

NBS and urban greening to create climate resilient, liveable and just cities

- [Anna Bruen](#), Senior Officer, Sustainable Resources, Climate, and Resilience, ICLEI Europe



What are nature-based solutions?



With nature, for nature and us



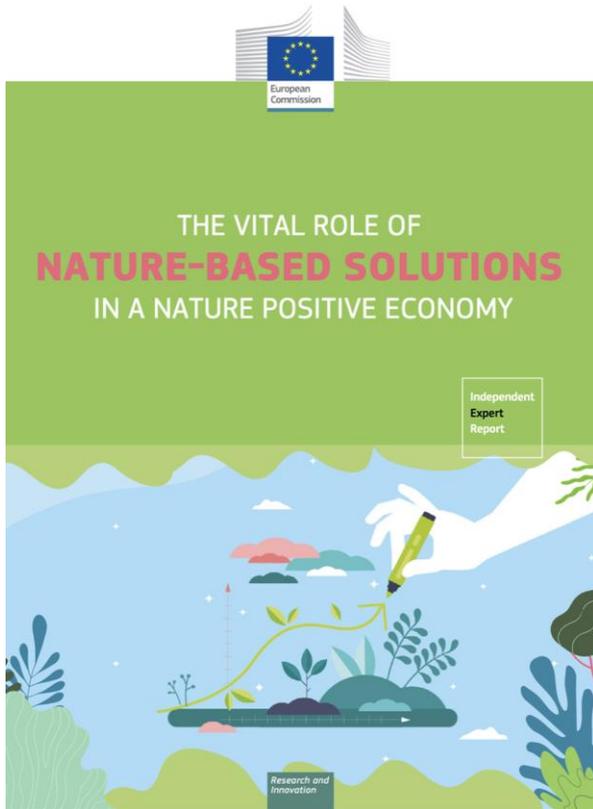
NBS, Climate adaptation and resilience



A climate-resilient European Union in line with EU Green Deal and green transformation

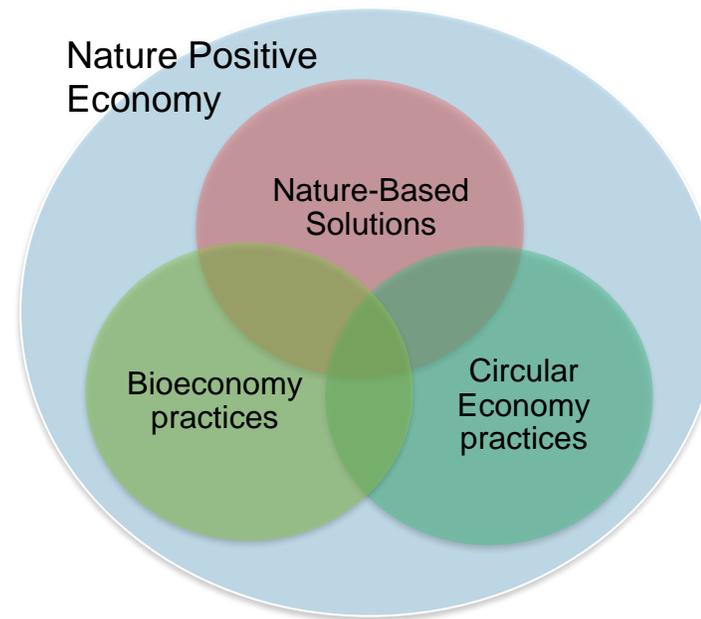
Achieving a climate-resilient society in a just and fair way by 2050

- NBS = “no-regret” measures (independent of climate scenarios) on a larger scale to increase climate resilience and contribute to multiple Green Deal objectives
- NBS = essential for sustaining healthy water, oceans and soils. They must play a bigger role in land-use management and infrastructure planning
- Europe needs to leverage more investments in nature-based solutions to generate gains for adaptation, mitigation, disaster risk reduction, biodiversity, and health.



*“A nature positive economy is one in which businesses, governments and others, **take action at scale to reduce and remove the drivers and pressures fuelling the degradation of nature, and work to actively improve the state of nature and the ecosystem services it provides.**”*

University of Cambridge, Institute for Sustainability Leadership



Contributions from 17 NBS projects and Authors:

Siobhan McQuaid, Esmee Kooijman, Daniela Rizzi, Thomas Andersson, Joanne Schanté

EU policy landscape and NBS



EU Biodiversity Strategy 2030

Conserve & protect



30%
of land in
Europe



30%
of sea in
Europe

Restore degraded ecosystems, by:



Increasing organic farming and biodiversity-rich landscape features on agricultural land



Halting and reversing the decline of pollinators



Restoring at least 25 000 km of EU rivers to a free-flowing state



Planting 3 billion trees by 2030

EU Nature Restoration Law

by 2050 ecosystems are restored, resilient, and protected.

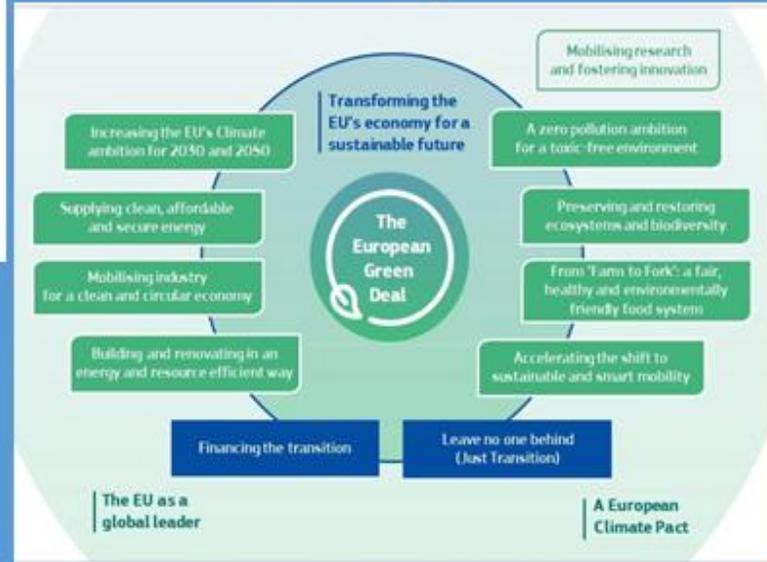
Focus on urban ecosystems with sequenced targets

EU Forest Strategy 2030

Increase forest coverage in EU along ecological principles, improve resilience of EU forests

European Green Deal

a just and inclusive green transition in the EU by tackling climate and environmental challenges



https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF

EU Adaptation Strategy 2030 + EU Climate Law

Achieving a climate-resilient society in a just and fair way by 2050

- NBS essential for sustaining healthy waters, oceans and soils
- NBS as no-regret measures for building climate resilience
- Leverage more investments in NBS for multiple benefits



- **Mission on Climate Adaptation** (150+ cities and regions)
- **Mission on for climate neutral and smart cities by 2030** (100 cities)

EU Soil Strategy 2030

by 2050 all EU soils are healthy and more resilient

Framework & concrete measures for protecting, restoring and sustainably using soils



What does this mean for cities?



<https://networknature.eu/proposed-eu-nature-restoration-law-key-green-future>

- **Whole-of-government approach**, including a strong role and mandate for local and regional authorities, with formalised governance structures and engagement processes
- Ecosystem restoration **actions to prioritize in urban contexts** (build on what is there, multifunctionality)
- Integration with **local policy and planning** frameworks (e.g. Urban Greening Plans, Master Plan)
- **Stakeholder engagement with unusual suspects** (e.g. Land owners, farmers)
- **Public and private finance** of ecosystem restoration

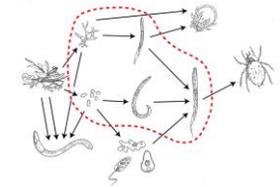
What does the EU Soil Strategy imply for cities?

