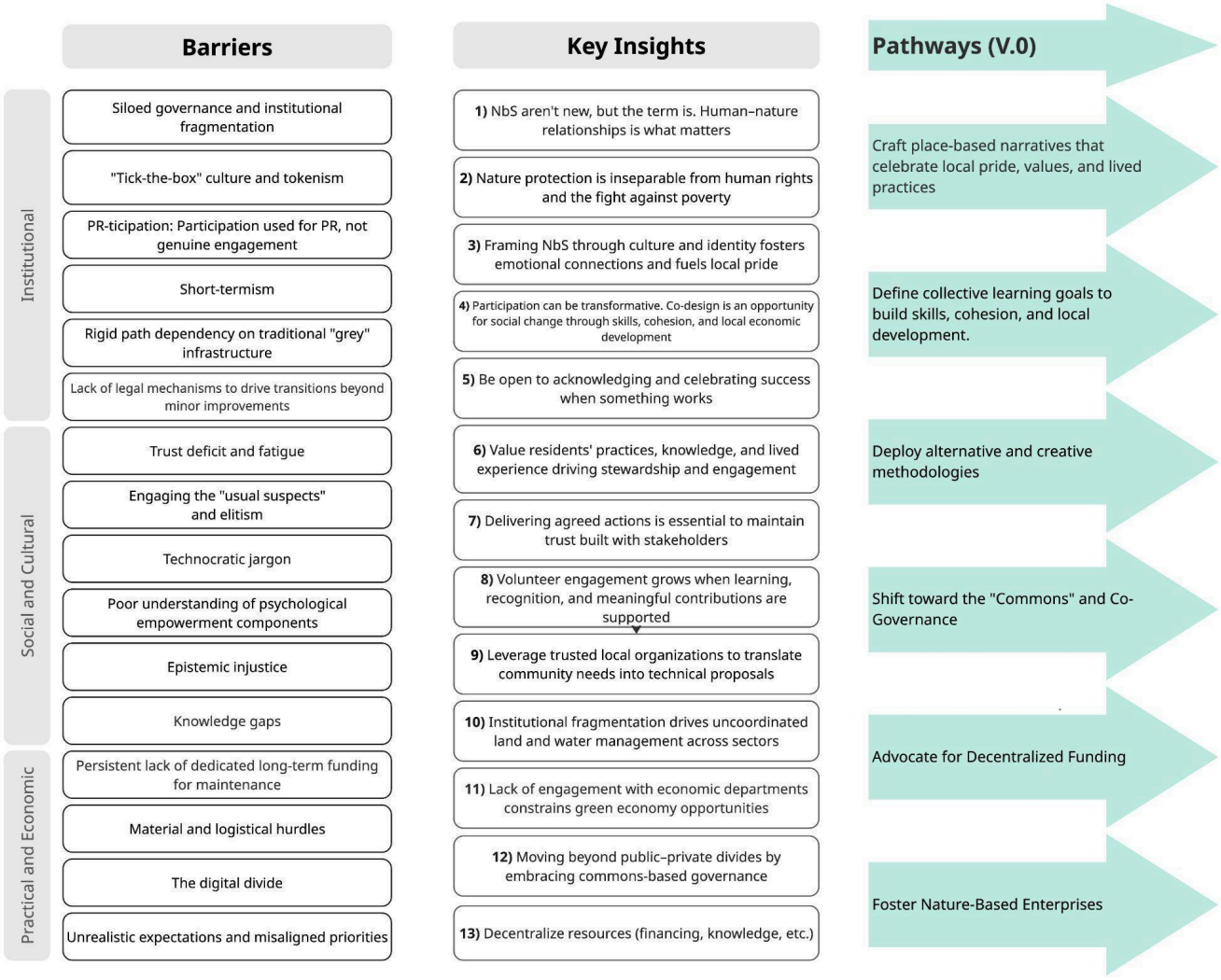

Figure C.10. *From Barriers to Insights to Actionable Pathways*

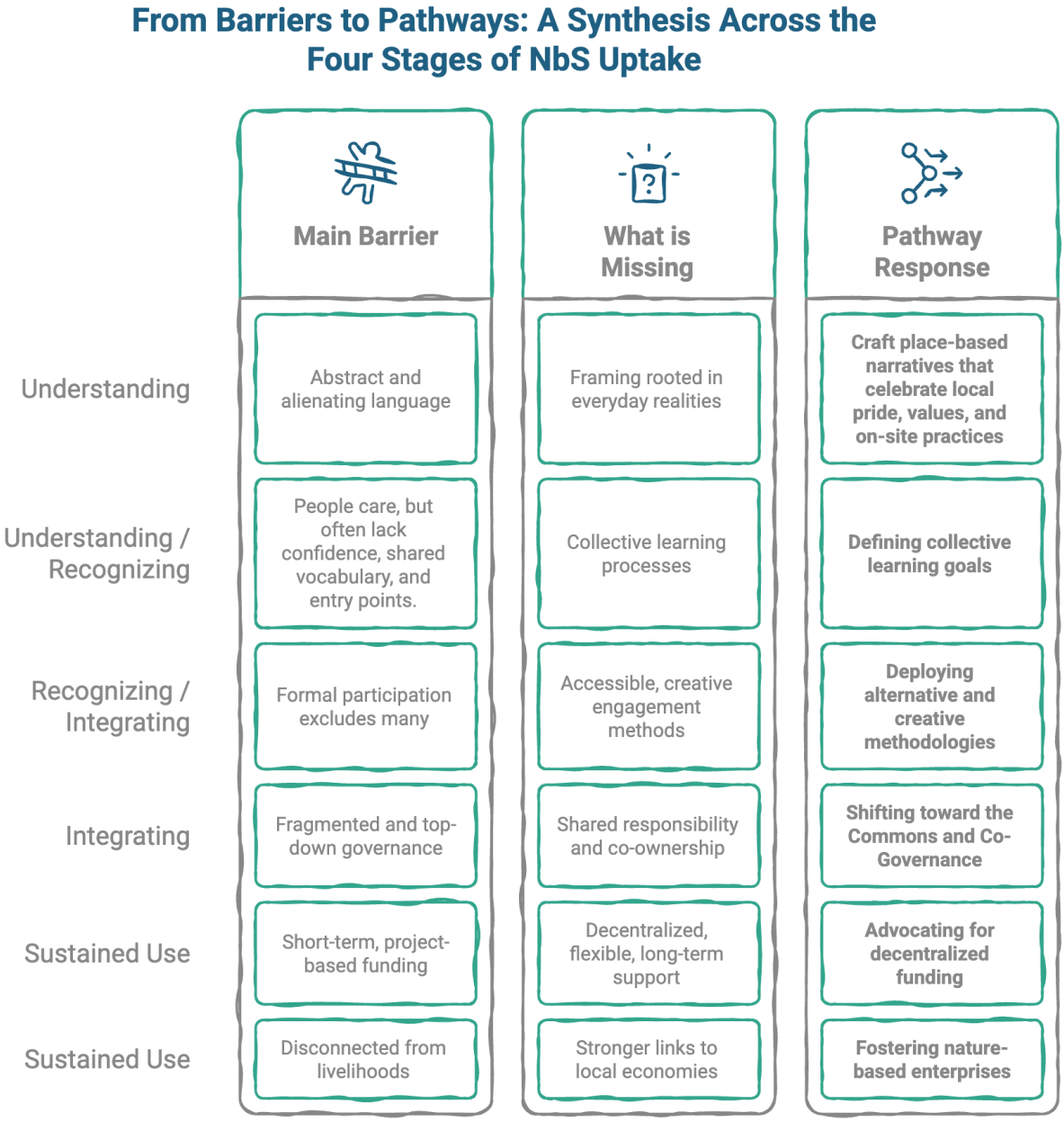

Figure C.11. *From Barriers to Pathways Across the NbS Uptake Journey*

The pathways are not sequential—they can be entered at any point depending on context, capacity, and need. Some are cross-cutting (Pathways 2 and 3 apply across all stages), while others concentrate on specific stages of NbS uptake (Pathway 1 at the Understanding stage; Pathways 4–6 at the Integrating and Sustaining stages). Together, they form a flexible framework for securing long-term, inclusive engagement—one that meets communities where they are, rather than where institutions expect them to be.

