

An aerial photograph of a city, likely Leuven, Belgium. The foreground shows a street with a white van, a red van, and a building with a colorful facade of small panels depicting human figures. In the background, there are more buildings, a large green park, and a tall blue skyscraper. The sky is bright and hazy.

Nature-based solutions Practices to help them spread

April 2024

KU LEUVEN



 **MADRID**



Kraków



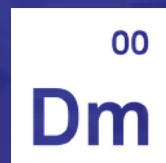
UNIVERSIDAD
POLITÉCNICA
DE MADRID

POLITÉCNICA



**Zorg
Leuven**

MAAKT MEER MOGELIJK



**LEUVEN
2030**



Nature-based solutions Practices to help them spread

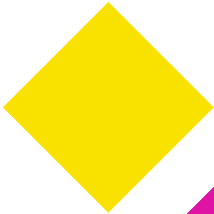
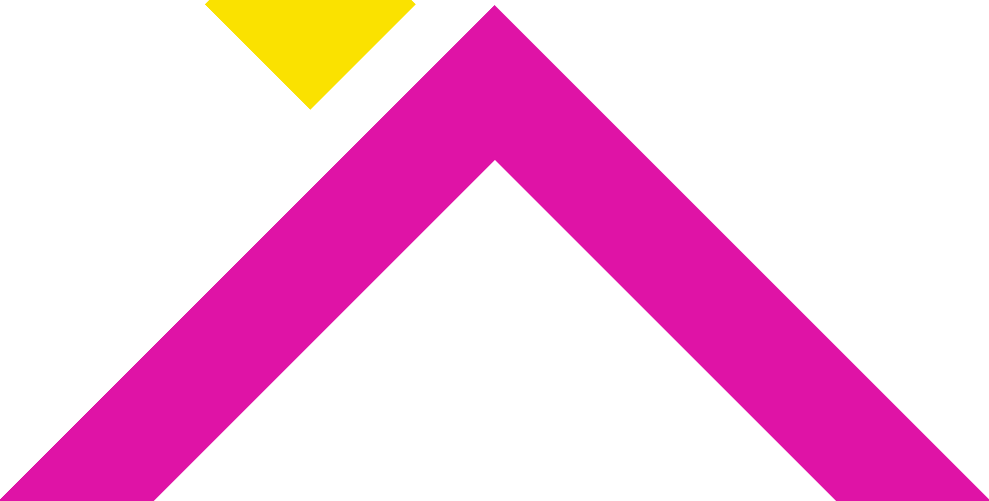
April 2024

Cover photo: Leuven skyline above Hooverplein. Source: City of Leuven

Photo: Spaanse Kroon event, Leuven. Source: City of Leuven



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1. Introduction

The COVID-19 pandemic has been a moment in time where many city residents have started to rethink their relationship with nature and have expressed the desire to be more surrounded by nature. Over the course of the last decades and even centuries, we have been able to see that the human relationship with nature has been changing. While humans are part of nature overall and depend on non-humans for survival, critical factors such as urbanisation, deforestation and usage of fossil fuels have eroded this understanding. For a large part, the relationship humans have with the natural world is one of ruling and exploiting it. This has led us to live in cities with poor air quality, regions of the world being inhospitable for humans and non-humans, rising sea levels and droughts – to name a few consequences.

What is therefore required goes beyond adding green facades to houses and planting additional trees. It requires us to rethink our relationship with non-humans and question our standing in nature itself. We hope that this guide can be a first step towards just that, a collective rethinking of our relationship with nature.

“To truly bring ourselves into harmony with the natural world, we must return to seeing humanity as part of it.” - Heather Alberro

Photo: Spaanse Kroon event, Leuven, Belgium . Source: City of Leuven




Nature-based solutions

Many local governments are keen on introducing Nature-based solutions (NbS) into their cities but do not know where to start or how to go about it. They want to ensure that NbS serve the needs of citizens by making the city more resilient against the effects of climate change, but often struggle with finding ways to do this in a way that gets all stakeholders involved aligned. This 'Practice Report' aims at outlining some of the core questions local governments need to ask and provides practice examples of NbS that have been implemented in cities as part of the LIFE-PACT project.

Nature-based solutions involve the sustainable implementation and management of natural features to bring about socio-ecological improvement to a neighbourhood. The core idea is that through natural means we can transform our neighbourhoods and improve the health and social wellbeing of citizens.

By bringing nature back into our cities, NbS help mitigate climate change, provide water and food security, decrease biodiversity loss, help with disaster risk management – in short they stand to significantly enhance life in cities and strengthen climate resilience for mutual benefit of humans and non-humans.

Photo: Marterlarenlaan, Leuven, Belgium. Copyright: Lander Loeckx



Key NbS benefits include flood protection, heat reduction and improved biodiversity and air quality

Participatory Approach

Many cities are understanding the relevance of NbS as a tool to address climate change and enable climate adaptation processes in their locality. Yet, most NbS projects are focusing on single technical solutions to a challenge that is rather systemic. Furthermore, citizens and other stakeholders are in general not included, making it difficult to ensure the long-term impacts we hope to see when equipping European cities to adapt to climate change. Yet research has shown such an approach is necessary in order to realise the full potential of NbS and achieve truly sustainable outcomes. Hence, the Practices in this report are geared towards designing and implementing NbS but doing it in a way that breaks out of the traditional siloed and technocratic approaches.

So what citizens and stakeholders do we seek to involve? It is obviously relevant to engage actors who are affected by the activities and might have a stake in the project itself, as well as subject matter experts. But it is also worthwhile to seek out new connections that can be initiated through the activities of actors that would otherwise not mingle. This can include e.g. private sector representatives, business owners, local residents, students at local schools, etc.

Engaging these various stakeholders in a co-design process in which they, alongside their local government, participate in the creation of an NbS design has many benefits:

- a systemic, integrated approach with wider involvement of actors creates opportunities for significant impact at scale, increasing and balancing NbS benefits across the city;
- it allows the transformation of private outdoor spaces by involving citizens, a dimension which is typically absent from efforts to deploy NbS;
- it creates a shared space for addressing concerns that might emerge. This can result in a shared understanding of the concerns various stakeholders have, causing all stakeholders to solve a collective problem, instead of their own stake in the matter;

- it improves NbS outcomes due to the multitude of angles the design is being looked at;
- stakeholders get an increased understanding of NbS and the need for certain transformations, which in turn can increase support for trade-offs that might need to be made;
- citizens, and the community as a whole, might contribute to the maintenance of NbS implemented near them as they have a higher sense of ownership due to their close involvement;
- it increases legitimacy of the choices being made due to broad representation of actors;
- it creates accountability towards the administration responsible for implementation;

by having stakeholders, topic experts, local authorities and other partners work closely together, all parties involved can build knowledge, capability and a network to pursue subsequent NbS projects.

In 2022 Democratic Society published the [Climate Democracy Model](#). This model provides a holistic view of what we need to mitigate climate change and build climate resilience in our cities and regions in a democratic way. It consists of practical, interconnected tools for a city or region to assess and analyse its progress towards climate resilience through democratic means. Many of the participatory approaches and project practices used within the LIFE-PACT project build upon this model.

Where does this guide come from, and who is it for?

This report is a guide to NbS 'Practices'. It contains ways of thinking and doing we have experimented with and learned from directly in multiple European cities belonging to the LIFE-PACT project. These NbS Practices are primarily aimed at civil servants working in local government. They are intended to complement and support existing practices, not add additional workload. They are also for civil society organisations, democracy innovation practitioners and subject matter experts in scientific, technical and community building professions working with local government civil servants to spread NbS locally. We also hope that community conveners and grassroots groups will find them inspiring for action, and useful to learn how local governments are approaching NbS to work better together.

LIFE is the EU funding programme exclusively geared towards the support of environmental projects that has funded the PACT project. PACT stands for People-driven: Adapting Cities for Tomorrow. 'People-driven', because alongside the project goal of implementing NbS, this is being done by engaging citizens and various stakeholders in the cities involved through participatory approaches as described earlier.

These Practices are produced by the LIFE-PACT project team: City of Leuven, City of Madrid, City of Kraków, Zorg Leuven, KU Leuven, Leuven 2030, Universidad Politécnica de Madrid, Democratic Society and Dark Matter Labs. Practice development is led by Democratic Society with support of Dark Matter Labs. We would like to thank the citizens and various stakeholders engaged across the project who have all contributed to the development of these Practices.

Want to read more about the LIFE-PACT project?

www.lifepact.eu

Questions, feedback, looking to connect?

We'd love to hear from you!

pact@leuven.be

+32 16 27 25 00

Photo: Leuven - Marterlarenlaan. Source: City of Leuven



2. Methodology



organize people to propose on

develop the bo
and

steps &
STEPS

PROPOSALS
↓

to identify social values in these shared moments of
participation (signature, choice of a symbol), consensus
(written agreement), and social alignment
① PROPOSAL, SOCIAL AGENTS (and memory), social
alignment
② DEFINE THE PROCESS - see 6

Principles in
-social res

organize people to propose on
the creation of commons
laws, laws on policies to protect
commitment and to put it under
unity (commons) administration

develop the bo
and act
(experiments)

define the identity of a commons (commons) as
a shared resource (with all in it the act,
and alignment, all equal)
① identify the relevant social agents
(identify the commonality to the group)
② identify the shared and useful (with shared
values)
③ define the process

the commons as a

2. Methodology

This NbS Practice Report has been developed based on:

- the learnings from the LIFE-PACT project implementation in the pilot sites in Leuven: Spaanse Kroon neighbourhood and residential care centre Ter Putkalle, and in Madrid: San Cristobal district;
- the experience of the NbS and community development practitioners working locally in the LIFE PACT project cities;
- the experience of the local Krakow project team from previous Krakow projects;
- the experience and expertise of the LIFE-PACT project partners.

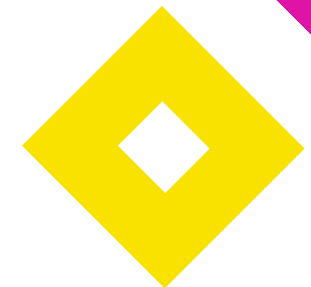
Knowledge and learnings were harvested through semi-structured interviews with individuals and groups. People interviewed include thirteen local government officials, five academia representatives, eleven representatives of public and non-governmental organisations, and two representatives of private companies. The interviews were held both in person and online from April to August 2022. There were also two in-person workshops organised: in Leuven with local government officials and civil society representatives in June 2022, and in Krakow with local civil servants in August 2022.

Interviewees and workshops' participants brought critical insights from the Cities of Leuven, Krakow and Madrid. The aim of the interviews and workshops was to understand and map:

- how local governments currently develop and implement NbS in their cities;
- which aspects local governments take into account;
- which challenges local governments encounter;
- how local governments, civil society and grassroots groups collaborate; and
- emerging practices and lessons learned.