*“It has been estimated that about **60 to 70% of soils** in the EU are not healthy”*

*“**Sets out a framework and concrete measures** for protecting, restoring and sustainably using soils and that mobilises the necessary societal engagement and financial resources, shared knowledge, sustainable practices and monitoring to reach common objectives”*

*“By **2050**, all EU soil ecosystems are in healthy condition and are thus more resilient, which will require very decisive changes in this decade. This new vision for soil is anchored in the **EU biodiversity strategy for 2030** and the **Climate Adaptation Strategy**”*

*“**Soil Health Law legislative proposal by 2023**”*





NetworkNature will expand the NBS community and provide support in implementing and amplifying nature-based solutions





WWF-UKRAINE TEAM



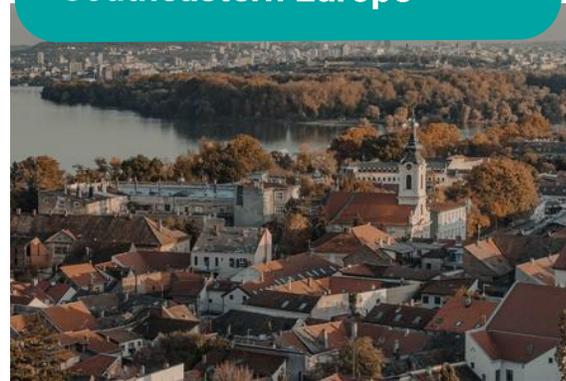
UrbanByNature NBS Hubs - in Europe and beyond!



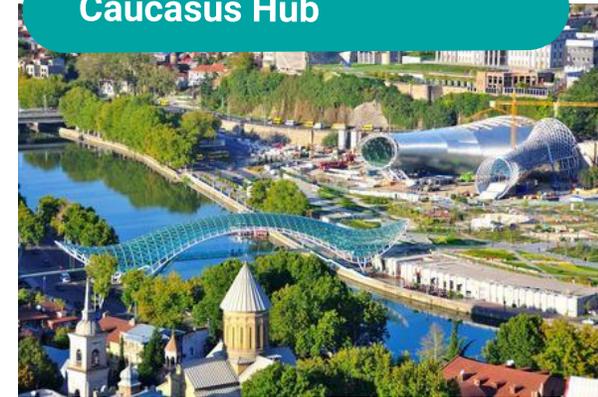
Flanders Hub, Genk, Belgium



Southeastern Europe



Caucasus Hub



Scottish Hub, Glasgow



Spanish Hub, A Coruna



- Brasil
- Korea
- China
- Latin America



Location: Outside / In Europe

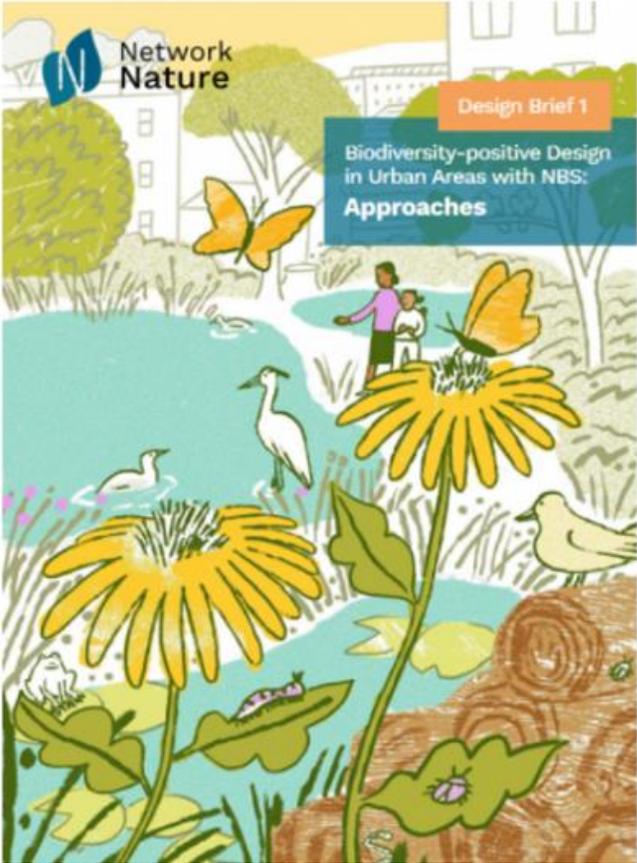


Local Governments
for Sustainability
EUROPE



- Over 430 resources on NBS
- Over 500 case studies on NBS

Nature-based Solutions Made Easy



Case studies

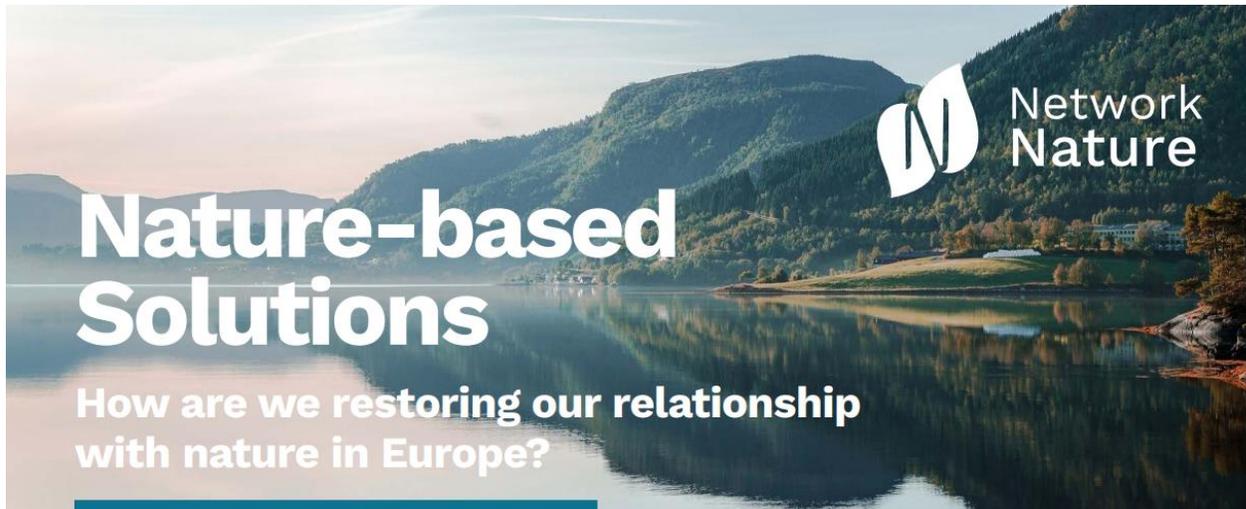
Displaying 1 - 520 of 520



Factsheets

General public

Practitioners,
infrastructure planners,
developers



practitioners



This Factsheet explores common water-related challenges, such as water availability, quality, and management, their associated risks, and relevant policies, while proposing nature-based solutions as a paradigm shift. By outlining key benefits of using nature for an integrated and ecosystem-based water management approach, and best practices in different contexts and ecosystems, the factsheet demonstrates the potential of shifting away from conventional 'grey' solutions. Thus, it aims to provide practitioners, developers and policymakers with inspiration, resources and opportunities to increase the uptake of nature-based solutions

Who should read this?

Are you a practitioner, infrastructure planner, developer or engineer looking to tackle water-related challenges in non-conventional ways, using the power of nature? Are you a policymaker working on areas linked to nature-based solutions, namely environmental, climate, land and water policies? This factsheet is for you!

The Factsheet explores the potential of ecosystem restoration actions to halt and reverse the degradation of ecosystems. Building on the [outcomes](#) of the last NetworkNature semester theme on [Nature-based solutions for Ecosystem Restoration](#), the factsheet provides an analysis of several restoration projects carried out in diverse ecosystems, and addressing multiple challenges. It concludes with a list of recommendations, resources and opportunities moving forward to ensure that restoration actions are put in place to successfully deliver on environmental, social and economic benefits.

Who should read this?