Annex D – Research Instruments

This annex compiles all research instruments used in the study. These materials are provided for transparency and to support replication or adaptation by other researchers and practitioners.

D.1 Desk Review Database

Table D.1. List of featured documents in the analysis (4 EC Expert Reports + 31 deliverables from 16 EU-funded projects).

	Author or Project	Type	GA	Report Name or Citation	Year	CORDIS[39]	NNRI DB[40]	Catalogue[41]	Task Lead[42]
Relevant EC Expert Reports									
1	Directorate-General for Research and Innovation	Report	n/a	Co-creating nature-based solutions with commonly excluded stakeholders – Insights from practice and research, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2777/4288584	2025				•
2	Joint Research Centre	Independent Expert Report	n/a	BiodiverCities Atlas – A participatory guide to building biodiverse urban futures, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2760/18849	2023				•
3	Directorate-General for Research and Innovation	Independent Expert Report	n/a	Guidelines for co-creation and co-governance of nature-based solutions: Insights from EU-funded projects (I. Ferreira, G. Lupp, & I. Mahmoud, Eds.). Publications Office of the European Union. https://doi.org/10.2777/157060	2023				•
4	Directorate-General for	Independent Expert	n/a	Nature-based Solutions: State of the Art in EU-funded Projects. Publications Office of the	2020				•

[39] The European Commission's primary public database for EU-funded research and innovation projects. (Note: It is spelled CORDIS, though your table header says CODIS).
[40] The NetworkNature Research and Innovation Database.
[41] The 2024 publication *EU-funded NbS research projects: Tackle the climate and biodiversity crises*.
[42] Indicates reviews and projects identified through targeted consultations with Task lead organisations.

	Research and Innovation	Report		European Union. ISBN 978-92-76-17334-2.					
Past EU NbS Projects									
1	TRANS-Lightho uses	Horizon Europe D.	101084628	Local Democracy Labs. Public engagement strategies for NBS. (D3.6)	2025		•	•	
2	COEVOLVERS	Horizon Europe D.	101084220	Searching for the Common Ground - Exploring the LL sites together using participatory and art-based creative methods (D3.1)	2024		•	•	
3	EUARENAS	Horizon Europe D.	959420	Citizen Participation Toolkit (D6.10)	2024	•			
4	NATURANCE	H2020 Deliverable	101060464	Governance/policy enablers/barriers for scaling NbS (D3.1)	2024	•		•	
5	INTERLACE	H2020 Deliverable	869324	From ideas to action. INTERLACE impulses for successfully implementing NbS in cities. D2.4 INTERLACE City Impulse Papers.	2024			•	•
6	INTERLACE	H2020 Deliverable	869324	Report on implemented engagement programmes (D5.4)	2024			•	•
7	URBiNAT	H2020 Deliverable	776783	Second Assessment Report on Progress, Results, and Insights for the Combination of Methods, Citizen Engagement, and Usage of Digital Tools (D3.8)	2024			•	
8	URBiNAT	H2020 Deliverable	776783	Community-Driven Processes to Co-Design and Co-Implement Nbs (D3.2)	2019			•	
9	JUSTNature	Journal article	101003757	Towards more equitable urban greening: A framework for monitoring and evaluating co-governance. Urban Planning, 9, Article 8184. https://doi.org/10.17645/up.8184	2024			•	
10	JUSTNature	H2020 Deliverable	101003757	State-of-the-art report on good practice for Co-governance of NbS (D7.1)	2022 /23			•	
11	JUSTNature	Research Paper	101003757	Strategies and tools for just collaborative planning of nature-based solutions. In Proceedings of the 58th ISOCARP Congress: From Wealthy to Healthy Cities. https://doi.org/10.47472/BfDVVsX5	2022			•	
12	proGIreg	H2020 Deliverable	776528	Living Labs impact at the district level (D4.8)	2023			•	
13	proGIreg	H2020 Deliverable	776528	Living Labs impact at the NBS level (D4.9)	2023			•	
14	proGIreg	H2020 Deliverable	776528	Implemented Living Lab in Zagreb, Croatia	2023			•	
15	proGIreg	H2020 Deliverable	776528	Living Lab Turin-Mirafiori Sud, Italy: Green corridor and local natural heritage enhancement.	2023			•	
16	URBAN GreenUP	H2020 Deliverable	730426	Report on Lessons Learned for the Large-Scale Deployment of NbS and Guidelines on How to Overcome Them - URBAN Green-UP mini-handbook (D7.10)	2023	•		•	
17	ACTION	H2020 Deliverable	824603	Policy brief on citizen science mainstreaming (D6.5)	2022	•			
18	Phusicos	H2020 Deliverable	776681	Opportunities and barriers to NBS at the EU, national, regional and local scales, with suggested reforms and innovations (D5.2)	2023			•	

19	Phusicos	H2020 Deliverable	776681	Lessons learned with the Living Labs Experience (D3.5)	2021			•	
20	Phusicos	H2020 Deliverable	776681	NBS in-depth case study analysis of the characteristics of a successful governance model (D5.1)	2019			•	
21	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages and lessons learned from the demonstration pilot in Manchester (D1.4)	2022	•		•	
22	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages, and lessons learned from the demonstration pilot in Valencia (D1.5)	2022	•		•	
23	GrowGreen	H2020 Deliverable	730283	Evidence-based outcomes, key messages, and lessons learned from the demonstration pilot in Wroclaw (D1.6)	2022	•		•	
24	OPERANDUM	Journal article	776848	Public acceptance of nature-based solutions for natural hazard risk reduction: Survey findings from three study sites in Europe. Sustainability, 14(8), 4614. https://doi.org/10.3390/su14084614	2022			•	
25	OPERANDUM	Journal article	776848	A review of public acceptance of nature-based solutions: The 'why', 'when', and 'how' of success for disaster risk reduction measures. Ambio, 50(8), 1552–1573. https://doi.org/10.1007/s13280-021-01502-4	2021			•	
26	OPERANDUM	H2020 Deliverable	776848	Mapping, characterisation, and critical evaluation of existing NBS (D1.1)	2019			•	
27	OPERANDUM	Other	776848	Project Infographic	n/a			•	
28	NATURE4CITIES	H2020 Deliverable	730468	Report on Agent-Based Analysis: Approaches identifying citizen agents and their behaviours for Nature-based Solutions (D3.2).	2020	•	•	•	
29	NATURE4CITIES	H2020 Deliverable	730468	Citizen and Stakeholder Engagement strategies and tools for NBS Implementation (D5.2).	2018	•	•	•	
30	NATURE4CITIES	H2020 Deliverable	730468	NBS Implementation Models Typology (D1.2).	2017	•	•	•	
31	NATURVATION	Report	730243	Taking Action for Urban Nature: Citizen Engagement Handbook, NATURVATION Guide	2019	•	•	•	•

D.2 Survey Questionnaire

This survey invited citizens and representatives from civil society organisations to share their experiences, challenges, and ideas for working with nature in everyday life — from gardens and trees to clean water and healthy places to live, learn, and work.

The responses contribute to the development of a shared roadmap within the NetworkNature+ project (funded by the European Union), aimed at informing policymakers and practitioners on how to better support community-led action.

The survey was designed to be completed in approximately 4–12 minutes. Participation was voluntary, and responses were anonymised and analysed in aggregate form.

Section 1. Community Challenges and Perceptions

Q1. What problem(s) does your community face?
Select all that apply.

