URBREATH [101139711]

Systemic Integration of Transformative Technical and Nature-based Solutions to Improve Climate Neutrality of European Cities and Regions and Tackle Climate Change: the URBREATH Approach

D5.6 - Local Living Labs report - V2

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Document description	This document is the second in a series of four reports detailing the work carried out under **Task 5.3** on **Local Living Labs** (LLLs). It outlines the progress made up to the publication of Deliverable 5.6 (describing the initial LLL baseline methodologies, processes, activities, and outcomes) at Month 24 of the URBREATH project.

Document revision history

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Disclaimer

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Executive summary

Deliverable 5.6 provides a detailed account of the methodologies, progress, and collaborative efforts underpinning the establishment and operation of Local Living Labs (LLLs) in the URBREATH project, serving as a key resource for partners, stakeholders, and future reporting.

- **Chapter 1** defines the scope and objectives of the deliverable, placing it within the overall context of the URBREATH project. It introduces the main goals of Task 5.3, which is responsible for coordinating, guiding, and supporting the creation and operation of LLLs in the project's pilot cities. The chapter highlights the significance of LLLs as participatory platforms that enable co-creation, citizen engagement, and the implementation of Nature-Based Solutions (NBSs). It also explains how Task 5.3 aligns closely with other work packages to ensure that LLL activities contribute directly to the project's broader mission and objectives.

  Additionally, the introduction describes the project's systemic approach to urban greening and renaturing, showing how specific objectives are mapped to relevant work packages and how scientific and operational efforts are interconnected. It presents the timeline for LLL activities, illustrating the progression from initial stakeholder engagement and needs assessment to the deployment and monitoring of NBS interventions. By providing this context, Chapter 1 sets the foundation for the rest of this Deliverable and clarifies the strategic importance of LLLs and Task 5.3 in advancing climate-neutral, resilient urban regeneration within the URBREATH initiative.

- **Chapter 2** provides a comprehensive review of the foundational work accomplished during the first 18 months of the URBREATH project. This period focused on establishing LLLs in the pilot cities, mapping key stakeholders, conducting baseline workshops, and developing the initial suite of digital tools to support project activities. The chapter details how these early efforts laid the groundwork for effective collaboration, ensuring that each city's unique context and needs were understood and incorporated into the broader project framework. Through stakeholder mapping and baseline workshops, cities refined their visions for LLLs, prioritised use cases, and defined critical roles.

  Additionally, Chapter 2 describes the initial phases of the LLL framework—empathise, define, and understand—which guided cities through building local capacity and aligning their specific needs with project-wide methodologies. Collaborative exercises, such as shared stakeholder mapping and the testing of early digital tools like Local Digital Twins (LDTs), enabled cities to deepen their knowledge base and foster networks among local actors. These activities not only strengthened the operational foundation of LLLs but also promoted the exchange of best practices and alignment with the overall objectives of the URBREATH initiative.

- **Chapter 3** is the core of the deliverable, describing the transition of the URBREATH project into the deployment phase, where co-created NBSs are implemented and systematically evaluated using predefined Key Performance Indicators (KPIs). This chapter provides a detailed account of the practical

steps, collaborative processes, and support mechanisms that underpin the successful rollout and monitoring of NBS interventions across the project's pilot cities. The focus is on how the project moves from planning and co-creation to real-world action, ensuring that lessons learned and methodologies developed in earlier phases are directly applied to achieve climate-neutral, resilient urban regeneration. Specifically, Chapter 3 covers:

  - The chapter outlines a series of targeted **training and "train-the-trainer" sessions** designed to equip LLL managers and stakeholders with the skills, methodologies, and best practices needed for effective NBS implementation and monitoring. These sessions foster a participatory mindset and provide practical guidance for engaging diverse local actors.
  - It highlights the strategic use of **citizen science** to involve local communities in the monitoring and evaluation of NBS impacts. By leveraging participatory data collection and community-driven initiatives, the project enhances both the scale and quality of environmental monitoring.
  - The chapter describes the regular **Cities Calls**, which serve as a platform for pilot cities to share progress, challenges, and best practices. These calls facilitate peer learning, real-time problem-solving, and the dissemination of innovative approaches across the consortium.
  - **Tailored support** is provided to LLLs through direct advice, hands-on assistance, and mediation in tool development and adoption. This ensures that each city receives guidance suited to its unique context and needs, strengthening the operational foundation of LLLs.
  - The chapter details the close collaboration with technical partners to develop, customise, and integrate **digital tools**—such as LDTs and monitoring dashboards—into LLL activities. This coordination ensures that technological solutions are user-friendly, relevant, and effectively support NBS deployment and evaluation.
  - Finally, Chapter 3 presents an in-depth overview of **LLL activities across all pilot cities, grouped by climatic zone**. For each city, it documents the timeline of activities, methods used, stakeholders involved, and the outcomes achieved, providing a comparative perspective on the diverse approaches and progress within the URBREATH consortium.

- **Chapter 4** outlines the upcoming actions, planned improvements, and the future direction of LLL activities and NBS deployment within the project.

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List of terms and abbreviations

Abbreviation	Definition
NBS	Nature-based Solutions
AI	Artificial Intelligence
D	Deliverable
DT	Digital Twin
EC	European Commission
EU	European Union
FLC	Follower City
FRC	Front Runner City
GA	General Assembly
ICT	Information and Communication Technologies
KPI	Key Performance Indicator
LDT	Local Digital Twin
LL	Living Lab
LLL	Local Living Labs
M	Month
NBS	Nature-Based Solution
NGO	Non-Governmental Organisation
SCEWC	Smart City Expo World Congress
T	Task
WP	Work Package

1. Introduction

1.1 Scope and goal of this deliverable

Deliverable 5.6 is the second in a series of four updates, detailing the methodology for establishing and operating Local Living Labs (LLLs) with the URBREATH pilot cities. It highlights the essential role of Task 5.3 in coordinating, guiding, and supporting both front-runner and follower cities through the process.

During this reporting period (Months 18-24), the focus of the LLLs has shifted towards following up and monitoring Nature-Based Solutions (NBS) and leveraging LLLs as platforms for citizen science. With NBS designs ready for deployment in most pilot cities, the URBREATH Toolbox is being further explored and tested, as new tools have become available and are now being tested and used in LLL environments.

While Deliverable 5.5 served as a blueprint and methodological roadmap (and also reported initial progress), Deliverable 5.6 serves as a progress report and consolidation document. It captures how the project has moved from concept definition to deeper implementation, demonstrating continuity with the previous deliverable while clearly highlighting the concrete developments achieved since its publication.

Figure 1: Status and timing of the Deliverables series 5.5-5.8, Local Living Labs.

Deliverable	Version	Due date	Status
Local Living Labs report (VLO)	D5.5 - V1	M18	Submitted
	D5.6 - V2	M24	In progress
	D5.7 - V3	M36	Future work
	D5.8 - V4	M48	Future work

1.2 Task 5.3 goals in relation to the project's objectives

The **key objectives** of the URBREATH project provide a unifying framework that connects and aligns the work of all project components, ensuring that both scientific and operational activities contribute to the same overarching mission. By mapping these objectives to each Work Package, the project clarifies how different efforts reinforce one another and collectively advance a systemic approach to urban greening and renaturing.

Table 1: List of objectives of the URBREATH project and the involved Work Packages.

Objective	WPs involved	Content
OBJ-1	*WP2-5-7*	*Creation of a stakeholder group under the concept of a Local Living Lab – identify end users' needs and define requirements for feasible restoration/regeneration measures (NBS at core), based on local needs, policy, climate, and hazard analysis.*
OBJ-2	*WP3-4*	*Establish the necessary Information and Communication Technologies (ICT) tools, methods and participation processes for increased stakeholder participation and wider public (including residents/citizens) participated decision making processes.*
OBJ-3	*WP2-5-7*	*Establish innovative cooperative organisational models ensuring project sustainability and aiming towards systematic adoption of solutions (NBS and hybrid solutions at core) for urban regeneration and climate neutrality.*
OBJ-4	*WP3-4-5-6*	*Develop and demonstrate efficient and effective services, models, and tools for quantitative impact assessment of the climate effects towards climate neutrality, regeneration, and adaptation planning.*
OBJ-5	WP5-6-7	Develop and deploy innovative clustering of NBS and hybrid approaches, for the enhancement of synergy effects of interventions with more effective functionalities towards improved urban/local climate neutrality, resilience, and regeneration.
OBJ-6	WP4-6	Develop an assessment framework for evidence-based evaluation of NBS (URBREATH approach) via extensive monitoring of deployed solutions in the four Front Runner Cities in different European geographical and climatic regions towards optimised future deployments and increased systemic adoption.
OBJ-7	WP7	Replication of the URBREATH methodology and tools through mentoring and coaching in Follower Cities.
OBJ-8	*WP8*	*Support of the adoption of the sustainable URBREATH solutions for the urban/regional planning for regeneration, resilience, and climate neutrality – through extensive public awareness and dissemination activities.*
OBJ-9	WP8	Develop novel business models and strategies for regional climate resilience enhancement.

For the first two years of the project, Task 5.3 aims for:

- **A stepwise in-depth analysis of pilots' functional needs**. OBJ-1
  This involves systematically gathering and structuring the needs of each pilot city through interviews, workshops, and co-creation sessions, a joint effort of Tasks 5.1, 5.2 and 5.3. The analysis bridges local challenges with the broader URBREATH framework, aligning city-specific requirements with the macro-level functional insights developed in Work Packages (WPs) 2, 3, and 4. The outcome is a coherent set of functional requirements, use cases, and user stories that guide tool development.

- **Streamlining the translation to technical solutions and supporting the road to tool & model development**. OBJ-1,2
  Because some of the tools and simulation models are used to support the LLLs and to facilitate the monitoring of Nature-Based Solutions (NBS) through citizen science initiatives led by the LLLs, this objective is also closely linked to Task 5.3.

  Supporting the setup and implementation of LLLs to co-create in NBS design, implementation, and monitoring. OBJ-1
  Task 5.3 assists pilot cities in establishing and running LLLs as participatory spaces where local stakeholders—citizens, experts, authorities—co-create climate-resilient Nature-Based Solutions (NBSs). This includes providing methodologies, facilitation guidance, digital tools, and templates that enable effective engagement, scenario exploration, and joint decision-making throughout the design, implementation, and monitoring phases.

- **Setting up a KPI monitoring framework & monitoring tools**. OBJ-4,5
  Task 5.1, 5.3 and 5.6 joined forces to contribute to defining a harmonised set of KPIs that reflect ecological, social, and climate-resilience impacts of NBS. These tasks support cities and their LLLs in selecting relevant indicators, structuring data flows, and using digital dashboards and analytical tools to monitor NBS effects.

1.3 Task 5.3 in relation to other WP5 Tasks

The Grant Agreement states:

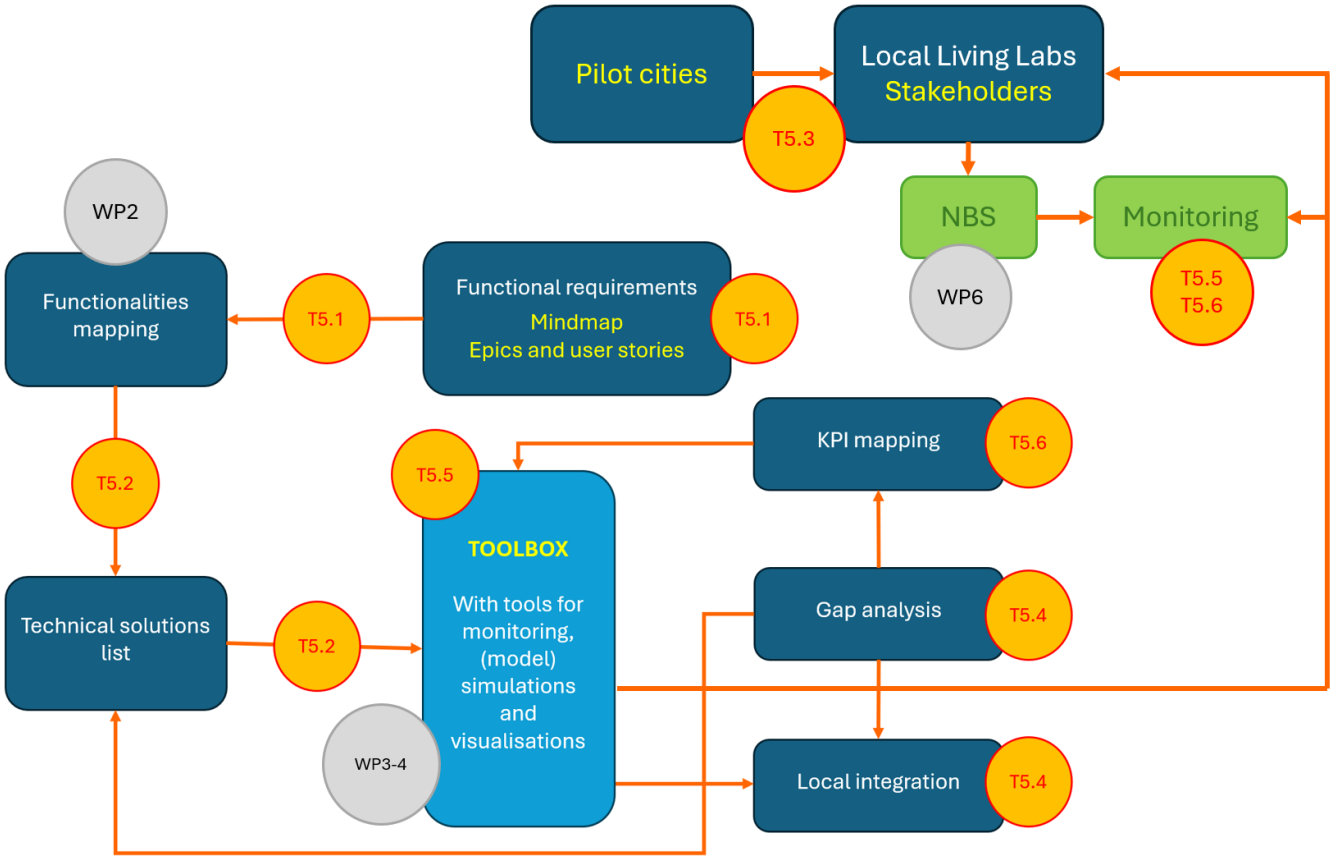
Task 5.3 - Local Living Labs

- M1-M48
- Lead: VLO
- Participants: LC, POLIMI, TAL, DEDA, URB, DBC, BLOX, CA, SPG, TRA, BAS, all cities.
- Each FRC and FLC maps the local and interested stakeholders to involve during the experimentation phase and in function of the creation of sustained partnerships based on business modelling and co-created value. According to the "user journey" described in session 1 (paragraph 1.2.2) and based on experts' knowledge and methods created in T2.1, NBS experts will identify a subset of cost-effective and sustainable NBS scenarios. This will be done using the climate and impact models developed in WP3. The selected subset will be made available to the LL participants during the co-creation process. Co-creation workshops with stakeholders and citizens will be conducted in FRC to agree on the NBS scenario to be implemented (WP6). To this end, LLs participants will visualize the NBS scenarios proposed by the experts by using the decision-making framework (T5.4) and digital twin toolbox (T5.5) customized for the FRC selected urban areas, and the dashboard (T5.5) with the simulated impacts of each scenario (ex-ante simulation conducted in T5.6) in

respect to given baselines (T5.1). The subset of proposed NBS scenarios will help co-create new NBS and reach an extended consensus on the most accepted, cost-effective, and sustainable NBS scenarios to be implemented in the selected urban areas, as described in WP6.

The interrelation between the different tasks, how they fit into Work Package 5, and how they connect to other Work Packages is summarised in the scheme below. Notice the **central role of Task 5.3** in designing, selecting, implementing, and evaluating NBS. Task 5.3 acts as a key integrator, leveraging a supporting Toolbox developed by Work Packages 3 and 4.

Figure 2: Updated diagram presented at the review meeting, illustrating the interdependencies between Task 5.3 and the other Work Package 5 Tasks and the relation between Task 5.3 and the designing, planning, implementation, and monitoring of Nature-Based Solutions.



Within the LLL context of this series of Deliverables, the specific roles and inputs of Task 5.3 and the relation to the most relevant other WP5 Tasks can be summarised as follows:

- **Task 5.3 – Local Living Labs**
    - Supporting the setup of LLL
    - Support the monitoring of NBS by LLL
    - Support the development of tools to support the LLL
    - Support the use of citizen science to support NBS monitoring

1.4 Tasks 5.3 - timing and planning

Figure 3 below offers a clear overview of WP5 tasks within the URBREATH project. It highlights the distribution of responsibilities among consortium partners, the main contributors involved, the timeline for each task, and their respective statuses.

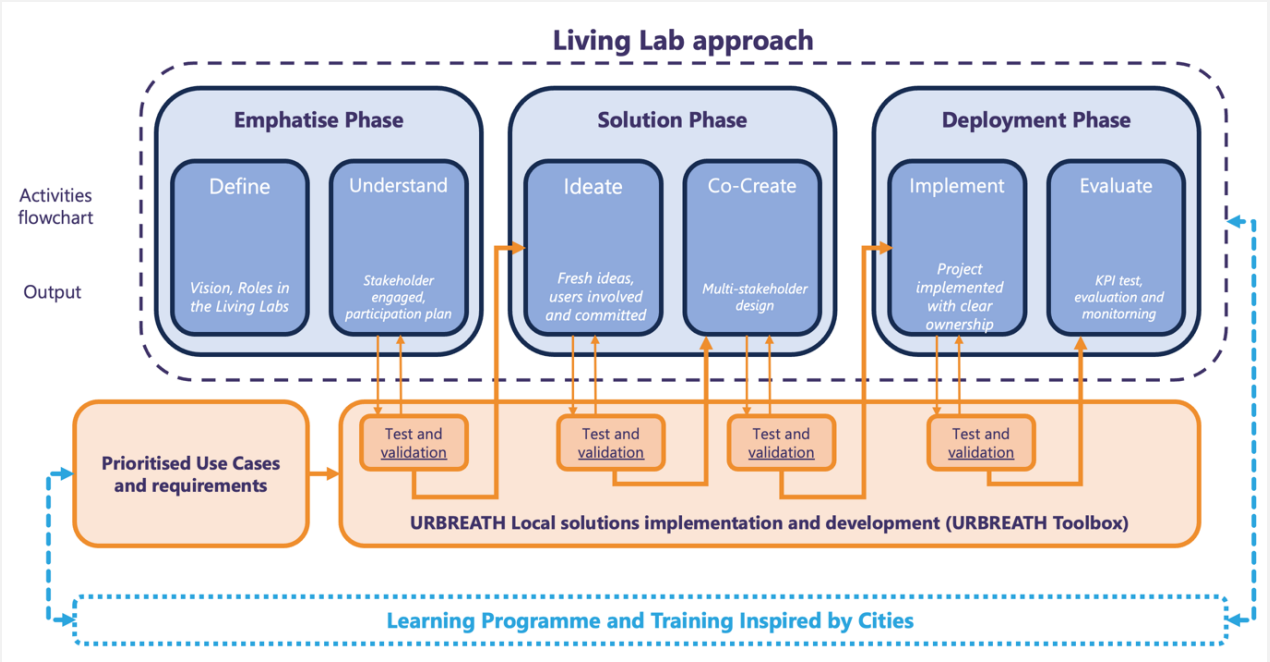
Figure 3: Overview of all WP5 tasks, their leading URBREATH consortium partner, the contributors, the timeline and the actual status.

Task	Title	Lead	Contributors	Timeline	Status
Task 5.1	Analysis of the local baseline state.	VLO	TAL, MUN, DEDA, URB, BLOX, TEL, OASC, CA, SPG, TRA, BAS, all cities	M1-18	Completed
Task 5.2	Alignment of requirements and technical solutions.	VLO	POLIMI, TAL, ICCS, UPM, ENG, MUN, DEDA, ATC, VCS, URB, DBC, TEL, EXUS, OASC, FIC, frontrunner cities	M6-48	Ongoing
Task 5.3	Local Living Labs.	VLO	CA, LC, POLIMI, TAL, DEDA, URB, DBC, BLOX, SPG, TRA, BAS, all cities	M1-48	Ongoing
Task 5.4	Customisation and deployment of the URBREATH decision-making framework into pilots.	VCS	TAL, ICCS, VITO, UPM, VLO, MUN, DEDA, ATC, URB, LAT, TEL, EXUS, FIC, TRA, BAS, frontrunner cities	M10-36	Ongoing
Task 5.5	Tools for monitoring, co-creating, deciding and steering.	MUN	TAL, ICCS, VITO, UPM, VLO, VCS, URB, LAT, BLOX, TEL, EXUS, FIC, frontrunner cities	M10-40	Ongoing
Task 5.6	Performance evaluation and impact assessment.	FRAU, USTUTT	LC, USTUTT, TAL, UPM, VLO, DEDA, URB, TEL, CA, FIC, TRA, BAS, all cities	M10-48	Ongoing

For completeness, the following boxed text is **reproduced from Deliverable 5.2**, as it provides essential background information for this Deliverable.

The implementation of Work Package 5 within the URBREATH project framework follows a structured and iterative process designed to ensure effective co-creation, technical integration, and capacity building across all pilot cities. This process is organised into three interconnected layers: a timeline of sequential phases and key LLL actions (in relation to the co-designing, implementation, evaluation, and replication of NBSs), the integration and refinement of supporting digital tools and models, and ongoing capacity building among stakeholders. The scheme below (Figure 4), described in detail in Deliverable 5.1, visually represents this integrated framework, highlighting how these layers interact to support the project's objectives from 2024 to 2028.

Figure 4: Schematic representation of the WP5 integrated framework, structured in three layers: (1) the process timeline outlining the sequential phases and key LLL actions from 2023 to 2027; (2) the digital tool integration layer depicting the iterative development, testing, and refinement of tools and models; and (3) the capacity building layer illustrating the continuous process of strengthening knowledge and skills among local stakeholders.



Between Months 18 and 24 of the URBREATH project, we are at a pivotal juncture: the conclusion of the **Solution phase** and the onset of the **Deployment phase**.

During the **Solution phase**, the project emphasised participatory design through two interconnected steps—**Ideate** and **Co-create**.

- In the **Ideate stage**, stakeholders from the public sector, academia, industry, and civil society engaged in structured brainstorming and design thinking workshops. These sessions generated a wide array of potential NBSs, encouraged creative exploration, and addressed dilemmas and trade-offs inherent in urban

environments. Tools such as stakeholder maps and visual mock-ups were used to structure thinking and stimulate dialogue, ensuring that a diverse range of perspectives shaped the emerging ideas.

- The **Co-create stage** then refined these ideas into implementable concepts through collaborative workshops. Here, multi-stakeholder teams translated promising ideas into concrete NBS designs, integrating ecological, technical, and social dimensions. This phase fostered ownership and consensus, with digital tools from the URBREATH Toolbox (such as the LDTs, storytelling tool, and e-participation tool) supporting design discussions and participatory decision-making. The outcome was a set of NBS designs that were not only technically feasible but also validated by the community and ready for implementation.

As the project moves into the **deployment phase**, the focus shifts to operationalising these co-created solutions. This phase is structured around two critical stages: **Implement** and **Evaluate**.

- The **Implement stage** transforms the collaboratively developed NBS designs into tangible interventions, involving procurement, resource allocation, and the mobilisation of necessary services.
- The **Evaluate step** systematically assesses the effectiveness of these interventions using a robust set of predefined Key Performance Indicators (KPIs), which were established in Milestone 7 at Month 18. These KPIs cover environmental, social, and liveability outcomes, and the evaluation process is evidence-based, drawing on data collected via the digital tools refined during the project.

This transition period is thus characterised by the near-completion of NBS designs and careful preparation for their real-world deployment and assessment. The project's structured approach ensures that the lessons learned and frameworks developed during the solution phase directly inform the practical actions and evaluations of the deployment phase, supporting the overarching goal of climate-neutral, resilient urban regeneration.

2. Recap of the Task 5.3 achievements up to Month 18

The process timeline layer depicts the sequential phases and critical actions cities are expected to complete between January 2024 and January 2028 to establish and operationalise their LLLs within designated pilot sites.

- Deliverable 5.5 described the ***Empathise phase*** achievements, with a focus on the *Define* and *Understand* steps. Early work included baseline workshops across all pilot cities to assess current stakeholder structures and participation processes. Cities refined their LLL visions, prioritised use cases, and defined roles critical to LLL functioning—namely, LLL Manager, Stakeholder Manager, and Pilot Manager. All nine pilot sites were geographically and thematically scoped.
- In the *Understand* step, pilots deepened their knowledge base and built stakeholder networks. A shared stakeholder mapping exercise was completed, and local context information was compiled. Cities also tested early versions of key tools, such as the LDT and the storytelling tool. Workshops enabled cities to exchange practices, refine visions, and align with the overall LLL framework.
- To conclude the *Empathise* phase and prepare the ***Solution phase***, WP5 hosted four workshops in late 2024. These sessions summarised first-year outcomes, focusing on co-creation readiness and the operational foundation of LLLs.
- **In early 2025, we shifted** to the ***Solution phase***, where WP5 delivered a series of train-the-trainer sessions tailored to the ***Ideation*** and ***Co-creation*** steps. These workshops provided practical guidance, methodologies, and peer-learning opportunities for LLL managers, stakeholder managers, and pilot managers. In addition to structured training, WP5 supported learning through bi-weekly Project and Cities Calls *(a revised Cities Calls 2.0 format) and regular one-on-one support for* pilot teams.
- **Tools and simulation models** were first demonstrated in their early stages during the General Assembly (GA) in Cluj-Napoca in May 2025, and their more advanced versions were documented at the end of Month 18 as part of the project deliverables. In early July, Tasks 5.2 and 5.4 collaboratively developed a 6-step testing, adoption and implementation plan to introduce these tools to the pilot cities (see also Deliverable 5.2, Chapter 5). This is particularly relevant for Task 5.3, as the tools and simulation models are also used within LLLs, for example, to visualise scenarios in LDTs and help citizens better understand the options. Additionally, specific tools can support KPI monitoring activities led by the LLLs, e.g. in the framework of citizen science initiatives.
- At the end of Month 18, **about 15 LLL initiatives** were set up and completed by all pilot partners.

3. Task 5.3 progress overview: Months 18-24

As the project enters the ***Deployment phase***, starting from M18, the focus shifts to putting co-created NBSs into practice through **implementation** and systematic **evaluation** using predefined KPIs. This structured approach ensures that lessons learned during the solution phase directly inform real-world actions and assessments via LLLs, supporting the overarching goal of climate-neutral, resilient urban regeneration.

Pilot cities continued their LLL activities, focusing on finetuning NBS, reporting on NBS scenario selection and rollout, and providing active support for LLLs in evaluating NBSs. After Month 18, tools and simulation models from the Toolbox became available, and some pilots started collecting data as part of the NBS monitoring. By combining participatory design, iterative experimentation, and data-informed evaluation, the LLL-framework provides a scientifically grounded pathway for co-creating sustainable and inclusive NBSs.

During this reporting period, support for the pilot cities and their LLL and stakeholder managers focused on:

- Organising targeted **train-the-trainer sessions** to prepare LLLs for the Deployment phase and address its specific challenges. These sessions also emphasised the value of LLLs as platforms for citizen science-based monitoring of NBS effects.
- **Facilitating communication and knowledge exchange among pilot cities** to align strategies, share lessons learned, and provide mutual support.
- **Strengthening coordination between pilot cities and technical partners**, ensuring clear communication about tool features, testing opportunities, and feedback processes to optimise tool adoption, development and rollout.
- **Providing ongoing, active support for LLL initiatives**, with Task 5.3 playing a central role in their implementation.
- Mediating the development and refinement of tools and models that support LLL activities, ensuring they meet the practical needs of the pilot cities.

3.1 Training sessions to support Local Living Labs working

3.1.1 Building on experience

In the first half of 2025, a series of train-the-trainer sessions was held to inspire and support pilot cities in establishing and operating their LLLs. These sessions focused on the ideation and co-creation phases of the LLL framework, providing insights, best practices, and practical guidelines to help **Living Lab Managers**, **Stakeholder Managers**, and **Pilot Managers** develop effective, locally adapted approaches.

- The **February 2025 train-the-trainer session** brought together LLL and stakeholder managers to collaboratively manage LLLs and ensure meaningful stakeholder participation in designing Nature-Based Solutions (NBS). The session began with reflective debates on co-creation, emphasising the importance of multi-stakeholder ideation, ecological integration (the "quintuple helix"), and the value of involving all stakeholders for locally adapted solutions.