The interviews and workshops were transcribed and analysed through the grounded research method that allowed for data to be systematically collected and analysed. The research method was chosen to identify key themes after the interviews and workshops had been carried out. This way, rich insights from three cities and an overarching understanding of NbS practices was gained. This Practice book is therefore based on already existing and emerging practices in the Cities of Leuven, Krakow and Madrid.

As the Practices were collected and analysed based on the first year of the LIFE PACT project duration, we expect more important examples to emerge as the project progresses. Therefore, we consider this Practices book the beginning of a learning journey, and not an end. The content will be iterated and updated over the further course of the LIFE PACT project.



3. How to use this guide



How to use this guide?

The practices highlight selected methods and examples from the field, and outline critical elements and capabilities needed to help spread NbS. A crucial thing to understand is that these Practices are not a detailed step-by-step implementation guide. They are intended to provide context and impulses to steer the conversation. They are best thought of as principles or guardrails for local government to refer to as they go on a journey of NbS. And it is a journey, taking months and years, to build up the conditions, relationships and processes that will support successful NbS implementation in a city. To make a difference, Practices have to be exercised again and again to learn or improve, and applied in the right way at the right moments that respect local context and need for local adaptation.

To put Practices into action, you need a plan with people and resources committed to that plan. As the implementation of NbS's is a newly developing field involving many actors in a context that is constantly changing, traditional waterfall model planning is not fit for purpose.

Hence, we refer to plans as guiding instruments that help us set a direction collectively, sensemake together and identify key next steps with shared clarity. We will need to respond with flexibility as we progress, adapting and iterating as part of the ongoing process. Our plan therefore becomes more of a map or a compass, to be used as we explore our way forward, than a predefined guide to each step. The LIFE-PACT project supports cities with localised Plan development and implementation, to put Practices into action. Each city will need to tailor, revisit and update its Plan in an ongoing process to respond to where they are in their NbS implementation journey and their local context. Some might already have multiple NbS-style projects in the city, some might be completely new to NbS. Every place, every population varies.



4. Practices



Workshop in San Cristobal, Madrid, Spain
Image by Collectif Etc.
Retrieved from collectifetc.com

Practices

We categorised the Practices into **six thematic Areas** that are essential for every NbS endeavour. Those areas of work can apply to different stages of NbS implementation, therefore the Areas and Practices should not be understood as linear steps, but rather as tips for taking a holistic approach. This chapter aims at providing an overview of the Practices identified. Each Practice will be explained by providing insights into what is involved, details on the timing and examples on when the Practices were used in specific contexts during the LIFE-PACT project or other projects in partner cities.



Planting the seeds for success

- Setting the conditions for collaboration
- Embracing collaborative governance
- Establishing and building partnerships



Understanding the field

- Mapping the ecosystem (people, power, relationships)
- Mapping existing NbS assets and potential sites
- Understanding the political, fiscal and regulatory context



Co-designing NbS

- Defining funding and resourcing
- Designing maintenance and long-term management



Taking Action

- Approaches to citizen engagement
- Approaches to stakeholder engagement
- Thinking and acting inclusively
- Addressing tension and conflict



Evaluating, learning and reflecting

- Assessing NbS impact (ecosystem services, co-benefits...)
- Communicating the work / sharing with others



Making it the new normal

- Building competence and confidence in NbS

6 Practice Areas for the successful implementation of Nature-based Solutions

Planting the seeds for success

These three Practices are about relationships, trust, and their critical, foundational role in helping NbS flourish. They are 'seeds' to plant, water and care for throughout the project journey.

Practices

1. Setting the conditions for collaboration
2. Embracing collaborative governance
3. Establishing and nurturing partnerships



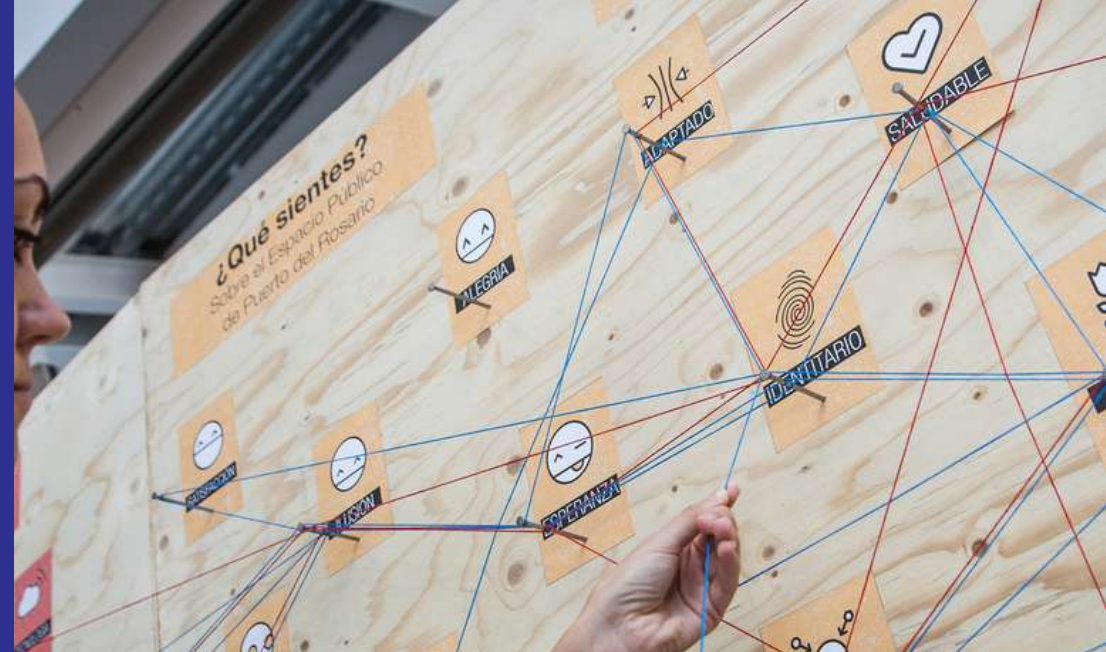
*kick-off meeting Edouard Remy, Leuven, Belgium, 17 January 2023
Source: City of Leuven*

1. Setting the conditions for collaboration

What's involved

This Practice is about building the conditions for change by focusing on relationships and alliances between civil servants, professionals, public institutions and communities, and growing purpose-driven networks for collective action. These conditions help dialogue and action progress in more substantial ways. Without them, teams tend to have conversations at higher-levels about project management, roles, and tasks, which misses opportunities for imagination and emergence. The main point of this Practice is that it *is not just about where you are going, but how you get there.*

- **Give meaningful time to participatory approaches.** Establish a joint way of making, learning, disagreement and taking action. These actions help build relationships and grow networks, bringing shared purpose and coordination to help smooth the path for NbS spread.
- **Foster a shared sense of purpose.** Embed the project, the partnerships and process with a collectively discussed and determined purpose. This purpose is why you even have a project, why you are working with the chosen individuals and organisations, and why carrying out the process in a particular way matters. This purpose should be reflected in both the details and agreements of the project and in the way relationships are developed and cared for.
- **Identify and gather the stakeholders necessary to cultivate impact networks.** Create a network of genuine, complementary relationships. Seek to connect people with different skills and backgrounds in your city. Your network should be geared toward action and capable of integrating the skills, people, practices, and processes necessary to deliver on the project. Simultaneously, it should keep the bigger ambition of urban, community and climate resilience alive. The people in the network might come from:
 - Within the municipality, especially across departments e.g. Sustainability, Environment, Climate, Mobility, Green department.
 - Outside of the municipality e.g. urban planners, landscape architects



“Establishing lasting alliances with other professionals, institutions and communities is essential if we want to provide a public service adapted to today's needs.”
– City administrator, Environmental Department, City of Madrid

Workshop for Mestura Puerto project by Civicwise and Oficoop
Image by Oficoop. Retrieved from <https://ofic.coop>



- Bridging the municipality, private sector and civil society e.g. including community convenors and people working at the 'frontline' of neighbourhood-scale initiatives.
- **Continuously enhance the ability of the network** to improvise and innovate throughout the project in response to unexpected complexities or emergent opportunities. This can be accomplished by taking time to discuss and capture learnings and reflect on steps taken so far, as well as jointly investigating new possibilities or challenges.
- **Create regular opportunities for the network to get together.** Regular - and ideally in-person - interaction gets people into deeper dialogue, builds trust, and generates richer opportunities to share experience and imagination. It gets people to look at complex problems differently and help with city decision making. By creating a welcoming and enjoyable atmosphere, it can attract the involvement of different stakeholders. It is especially powerful to ensure decision-makers can follow the process and take forward the suggested action points. This critical buy-in from decision makers can help the project have a more widespread, positive and sustained impact. It also has benefits outside the project, influencing cultures and actions.

Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [Strategies for a networked approach: Building intentional relationships and processes to achieve transformational change in change-hesitant cities.](#) - Democratic Society
- [Competencies for Climate Democracy: Competencies for individuals and teams taking action for community and climate resilience requires a spectrum of individual and group skills and capabilities.](#) - Democratic Society
- [DM Note #8: On Art, Imagination Infrastructures, and Shared Memories of the Future: Infrastructures for imagination](#) - Dark Matter Labs



Example 1
Elderly care facility Ter Putkapelle
LEUVEN, BELGIUM

Partners with various backgrounds and specialisations were involved: facility management, staff, city officials, dementia-friendly garden specialists,... . While it is intuitively clear that involving various specialists can be beneficial, it is less clear how to shape this collaboration so that each individual expertise shines through.

The collaboration started off with dedicated workshops to align on the project goals and boundaries, making sure everyone is using the same language and understands the project goals in the same way. We then collectively considered who to involve in the project coordination and in the participatory process and when and how they should be involved. All partners were also involved in setting up the activities, and the subsequent debrief sessions. In doing so, everyone had a sense of ownership of the entire project, in which they contributed their own specialisation, but understood their role in the whole.



Ter Putkapelle workshop nr 3, Wilsele, Belgium, 2022-06-30
Source: Democratic Society





Example 2

Leuven: Spaanse Kroon neighbourhood

LEUVEN, BELGIUM

- Civil servants from multiple departments (Public works, Participation, Mobility, Communication and Green departments) are working closely together to design living streets and neighbourhoods. Weekly dialogues happen inside the working group on what participation is or could look like, how the NbS can be implemented and how the project could evolve.
- Ample time is given to dialogue between civil servants, private sector and civil society. Challenges and struggles are discussed and diverse viewpoints are heard. This helps citizens get familiar with ideas and find common ground, and willingness to support or be involved in implementation.
- Members of the City's Participation team have taken a hands-on approach since the start by organising meetings, and building up relationships, trust and rapport within the municipality and with citizens.
- The City has reached out to groups and professionals linked to the NbS site who are influential with citizens. This has helped more actors get on board with the project vision and find commitment to shared action:
 - School next to the neighbourhood, because the kids use the playground in the selected site;
 - Representatives of the neighbourhood committees;
 - Contractors who will help remove driveway paving;
 - Gardeners and landscapers, and a landscape designer;
 - Garden rangers that give free advice on ecological gardening to citizens;
 - University of KU Leuven that has experience in NbS.