Too much water (e.g., flooding)

Too little water (e.g., drought)

Too much heat/lack of shade

Poor soils/erosion

Food — access and quality

High energy costs

No place to play, walk, or gather

Biodiversity is not being protected

Unstable slopes/land risks

Too many people live with too little

Difficulty engaging the community in meaningful activities

Challenges in teaching new skills (e.g., in schools or communities)

Pollution of water, air, or soils

Lack of jobs or livelihood opportunities

Reducing waste

Building a sense of belonging

Supporting mental health and well-being

The protection of human rights is failing

Other (please specify)

Q2. How curious are you to explore how nature can help address these challenges?
Not curious

Not sure yet

A little curious

Yes, if it connects to my work

Yes, I'm all in

Q3. What makes working with nature feel difficult or distant?
Select all that apply.

It feels too abstract.

It feels far from my work or priorities

It is not a priority right now

It is difficult to estimate the costs

It still feels too new

Other (please specify)

Q4. Would you like to continue to the section on support needs?
Yes

No

Section 2. Experience with Nature-Based Actions

Q5. Have you been personally involved in any nature-related project?
Select all that apply.

Yes — implementation on the ground (e.g. planting, surveying)

Yes — helping shape the idea or vision

Yes — helping monitor or follow up

Yes — helping with maintenance or care

Yes — helping engage or bring others on board

Yes — offering guidance or expertise

Yes — volunteering

Yes — in another way (please specify)

No

Q6. What was the project about?
Select all that apply.

Street trees / planted verges

Green roofs / green walls

Parks/community gardens

Bioswales/rain gardens / permeable pavements

Constructed wetlands/ponds for drainage

Letting nature regenerate (e.g., meadows, rewilding)

Livelihoods/bioeconomy (bio-based goods and services)

Ecological restoration

Other (please specify)

Q7. How were citizens engaged in the project?
Select all that apply.

Public meetings

Citizen mobilisation (e.g., demonstrations, advocacy, media engagement)

Traditional community gatherings

Workshops to understand the problem together

Data collection activities (e.g., environmental monitoring)

Community walks, social cartography, emotional mapping

Online consultations

Monitoring activities

Social media campaigns

Storytelling

Arts (e.g., theatre, dance, performance)

Not clear

Other (please specify)

Q8. In what ways was the project innovative in how it worked with people?
Open-ended question

Section 3. Support Needs and Enabling Conditions

Q9. What would help you (or your organisation) work more closely with nature in your community?
Select all that apply.

Guidance on how to start

Stronger connections with local authorities

Training and capacity-building opportunities

Access to relevant knowledge, evidence, or case studies

Peer-to-peer learning and knowledge exchange

Tools to engage citizens and communicate effectively

Access to funding and financial resources

Strategies to mobilise volunteers

Tools for monitoring and evaluation

Literature in my language

Compensation for participation

Childcare while attending activities

Not sure

Other (please specify)

Q10. Would you or your organisation be interested in supporting others to work with nature (e.g. on a pro-bono basis)?
Select all that apply.

Provide guidance on how to get started

Offer training or capacity-building

Share technical knowledge or case studies

Facilitate peer-to-peer learning

Advice on citizen engagement and communication

Advice on monitoring and evaluation tools

Help promote others' work

Yes, but I would like more information

No

Not sure

Other (please specify)

Section 4. Information and Organisational Context

Q11. Where do you typically obtain information or inspiration on working with nature? Rank in order of importance.
Websites
Social media (LinkedIn, X, Instagram, TikTok)
Training (webinars, online courses)
Newsletters
Formal meetings (seminars, conferences)
Informal gatherings (community walks, networking, retreats)

Q12. What is the size of your organisation? (Optional)
0–5 staff (volunteer-based / very small)
6–10 staff (small)
11–20 staff (medium)
21–50 staff (medium-large)
51–200 staff (large)
200+ staff (very large/international)
I do not represent an organisation

Q13. Where are you based? (Optional)
Open-ended question
Q14. What best describes your role?
Select all that apply.
I help set the vision or direction
I ensure activities happen on the ground
I connect people and build collaborations
I create or share technical knowledge
I share knowledge based on lived experience
I am an educator or facilitator
I am a campaigner or advocate
I support communities in legal or rights-based processes
I actively support causes or initiatives
Other (please specify)

Section 5. Optional Follow-up and Reflections

Q15. Would you like to stay connected and receive updates about the roadmap? *(Optional)*
Email field

Q16. Would you like your organisation to be acknowledged in this study? *(Optional)*
Website or social media

Q17. Is there anything you would like decision-makers to better understand about working with nature in your community? *(Optional)*
Open-ended question

Note on Survey Design
The survey used a **branching logic structure**, allowing respondents to skip irrelevant sections based on their answers. This reduced response burden, improved engagement, and increased data quality by tailoring the experience to different levels of familiarity and involvement with nature-based actions.

D.3 Media and Dissemination Pack

To support the dissemination of the Global Survey on Citizen Action for Nature, a media pack was developed with ready-to-use communication materials for partners, networks, and public audiences. The materials were designed to ensure consistent messaging, accessibility, and broad participation across regions and sectors.

A3.2 Campaign Visual

Figure D.1. Global Survey on Citizen Action for Nature — Campaign Visual



The visual identity combined illustrations of people, landscapes, and biodiversity with partner logos, presenting the survey as a collective global effort.



A3.3 Social Media Copies

LinkedIn Version

Global Survey on Citizen Action for Nature: What does your community need most?

The people shaping the future of nature aren't only policymakers; they are neighbours, activists, educators, volunteers, and community groups. People like you.

Today, we launched a global survey to understand how citizens and civil society work with nature (even if they don't call it "NbS").

✔ Adaptive branching logic — only relevant questions
✔ 4–12 minutes, jargon-free
✔ Anonymous

✔ Auto-language matching
✔ Open to citizens, CSOs, educators, volunteers, organisers

Take the survey before 1 March 2026:
https://thenatureofcities.typeform.com/to/iM8zPyV7

Your insights will help build a roadmap for people and nature, together.

Instagram Version

Global Survey on Citizen Action for Nature
What does your community need most?

Across the world, it's not just politicians who shape the future of nature —
it's neighbours, activists, educators, volunteers, community groups… you.

This survey is your chance to tell policymakers what your community really needs.

🌍 Launching a global survey to understand how people engage with nature, even if they don't call it "NbS."

✨ What makes this survey different?
– Only relevant questions
– 4–12 minutes
– Anonymous
– Open to everyone

🌱 Share your voice before 1 March 2026:
thenatureofcities.typeform.com/to/iM8zPyV7

Your insights will help build a roadmap for people and nature, together.

Short Version (X / WhatsApp / Newsletter)

Global Survey on Citizen Action & Nature

The people shaping the future of nature aren't only politicians — they're citizens, neighbours, activists, educators, volunteers… you.

This survey is your chance to tell policymakers what your community really needs.

Take the survey before 1 March 2026:
https://thenatureofcities.typeform.com/to/iM8zPyV7

A3.4 Reminder Messages

A sequence of reminder messages was used to maintain engagement:

"Your perspective can directly shape the Roadmap for Citizen Action on NbS — a guide that policymakers will use to understand what communities need."

"Did you know? The last major public survey on nature-based solutions was in 2015… A decade later, we're listening globally."

"It takes 4–12 minutes… a small action with real impact."

"Final days to share your voice — your community's needs deserve to be heard."

A3.5 Blog and Newsletter Copy (Excerpt)

Across the world, the people who shape the future of nature aren't only politicians. They are citizens, neighbours, activists, educators, volunteers, and community groups — people like you.

This survey is your chance to tell policymakers what your community really needs.

Your voice will help co-create the Roadmap for Citizen Action on Nature-based Solutions.

A3.6 Partner Support Text (Excerpt)

[Partner Name] proudly supports the Global Survey on Citizen Action for Nature and the co-creation of the Roadmap for Citizen Action on Nature-based Solutions.

We believe that the future of nature is shaped not only by policymakers, but by citizens, neighbours, educators, activists, volunteers, and community groups across the world.

You can help by taking and sharing the survey:
https://thenatureofcities.typeform.com/to/iM8zPyV7

A3.7 Dissemination Approach

The survey was disseminated through partner networks, civil society organisations, and digital channels, using a snowball approach to maximise reach and diversity of responses.