  Participants explored creative ideation techniques—including "how might we" problem statements, bodystorming, and interactive mood boards—and discussed the transition from expert-driven to participatory mindsets. The co-creation phase was highlighted as a process of selecting, refining, and visualising the best ideas, supported by digital tools.

  The workshop also covered citizen design approaches and methods for exploring dilemmas. It concluded with a set of 15 co-creation enablers based on research from Living Labs applying NBSs, equipping participants with practical strategies for effective, community-driven innovation.

- The **May 2025 train-the-trainer session** during the URBREATH General Assembly in Cluj-Napoca focused on integrating Digital Twins and creative methods into urban co-design. The session aimed to spark creativity, promote the exchange of LLL co-design experiences, and demonstrate how a LLL workshop can be both playful and powerful. Through immersive, interactive activities, participants stepped into the roles of local stakeholders, using tools such as Google Street View to simulate live site visits and virtually explore pilot areas. Drawing and sketching were introduced as creative communication tools to enrich dialogue and clarify complex ideas.

  Additionally, LDT planning tools were simulated using printed base maps, allowing participants to collaboratively design scenarios with markers and pencils for a tangible, interactive approach to urban design. The URBREATH Digital Twin framework further supported the collaborative envisioning and design of NBSs for urban environments. This hands-on approach enabled the co-creation of insightful, inclusive, and feasible NBS concepts, illustrating that enhanced visualisation leads to broader thinking and smarter design.

  The workshop provided a replicable, scalable model for other cities, showcasing how integrating digital and creative methods can operationalise LLL principles and engage diverse stakeholders in collaborative urban transformation.

3.1.2 Deploying Local Living Labs for citizen science-based NBS monitoring

Most pilot cities have completed the co-creative, participatory design of their NBSs and are now focused on fine-tuning and final adjustments. With the KPI list for NBS monitoring finalised at Month 18 (Milestone 7), the project is on the verge of deploying these solutions. Tools and simulation models will play a crucial role in monitoring the effects of NBS. At the same time, LLLs can support underlying data collection through citizen science initiatives, an exciting development that will enhance KPI-based monitoring of NBS.

A train-the-trainer workshop was organised during the General Assembly in Tallinn on October 14th, 2025. Based on insights gathered from the cities' calls, individual pilot needs, discussions with task leads, KPI progress, and the overall project phase, WP5 selected **citizen science** as the central theme of the session.

In preparation, we compiled climate-zone-specific KPI lists (A2 format) and grouped participants by climatic zone, each with an assigned moderator. Many pilots are currently co-designing their NBSs with stakeholders through LLLs and are therefore also approaching the phase where NBS monitoring must begin. Citizen science, as part of LLL activities, can support this monitoring in various ways.

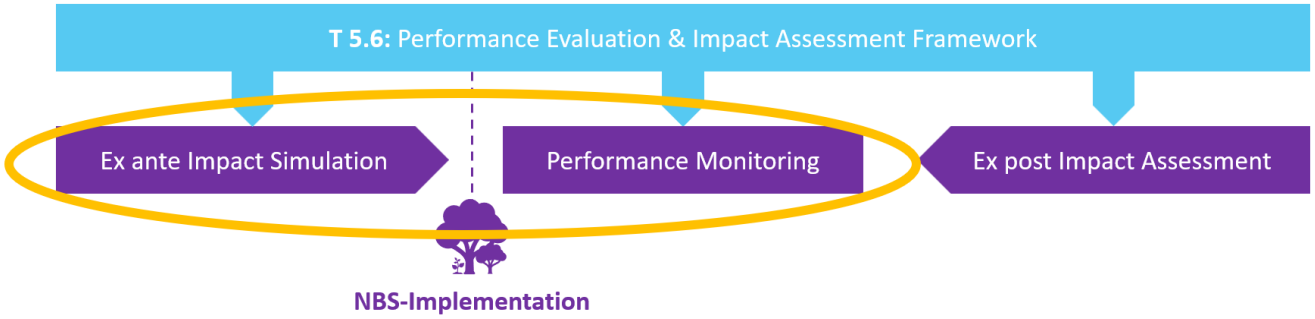
Workshop introduction and warm-up

We opened the session by outlining three main objectives.

- helping pilots understand the concept of citizen science.
- encouraging cross-learning between cities through good practice examples.
- guiding each pilot group to draft a citizen science activity for their LLL.

We then provided background on the project's transition into its **Deployment phase**, highlighting KPIs as the starting point for data collection and explaining how citizens and stakeholders can actively contribute. Links to **impact assessment** (Task 5.6) and **dashboard-based monitoring** (Task 5.5) were also clarified.

Figure 5: KPI monitoring as part of the Impact Assessment Framework developed under Task 5.6.



As an icebreaker to stimulate open co-creation, participants briefly discussed which scientist they would like to be, as a warm-up to foster a creative, interactive environment.

Key principles of citizen science

We introduced the fundamental aspects of effective citizen science:

- **Citizen participation is central:** Citizen science works when people directly contribute to a scientific project.
- **It expands what traditional research can achieve:** Citizen science enables data collection at a scale that professional teams alone cannot reach. It also supports policy-making and real-world action with evidence grounded in residents' lived experiences. In doing so, it raises public awareness, strengthens community engagement, and empowers people to understand and shape their environment.
- **Successful initiatives are well designed:** A strong citizen science activity begins with a clear, specific goal that gives participants a meaningful purpose. Simplicity is crucial—avoiding overly complex or feature-heavy designs helps keep the activity accessible. High data quality must be ensured through good methodology and easy-to-follow instructions. Equally important is participant motivation: people stay engaged when their contributions feel valuable, and the experience is rewarding. Finally, visibility matters; even the best activity needs active promotion to attract and retain participants.

Inspiring examples

We then applied these principles directly to the URBREATH project, making the concept more concrete and hands-on. To do this, we developed several practical examples of citizen science initiatives and explained their approach and key success factors in detail. We selected cases that closely resemble the URBREATH context—projects supported by a Toolbox or a similar set of data-collection tools. By combining large- and small-scale examples, we illustrated the broad potential of citizen science to generate valuable data.

For each example, we broke down the core elements that pilot cities should consider when designing their own initiatives:

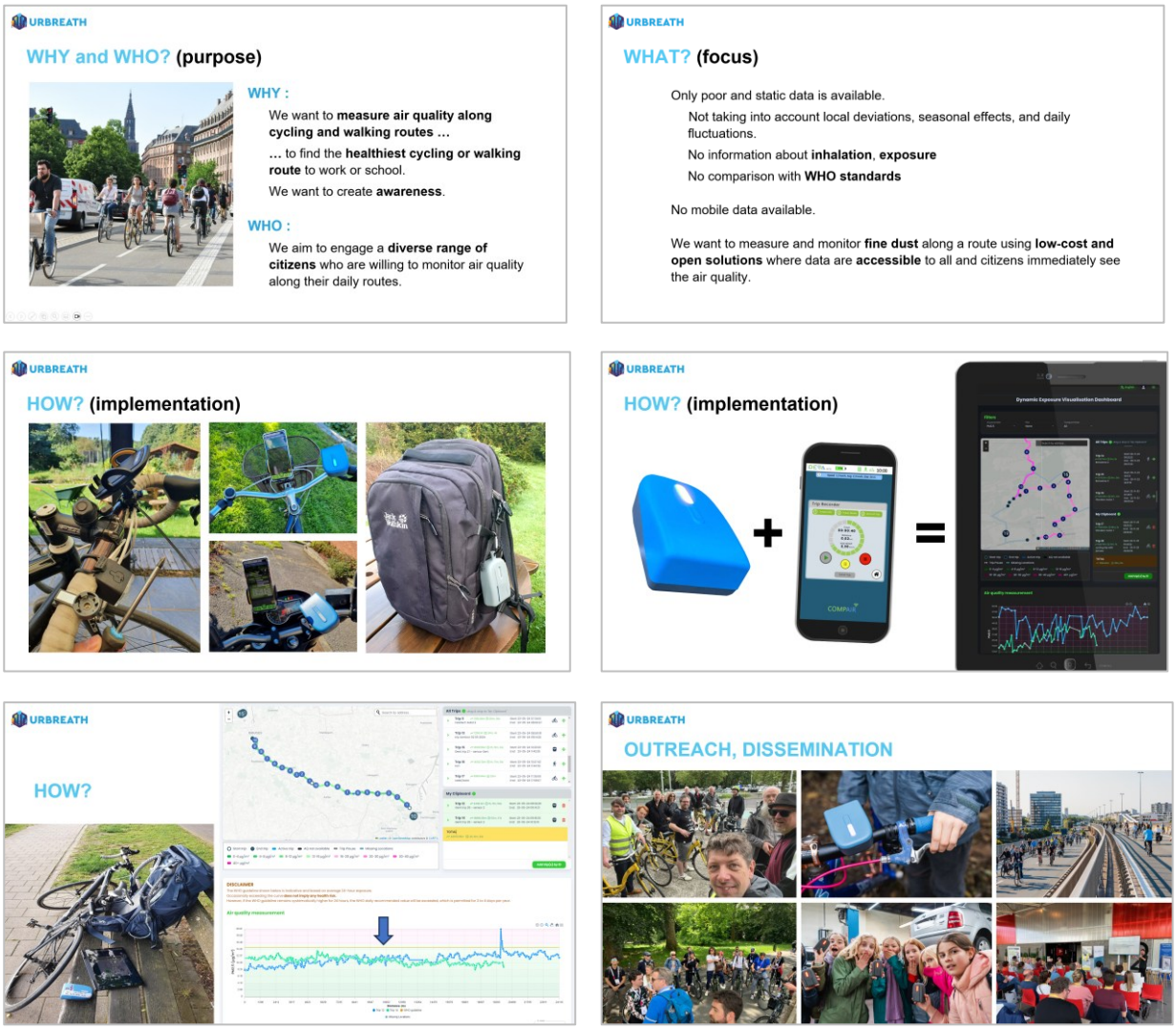
- **WHY – Purpose:** Who should be involved, and why?
- **WHAT – Focus:** What data or knowledge gaps need to be addressed? What exactly will citizens observe or measure?
- **HOW – Implementation:** How will citizens collect and submit data?
- **OUTREACH – Exploitation:** How will the activity be promoted, and what is needed to ensure its success?

These structured examples were explicitly selected to inspire the pilot cities and support their use of citizen science approaches to monitor URBREATH KPIs. WP5 presented four citizen science cases:

1. **Mobile air-quality measurements** using low-cost sensors and open dashboards (Flanders and Berlin).

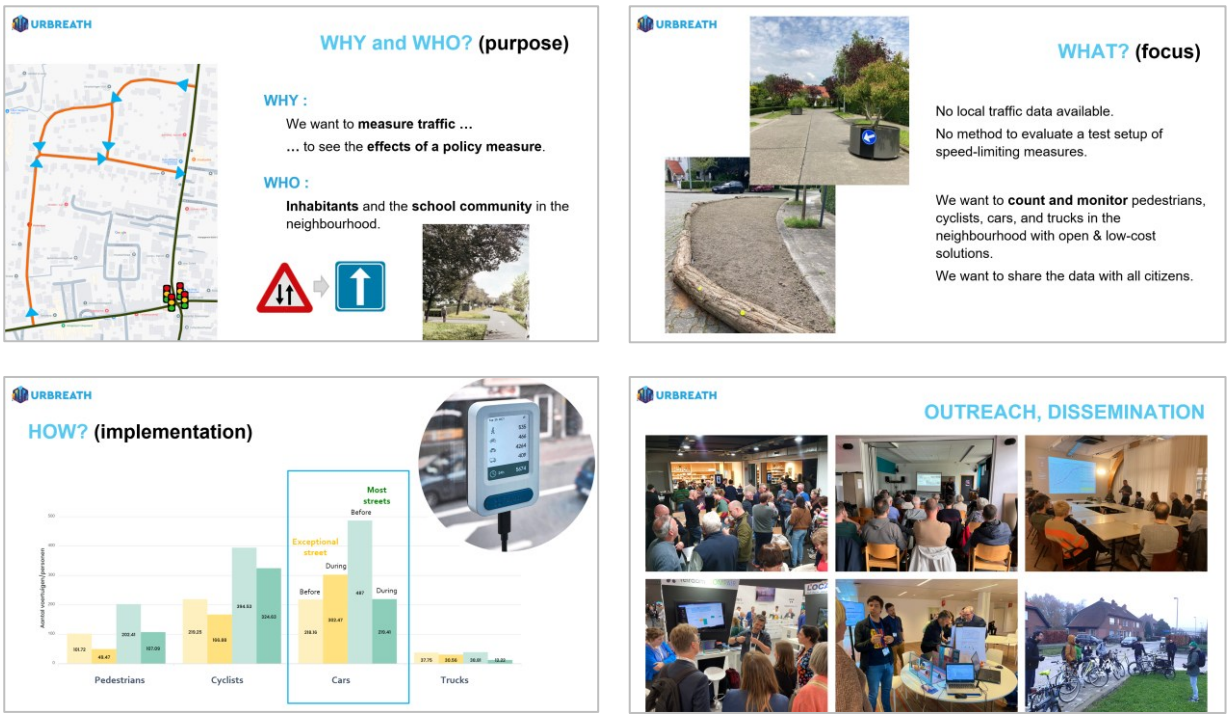
   The use of low-cost mobile air-quality sensors, combined with open-source tools and dashboards, enables widespread air-quality monitoring across the Flanders region and the city of Berlin. It clearly illustrated how accessible technology can generate valuable, large-scale environmental data.

Figure 6: Citizen science example using a combination of low-cost sensors, tools, and a dashboard for mobile measurements of air quality in the Flanders region and the city of Berlin.



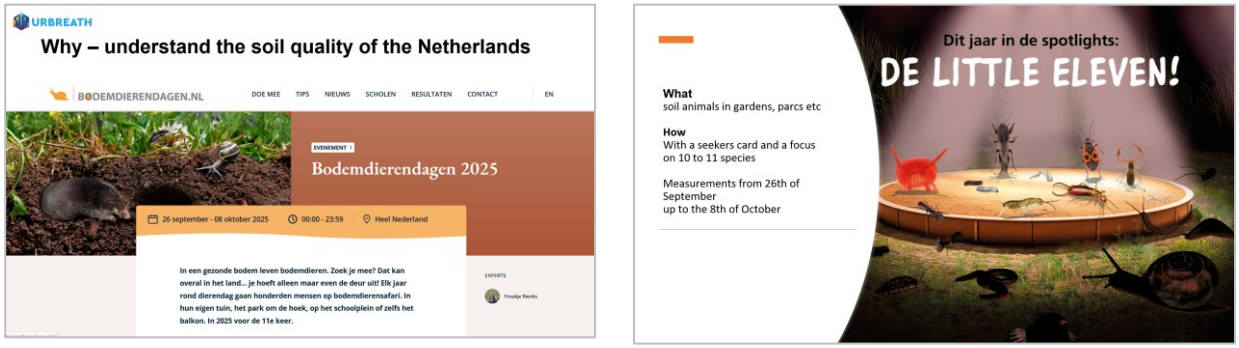
2. Using affordable mobility sensors together with open-access dashboards to **monitor traffic** in neighbourhoods experiencing issues with rat running. The data collected from these sensors is openly shared, enabling the community to analyse traffic patterns and collaboratively develop solutions tailored to local needs. This approach is further supported by LLL activities, such as organising **data cafés**, which facilitate dialogue between local government and residents. Notably, the same type of traffic sensors is used by the City of Leuven in the URBREATH project, establishing a direct connection between this example and the project's ongoing initiatives

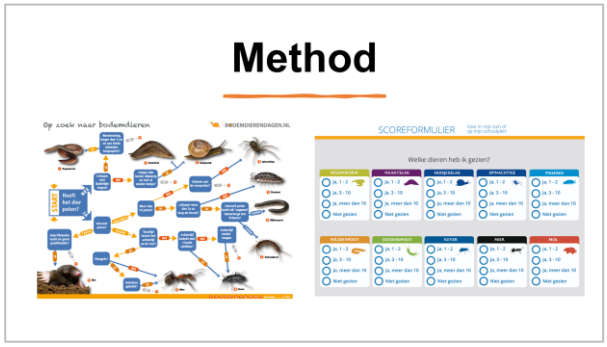
Figure 7: The use of low-cost sensors and open monitoring dashboards to monitor traffic in a neighbourhood.



3. Since **biodiversity monitoring** is essential for many pilot cities, a citizen science initiative from the Netherlands was highlighted as an inspiring example. The project uses a simple, accessible method: common key species of **bottom-dwelling animals** are selected as indicators of biodiversity. Schoolchildren and citizens participate by exploring school grounds, gardens, and public green spaces during two weeks in autumn, identifying these key species and recording their findings on printed scorecards. The scorecards include straightforward, easy-to-follow instructions for species identification, making the activity accessible to all. This annual survey enables participants to track changes in biodiversity over time and serves as a practical model for pilot partners aiming to measure biodiversity in their regions.

Figure 8: The use of recurrent bottom-dwelling animal counts by citizens to measure biodiversity evolution in the Netherlands.

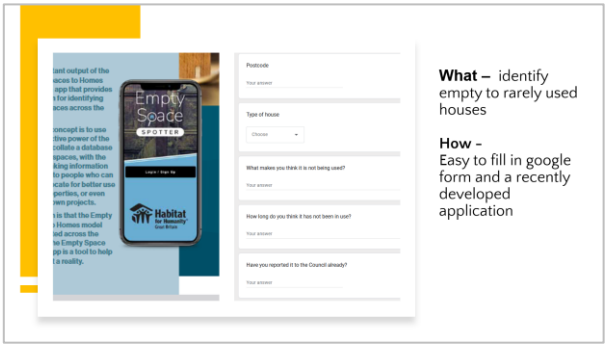


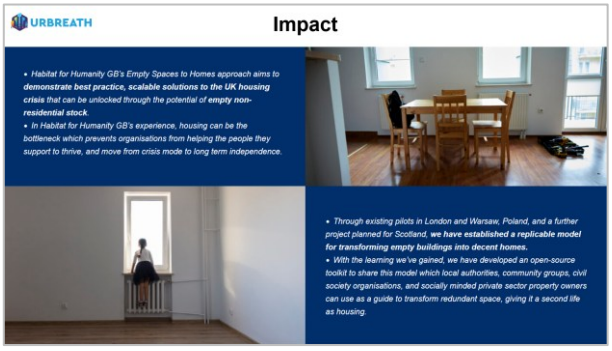


4. A final citizen science best practice focused on **measuring liveability**, which is often challenging to assess. To encourage innovative thinking among pilot cities, this example centred on monitoring home usage—specifically, identifying empty or rarely used houses. The approach relied on a simple, user-friendly tool: an easy-to-complete Google form. Given that the URBREATH Toolbox includes the *DeciDim* tool, there is potential to adapt this method within the project.

   Since many KPIs are monitored qualitatively through surveys, this example provides a valuable starting point for considering how surveys can be designed and integrated with other Toolbox tools. For instance, surveys could be linked to dashboards, use AI-based analysis of open-textbox responses, or be connected directly to the KPI-monitoring tool to enhance data collection and interpretation.

Figure 9: The use of online surveys to monitor liveability aspects and the connection with the existing URBREATH Toolbox.

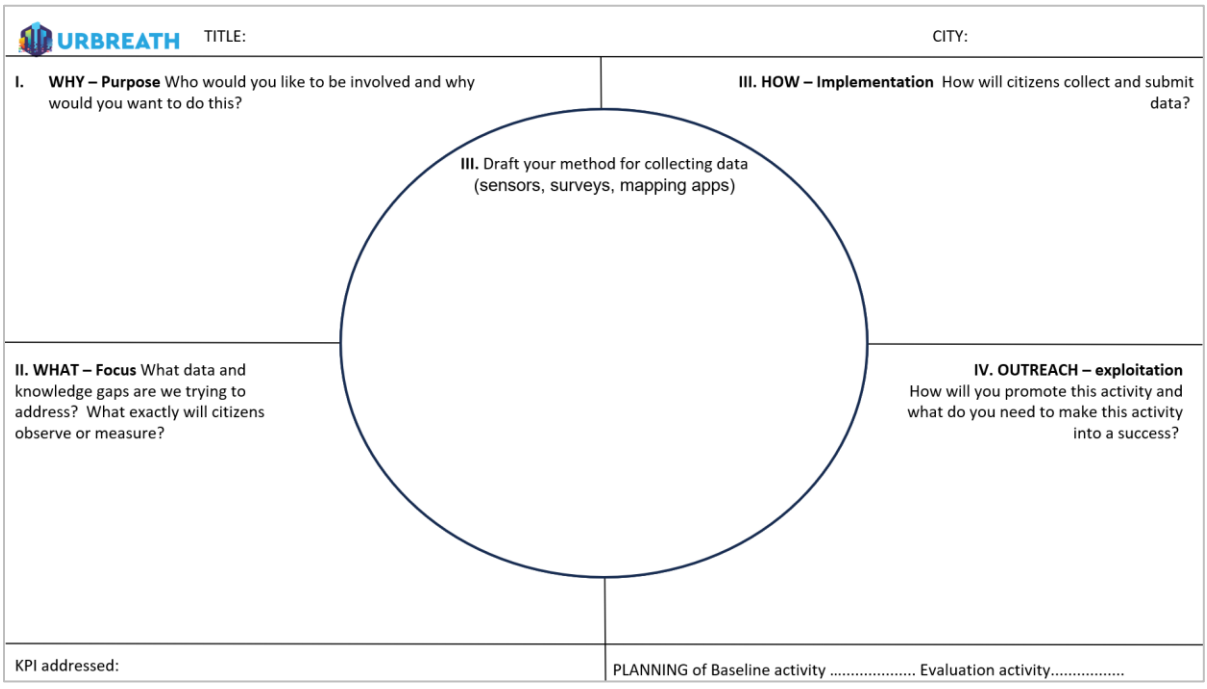




Group exercise

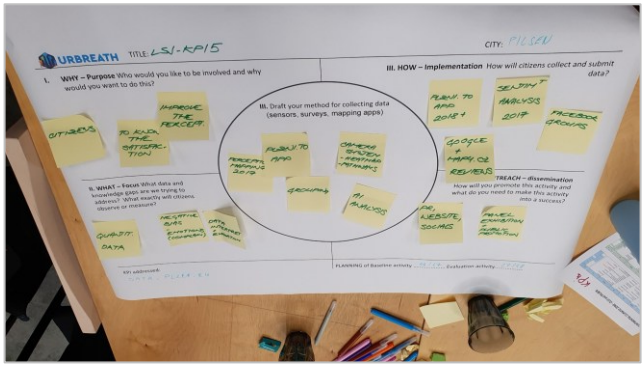
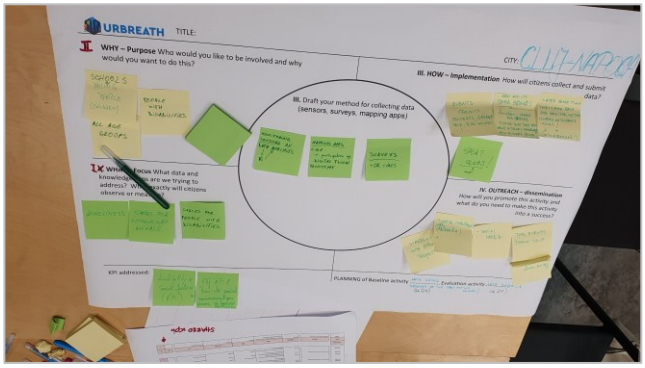
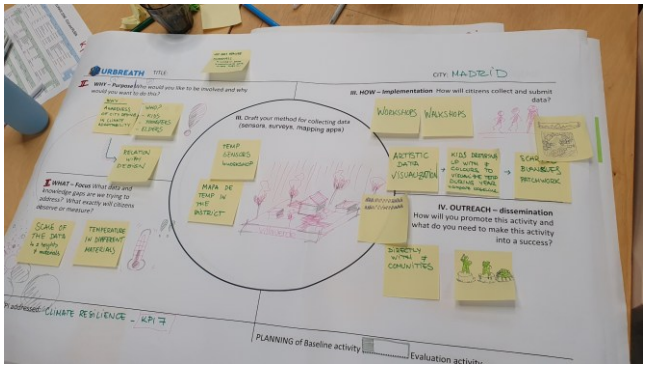
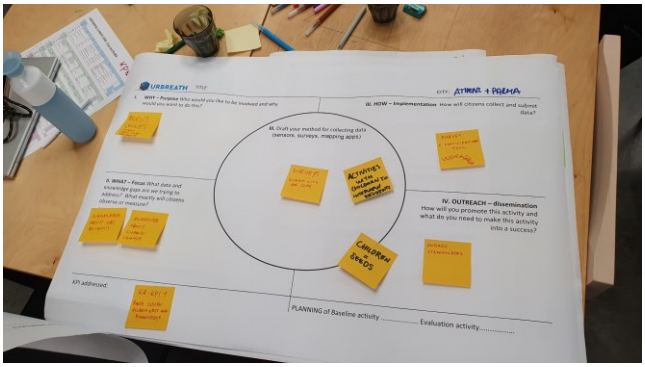
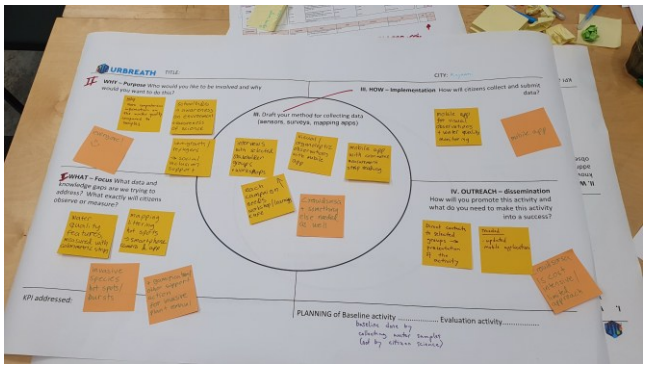
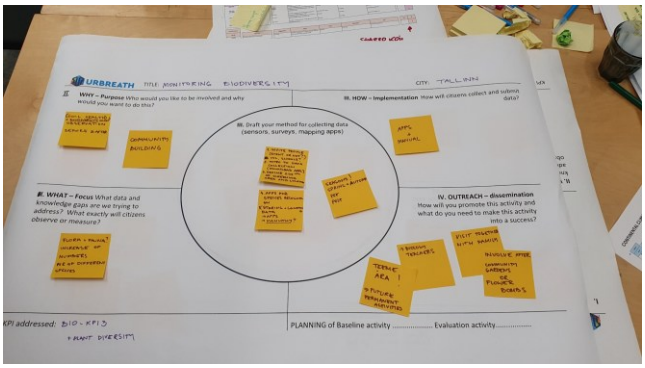
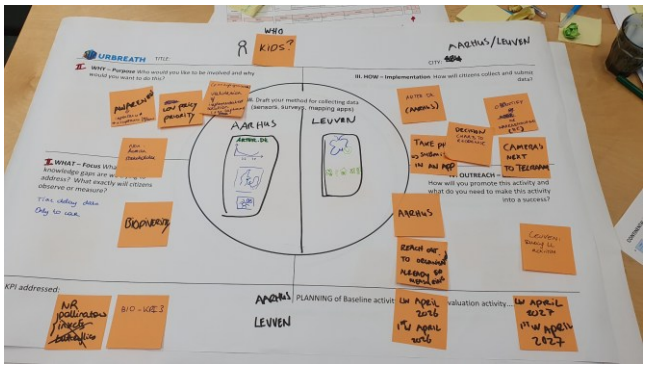
After reviewing the inspiring examples, each workshop table received climate zone-specific KPIs (in A3 format, see also Annex 1) and an A1 instruction sheet (see Figure 10). Pilot teams were tasked with selecting a relevant KPI with citizen science potential from the list and designing a citizen science project for their region, focusing on defining the **purpose, objectives, methods, and outreach strategies**.

Figure 10: A1-format printed instructive sheet supporting the train-the-trainer workshop to work out potential citizen science initiatives.



Working collaboratively, groups drafted data-collection approaches, such as sensors, surveys, or mapping apps, while preselected moderators facilitated the discussions without directing them. This led to a dynamic co-creation process, resulting in constructive conversations and extensive documentation of **seven potential citizen science initiatives** using sticky notes.

Figure 11: Train-the-trainer session results. Seven potential citizen science projects were worked out in detail.

After the workshop, each group's representatives took the stage to present the citizen science projects they had developed for their respective pilot areas. These presentations showcased a diverse range of creative approaches—from innovative data collection methods to unique strategies for engaging local communities.