Example 3

San Cristobal neighbourhood

MADRID, SPAIN

- Madrid project team actors knew each other through previous networks. This meant they knew what was coming, how much effort is required and where to start.
- Civil servants stress how important it is to find signals and synchronisation between actors, and alignment on 'desires' of the work.
- ItdUPM is experiencing that being a facilitator and convenor between the team and communities has exposed more nuances and details to facilitate and progress the work. They would not have had this same experience by being 'just a project manager'.
- University members of LIFE-PACT work with a big and distributed network of public, private and civil society actors, bringing beneficial broader knowledge and skills into the NbS work. Inside the University, their research centre is multidisciplinary. Team members have access to - and actively engage with - colleagues with more experience and expertise in participation to assist their NbS work.
- Civil servants have observed how concepts get amplified through 'mobilised associations' of different actors. This is only possible because of a solid base of technicians and internal training on NbS implementation inside the municipality.
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2. Embracing Collaborative Governance

What's involved

This Practice is about embracing the power of multidisciplinary governance and mediating new relationships and alliances between different actors, to join forces towards the implementation of an ambitious project. Collaboration brings about greater achievements towards 'the common good' than one sector could achieve alone. It involves informal and formal relationships between civil servants, private sector and civil society in decision making and problem solving, and shared ownership and coordination of processes, plans and systems across to deliver NbS 'smoothly'. This Practice is complementary to 'Setting the conditions for collaboration'.

There are four components to collaborative governance:

- Support of a collaborative network, for relationship building, knowledge exchange, capability building, service support, and measuring and monitoring.
- Relational leadership acknowledging the diverse talents of group members and trusting the process to bring about good thinking for socially responsible changes.
- Forums to develop policies, solutions and answers. This is also the environment for making time for participatory meaning making, learning, disagreement and action.
- Collaborative governance is also about understanding what works best for the team, and taking responsibility for the practices.

Collaborative governance helps break teams and organisations out of siloes. This is particularly beneficial for local governments as decision making bodies that create local law. Less siloed, decentralised decision making improves transparency and accountability and shares power across broader groups. This also develops lasting capability and capacity to address complex societal problems.

Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community.

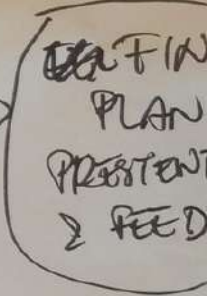
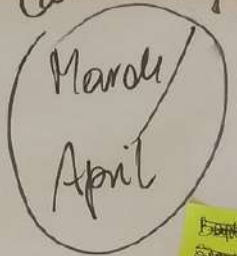
Further reading

- [Geneva environment network](#)
- [MDPI: Multidisciplinary Digital Publishing Institute](#)
- [Collaborative Governance - an overview - ScienceDirect](#)

WAAR & - PRAKT

WANNEER

CO-DESIGN/SKETCH



uit input
inervies
concreet te maken
mit 2 workshop

Sketch
mit foto's
zoner die mee
in gebruikt is
Feed back verzamelen
bijeen na workshop

Verplaatsing
presentatie
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feed back
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Example 1
Elderly care facility Ter Putkapelle
LEUVEN, BELGIUM

All partners, including care staff from the facility and experts in dementia-friendly garden design, co-designed the participatory process and were involved in setting up and debriefing the activities. The close involvement early on contributed to a shared sense of ownership and mutual trust, providing a foundation for collective governance of the process.

For example, meetings took place in offices of the various project partners, as opposed to only on-site. This helped to materialise the networked approach.

Ter Putkapelle sense-making session, Leuven, 2022-02-22
Source: Democratic Society



Example 2
Leuven: Spaanse Kroon
neighbourhood
LEUVEN, BELGIUM

The architecture company collaborates with the participation experts when launching new projects, be it commissioned by public or private bodies, to help them design and carry out participatory approaches to involve citizens and stakeholders. This approach allows the company to combine subject matter expertise with experiences of people who live in and use the site of intervention to deliver better architectural projects. Through this collaboration, the architects also build their capabilities of working with local communities.

The City of Leuven also collaborates with big local companies that are active in the neighbourhoods where NbS are being implemented to help hold the city accountable and push it into action.



3. Establishing and nurturing partnerships

What's involved

Rewarding partnerships are critical to successful implementation, and therefore choice of partners and nurturing of partnership need careful attention.

- Choose partners that share the same values and interests.
- Successful partnerships depend on transparency and being upfront about motivations.
- Partnership members should have training to identify issues or resolve internal conflicts.
- Helps with achieving goals, and sharing risk, responsibility, accountability, benefits.
- Power is shared across partners, not held by one person or partner. Equalities in partners' resources and expertise determines their relative influence in the partnership's decision making.

Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [A typology of Nature Based Solutions Implementation models - Nature4Cities](#)
- [Successful partnerships: a guide \(2006\) - OECD](#)



“Despite the fact that partnerships vary considerably in number of members, model, size and location, many of them contribute positively to deepening and improving local governance and democratic processes; supporting economic growth; driving a process of strategic planning; piloting new initiatives; helping harmonise diversity within communities; assuring better coordination in the delivery of state services; and building effective vertical and horizontal communication channels within and across different sectors.”
OECD. (2006). Successful partnerships: A guide.



Example 1
Elderly care facility Ter Putkapelle
LEUVEN, BELGIUM

Although Democratic Society was leading the engagement process in Ter Putkapelle, the other partners were always closely involved in any design decisions being made. For example, when workshops had to be cancelled due to a COVID-19 lockdown, ample time was spent on realigning expectations and deciding collectively on a new approach.



Example 2

City of Leuven

LEUVEN, BELGIUM

- The City of Leuven has got several partnerships in which they lead or participate to share knowledge, build networks or take action
 - [100 Mission cities](#)
 - [EIT Climate-KIC](#)
 - [Leuven 2030](#)
 - [Leuven Mindgate](#)
 - [Urban Lab Leuven](#)
 - [Just Nature](#)
- The City of Leuven is part of a European project partnership with Sustainable Schools, along with public schools and police. Together they are publishing a guide on designing a school and recovering trees.

“I put a lot of effort into reaching suitable persons to get involved in projects. Not necessarily directors or decision makers, but often enthusiastic teachers or parents. This speeds up the process as it spurs on people who are already eager to become active around a topic.” - Expert on sustainable education, School 2030 project.



Example 3
Tech4All
MADRID, SPAIN

Ecological project Teach4All that involves partners and practitioners from different sectors: civil society organisations, neighbourhood group, artistic collective and teachers. The group is willing to continue collaboration and collectively seek funding for project development.

*Drones experience within the initiative Tech4All-Volando Voy! in Madrid, Spain
Retrieved from : <https://www.lanavemadrid.com/actividad/tech4all-volando-voy/>*

Understanding the field

These three Practices are about understanding the context and wider ecosystem, investment and knowledge building, identifying existing projects, accommodating to communities' needs and providing tailored support to them. These Practices help in understanding where there is need for NbS solutions and the ongoing projects that are being implemented in a city.

Practices

1. Mapping the ecosystem (people, power, relationships)
2. Mapping existing NbS assets and potential sites
3. Understanding the political, fiscal and regulatory context



Source: Leuven Tuinrangers

1. Mapping the ecosystem (people, power, relationships)

What's involved

Relationships and alliances are critical for NbS. Early on, work out who knows who, and think about how people can get to know each other. See also 'Setting the conditions for collaboration.' Doing this early in the project – and revisiting it - helps with identifying challenges, barriers and opportunities.

This Practice is about mapping and understanding what 'is': people, stories, processes and power dynamics of place to:

- Identify levers of change for NbS;
- Identify synergies between existing initiatives that can be strengthened and built upon - other social and environmental projects;
- Identify previous projects or actions related to the location;
- Identify who is being left out of design and decision making, e.g, marginalised communities;
- Identify barriers to successful collaboration.

Mapping the ecosystem helps with tactical, strategic and informed decision-making on a continuous basis on things including:

- Citizen engagement strategies;
- Stakeholder engagement strategies;
- Choice of participatory, deliberative methods;
- Collaborative governance;
- NbS potential intervention points, linked to impact/co-benefits (healthy, social, economic, etc.).

Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [Stakeholder map template](#) - The Europe Challenge - Democratic Society
- [Actor Types & Interactions](#) - Democratic Society
- System mapping tool, such as [KUMU](#)
- [Tamarack Institute. \(2019\). Evaluating Systems Change Results. An Enquiry Framework.](#)





Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

During the initial stakeholder mapping, two staff members were identified who had already been doing extensive work around greening of the facility in the past. Including them as key persons in the design and execution of the participatory process helped embed these past experiences

#NBS #ClimateTransition #NetworkedApproach





Del Madrid de las iniciativas que aparecen por pasar que la ciudad también debe crecer desde los niños y niñas. Al mapa donde siempre fueron parques en diversidad, al mapa donde las flores son horizontes, siempre desde las comunidades como contaminación, donde el mobiliario urbano es una representación desde los espacios de espacios desde Chacón es un estándar más... Este mapa está elaborado con dibujos realizados por niños y niñas durante un taller de mapas desarrollados en Madrid Madrid, pensando que al futuro, al Madrid de la Infancia, debe ser decidido y diseñado por los más pequeños. Durante dicho taller se han respondido como debería ser los espacios públicos, nuestros lugares de convivencia, los áreas de juego, los equipamientos y un largo etc. La metodología consistió en un ejercicio de dibujo y expresión libre como respuesta a la pregunta: "¿Para qué te gustaría hacer en Madrid y dibujar/describir sus maravillas?".

Este mapa es una invitación a preguntarnos qué sucedería si muchos de los espacios que tenemos por la ciudad garantizaran la oportunidad de jugar, explorar y aprender.



Los Madriles / Edición especial infancia es el resultado de un programa de talleres de mapas realizados durante los meses de marzo y mayo de 2016, y de un formulario digital en el que se invita a los ciudadanos activos en el contexto de la infancia y su entorno. Este mapa representa la suma de un proceso en constante evolución.