D.4 Anonymised List of Interviewees

The list below presents the anonymised interviewees consulted as part of this study.

INT-01 — Europe — Civil society practitioner

INT-02 — Europe — Community engagement practitioner

INT-03 — Global — Knowledge broker / NbS expert

INT-04 — Latin America — Environmental NGO leader

INT-05 — Africa — Community resilience practitioner

INT-06 — Europe — Landscape and territorial practitioner

INT-07 — Europe — Governance and participation expert

INT-08 — Europe — Social innovation practitioner

INT-09 — North America — Environmental communication expert

INT-10 — Europe — Policy and NbS advisor

INT-11 — Europe — Environmental NGO practitioner

INT-12 — Europe — Participatory processes facilitator

INT-13 — Asia — Sustainability practitioner

INT-14 — Europe — Urban and regional practitioner

INT-15 — Africa — Community-based practitioner

INT-16 — Latin America — Environmental governance practitioner

INT-17 — Latin America — Community-based practitioner

INT-18 — Europe — Civil society / regional development expert

INT-19 — Europe — Grassroots civic engagement practitioner

INT-20 — North America — Environmental and social innovation expert

D.5 Topic Guide for Semi-Structured Interviews

This topic guide was used to conduct **semi-structured interviews (≈50 minutes)** with civil society actors and global experts.

The aim was to gather **rich, comparable, and practice-based insights** on:

How nature-based solutions (NbS) are understood and applied

Experiences and engagement practices

Barriers and enabling conditions

Recommendations for strengthening citizen action

The guide follows a flexible structure, allowing interviewers to adapt questions while ensuring consistency across interviews.

1. Welcome and Framing (5 minutes)
Thank the interviewee for their time

Briefly introduce:

The interviewer

The Nature of Cities (TNOC)

The NetworkNature+ project and Citizen Roadmap

Clarify:

Purpose of the interview

Confidentiality and anonymisation

Use of insights for shaping recommendations

Warm-up questions:

Is there an experience in your life that transformed your relationship with nature—or with the world around you?

Could you briefly introduce yourself, your role, and your organisation's work?

Purpose:
Build trust and situate responses within the interviewee's context

Roadmap link:
Helps classify contributions by sector, geography, and type of civil society actor

2. Understanding of NbS (6 minutes)
When you think about Nature-based Solutions (NbS), how would you describe them in your own words?

Alternative framing (for all participants):

How would you use nature to solve problems in your community? What might that look like?

Purpose:
Explore how NbS is understood, framed, or reinterpreted

Roadmap link:
Informs communication strategies and addresses knowledge gaps, including cases where NbS terminology is not used

3. Recognising NbS (6 minutes)
In your experience, what is the level of awareness and recognition of NbS among your partners or networks?

Do you find the term “NbS” effective, or do you prefer other terms (e.g., green infrastructure, restoration, agroecology)?

Alternative (for those outside the NbS discourse):

Have you considered integrating nature-based approaches into your work?

How would you describe the level of awareness among your partners?

Purpose:
Understand legitimacy, awareness, and language preferences

Roadmap link:
Supports strategies for improving recognition and communication of NbS

4. Integrating NbS: Experiences and Examples (12 minutes)
Can you share an example of a challenge your organisation addressed (e.g., flooding, heat, pollution, lack of green space) and the solution implemented?

What worked well? What did not?

How were citizens or communities involved?

Any notable practices (e.g., co-creation, co-governance, citizen science)?

Alternative (for limited experience):

How far have you gone in integrating nature-based approaches?

What are the main barriers preventing implementation?

Purpose:
Capture real-world practices, engagement models, and lessons learned

Roadmap link:
Provides evidence for effective approaches and supports the design of scalable, inclusive practices

5. Using NbS Over Time: Future and Recommendations (8 minutes)
What are the main obstacles preventing policymakers from meaningfully involving civil society in working with nature?

What practical changes would you recommend?
(e.g., funding models, governance structures, recognition mechanisms)

Are there examples of effective platforms or mechanisms for citizen engagement?

EU-specific question (when applicable):

How should EU and national policymakers better involve civil society in NbS?

Purpose:
Identify enabling conditions, policy gaps, and opportunities

Roadmap link:
Directly informs actionable recommendations and pathways

6. Closing (2 minutes)
Anything else you would like to share?

Thank the interviewee and:

Explain how insights will be used

Ask for consent for acknowledgement (if applicable)

Invite suggestions of additional relevant experts

D.6 Example of Anonymised Interview Transcript

This annex presents an excerpt from a semi-structured interview, illustrating the type of qualitative data collected and analysed for this roadmap.

All identifying information has been removed or replaced with placeholders (e.g., Person A, Organization A, Place A) to ensure confidentiality.

The excerpt is lightly edited for clarity, while preserving timestamps, meaning, and conversational flow.

Transcript Excerpt (WEBVTT format)

00:00:04 – 00:00:13
Interviewer:
To begin, we would like to ask: is there an experience in your life that changed the way you relate to nature—or to the world around you?

00:00:30 – 00:01:02
Person A:
I think it was the beginning of my work in the association. Before this, I was just a user of nature. Now I also feel like a protector. I work with nature, for nature—not only using it.

00:01:49 – 00:02:05
Interviewer:
Could you briefly introduce yourself, your role, and your organisation’s work?

00:02:05 – 00:02:41
Person A:
I am a manager at Organization A in Place A. Our organisation acts as a platform for joint projects, bringing together municipalities to address shared environmental challenges.

We collaborate on sustainable development and connect municipalities with research institutions and international networks.

Through Event B, we learned about the potential of nature-based solutions—this was a game changer for us.

Understanding NbS

00:04:16 – 00:04:21
Interviewer:
How would you describe nature-based solutions in your own words?

00:04:21 – 00:05:15
Person A:
Nature-based solutions are ways of solving city problems by letting nature do what it does best.

We use natural processes to slow stormwater, cool overheated areas, and increase biodiversity. They are often cheaper than traditional infrastructure and improve well-being at the same time.

They help cities become more resilient to climate change.

Recognising NbS

00:06:07 – 00:06:22
Interviewer:
When working with different stakeholders, do you use the term “NbS,” or adapt your language?

00:06:22 – 00:07:29
Person A:
We adapt our language depending on who we speak to.

With policymakers, we talk about infrastructure, risk management, and cost savings.

With citizens, we emphasise green spaces and health benefits.

This makes the concept easier to understand for different audiences.

Integrating NbS in Practice

00:10:40 – 00:10:54
Interviewer:
Can you share an example of a challenge and how you addressed it?

00:11:31 – 00:12:21
Person A:
Our metropolitan area faces both flooding and water shortages.

We developed a guide for municipalities on natural retention, including recommendations for planners and strategies.

00:12:21 – 00:13:12
We also created tools such as:

a funding search engine

project standards (“do’s and don’ts”)

00:13:12 – 00:13:44
We co-created rain gardens with school students. These are visible in public space and help people understand their function.

Engagement Approaches

00:15:52 – 00:16:29
Person A:
We implemented Minecraft workshops in schools.

This gamified approach made urban design accessible and engaging. The quality of ideas from students was very high.

00:16:29 – 00:17:05
It was easy to engage schools—there was strong interest in participating.

Collaboration and Governance

00:18:54 – 00:19:19
Person A:
We collaborate with universities often.

Sometimes formally through contracts, but also informally when there is no budget. Experts are usually willing to contribute.

00:20:32 – 00:20:44
We also organise thematic forums every three months to bring together municipalities and experts.

Barriers and Enabling Conditions

00:20:48 – 00:21:28
Person A:
Institutional embedding is key. If NbS are part of long-term strategies, they survive political changes.

00:21:28 – 00:22:24
Capacity building is also essential—training planners and local officials.

00:22:24 – 00:23:12
Funding is a major challenge, especially for smaller municipalities. Mechanisms are often unpredictable.

00:23:12 – 00:24:03
Other barriers include maintenance burden and limited staff capacity.