Are you a practitioner directly involved in, or thinking of starting, a restoration project but would like to find out more about what types of benefits can be achieved and what actions can best support effective restoration? This factsheet is for you!

Knowledge briefs



NetworkNature
Knowledge Brief 1

Taking nature-based solutions up the policy ladder:

from research to policy action

NetworkNature
Knowledge Brief 2

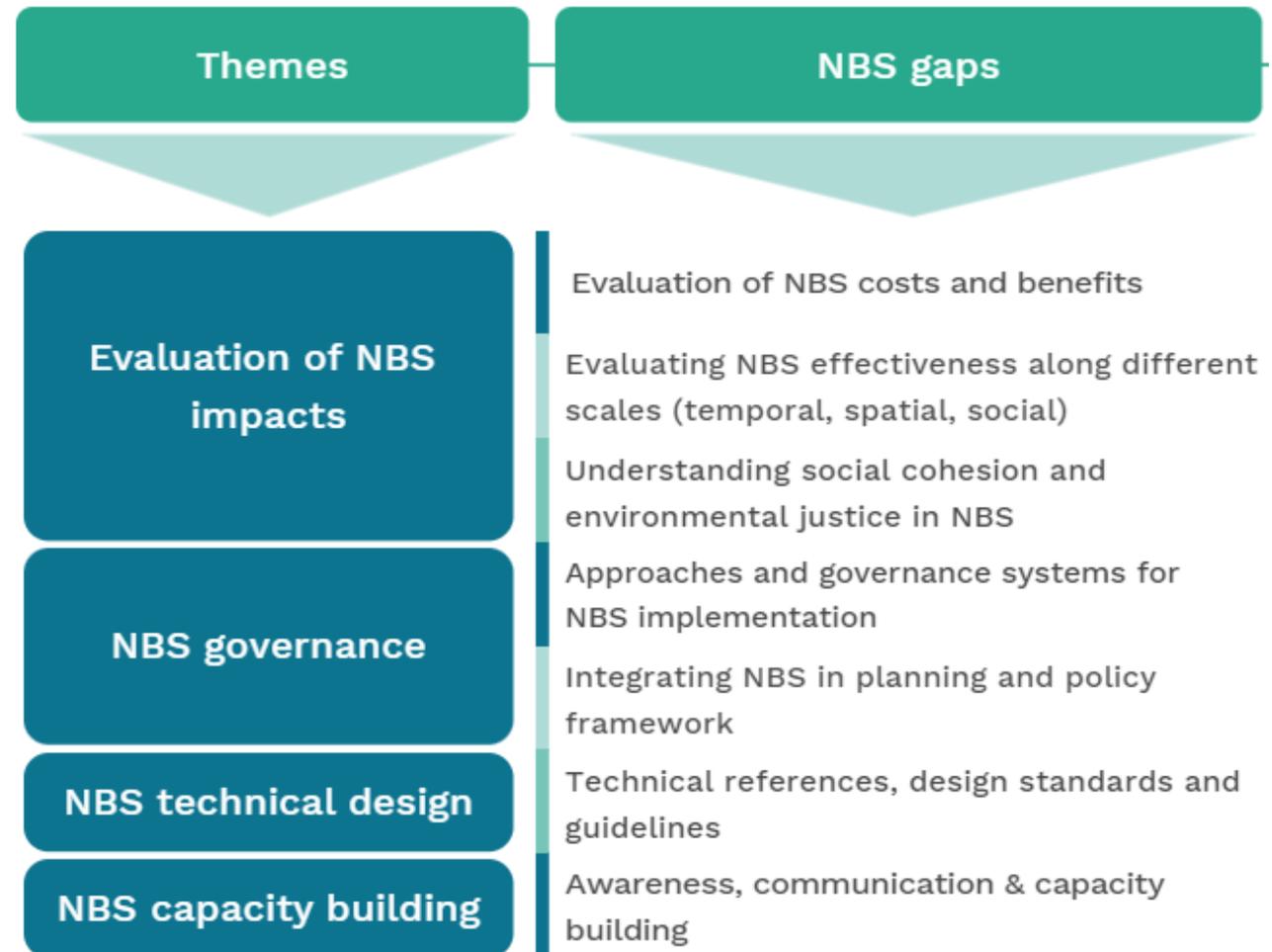
Ensuring the quality of nature-based solutions:

Perspectives of key stakeholder groups

Network Nature



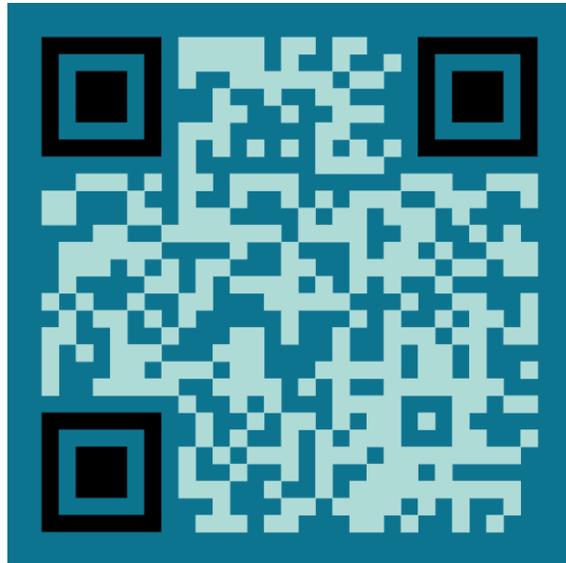
NbS Knowledge gaps



NBS Knowledge Database

[Introduction to the database >](#)

Displaying 1 - 100 of 699



RESOURCE TYPE	TYPE OF ENTITY	KEY THEMES	REGION	COUNTRY	LANGUAGE
- Any -	- Any -	- Any -	- Any -	- Any -	- Any -
SOCIETAL CHALLENGES					
- Any -					
SEARCH FOR PHRASE					
<input type="text" value="Enter search terms:"/>					<input type="button" value="RESET"/> <input type="button" value="APPLY"/>

Community- and Nature-Based Solutions for Integrated Urban Flood Risk Management : Mini Studios for Water-Sensitive Urban Design - A Handbook for Organizers and Facilitators

Main entity:
World Bank

Description: Globally, floods are the most frequent and damaging natural hazard. To help manage the impact of flooding on people and economies, the World Bank provides technical assistance, advisory services, and financing to its client countries through a range of resilient urban...

Scope:
Global

Nature-Based Solutions for Disaster Risk Management : Booklet (English)

Main entity:
World Bank

Description: Nature-based Solutions (NBS) that strategically conserve or restore nature to support conventionally built infrastructure systems (also referred to as gray infrastructure) can reduce disaster risk and produce more resilient and lower-cost services in developing countries. In the...

Scope:
Global

Protecting Albania's Marine and Coastal Biodiversity

Main entity:
UNDP

Description: UNDP and the Global Environment Facility support the Government of Albania's plans to double Marine Protected Areas, and improve their overall management. In close cooperation with national partners, this includes: - improving the legal and regulatory framework that supports...

Scope:
Europe

Wetlands for Disaster Risk Reduction

Main entity:
Ramsar Convention on Wetlands

Description: Along the coastline, wetlands act as a natural protective buffer. Inland, they act as a natural sponge, absorbing and storing excess rainfall and reducing flooding. During the dry season, they release the stored water, delaying the onset of droughts and reducing water shortages...

