

Reflexive Monitoring Guidebook



Bringing Cities to Life,
Bringing Life into Cities

Acknowledgments

Reflexive monitoring: using continuous evaluation techniques to adapt your nature-based solution planning process in real-time

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1 Introduction

What are Nature Based Solutions?

The European Commission defines Nature-Based Solutions to societal change as solutions that are

“inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.”

Nature-Based Solutions benefit biodiversity and support the delivery of a range of ecosystem services.

What is the Connecting Nature Framework?

Designing and implementing Nature-Based Solutions on a scale that delivers economic, environmental and social co-benefits, while also building resilience and benefiting biodiversity is complex with many different issues to consider.

Many questions arise and need answers.

What is the best solution for the area?

Who will manage it?

How will it be financed?

Who needs to be involved in the planning, delivery and stewardship?

Will it support innovation and generate jobs?

How to measure the economic, environmental and social impact?

How can we manage change?

Even identifying where to start can often be a challenge!

In response to this uncertainty, Connecting Nature has developed a process tool to help cities and other organisations navigate the path towards implementation of Nature-Based Solutions on a large scale: the **Connecting Nature Framework**. The Framework identifies **three distinct phases of development** for a nature-based solution: planning, delivery and stewardship.

Throughout each phase there are **seven separate elements** that cities and other entities need to consider when shaping their individual nature-based solution: technical solutions, governance, **impact assessment**, **finance**, **entrepreneurship**, **co-production** and **reflexive monitoring**.

Cities may choose to start with any element of the Framework process and consider the others in the order that suits their context. What emerges from the Framework process is a comprehensive 360° overview of each stage of development of the nature-based solution.

Guidebooks

To assist you in developing your nature-based solution, Connecting Nature has produced a series of guidebooks. The overall Connecting Nature Framework Guidebook is a good starting point. There is also a guidebook for each element of the framework process describing the implementation steps and providing case studies to show how it works in practice. A step-by-step how-to manual on the Connecting Nature Framework process is also available.

All the Connecting Nature guidebooks and the manual may be downloaded from www.connectingnature.eu.

Connecting Nature Framework



- TECHNICAL SOLUTIONS
- GOVERNANCE
- FINANCING AND BUSINESS MODELS
- ENTREPRENEURSHIP
- CO-PRODUCTION
- REFLEXIVE MONITORING
- IMPACT ASSESSMENT



2 | What is Reflexive Monitoring?

Reflexive monitoring in a nutshell

Reflexive monitoring is an evaluation method that gives urban practitioners insight into the progress of their project in real time. It helps them evaluate day-to-day activities and to respond to them while considering the bigger picture. This is especially helpful when addressing the complex challenges nature-based solutions tend to combat, such as climate change and social exclusion.

Turning barriers into opportunities

Addressing complex challenges requires different perspectives and types of knowledge along with a spirit of collaboration. Reflexive monitoring draws together these different elements in a process that enables urban practitioners to identify barriers and translate them into opportunities to address these complex challenges.

What's special about reflexive monitoring?

Traditionally, monitoring and evaluation have been used to determine the effects of a policy after its delivery. This means that insights into the progress and direction of a project are gained retrospectively. Additionally, conventional monitoring is not flexible because it is designed at the beginning of a project and cannot be changed. It often leaves no space for the participation of different actors (citizens, voluntary groups, nature-based enterprises and so on) in the monitoring and evaluation activities.

Reflexive monitoring, on the other hand, is applied real-time and throughout the implementation of a nature-based solution. It is not tied to pre-defined outcomes and pre-selected indicators like the number of actors involved in the co-production of the nature-based solution, or costs of implementation. Information such



“With reflexive monitoring we try to explicitly integrate reflection in the implementation process.”
 – Peter Vos, Reflexive Monitor, Stiemer Valley programme, Genk.

as this is of course very useful in the evaluation of a nature-based solution at the end of the process, but it does not support planning and delivery when they are actually happening.