Esta edición de Los Madriles es un proyecto de colaboración con la colaboración de Carolina Bustamante, Pablo Flores, Silvia Banderas, María Rosales y María Vitoria, y con el acompañamiento de Cofrevalle, Federación Madrileña de Inmigrantes (FRAM), Madrid Cita, Organización Madrileña de Salud, Plataforma por la Infancia, Unicef, así como al Área de Gobierno de Medio Ambiente y Movilidad, Centro Municipal de Salud Comunitaria de Arganzuela, la Comisión responsable de espacios públicos e intervención urbana del Ayuntamiento de Madrid, la Plataforma de Organización de la Infancia de Madrid, y el equipo de Los Madriles (Lys Villalba, Sándra, Zuloark y VIC).

En la web www.GVIC3.CC puedes encontrar la versión digital del mapa que permite someter al proyecto si así lo deseas.
WWW.LOSMADRILES.ORG

4. PRACTICES Understanding the field

Example 2 Los Madriles MADRID, SPAIN

- Los Madriles is a platform to reflect on all the activities in Madrid. A living atlas that evolves to show an interlinked and active but invisible city, a cartography that tries to value the power of a critical and active citizenry that enables another way of building the city through open governance and participation. Los Madriles was promoted in 2015 by a group of agents in collaboration composed of the Regional Federation of Neighborhood Associations of Madrid (FRAVM), Intermediae Matadero, and the collectives Zuloark + Lys Villalba, Vivero de Iniciativas Ciudadanas [VIC], Paisaje Transversal, Sodeste and Todo por la Praxis. Since then and with the help of several institutions, the project has continued openly. Other new groups and institutions have joined and collaborated with Los Madriles and many neighbours have participated in the mapping sessions.



Example 3
Autobarrios San Cristobal
MADRID, SPAIN

AUTOBARRIOS SANCRISTÓBAL was launched in 2012 in the Madrid neighbourhood of San Cristóbal de los Ángeles. During the first twelve months, the project worked with social agents and neighbourhood residents, understanding and mapping their existing processes and consolidating them. From the meetings, a platform was born made up of different local associations with which Autobarrios SanCristobal was defined as a collective process of reactivation of an abandoned place. It reinvented its function and use through the construction of a suggestive urban space by and for young people and neighbourhood residents.



#NbS #TacticalUrbanism #PopUpUrbanism

Autobarrios project San Cristóbal, Madrid, Spain
Source: Basurama



2. Mapping existing NbS assets and potential sites

What's involved

This is about determining where NbS interventions happen physically and geographically. It is also about identifying and aligning interests within city districts and departments to uncover "areas of opportunity" - spotting, connecting and otherwise supporting existing "allies", initiatives, programs, and efforts.

- In general, there will be more momentum and energy in the local community population if they expressed an **initial desire or necessity for the NbS**. This requires the right people connected and listening on the ground, with connections to civil servants and other decision makers. Citizens can also suggest locations to implement NbS or areas in need to be addressed.
- It is important that communities and **existing initiatives feel they have ownership** in the process so that they are not dictated by the municipality.
- What resources are available to carry out the NbS project, e.g. is there public or private funding for NbS?; are there projects that are planned where NbS can be included or integrated?
- **Clarification on ownership, use, responsibility, and mandate of the land**, e.g. who is legally responsible for the land?, who uses the land?, who is impacted by its use or by it being vacant/derelict?, who has the mandate to act on that land?, what mechanisms exist for others to act?, what is the legal and administrative context?
- **Consideration of physical characteristics:** site availability, size, character (e.g. green wall vs vacant lot vs school yard vs street trees etc.), soil quality (e.g. does soil need to be remediated before a community food garden can be established, etc.)



Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

The NbS project at Ter Putkapelle caused prior plans for a specific outdoor area of the facility to be evaluated in a new light. Through the close interaction with the City administration, a win-win solution was worked out in which ownership of the area would be transferred to the City allowing them to pick up development and maintenance, while still allowing shared use of the area by the facility.



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*Ter Putkapelle workshop, Wilsele, Belgium
Source: Democratic Society*





Example 2

City of Leuven

LEUVEN, BELGIUM

For the selection of the replication neighbourhoods of the Life Pact project, the city of Leuven made a spreadsheet where several indicators were taken into account (eg. Spreading throughout the city, feasibility, support from the neighbourhood, in need of extra green, current state of the public domain, BAF score,...).

The city of Leuven has a campaign where citizens can indicate locations where they would like to see extra NbS. During the desealing campaign “Hier dringt het door” (“Let it sink in”), proposals were collected through the project website. A jury made up of staff from various city departments then assessed the proposals and selected eight locations that the city will deseal and green in 2023.

<https://leuven.be/hierdringthetdoor>

#NBS #ClimateTransition #NetworkedApproach

skyline above Hooverplein, Leuven, Belgium
Source: City of Leuven





Example 3

San Cristobal neighbourhood

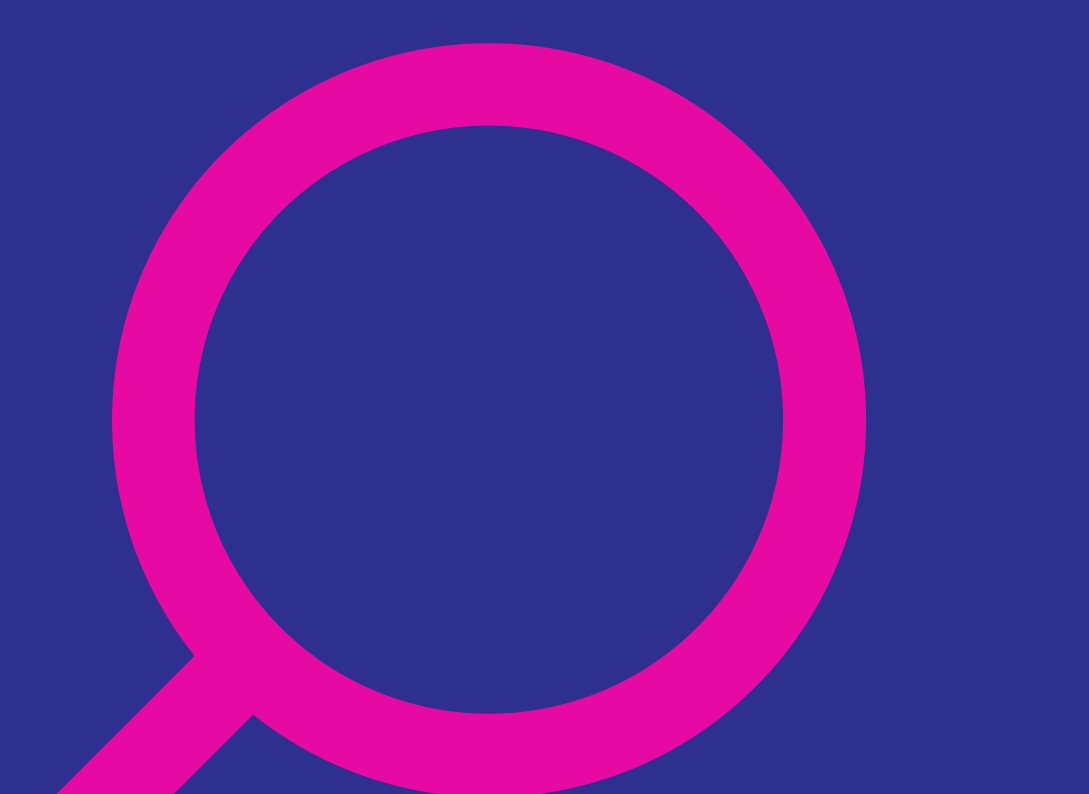
MADRID, SPAIN

“Pre-selected schools: do not get involved in the process because of desire or the necessity, 'they do not have the energy to do both'. Idea of collaboration: They are open to collaborate, but it's like, well, I am going to give them resources and ask to work with students. So they send out some guides and the director at the meeting. He wasn't noticing if they weren't the same way 'I need to work with people at least.' So this is how they live and things are changing.” - UPM, Madrid

“The approach of a community convenor closely connected with the neighbourhood and community is to engage people who are doing things and add them together for 'action', where they have similar aims and objectives.” - Madrid City official

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3. Understanding the political, fiscal and regulatory context

What's involved

Local, state and national regulatory considerations vary. NbS interventions may 'rub against' these in different ways. How can civil servants and communities navigate these regulations when pushing for interventions that disrupt existing infrastructure and status quo? Having an understanding of what can be challenged and who makes the challenge is critical to align regulatory frameworks to the local context.

- Policy frameworks should be coherent and consistent throughout, e.g. while some local areas prevent certain practices from happening, other areas allow them.
- Incorporating some NbS interventions under subsidised projects can encourage the implementation of these NbS solutions.
- Knowing the language and terrain to be able to navigate conversations with technicians, intermediaries, e.g. water, power, other utilities.
- Identifying and understanding EU obligations before the start of an NbS project.
- Identifying opportunities and barriers within the regulatory framework and creating safe spaces that enable innovation experimentation, e.g. innovation labs, regulatory sandboxes.
- Working with experts who hold specific knowledge and expertise, such as legal teams in municipalities, auditors, civic associations with a legal focus etc. This requires identifying potential allies and working to build trust.

Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [DM Note #1-7 learnings from our regulatory innovation work on the ground](#) | by Dark Matter Labs

Example 1

Spaanse Kroon neighborhood

LEUVEN, BELGIUM

The Green department of the City of Leuven changed/updated some of their regulations around “facade gardens” (NL: geveltuintjes). These are tiny “gardens” that residents can create in front of their house by breaking up a small piece of the sidewalk. This change was not an integral part of the project, yet it was directly inspired by it and can be considered a spill-over effect on local policy. The direct and close involvement of the Green department in the project is considered to have been a crucial trigger for this.