Recommendations

00:28:20 – 00:29:00
Person A:
Local authorities should involve citizens in co-creating solutions.

For example, asking where green spaces should be and how they should function.

00:29:00 – 00:30:18
NbS should be more visible. Many projects exist, but people don’t recognise them as such.

Closing Reflection

00:35:06 – 00:36:01
Person A:
We are currently working on protecting a natural area shared by four municipalities.

If successful, it will be an important example of cross-territorial cooperation.

Note on Use

This transcript illustrates how:

insights emerge through conversation

language varies across actors

practical experience informs the roadmap

In the report, excerpts like these are used as anonymised quotes to ground findings in real-world perspectives.

Full transcripts were analysed through thematic clustering and contributed to the development of pathways and recommendations.

Annex E – Full Interview Quote Repository

This annex compiles the full set of interview excerpts used to inform the six pillars of sustained citizen action. Quotes are organised by analytical pillar, with all 20 interviewees represented under each. These excerpts form the extended qualitative evidence base behind the synthesised findings presented in the roadmap.

1. NbS as institutional buzzword vs. code-shifting

Analytical focus: This pillar captures how interviewees describe the tension between institutional NbS language and the everyday, culturally embedded ways communities speak about and practice working with nature.

Interviewee 1 — Project Manager, Poland
"When we work on education materials or social media, we emphasise green spaces, parks, and health benefits—something that citizens are more interested in. I think that makes the concept easier for different stakeholders to understand."

Interviewee 2 — Landscape Designer, Netherlands
"If you translate nature-based solutions to the Dutch... it evaporates, it's a hollow term. We have to think more about a regenerative ecosystem in which we see mankind as part of nature... solutions based on mutual well-being."

Interviewee 3 — Climate Resilience Lead, UK/Global
"For the heavier infrastructure sectors, like transport and energy, the language of 'green design' is more welcomed than 'nature-based solutions'."

Interviewee 4 — Architect/Urban Planner, Colombia
"With the community, we use much simpler language, because technical languages often alienate people, creating a distance—as if to say 'I know more and I have a strange term'."

Interviewee 5 — Landscape Architect, Kenya
"The definition of nature-based solutions comes from defining that relationship. It's thinking

about what you can learn by observing nature, by interacting with nature, or utilising nature in a way that does not harm it."

Interviewee 6 — Agrobiologist, Spain
"Nature-based solutions are an approach to problems. They are not a thing in themselves; it's how you approach them, how you understand them, and how you look at them."

Interviewee 7 — Educator and Artist, Ireland
"The trick is to talk about culture in such a way that it envelops the environmental, the ecological place. We have layers of history, and there's always a point of contact."

Interviewee 8 — CEO of Not-for-Profit, Ireland/Europe
"Nature-based enterprises don't realise that they're nature-based enterprises a lot. They don't self-identify automatically... so we have a lot of awareness raising to do around the growth and uptake of this term."

Interviewee 9 — Research Social Scientist, USA
"I like the word 'solutions', because it draws your attention to there being a problem or a challenge that n] people still speak more often in the language of green infrastructure."

Interviewee 10 — NGO Director, UK
"I can't imagine we'd ever use the phrase nature-based solutions to talk about planting a rain garden or a street garden with the people in the local community... there's no doubt it loses a lot of the poetry and romance."

Interviewee 11 — Urban Consultant, Hungary
"Even if people know what nature-based solutions are, they don't call them like that... We try to help our partners understand that it's not just for the sake of the greenery, but a nature-based solution is a solution for something."

Interviewee 12 — Sustainability Consultant, Belgium
"Nature-based solutions are a very technical language, which is anthropocentric... We would maybe call it work with nature, or live with nature, and learn from her, because the 'solutions' bit is very transactional."

Interviewee 13 — Community Campaigner, Nepal
"They already adapt their lifestyle to a nature-based. You can't just say, 'Oh, I have a solution'; their life is already living those solutions, the only gap is that nobody comes to articulate or appreciate their lifestyle."

Interviewee 14 — Landscape Architect, Spain
"I have to say that [NbS] is not a term I would marry... I feel like it makes things that are actually simpler more complex. I think we tend to speak instead of regeneration and restoration."

Interviewee 15 — Legal Advocate, Kenya
"I just discovered people sometimes talk about the river, just talk about restoration, just talk about access to clean water, and that's how they refer to nature... without all this terminology."

Interviewee 16 — Urban Planner, Colombia
“Nature-based solutions is a very Western concept. For many communities, this is simply ancestral knowledge — a way of living.”

Interviewee 17 — Institute Founder, Brazil
“With the community, we almost never use the term 'nature-based solutions' because it doesn't make sense... We want a tree, we want a garden, we want little animals, birds, we want butterflies.”

Interviewee 18 — NGO President, North Macedonia
“Of course, we didn't name them like that [NbS]. We use terms like afforestation projects, reforestation, urban greenery, urban forests, constructing parks.”

Interviewee 19 — Transport Activist, North Macedonia
“We're not using any nature-based language or ecology-based language; it is more like, 'what are your needs?' You're gonna say it's a nature-based solution, but it's tree planting, because you need trees.”

Interviewee 20 — Social Scientist, USA
“My issue with nature-based solutions is that they seem very constructed... like they're trying to solve a problem and move on. We'll put some green things in the ground, walk away, and we've solved the problem. It's just simply not enough.”

2. From top-down solutions to a strength-based approach

Analytical focus: This pillar captures how interviewees describe the need to move from deficit-based, externally designed interventions toward approaches that recognize and amplify existing civic capacity, care, and stewardship.

Interviewee 1 — Project Manager, Poland
“Ask them where they want a pocket park, or the rain garden, and how it should look, which function it should fulfill. So citizens would feel like the space is theirs; they would respect it, they take care of it and replicate it in their own spaces.”

Interviewee 2 — Landscape Designer, Netherlands
“The first thing that people can do is take it serious, listen to citizen science and people that started things like this. You're still considered one of the persons living there, and they forget about the expertise.”

Interviewee 3 — Climate Resilience Lead, UK/Global
“Making sure there's an inclusive process, not just in the design, but understanding how the benefits will be distributed throughout the community. Making sure it's not perpetuating structural inequalities in communities is fundamental.”

Interviewee 4 — Architect/Foundation Director, Colombia
“Many go and say, 'I already did participation because I showed them the project, it's going to be like this.' On the contrary, [we need to] learn to make that dialogue more fluid.”

Interviewee 5 — Landscape Architect, Kenya
“Co-production is not necessarily saying the community knows it all or that the technical people know it all. I think it's a recognition that there is ignorance on both sides... we all need to come together.”

Interviewee 6 — Agronomist, Spain
“You need a sense of belonging in the citizenship, for them to understand that this is theirs, that it belongs to them and they belong to it. And co-responsibility... it cannot be just someone shouting in the desert.”

Interviewee 7 — Educator and Artist, Ireland
“It's this idea of the commons, enabling people to have usership in spaces. Usership, I think, is really important; when you have usership, you have a stake.”

Interviewee 8 — CEO of Not-for-Profit, Ireland/Europe
“You can outsource some of the maintenance to nature-based enterprises, or work with community groups and look at the governance structures. It's all about doing that internal silo-busting as well.”

Interviewee 9 — Research Social Scientist, USA
“There is ecological knowledge and people who care in every single neighborhood in the city. It's recognizing the already existing civic capacity rather than starting from scratch every time.”

Interviewee 10 — NGO Director, UK
“We celebrate and support the work of hundreds of grassroots organisations who are leading on local nature recovery... We platform them, we share their work, we help other people copy and adapt it for their own streets and neighbourhoods.”

Interviewee 11 — Urban Consultant, Hungary
“Engaging citizens is not about letting citizens provide technical inputs. It's about understanding their perspectives, being more caring about their preferences, and using these co-creation processes also as an awareness-raising and capacity-building process.”

Interviewee 12 — Sustainability Consultant, Belgium
“What makes initiatives like ours last over time is the community-building aspect... working with nature is a work, and it's not a project. Thinking about only funding projects and not the networks and communities... is just a big gap in policy.”