Reflexive monitoring supports urban practitioners –civil servants in the main but anyone working on a nature-based solution – to identify and reflect on the challenges and opportunities they encounter throughout the process itself. By identifying challenges and opportunities, urban practitioners can better navigate them as well as react to how they change over time. For example, a problem that was initially framed as : “How can we engage engineers in co-production activities”, might evolve to “How can we facilitate co-production between engineers and citizens?” and then to “How can we integrate co-production in the design process of the infrastructure department when working on the planning and delivery of nature-based solutions?” over the course of the project

Reflexive monitoring...

Encourages proactive problem solving – by solving the problem in real time, not retrospectively.

Takes context into account – by revealing the complexities of the problem and breaking it down into learning questions –which leads to better solutions.

Turns learnings into actions when they're needed – by focussing on learning, barriers and structural changes (changes that require participants to rethink the way they act, organise and approach a topic) are addressed and translated into actions and learning outcomes.

It has a role in:

- Supporting the planning of the project
- Evaluating daily activities, decisions and progress
- Aligning daily activities with long-term ambitions and impact
- Facilitating reflection on problems and solutions, allowing for the adapting of activities
- Identifying actions to address (institutional) barriers
- Coming up with creative solutions because existing procedures and structures are questioned
- Institutionalising learning in daily activities
- Capturing lessons useful for external communication
- Engaging with (knowledge) experts in a novel way
- Offering insights and clarity in complex processes
- Comprehending how to influence the wider system, to be more transformative and have more systemic impact.





Nature-oriented playground in Poznań (Source: Brama Poznań/Porta Posnania, Ł. Gdak)

Case study: Reflexive monitoring in the co-production of nature-based solutions in Poznań

The city of Poznań in Poland has adopted reflexive monitoring in the co-production of open gardens in kindergartens and nature-oriented playgrounds. The project team finds reflexive monitoring useful for analysing gaps in project management as well as for identifying resource needs and potential new activities.

“Reflexive monitoring helps us to reflect on the context in which we are implementing nature-based solutions. Specifically, it gives a strategic overview of the situation in our organisation. The strategic overview facilitates collaboration with other city units. It helps us to engage our colleagues and let them see how their activities can support upscaling nature-based solutions even when they are not participating directly in the process.”

“This approach enables us to put in place more effective instruments that do not only refurbish playgrounds and gardens but also bring ‘intangible’ results, like raising awareness and educating the citizens of Poznań. This approach helps us to link the intangible results to the tangible ones and this is crucial to ensure a long-term change from grey playgrounds to green playgrounds.”

– Natalia Madajczyk of the Poznań Connecting Nature Team.

Mastering reflexive monitoring

Implementing nature-based solutions can be complex because of conflicting priorities and challenges. Before you start to apply reflexive monitoring, it is useful to have experience of nature-based solutions and co-production processes. This will help you to differentiate between what is truly innovative and what is ‘business as usual’. Mastering reflexive monitoring requires an attitude of experimentation. At first, the process might be quite messy because you will be experimenting with different steps and tools. Soon enough, reflexive monitoring will allow you to organise ongoing processes and to translate what you learn into actions. The cities of Genk (Belgium), Glasgow (Scotland) and Poznań (Poland) have found it is wise to reserve space and time to become familiar with the steps and the tools before proceeding with them.

Once the reflexive monitoring process is aligned with your daily activities, you will be able to identify the benefits and act on what you learn.



Experimentation with novel workshop formats (Source: Marleen Lodder, DRIFT)

3 | How Do We Do It?

A six-step procedure has been developed to implement the reflexive monitoring process. The process is supported by seven reflexive monitoring tools which may be applied by urban practitioners.

This guidebook presents a brief description of these tools and examples of how the Connecting Nature cities applied them. The tools are based on a selection of the tools presented in the Reflexive Monitoring in Action guidebook by Van Mierlo et al (2010). This guidebook presents a large variety of tools with step-by-step descriptions of how they can be

applied by urban practitioners. Together with Connecting Nature cities and partners we tailored a selection of these tools for the reflexive monitoring process for planning, delivering and stewarding nature-based solutions in cities. This will be presented in the final and more elaborate guidebook on the Connecting Nature website by May 2022.