By sharing their plans, each group not only highlighted practical solutions tailored to their region but also sparked new ideas and enthusiasm among the other participants. The exchange of experiences and best practices fostered a collaborative atmosphere, inspiring all attendees to refine and expand their own citizen science initiatives.

The workshop concluded with a strong hope that the citizen science projects developed would be implemented in future KPI monitoring efforts. Additionally, all participants were informed about the next steps and follow-up actions to ensure continued progress.

Figure 12: Atmospheric impressions from the train-the-trainer workshop on citizen science held in Tallinn.




Follow-up

- After the citizen science workshop, all data collected were processed over the following weeks. More details on the next steps were presented during the cities' call on November 14th, 2025.
- Subsequently, a broader follow-up communication was sent to all pilot cities on December 4th, 2025, summarising the creative work accomplished during the workshop at the General Assembly in Tallinn. An updated and enriched presentation was shared, incorporating pilot input as a living document. Cities were invited to review, update, and use this resource for inspiration and planning. WP5 emphasised the importance of keeping the document current, sharing progress and challenges during City Calls, and reminded participants that true citizen science requires direct involvement of citizens in data collection.

  Additionally, WP5 encouraged ongoing collaboration and offered support for brainstorming or assistance. Cities were urged to continue updating their activities and to consider integrating citizen science principles into their KPI monitoring. WP5 reinforced the value of collective learning and open communication, ensuring that all cities remain engaged and supported as they advance their citizen science initiatives.
- An extra follow-up session is planned for early 2026 to maintain momentum and support further progress.

3.2 Fostering mutual learning and knowledge exchange

3.2.1 Monthly Cities Call

Starting in April 2025, dedicated cities calls were organised as described in Deliverable 5.5. To support these meetings, a **general presentation template** was developed to help pilot cities document and share the progress of their respective cases. Designed as a living document, the template allows cities to regularly update their activities and make their progress visible to fellow pilots and consortium partners. It includes dedicated slides for LLL initiatives, enabling cities to visually and concisely present recent developments, supported by photos and brief explanations.

Driven by WP5's Task 5.2, a communication improvement plan was implemented to enhance intra-pilot communication and strengthen dialogue between cities and technical teams. Each pilot city used the new PowerPoint template to present recent activities, challenges, and progress updates, fostering peer learning and real-time problem-solving.

Several structural improvements emerged, such as co-created agendas for monthly calls, clearer updates from technical teams, and more consistent feedback from pilot cities. The need for tool demonstrations and documentation led to the demo café in Cluj-Napoca (May 21st, 2025), and technical partners now regularly showcase new functionalities and hold Q&A sessions. Pilot cities also requested access to sandbox environments to test and evaluate tools before full adoption.

These findings formed the basis for the Cities Call format and the foundation of the **six-step plan,** developed during this reporting period and reported in detail in Deliverable 5.2, Chapter 5, developed by Tasks 5.2 and 5.4 for adopting, implementing, and customising tools and simulation models from the **URBREATH Toolbox**.

The concept of organising dedicated city calls developed naturally and was further refined collaboratively by WP5 and the pilot cities, who jointly determined the format and focus. These calls, especially in the context of tool and simulation model development, serve as a forum for bringing together pilot teams, including LLL **and stakeholder managers**, and technical partners.

Task 5.3, in cooperation with Task 5.2, uses these 90-minute sessions to encourage the exchange of ideas, raise concerns, ask questions, and discuss ongoing progress for the reporting period for the Months 18-24. Each Cities Call provides:

- A platform for LLL and stakeholder managers from all Front-Runner Cities (FRCs) and Follower Cities (FLCs) to update technical teams and fellow city LLL representatives on the status of their use cases and LLL initiatives and to express specific needs or desired improvements. A living document presentation template serves as the basis for these status updates.
- A platform for technical partners to present new developments, highlight challenges, and request feedback on tools and simulation models that can be used as support for the LLLs (e.g. LDTs, simulation models and e-participation tools).

- An opportunity for other work packages to introduce pilot and LLL-related topics, ensuring that tool and model development and adoption, as well as LLL-working, are considered within the broader project perspective.
- Organisational support from Task 5.2, which prepares agendas, sends invitations, structures the content, and facilitates or moderates the discussions.

By carefully preparing, moderating, chairing, and following up on each session, WP5 actively promotes the exchange of best practices, lessons learned, and practical insights among participants. Open discussion of implementation challenges is encouraged, strengthening the collective capacity of the URBREATH consortium to run effective and impactful LLLs. Each city call is preceded by an email invitation that includes the agenda and all necessary preparations for the pilot city teams.

Cities Call - July 25th, 2025

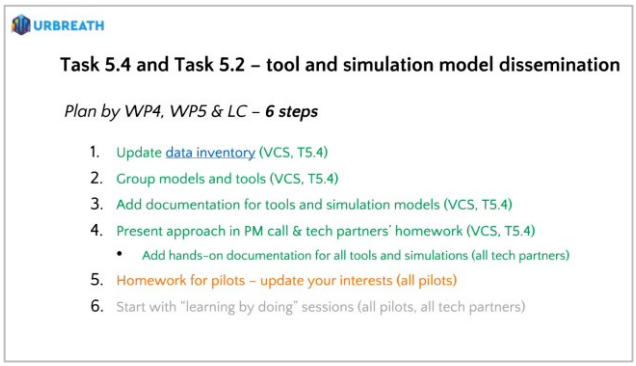
With the technical Deliverables of Month 18 and based on the Tool presentation during the first data café in Cluj-Napoca, the pilot cities gained a good understanding of the *Toolbox in progress*. In tight cooperation with the Task 5.4 and Task 5.2 leads, a plan of approach was developed for both technical teams and pilot cities, following the Local Living Lab principles, to explore, test and adopt the available Tools presented by the WPs 3-4 consortium partners. The first plan in progress was presented on July 11th, 2025, during a *Project Management Call*. It was refined, following the initiation of substantial input and Tool documentation (see step 3 below) from the technical teams. Additionally, homework was assigned to the pilot cities to update their interest in the tools under development and to further complete the list with required datasets and models.

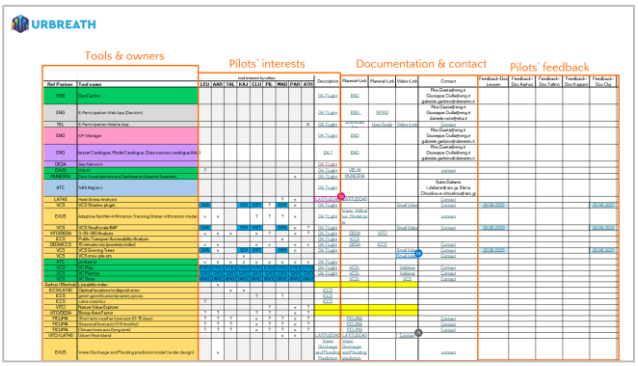
This Cities Call was used to present the mature 6-step plan to all pilots and technical partners:

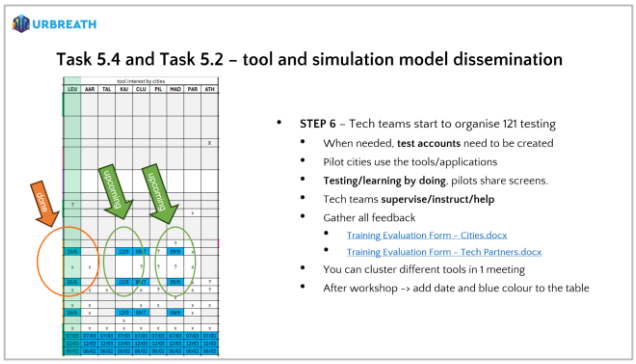
1. Update of the data inventory.
2. Clustering tools and models.
3. Providing documentation and demo movies for available tools and simulation models.
4. Updating the pilots' interest in the tools and models developed.
5. Start Learning-by-doing sessions.
6. Collection of feedback using the general training evaluation forms.

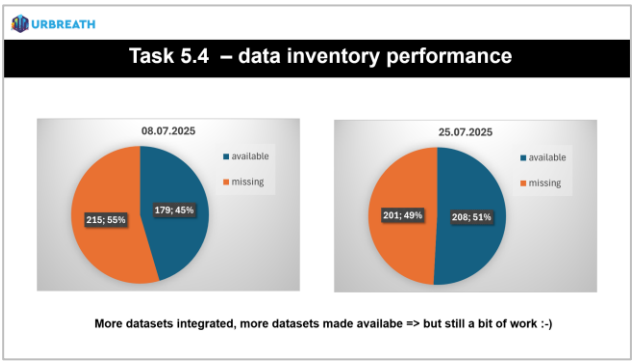
Providers of tools and simulation models are at different stages in this six-step process, and the upcoming summer holidays are being used efficiently by organising learning-by-doing sessions with available pilot cities at various times throughout the holiday period.

Figure 13: Selection of presentation slides used to pitch a 6-step approach for tool exploration, exploitation and adoption.









During this Cities Call, all pilot cities were invited to present their case updates in a 5-minute pitch, using their updated presentation templates to showcase progress across LLL initiatives, planning, and NBS implementation steps. They shared learnings, new insights, and ideas, and presented near-future actions and initiatives related to their use cases. **Key Takeaways:**

- Planning and Surveys: Updates were provided on NBS planning and timelines, LLL planning, and the preparation of surveys for neighbourhood consultation and KPI baseline definition. Best practices were shared, including the use of maquettes and alternative techniques in LLLs. Parma completed its data inventory.
- Leuven: Presented dissemination initiatives, integration of mobility and waste management into project scenarios, progress on LDT development, and outlined upcoming plans for LLLs and NBS initiatives.
- Pilsen: Shared updates on sensor measurements, co-creation and LLL activities, and Toolbox analyses, including data inventory, NBS registry, and climate modelling.
- Cluj-Napoca: Reported on the deployment of sensors (including NBS sensors), the content of the NBS registry, and recent LLL activities with students using the LDT environment.

- Tallinn: Discussed meetings with city representatives on the preliminary design for snowmelt water treatment, upcoming URBREATH courses in September (in partnership with TalTech), public dissemination of NBS designs, and preparations for the General Assembly.
- Athens: Provided further details on plans for an open-air museum, funding and procurement steps, accessibility challenges, NBS rollout progress, and LLL activities (including participation in the Greenstorm GA and ScalableCities event).

Also, a status update and an explanation of Ficlima's potential for climate modelling were provided (with a request to the pilots to share their interest in specific climate parameters to be monitored), and the project lead and the WP2 lead made general announcements about upcoming activities and Task 2.2 progress.

Cities Call - August 22nd, 2025

After some general announcements from the project lead (upcoming events and activities), WP6 presented their upcoming T6.1 and T6.4 steps and reporting plans till Month 30. OASC shared relevant guidelines for the pilot cities to comply with open, widely used standards and to align tools for combining data sources using different standards.

A heads-up on WP5's Task 5.4 was provided on:

- the mapping of the Urban Planning workflow.
- the progress on the data inventory.
- the status of the 6-step plan for the tool and simulation model. Also, a train-the-trainer evaluation form was developed and introduced to the pilot cities.
- A presentation by the city of Leuven of their LDT customisation progress, and more specifically, the VCS planner tool to work out NBS scenarios (including the tree growing functionalities, tree water need and automated simulation reporting).

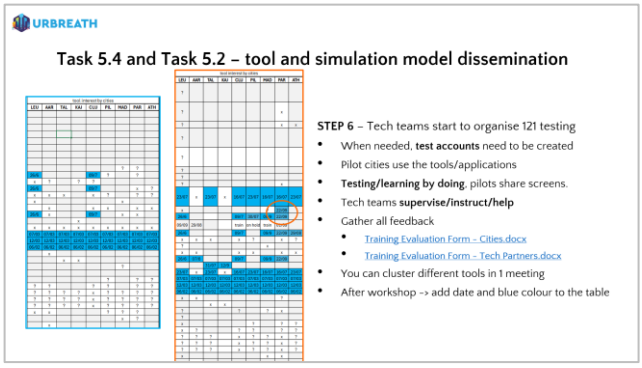
WP5's Tasks 5.3 and 5.2 took a significant amount of time to present the approach for the EC review meeting of September 25th, 2025. The agenda was explained with a focus on the WP5 timeslots foreseen. The pilots' 5-minute pitches were streamlined, and the use of a 5-slide template (created by Task 5.3) fitting the 5-minute timing (see

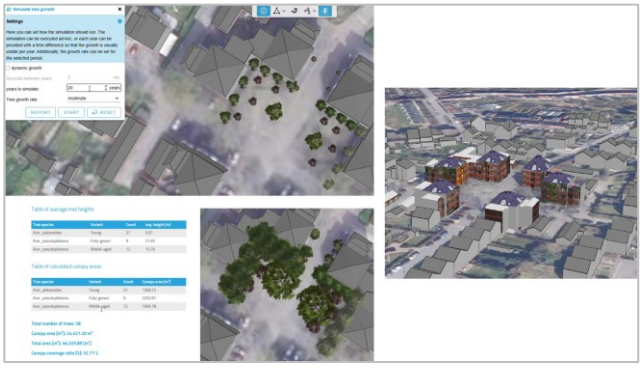
Figure 14) was presented to the pilot cities and discussed. For each LLL-activity, a card was created for pilots to add the LLL-activity title, goal, summary, involved stakeholders, and the session outcome. Pilots were stimulated to add supporting pictures as well. WP5 instructed the pilot cities on how to complete their slides and how this template will be used in the future to report in Deliverables.

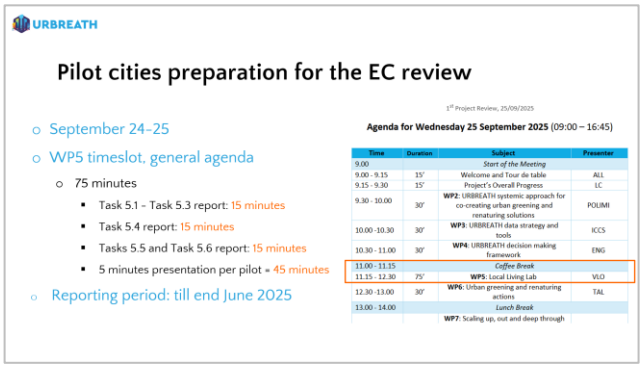
All cities presented their progress on their use cases since the previous Cities Call. **Some key takeaways:**

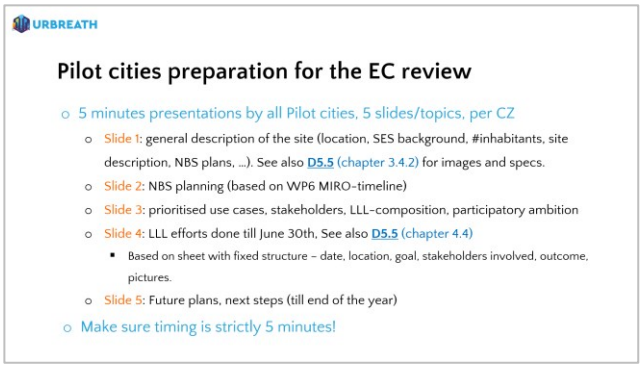
- Pilsen: Installed tree sensors and began collecting traffic data. The team explained their use of the URBREATH Toolbox and outlined the next steps for rolling out their NBSs.
- Aarhus: Initiated the NBS rollout and introduced new LLL activities, including participation in a tech festival and an internal workshop.
- Cluj-Napoca: Presented detailed planting plans, sensor deployment updates, an updated project timeline, and progress on LDT development, along with suggestions for a forthcoming white paper.
- Leuven: Reported progress on LDT functionalities (such as shading and flyover features), described meetings with VCS, VLO, and local partners for software and data implementation, evaluated the Toolbox in its current form, shared the Task 5.9 inception report, provided an overview of upcoming events, and discussed plans for organising LLL activities in mid and late September.

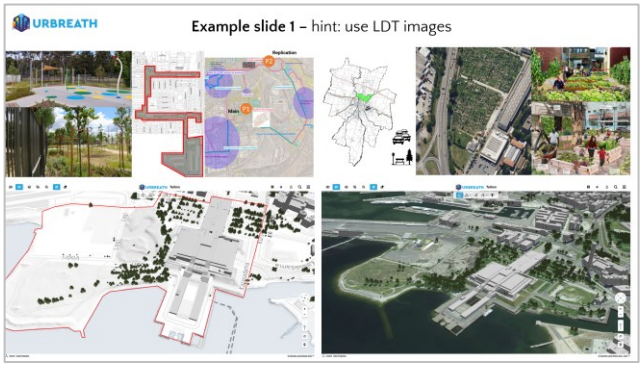
Figure 14: Selection of presentation slides used to document Task 5.4 progress, demonstrate new LDT functionalities and prepare for the European Commission review meeting (Tasks 5.3 and 5.2).

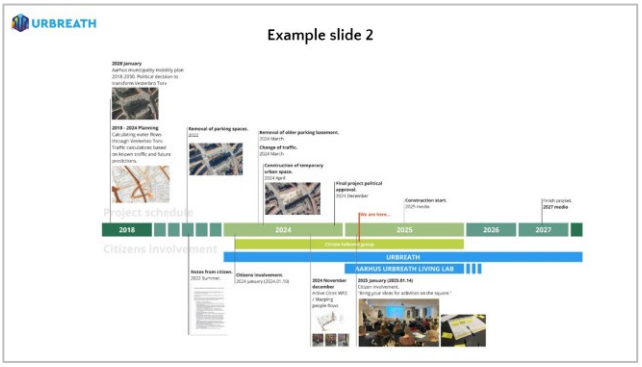


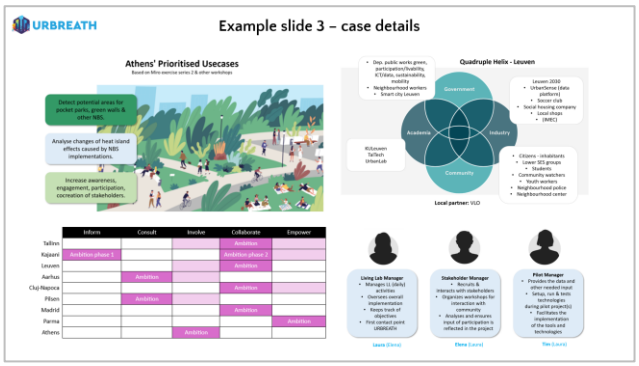


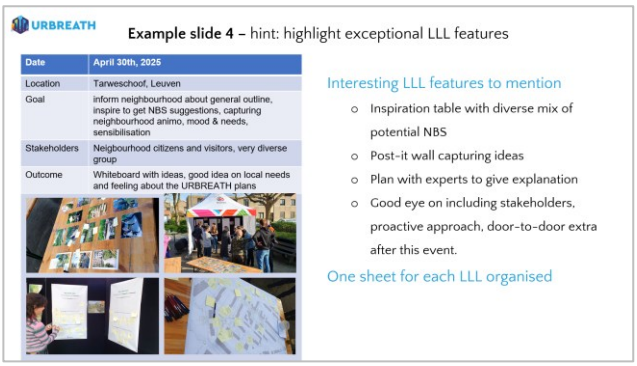












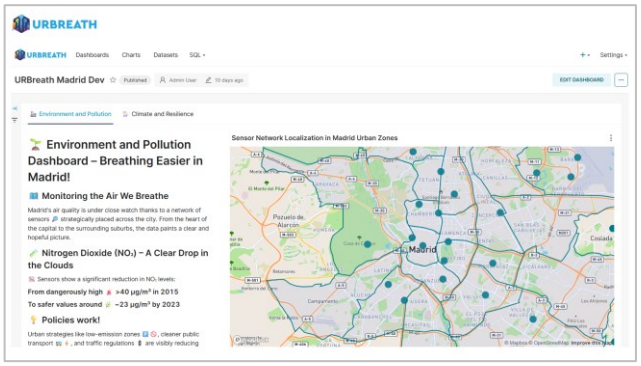
Cities Call - September 19th, 2025

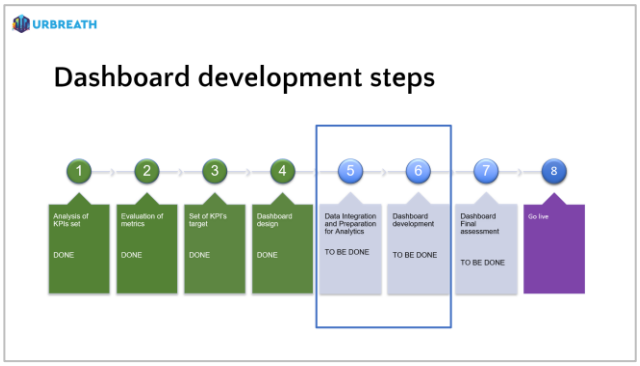
Because this Cities Call took place just before the EC review meeting on September 25th, 2025, the session primarily focused on rehearsing the 5-minute presentations from each pilot city. Pilots prepared their slides, supported by WP5 e-mail instructions and by using the provided templates. It was encouraging to see that everyone adhered to the time limits and delivered presentations of consistently high quality. Only minor adjustments are needed.

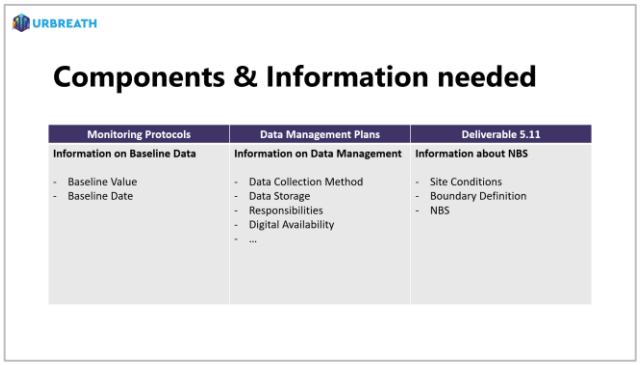
Task 5.4 provided a status update on the learning-by-doing sessions to be initiated by all technical WP3-4 partners, and the city of Leuven demonstrated updates to the Task 5.4 LDT customisation. Task 5.5 demonstrated the status of dashboard development for NBS monitoring, connected to KPIs. Task 5.6 provided a status update on the baseline ex-ante data collection within the KPI monitoring framework, and Task 5.6 outlined the next steps for the near future. WP3 presented their progress and concerns regarding data availability in the pilot cities, and the project lead made general announcements about future activities, including EC review instructions.

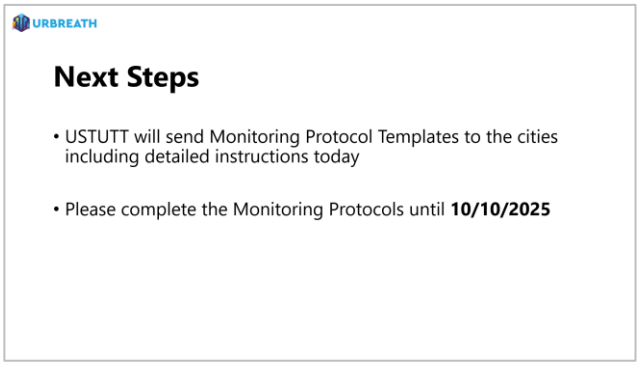
Finally, the city of Leuven presented a stunning flyover movie created in their LDT to showcase NBS scenarios at the Krakau square to local stakeholders in an LLL setting.

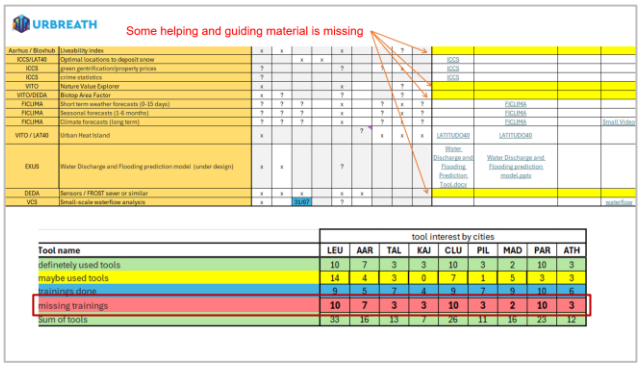
Figure 15: Selection of presentation slides used to demonstrate the progress on dashboards (Task 5.5), the KPI baseline value monitoring (Task 5.6), the status of the learning-by-doing session coordinated by Task 5.4 and the technical LDT updates developed by technical partner VCS.

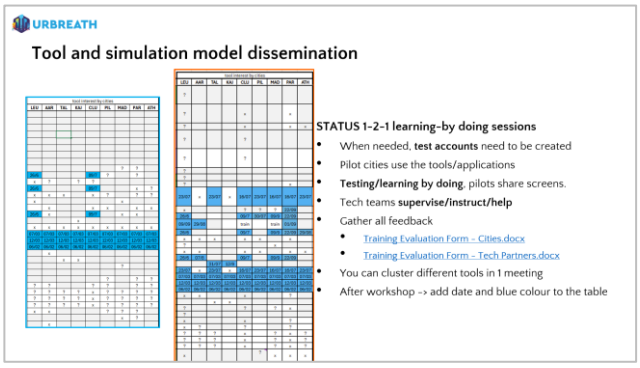


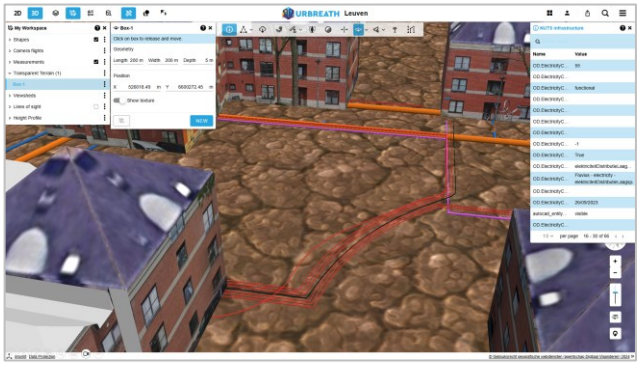












Cities Call - October 31st, 2025

During this Cities Call, the session began with updates on Task 5.4, including the current status of the data inventory, progress on learning-by-doing training sessions, and a reminder for technical partners to organise these meetings. The documentation of available tools was reviewed, and pilot cities discussed their preferred tools, referencing the Grant Agreement for alignment. Implementation guidelines were also shared. A comprehensive status overview was presented, detailing each pilot's interest in various tools and simulation models. This included information on documentation availability, integration readiness, relevance to KPI monitoring, previous demonstration events, and training status for both front-runner and follower cities. This overview will serve as the foundation for an upcoming workshop dedicated to Task 5.4, with a new series of regular meetings initiated immediately after this call.

Additionally, a mini demo/workshop introduced participants to the *DeciDim* e-participation tool (mobile version), which can be used to create surveys for qualitative KPI monitoring. Pilot cities provided valuable feedback on the tool's usability and features and raised questions about integrating monitoring dashboards and AI-based analysis tools.

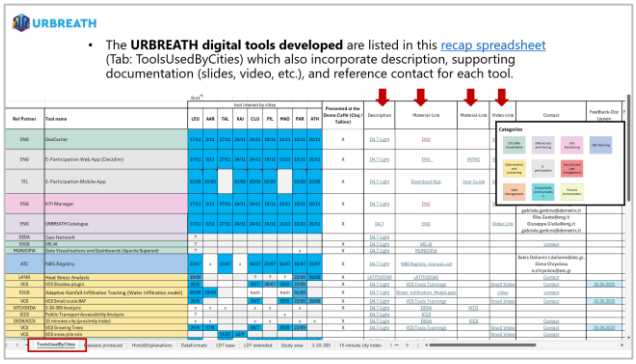
A call was made for pilot cities to contribute input for Deliverable 5.6, encouraging them to reuse information previously shared during the EC review meeting presentations—instructions followed by e-mail.