Interviewee 13 — Community Campaigner, Nepal
“We try to deal with the strengths rather than trying to deal with the problem, because people don't like to talk about the problems. We amplify that strength in a way that helps to resolve the identical problem as well.”

Interviewee 14 — Landscape Architect, Spain
“At first there is a blockage, and then a lot of enthusiasm, because people say: 'Oh, finally someone listens to me?'... the great challenge now is to make this sense of ownership not just ours, but for more people to feel equally involved and equally owners of this whole process.”

Interviewee 15 — Legal Advocate, Kenya
“Nature has also become a point that we can use to organize our people to realize that poverty is a man-made creation. And they themselves have the power to fight against these structures of poverty.”

Interviewee 16 — Urban Planner, Colombia
“Community work exists because people are driven to solve a need in their environment and their daily life. If we had institutional support, there would be more motivation to continue because they wouldn't feel alone.”

Interviewee 17 — Institute Founder, Brazil
“Everyone needs to be together, everyone needs to get involved to transform the territories. It starts to build relationships of care, relationships of enchantment, of curiosity.”

Interviewee 18 — NGO President, North Macedonia
“You can't just protest. You have to work hand-in-hand with the local people, because the decisions are made by the top politicians... so we need to work more on sensitization of the local population, so they search for it.”

Interviewee 19 — Transport Activist, North Macedonia
“When the fire starts burning, don't be the firefighter. Try to find ways for the community to fight for themselves.”

Interviewee 20 — Social Scientist, USA
“We visualize the nature-based solution, the design, the structure, the function, but we don't visualize the social network or the social infrastructure that gives life and energy to these spaces.”

3. Eco-gentrification vs. equity, justice, and decolonization

Analytical focus: This pillar captures how interviewees link NbS to structural inequality, displacement, environmental justice, and the need to recognize local and ancestral knowledge systems.

Interviewee 1 — Project Manager, Poland
“Ask them where they want a pocket park, or the rain garden, and how it should look, which function it should fulfil. So citizens would feel like the space is theirs; they would respect it, they would take care of it and replicate it in their own spaces.”

Interviewee 2 — Landscape Designer, Netherlands
“We have to stop just utilising nature... We have to think more about a regenerative ecosystem in which we see mankind as part of nature, [and create] solutions based on mutual well-being.”

Interviewee 3 — Climate Resilience Lead, UK/Global
“Making sure it's not perpetuating structural inequalities in communities is fundamental. You get a lot of maladaptation because of that shallow, project-level thinking where you say, 'okay, we'll hand it over to the community,' but who's actually gonna benefit from that?”

Interviewee 4 — Architect/Foundation Director, Colombia
“Creer que imponer el conocimiento, lo poco que sabes... hace que las cosas empeoren. O sea, entre más sencillo y humilde, y en escucha, te presentes... curioso de aprender del otro, [es mejor].”

Interviewee 5 — Landscape Architect, Kenya
“Nature-based solutions are not nature-based solutions if they are causing harm. You have people being evicted out of forests because of reforestation, and very hard-lined conservation initiatives that just talk about nature for nature and leave out people.”

Interviewee 6 — Agrobiologist, Spain
“Desmantelar naturaleza para que todo sea materia prima y desmantelar los seres humanos, para que seamos ni esclavos, no seamos nada. Tenemos que desarrollar este sentido de pertenencia, de pertenecer a las cosas y que las cosas nos pertenezcan.”

Interviewee 7 — Educator and Artist, Ireland
“If we speak about the potato, we speak about the history of the last 400 years... we speak about colonization, we speak about monoculture, we speak about industrial-scale food production. We need to unlearn and reprogram and reboot.”

Interviewee 8 — CEO of Not-for-Profit, Ireland/Europe
“You can't dissociate politics from finance and nature-based solutions. Who should pay for nature-based solutions? Just because the revenue is generated by the park doesn't mean that the revenue is kept by the park.”

Interviewee 9 — Research Social Scientist, USA
“If we study the community gardening movement in the U.S., it emerged out of a crisis, out of a disinvestment of the state, out of an absence or a vacuum. People just took back vacant land.”

Interviewee 10 — NGO Director, UK
“I don't think the movement needs another middle-aged white leader pushing his own position. I'm very aware of my own position and privilege in that regard.”

Interviewee 11 — Urban Consultant, Hungary
“Engaging citizens is not about letting citizens provide technical inputs. It's about understanding their perspectives, being more caring about their preferences... and using these co-creation processes also as an awareness-raising and capacity-building process.”

Interviewee 12 — Sustainability Consultant, Belgium
“The fact that people care says something. This care and the values that are behind it—of stewardship, or partnership, or inspiration, or love—needs to matter for policymakers.”

Interviewee 13 — Community Campaigner, Nepal
“In our culture, mountain is our God, and technically, it's not allowed to climb mountain. It's a very much British mindset that they come to the Global South and say, 'We didn't have any war in the world, so now we want to conquer Mount Everest.'”

Interviewee 14 — Landscape Architect, Spain
“Quizás deberían ser otros organismos a nivel de cuenca hidrográfica para recopilar esas voces de todos los sectores... de mujeres, que aquí parece que solo existen los hombres en este territorio porque es agrícola, y llevar esas voces más allá.”

Interviewee 15 — Legal Advocate, Kenya
“Environmentalism, without dealing with the social justice and economic question, is just gardening. If you're protecting nature, you must ask, why is it that people can own acres upon acres of land while other people are living in shanties?”

Interviewee 16 — Urban Planner, Colombia
“Bringing concepts from the West is like forgetting that these knowledges already exist. Cosmologies, or as the indigenous people say, their life plans, are strategies of how you live in your territory with your ecosystem.”

Interviewee 17 — Institute Founder, Brazil
“With the community, we almost never use the term 'solutions based on nature' because it doesn't make sense for someone who is in a context of vulnerability... and who has a knowledge that is not evaluated from a scientific technical point of view, but it is a knowledge of the relationship with the territory.”

Interviewee 18 — NGO President, North Macedonia
“People here are dealing with corruption aspects, with social issues, with economic disparities. You must work with assessing the needs of people, and then through this, make a campaign that will visualize the impact of nature-based solutions.”

Interviewee 19 — Transport Activist, North Macedonia
“When the fire starts burning, don't be the firefighter. Try to find ways for the community to fight for themselves.”

Interviewee 20 — Social Scientist, USA
“It’s not about how many pounds of peppers you yield from that garden; it’s also about how many laughs you’ve had, how people have felt safe in that garden... how their identities are formed in that garden, and they feel pride in their place.”

4. Municipal silos vs. cross-departmental collaboration

Analytical focus: This pillar captures how interviewees describe the institutional fragmentation that hinders NbS implementation and the need for integrated, cross-sectoral governance.

Interviewee 1 — Project Manager, Poland
“If nature-based solutions are integrated into long-term strategies, like our climate strategy or metropolitan planning, they're more likely to survive changes like political leadership after elections.”

Interviewee 2 — Landscape Designer, Netherlands
“If we want nature to have rights, you give a real, contracted voice to a 'speaker of the living'

who is independent and solely speaks on behalf of all other life in your decision-making process."

Interviewee 3 — Climate Resilience Lead, UK/Global
"You get a lot of maladaptation because of that shallow, project-level thinking where you say, 'okay, we'll hand it over to the community,' but who's actually gonna benefit from that? Making sure there's an inclusive process, not just in the design, but understanding how the benefits will be distributed is fundamental."

Interviewee 4 — Architect/Foundation Director, Colombia
"Muchos van y dicen, 'yo ya hice participación porque les mostré el proyecto, va a ser así'... Por el contrario, [hay que] aprender a hacer ese diálogo más fluido."

Interviewee 5 — Landscape Architect, Kenya
"Co-production is not necessarily saying the community knows it all or that the technical people know it all. I think it's a recognition that there is ignorance on both sides... and we all need to come together."