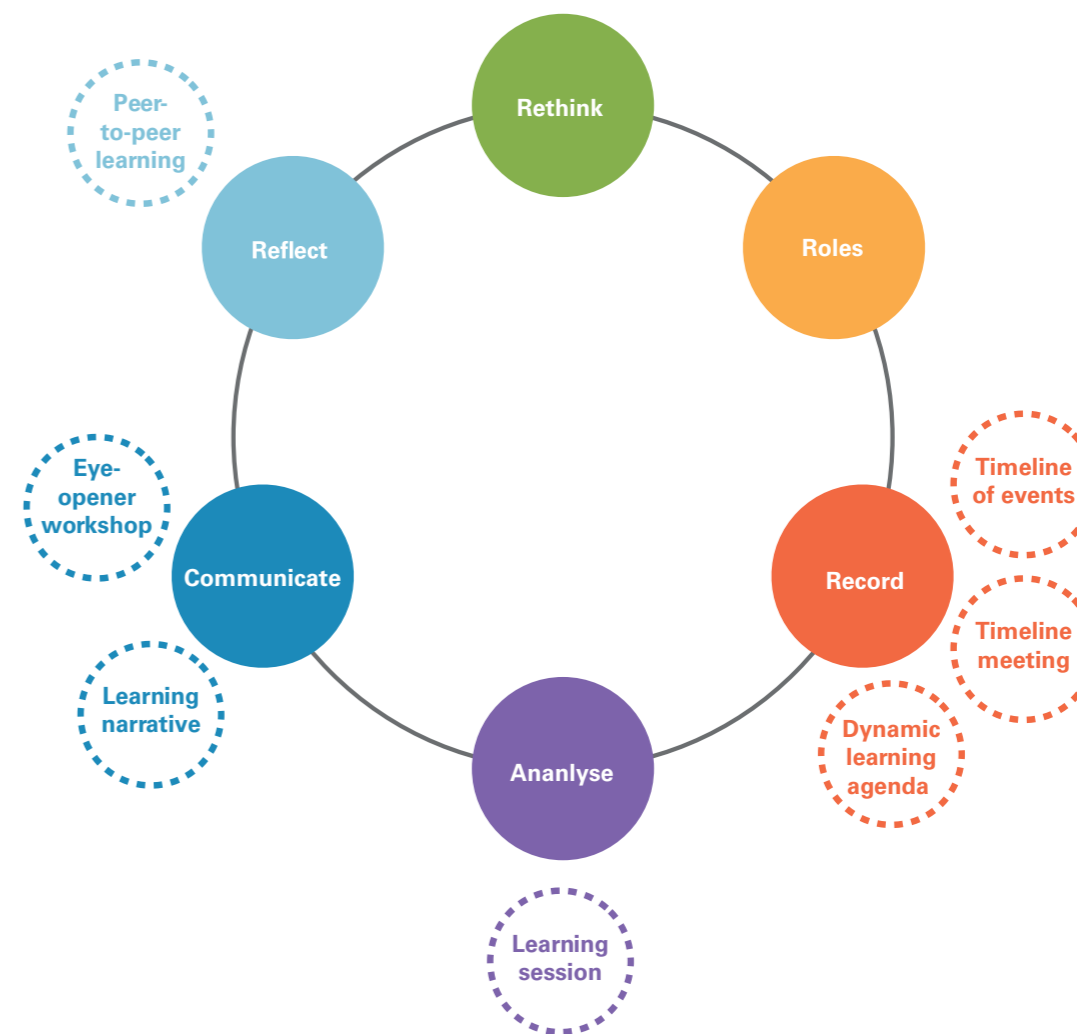


Figure 2. Steps in the reflexive monitoring process with accompanying tools

Step 1: Rethink goals: what do you need to learn about implementing nature-based solutions

In reflexive monitoring, it is important to continually redefine the goals of your nature-based solution. At the start of the process, you should write down the goals and what you need to learn to achieve them. For example, if a goal is to reduce silos in local government departments, you might ask how you should collaborate with colleagues from other departments. Answering questions on what you need to learn will help to achieve the associated goals. This process should be repeated throughout the planning and delivery process of the nature-based solution.

Step 2: Define the roles within the process

Reflexive monitoring should be happening during all the phases of nature-based solution development, from the planning phase, right through delivery and stewardship. From the very outset of the nature-based solution, it should be made clear that each actor has a role in reflexive monitoring and that exercising this role will involve collaborating closely and meeting regularly. The level of involvement of each one depends on the steps in the process. Some of the reflexive monitoring roles require specific skills.