Scope:
Global

NetworkNature Policy Package



NetworkNature
Policy Brief

**The proposed EU
Nature Restoration
Law: what role for
cities and regions?**

NetworkNature
Policy Brief

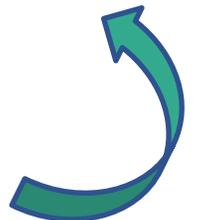
**Integrating Nature-based
Solutions in Education:
Unlocking the Potential of
Transformative Learning
for Sustainability**



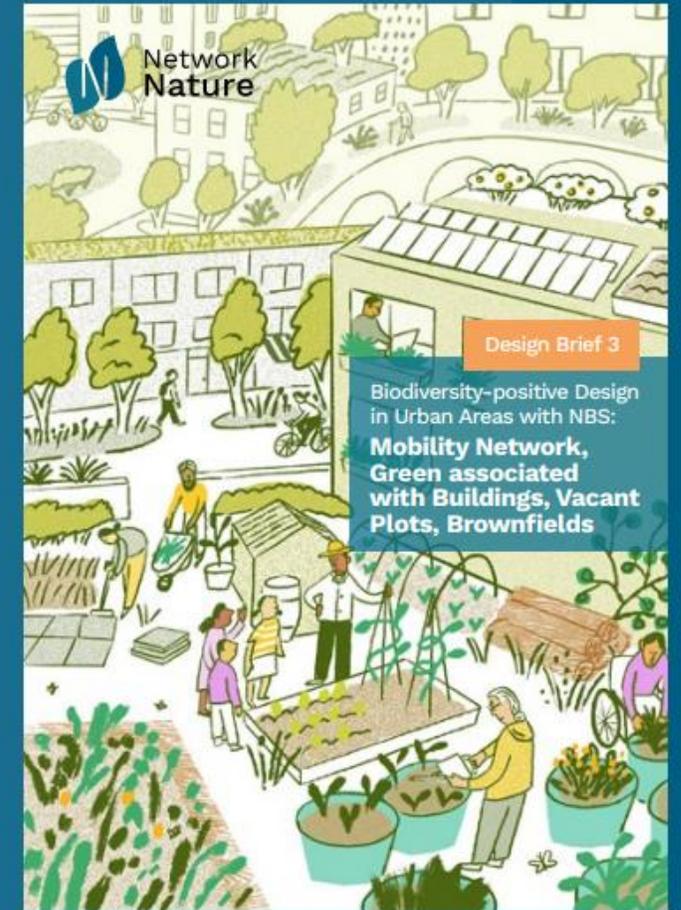
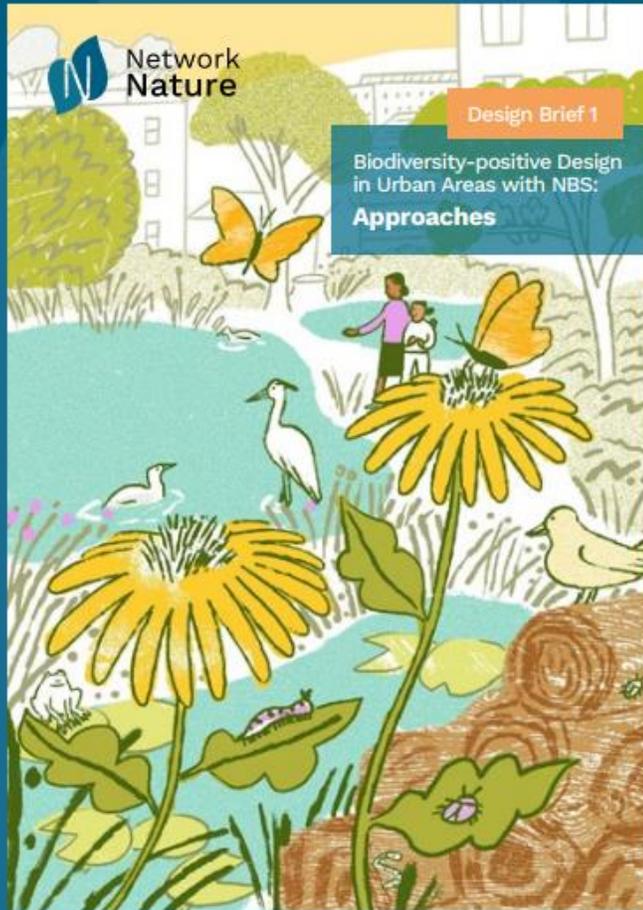
Local and regional
policymakers,
practitioners



Educators, policymakers,
researchers, practitioners



NetworkNature Practitioners' Package



Practitioners, landscape managers, policy makers





Network
Nature



Network
Nature

Nature-based solutions Business information package



Contents of the Business Package

1. **What are nature-based solutions and nature-based enterprises?**

Clarifies the NBS and NBE concepts

2. **Examples of successful nature-based enterprises**

Inspiring stories of NBE which made their way through

3. **Nature-based solutions as a business opportunity**

Depicts an overview of key figures and trends

4. **Business models for nature-based solutions**

Three business models canvases especially adapted for NBS

5. **What next? Where to start?**

Policy and legislation, networking platforms, funding and investment opportunities

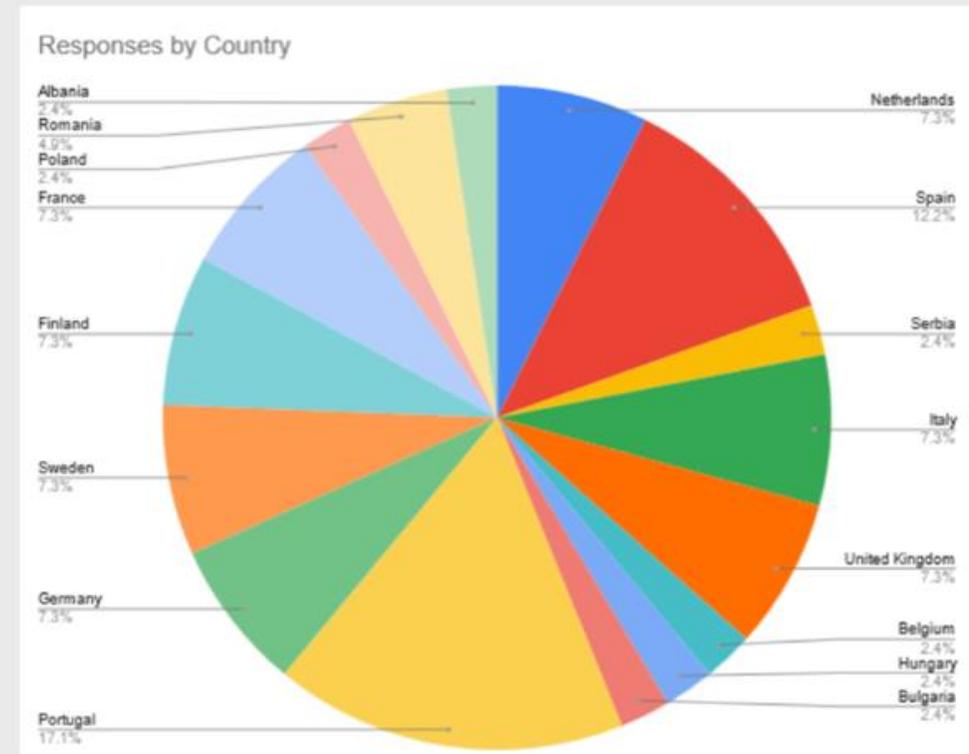
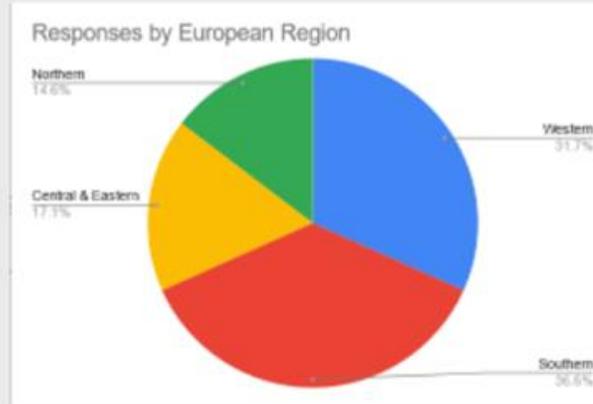