Interviewee 6 — Agrobiologist, Spain
"Yo creo que se necesita transversalidad... las soluciones basadas en la naturaleza no son solo ecología o biología, tienen un ámbito económico, cultural y político. Y a la transversalidad hay que quitarle una pieza: la de tu ego propio."

Interviewee 7 — Educator and Artist, Ireland
"It does mean decentralizing control a bit; it does mean entrusting people. It's this idea of the Commons, enabling people to have usership in spaces, because when you have usership, you have a stake."

Interviewee 8 — CEO of Not-for-Profit, Ireland/Global
"You talk with cities and you have a project team from planning or environment, and they don't think about economics or enterprise, it's like a foreign language to them... It's all about doing that internal silo-busting."

Interviewee 9 — Research Social Scientist, USA
"Our city administrative functions were created in a different era to solve the problems of that day... The problems have continued to evolve, they're more wicked, they're more complex, and we need more durable integration across these silos."

Interviewee 10 — NGO Director, UK
"We don't own the land, we're not responsible for planning, we're not politically responsible for it... but [this movement] only works if all those different stakeholders are involved some way and can see some benefit and value."

Interviewee 11 — Urban Consultant, Hungary
"I think we tend to always look for innovation, but it's not always innovation; it's just really making the existing structures working better... not reinvent the wheel all the time, just mainstreaming and scaling up."

Interviewee 12 — Sustainability Consultant, Belgium
“The municipalities we work with, they have not even climate as a task... everything that is non-obligatory, it's just nice to have. So they don't have capacity, skills, or resources... It just doesn't fit anywhere.”

Interviewee 13 — Community Campaigner, Nepal
“All the policies, guidelines, and building accords are designed by structural thinking... If you have a bamboo house, the city office doesn't approve it, but if you are off-grid in communities... they are more caring on the nature.”

Interviewee 14 — Landscape Architect, Spain
“Hay un problema muy gordo aquí que es el tema de la gestión de las confederaciones hidrográficas... es un monstruo al que es dificilísimo llegar. Necesitamos que sean organismos a nivel de cuenca para recopilar esas voces... y llevarlas a las políticas.”

Interviewee 15 — Legal Advocate, Kenya
“They should not be pro-business policies. They should be people politics and policies, so that they do not destroy nature whilst claiming to protect it.”

Interviewee 16 — Urban Planner, Colombia
“If you don't align with the people who make the decisions, you will be in a constant struggle... If you have it aligned with what the institution or public authority has planned, it is much easier to scale the projects.”

Interviewee 17 — Institute Founder, Brazil
“It is not because we have these participatory structures available that they are working. There needs to be a greater force of interest and strategic vision from the managers... It needs to be defined in the government plan budget.”

Interviewee 18 — NGO President, North Macedonia
“We are lacking this kind of integrated approach... You don't need just a biodiversity expert, you will need an urban planner, someone who deals with architecture. But they're working in their own bubble; they don't get out from there.”

Interviewee 19 — Transport Activist, North Macedonia
“We can only work with municipalities when the municipalities have the incentives to work with us... it's not so much 'can you be on the table and help me redistribute my budget?' as much as 'how can me working with you help me get more votes?'”

Interviewee 20 — Social Scientist, USA
“If we don't acknowledge that space in our capital budgets—investing in the process of maintaining and sustaining our cities, investing in people, organizations—then we miss the point.”

5. Project myopia vs. long-term funding needs

Analytical focus: This pillar captures how interviewees describe the mismatch between short-term project cycles and the long-term ecological, social, and financial conditions required for sustained NbS.

Interviewee 1 — Project Manager, Poland
"The barrier could be the maintenance burden, because nature-based solutions require long-term maintenance, but municipalities lack the budget or staff to support it."

Interviewee 2 — Landscape Designer, Netherlands
"Provide easy access to small amounts of money. I know the EU is very good in big projects... but if you applied for a small budget of 750 euros, you could do quick, small things... That would really be helpful."

Interviewee 3 — Climate Resilience Lead, UK/Global
"If a project looks to implement a nature-based solution, and thinks that it's all capital costs and not operational costs... you have something great for the first year, and then maybe there's a drought, and you'll see high mortality rates."

Interviewee 4 — Architect/Foundation Director, Colombia
"Involving the people who live with the place is key... In Colombia, they usually hire someone to do external maintenance, but if you involve the community in monitoring, they learn and take ownership."

Interviewee 5 — Landscape Architect, Kenya
"Especially around community expectations, it is a challenge that I find a lot with NBS. They're not instant solutions; they take time to even perform at their best, because trees don't start as trees, they start as seedlings."

Interviewee 6 — Agrobiologist, Spain
"The solution never ends; it only ends when it ceases to be there. For me, it is about producing processes, knowing them, following them, and learning from them."

Interviewee 7 — Educator and Artist, Ireland
"I think it's incumbent upon ourselves that we can let the space rest, and give it time and space to have its own sovereign, wild time to itself. That's typically very hard for humans to leave things alone."

Interviewee 8 — CEO of Not-for-Profit, Ireland/Europe
"You can't dissociate politics from finance as nature-based solutions... Most local authorities are run by a mayor elected every four years, so budgets for things like nature are either going to be prioritized or cut depending on electoral cycles."

Interviewee 9 — Research Social Scientist, USA
"There's nothing worse than a beautifully redesigned site with a ribbon cutting that then is disinvested or not cared for a decade or two later. It will make people think that the installation didn't work."

Interviewee 10 — NGO Director, UK
“Our grants run from £250 to £1,000... It's quite difficult for the local authority to give £250 away, but it's really easy for us, because we've already established a cohort of people who are pre-screened.”

Interviewee 11 — Urban Consultant, Hungary
“When it comes to the maintenance, and how much people like the new solutions... If they are not engaged and involved and heard, then this kind of future support from the community is lost.”

Interviewee 12 — Sustainability Consultant, Belgium
“Working with nature is a work, and it's not a project. Like, it's not gonna stop. And thinking about only funding projects and not the networks and communities... is just a big gap in policy.”

Interviewee 13 — Community Campaigner, Nepal
“People want to have very quick, immediate solutions. Rather than having this slow, nature-centric, people-centric approach, people need fast solutions, and everybody likes to do that.”

Interviewee 14 — Landscape Architect, Spain
“Almost without exception, there must be a client committed to the idea, the concept, and the long-term vision for these solutions to last over time.”

Interviewee 15 — Legal Advocate, Kenya
“We need economic facilitation, like a small stipend to alleviate their everyday struggles for food and housing... so that these ecological justice defenders can continue with the Lord's work.”

Interviewee 16 — Urban Planner, Colombia
“People say, 'If I am going to be a volunteer in a garden, I am using my time for free... it was good, but it's not generating any income.' So they can't continue, because they have to survive.”

Interviewee 17 — Institute Founder, Brazil
“People are still very afraid to talk about money... For many years, I did a lot of voluntary things because it's a purpose, but it's a wrong thought: if we are using our time and energy to offer change for society, these works should be honored and highly valued.”

Interviewee 18 — NGO President, North Macedonia
“We had a project placing urban gardens, but the problem is the maintenance. We need to think about solutions which will be self-sustainable, like a micro-forest... so people will not have to do a lot with watering and pruning.”

Interviewee 19 — Transport Activist, North Macedonia
“Unfortunately, with the public sector, it's hard, because the moment the money stops flowing, that's when the people stop working on it.”

Interviewee 20 — Social Scientist, USA
“If you bring a houseplant home... Do you set it on your desk or your table and never water it

again? Of course not. We have to think about that same sort of attention to care as not a burden... that we're always going to have to maintain."

6. Nature alienation vs. multi-sensorial and emotional engagement

Analytical focus: This pillar captures how interviewees emphasize the importance of sensory, emotional, playful, and embodied forms of engagement in reconnecting people with nature.

Interviewee 1 — Project Manager, Poland
"Minecraft has proven to be a powerful tool for working with young people... this gamified approach made urban design accessible and fun."