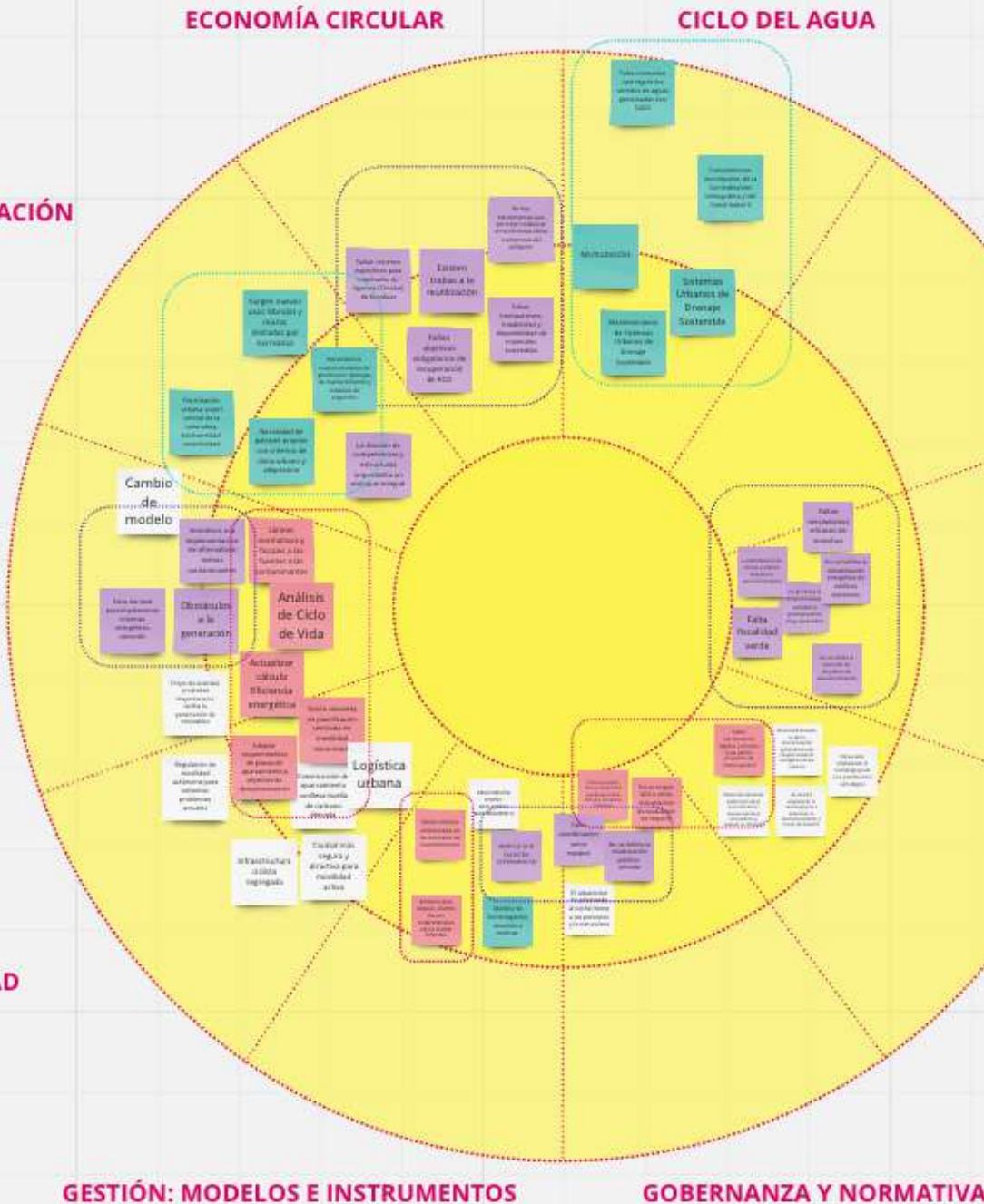
The city also revised and expanded the regulations and grants for climate actions. Extra grants were launched to persuade citizens to take actions towards climate change adaptation and mitigation (e.g. grants for green roofs, infiltrations, trees,...) <https://leuven.be/premies>



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*Spaanse Kroon event, Leuven, Belgium
Source: City of Leuven*





Example 2 Madrid regulatory sandbox

MADRID, SPAIN

Madrid City Council has acknowledged the need to modify and adjust regulations to respond to the climate crisis and achieve climate neutrality by 2030. The key lever of change addressed here is the facilitation of regulatory innovation processes focused on the decarbonization of the City of Madrid, particularly through 'sandboxes' which are controlled experimentation spaces that allow the testing of and learning in a collaborative way. (For example, public administration, private developers, civic entities, union groups, and professional associations).

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Example 3

Leuven

LEUVEN, BELGIUM

“Group all information together (city, region, province) to make it simple to find, and use, for schools. Guiding them to the multitudes of subsidy possibilities. It’s not yet possible to roll all these various subsidies into one project file/proposal.” - Expert on sustainable education, School 2030 project.

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Co-designing NbS

These two Practices are about considering the long-term implications of NbS and its requirements. This entails considering NbS policies and funding mechanisms in the wider city, how citizens are engaged in the process and ensuring the NbS are maintained even after the end of the project itself.

Practices

1. Defining funding and resourcing
2. Designing maintenance and long-term management



Ter Putkapelle workshop 3, Leuven, 2022-06-30
Source: Democratic Society

1. Defining funding and resourcing

This Practice is about meaningfully involving citizens in allocating resources, prioritising policies and proposals, and monitoring public spending.

- Deliberative approaches such as participatory budgeting, gives communities power to make real decisions about how money is spent. These approaches should be done with communities in a meaningful way that contribute to strengthening participation. This enables people to go deeper in considering choices than using proposal submissions, idea generation or voting alone.
- It is also about creating a shared ownership model with the government and citizens to encourage the involvement of the city in the project, and to distribute the management and resources of the initiative.
- Encourage residents to take action in their own areas by supporting their initiatives financially.
- Mutual guidance between locals and the city can help prioritise areas where NbS are most suited to invest effort and time.
- Provide readily available resources such as tools for people to use when they work on projects, and when needed, involve other departments in the work to bring in expert skills.
- Invest time and resources for internal learning as well as sourcing technicians to implement technical aspects of the NbS initiatives.
- Having a clear overview of the project and well managed staff ensures that deadlines and actions are met.



Timing

- When setting up an NbS project for the first time in your city
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [Nature4Cities developed a typology of Nature Based Solutions Implementation models](#)
- [Guide to Participatory Budgeting](#)
- [Betting on biodiversity: how financial institutions can invest in the irreplaceable power of nature](#)
- [Urban Nature-based Solutions in Scotland at Scale: Toward a regenerative natural asset economy - Dark Matter Labs](#)
- [Trees As Infrastructure. An open source model to support municipalities in transitioning toward resilient urban forest management practices. - Dark Matter Labs](#)
- [A Smart Commons. A New Model for Investing in the Commons. - Dark Matter Labs](#)





Example 1

School Civic Budget

KRAKOW, POLAND

School Civic Budget in Krakow, Poland. 31 schools in Krakow participated in the annual participatory budgeting exercise. Students submit ideas themselves, create projects, and then choose those that they think are most attractive and necessary. Students submitted more than 230 projects, involving 1122 people. After formal verification, more than 187 of them passed to the voting phase. More than 5.500 students took part in the vote. 79 projects were selected, which will be implemented by the end of winter holidays in 2022. The School Civic Budget results from the Young Krakow program - a program of participation of young people in the life of the city. This is one of our goals: to equip young people with competences that will allow them to actively enter adult life. This exercise led for example to meteorological gardens to be implemented through Participatory Budgeting.



*School Civic Budget campaign and 2023 action, Krakow, Poland
Retrieved from: <https://mlodziez.krakow.pl>*

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Example 3

Leuven

LEUVEN, BELGIUM

The city of Leuven has a campaign - “Kom op voor je wijk” (“Stand up for your neighbourhood”) - in which citizens can submit ideas to improve their neighbourhood (e.g. communal vegetable garden, implement NbS...) and receive funding of up to € 18.000 to implement their idea.

<https://leuven.be/komopvoorjewijk>

*Leuven, Belgium
Copyright: City of Leuven*

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Example 3
Urban gardens

MADRID, SPAIN

Huertos Urbanos - Urban Gardens

The Environment and Mobility Department of Madrid City Council develops various programs to promote citizens getting engaged in urban horticulture, taking into account environmental, social and educational benefits that this activity brings to make Madrid a more sustainable city.

*Esta es una plaza, Madrid, Spain
Image retrieved from <https://madridnofrills.com/madrids-illegal-gardens/>*



2. Designing maintenance and long-term management

What's involved

The real challenge of NbS starts after implementation, for example once a first pilot site is established. This Practice asks us to think about what is needed to sustain the intervention in the long term, looking beyond the delivery. Some things to consider are: who will take responsibility, who will resource and how things will continue to 'spread' across the city.

- Consider **practicalities of daily maintenance** such as roles, responsibilities, financing and resourcing - also within existing municipal legal and procurement frameworks (e.g. maintenance contract timeframes, legal restrictions limiting co-management etc.).
- Assign **clear roles and responsibilities** can help mitigate misunderstandings, conflicts and overwork. Not having clear responsibilities can also hinder the amount of time and effort spent on actual participatory processes.
- **Acknowledge the existing working culture** in governments and city administration, and aim to reduce the administrative burdens they may face by providing guidelines and simplifying existing procedures.
- Understand the **different scopes of projects** to budget and manage the amount of work and resources needed for it, e.g. a project on a school scale is different to a project on a municipal scale.
- **Create collaborative spaces** to explore, propose and implement innovative approaches, and ensure that cities do not take over the work and that the people have a strong sense of ownership over the project. Create long-term collaboration and engagement to sustain the impact of the work, and the connection between citizens and the city.

- **Provide knowledge and expertise** on NbS maintenance and biodiversity (low maintenance plants, extensive grass mowing, ...).
- Create spaces to escape short-term bias and **enable long-term thinking** (future imagining workshops etc.).

Timing

- When setting up an NbS project for the first time in your city
- After setting up an NbS project: throughout the project timeline
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [Trees as Infrastructure](#)
- [The Darker Side of Tree-Planting Pledges](#)
- [Urban Gardens in Madrid](#)
- [Futures in long-termism \(2020\) - Dark Matter Labs](#)





Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

Maintenance has been an aspect, or constraint, that was explicitly factored in during the design of the plans for the outdoor spaces at the Ter Putkapelle facility, as opposed to being an afterthought. This resulted in an interesting design for one of the planters used by residents interested in growing their own produce. The expectation was that in certain years there would be a sufficient number of residents interested in maintaining them, while in some years there might not be. A low-maintenance selection of plants is specified in the plan that can be used during the years in which an insufficient number of residents are interested in maintaining a vegetable/herb garden.

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Example 2

Leuven

LEUVEN, BELGIUM

In the design of the Pilotlocation - Spaanse Kroon - the green spaces were designed to be low maintenance. Implementing extra green spaces is always in accordance with the green department. A landscape designer is involved from the start of the project to ensure that the choice of plants and trees and water infiltration areas do not impose a lot of extra work on the maintenance department.

Less mowing, more biodiversity is a project implemented by the city of Leuven to increase biodiversity in the city and ensure that the habitat for wildlife in the city is protected.

The city of Leuven works together with the citizens to maintain green spaces. Residents can adopt a tree bed or green space in their neighbourhood. After applying to the website <https://leuven.be/buurtplantsoen>, the resident can act as the ambassador of a slice of the public domain. They can then plant extra plants, request extra soil or compost, and do the maintenance.

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Example 3
Urban gardens

MADRID, SPAIN

Huertos Urbanos - Urban Gardens

The Environment and Mobility Department of Madrid City Council develops various programs to promote citizens getting engaged in urban horticulture, taking into account environmental, social and educational benefits that this activity brings to make Madrid a more sustainable city. Madrid is working with the city residents to ensure the maintenance of the Urban Gardens and supports its residents with tools and information to enable a good implementation.