Urban Greening Plan Guidance, toolkit, and platform

1. How was it developed?
2. What is in it?
3. How can cities use it?



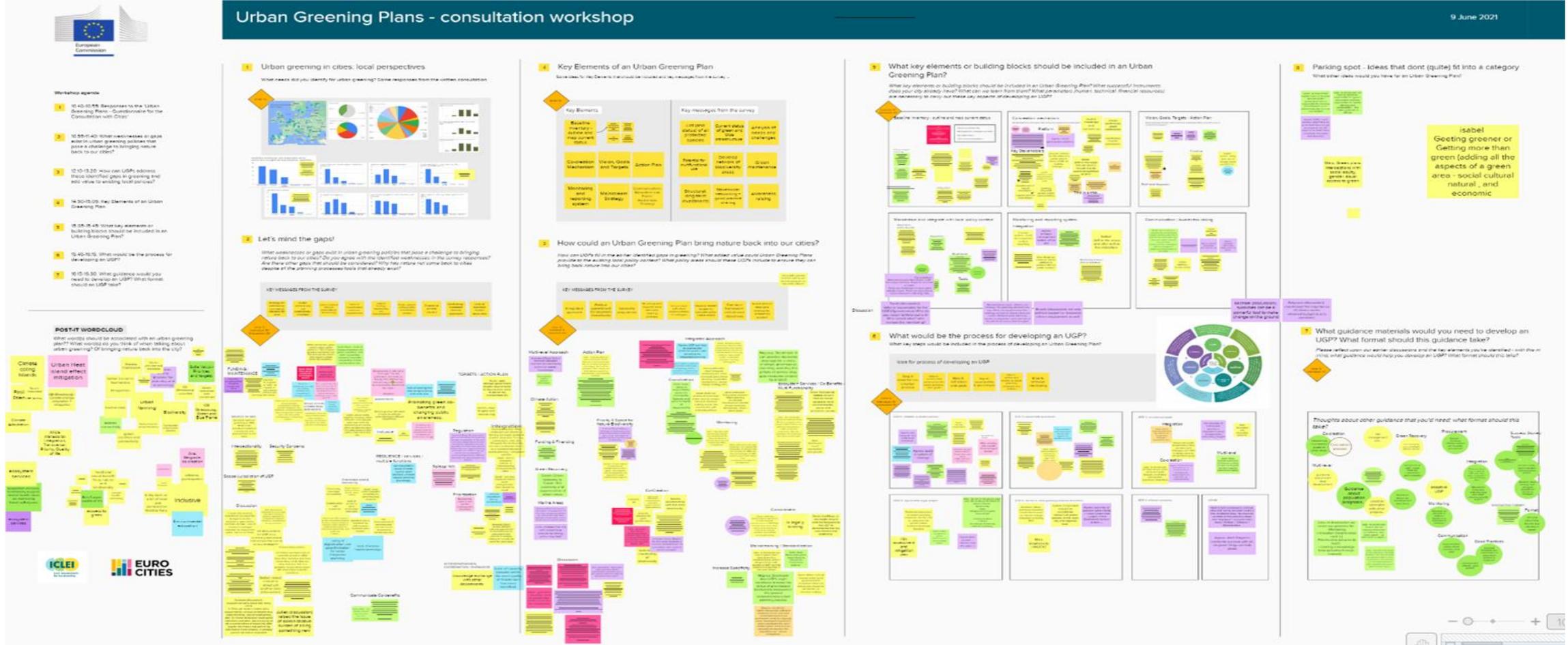
City Consultations



City Consultations

Urban Greening Plans - consultation workshop

9 June 2021



Workshop agenda

- 10:40-10:45: Responses to the Urban Greening Plan - "Guidance for the Consultation with Cities"
- 10:50-11:40: Other measures or green spaces that bring nature back into our cities? Do you agree with the identified needs in the survey responses? Are there other ideas that should be considered? Why has nature not come back to cities since the planning processes took place already?
- 12:10-13:20: How can USPs address these identified gaps in greening and add value to existing local policies?
- 14:30-15:05: Key Elements of an Urban Greening Plan
- 15:25-16:45: What key elements or building blocks should be included in an Urban Greening Plan?
- 16:45-17:15: What would be the process for developing an USP?
- 17:15-18:30: What guidance would you need to develop an USP? What format should an USP take?

POSTIT WORDCLOUD

What words should be associated with an urban greening plan? What words do you think of when talking about urban greening? Or bringing nature back into the city?

1 Urban greening in cities: local perspectives

What needs did you identify for urban greening? Some responses from the urban consultation.



2 Let's mind the gaps!

Other measures or green spaces in urban greening policies that pose a challenge to bringing nature back to our cities? Do you agree with the identified needs in the survey responses? Are there other ideas that should be considered? Why has nature not come back to cities since the planning processes took place already?

3 Key Elements of an Urban Greening Plan

What elements or building blocks should be included in an Urban Greening Plan? Other successful instruments that your city already uses? What can we learn from them? What practical, technical, financial resources are necessary to carry out these key elements of developing an USP?

4 What key elements or building blocks should be included in an Urban Greening Plan?

What key elements or building blocks should be included in an Urban Greening Plan? Other successful instruments that your city already uses? What can we learn from them? What practical, technical, financial resources are necessary to carry out these key elements of developing an USP?

5 What guidance materials would you need to develop an USP? What format should this guidance take?

Please reflect upon your earlier discussions and the key elements you've identified - with the or this, what guidance would help you develop an USP? What format should this take?

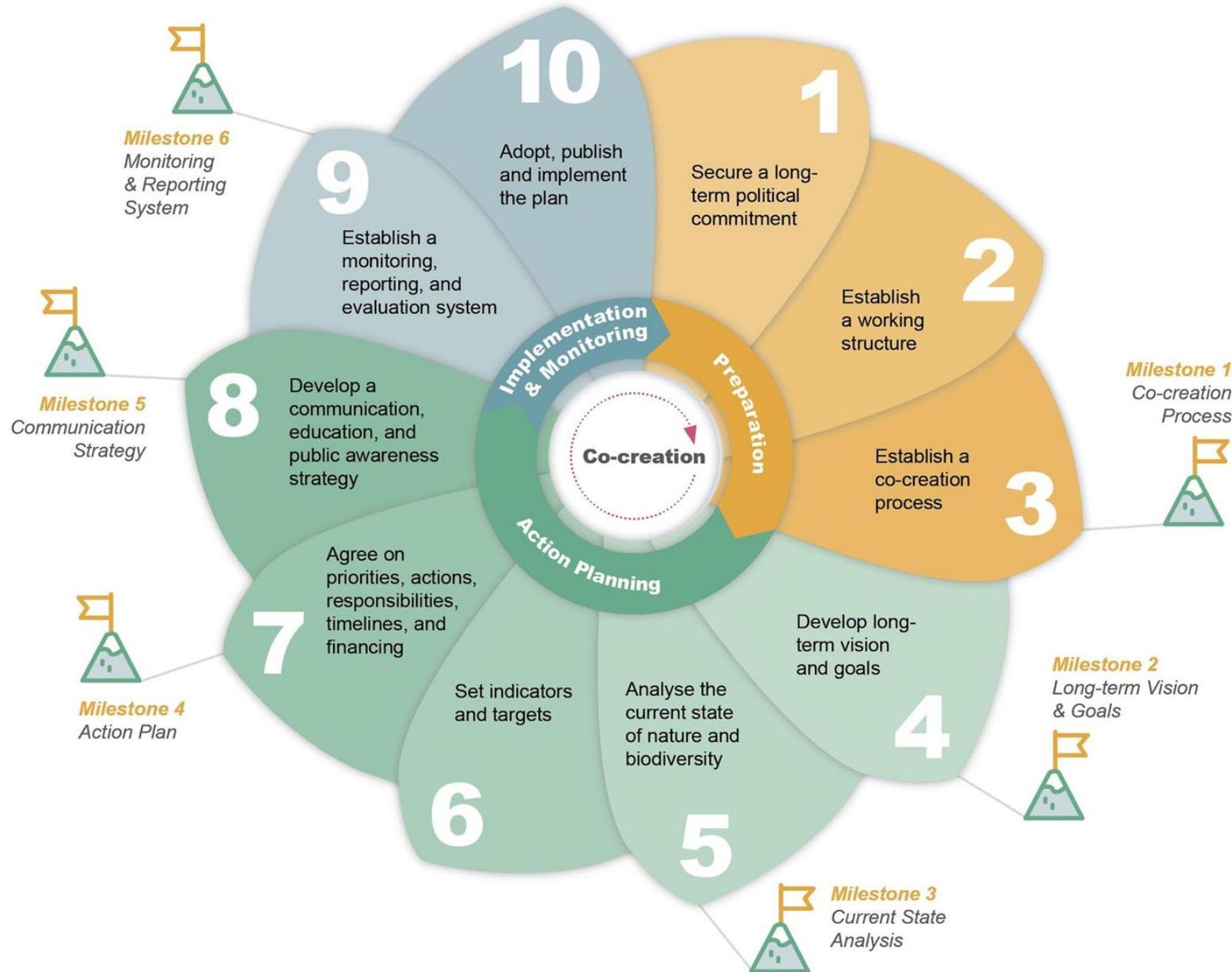
6 Parking spot - ideas that don't quite fit into a category