The reflexive monitor

The most important role is that of reflexive monitor. The reflexive monitor is responsible for steering the learning process of the monitoring team. He or she needs to be able to balance thinking constructively with the participants in reflexive monitoring sessions with stepping back to ask critical questions of him or herself and the participants and analysing the process.

Reflexive monitoring coach

If the method is new for the members of the reflexive monitoring team, it is wise to involve an expert who can coach the reflexive monitor on applying the tools and practice with the different facilitation techniques and attitudes as well as teaching the skills to assess the reflexivity when analysing the process.

Other participants in the reflexive monitoring process

We recommend that the following actors participate in the reflexive monitoring team:

- The project leader who is responsible for the overall project
- One or two other collaborators who work on implementing the nature-based solution on a daily basis

We recommend that the following actors participate in the reflexive monitoring activities the team is organising:

- Other collaborators who work on implementing the nature-based on a daily basis
- Participants in the co-production process of the nature-based solution, such as knowledge institutes, expert groups, citizens and NGOs – these can participate in or collaborate with the reflexive monitoring team
- The client who is commissioning the nature-based solution can participate in or collaborate with the reflexive monitoring team.



The reflexive monitor of Genk: Peter Vos

In the city of Genk, Peter Vos is the reflexive monitor of the Stiemer Valley programme team. He uses reflexive monitoring to structure internal meetings and to organise reflection. He had this to say about his role:

“The Stiemer Valley programme requires us to connect with different city departments and to relate to many ‘regular’ urban development processes. This is challenging! Our work is not just to define what needs to happen, it is also about how things happen and why. Because of our co-productive approach, we need to reflect and monitor closely. But reflection is often implicit, intuitive and unstructured in complex projects. Reflexive monitoring helps us to zoom out by asking: “What are we actually doing?,” “How do we influence the processes that are hindering our work?” and “Are we doing what we need to do?”. With reflexive monitoring we try to explicitly integrate reflection in the implementation process. We do this to achieve better processes and faster results. It also helps us to not get lost in complexity.”

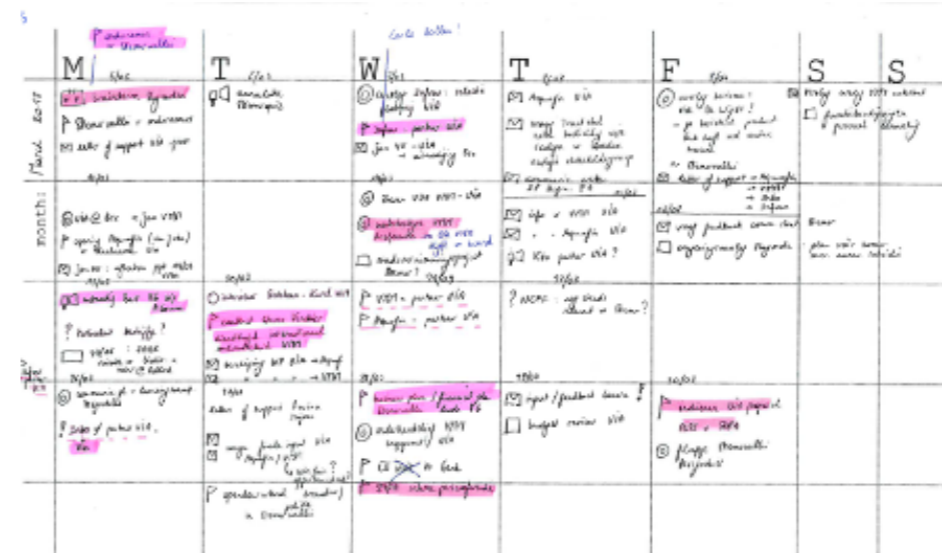


Figure 3. Timeline of events by one of the team members of the Genk reflexive monitoring team (Source: Genk reflexive monitoring team)

Step 3: Recording important events and analysing critical turning points

There are a number of reflexive monitoring tools which should be called upon in this step: the **timeline of events**, the **timeline meeting** and the **dynamic learning agenda**.