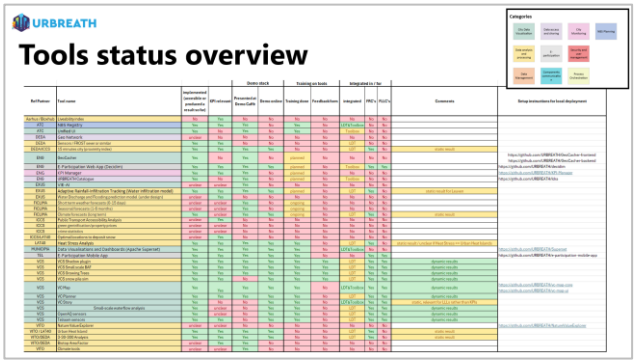
All cities presented their progress on their use cases since the previous Cities Call. **Key Takeaways from Pilot City Updates:**

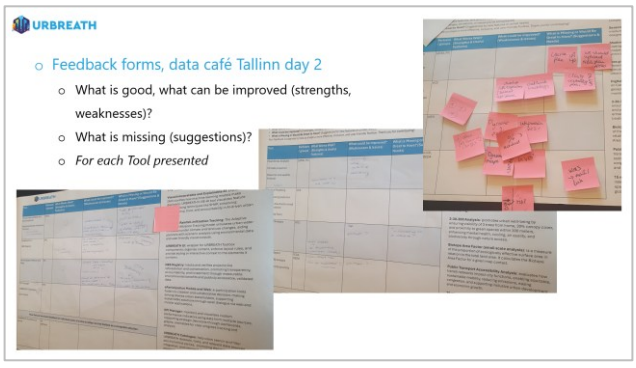
- Parma: Presented updates on project workflow, including the development and implementation plan (covering objectives, methods, and locations). Upcoming meetings with technical partners will focus on tools and models.
- Cluj-Napoca: Shared progress on co-creation and educational initiatives involving university students and residents. Provided updates on evaluation surveys designed to monitor well-being.
- Athens: Reported on the status of NBS rollout, financing, and procurement processes. LLL preparations are planned for November/December 2025, with ongoing adoption of e-participation tools.

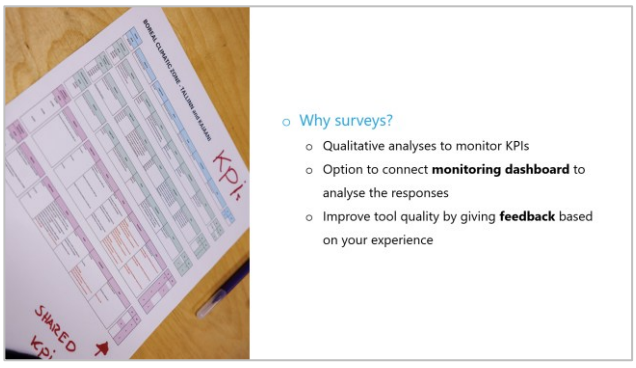
- Leuven: Detailed the latest LLL event in Kessel-Lo, Toolbox testing, preparations for the General Assembly, and upcoming events.
- Aarhus: Updated on NBS rollout progress, including challenges related to the political climate. Reported on tool testing for liveability and city-quality monitoring, and data collection.
- Pilsen: Outlined dissemination plans, including participation in the Smart City Expo World Congress (SCEWC) in Barcelona, and provided updates on available datasets.
- Madrid: Presented city-to-city initiatives, current NBS rollout status (with before-and-after photos), LLL activities, and next steps such as urban greening investment planning, climate index definition for site planning, LDT modelling, climate shelter mapping, and KPI dashboard design.
- Kajaani: Reported on NBS rollout and monitoring, assessment of invasive species risks (using citizen science tools), and ongoing LLL activities.

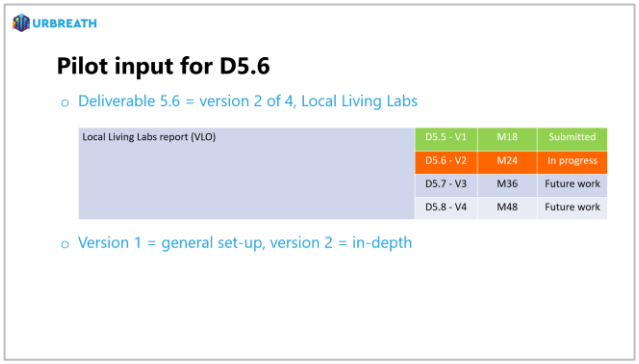
Figure 16: Selection of presentation slides used to demonstrate the status of the learning-by-doing session and tool interest table (coordinated by Task 5.4), the use of feedback forms for qualitative KPI monitoring (WPs 3-4), and a call for Deliverable 5.6 feedback (Task 5.3).

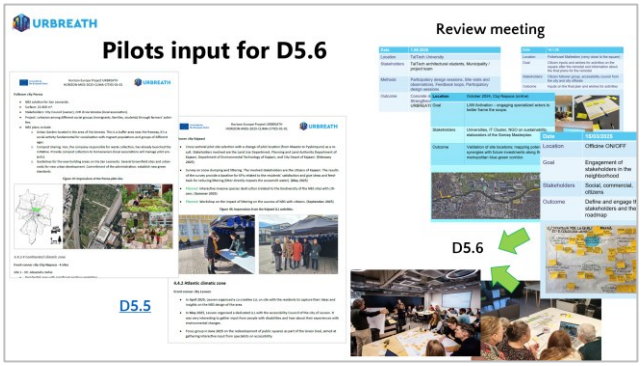












Cities Call - November 14th, 2025

The scheduled Project Management meeting was replaced by this Cities Call to address urgent WP5 updates.

The session began with a presentation on the next steps following the train-the-trainer session held in Tallinn during the October 2025 General Assembly. Task 5.3 will provide a recap of the citizen science workshop, including additional guidelines and remarks. Updated plans for baseline and evaluation activities were presented and confirmed with the pilot cities. As announced during the meeting, a more comprehensive exercise is planned for early next year, during which all pilot cities will further refine their activities. Also, a nature article reporting on the positive effects on immunity of bringing children and nature (soil) together.

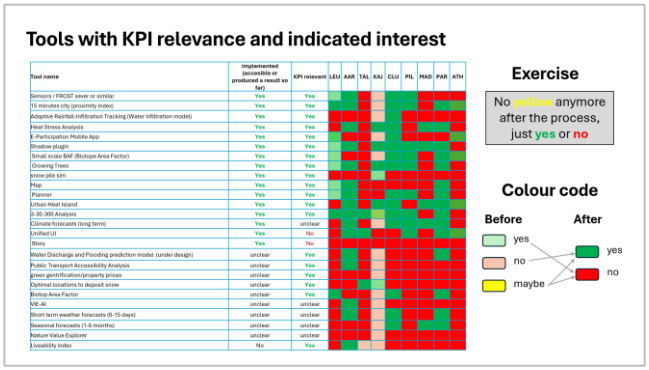
Input was requested for Deliverables 5.6 (Task 5.3) and 5.9 (Task 5.4), along with additional instructions. Deliverable 5.6 progress was demonstrated live in the first draft of the document, with the missing or incomplete information clearly marked.

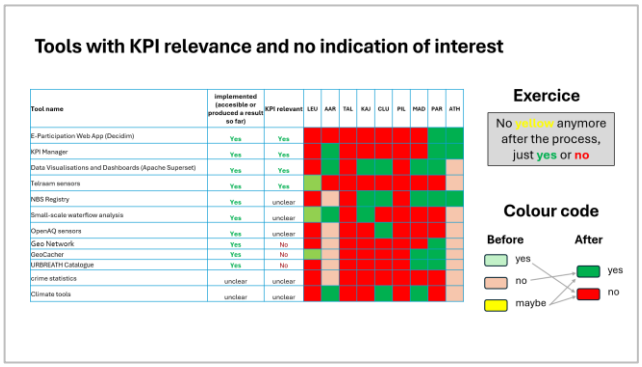
The central part of the session was dedicated to a workshop prepared by the task leads for Tasks 5.2, 5.3, and 5.4. The goal of the workshop was to update (live) the Toolbox interest of the pilot cities, based on guiding instructions. An overview was given of the roadmap from the first demo café in Cluj-Napoca, the availability, maturity, usability and interactivity of tools in Month 18, the evolution of the 6-step plan, and the second demo café in Tallinn. The exercise was explained: updating the list with tool interests, based on the documentation and learning-by-doing sessions initiated by the technical teams connected to WPs 3-4. A colour code was introduced and explained (see also Figure 17), and pilots updated the table live by accessing the presentation. After this exercise, the following steps for early 2026 were outlined: pilot cities will be asked to provide insights into any changes. This will help technical teams better understand the reasons behind evolving interests and needs.

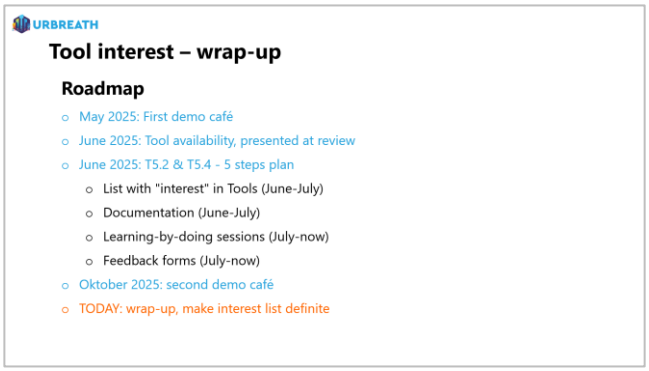
Two pilot cities were unable to join this Cities Call and were later instructed by e-mail to update the missing information. Also, the other cities were invited to update their choices. The session learned that not all learning-by-doing sessions have yet been undertaken and that information is sometimes missing to help pilots make decisions about their preferences.

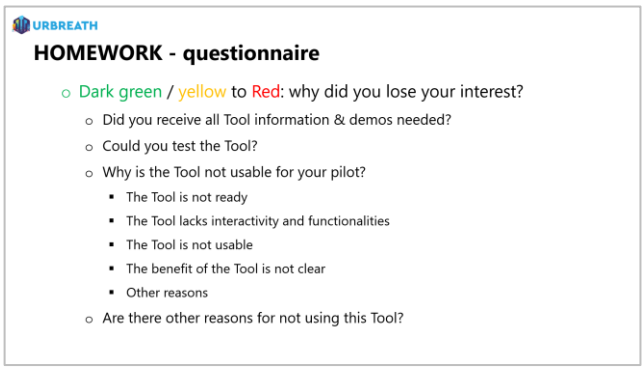
The Cities Call ended with an exercise with the pilot cities to consider how to improve existing solutions by combining tools such as surveys, AI analyses, dashboard visualisations, and integrations with a KPI manager for qualitative KPI monitoring (covering most of the KPIs).

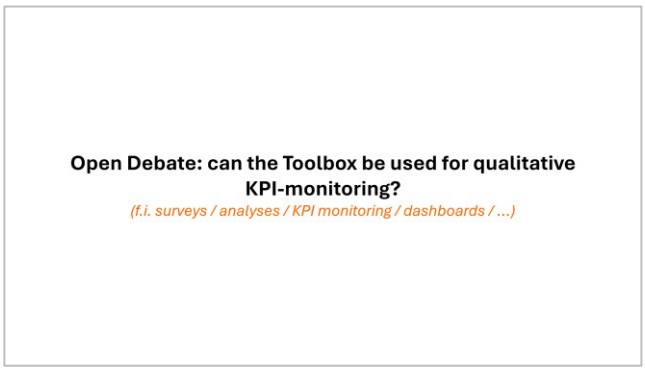
Figure 17: Selection of presentation slides used to present the next steps following the train-the-trainer session on citizen science (Task 5.3), the update of tool interest by the pilot cities (Task 5.4) and an open discussion on tool integration to support qualitative KPI monitoring.











Cities Call - December 12th, 2025

Task 5.6 began by reviewing the pilots' progress on data monitoring protocols, including NBS descriptions, baseline data, and data management details. A new submission deadline was set for December 17th, 2025. Ongoing activities and upcoming plans for Task 5.6 were also shared with the pilot cities. Task 5.3 presented an updated focus and planning scheme, reflecting feedback from the pilot cities since the previous Cities Call (see Figure 18).

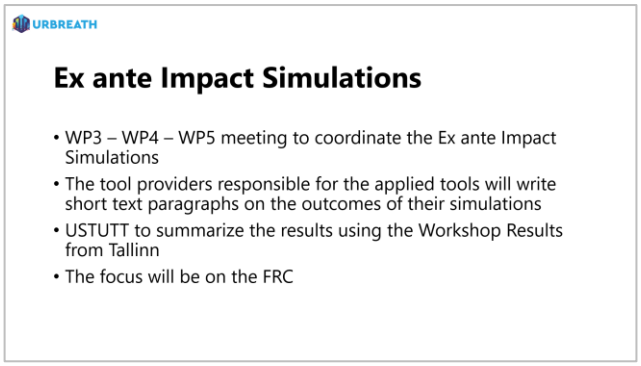
Additionally, two technical demonstrations were provided: one on the 3-30-300 index model integrated into a viewer by VITO, highlighting parameter customisation, and another on processed satellite data by LAT40. WP7 introduced the concept for an upcoming joint WP5–WP7 workshop (planned for January 2026) on the financial impacts of NBS, developed in collaboration with Task 5.3. WP6 also proposed expanding the pilot cities' PowerPoint template to include more detailed updates on NBS rollout progress.

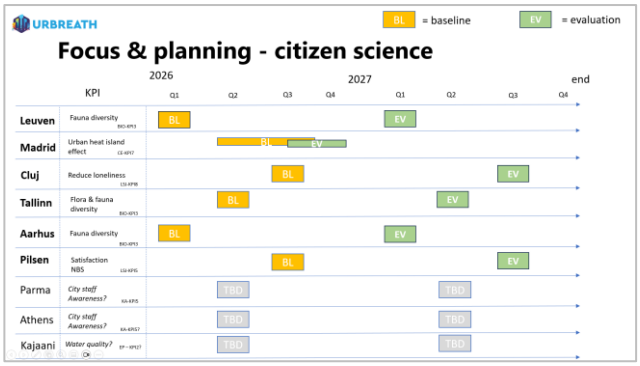
Pilots presented their updates during their 5-minute pitches. **Key Updates from Pilot Cities**:

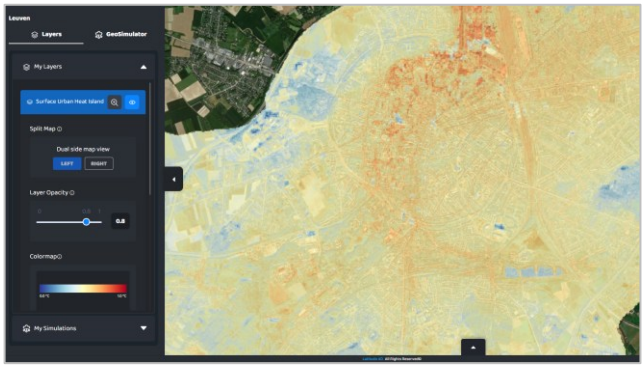
- Cluj-Napoca: Initiated planting across all four NBS sites, with 40 students planting 1,160 lower plants and 129 trees as part of a hands-on learning and guerrilla planting initiative. The planting activities were mapped in the project timeline. Monitoring surveys were distributed, a whitepaper on NBS is underway, and an interim KPI monitoring status report was provided. Additional LLL activities are planned from March 2026 on.
- Tallinn: Finalised technical designs for the pilot site. Talltech students contributed to playground designs, and preparations for public procurement of construction works are ongoing. An NBS specialist is drafting a guidance document for municipal staff.
- Leuven: The city council approved the NBS plan. Detailed reports on LLL activities with citizens were shared, along with progress on NBS monitoring. Numerous contacts were established with URBREATH technical partners to explore tool and model integration.
- Pilsen: Provided mobility data for URBREATH technical partners and plans to use AI to monitor social media for feedback on NBS rollout satisfaction.

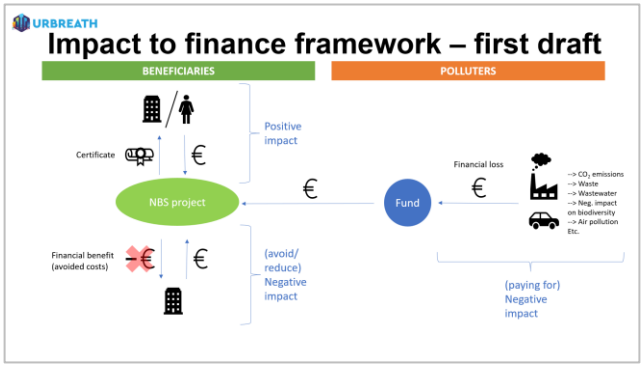
- Athens: Continued work on an LLL activity (the last for 2025) and reported good progress on KPI monitoring.
- Kajaani: Completed installation of a nature-based stormwater management system. Due to the current snow, system performance will be assessed in the spring. Plans were shared to reduce litter and plastic in snow, including a youth workshop and monitoring of snow load volumes.
- Parma: Presented URBREATH tools and models to various departments, initiated training sessions, and organised LLL neighbourhood meetings.
- Aarhus: Began construction at the pilot site and discussed common challenges with other pilot partners. Local election results were positive for the project. A survey revealed that negative perceptions of new traffic measures mostly came from outside the neighbourhood, while residents were supportive. Aarhus also reported progress on developing a Liveability Index.

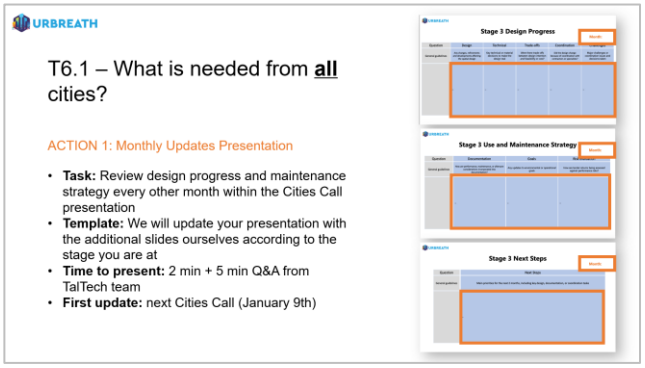
Figure 18: Selection of presentation slides used to present the next steps in KPI monitoring (Task 5.6), the focus and planning of citizen science activities (Task 5.3), two demos on URBREATH simulation models (VITO and LAT40), near-future WP5-7 workshop plans and a pitch to upgrade the general reporting presentation template.











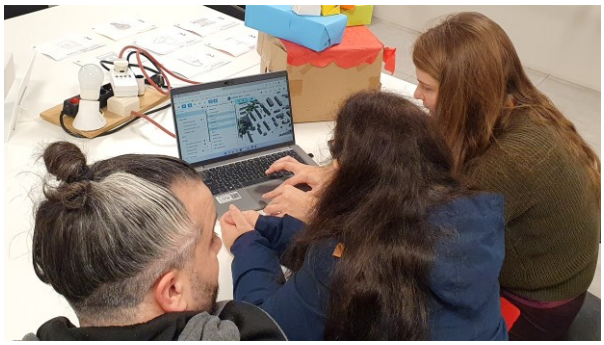
3.2.2 Custom LLL-support

Task 5.3 actively supports the LLLs at the local level by:

- Advising (in person or in small groups) the LLL-managers of all URBREATH FRCs and FLCs on the setup and running of LLLs. During live meetings (City of Leuven), the General Assembly, Cities Calls, dedicated e-mails and virtual meetings.
- Actively participate in LLLs whenever possible. For example, take part in three LLLs organised with residents and stakeholders at the Leuven pilot site, providing support to the LLL manager, co-creation specialist, and mobility experts.

Figure 19: Atmospheric pictures from the LLL organised in Kessel-Lo on November 19th, 2025, with residents, using supporting URBREATH tools (LDT, traffic sensor monitoring).






- Streamlining and facilitating learning-by-doing sessions for all URBREATH front-runner and follower cities, followed by in-depth meetings with local technical experts (at the levels of tools, NBS and IT-infrastructure) and consortium partners. Help participants understand and effectively use the available tools and models—such as the integrated features of the LDTs.
- Advising the URBREATH technical teams on the city-specific needs and concerns of URBREATH FRCs and FLCs.
- Supporting dissemination (e.g. the live monthly cluster meeting of September 19th) and reporting activities (e.g. publications for social media) by the LLL-managers.

Targeted bilateral and group meetings play a crucial role in supplementing broader coordination activities, ensuring that pilot cities receive tailored support. These meetings help WP5 address the unique needs of each city, while also promoting knowledge sharing, technical alignment, and collaborative development across the entire URBREATH project.

3.2.3 Task 5.3 support of specific activities involving pilot cities and their LLLs

Task 5.3 supported the pilots in preparing to present their progress at the review meeting and also supported the pilot cities at multiple levels during the GA meeting in Tallinn (as explained in more detail in Deliverable 5.2, Chapter 4).

- For the **EC review meeting** of September 25th, 2025, Tasks 5.3 and 5.2 took up the organisation of the 5-minute presentation of all pilot cities' timelines and their progress at the level of NBS and LLL activities. By creating and fine-tuning presentation template slides, by advising and instructing on the step-by-step approach in providing content and by organising multiple rehearsals and feedback moments. By optimising the content and timing.
- Regarding the preparation and content of the **General Assembly in Tallinn** (October 2025), Task 5.3 actively represented the interests and perspectives of the pilot cities during the technical meeting. Task 5.3 organised a train-the-trainer session on citizen science (see Chapter 3.1) and coordinated three workshops for all pilot cities. Together with Task 5.2, WPs3-4, and the Lisbon Council, Task 5.3 also took a leading role in preparing and leading the demo café. By participating in the demo café, Task 5.3 ensured that the pilot cities' interests were advocated and protected.

3.2.4 Task 5.3 alignment support with other tasks and WPs, and EU projects

Deliverable 5.2 already extensively reports on the contribution of WP5 synchronisation activities to other tasks, other WPs, and even other European Union (EU) projects (see Deliverable 5.2, Chapter 2 for a more detailed reporting). Task 5.3 significantly contributes to those efforts:

- Task specific bi-weekly WP5 meetings and WP5 Teams channel communications.
- Alignment meetings with other URBREATH WPs, such as the weekly WP lead meetings and monthly project management meetings.
- Active contribution to workshops and exercises organised by other WPs:
    - A series of **WP2** workshops on risk management and adaptive pathways for FLCs (September).
    - A series of **WP6** workshops on the alignment of timelines for LLL activities and NBS deployment.
    - Planning of a series of joint **WPs 5-7** workshops on impact on finance frameworks.
- Alignment with and active Task 5.3 participation in other EU-projects during the monthly urban greening and renaturing cluster meetings and Task 5.3-related webinars.
- Participation in reporting and dissemination activities.

3.3 LLL initiatives by FRCs and FLCs

This chapter provides a comprehensive overview of all LLL activities conducted by the URBREATH pilot cities, neatly sorted by climatic zone. It includes an updated timeline of these initiatives and illustrates LLLs' local visibility through selected examples.

The overall structure of the use cases and location descriptions was previously outlined in Deliverable 5.5. Pilots regularly provide updates on their LLL activities during the monthly Cities Calls, where they discuss challenges, best practices, techniques used, and lessons learned. These sessions also serve as a platform for pilots to report on their timelines, with a focus on NBS plans and upcoming LLL efforts.

3.3.1 Atlantic climatic zone

3.3.1.1 LLL activities by the front-runner city of Leuven

Updated timeline Month 24

Figure 20: Timeline on Month 24 for FRC Leuven - Atlantic climatic zone.

LLL activities till Month 24

Table 2: Overview of the LLL-activities till Month 24 of FRC Leuven - Atlantic climatic zone.

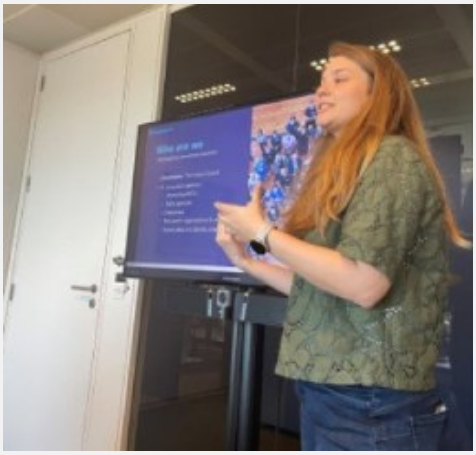
Date	Activity 01 - 02 April 2025
Goal	To collect input without giving pre-designed plans, so citizens can freely suggest their ideas, input and concerns of the area.

Location	 *Tarweschoof* is a small square located close to Krakau Square.
Stakeholders involved	Neighbourhood: A diverse group of citizens, with 226 households personally invited. Participants represented a wide range of ages and ethnic backgrounds and were approximately equally split between genders.
Methods used	• Provided information about the project. • Engaged in personal interactions with city staff, local police, and neighbourhood community workers to capture input and involve quieter participants. • Used a whiteboard for ideas, inspiration images for feedback, and location mapping with sticky notes. • Conducted door-to-door conversations.
Outcome	• Gathered input for the upcoming redesign of the area. • Engaged citizens in the project through Citizen Science activities, specifically recruiting participants for *Telraam* monitoring.
Pictures	   

Date	Activity 02 - 22 April 2025
Goal	A department meeting was held to present the URBREATH project to colleagues, share its objectives, and facilitate the exchange of ideas and knowledge on potential use cases relevant or beneficial to the team.
Location	Brusselsestraat, 3000 Leuven.
Stakeholders involved	The meeting included experts from the City of Leuven and the roadwork department.
Methods used	• Presentations were given to introduce the project and its objectives. • Whiteboards were used to facilitate idea sharing and collaborative discussion. • Relevant documentation was distributed to participants prior to the meeting for review.
Outcome	The main focus of the meeting was to raise colleagues' awareness of the project and its early-stage tools, gather feedback on potential connections within the city, and collect initial insights into tool usage and applications.

Date	Activity 03 - 23 April 2025
Goal	LOV organised a brainstorming meeting at META Leuven to explore how digital twin technologies could be leveraged for the "Leuven cultural capital bid book." The discussion focused on opportunities to collaborate with artists and to integrate creative, cultural, and artistic approaches that combine digital technologies with nature, with the aim of making these innovations more accessible and engaging for citizens.
Location	META Leuven.
Stakeholders involved	Brainstorm LOV attendees.
Methods used	Live meeting, specifically addressing how to combine digital technologies and nature to engage citizens through creative, interesting projects.
Outcome	The final bid book was written, and Leuven won the call to become the cultural capital of 2030.

Picture	

Date	Activity 04 - 29 April 2025
Goal	To inform about the project and explore the interests of the different departments in specific tools/possibilities of URBREATH.
Location	Leuven City Council office.
Stakeholders involved	Cockpit meeting with the heads of departments involved with NBS and climate adaptation projects.
Methods used	Live meeting with PPT and discussion.
Outcome	Collected the initial interests for the different tools from different departments.
Pictures	 

Date	Activity 05 - 28 May 2025
Goal	To engage minority groups and collect their input to help develop a plan that is both integrated and accessible.
Location	Leuven City Council office.
Stakeholders involved	Accessibility Council (minority groups).
Methods used	Presentation and exchange (discussion of the plans on the square).
Outcome	Advice on NBS set-up from the perspective of people with disabilities. The Accessibility Council is a mix of people with all kinds of disabilities, broadening the discussion to accessibility. The Council's attendees provided interesting feedback and points of attention on the plan, which will be taken into account in its further development.