Interviewee 2 — Landscape Designer, Netherlands
"You can dry and then burn under control this polluted harvest [from phytoremediation]... People could buy these cups, but they were only allowed to use it if they would give the sapling a good spot."

Interviewee 3 — Climate Resilience Lead, UK/Global
"We want to encourage bird species and bird watching, so this is going to be like a cycle trail that's gonna incorporate heritage sites, bird watching, and environmental activities through a coastal zone."

Interviewee 4 — Architect/Foundation Director, Colombia
"Para hacerlo supremamente pedagógico de reciclar el agua, devolverla totalmente limpia, pero que todo se viera... Lo que fue bonito del proyecto en realidad es volverle a recuperar la confianza de esas comunidades haciendo muchos talleres con ellos."

Interviewee 5 — Landscape Architect, Kenya
"We've had our Asili futures... Asili is a word for nature in Swahili... It actually starts to chip away these conversations that hardly happen, these intergenerational conversations about the future of nature."

Interviewee 6 — Agrobiologist, Spain
"Es muy interesante trabajar con el suelo, con las plantas, conocer íntimamente los materiales con los que después diseñas o sobre los que opinas... te das cuenta de que hay cosas que se dicen que poca relación tienen con la realidad."

Interviewee 7 — Educator and Artist, Ireland
"We feed everyone these biodiverse potatoes, coated in seawater and seaweed, after spending the morning looking at the history of the potato... It's very important to eat the world, and to gain trust and relationship through that process."

Interviewee 8 — CEO of Not-for-Profit, Ireland/Europe
"There's been a little bit of pushback about these gardens from the families of the children attending, because they're coming home dirty... So there's always this continuing need to educate the generations of parents as to why the natural playgrounds are there."

Interviewee 9 — Research Social Scientist, USA
“The city runs a street tree census, and it involves thousands of volunteers... Some of them even gamified it, and it became a way for them to learn about ecology, explore their city, and become more connected to place.”

Interviewee 10 — NGO Director, UK
“We share our urban nature map, which shows the city differently... creating a way that we can get them to open their eyes to something that they might not have noticed up until now.”

Interviewee 11 — Urban Consultant, Hungary
“Engaging citizens is not about letting citizens provide technical inputs... it's about helping to shift mindsets, and using these co-creation processes also as an awareness-raising and capacity-building process.”

Interviewee 12 — Sustainability Consultant, Belgium
“We call on people to share their favorite places in nature... And the events that worked best were really the ones where we offered joyful nature connection... a hike through nature where it didn't come across as experts telling you how the world is, but citizens sharing.”

Interviewee 13 — Community Campaigner, Nepal
“We do a video interview with the young people and ask: What is your dream? What inspired you to be on these locations?... And bring back all this information that comes from mapping and stories... to design your space more like a people-centric [one].”

Interviewee 14 — Landscape Architect, Spain
“Vamos a organizar unas visitas con estos 5 agricultores a otros proyectos inspiradores... ha sido como un contacto muy de tú a tú... un aprendizaje de ir y venir que fue muy bonito.”

Interviewee 15 — Legal Advocate, Kenya
“We started out planting memorial trees in memory of people who lost their livelihoods through extrajudicial killings... Now, kids do environmental play activities around those parks, they themselves are being birthed as conscious ecological justice defenders.”

Interviewee 16 — Urban Planner, Colombia
“For me, the work has been a very visual exercise. Speaking with images, with symbols, is the easiest way to convey a concept... If you want people to really engage, you have to explain things as if you were talking to a five- or ten-year-old child.”

Interviewee 17 — Institute Founder, Brazil
“It's no use being only mental, it has to be a multi-sensory experience... There are smells, there are sounds, how do we perceive temperatures, textures, shapes... and suddenly these people release like this: 'Wow, when I was a child, I ate this fruit, it reminded me now of her smell.'”

Interviewee 18 — NGO President, North Macedonia
“We approached them to try to do something under the Erasmus Plus program... to develop training curricula introducing these nature-based solutions to train the urban planners, the architects, and those who are designing the public spaces.”

Interviewee 19 — Transport Activist, North Macedonia
“We give them seed bombs... and say, try to visualise the city a bit differently, see what locations could need more plants, see where you can drop these... That kind of stuff are a means for us to engage our volunteers.”

Interviewee 20 — Social Scientist, USA
“My mentor taught us very basic methods: to walk through space, to talk with the people that you meet, to map, and to listen... not be a passive observer, but to be a participant.”

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B.7 How this Annex is Referenced in the Roadmap

The roadmap and the annexes are designed to be read together. The roadmap synthesises evidence into action; the annexes preserve the evidence base, methodology, and verbatim source material.

The table below provides the inverse map: from any annex section, where it is invoked in the roadmap. Readers entering from the annexes side can use it to locate the corresponding section of the main report; readers entering from the roadmap side can use it as an index back into the underlying evidence.

Annex section	Referenced in roadmap section(s)
Annex A — Four-stage framework (full)	Executive Summary → "The Four Stages of NbS Uptake"; The Roadmap for Citizen Action on NbS (introduction); each Pathway header ("Stage:")
B.1 — Desk Review methodology	Executive Summary → "Evidence Base and Methodology"; Introduction & Background
B.2 — Global Survey methodology	Executive Summary → "Evidence Base and Methodology"
B.3 — Interview methodology	Executive Summary → "Evidence Base and Methodology"; Acknowledgements
B.4–B.5 — Synthesis & PRISMA	Executive Summary → "Evidence Base and Methodology"
B.6 — Open-Source Database	Each Pathway → Tools and examples table (last row, "Roadmap Research Database")
C.1 — Desk Review Results	Pathway 1 (place-based narratives); Pathway 4 (governance models from EU projects)
C.2 — Global Survey Results	Executive Summary (the 63%/56%/52% figures); Pathway 1 ("Childhood Effect"); Pathway 2 (collective learning); Pathway 5 (funding barriers)
C.3 — Expert Interviews (synthesis)	Every Pathway — quotes embedded throughout the roadmap are sourced from this annex
C.4 — Reflections / Pathways for Citizen Action	The Roadmap for Citizen Action on NbS (introduction to pathways); Conclusion
D.1 — Desk Review Database	Pathways 1–6 → Tools and examples tables (every project cited there is documented in D.1)
D.2 — Survey Questionnaire	Executive Summary → "Evidence Base and Methodology"

D.3 — Media Pack	Acknowledgements (NbS Hubs distribution); Annex B.2
D.4 — Interviewee list	Acknowledgements (named contributors)
D.5 — Topic Guide	Annex B.3
D.6 — Example transcript	Annex B.3 — illustrating the source material behind every embedded quote
Annex E — Full Quote Repository	Pathways 1–6 (every quote in the roadmap is a sample from the 120 in E); Conclusion

Quick-reference: which annex matters most for each pathway

Pathway	Primary annex evidence	Why
P1 — Speak the Language	Annex E (Pillar 1) + Annex C.2 (Childhood Effect)	The pathway is built from interview data about language and lived experience.
P2 — Learn Together	Annex C.1 (URBiNAT, ConnectingNature) + Annex E (Pillar 6)	Co-learning evidence is concentrated in EU project deliverables.
P3 — Meet People Where They Are	Annex C.1 (URBiNAT, INTERLACE) + Annex E (Pillar 2)	Creative methodologies are documented case by case.
P4 — Share Power	Annex E (Pillar 4) + Annex C.1 (NATURVATION, EUARENAS)	Governance is the most quote-heavy pillar.
P5 — Sustain the Stewards	Annex E (Pillar 5) + Annex C.2 (barriers data)	Funding is the #1 barrier in the survey AND the most discussed in interviews.
P6 — Make Nature Work	Annex C.1 (NATURVATION) + Annex E (Pillars 5 & 3)	Enterprise evidence spans EU projects and Global South interviews.

Across every pathway, three annex sections are invoked: Annex A for the "Stage:" header at the top; Annex B.6 / D.1 for every "Tools and examples" table; and Annex E for every embedded interview quote.

— End of Annexes —



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