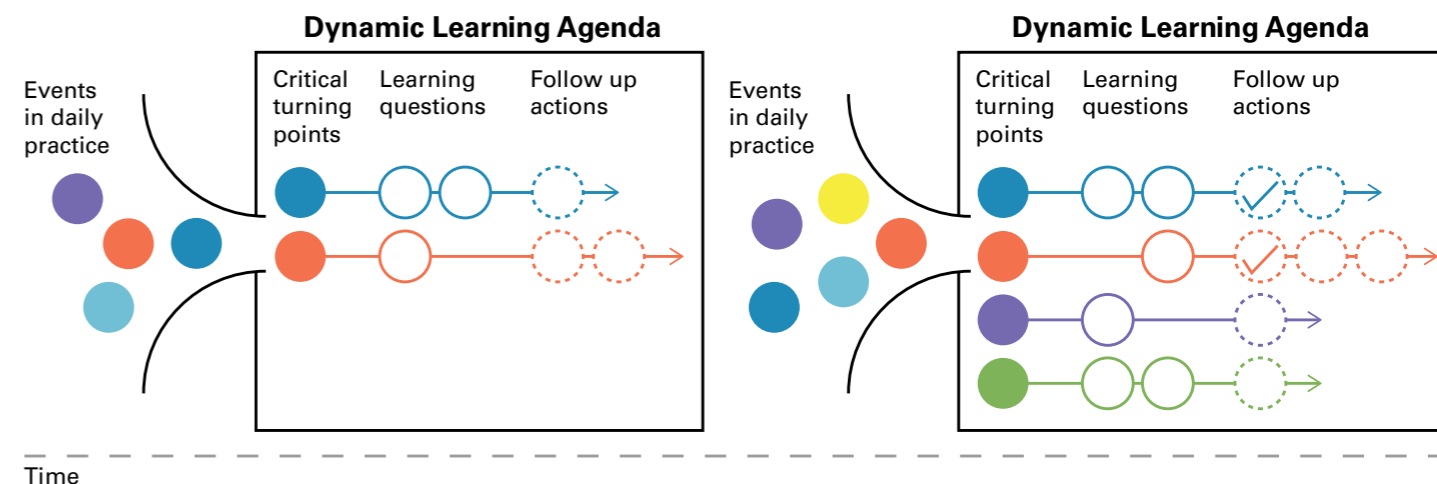
Timeline of events

Record for one or two months all events that occur during this period on a timeline. The goal is to trace important moments, insights or events that influence the nature-based solution process. This can be done daily, weekly or monthly on an individual basis or together with your team.

Timeline meeting

When the timeline is recorded, hold a meeting with your collaborators to discuss it and identify critical turning points. Critical turning points are important moments where something changes that helps or hinders the realisation of the nature-based solution. Identifying barriers or opportunities helps everyone to reflect on the main events by formulating how the events influenced your work. Questions that help to formulate critical turning points are: What challenge needed to be addressed? What changed because of this event? How did it influence your work? Was it a breakthrough or did you get stuck?

Figure 4. Schematic representation of the dynamic learning agenda process in time



Dynamic learning agenda

A dynamic learning agenda is a tool to record and trace the reflexive learning process. This can be done in various ways. The agenda presents the critical turning points and connects these to learning questions and follow-up actions. Formulating learning questions for each turning point is preferably done as a collective exercise by the reflexive monitoring team. This helps to identify the essence and difficulty of the turning points. Next, follow-up actions are added to the agenda that describe the next steps in answering the learning question. The actions address the barriers or utilise the opportunities captured in the critical turning points. The agenda is dynamic because it changes in time. It changes for example in the way the critical turning points and learning questions are formulated or in the follow-up actions that are completed and new learning questions or actions that are added (see picture).

The goal of the dynamic learning agenda is to link the long-term goals of the nature-based solution to learning objectives and concrete short-term actions. Tracking the changes over time allows you to evaluate the dynamic learning journey. The dynamic learning agenda provides a good overview of what happened by formulating the barriers or challenges that arose as critical turning points. It allows you to make any necessary adjustments, undertake additional actions or assume new, meaningful commitments.