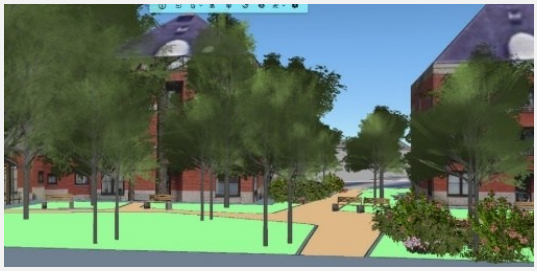
Date	Activity 06 - 10 Juni 2025
Goal	To present the plan to external experts, facilitate an exchange of ideas, and gather feedback on specific aspects such as accessibility and the implementation of Nature-Based Solutions.
Location	Brussels.
Stakeholders involved	Expert consultation (Green Deal).
Methods used	Live meeting, PowerPoint presentations and discussions.
Outcome	The Krakau square-Tarweschoof plan was showcased and discussed, including a brainstorming session on specific viewpoints at round tables, and is incorporated into the need for further policy advice in the "Green deal".
Picture	

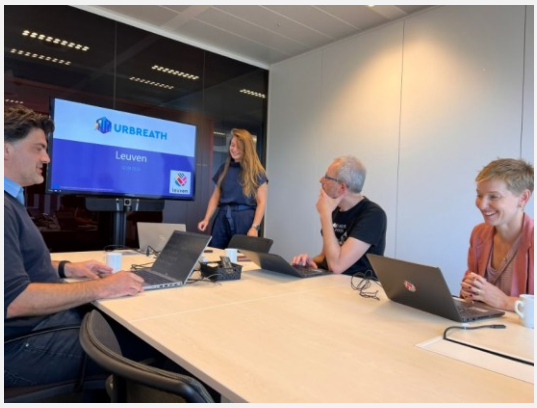
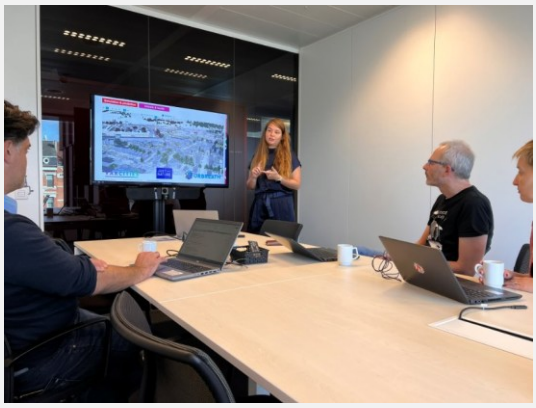
Date	Activity 07 - 26 August 2025
Goal	To provide updates to the green department about the progress of the URBREATH projects and to exchange ideas for applying project tools and solutions in real-life cases.
Location	Kruidtuin Leuven.
Stakeholders involved	Expert colleagues from the Greening Department.
Methods used	Live meeting, PowerPoint presentations and discussions.
Outcome	• Input for some tools from the URBREATH Toolbox. • Interest in some of the functionalities (BAF, tree growth, ...) developed in URBREATH and possible future integration into the process of policy making. • The meeting generated ideas for applying URBREATH tools to various Greening Department cases beyond just using Krakau as a demonstration site. These ideas were further explored in follow-up one-on-one meetings.
Pictures	 

Date	Activity 08 - 22 September 2025
Goal	To provide updates and facilitate an exchange of ideas and knowledge with the Data & GIS department about the latest developments in the URBREATH project.
Location	Stadskantoor Leuven (City Council office) / Online.
Stakeholders involved	Colleague experts of the DATA&GIS department.
Methods used	Live meeting, PowerPoint presentations and discussions.
Outcome	• The department was informed about the most recent status of the URBREATH project. • Interest mapping was conducted to identify which URBREATH tools were most relevant to the department's needs.

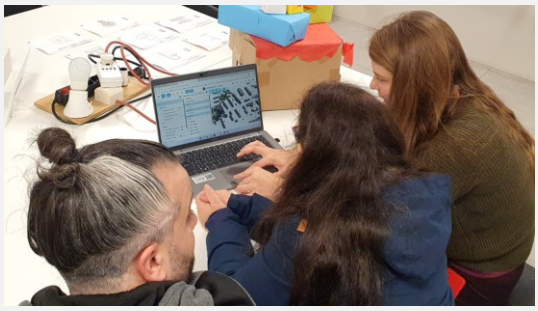
Picture	

Date	Activity 09 - 24 September 2025
Goal	Citizens can review the NBS design and provide feedback on the next steps in the NBS rollout.
Location	Casablanca centre, LoLanden meeting centre.
Stakeholders involved	The neighbourhood includes a diverse group of citizens, with 226 households personally invited. Participants represented a broad range of ages and ethnic backgrounds and were approximately equally split between genders.
Methods used	Traffic expert for the city of Leuven.
Outcome	• Leuven's' LDT. • Maps of the NBS site. • Post-it exercises. • Input for the upcoming redesign of the Krakau square. • Explanation of different scenarios and simulations in the area. • Survey of the "pre-measures".
Pictures	 

Date	Activity 10 - 26 September 2025
Goal	To update and exchange with the urban planning department regarding the developments of the URBREATH projects and collect ideas for application in real-life cases.
Location	Stadskantoor Leuven (City Council office).
Stakeholders involved	Colleague experts from the Urban Planning Department.
Methods used	Live meeting, PowerPoint presentations and discussions.
Outcome	• Interest mapping was conducted to identify which URBREATH tools were most relevant to the Urban Planning Department. • The meeting generated ideas for applying these tools to various cases beyond just using Krakau as a demonstration site. These ideas were further explored in follow-up one-on-one meetings.
Pictures	 

Date	Activity 11 - 19 November 2025
Goal	To raise awareness among citizens, to offer interactive workshops that are fun and accessible to children as well, and to collect final input from citizens.
Location	Casablanca centre, LoLanden meeting centre.
Stakeholders involved	The neighbourhood includes a diverse group of citizens, with 226 households personally invited. Participants represented a broad range of ages and ethnic backgrounds and were approximately equally split between genders. Some neighbours from the larger surrounding streets were also present.

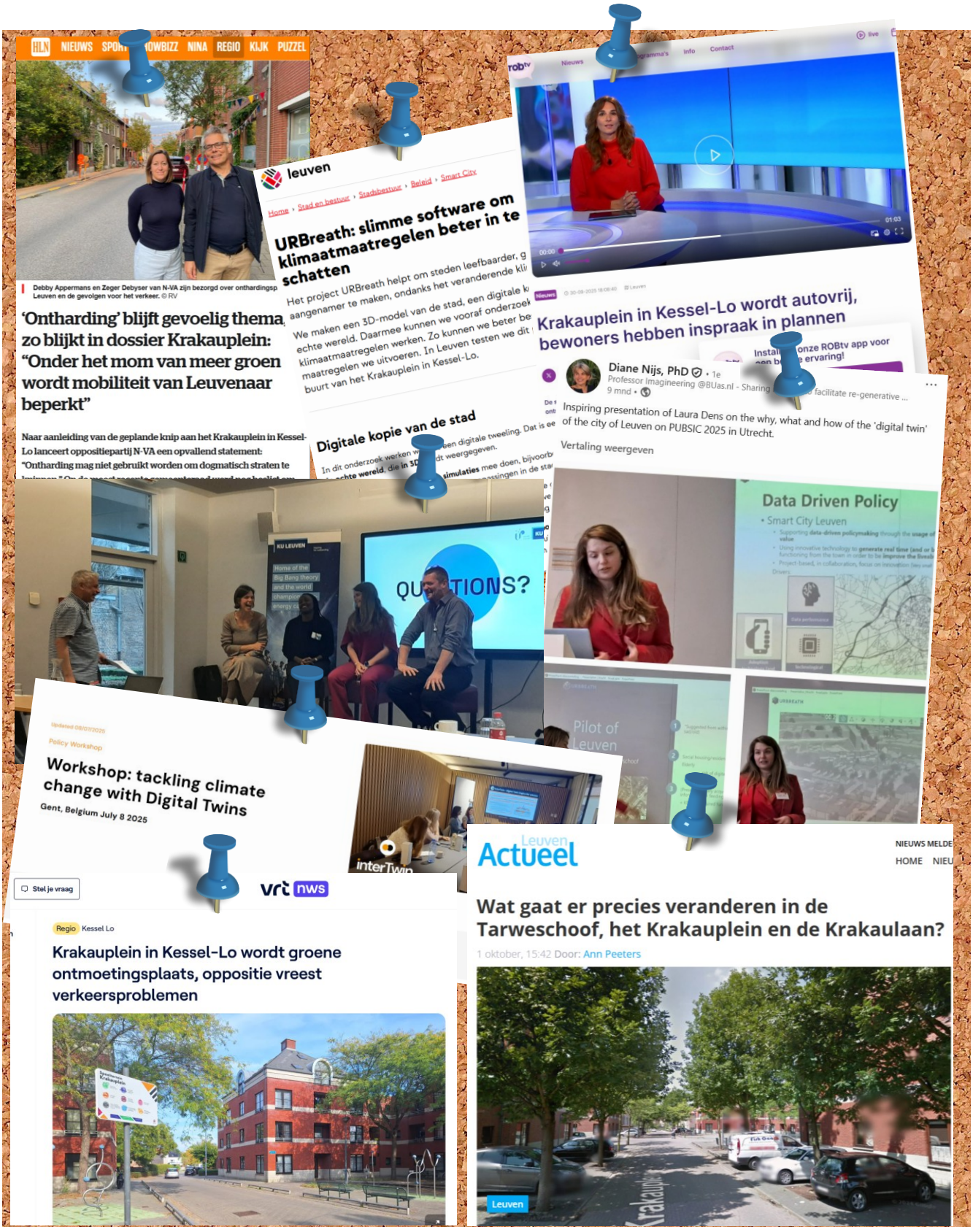
Methods used	• Information boards, printout of the plan, reference images and descriptions. • Organisation involved with energy saving at home, they were present with plans + possibility to schedule a meeting after for home-visit and personalised tips/aid (We had an additional meeting with them on August 26th, 2025). • "Water table" - hosted by the region (Province Vlaams-Brabant), explaining water-infiltration mechanisms. • Clay workshops, birdhouse crafting.
Outcome	• Final input. • Small crafts to help nature at home (birdhouses, birdfeeders). • Concerns about the general mobility plan were raised and will be further investigated. • Some people made appointments with the energy-saving organisation for a follow-up at home. • An increase in awareness regarding water infiltration.
Pictures	   


Date	Activity 12 - 11 December 2025
Goal	Update and demo the DT possibilities to the designers by showcasing the Krakau square, collecting feedback and input.
Location	Leuven City Council office.
Stakeholders involved	Green and public works designers, the coordinator of the youth department (about 10 people).
Methods used	PowerPoint presentation and open discussion
Outcome	Input and feedback were collected regarding the application of the Digital Twin (DT), including: • Identified needs from designers. • Potential for bridging to policy making. • Strategies for using the DT as a communication tool with citizens.

	• Suggestions for possible use cases, which enhanced interest and knowledge about the tools.

Exposure

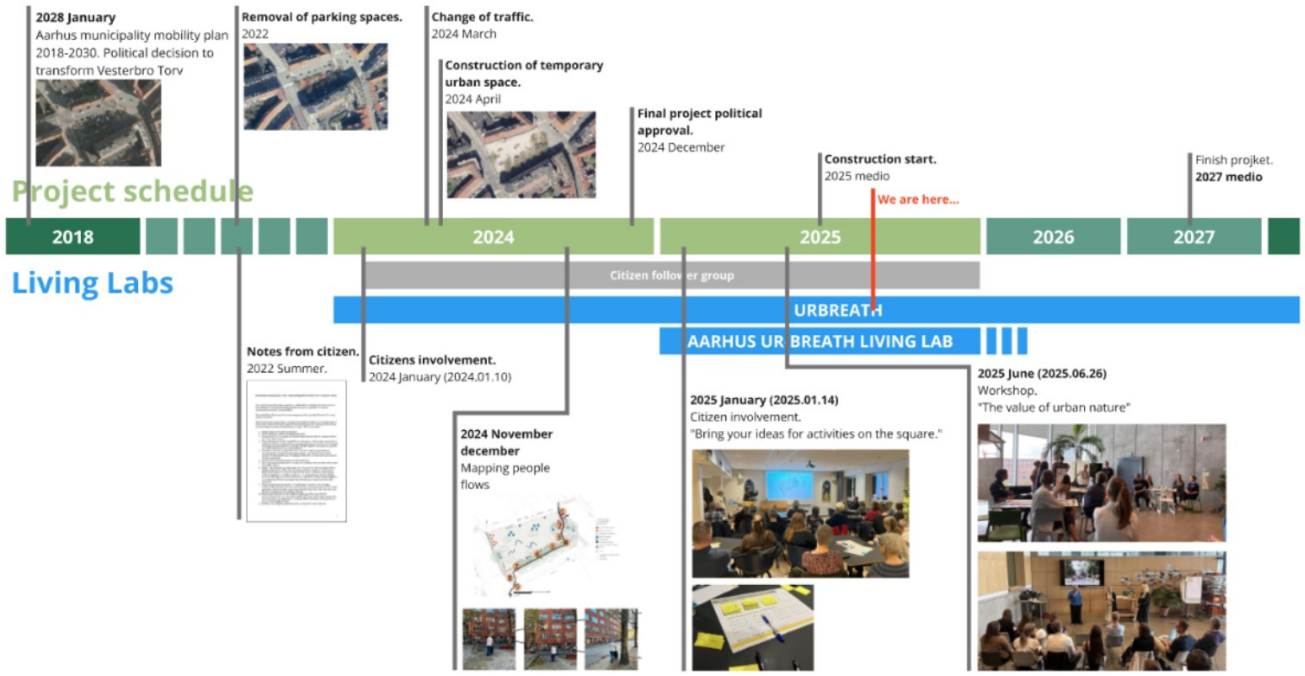
Figure 21: Selection of dissemination activities till Month 24 for FRC Leuven - Atlantic climatic zone.


NIEUWS
REGIO
Debby Appermans en Zeger Debyser van N-VA zijn bezorgd over onthardingsp
Leuven en de gevolgen voor het verkeer. © RV
'Ontharding' blijft gevoelig thema, zo blijkt in dossier Krakauplein: "Onder het mom van meer groen wordt mobiliteit van Leuvenaar beperkt"
Naar aanleiding van de geplande knip aan het Krakauplein in Kessel-Lo lanceert oppositiepartij N-VA een opvallend statement: "Ontharding mag niet gebruikt worden om dogmatisch straten te
leuven
URBreath: slimme software om klimaatmaatregelen beter in te schatten
Het project URBreath helpt om steden leefbaarder, g
aangenamer te maken, ondanks het veranderende kli
We maken een 3D-model van de stad, een digitale k
echte wereld. Daarmee kunnen we vooraf onderzoek
klimaatmaatregelen werken. Zo kunnen we beter be
maatregelen we uitvoeren. In Leuven testen we dit
buurt van het Krakauplein in Kessel-Lo.
Digitale kopie van de stad
Krakauplein in Kessel-Lo wordt autovrij, bewoners hebben inspraak in plannen
Diane Nijs, PhD
Professor Imagineering @BUas.nl - Sharing
9 mnd
Inspiring presentation of Laura Dens on the why, what and how of the 'digital twin' of the city of Leuven on PUBSIC 2025 in Utrecht.
Vertaling weergeven
Data Driven Policy
Smart City Leuven
QUESTIONS?
Pilot of Leuven
Policy Workshop
Workshop: tackling climate change with Digital Twins
Gent, Belgium July 8 2025
Stel je vraag
vrt nws
Regio Kessel Lo
Krakauplein in Kessel-Lo wordt groene ontmoetingsplaats, oppositie vreest verkeersproblemen
Leuven Actueel
Wat gaat er precies veranderen in de Tarweschoof, het Krakauplein en de Krakaulaan?
1 oktober, 15:42 Door: Ann Peeters
Leuven

3.3.1.2 LLL activities by the follower city of Aarhus

Updated timeline Month 24

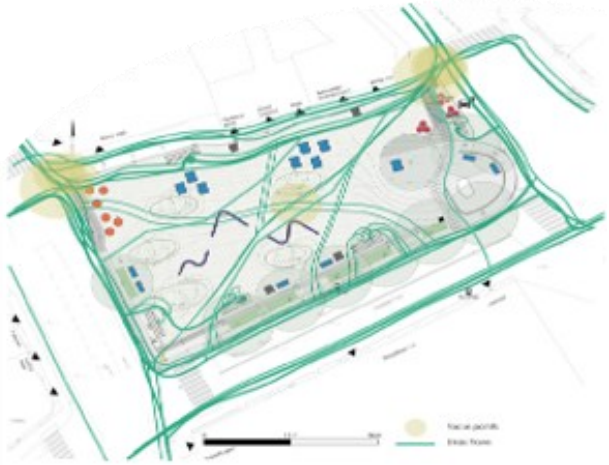
Figure 22: Timeline on Month 24 for FLC Aarhus - Atlantic climatic zone.

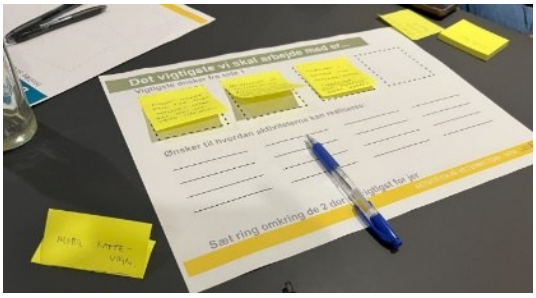


LLL activities till Month 24

Table 3: Overview of the LLL-activities till Month 24 of FLC Aarhus – Atlantic climatic zone.

Date	Activity - Winter 2024-2025
Goal	Flow analysis and mini stop-up interviews with users of the square. Learning more about the before/current use of the square.
Location	At the square.
Stakeholders involved	Users of the square (mainly citizens walking or biking).
Outcome	Knowledge of current flows and what is problematic according to users, plus baseline information for KPIs.

Picture	

Date	Activity 2 - 01 January 2025
Goal	Citizen input and wishes for activities on the square after the remodel, and information about the final plans for the remodel.
Location	Folkehuset Møllestien (verry close to the square).
Stakeholders involved	Citizen follower group, accessibility council from the city and city officials.
Outcome	Inputs on the final plan and wishes for activities.
Pictures	  

Date	Activity 3 - 26 June 2025
Goal	Highlighting the importance of urban greening and exploring methods to assess its impact on creating more liveable cities.
Location	Dokk1.
Stakeholders involved	30 representatives from the private sector, research institutions, NGOs, start-ups, city experts.
Outcome	The meeting resulted in a shared understanding of the value of urban greening, generated numerous ideas for measuring this value, and fostered productive dialogue across sectors.
Pictures	 

Exposure

Figure 23: Selection of dissemination activities till Month 24 for FLC Aarhus - Atlantic climatic zone.


URBREATH Horizon Europe Project
884 followers
4mo •
Earlier in June, Aarhus welcomed over 30 stakeholders for an insightful workshop on "The Value of Urban Nature – and How Can We Measure It?", hosted at Dokk1 by the City of Aarhus.
From planners to academics, participants explored how urban nature enhance liveability—and how to better capture, quantify, and communicate its value.
The discussions marked an important step toward rethinking nature as a core in shaping healthier, more resilient cities.
Read more: https://lnkd.in/gbYKhNGr
#URBREATH_eu #SustainableCities #NatureBasedSolutions #Aarhus #GreenC
#ClimateResilience #UrbanPlanning
URBREATH Workshop: The Value Of Urban Nature – And How Can We Measure It?
VILDE TEKNOLOGIER
September 1, 2025 • News •
What a fantastic day! We were thrilled to be part of the Vilde Teknologier Festival in Aarhus on 29 August.
Our project partner, the City of Aarhus, was excited to have its own stand and showcase URBREATH's innovative digital twin technology. It was a brilliant opportunity to engage directly with citizens and technology enthusiasts from the community. We had so many great conversations and loved seeing the curiosity about how digital solutions can help shape the cities of tomorrow. Thank you for your insightful questions and enthusiasm!
It was a true pleasure to share our work with you and demonstrate how technology can foster citizen engagement.
We look forward to more events like this!
AARHUS KOMMUNE
Høringer
Begivenheder
Udviklingsprojekter
URBREATH
Opbygning af digitale værktøjer til at skabe en klimarobuste og naturbaserede udviklinger.
URBREATH
Vesterbro Torv / Aarhus
Fakta om projektet
En del af Horizon Europe-programmet
Projektperiode: 2024–2027
35 partnere – ledet af Lisabon Council
Aarhus er en af i alt 9 pilotbyer
ITK
Mathilde Epstein
Hack Kampmanns
URBREATH
About URBREATH
Pilots
Who We Are
Resources
Media
Blog
GET IN TOUCH
Exploring The Digital Twin: URBREATH Living Lab Workshop In Aarhus
Home » News » Exploring the Digital Twin: URBREATH Living Lab Workshop in Aarhus
September 4, 2025 • News •
On September 8, 2025, the City of Aarhus will host an internal Living Lab workshop in Aarhus, Denmark, bringing together city experts from diverse backgrounds to explore the practical use cases of our digital twin technology. This collaborative session will enable participants to delve into the potential of digital twins to support urban planning, environmental monitoring, and citizen engagement. By combining expertise from various city departments, we aim to identify innovative solutions and applications that can improve decision-making and enhance the
Search for...
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Approach
Results

3.3.2 Boreal climatic zone

3.3.2.1 LLL activities by the front-runner city of Tallinn

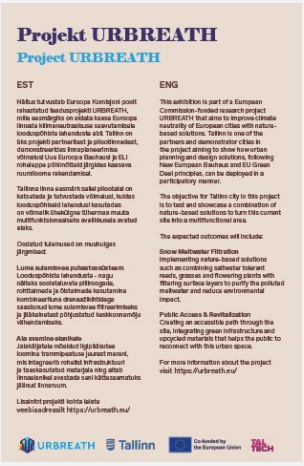
Updated timeline Month 24

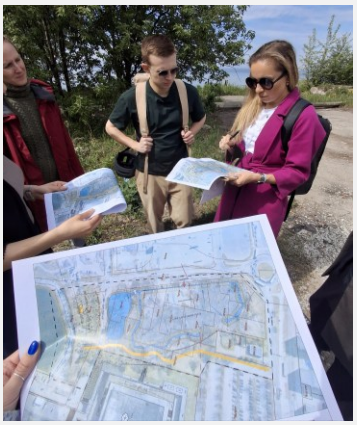
Figure 24: Timeline on Month 24 for FRC Tallinn - Boreal climatic zone.

LLL activities till Month 24

Table 4: Overview of the LLL-activities till Month 24 of FRC Tallinn - Boreal climatic zone.

Date	Activity 01 - 01 September 2024 – URBREATH Exhibition
Goal	The exhibition served multiple purposes. The first aim was to introduce the project, the planned implementations in the area, and the nature of NBS solutions in general. Secondly, the objective is to display waste collected from the pilot side, carried to the snow dumping site and stored there throughout the winter. In conclusion, the exhibition, which is kept on the pilot site until the area is repurposed, is both educational and informative. The exhibition was set up in parallel with the Urban Space Festival, which was organised in the area, bringing many visitors to the site.
Location	Pilot site, Outdoor Exhibition: Winter's Waste - Reimagining Urban Brownfields with Nature-Based Solutions.
Stakeholders involved	URBREATH project team, Local community and visitors.

Methods used	Site-specific curation, Creative presentations.
Outcome	Public visibility, knowledge sharing.
Pictures	 

Date	Activity 02 - 29 May 2025 - Pilot site visit
Goal	Discussions about implementation plans and stakeholder involvement.
Location	Pilot site.
Stakeholders involved	URBREATH project team, designer, landscape architect, municipality specialists, technical designer, NBS expert, and local stakeholders.
Methods used	Site visit, on-site discussions.
Outcome	Project technical design discussions, engagement of local stakeholders (namely, the guerrilla - that is, the unofficial sauna team in the area).
Pictures	 

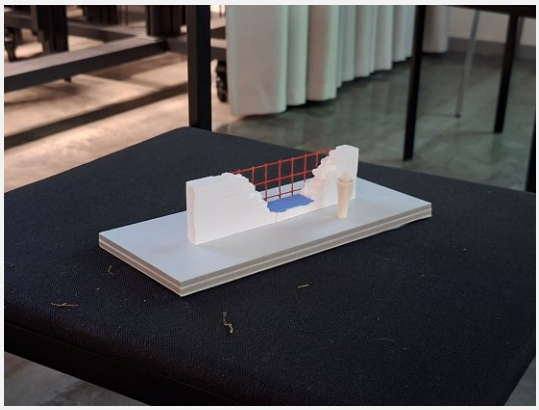
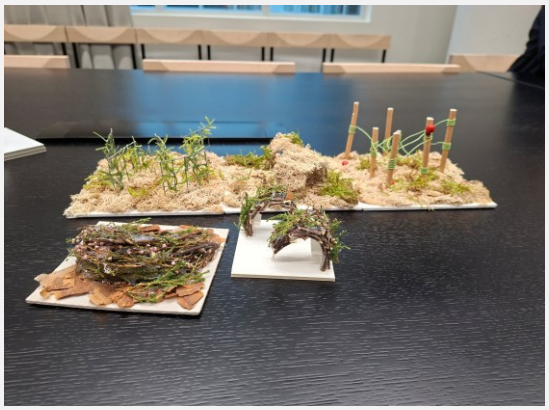
	

Date	Activity 03 - 01 June 2025 - SPOGOMI clean-up event
Goal	Spogomi Clean-up competition. The primary purpose of the competition was to raise awareness of urban waste and to promote clean urban areas. The accompanying goal for the project was to bring visitors and city officials to the site, introduce the project's plans, and inform visitors of the purpose of the NBSs planned for the area.
Location	Pilot site.
Stakeholders involved	Participants of the clean-up competition, URBREATH project team, City representatives, Local community, visitors and general public.
Methods used	Clean-up competition (Spogomi), on-site introduction, future planning discussions, and direct conversations.
Outcome	Pilot site visibility, community engagement: strengthened collaboration with the city, foundation for co-creation, cleaned the pilot site. Educational outcome - awareness of the waste brought to the area with malicious intentions, as well as the amount of waste gathered at the site with the snow from the streets. As the event was broadcast on the Estonian national television, where URBREATH team members introduced the waste found in the area, it brought attention to the site.
Pictures	 

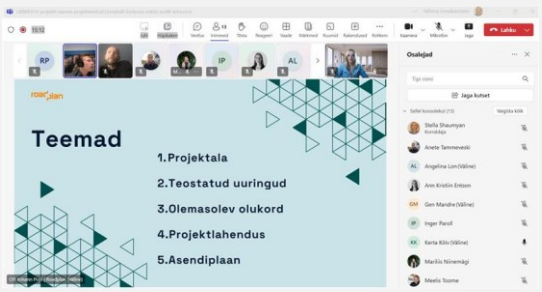
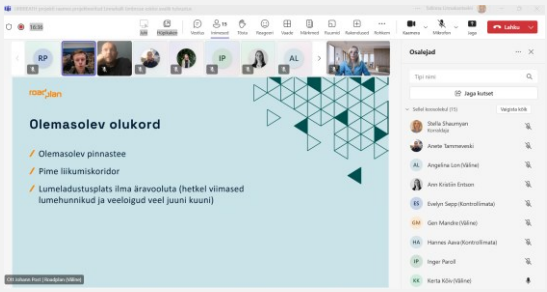
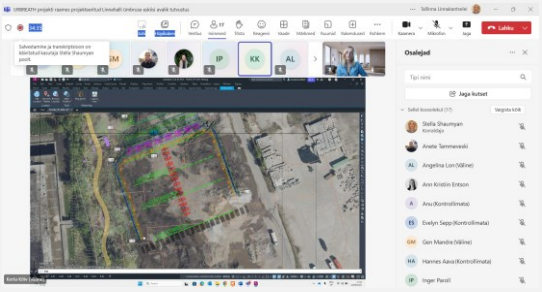
	 

Date	Activity 04 – 15-16 June 2025 - URBREATH side event at festival
Goal	The Tallinn team organised a dedicated URBREATH area as part of the Tallinn Urban Space Festival. The festival attracted large numbers of visitors, generating exposure for the project and the site. Three public podcasts were recorded on site - allowing visitors to listen to the discussions about the pilot site as well as engage in the debate; educational workshops for children were organised in pilot site - teaching children about the complex relations of waste and climate change; a workshop was organised on site on reusing branches gathered from the site to build small chairs - the workshop served an educational goal on recycling materials. The site was cleaned and made accessible by the time of the event, so visitors could easily access the area. This created interest in the area, attracted new visitors and increased accessibility and acceptance of the site.
Location	Pilot site.
Stakeholders involved	Local community, URBREATH project team, city representatives, festival participants, general public (the event was broadcast on national television), project stakeholders - sauna team.
Methods used	On-site discussions, on-site surveys, public podcast recordings, workshops, excursions, a specific exhibition on the future of the area, and a guided exhibition tour.
Outcome	community involvement, knowledge sharing, baseline data, tangible results, increased visibility of URBREATH, and educational.