What other ideas would you have for an Urban Greening Plan?

isabel
Getting greener or getting more than green (adding all the aspects of a green area - social cultural natural, and economic)

Logos: European Commission, ICLEI, EURO CITIES

URBAN GREENING PLANS



Urban Greening Plan Toolkit

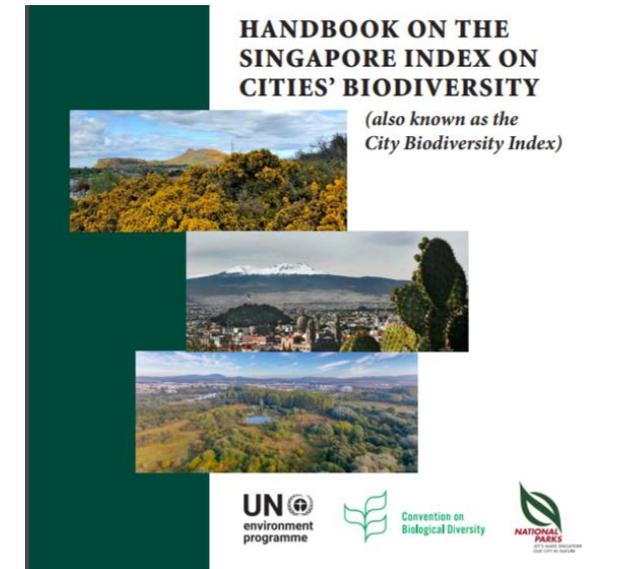
- Support cities in the implementation of the Urban Greening Plans
- Structured around the phases and steps
- Tools ranging from EU level data to citizen-led initiatives
- Each tool includes an overview, 'how to use' and 'alternatives'



How It Works



iNaturalist



Preparation

1

Secure a long-term political commitment

2

Establish a working structure

3

Establish a co-creation process

Preparation

Co-creation

Milestone 1
Co-creation
Process



Step 3: establish a co-creation process

Tool: CLEVER Cities Guidance on co-creating nature-based solutions

What is the tool in a nutshell?

A two-part guide to creating a co-creation process; Part I focuses on understanding the importance of co-creation, **identifying and mapping stakeholders, involving** them in the process, and **monitoring** the co-creation process; Part II goes further into details with a **16-step guide with tools, templates and activities**.

What other steps would this tool be useful for?

- Co-creation process is carried out throughout the development of the Urban Greening Plan
- Especially useful in final steps, establishing a monitoring, reporting and evaluation system as this Part II provides guidance on co-monitoring and co-implementation.



INTEGRATING NBS IN CITIES THROUGH CO-CREATION

Nature-based solutions (NBS) are actions inspired by, supported by or copied from nature that aim to help societies address a variety of environmental, social and economic challenges in sustainable ways.

CLEVER Cities stands for Co-designing Locally tailored Ecological solutions for Value added, socially inclusive Regeneration in Cities. Hamburg (DE), London (UK) and Milan (IT) have decided to create CLEVER Cities.

Co-creation arose from the business world as "the practice of collaborative product or service development, where developers and stakeholders are working together".

A PRACTICAL GUIDANCE FOR CLEVER CITIES

The guidance proposes a definitional framework for implementing nature-based solutions, including sets of steps and tools to provide a complete co-creation process. It also aims to include a Diversity of Stakeholders throughout the whole Co-creation Process.

The first part addresses the co-creation pathway and the understanding of co-benefits, as well as stakeholders' involvement in the co-creation process. This part addresses the definitions of both the concepts of co-creation and nature-based solutions, the main principles of co-creation and the different principles of implementation, as well as possible challenges.

The Guidance Part II installs a series of steps and a toolkit for the implementation of the co-creation process. Specifically, 16 co-creation steps are envisioned in a complete co-creation pathway to support cities to achieve successful implementation of NBS.

The guidance illustrates the co-creation steps through a series of practical sheets, tools and templates that cities can follow and easily adapt to their needs and specific context. In particular, each step is composed by one or more activities, which are marked as fundamental, recommended or optional.

2018

- 1 Identify CLEVER Cities project within the city local context
- 2 Map and Engage Stakeholders
- 3 Launch the Urban Innovation Partnership
- 4 Design the Platform according to the local context
- 5 Plan the co-creation activities and arrange the status quo
- 6 Design the CAL space internally
- 7 Launch the CAL at local level

CO-CREATION PLANNING

2019

- 8 Co-Design the Nature-based Solutions
- 9 Disseminate Co-Design activities
- 10 Co-Design and test alternative design scenarios
- 11 Co-Implement the joint project

CO-DESIGN OF SOLUTIONS

CO-IMPLEMENTATION

- 12 Verify the CAL co-implemented within the Plan
- 13 Co-Monitor and Map the Progress of implemented NBS
- 14 Verification of Co-benefits of NBS

CO-MONITORING

- 15 Sustain the Action
- 16 Co-Develop the Action

CO-DEVELOPING

2023

Legend: ● Fundamental ● Recommended ● Optional

URBAN INNOVATION PARTNERSHIP
A city-wide or district-focused informal alliance of local and city authorities, community (groups), businesses, academics to promote the NBS for regeneration or urban transformation, facilitate and drive the co-creation process. More specifically, each UIP supports one or more CLEVER Action Labs (CAL).

CLEVER ACTION LABS
CLEVER Action Labs (CAL) will co-design, co-implement and co-manage NBS interventions in the deprived districts starting from specific place-based NBS technologies as impulses.