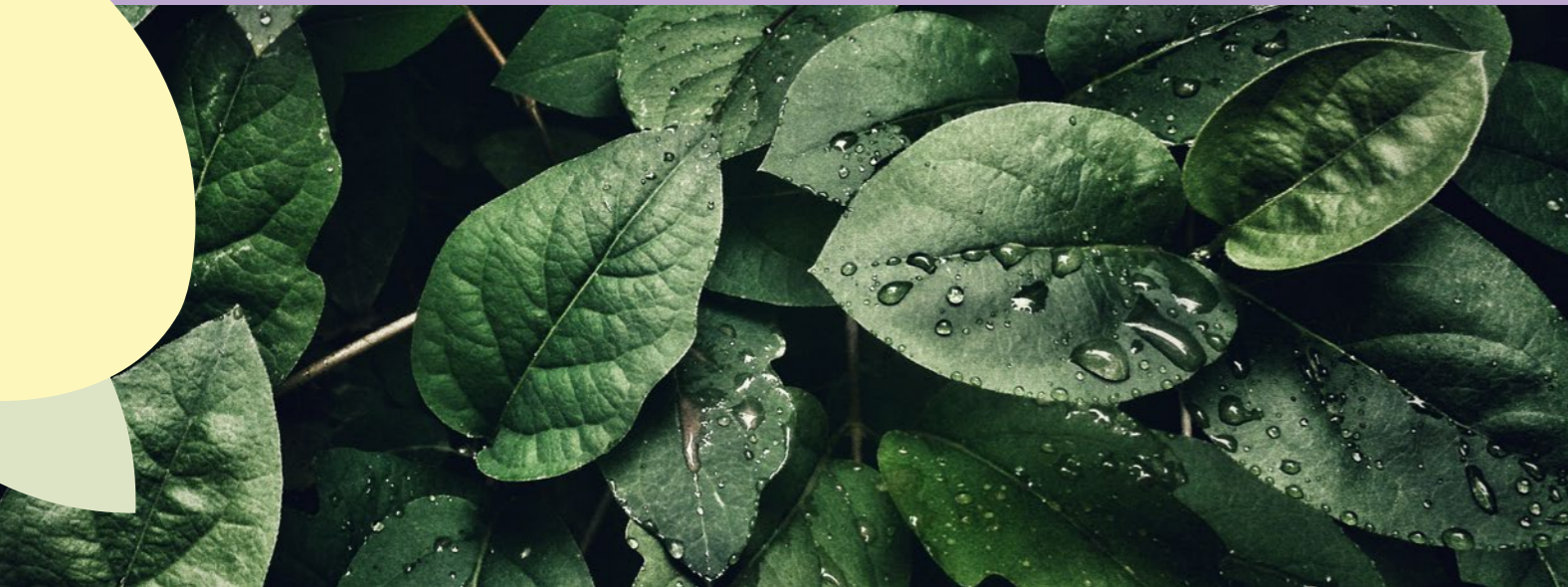
How the cities adapted the tools of step 3 to fit their context

Genk

In Genk the reflexive monitoring team consists of the reflexive monitor, the project leader and the co-production expert. The 'Genk way' is to carry out the reflexive monitoring tools of step 3 as a collaborative team effort. The dynamic learning agenda includes the work of colleagues from different departments, without

involving them in the reflexive monitoring tools of this step. All team members have a copy of a monthly calendar on their desks to record important events on a daily basis (see Figure 3), for example, when they receive an important phone call that urges them to rethink a planned activity. They use different icons to record the type of event. After each month they highlight the most important

events. Once every two months, a timeline meeting is organised to discuss the highlighted events from their individual timelines. From this, they identify critical turning points and add them to their dynamic learning agenda. Then they discuss what they need to learn to overcome barriers or seize opportunities. They formulate learning questions and follow-up actions together.