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Taking Action

These four Practices are about mobilising citizens and stakeholders to consider the context and take action on NbS.

Practices

1. Approaches to citizen engagement
2. Approaches to stakeholder engagement
3. Thinking and acting inclusively
4. Addressing tension and conflict



*Autobarríos project San Cristóbal, Madrid, Spain
Source: Basurama*

1. Approaches to citizen engagement

What's involved

This Practice is about municipalities engaging citizens in a participatory way, centering citizen voices in design and decision making processes. Giving citizens greater agency in decision-making and design processes creates more openness, transparency, and accountability, and helps address declining trust in government.

See also 'Setting conditions for collaboration.'

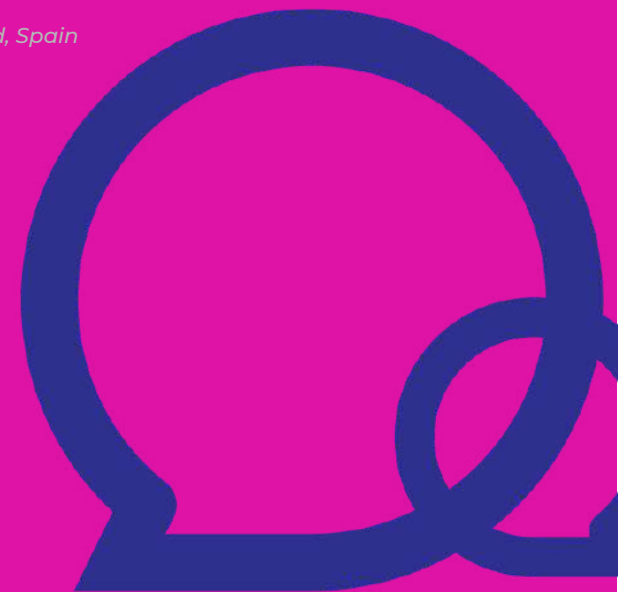
- **Bottom up and top down:** Bottom-up approaches that enable community voices and knowledge to come through must be the foundation of the action that governments and civil society take.
- **Support the creation of neighbourhood councils** or neighbourhood residents to raise concerns and ideas for potential initiatives which then can be budgeted and supported. Initiatives must incorporate citizens' existing skills and know-how to the work to ensure that they have ownership and agency over the project.
- **Having neighbourhood managers** who help residents take initiative and act as a single point of contact for questions concerning their neighbourhood. Support people with different backgrounds such as immigrants to become neighbourhood managers to help build a community and give continuity.
- **Co-design and co-creation:** Governments innovatively, meaningfully, and effectively engage with citizens to source ideas, co-create solutions, and tackle complex policy problems. Deliberative, collaborative, and participatory methods for public decision making.
- **Create spaces** in which people can meet, have open dialogue and share power, e.g. using tactical urbanism, such as the concept of Superblocks, to set up spaces for participation.



“Always remember that initiatives revolve fully around people. If there is no existing group of people interested in working around something, it’s unlikely that you can set this up top-down. Find individuals, or small groups that are enthusiastic about something, and help them grow.”

- LIFE-PACT ‘Hub on the Road’ event attendee, Leuven, June 2022

*Autobarrrios project San Cristóbal, Madrid, Spain
Source: Basurama*



- **Input from people at each stage** of the process needs to be considered throughout. This involves people and cities making decisions together and understanding the boundaries of the work and their role.
- **Communication:** Ensure that information reaches the people in multiple different ways, e.g by mail, digitally via newsletters, websites, group chats and meetups, in-person at arranged events or by notice boards. Ensure that the information that is shared is designed for the target audience, as well as is accessible, visually pleasing and scientifically sound. Incorporating visual elements into information can help spark peoples' imagination and connect ideas to possibilities.
- **Set up information markets** where all those involved are present and provide information on the purpose, answer any concerns and collaborate with people on suggestions. Hosting dialogues or Citizens Labs with citizens identifies their enthusiasm and the plan for working together to implement their needs. An event can be held where people can meet their neighbours and socialise before any actual action is taken.
- **Design justice:** Centering voices of marginalised communities in design and decision-making processes (Design Justice Network). Creating culturally and psychologically safe spaces that involve one-on-one discussions with individuals and embed work on the ground.
- Focus on addressing and **eliminating the barriers to participation** and ensure that the threshold to take action is as low as possible.
- **Competencies:** Team members with experience in participatory approaches strengthen democracy.
- Producing **new imagination and narratives** that set out the change that we want to see. By working together, people create a sense of enjoyment and a sense of being together. Time should be invested to build trust with the neighbourhood citizens to encourage engagement.

Timing

- When setting up an NbS project for the first time in your city
- After setting up an NbS project: throughout the project timeline
- Revisit when starting with a new NbS site and its surrounding community

Further reading

- [DM Note #8: On Art, Imagination Infrastructures, and Shared Memories of the Future | by Dark Matter Labs](#)



Example 1

Spaanse Kroon neighbourhood

LEUVEN, BELGIUM

The project included several different aspects of citizen engagement:

- Information markets for residents: this gave us a chance to talk to people and inform them, allow them to get to know us, get in touch with neighbours and talk to each other, share ideas and allow us to address first concerns and questions (e.g. about timing and infrastructure);
- Temporary green infrastructure: enabled people to envision what the neighbourhood could look like, and share ideas;
- Citizen science: calls to have citizens involved in measuring/monitoring of climate data;
- Accessible 'NbS cookbook' designed by KU Leuven, inspiring citizens what actions they can take in their private gardens;
- Physical prototyping so people can see and experience things, learning by doing;
- DIY workshop for kids (bird house or bee hotel) – By installing this DIY bee hotel workshop, we attracted a lot of younger kids and their parents. The kids were actively involved and inspired by the workshop and the parents were freed up to come to the infomarket on NBS;
- Info panels in the park to make the information visible for everyone;
- Workshops on public & private spaces.

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Example 2

Leuven

LEUVEN, BELGIUM

“Cities should focus on strengthening the initiatives that already exist. They should support and get out of the way. Make sure people have a sense of ownership and autonomy.” - Leuven Hub on the Road drop-in event attendee, June 2022.

“Lure people in by attracting them with something they have an active interest in, e.g. compost workshop, yet let it evolve into broader topics like ecological gardening.” - Leuven Hub on the Road drop-in event attendee, June 2022.

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Hub on the Road event, Leuven, Belgium, June 2022
Copyright: City of Leuven



2. Approaches to stakeholder engagement

What's involved

Engaging stakeholders effectively e.g. getting input into decision-making processes, exchanging knowledge and expertise.

- **Engage proactively with stakeholders** in various phases of the policy cycle, including through the exchange of knowledge and expertise, to prioritise and develop initiatives for enhancing NbS, making specific efforts to reach out to the marginalised and vulnerable groups in society.
- Understanding **which stakeholders are crucial and relevant** for which phases of the policy cycle to avoid unproductive processes with too many actors involved.
- Reach out to stakeholders who are eager to work on NbS.
- Work with stakeholders to **raise public awareness and mobilise support on NbS.**
- Formal and/or informal mechanisms in place to ensure that **stakeholder input feeds into decision-making processes.**
- Clear legal provisions and guidelines for consultation and participation in the policy-making process
- Encourage, reward and disseminate initiatives of stakeholders for designing and implementing NbS.
- Engaging with stakeholders helps prioritise and develop initiatives for enhancing NbS, and support the maintenance of NbS in the long term.
- It raises public awareness and mobilises support on sustainable development and government commitments to support NbS, through campaigns, policy dialogue, capacity building and information sharing.

Timing

- When setting up an NbS project for the first time in your city
- After setting up an NbS project: throughout the project timeline



*infomarket Spaanse Kroon, Leuven, Belgium
Copyright: City of Leuven*





Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

The Ter Putkapelle pilot started off with thinking about which stakeholders to involve in the project, and at what stage. More specifically, which stakeholders to involve in the design of the participatory process. Anyone that would at some point in the project be involved in final decision-making, was consciously involved from the very beginning. By doing so, all decision-makers helped co-design the participatory process, and were committed to the NbS and participatory focus.

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Example 2

Leuven

LEUVEN, BELGIUM

The city of Leuven has launched the desealing campaign “Hier dringt het door” (“Let it sink in”) as a baseline where all the NbS actions are communicated. By communicating towards citizens and stakeholders in a uniform, clear and appealing way, the city tries to raise the awareness and support for NbS. A website www.hierdringthetdoor.be was launched together with an [animated video](#) explaining the need for desealing and greening in the City.

*“Hier dringt het door” Campaign, Leuven, Belgium
Copyright: City of Leuven*

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3. Thinking and acting inclusively

What's involved

Making space for inclusive participation, by designing democratic and participatory infrastructure that gives citizens and people with lived experience more say and shares of power and knowledge more equitably.

- Think about who is involved in design and decision-making processes; stakeholders taking steps to make inclusivity happen in project activities and policy design.
- Build civil servant, stakeholder capacity and capability in inclusive practices e.g. through training.
- Creating and fostering trust between those involved.
- **Center voices of people commonly marginalised and excluded**, and place importance on diversity and inclusion. Engage those who are not always the 'usual suspects'.
- Civil servants and other stakeholders witnessing firsthand what it is like for communities and people with lived experience, can cause fundamental mindset shifts in how civil servants or stakeholders see the system, and where their role and Nbs' role is in change.
- **Making space for inclusive participation** — design of democratic infrastructure — gives local citizens more power, and includes more diverse voices.
- Create spaces that are **welcoming and make people feel comfortable**. These can be done by holding meetings that are both formal and informal, providing catering and creative ways to boost peoples' moods by e.g. creating a cosy environment, and holding events and meetings at a low threshold to include as many people as possible.
- Recognising that attitudes in the work are as important as the work itself by having adequate social skills, empathy, respect, and work that centres those with lived experience to challenge the status quo.



“Hearing the same voices repeatedly won’t solve the problems of our time.”
The creative bureaucracy festival, Kate Goodwin

Urban Assembly.
Image by Collectif Etc.



- Acknowledge and respect that the different people working on NbS have their **own expertise and skills, and different responsibilities and commitment**.
- **Build genuine empathy for people with lived experience** in terms of how unsupported, unrecognised and disrespected they can be; how diverse their needs are; and how difficult it is to access support and resources for those who are marginalised.

Timing

- When setting up an NbS project for the first time in your city
- After setting up an NbS project: throughout the project timeline

Further reading

- [Actor Types & Interactions](#)
- [Competencies for Climate Democracy](#)



Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

In elderly care facility Ter Putkapelle, the residents were the most important and hardest stakeholder to embed into the decision-making process. Most of the residents have physical, cognitive and social hurdles to overcome. By carefully examining these hurdles together with the care staff and residents themselves, interviews and workshops were designed that catered specifically to the residents.