Pictures	     

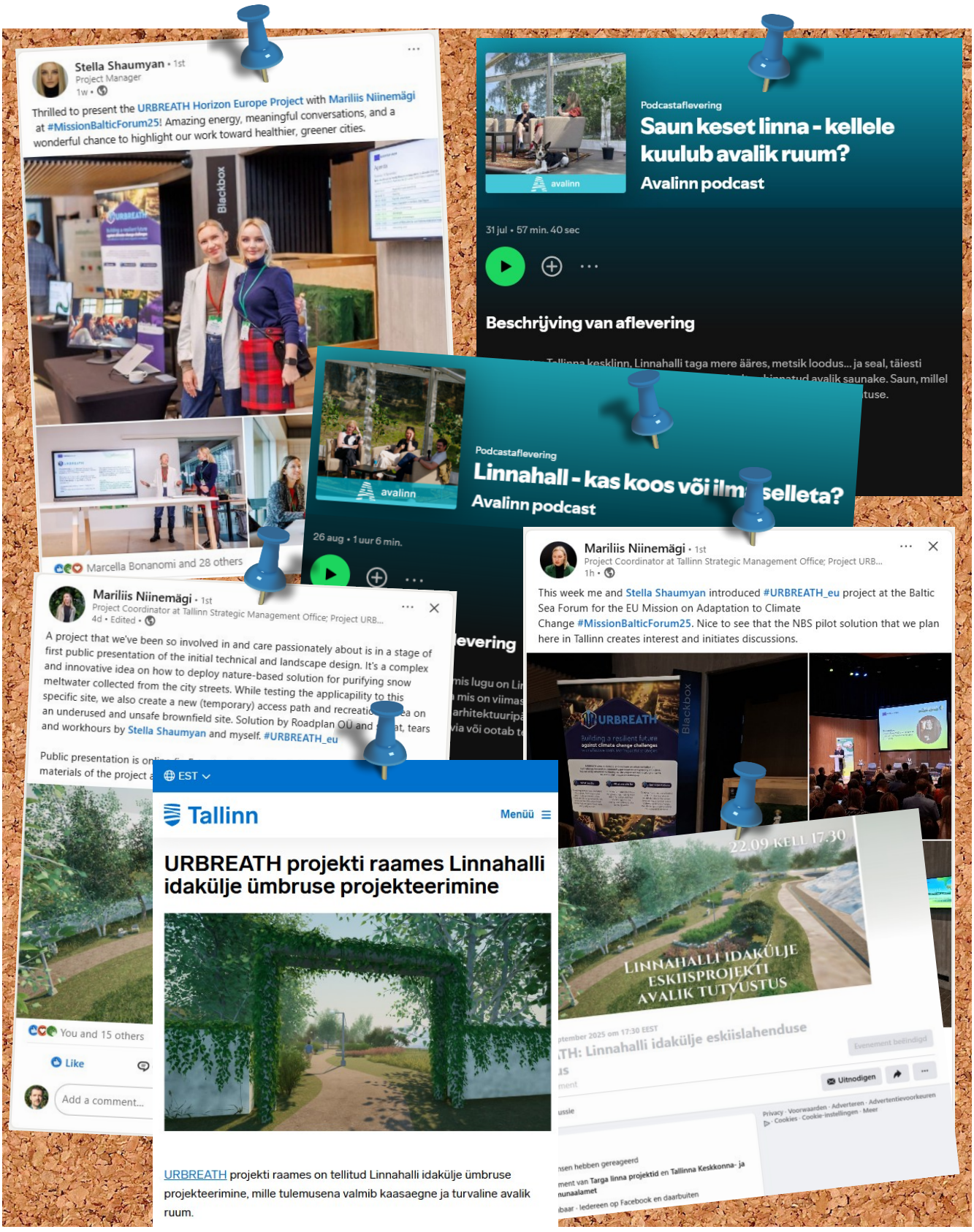
Date	Activity 05 - 01 September 2025 - ONGOING TALTECH COURSE about the site
Goal	Student engagement - educational, new ideas for implementation, awareness of NBS solutions and using recycled materials in design, awareness of climate change and snow wastewater management.
Location	TalTech University.
Stakeholders involved	TalTech architectural students, Municipality representatives, URBREATH project team, TalTech URBREATH team members.
Methods used	Participatory design sessions, site visits and observations, and feedback loops.
Outcome	Concrete design proposals, Visual materials, strengthened collaboration, increased visibility of URBREATH, awareness of climate change, recycled materials, snow meltwater management.
Pictures	   

Date	Activity 06 - 22 September 2025 - PUBLIC PRESENTATION of the project design
Goal	Introducing project technical and landscape architectural design to the general public, asking for feedback on the design, opening discussion and raising awareness.
Location	Online.
Stakeholders involved	URBREATH team, designers, and the general public.

Methods used	Online event, public website with access to the design documents and plans, equipped with feedback options.
Outcome	URBREATH project visibility, feedback from the general public on the pilot site design plans.
Pictures	  

Exposure

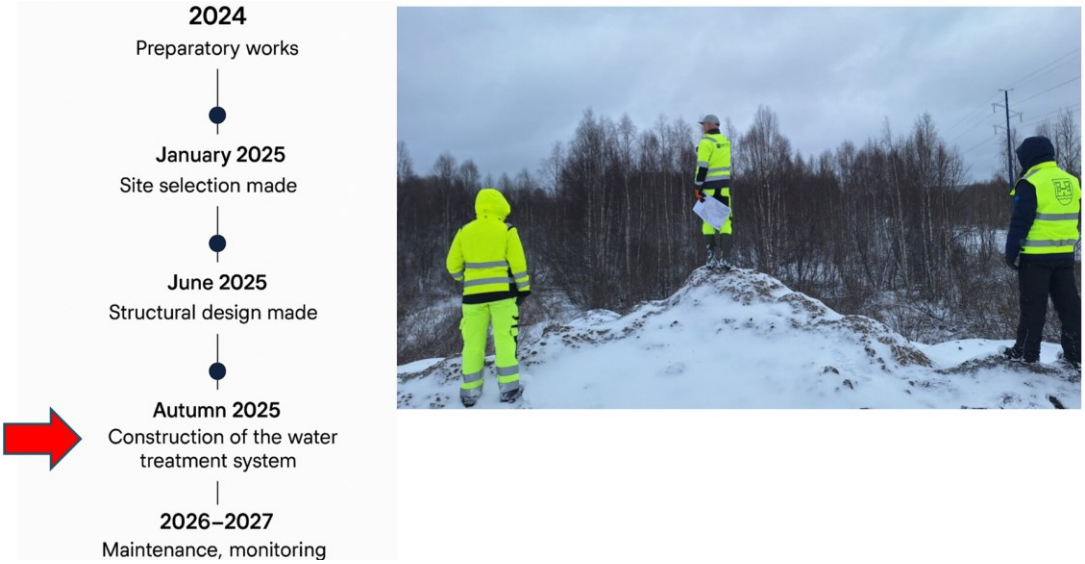
Figure 25: Selection of dissemination activities till Month 24 for FRC Tallinn - Boreal climatic zone.


Stella Shaumyan • 1st
Project Manager
1w •
Thrilled to present the URBREATH Horizon Europe Project with Mariliis Niinemägi at #MissionBalticForum25! Amazing energy, meaningful conversations, and a wonderful chance to highlight our work toward healthier, greener cities.
Blackbox
Podcastaflevering
Saun keset linna - kellele kuulub avalik ruum?
Avalinn podcast
avalinn
31 jul • 57 min. 40 sec
Beschrijving van aflevering
Podcastaflevering
Linnahall - kas koos või ilm selleta?
Avalinn podcast
avalinn
26 aug • 1 uur 6 min.
Marcella Bonanomi and 28 others
Mariliis Niinemägi • 1st
Project Coordinator at Tallinn Strategic Management Office; Project URB...
4d • Edited •
A project that we've been so involved in and care passionately about is in a stage of first public presentation of the initial technical and landscape design. It's a complex and innovative idea on how to deploy nature-based solution for purifying snow meltwater collected from the city streets. While testing the applicapility to this specific site, we also create a new (temporary) access path and recreati ea on an underused and unsafe brownfield site. Solution by Roadplan OÜ and at, tears and workhours by Stella Shaumyan and myself. #URBREATH_eu
Public presentation is on
materials of the project
Mariliis Niinemägi • 1st
Project Coordinator at Tallinn Strategic Management Office; Project URB...
1h •
This week me and Stella Shaumyan introduced #URBREATH_eu project at the Baltic Sea Forum for the EU Mission on Adaptation to Climate Change #MissionBalticForum25. Nice to see that the NBS pilot solution that we plan here in Tallinn creates interest and initiates discussions.
URBREATH
Building a resilient future against climate change challenges
Blackbox
EST
Tallinn
Menüü
URBREATH projekti raames Linnahalli idaküljeümbruse projekteerimine
You and 15 others
Like
Add a comment...
22.09 KELL 17.30
LINNAHALLI IDAKÜLJE ESKIISPROJEKTI AVALIK TUTVUSTUS
TH: Linnahalli idaküljeeskiislahenduse
Uitnodigen
URBREATH projekti raames on tellitud Linnahalli idaküljeümbruse projekteerimine, mille tulemusena valmib kaasaegne ja turvaline avalik ruum.

3.3.2.2 LLL activities by the follower city of Kajaani

Updated timeline Month 24

Figure 26: Timeline on Month 24 for FLC Kajaani - Boreal climatic zone.



LLL activities till Month 24

Table 5: Overview of the LLL-activities till Month 24 of FLC Kajaani - Boreal climatic zone.

Date	Activity 01 – January 2025
Goal	Cross-sectoral pilot site selection.
Location	Kajaani, Finland.
Stakeholders involved	Land Use, Planning and Land Authority Department of Kajaani, Department of Environmental Technology of Kajaani, City Depot of Kajaani.
Methods used	On site discussion, internal workshop.
Outcome	Consensus on the pilot site and the next steps.

Picture	

Date	Activity 02 - 09 May 2025
Goal	Survey on snow dumping site locations and littering.
Location	Kajaani, Finland.
Stakeholders involved	Kajaani inhabitants.
Methods used	Local event, online and offline survey.
Outcome	The survey provides a baseline for KPIs related to residents' satisfaction and offers ideas and feedback for reducing littering and for potential snow-dumping sites.
Pictures	 

Date	Activity 03 - 10 September 2025
Goal	The workshop aimed to raise residents' awareness of the effects of climate change on nature, to discuss preparing for change and the importance of preparedness, and to generate ideas for ways to organise, both for residents themselves and for the city and other actors.
Location	Kajaani, Finland.

Stakeholders involved	Kajaani inhabitants.
Methods used	Local event, workshop.
Outcome	The residents who participated in the event were well-equipped to recognise and discuss the effects of climate change on the natural environment. However, it is necessary to increase further residents' awareness of climate change, nature, and preparation and adaptation. The workshop was well received, and both the theme and the opportunity to discuss it were considered significant. Involving residents in discussions increases their knowledge and enables them to bring the theme to different communities, such as neighbourhoods.

Exposure

Figure 27: Selection of dissemination activities till Month 24 for FLC Kajaani - Boreal climatic zone.

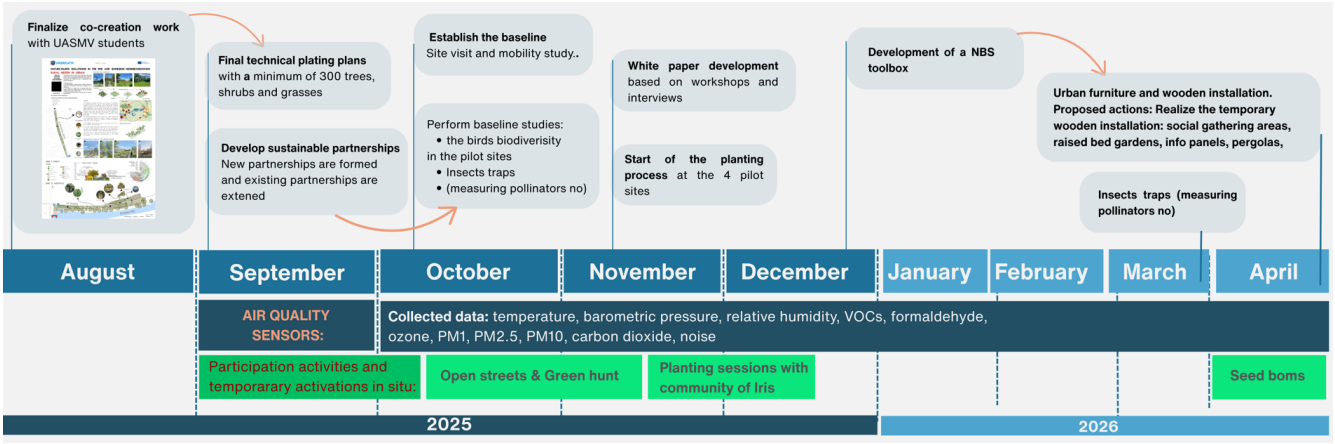

KAMK TKI · Seuraa
18. elokuu ·
Asukastilaisuutta pukkaa! 👀 Ilmastonmuutos muuttaa Kajaania, sen luontoa ja kajaanilaisille lähiympäristöjä. Millaisia nämä vaikutukset ovat, ja miten varmistam... Näytä lisää
Euroopan unionin osarahoittama
URBREATH
Tulevaisuuden lähiluonto Kajaanissa
Asukastilaisuus ke 10.9.2025 klo 17-19
Kajaanihalli ntotila, Ratakatu 2
Kajaanin kaupunki
Henna-Mari Laurila · You
Project Manager | Impact-driven and needs-based projects
6mo ·
Eurooppa-päivänä juttelin kajaanilaisten kanssa lumen sulamisvesistä ja lumen mukana kulkeutuvista roskista – samalla kerroin luontopohjaisesta ratkaisusta lumen sulamisvesien käsittelyyn, joka Horisontti ...more
Mustonen ja 4 muuta
5 jakoa
KAMK TKI
641 followers
2mo ·
Kansainvälisen URBREATH Horizon Europe Project -hankkeen Kajaanin tiimi järjesti Kajaanissa, Kajaanihallilla asukastilaisuuden, jossa keskusteltiin siitä, millaisia muutoksia lähiluonnossa on jo havaittu ja miten niihin voidaan ...more
Show translation
KAMK TKI
649 followers
6mo · Edited ·
+ Follow
Horisontti Eurooppa -rahoitteisessa URBREATH Horizon Europe Project -hankkeessa Kajaanin kaupunki - City of Kajaani ja Kajaani University of Applied Sciences (KAMK) toteuttavat Kajaanin Pyykönpuron lumenkaatopaikalle ...more
Show translation
Koti-Kajaani // Keskiviikkona 3. syyskuuta 2025
Kajaanin kaupunki
Tervetuloa asukastilaisuuteen 10.9. – Aiheena tulevaisuuden lähiluonto Kajaanissa
Ilmastonmuutos muuttaa Kajaania, sen luontoa ja kajaanilaisille tuttuja lähiympäristöjä. Esimerkiksi helteitä ja voimakkaita sateita esiintyy yhä useammin, mikä vaikuttaa asukkaiden arjen lisäksi luonnon ja lajien kykyyn pärjätä muuttuvissa oloissa.
Kaikille avoimessa tilaisuudessa kuullaan ilmastonmuutoksen aiheuttamista luontovaikutuksista sekä keskustellaan muutoksiin varautumisesta.
Tilaisuuden yhteydessä voit osallistua roskienkeruutalkoisiin Kajaanihallin lähiympäristössä klo 19 alkaen, tarvittavat välineet löytyvät paikan päältä!
Keskustelun tuloksia hyödynnetään URBREATH-hankkeessa, jota Kajaanin kaupunki ja Kajaanin ammattikorkeakoulu toteuttavat. Tilaisuuden toteutusta tukee Euroopan unionin ilmastonmuutokseen sopeutumisen mission MIP4Adapt-projekti.
Aika: Keskiviikkona 10.9.2025 klo 17-19. Kahvitarjoilu klo 16.30 alkaen.
Paikka: Kajaanihallin luentotila (Ratakatu 2, 87100 Kajaani).
Send
Kajaanin kaupunki - City of Kajaani
15. toukokuu ·
Kiinnostunut
KYSELY
Vastaa kyselyyn

3.3.3 Continental climatic zone

3.3.3.1 LLL activities by the front-runner city of Cluj-Napoca

Updated timeline Month 24

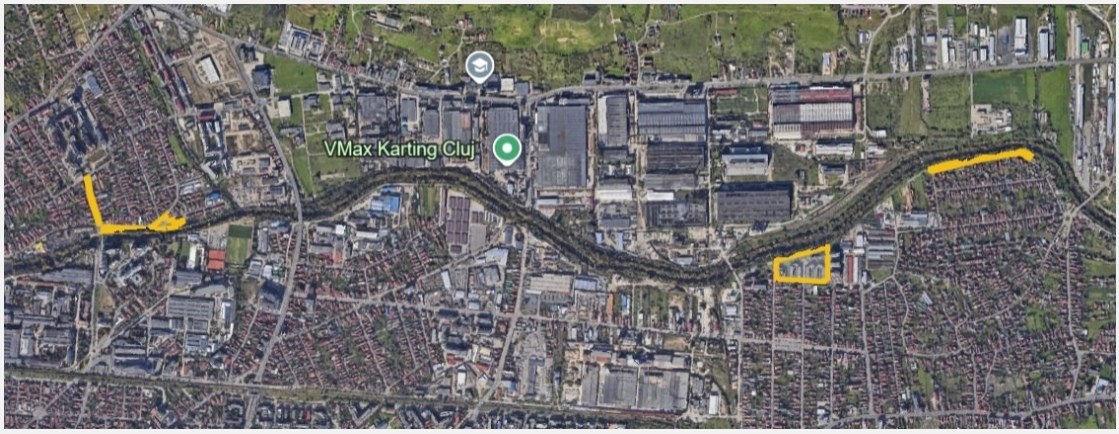
Figure 28: Timeline on Month 24 for FRC Cluj-Napoca - Continental climatic zone.



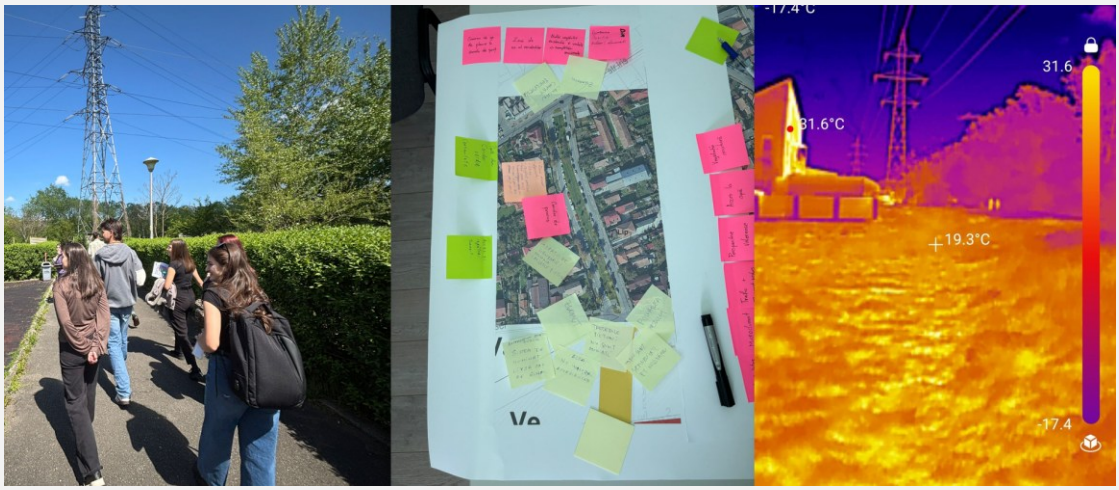
LLL-activities till Month 24

Table 6: Overview of the LLL-activities till Month 24 of FRC Cluj-Napoca - Continental climatic zone.

Date	Activity 01 - October 2024
Goal	LAN Activation - engaging specialised actors to better frame the scope.
Location	Cluj-Napoca.
Stakeholders involved	Universities, IT Cluster, NGO on sustainability, and elaborators of the Someș River Masterplan.
Methods used	Online event, including a general presentation, and a roundtable of ideas and provocations considering the pathways that URBREATH should take for Cluj-Napoca. As of Nov 2025, we conclude 1 year of activities that began with these discussions. It is expected to have an end-of-year newsletter or communication materials for all stakeholders involved in the LAN.
Outcome	Validation of site locations; mapping potential synergies with future investments along the metropolitan blue-green corridor.

Picture	

Date	Activity 02 - January 2025
Goal	Engaging with citizens, ensuring technical alignment, and conducting site visits.
Location	Cluj-Napoca.
Stakeholders involved	Citizens, NGOs, USAMV students, elaborators of the Someș River Masterplan, and the Green Spaces Department.
Methods used	• Part 1 - Technical alignment with Green Space Department, and with the elaborators of the Metropolitan Somes Masterplan. • Part 2 - Exploratory discussion with USAMV teacher for identifying potential collaborations. • Part 3 - Physical Workshops, consisting of a presentation and open discussions with the residents. The first one was organised in the Iris neighbourhood - at the neighbourhood city hall, and the second in the Someseni neighbourhood at the local canteen.
Outcome	Key findings: new site selection (Site 4 - Barc III), beavers in the river, Green Spaces Department support, and identification of future pedestrian and cycling routes.
Picture	

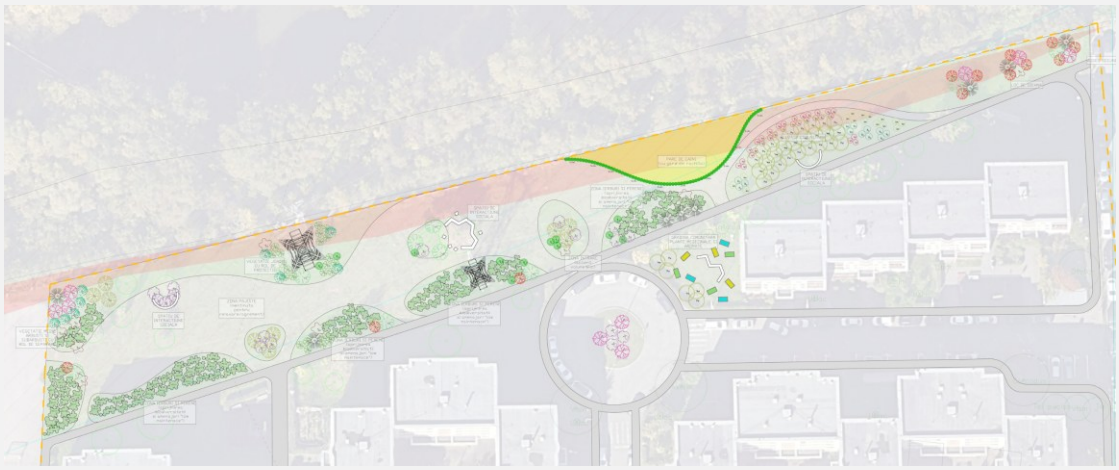
Date	Activity 03 - April 2025
Goal	Nature-Based Solutions (NBS) proposals for the four sites.
Location	Cluj-Napoca.
Stakeholders involved	USAMV teacher, USAMV students, local environmental Non-governmental organisation (NGO) (support/advisory role), and citizens.
Methods used	Co-creation workshop; site visit, analyses and discussions with the residents; landscape design studios.
Outcome	The workshop began with 2 days of on-site work: • Day 1: site visits, ad-hoc discussions with citizens, mapping existing vegetation, and situation analysis. • Day 2: conceptual drawings, NBS training, proposals. Followed by two weeks of remote work with regular online consultations.
Picture	

Date	Activity 04 - May 2025
Goal	Final design gallery (Armătura Park) and citizens' voting.
Location	Cluj-Napoca.
Stakeholders involved	Citizens, USAMV students.
Methods used	Open a gallery and an online survey for citizens to select the preferred solution.
Outcome	358 community votes. One winning team selected for all four sites - The Villagers. The exhibition panels.

Picture	

Date	Activity 05 - June-September 2025
Goal	From conceptual designs to technical plans - working with the winning team.
Location	Cluj-Napoca.
Stakeholders involved	USAMV students.
Methods used	Over the summer, the winning team has worked closely with the URBREATH team in the format of online design studios.
Outcome	Final plant selection, detailed planting plans, furniture design (in progress), and a list of quantities.
Picture	**Site 1 - Alexandru Sahia** - The Narrow Forest / Green buffer for pedestrian safety and mitigation of heat island effect and traffic-related pollution.  **Site 2 - Nadasel** - The Meadow and the River / Blue-green corridor and open meadow with pollinator-friendly plantations and multifunctional community space.

Site 3 - Timisului - The Village Heart / Ecological corridor and open meadow for community activities and gardening.



Site 4 - Barc III - The Orchard / Green ecological corridor with mixed fruit trees for the community.

Date	Activity 06 - October 2025
Goal	Open Streets event on Barc III (temporary action), Cluj-Napoca. Eco-friendly urban activation event dedicated to promoting movement in an accessible, friendly, and recreational setting. The goal was to raise awareness of the landscape and community value of the narrow green corridor along the river on Barc III Street, and to raise awareness of the possibility of closing the street to traffic (transforming it into a potential shared-space street). The goal was to bring people together and engage in interactive activities focused on sport, environment, and ecology.

Location	Cluj-Napoca.
Stakeholders involved	• Local community members and families. • Municipality / local authorities involved in mobility and public space activation. • Organisers and facilitators of the "Străzi Deschise" programme.
Methods used	• Temporary pedestrianisation of Barc III Street to test shared-space potential. • Interactive, open-to-all activities (pickleball, badminton, lap tennis, paddlesmash, table tennis, basketball, kanjam, beginner tennis, etc.). • Eco-friendly challenges requiring exploration, movement, and coordination. • Structured friendly competitions to encourage engagement (Carnet de Joacă with checkpoints). • Hands-on educational ECO activities (Treasure Hunt, "Echipa veveriței", eco obstacle course). • Participatory approach encouraging movement, play, and discovering the natural corridor.
Outcome	• Significant community participation and activation of a currently traffic-dominated street. • Increased awareness of the potential value of the green corridor and its recreational use. • Demonstrated feasibility and public interest in traffic calming & temporary pedestrianisation. • Strengthened local community interaction through sport, play, and ECO activities. • Positive feedback from residents, supporting the idea of recurrent or permanent shared-space interventions. • Enhanced visibility of environmental education and sustainable behaviour in an urban context
Pictures	 

Date	Activity 07 - October 2025
Goal	To create a baseline for quality of life in the neighbourhood before implementing Nature-Based Solutions (NBS), and to better understand community needs and perception in order to adapt the planned interventions accordingly.
Location	Cluj-Napoca.

Stakeholders involved	The questionnaire collected 67 responses and was designed for the following stakeholder groups: • Residents from Iris and Someșeni (e.g., community and neighbourhood groups, vulnerable groups indirectly represented through questionnaire items (elderly, families, people with disabilities, etc.). • Residents from other parts of Cluj-Napoca who frequently use or visit green spaces in Iris and Someșeni. • Municipality of Cluj-Napoca. • URBREATH project team and research partners.
Methods used	The methodology is based on a structured online survey of 88 questions designed to collect baseline perceptions and site-specific insights from residents, organised as follows: 1. Online questionnaire (Google Forms) with two main components: a. Respondent Profile - demographic information (age, gender, occupation), familiarity with NBS and climate impacts, information sources, and general perceptions of neighbourhood quality of life b. Four site-specific sections, corresponding to the intervention areas in Iris and Someșeni: • Site 1, Green space on Alexandru Sahia Street • Site 2, Green space along the Someșul Mic River on Strada Nădășel • Site 3, Green space behind the residential buildings on Strada Timișului • Site 4, Green space along the Someșul Mic River on Strada Barc III Each site section followed the same structure, covering: • Identified problems and desired transformations • Perception of the area (satisfaction, safety, community, quality of life indicators) • Mobility and accessibility patterns 2. Branching logic ensured that respondents were directed only to the site most relevant to their location or usage. 3. Mixed question types: Likert scales, multiple-choice, check-all-that-apply, and visual prompts to support spatial understanding.
Outcome	The 67 responses provide a clear baseline on quality of life, environmental issues, and mobility in Iris and Someșeni. Results show recurring problems (maintenance, safety, accessibility) and strong support for NBS measures such as tree planting, improved paths, lighting, and community spaces. The findings guide site priorities and inform upcoming URBREATH interventions.

Date	Activity 08 - October-November 2025
Goal	Obtain donations for planting actions, and competitive prices for the rest of the plants.
Location	Cluj-Napoca.

Stakeholders involved	• Gradini Cluj (landscaping company) • Green Spaces Department • USAMV teacher (part of LAN)
Methods used	A series of discussions has been organised in order to establish partnerships.
Outcome	Through these discussions and collaborations, the municipality team obtained, with a relatively small budget, the entire set of plants required for the NBS planting actions. The plants used are the smaller version, due to the cost, but this aligns with the overall theme of the URBREATH journey for Cluj - "creativity under constraints" The difficulty remains in manpower and the cost of preparing the terrain.

Date	Activity 09 - November 2025
Goal	Planting stage 1.
Location	Cluj-Napoca.
Stakeholders involved	• USAMV students (volunteers). • Green Space Department. • Gradini Cluj (landscaping company).
Methods used	Volunteer work, involving the students who elaborated the plans as coordinators of the planting actions.
Outcome	Stage 1 of greening actions deployed.
Pictures	 

Exposure

Figure 29: Selection of dissemination activities till Month 24 for FRC Cluj-Napoca - Continental climatic zone.