Poznań

In Poznań, the reflexive monitor closely collaborates with five colleagues on the implementation of the nature-based solution. This team meets every week to discuss their progress and tasks. In the 'Poznań way', only the reflexive monitor works with the tools of step 3, but insights gained from the dynamic learning agenda are discussed with the reflexive monitoring team and

the larger team of colleagues. The reflexive monitor uses the dynamic learning agenda as a management tool to map and reflect upon the teams' effort with two colleagues who can be considered members of the reflexive monitoring team. The reflexive monitor reconstructs a timeline based on the project team meetings and translates them into critical turning points and learning questions. The learning questions are a reflection of the the project

team's discussions. The reflexive monitor connects follow-up actions, on which team members are working, to the learning questions. This way the reflexive monitor uses the dynamic learning agenda to keep an overview of all activities her colleagues are involved in. Mapping these activities and translating them into critical turning points and learning questions creates mental space and time for the reflexive monitor to reflect and rethink them.



Bellahouston Demonstration Garden (Source: Sean Kelly, Glasgow)

Glasgow

In Glasgow the reflexive monitoring team consists of the senior project officer who shares the role of reflexive monitor with the co-production expert. The two other team members are the Geographic Information System expert and the spatial planning manager, who support the process. The 'Glasgow way' is to use the reflexive monitoring tools of step 3 to prepare and conduct the workshop with colleagues from different departments. The reflexive monitor prepares a timeline at the end of the month based on updates from colleagues and discussions that take place at the monthly Connecting Nature team meeting. The timeline is discussed on a monthly basis with a larger team of colleagues. The senior project officer facilitates the meeting and the co-production expert takes notes to collect input for the timeline meeting. This allows the senior project officer to easily

shift between the two roles and the different attitudes he or she requires. After the workshop they sit together to retrospectively write down critical turning points based on the workshop discussions. They also translate them into learning questions and follow-up actions and discuss these if needed with the other members of the reflexive monitoring team. In this way, all colleagues are not required to use all the tools, rather they are divided in a flexible way over the reflexive monitoring team members.

Glasgow's Connecting Nature Team identified a critical turning point in relation to the successful Bellahouston Demonstration Garden. Through a business model canvas workshop, the team identified the added value of the project. This was a turning point in that it helped the team and colleagues from other departments to understand how to replicate the demonstration garden project in

other parts of the city. In addition, the workshop helped to find new funding streams and build new relationships that would aid the project replication.

Working with the dynamic learning agenda stimulated the team to formulate learning questions about the barrier of not knowing how to replicate the successful Bellahouston Demonstration Garden. Follow-up actions could then be linked more easily to the critical turning point.

The Glasgow team is hosting more business model canvas events for nature-based solutions in other parts of the city with the aim of helping stakeholders to identify sustainable finance and governance models.

Step 4: Use learning sessions to identify learning outcomes

In step 3 we elaborated on how to record learnings in the dynamic learning agenda reflecting upon them as a reflexive monitoring team. This step is about supporting the team to improve the learning process and analyse the outcomes. To facilitate this, we recommend the organising of learning sessions with the reflexive monitoring team, perhaps facilitated by the reflexive monitoring expert. The objective of these learning sessions is two-fold: 1) to get a better understanding of how to 'do' reflexive monitoring and 2) to abstract and analyse the learning outcomes of the team.

During the learning sessions each newly added item on the dynamic learning agenda is discussed. The critical turning points and learning questions are discussed and if

needed reformulated to increase their reflexivity. For example, a learning question might start as: "How to develop a masterplan for implementing nature-based solutions in our city?" and end as: "How can we reinvent the current way we plan to allow for more effective implementation of nature-based solutions?". Questions about how to apply the tools may also be answered and suggestions made for additional follow-up actions.

After all items on the dynamic learning agenda are discussed, the expert and team identify learning outcomes. Learning outcomes are innovative ways the team handles the barriers or opportunities captured in the dynamic learning agenda. We use the operationalisation of reflexive learning outcomes based on Beers & Van Mierlo (2017) that distinguish between categories:

- (1) **Rules** guiding actors' practices, for example tendering procedures or the way a city department is organised.
- (2) **Relations** between actors and between the nature-based solution and its context, for example who is involved in the planning process.
- (3) **Practices** concerning common ways of working, for example how the team collaborates internally.
- (4) **Discourse** related to the future of the nature-based solutions, for example the way a mayor talks about the benefits of nature-based solutions for the city.

Analysing the learning outcomes in detail helps the team to better understand and explain to others what they learnt and in what way their work is innovative.