One method of engagement used was one-on-one interviews in the rooms of the residents in the format of a casual conversation about the role of nature in their past and present experiences. Consciously creating a setting and format that puts residents at ease allows them to express themselves in their own way. For the design of the workshops, multisensory cues were used to engage residents (some of which had cognitive disabilities and onset dementia) and draw out input from them.

- Instead of just maps of the area, 360° images of the site were displayed, as going outdoors was not an option due to cold and physical limitations.
- During the workshop, the non-invasive sound of a calm spring forest was played, creating an auditive backdrop.
- During the group conversations, the table contained physical objects that could be touched, smelled and eaten that helped remind participants about nature and the outdoors: branches, leaves, berries, herbs, ...
- Instead of textual lists of NbS, the table contained large and clear pictures (that participants could pick up and interact with) of NbS that could be implemented on the site.
- Aside from a facilitator, additional care staff were present during the group conversations as supporting facilitators, at least in a 1-to-3 ratio, helping residents express themselves and stay engaged

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Example 2

San Cristobal neighbourhood

MADRID, SPAIN

The Madrid stakeholders have formed a fruitful way of working by forming task groups with a diverse set of participants, mirroring the different organisations, voices and contribution entailed in the project. This has contributed to their reflections on how to overcome barriers and find new ways of contributing to the success of the project that are more inclusive and sustainable.

*Autobarrios project San Cristóbal, Madrid, Spain
Source: Basurama*

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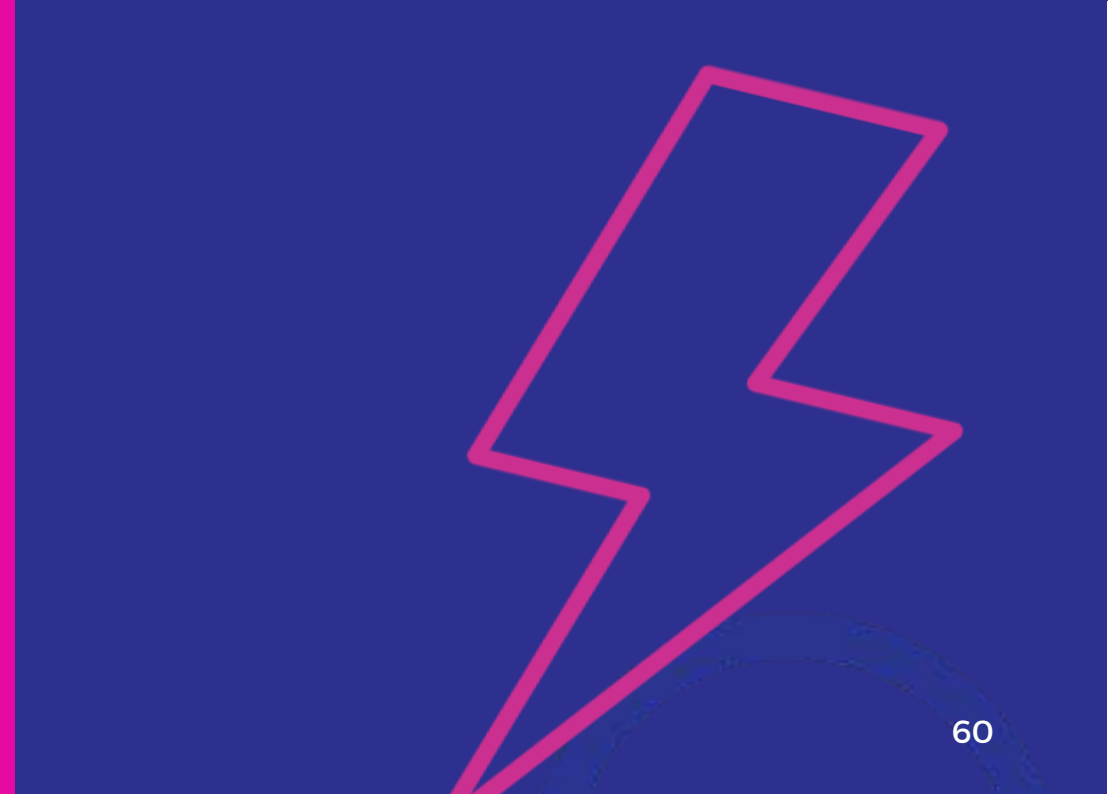


4. Addressing tension and conflict

What's involved

This Practice is about acknowledging and embracing conflict as a natural part of dialogue and action for change in the context of NbS, and being more inclusive in the plurality of values in public life. This is necessary because NbS 'cut across' multiple things in our cities and livelihoods - water and energy, mobility, and ownership and use of public and private spaces, for example. Because of this, NbS blur boundaries we are used to, and challenge our sensibilities about 'what belongs where'. This can cause tension as people feel things are being taken away from them, if they feel criticised or if they feel worried about change.

- Addressing tension and conflict means bringing in "...the capacity to "hold space" for conflicts and understand the sources of social tensions, frictions and polarities are central to political imagination." The main point is that embracing conflict together, rather than avoiding it, allows us to generate new alternatives collectively and helps construct the values of an entity.
- Tensions or disagreements may arise among residents when new initiatives are being implemented, so it is important to create spaces where residents can voice their concerns with what is happening in their neighbourhood.
- A way to address tensions and help the implementation of an initiative is to both identify the needs of stakeholders as well as the problem areas of an NbS to then identify the positives of the solution.
- Conflict can also be observed before intervening in it. Observation may help understand the underlying issues of a project and the complexities of the work.
- As mentioned in previous sections, clear communication and roles also help address possible conflicts. Providing information that is valuable to stakeholders and that is not simply noise can ensure that tensions are well addressed.



Addressing conflict may involve training in developing listening skills, nonviolent communication and empathy building methods, or seeking support of facilitators trained in these approaches.

Timing

- As and when it arises.
- In preparation for citizen engagement and stakeholder engagement sessions, for example.

Further reading

- [Nature-based Solutions and Peacebuilding | Geneva Nature-based Solutions Dialogues](#)
- [After participation: Imagining democracy in the age of conflict: Harnessing friction and other ideas for democracy in the new global context.](#)





Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

One approach that has been consciously followed in the Ter Putkapelle work, is putting different end-user stakeholders around the table together: residents, staff, neighbourhood residents. The needs and wishes of these groups would traditionally often be explored individually in siloed efforts. Doing this in a more collaborative way helped create mutual understanding toward each other's expectations of the shared space.

Also, during each of the workshops, experts, including the landscape architect, were present to help explain the implications of certain decisions, or to hear worries and considerations first hand from staff and residents and work out possible ways of working around them together.

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Example 2

Spaanse Kroon neighbourhood

LEUVEN, BELGIUM

Ample time is given to dialogue between civil servants, private sector and civil society. Challenges and struggles are discussed and diverse viewpoints are heard. Plans impacting how people can drive through their neighbourhood and where they can park are bound to spark strong emotions and resistance. Making honest and open attempts to address these concerns is crucial to build the support from residents that is needed to advance the NbS.

For the design of the public domain the city of Leuven organised an extra information and dialogue evening due to concerns voiced by the citizens. After this workshop the support base was increased.



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Evaluating, learning and reflecting

These two Practices are about assessing and measuring the processes and the work done with NbS. To improve the work being done, learning and evaluation must happen. The assessment should be readily available for anyone to read and see for them to understand what happened, what went well and what could have gone better. Evaluation is also important to highlight the impact of the work and the individual contributions to it.

Practices

1. Assessing NbS impact
2. Communicating the work and sharing with others



1. Assessing NbS impact

What's involved

Being clear about which systems we are trying to change with NbS, and how this is being done in line with local priorities e.g. housing, ecological systems, job markets, education.

- Have a joint understanding of what we mean by 'change' or 'impact' given that understandings might vary in a group. Oftentimes, results may fail to illustrate the systemic change that is needed to address the barriers to NbS.
- Reflection on what is being measured and how, e.g. using qualitative and quantitative indicators that are appropriate to the context, not 'traditional KPIs' such as 100 trees planted.
- Addressing the impact of the NbS, both the negative and positive, and unintended consequences help reflect on the work that has been done as well as to adapt to better ways of working for the future.
- Ensure there is reflection throughout the process, not only at the end to learn from previous actions making the NbS more efficient and fit for the needs of the residents.
- "Nature-based solutions (NBS) are solutions to societal challenges that are inspired and supported by nature. NBS are also seen as open innovations that require engagement with multiple actors, providing co-benefits that bridge social and economic interests and as thus, can stimulate new green economies and green jobs. When fulfilling the functions of urban infrastructures using or mimicking natural processes, NBS may simultaneously provide co-benefits for biodiversity and human well-being."
 - Co-benefits:
 - Improved rainwater management, increased permeability, reduced runoff and increased aquifer recharging;
 - Improved micro-climate conditions (shade, humidity, wind protection...), including reduced urban heat island effect;
 - Greater biodiversity;
 - Bridging social and economic interests;
 - Stimulating new green economies and green jobs;
 - Non-human well-being (more than human);
 - Human health and well-being;
 - Potential contribution to active mobility and social cohesion through the creation of safe, attractive public spaces.



monitoring station, Leuven, Belgium
Copyright: KU Leuven



Timing

- When certain milestones of NbS project have been achieved
- After NbS project has been concluded

Further reading

- [Leuven Cool - a map tracing temperature development in Leuven](#)



Example 1

Spaanse Kroon neighbourhood and elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

Within LIFE-PACT, ongoing monitoring of the impact of NbS is important as it allows us to evaluate if NbS implementation has indeed a positive effect on the environment and society. Both the environmental impact on the local climate (e.g.. temperature, carbon sequestration, and soil moisture) as well as the societal impact (e.g. awareness of NbS, well-being, and behavioural change) is monitored using a selection of indicators.

For the environmental monitoring, an in-situ network of autonomous weather and soil sensors is combined with existing models, GIS-analyses and remote sensing.



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For the environmental monitoring, an in-situ network of autonomous weather and soil sensors is combined with existing models, GIS-analyses and remote sensing.

- Temperature reduction is measured using a network of in situ low-cost weather stations (RENKFORCE WH2600), collecting high-resolution time series of air temperature (at 2 m height), irradiance, and relative humidity. Based on these times series, the impact on urban heat (stress) can be quantified. The KU Leuven team is currently already running a similar network (>100 weather stations, www.leuven.cool) and thus have the necessary expertise in these kinds of sensor networks. Soil moisture is measured using a network of in-situ soil moisture sensors (TMS-4) at different soil depths (up to 20 cm). Installation of these sensors at several of the project's locations will further contribute to building a regional network for soil moisture and drought monitoring in collaboration with the Flemish citizen science project CurieuzeNeuzen.
- Increased above ground carbon sequestration, reduced air pollutants and improved resilience to flooding are estimated using Nature Value Explore, a quantitative ecosystem service modelling tool available for the Belgian territory (<https://vito.be/en/nature-value-explorer>; and ECOPLAN-SE, a QGIS plugin), GIS-analyses and remote sensing.
- Within LIFE PACT, we strive to involve citizens throughout the monitoring process and thus we included them in the installation of both sensor networks. Subsequently, they were also involved in collecting soil samples from their gardens to measure improved soil surface whereby the soil samples will be further analysed in the lab for soil quality parameters and for carbon sequestration in the soil.