URBREATH: Insights of the Cluj Napoca meeting | Full Ov...
WEBINAR
Understanding Nature-Based Solutions (NBS): Sustainable Solutions for Urban Resilience
November 19th, 2025 11:00-12.15 CET
Alexandra Poliec
Project Coordinator, City of Cluj Napoca
Meet the speakers!
Funded by the European Union
WEBINAR
Understanding Nature-Based Solutions (NBS): Sustainable Solutions for Urban Resilience
November 19th, 2025 11:00-12.15 CET
Codruț Papina
Deputy Director URBASOFIA, Urban and Landscape planner
URBREATH Horizon Europe Project
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#URBREATH_eu General Assembly | 21–23 May 2025 | Cluj-Napoca, Romania
Three days of collaboration, exchange, and progress toward greener, more resilient cities. From inspiring discussions to hands-on sessions, the General Assembly marked another important step for the URBREATH consortium.
A heartfelt thank you to the Cluj team for their warm hospitality and excellent organisation!
#GeneralAssembly #ClujNapoca #UrbanTransformation #HorizonEurope #SustainableCities #NatureBasedSolutions #EUProjects
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Cluj-Napoca deploys uRADMonitor sensors in Europ... Union URBREATH Project
By uRADMonitor, on August 7, 2025
events, news
cluj
model A3
model CITY
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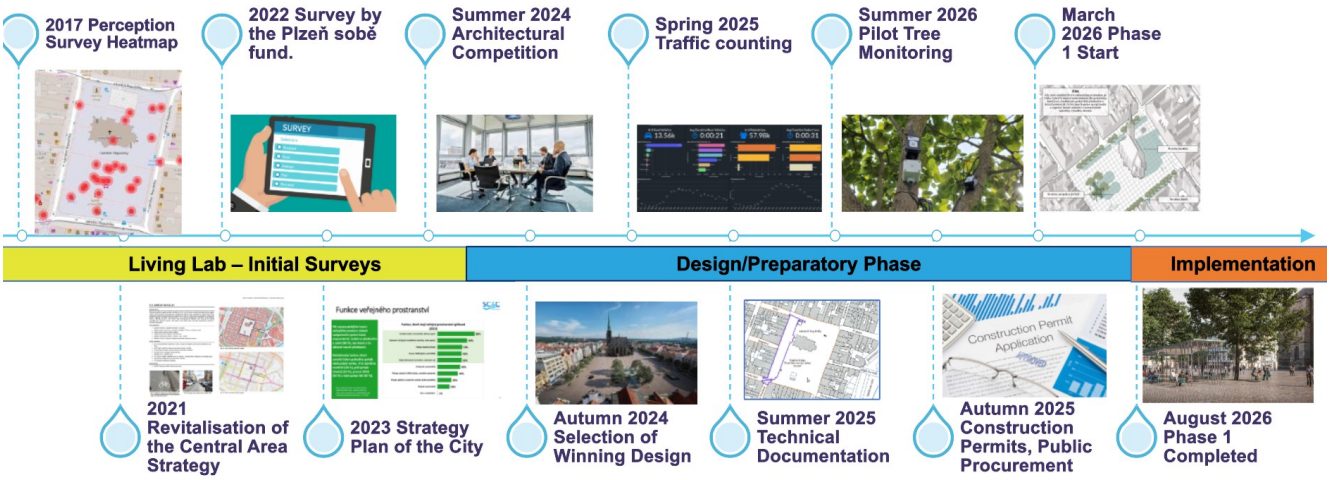
3.3.3.2 LLL activities by the follower city of Pilsen

Updated timeline Month 24

Figure 30: Timeline on Month 24 for FLC Pilsen - Continental climatic zone.



LLL activities till Month 24

Table 7: Overview of the LLL-activities till Month 24 of FLC Pilsen - Continental climatic zone.

Date	Activity 1 - January, February 2025
Goal	To showcase the designs of the renovation of the Republic Square.
Location	Exhibition Hall of the City of Pilsen.
Stakeholders involved	Urban Planning Department, City of Pilsen, and citizens.
Methods used	Exhibition of final designs submitted to the Architectural Competition - open to the public (free of charge); at the beginning, there was also a vernissage for the selected audience.
Outcome	Presentation of Architectural Competition Designs. Communication towards the broad public. Explanation of concept.

Pictures	 

Date	Activity 2 - June 2025
Goal	Expert stakeholder committee meeting.
Location	Department of Investment, MMP.
Stakeholders involved	Statutory City of Pilsen, Urban Planning Department, SITMP, SVSMP (city organisations).
Methods used	Offline meeting of selected organisations with the contactor, presentation of possible issues (troubleshooting).
Outcome	The contractor presented the reconstruction proposal based on the winning design. The concept aims to adapt the square for today's needs by planting trees and completing the paving grid.
Picture	

Date	Activity 3 - September 2025
Goal	Pilot implementation of tree monitoring sensors.
Location	Cukrovarská street.
Stakeholders involved	SITMP, SVSMP (city organisations).
Methods used	Installation of tree-monitoring sensors and IoT integration within the city's LoRa network. Some of the sensors are not currently working and have been sent back to the company for review.
Outcome	Installation of tree monitoring sensors.
Pictures	 

Exposure

Figure 31: Selection of dissemination activities till Month 24 for FLC Pilsen - Continental climatic zone.

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to see our #URBREATH_eu partners participating at the Smart City Expo Congress 2025 in #Barcelona (4–6 November), the global meeting point for innovation, and sustainability! #SCEWC25 ...more

Správa informačních technologií města Plzně + Follow
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Projekt URBREATH Horizon Europe Project slaví 1. narozeniny a naše cesta v něm se zabývá proměnou náměstí Republiky, jeho ozeleněním a sledováním efektu při prosazení řešení blízkých přírodě.

Už jsme začali sledovat data o pohybu chodců a vozidel ve vybraných lokalitách na náměstí. A chceme se dozvědět, jaký budou mít tato přírodě blízká řešení dopad na dopravu přes náměstí, kvalitu ovzduší a hluk a na tzv. městský tepelný ostrov.

Určitě vás o dalším průběhu budeme informovat. A zatím vás zveme aspoň na výstavu všech návrhů proměn náměstí Republiky – do 16. 2. je k vidění v Západočeské galerii v Plzni.
Vizualizace vítězného návrhu: Studio MAAUS.
#sitmp #pilsen #NatureBasedSolutions #Sustainability #SmartCities #UrbanInnovation #HorizonEU

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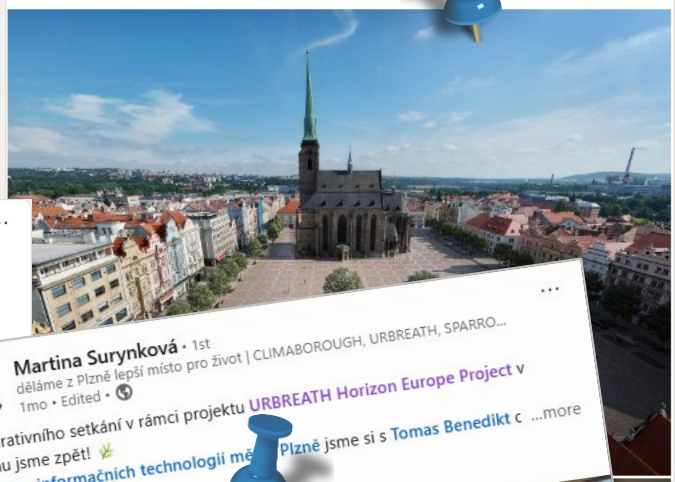

URBREATH Horizon Europe Project
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URBREATH at Inovujeme Plzeň 2025!

Our partner, the City of Plzeň, proudly took part in this vibrant celebration of innovation and technology on 6–7 June at TechTower.

Throughout the event, the #URBREATH_eu team engaged with visitors to s vision for sustainable air purification and healthier urban living. By showcasi approach to improving indoor air quality, we highlighted how innovation ca more liveable and climate-resilient cities.

#InovujemePlzeň #SustainableCities #UrbanInnovation #HorizonEU

24

Martina Surynková • 1st
děláme z Plzně lepší místo pro život | CLIMABOROUGH, URBREATH, SPARRO...
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Z inspirativního setkání v rámci projektu URBREATH Horizon Europe Project v Tallinnu jsme zpět!
Za Správa informačních technologií města Plzně jsme si s Tomas Benedikt c ...more

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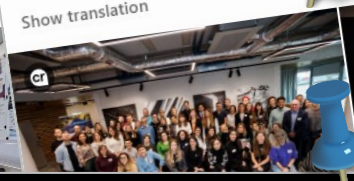

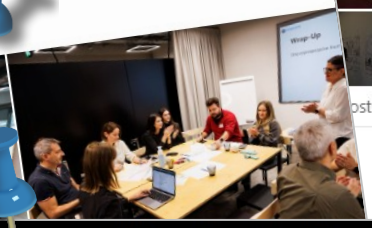

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Horizon Europe Project URBREATH

What is URBREATH?

URBREATH is a four-year Horizon Europe-funded project on urban adaptation to climate change. Its aim is to put into practice **nature-based solutions** (NBS) that will help regenerate public urban spaces. An important factor is the involvement of citizens in the decision-making process.

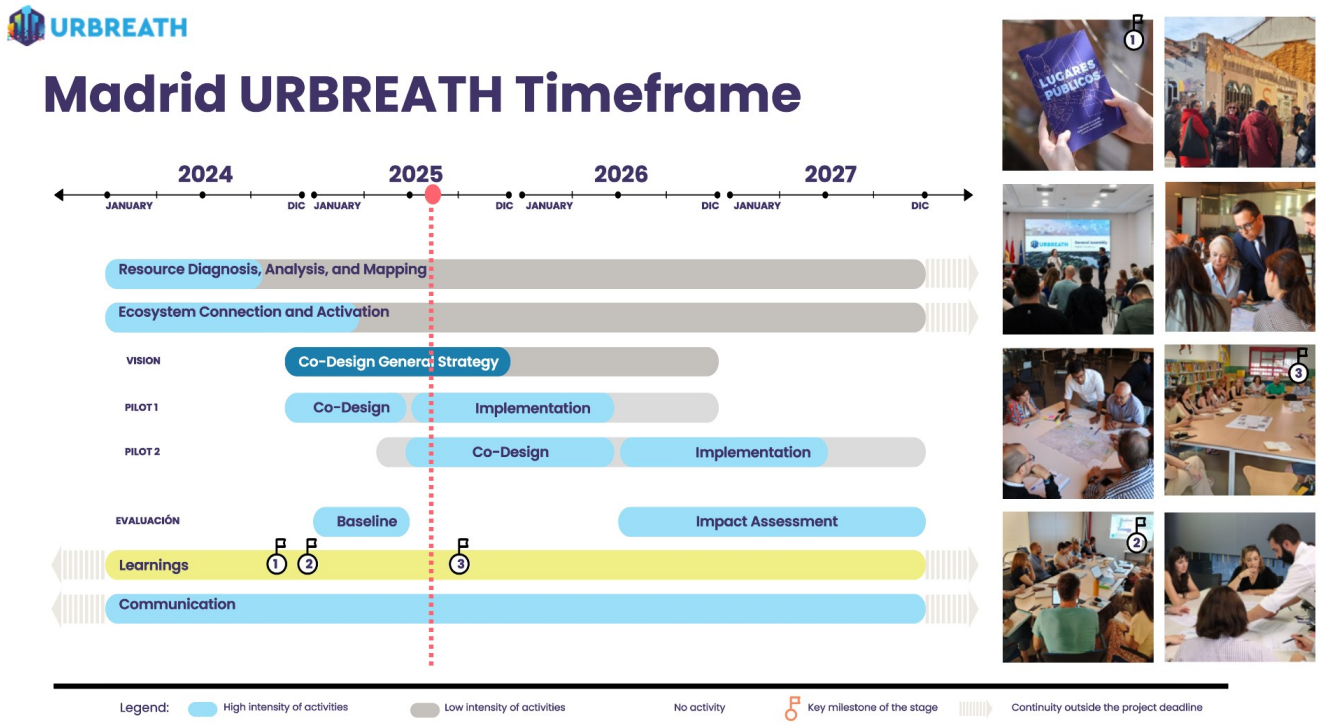
In the project we learn from the so-called pilot cities. In Pilsen we focus on **the transformation of the Republic Square**. Using a 3D model of the city (a digital twin of the city), we are simulating the greening of this large space. We model the benefits for the inhabitants, the change towards the environment and quality of life.

3.3.4 Mediterranean climatic zone

3.3.4.1 LLL activities by the front-runner city of Madrid

Updated timeline Month 24

Figure 32: Timeline on Month 24 for FRC Madrid - Mediterranean climatic zone.

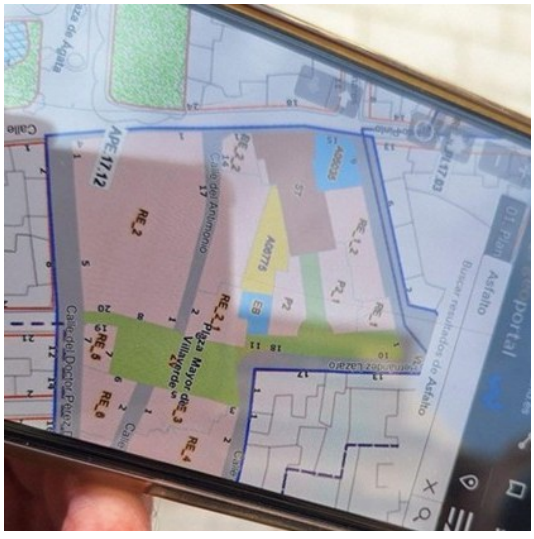


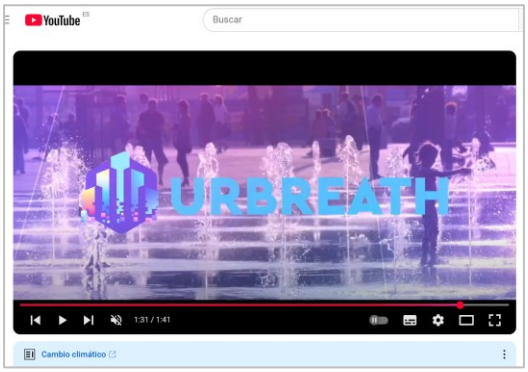
LLL activities till Month 24

Table 8: Overview of the LLL-activities till Month 24 of FRC Madrid - Mediterranean climatic zone.

Date	Activity 1 – 2024 series
Goal	Ecosystem Connection and Activation, Resource Diagnosis, Analysis, and Mapping.
Locations	Pilot 1 (San Cristobal | Environmental schools and Interblocks areas) and Pilot 2 (Los Ángeles | Environmental schools and Interblocks areas).
Stakeholders involved	Municipal technicians, universities, companies, civil society, and citizens.
Methods and Outcome	• **Interdepartmental Working Group** The interdepartmental working group (the essence of our living lab) was launched during the General Assembly in October 2024.

	• **Social study on public places** We have conducted social research to understand the ideas of the city and the district held by the working classes of Villaverde. It shows that there is no single imaginary of the city. For popular classes, regenerating the district involves revitalising small businesses and the sociability they foster, creating local employment, and rethinking public facilities. • **Strategic Vision of the district** The interdepartmental working group (the essence of our living lab) was launched during the General Assembly in October. Subsequently, we have organised a collective tour of the district to analyse areas of opportunity and determine intervention sites.
Pictures	  

Date	Activity 2 - 2024-2025 series
Goal	Co-Design General Strategy, Learning, Communication.
Location	Pilot 1 (San Cristobal | Environmental schools and Interblocks areas) and Pilot 2 (Los Ángeles | Environmental schools and Interblocks areas).
Stakeholders involved	Municipal technicians, universities, companies, civil society, and citizens.
Methods used and Outcome	• URBREATH Tool We are integrating the different departments of the Madrid City Council and exploring improvements to the URBREATH tools' usability. • District Walks & URBREATH Pilots We have organised several collective tours of the district to identify areas of opportunity and determine intervention sites. • Madrid URBREATH storytelling We have developed a series of videos about the European project and its landing in Madrid, divided into three blocks: - Perspectives of the cities, - Strategic and political interviews, - Perspectives of the URBREATH partners. These videos are available to all partners for their respective communications and for easy communication.
Pictures	 

Date	Activity 3 - 2024-2025 series
Goal	Co-Design Pilots.
Location	Pilot 1 (San Cristobal | Environmental schools and Interblocks areas) and Pilot 2 (Los Ángeles | Environmental schools and Interblocks areas).
Stakeholders involved	Municipal technicians, universities, companies, civil society, and citizens.
Methods used and Outcome	• **Identifying pilots** Last October, Madrid hosted the first GA. Over these 3 days, we learned. The second day was focused on Madrid and the work of the different departments. Through the workshop with the interdepartmental team, we identified potential opportunities and priority areas in the district. • **Participatory process for co-design and project improvement – Key takeaways** ○ Residents, local associations, and municipal staff have validated technical solutions. ○ Strong coordination is needed between departments with different competencies and interventions. ○ It is essential to acknowledge the diverse perspectives of stakeholders, based on their specific knowledge (e.g., type of use, activities, time of use, etc.).

Pictures	  

Date	Activity 4 - 09 October 2025
Goal	Participatory Process for Pilot 2 Replication.
Location	Colonia Ferroviarios, near CEIP Antonio Nebrija (School). Villaverde Bajo.
Stakeholders involved	Citizens, Associations, Commerce.
Methods used	Collective Walk.
Outcome	Define and engage stakeholders in a participatory process to develop an urban intervention with NBS.

Picture	

Date	Activity 5 - 04 November 2025
Goal	Participatory Process for Pilot 2 Replication.
Location	Colonia Ferroviarios, near CEIP Antonio Nebrija (School). Villaverde Bajo.
Stakeholders involved	Citizens, Associations, Commerce.
Methods used	Collective diagnosis and co-creation methodology.
Outcome	Collectively draw an analysis of the situation of the neighbourhood in Villaverde Bajo. Collective diagnosis of the area working on a map of the pilot area.
Pictures	 

Date	Activity 6 - 10 December 2025
Goal	Participatory Process for Pilot 2 Replication.
Location	*Colonia Ferroviarios*, near CEIP Antonio Nebrija (School). Villaverde Bajo.
Stakeholders involved	Citizens, Associations, Commerce.
Methods used	Collective Collage workshop.
Expected Outcome	Through collective creative work, participants will co-create a collective collage that reflects their shared visions of the ideal neighbourhood. This exercise aims to activate imagination, rebuild collective confidence and project future possibilities, setting a more positive and inspiring tone after the realism of the diagnosis sessions.

Exposure

Figure 33: Selection of dissemination activities till Month 24 for FRC Madrid - Mediterranean climatic zone.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TALLER ESTRATEGIAS URBANAS
September 25, 2025 • News
On Tuesday, September 23, 2025, the Madrid Cluster team participated in the Urban Strategies Workshop at the Official College of Architects of Madrid. The Urban Strategies Workshop was designed to promote a culture of urban transformation and regeneration through multidisciplinary collaboration. It focused on analysing strategies and solutions that respond to some of the most pressing challenges facing contemporary cities, with special attention to the principles of environmental, economic, and social sustainability.
As part of the event, the Madrid Cluster team presented the URBREATH project, highlighting its contribution to creating greener, healthier, and more resilient urban environments.
This was an opportunity to share progress with an engaged professional audience and to position the project within a broader conversation on sustainable urban strategies.
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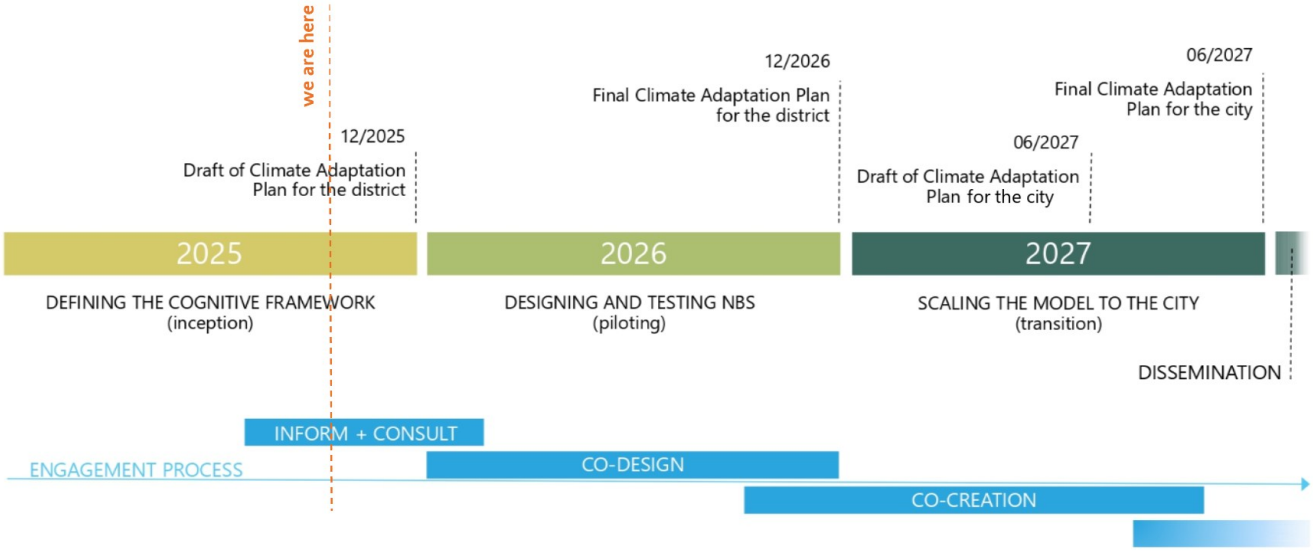
URBREATH is a Horizon Europe project focusing on boosting social interactions, inclusion, equitability and liveability in cities.

3.3.4.2 LLL activities by the follower city of Parma

Updated timeline Month 24

Figure 34: Timeline on Month 24 for FLC Parma - Mediterranean climatic zone.



LLL activities till Month 24

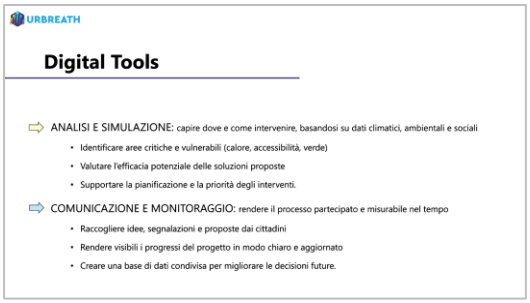
Table 9: Overview of the LLL-activities till Month 24 of FLC Parma - Mediterranean climatic zone.

Date	Activity 1 - 15 March 2025
Goal	Engagement of stakeholders in the neighbourhood.
Location	Officine ON/OFF.
Stakeholders involved	Social, commercial, and citizens.
Methods used	Live meeting and brainstorming board.
Outcome	Define and engage the stakeholders and the roadmap.

Picture	

Date	Activity 2 - 08 July 2025
Goal	Consult local users of the area, raise awareness on NBS, involve in the co-design process.
Location	Piazzale Bassano del Grappa.
Stakeholders involved	Social cooperative "Fiorente".
Methods used	Brainstorming whiteboard, surveys, and a model of the area.
Outcome	Participants' ideas and suggestions.
Pictures	 

Date	Activity 3 - 08 July 2025
Goal	• Introduce the URBREATH project to the other sectors. • Involve them in the development of the project and in the use of the digital tools. • Give transversality and continuity to the project.
Location	Municipal meeting room.
Stakeholders involved	Internal technical offices (ecological transition, mobility, digital transition, public works, maintenance, social, urban planning).
Methods used	Live meeting, PowerPoint presentation.
Outcome	Official establishment of the working table on adaptation.
Pictures	 

Date	Activity 4 - 24 November 2025
Goal	• Introduce and engage stakeholders on the topic of climate refuges • know the willingness of the district to participate in the network • better understand the fragilities and strengths of the neighbourhood during summer emergencies.
Location	"Avalon" social cooperative.
Stakeholders involved	• Social associations and cooperatives. • Main local companies and brands. • CSV (volunteer service centre). • Housing policies sector. • Social sector.
Methods used	• Live meeting. • PowerPoint presentation. • Public discussion.
Outcome	Define expectations and required interventions.
Pictures	 

Date	Activity 5 - Rescheduled - 01 February 2026
Goal	Consult, raise awareness on NBS, and co-design the regeneration of the area.
Location	Orti del Garda.
Stakeholders involved	• Orti sociali del Garda. • Ancescao (association of social centres and senior centres). • Local Schools.
Methods used	• Live meeting. • PowerPoint presentation. • Public discussion.
Outcome	Define expectations and required interventions.

Picture	

Figure 35: Selection of dissemination activities till Month 24 for FLC Parma - Mediterranean climatic zone.

AVVISO AI CITTADINI

Riqualificazione urbana dell'ambito di Via Bassano del Grappa

Comune di Parma

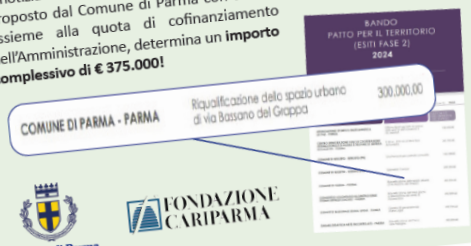
Il primo stralcio dei lavori è sostenuto dal Comitato territoriale IREN di Parma

Il secondo stralcio progettuale è proposto dal Comune di Parma con il sostegno di Fondazione Cariparma

Il miglioramento e la riqualificazione degli spazi verdi in via Bassano del Grappa sono stati oggetto di un ampio confronto che, nell'arco dell'anno, ha coinvolto diverse realtà del Terzo Settore presenti a Parma e nel

SECONDO STRALCIO - PROPOSTA DEL COMUNE DI PARMA A FONDAZIONE CARIPARMA

È notizia recente che **Fondazione Cariparma ha approvato il progetto** proposto dal Comune di Parma con un contributo di **€ 300.000** che, assieme alla quota di cofinanziamento dell'Amministrazione, determina un **importo complessivo di € 375.000!**



Comune di Parma

FONDAZIONE CARIPARMA

Con il presente avviso i cittadini

sono invitati

a partecipare ad un **brindisi augurale** presso il piazzale di Via Bassano Grappa, a **conclusione dei lavori del primo stralcio**

sono informati

e in data da stabilire del gennaio 2025 sarà organizzato un **primo in-ntro pubblico** per pianificare il **processo partecipativo** di accompa-namento alla stesura del **progetto esecutivo** di secondo stralcio e alla **alizzazione degli interventi.**

a data dell'incontro, che si terrà presso la ede della cooperativa Fiorente, sarà comu-icata ai cittadini mediante distribuzione di ocandine e/o volantini

GAZZETTA DI PARMA — Sabato 21 dicembre 2024 — 17

Parma

San Leonardo L'idea è pa ta da un gruppo di residenti

«Per riqualificare il quartiere seminiamo nuove piante»

Nuovo verde in via Bassano del Grappa ma, soprattutto, un nuovo modo di gestire collettivamente la natura, che potrebbe prendere piede in altri spazi della città. Ieri, nel quartiere San Leonardo, è stato messo a dimora un filare di sette piante di Gingko Biloba, che sono andate a sostituire dieci alberi di Thuja ormai malandati. I risultati si potranno ammirare fra qualche tempo: la natura, si sa, ha i suoi ritmi.

La chiusura di questa prima fase di riqualificazione è stata proposta dalla cooperativa Sociale Ecole e da Federconsumatori in collaborazione con il Centro etica ambientale, con il sostegno del Comitato territoriale Iren che ha contribuito con 11mila euro nell'ambito del progetto «Green in Parma». «Si tratta di una collaborazione spontanea nata dal quartiere - afferma Francesco De Vanna, assessore ai Lavori pubblici -, è da un anno che si parla di questo progetto. È bello vedere come la suggestione di un gruppo di cittadini possa trovare l'attenzione dell'Università e le altre istituzioni. Un quartiere che sta attraversando una trasformazione sociale ma anche architettonica e urbanistica, stiamo cercando di accompagnare con attenzione questo percorso che interessa varie parti del San Leon micro interve dialogo con migliorare il con riguard ambientale».

«La rete di afferma Fab di Ecole - ha al meglio il modesto, in spettiva più l'anno abbi contri con i l'idea di un che per gli doli e razio

Fare squadra
Questa prima fase è stata avviata dalla cooperativa Ecole e da Federconsumatori, in collaborazione con il Centro di etica ambientale, Iren, il Comune e l'Università.

la collaborazione del Comune è stata presentata una proposta al

ariparma, con il supporto del CEA (Centro Etica Ambientale), na riqualificazione più ampia del verde e del piazzale.