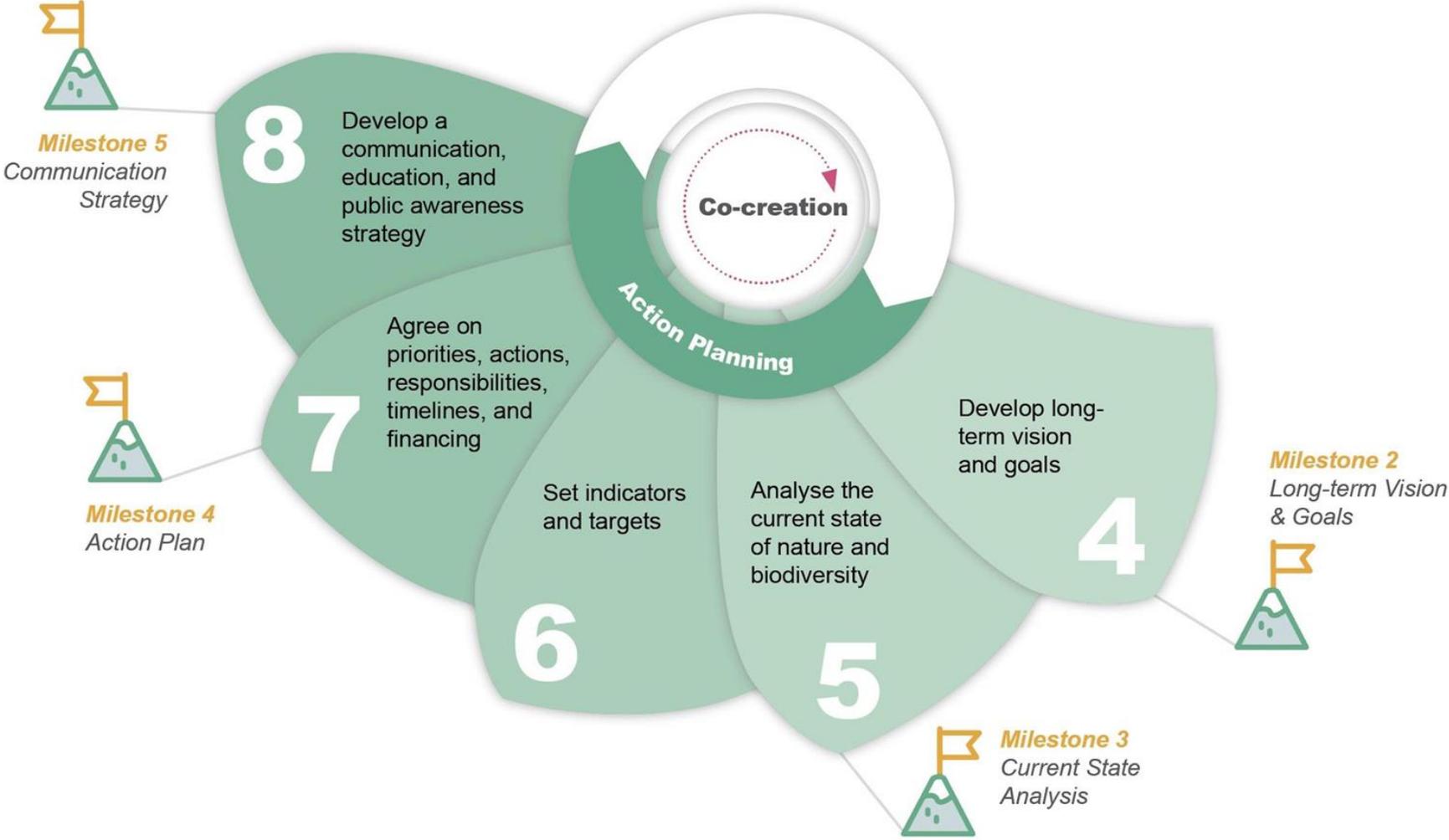
GUIDANCE TOOLKIT
The guidance is intended to be flexibly adapted to different cities' contexts, inclusive to a diversity of stakeholders, open to all and transparent whatever their scale is. Possible adaptations hence, are widely compliant and feasible. The co-creation pathway planned in this guidance (see Part II) is in the form of steps, a toolkit and templates is also flexible, with adaptable timing and even facilitative to cities on-going processes based on equivalent experiences.

This document has been prepared in the framework of the European project Clever Cities. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101019719.

More about the Clever Cities guidance: www.clevercities.eu

www.clevercities.eu

Action Planning



Step 5: analyse state of current nature and biodiversity

Tool: Copernicus land monitoring service Urban Atlas

What is the tool in a nutshell?

The Copernicus Land Monitoring Service provides satellite data through the Urban Atlas with comparable information on land use and land cover across Functional Urban Areas.

How can it be used?

There are many handy tools within this overarching service that can be used to analyse the state of nature within a city. The Urban Atlas provides pan-European comparable land cover and land use data covering a number of Functional Urban Areas (FUA). In 2012, an additional layer (Street Tree Layer - STL) was produced providing an overview of trees along roads, in parks and gardens.



Step 6. Indicators and targets



Tool: City Biodiversity Index

Also known as the Singapore Biodiversity Index

What is the tool in a nutshell?

The City Biodiversity Index is a self-assessment tool for cities to evaluate and monitor the progress of their biodiversity conservation efforts through a profile of the city and 28 indicators that measure native biodiversity, ecosystem services provided by biodiversity, and governance and management of biodiversity.

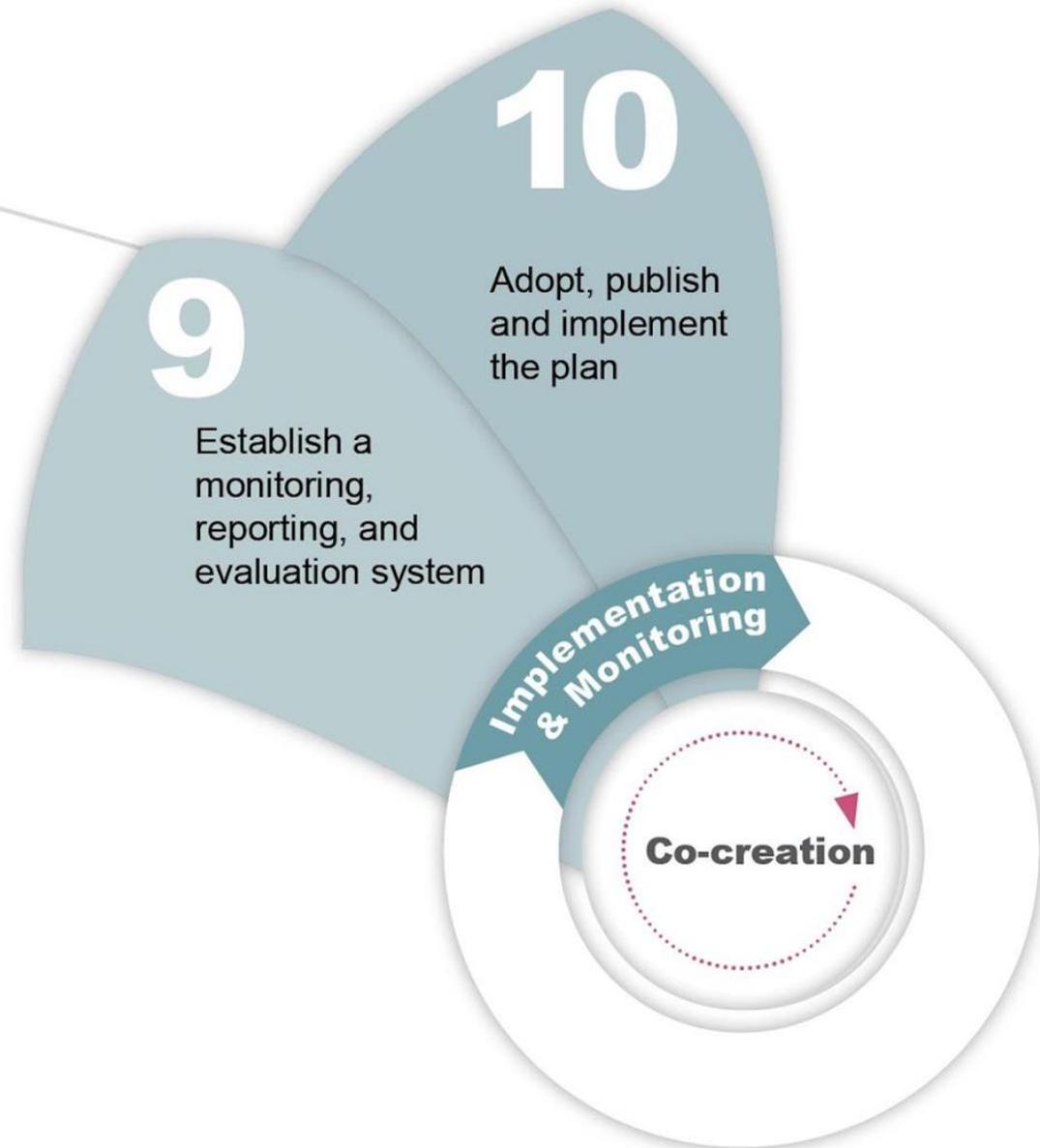
How can it be used?