Urban practitioners discuss the effectiveness of reflexive monitoring. (Source: DRIFT)



Reflexive monitoring workshop in Genk. (Source: Genk)

Step 5: Share your findings with others

Reflexive monitoring is a novel governance process that allows many lessons to be learned. It is valuable to share these lessons, along with tips and tricks, with other actors who use the method. The following two tools are selected to support this exchange: the **eye-opener workshop** and the **personal learning narrative**.

The purpose of **eye-opener workshops** is to share what is learned from co-producing nature-based solutions with people who are not yet involved in your project. For example, colleagues from other departments, the mayor's office or professionals working with co-production or

nature-based solutions. The format for this workshop developed based on the outcomes of the tools used in step 3 and 4 of the reflexive monitoring process.

Personal learning narratives are stories that describe the learning journey of yourself or your team members throughout the co-production process. They may present an experience, a hindering factor, a struggle or a challenge. These personal stories can be shared in different ways to supplement regular reports. For example, a participant records a video about his or her own learning journey and it is pushed out through social media or played at an eye-opener workshop.

Step 6: Reflecting on the method and peer-to-peer sharing

In step six, sessions can be organised to reflect upon the effectiveness of the reflexive monitoring method itself and compare and share the learning outcomes. These sessions give urban practitioners the chance to share their experience of working through the various steps and using the tools of the method, which may in turn be adapted based on the feedback received or changing needs. Peer-to-peer learning events can be used for the sharing and comparing of the learning outcomes of different teams. Think of organising sessions to learn how others dealt with similar challenges and barriers, sharing personal learning narratives and celebrating innovations to inspire each other.



4 | Additional Resources

This guidebook is the result of a co-production process between research partners and European cities within the scope of the Connecting Nature project. Connecting Nature is a European research project funded by the European Commission's Horizon 2020 Innovation Action Programme. The aims are to support the scaling of nature-based solutions in cities and to position Europe as a global leader in the innovation and implementation of those solutions by co-creating a toolkit for cities..

For more information on reflexive monitoring:

- The extended reflexive monitoring guidebook will be published on the Connecting Nature website by May 2020.
- Reflexive Monitoring in Action. A guide for monitoring system innovation projects. Mierlo, B.C. van; Regeer, B.; Amstel, M. van; Arkesteijn, M.C.M.; Beekman, V.; Bunders, J.F.G.; Cock Buning, T. de; Elzen, B.; Hoes, A.C.; Leeuwis, C. (2010). Communication and Innovation Studies, WUR; Athena Institute, VU. <https://www.wur.nl/en/Publication-details.htm?publicationId=publication-way-333935373332>

- Website with practical tips on transition work, including reflexive monitoring: <https://transitiepraktijk.nl/en/programma/monitoring/why-does-monitoring-receive-special-attention>
- The value of reflexive monitoring for nature-based solutions projects by Marleen Lodder for UrbanByNature <https://youtu.be/kviAZHtUMNA>

For more information on Connecting Nature, visit:

- www.connectingnature.eu
- Connecting Nature's YouTube channel: <https://www.youtube.com/channel/UCI24BLyUnvxq7aehGu-XMLKw/videos>

Recap

The reflexive monitoring process requires effort but it is personally rewarding in that it boosts your knowledge and develops your skills.

Five key things to remember about reflexive monitoring:

1. Plan reflexive monitoring as an integral part of the project from the start.
2. Make sure all actors involved in co-producing your nature-based solution(s) have a reflexive monitoring role. Everyone brings his or her own perspectives and experiences and so they should all take part in meetings/activities to extract learning outcomes.

3. Assign the role of the reflexive monitor to someone who has experience with the method or who can be coached by someone who does. The main responsibility of the monitor is to steer the reflexive monitoring process. This is a challenging role as it requires specific skills, including the ability to balance detail with the bigger picture, so as to facilitate meetings/sessions, to synthesise large amounts of information and ask key ad hoc questions of those involved.

4. Evaluate the daily practices in your co-production journey using a timeline. This is done by regularly connecting the insights from the reflexive monitoring process with the delivery process. Identify critical turning points, formulate learning questions relating to them, and identify follow-up actions so that the reflection informs the day-to-day work involved in the nature-based solution.

5. Commit to the method and reserve time to learn and adapt your practice.