- They also participated in field observations of wildlife species by collectively walking a certain route in the neighbourhood while counting bird species. To measure the reduction of water consumption, they were also asked to keep a diary of their water consumption.

An extensive in-situ climate adaptation sensor network, soil samples, in field observations, and simulations through modelling are all methods that offer the possibility to track the impact of NBS actions in the public and private domain. An important remark however is that the impact of NBS implementation on several indicators cannot always be measured immediately, but takes several years to be established, e.g. vegetation takes time to grow. This means that a sound monitoring of NBS-impact also needs 'time' to be implemented. For the socio-economic impact, several GDPR-approved surveys (file numbers G-2022-4809; G-2022-4788) are used including a preliminary survey before intervention, a post-measurement (after the project) and a long-term measurement. The indicators that are monitored for changes before and after the project are 'awareness raising', 'support base for NBS', 'behavioural change', 'citizen well-being', and 'mental and physical health'.

The surveys were composed from the perspective of Pro-Environmental Behavior (PEB), in which self-report scales are considered reliable (Larson et al., 2015). PEB are 'a range of behaviours that benefit the natural environment, enhance environmental quality, or harm the environment as little as possible' (Larson et al., 2015). This allows us to monitor the progress of these indicators throughout the participation processes, and to evaluate if the participation process is successful in affecting the selected indicators.

2. Communicating the work and sharing with others

What's involved

This Practice is about sharing learnings and critical reflection upon outcomes of experimentation, and renewal of the approach.

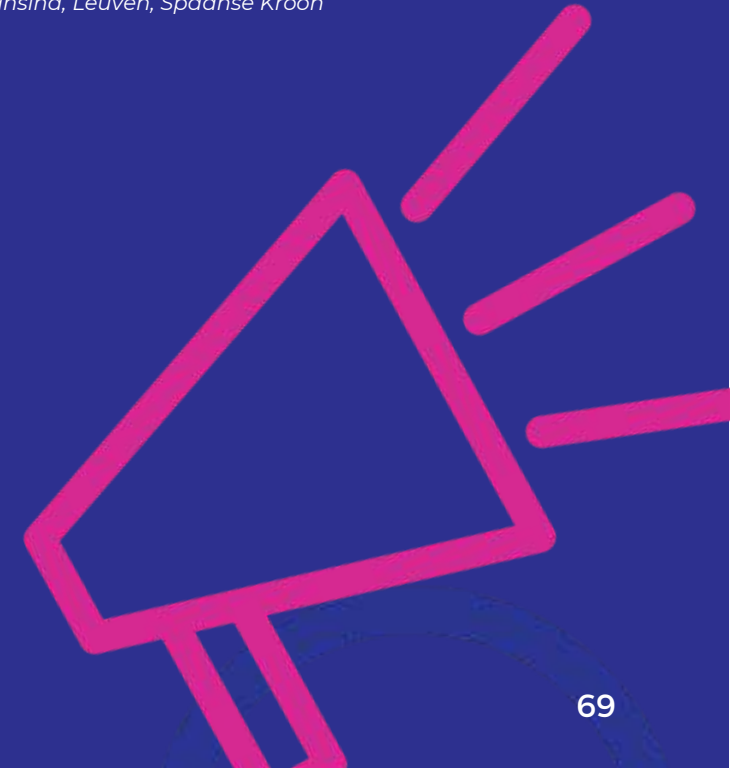
- **Sharing learnings** iteratively supports critical reflection and renewal of the approach by providing built-in and ongoing reflection upon the outcomes of experimentation.
- **Transformative learning:** “While the literature acknowledges an increase in NbS experimentation in cities and documents new governance approaches for NbS, academic knowledge on transformative learning to advance the potential of NBS is scarce.”
- **Sharing outcomes** of what has been done, what went well and what could be improved with people in ways that are understandable and readily available both in-person and online to a wider audience in plain language. Not only should outcomes be shared but main contact details as well for people to reach out to.
- Sharing the work in a format of a guide or toolkit; making it very **practical and easy to read** for people so that they can find inspiration from it for their own NbS.
- Communicating the work also informs people of what has been done with their input and how it has been incorporated in the NbS.
- is not simply noise can ensure that tensions are well addressed.

Timing

- When certain milestones of NbS project have been achieved
- After NbS project has been concluded



*interview with alderman Dirk Vansina, Leuven, Spaanse Kroon
Source: City of Leuven*



Example 1 Elderly care facility Ter Putkapelle LEUVEN, BELGIUM

At the elderly care facility, 'Project corners' were set up to bring the project as close to the residents as possible. At various stages in the project, updated posters were put up in these corners that explained the various steps in the project, what decisions had been made, and how, who was involved, and how people could participate.

After each activity, project partners also got together to evaluate and learn. Project partners also got interviewed on an individual basis to learn how they experienced the process. All of these learnings got aggregated and translated into the document you are reading today

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Making it the new normal

This one Practice is about creating strong foundations for future work. It builds upon the previous practices by shifting mindsets, providing training and capability building, and strengthening structures that can perform the work that goes into NbS.

Practices

1. Building competence and confidence in NbS



*Kick-off meeting Edouard Remy, Leuven, 29 November 2022
Source: City of Leuven*

1. Building competence and confidence in NbS

What's involved

This Practice is about getting people to a point where they take action or get involved in some actions themselves that are connected to NbS. It is about equipping people with knowledge, skills and pathways to know their rights and capabilities and act upon them to spread NbS further. This also has the benefit of word-of-mouth influence as people start 'talking in the streets'. 'Social mimicry' is a motivating factor - as people copy or are influenced by the actions of their neighbours, this broadens reach and action across people and places.

- **Educating people on issues of climate**, climate resistance, overheating, the origin of food etc. to better equip them to take action and question existing systems. Needs for education, levels of education, educational experiences, etc.
- Providing practical tools, mechanisms, incentives, resources and a **low threshold to participate for people to take action.**
- Supporting training, upskilling, **capability building** and learning by doing.
- Municipal competences paired with community competences can create **innovative ways of thinking and doing.**
- Cultivating **cultural and mindset shifts** where residents who may not believe in NbS are made aware of the added value of these solutions.
- Seeding movements and momentum for change as individual agency spreads to collective networks.

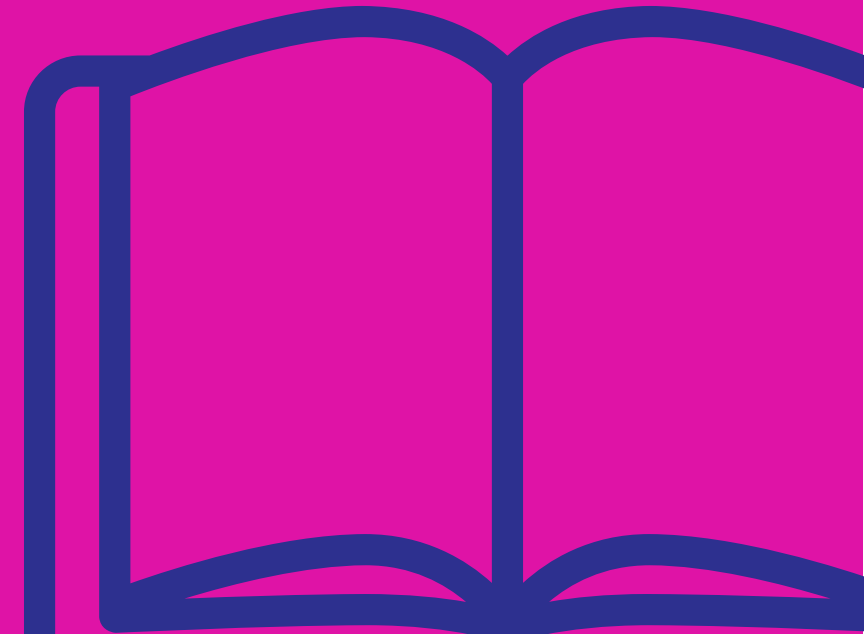
Timing

- After setting up an NbS project: throughout the project timeline
- As and when it arises.



“The desire to act comes from citizens themselves - they can't be forced.”

City of Leuven stakeholder





Example 1

Elderly care facility Ter Putkapelle

LEUVEN, BELGIUM

At the beginning of this pilot project, most partners had little to no experience with NbS, aside from a landscape architect trained in NbS from the City of Leuven. Designing, running and evaluating various workshops together with all partners allowed a shared understanding of NbS to develop. Having this knowledge replicated over all project partners makes the project and future implementations less dependent on one individual expert, and allows NbS to spread into each partner's own sphere of future work.

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Example 2

Spaanse Kroon neighbourhood

LEUVEN, BELGIUM

People will take/ do some actions themselves - it's normal that it hasn't happened yet, but this is the goal - they will think to themselves what they can do themselves.

The city of Leuven has informed and inspired the citizens during the participatory trajectory. Several actions were taken to get the people motivated and supported.

Citizens are led to the Garden rangers. These volunteers give free advice on climate adaptive gardening.

A garden fair will be organised to get the citizens informed and inspired.

A tegeltaxi will pick up depaved tiles and debris from peoples private domains for free. The tegeltaxi helps people to take action individually. www.leuven.be/tegeltaxi

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Example 3

Urban gardens

MADRID, SPAIN

The Environment and Mobility Department of Madrid City Council develops various programs to promote citizens getting engaged in urban horticulture, taking into account environmental, social and educational benefits that this activity brings to make Madrid a more sustainable city. Madrid is working with the city residents to ensure the maintenance of the Urban Gardens throughout the city and different communities, and supporting its residents with tools and information enabling a good implementation.

*Esta es una plaza, Madrid, Spain.
Image retrieved from <https://madridnofrills.com/madrids-illegal-gardens/>*

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Thanks!

These Practices capture the collective learnings by the LIFE-PACT project team: City of Leuven, City of Madrid, City of Kraków, Universidad Politécnica de Madrid, KU Leuven, Zorg Leuven, Leuven 2030, Dark Matter Labs and Democratic Society.

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Get in touch!

Want to read more about the LIFE-PACT project?

www.lifepact.eu

Questions, feedback, looking to connect?

We'd love to hear from you!

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Democratic Society is a democratic practice, design and research group working across Europe on climate action and democracy. **Get in touch with us!**



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