The CBI includes indicators such as the change in number of native bird species, proportion of invasive alien species, accessibility to parks, and connectivity measures as well as budget allocated to biodiversity, imperviousness and number of biodiversity projects implemented in the city. Each indicator is assigned a scoring range between zero and four points, with a maximum score of 112 points. Cities will have to conduct a baseline scoring in the first application of the SI and conduct subsequent application every 3 – 5 years to allow sufficient time between applications for the results of biodiversity conservation efforts to materialise.

PART II – INDICATORS	Core Components	Indicators	Maximum Score
	Native Biodiversity in the City	1.	Proportion of Natural Areas in the City
2.		Connectivity Measures or Ecological Networks to Counter Fragmentation	4 POINTS
3.		Native Biodiversity in Built Up Areas (Bird Species)	4 POINTS
4.		Change in Number of Vascular Plant Species	4 POINTS
5.		Change in Number of Native Bird Species	4 POINTS
6.		Change in Number of Native Arthropod Species	4 POINTS
7.		Habitat Restoration	4 POINTS
8.		Proportion of Protected Natural Areas	4 POINTS
9.		Proportion of Invasive Alien Species	4 POINTS
Ecosystem Services provided by Biodiversity	10.	Regulation of Quantity of Water	4 POINTS
	11.	Climate Regulation – Benefits of Trees and Greenery	4 POINTS
	12.	Recreational Services	4 POINTS
	13.	Health and Wellbeing – Proximity/Accessibility to Parks	4 POINTS
	14.	Food Security Resilience – Urban Agriculture	4 POINTS
Governance and Management of Biodiversity	15.	Institutional Capacity	4 POINTS
	16.	Budget Allocated to Biodiversity	4 POINTS
	17.	Policies, Rules and Regulations – Existence of Local Biodiversity Strategy and Action Plan	4 POINTS
	18.	Status of Natural Capital Assessment in the City	4 POINTS
	19.	State of Green and Blue Space Management Plans in the City	4 POINTS
	20.	Biodiversity Related Responses to Climate Change	4 POINTS
	21.	Policy and/or Incentives for Green Infrastructure as Nature-based Solutions	4 POINTS
	22.	Cross-sectoral and Inter-agency Collaborations	4 POINTS
	23.	Participation and Partnership: Existence of Formal or Informal Public Consultation Process Pertaining to Biodiversity Related Matters	4 POINTS
	24.	Participation and Partnership: Number of Agencies/Private Companies/NGOs/Academic Institutions/International Organisations with which the City is Partnering in Biodiversity Activities, Projects and Programmes	4 POINTS
	25.	Number of Biodiversity Projects Implemented by the City Annually	4 POINTS
	26.	Education	4 POINTS
	27.	Awareness	4 POINTS
	28.	Community Science	4 POINTS



Milestone 6
*Monitoring
& Reporting
System*



Implementation & Monitoring

Step 9. establish a monitoring, reporting and evaluation system

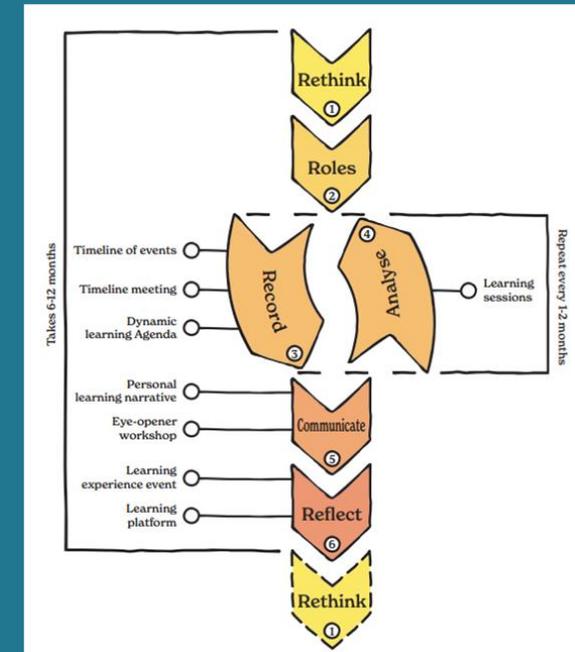
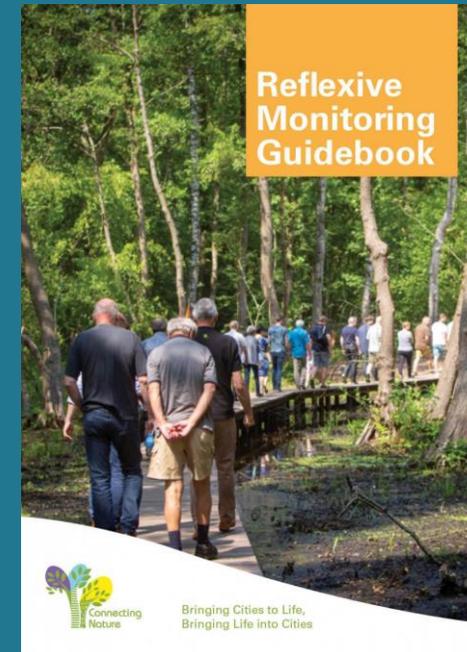
Tool: Connecting Nature Reflexive Monitoring Guidebook

What is the tool in a nutshell?

The Guidebook provides a step-by-step guide to reflexive monitoring, an evaluation method that gives urban practitioners insight into the progress of their project in real time. It encourages proactive problem solving by addressing barriers and challenges as they arise, requiring participants to rethink the way they approach their task.

How can it be used?

This reflexive approach can be used to monitor and adapt the UGP according to changing circumstances, ensuring it is as effective as possible. Practically speaking, reflexive monitoring could be brought into the UGP development in the first phases in the creation of a working structure (step 2). In this initial step, reflexive monitoring could be discussed with colleagues as a method for developing an UGP that continually adapts to changing circumstances. During this step, cities can explore the purpose, benefits and process of reflexive monitoring and determine who will be responsible for the process.



Resources

[Urban Greening Platform](#)

[NBS Hubs](#)

[Nature Based Solutions Made Easy – brochure](#)

[Policy brief: the proposed nature restoration law: what role for cities and regions?](#)

[Policy brief: integrating NBS in education to unlock transformative learning for sustainability](#)

Design Briefs: Biodiversity-positive Design in Urban Areas with NBS:

- [Biodiversity Positive Design in Urban Areas](#)
- [Wildlife-friendly Areas, Conservation Sites, the Public Realm](#)
- [Mobility Network, Green associated with Buildings, Vacant Plots, Brownfields](#)

[Factsheets and knowledge briefs](#)

www.networknature.eu



THANK YOU!

ICLEI EUROPE

The ICLEI European Secretariat is based in Freiburg (Germany) with offices in Brussels (Belgium) and Berlin (Germany).

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📺 [NetworkNature](https://www.youtube.com/channel/UCv8v8v8v8v8v8v8v8v8v8v8)



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Network Nature

*Pooling resources for the
nature-based solutions
community*



What next? Where to start?

Summary of resources directed to NBE and companies interested in NBS

- **Networking platforms**
 - Help NBE to connect with partners across their value chains, stay up to date and to make their voice heard
 - Connecting Nature Enterprise Platform (Project Connecting Nature)
 - EdiCitNet Marketplace (Project Edible Cities Network)
 - European Rewilding Network (Rewilding Europe)
- **Funding opportunities**
 - Different financial instruments facilitate the start-up and scale-up of NBE
 - *Grants* from EU programmes such as Horizon Europe, LIFE programme, COST Actions or the European Regional Development Fund
 - *Loans, guarantees and equity* from EU institutions such as the European Investment Bank
 - *Crowdfunding* through the Nature Solutions Platform (Project REGREEN)