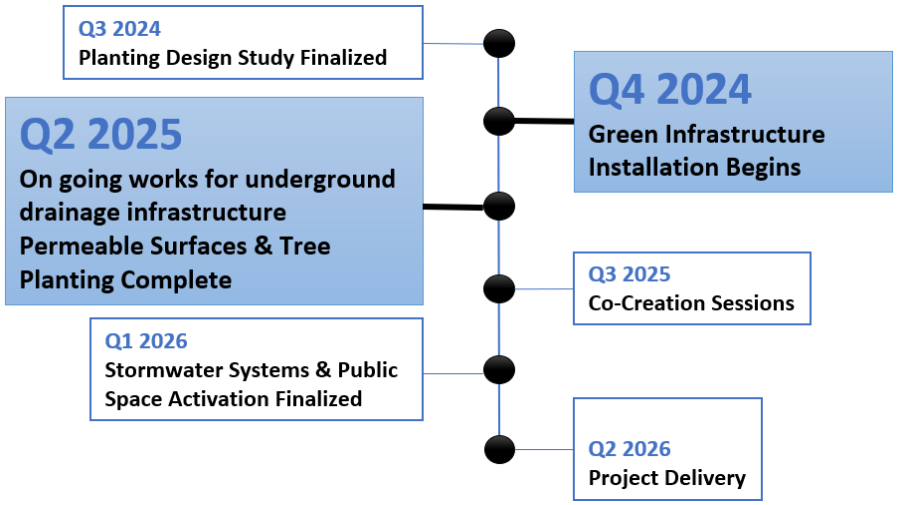
RALCIO DEI LAVORI

aranno realizzati nelle **prossi-comunque entro Natale,** pre-ne del Comune di Parma - set-olico - e la scrizione di un azione co mministrazione itesi:

3.3.4.3 LLL activities by the follower city of Athens

Updated timeline Month 24

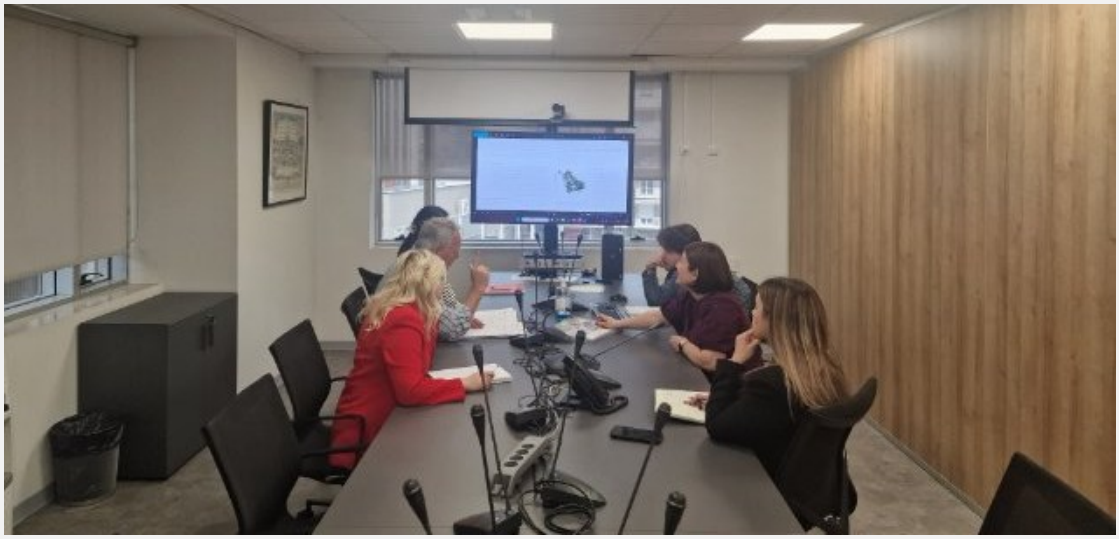
Figure 36: Timeline on MONTH 24 for FLC Athens - Mediterranean climatic zone.



LLL activities till Month 24

Table 10: Overview of the LLL-activities till Month 24 of FLC Athens - Mediterranean climatic zone.

Date	Activity 1 - February 2025
Goal	To establish a structured foundation for the stakeholders' involvement in the Vasilisis Olgas Avenue regeneration process by conducting an internal coordination session with the Urban Planning Department. The goal was to ensure that all internal teams share a common understanding of the project. This included, on the one hand, reviewing the construction progress, aligning with the NBS implementation roadmap, discussing the integration of archaeological findings into the design, and developing a clear stakeholder identification and engagement approach that will guide collaboration during the next phases of the pilot.
Location	Anaplassis Premises.
Stakeholders involved	Urban Planning Department.
Methods used	• Internal briefing on design and construction work updates and monitoring • Structured mapping of key stakeholder groups (municipal services, cultural authorities, local businesses, mobility partners, sports clubs, citizens). • Definition of initial engagement pathways and communication flow.
Outcome	• Define and engage the stakeholders. • The establishment of the NBS awareness roadmap.

Picture	

Date	Activity 2 - June 2025
Goal	To showcase the tangible progress of the Vasilisis Olgas Avenue regeneration pilot, highlighting the implementation of NBS and the transformation of the area into a green, accessible public space. The visit aimed to inform and actively engage key stakeholders, including local citizens, cultural authorities, municipal representatives, and some academic partners, by presenting the ongoing environmental, cultural, and mobility-related interventions. Additionally, within the context of the *Greenstorm HE project* visit, the session aimed at fostering and enhancing the stakeholders' understanding of how the project integrates urban greening, stormwater management, sustainable mobility, and archaeological preservation into a cohesive regeneration plan. The activity aimed at stimulating active participation in the co-creation process, especially in relation to the ongoing debate regarding the street's potential pedestrianisation, and to generate wider institutional and community interest by presenting the vision of reconnecting major cultural sites through a continuous green corridor as part of the Great Archaeological Walk of Athens.
Location	Pilot Site.
Stakeholders involved	Citizens, Ministry of Culture, Athens Municipality, Representatives of the Zappeion Mansion, Agricultural University of Athens.
Methods used	• Walk through the pilot site to present completed permeable surface works, tree planting, and early-stage green infrastructure installation. • Interactive co-creation discussions on mobility solutions, including the trade-offs between full pedestrianisation and controlled vehicle access. • Presentation of historical and archaeological constraints, including the preservation strategy for ancient ruins. • Joint session with *Greenstorm HE* participants to exchange insights on NBS applications and urban resilience approaches.

Outcome	Stakeholders' active engagement and the Ministry of Culture's initial plans for the open-air museum, aimed at protecting the archaeological ruins while ensuring the regeneration process is not hindered.
Pictures	      

3.3.5 Cross pilot conclusions

Across the URBREATH project, a total of 49 LLL activities were organised by the pilot cities, reflecting a remarkable diversity of approaches, contexts, and lessons learned as demonstrated by previous chapters.

Table 11: The number of LLL initiatives for each pilot city and each climatic zone.

Climatic zone	Pilot city	Nr. of LLL activities	TOTAL
Atlantic	Leuven	12	15
	Aarhus	3	
Boreal	Tallinn	6	9
	Kajaani	3	
Continental	Cluj-Napoca	9	12
	Pilsen	3	
Mediterranean	Madrid	6	13
	Parma	5	
	Athens	2	
TOTAL			49

Each city tailored its LLL strategy to local realities—ranging from Aarhus, where a major investment in a green square served as a traditional anchor for testing URBREATH tools, to Cluj-Napoca, which, facing financial constraints, adopted a more tactical urbanism approach with guerrilla planting and strong collaborations with local actors.

Other cities, such as Pilsen, navigated urbanistic constraints through structured co-decision processes, while Leuven and Cluj-Napoca leveraged greater flexibility for creative and participatory experimentation. This variety demonstrates the adaptability and robustness of the URBREATH approach (supported by the URBREATH Toolbox), which has proven effective across different investment scales, stakeholder constellations, and governance models.

The cross-pilot experience highlights that, despite differing starting points and challenges, mutual learning—facilitated through regular Cities Calls and shared presentations—has enabled cities to exchange what works (and what doesn't), ensuring that the project's tools and methodologies are applicable and valuable in multiple urban contexts.

The Cities Calls have proven to be a crucial mechanism not only for sharing ideas and best practices among pilot cities, but also for openly discussing pitfalls, dilemmas, difficulties, and obstacles encountered during implementation. These regular exchanges create a safe space for cities to reflect on challenges candidly, seek advice, and collaboratively develop solutions. By sharing both successes and setbacks, pilot cities can accelerate problem-solving, avoid repeating mistakes, and adapt strategies based on collective experience. This spirit of

openness and cooperation strengthens the entire consortium, ensuring that knowledge and solutions are co-created and that the journey toward climate-neutral, resilient urban regeneration is truly shared.

3.4 LLL tool development and adoption

Tools were first showcased in their initial versions during the GA in Cluj-Napoca in May 2025. By the end of Month 18, these tools had been further developed and documented in the project deliverables. In early July, Tasks 5.2 and 5.4 collaborated to design a structured six-step plan for introducing and implementing these tools across the pilot cities (see also Chapter 5 of Deliverable 5.2).

Deliverable 5.2, Chapter 4.2, provides a helpful overview of the four categories of tools and simulation models included in the URBREATH Toolbox. **For LLL support, two categories are especially relevant:**

Tools supporting the LLL process

These tools assist the Local Living Labs throughout the co-creative and participatory design phases of NBSs—particularly during the *empathise* (define, understand) and *solution* (ideate, co-create) stages, as illustrated in Figure 4. Some of these tools are also used during the *deployment* phase. For example, citizen science approaches can help gather data that will later feed into the *monitoring and evaluation* of NBS performances.

Examples:

- *E-participation tool enabling LLLs to communicate, engage participants, and share information & documentation.*
- *Local Digital Twins supporting scenario exploration with immersive visualisation capabilities.*
- *Citizen science supporting tools. Such as biodiversity-monitoring tools, where citizens participating in an LLL can collect biodiversity data in the field.*

Tools supporting NBS monitoring

URBREATH systematically monitors the effects of NBSs. The Toolbox plays a central role here, grounded in a set of 64 KPIs across eight categories, developed under Task 5.6 along with the associated evaluation methodology.

Examples:

- *Qualitative analyses via e-participation tools (e.g., surveys for citizen feedback on perceived NBS impacts).*
- *Quantitative analyses using predictive models combined with visualisation, interpretation tools, and monitoring dashboards.*

The second category of tools is particularly important when LLLs engage in monitoring NBSs through citizen science initiatives. This approach, which was actively promoted during the train-the-trainer sessions and detailed in Chapter 3.1.2, encourages LLLs to leverage citizen science methods to effectively measure the impacts of NBS.

In this framework, Task 5.3 supports Task 5.2 in the development and use/adoption of LLL-supporting tools by the pilot cities. Task 5.3 actively supports the following activities:

- Support of **tool and simulation model development** by the technical consortium partners in WP3-4.
- Support of and guidance to the **demonstration of the tool and model functionalities** in demo cafés, Cities Calls, and pilot-specific, custom learning-by-doing testing sessions (as part of the 6-step plan, see also Deliverable 5.2, Chapter 5.5.1) and tool/model evaluation in cooperation with WPs 3-4 and Tasks 5.2 and 5.4.
- Provide support to technical consortium partners and LLL managers, working together with Task 5.2, to **enhance the usability, flexibility and interactivity** of tools and models, ensuring they are user-friendly and well-suited for practical use in LLL environments.
- Promote the **integration, customisation and local implementation** of LLL-supporting tools as accessible services, in cooperation with Task 5.4, to minimise the effort required for deployment and use (in collaboration with Task 5.4 and WP3-4).

3.5 Task 5.3 dissemination of Local Living Lab approaches

The LLL work was disseminated by Task 5.3 on different occasions during this second reporting period. Local dissemination by the individual pilot cities was already well-documented in Chapter 3.3.

- On **September 17th**, 2025, Task 5.3 and the city of Leuven participated alongside fellow participants in the **Urban Greening and Renaturing Cluster**, the projects *ReGreeneration Europe*, *GreenInCities*, *Commit2Green*, and *ClimaGen*, and the European Commission, as coordinator, for a live collaborative World Café session in Brussels, focusing on tools, NBS and LLLs.

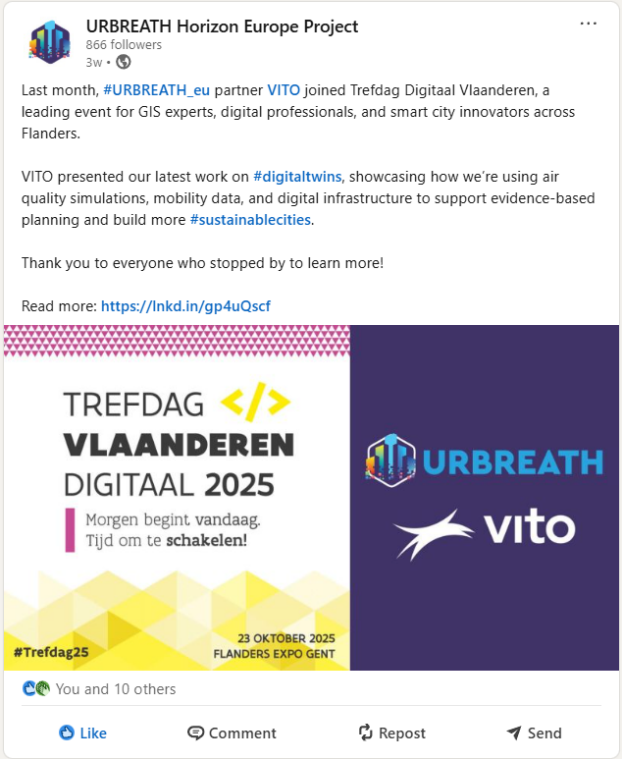
Figure 37: Attendees of the EC Urban Greening and Renaturing Cluster world café in Brussels, including representatives of five URBREATH consortium partners.

- On **October 21st, 2025**, a general presentation for the **Flemish digital strategy division** of the Digital Flanders Department highlighted the latest progress of the URBREATH project, including the development of LDTs for Leuven, ongoing LLL activities, and recent train-the-trainer sessions. The meeting also featured a lively discussion about the detailed 3-30-300 index maps available in Leuven's LDT, which drew interest following recent national news coverage of citywide compliance levels.
- The **Trefdag Digitaal Vlaanderen** held on **October 23rd, 2025**, is Belgium's largest government technology event. It brings together thousands of professionals to explore digital transformation in the public sector, focusing on topics such as GovernmentOS, artificial intelligence, digital security, and data-driven innovation

  At the event, Task 5.3 showcased the LDT tools and LLL approach at the Digital Flanders booth, while VITO promoted the 3-30-300 index and Biotope Area Factor models.

  A summary report of the event was published on the URBREATH website and social media.

Figure 38: Trefdag Digitaal Vlaanderen 2025, LinkedIn post.



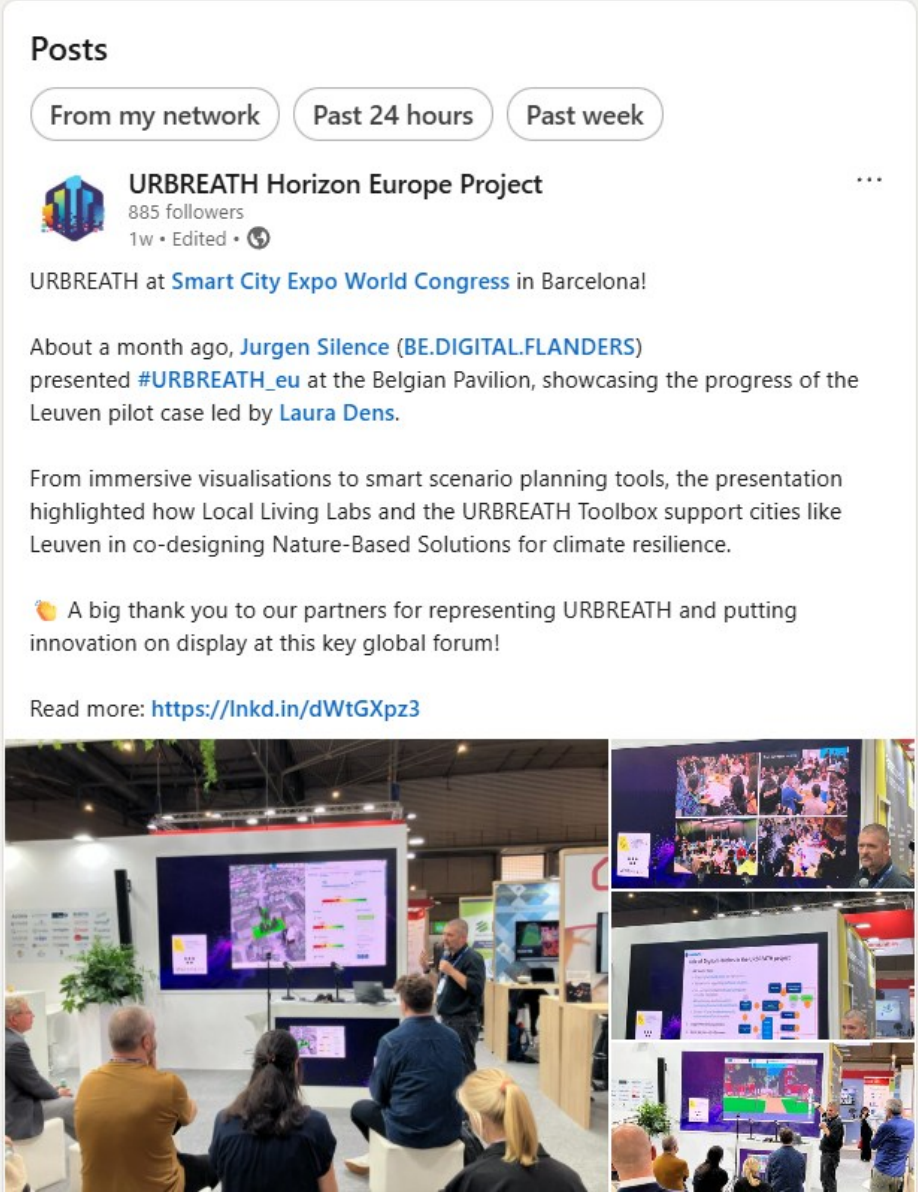
- At the **Smart City Expo World Congress 2025 in Barcelona (November 5th)**, Task 5.3, supported by the city of Leuven, showcased the URBREATH project at the Belgian booth. After a short introduction to the project, Task 5.3 showcased the interim progress of the Leuven pilot case, highlighting how LLL methods foster the co-creation of climate-resilient NBSs. Task 5.3 also demonstrated how the URBREATH Toolbox supports the city of Leuven in designing, implementing, and evaluating these NBS interventions.

  The presentation featured several customised components of the LDT, including:

  - Immersive visualisations of NBS scenarios, created using a planner tool and presented through an interactive walkthrough video.
  - Visualisation of key datasets, such as underground cables and pipelines, to support NBS planning and avoid damage during implementation.
  - Integration of analytical models — the Biotope Area Factor, 3-30-300 Index, and Climate Adaptation Score Tool — enabling comparison of NBS scenarios and before/after simulations linked to KPIs.

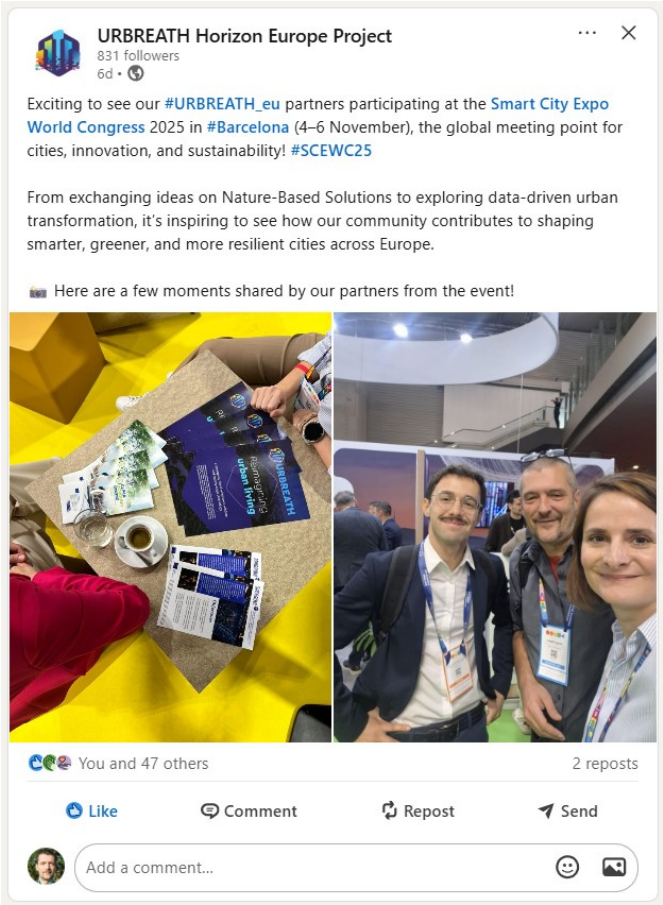
  The URBREATH pitch was part of an inspiring session featuring innovative presentations from Flemish companies and public organisations, showcasing how Flanders is driving urban innovation and climate resilience across Europe.

Figure 39: LinkedIn post reporting on the URBREATH pitch of Task 5.4 at the SCEWC, Barcelona.



Task 5.3 also supported the Lisbon Council by presenting the URBREATH project at the European Commission's booth, and they also joined the booths of the continental climatic zone FLC Pilsen and consortium partners ATC, OASC and VCS.

Figure 40: Two LinkedIn posts on URBREATH's participation in the SCEWC 2025 event.



On **November 28th, 2025**, Task 5.3 recorded a podcast episode with the general theme "surprisingly innovative," focusing on the safe experimentation with digital twins and LLLs. In the episode, Task 5.3 provided an overview of the URBREATH project, discussed the challenges the project aims to address, and explained how LDTs and LLLs are set up and used within the project, including the process for selecting, testing, and implementing NBSs scenarios.

The episode also covered how Task 5.3 defines successful impact and concluded with practical tips and best practices for those interested in experimenting with LDTs and LLLs.

Figure 41: WP5 URBREATH podcast on LLLs and LDTs recording.

4. Further activities and further steps

The next follow-up version of this report is scheduled for Month 36 (December 2026). Over the coming twelve months, the planned activities and steps for Task 5.3 will build upon the work presented in this Deliverable, although we anticipate minor shifts in focus and emphasis as the project evolves.

- For the next reporting period (Months 25-36), we will build on the outcomes of the **train-the-trainer session** focused on using citizen science techniques within LLLs to support KPI monitoring via the collection of qualitative and quantitative data. The designs, questions, and feedback collected from each climatic zone group during the session have been reviewed and processed, and we will further develop these together with the pilot cities into a consolidated action plan for the LLLs. Additionally, we plan to organise more train-the-trainer sessions on a range of new topics for LLLs in 2026.

- Task 5.3 will maintain its support to technical partners through Tasks 5.2 and 5.4 during the **development of tools and simulation models** that aid the LLLs. In collaboration with Tasks 5.4, 5.5, and 5.6, Task 5.3 will also help fine-tune, customise, and prepare these tools and models for local use and deployment. During the next reporting period, we expect new tool and model functionalities to emerge, based on the further development of previously non-prioritised use cases from pilot cities.

- Task 5.3 is committed to further advancing mutual learning and knowledge exchange within the URBREATH project. We will continue to organise and lead the **monthly Cities Calls**, which have proven effective for sharing progress, challenges, and best practices among pilot cities and technical consortium partners. To further enhance these sessions, Task 5.3 will encourage more active participation, structured feedback, and the use of updated presentation templates, ensuring that knowledge is systematically captured and shared across the consortium. By keeping these templates current and adapting meeting formats as needed, they aim to create a dynamic environment where cities can learn from each other and from technical partners, address common challenges collaboratively, and accelerate the adoption of innovative approaches. As there will be a stronger focus on non-prioritised use cases, more tools and models will be tested and used in LLLs, likely leading to new developments and deeper collaboration between pilot cities and technical partners. This will result in more frequent demonstrations of new functionalities during the monthly Cities Calls.

- Task 5.3 will continue to **actively support LLLs at the local level** through a range of targeted activities. This includes advising LLL managers from all URBREATH FRCs and FLCs on the setup and operation of LLLs, both in person and in small groups, during live meetings, general assemblies, Cities Calls, dedicated emails, and virtual sessions. Task 5.3 will also maintain active participation in LLLs whenever possible, such as supporting LLLs organised with residents and stakeholders at the Leuven pilot site, and providing guidance to LLL managers, co-creation specialists, and mobility experts. The team will streamline and facilitate learning-by-doing sessions for all pilot cities, followed by in-depth meetings with local technical experts and consortium partners, helping participants understand and effectively use available tools and models, including integrated features of LDTs. Additionally, Task 5.3 will continue to advise technical

teams on city-specific needs and concerns, and support dissemination and reporting activities led by LLL managers, such as cluster meetings and social media publications.

- Task 5.3 will **continue supporting specific activities** such as GA's, review meetings and dissemination events involving pilot cities and their LLLs.
- For this reporting period, Task 5.3 will continue to **actively support alignment and collaboration across the URBREATH project** and with other EU initiatives. This includes ongoing participation in bi-weekly WP5 meetings and Teams channel communications, regular alignment meetings with other URBREATH work packages—such as weekly WP lead meetings and monthly project management sessions—and active contributions to workshops and exercises organised by other WPs. Task 5.3 will also maintain its engagement with other EU projects through monthly urban greening and renaturing cluster meetings and related webinars, as well as supporting reporting and dissemination activities to ensure effective knowledge sharing and coordination throughout the consortium.
- These actions will be complemented by tailored guidance to address city-specific needs and technical questions. By fostering open communication between pilot cities and technical partners, Task 5.3 aims to ensure that all cities are equipped to use the URBREATH Toolbox effectively. This ongoing commitment to mutual learning and knowledge exchange aims to enhance the effectiveness of LLLs and support ongoing improvement within the URBREATH project.
- Finally, WP5 will keep disseminating its activities, results, and overall progress of the URBREATH project to a broader audience, ensuring visibility and knowledge sharing throughout this next reporting period.

5. Annexes

KPI lists per climatic zone - BOREAL - Tallinn, and Kajaani

Mobility								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
MOB-KPI8	Promotion of pedestrian traffic	Increase	Total number of pedestrians	TBD after Tallinn filled out Monitoring Protocol Draft	Counting	Absolute numbers (#)	X	

Biodiversity								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
BIO-KPI1	Expand greened areas	Increase	Total greened area	NBS site	Measurement	Square metres (m^2)		X
BIO-KPI3	Increase fauna diversity	Increase	Number of pollinators/insects/butterflies	NBS site	Counting	Absolute numbers (#)	X	
BIO-KPI8	Reduce invasive plant species	Increase	Total area freed from invasive plant species	NBS surrounding area	Measurement	Square metres (m^2)		X

Environment & Pollution								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
EP-KPI2	Decreased snow meltwater pollution/	Decrease	Sodium level (NA^+) in snow meltwater	NBS site	Evaluation of snow meltwater sample	Milligrams per litre (mg/l)	X	X
EP-KPI3	Improve soil health	Decrease	Chloride level (Cl^-) in snow meltwater	NBS site	Evaluation of snow meltwater sample	Milligrams per litre (mg/l)	X	X
EP-KPI4		Decrease	Level of heavy metals in snow meltwater	NBS site	Evaluation of snow meltwater sample	Micrograms per litre (µg/l)		X
EP-KPI5		Decrease	Level of phosphorus in snow meltwater	NBS site	Evaluation of snow meltwater sample	Milligrams per litre (mg/l)		X
EP-KPI6		Decrease	Level of nitrogen in snow meltwater	NBS site	Evaluation of snow meltwater sample	Milligrams per litre (mg/l)		X
EP-KPI7	Decrease litter pollution	Decrease	Amount of litter in the plowed snow	NBS site	Measurement	Litres (l)		X

Climate Resilience								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
CR-KPI3	Improve snowmelt water treatment	Increase	Size of permeable snow deposit area	NBS site	Measurement	Square metres (m^2)		X
CR-KPI4		Increase	Total amount of treated snowmelt water	NBS site	Quantifiction of the volume of meltwater that has been collected and treated (e.g., for use in irrigation, drinking water, or other purposes)	Cubic metres (m^3)	X	X

Livability & Social Justice								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
LSJ-KPI4	Improve natural area access for recreation	Increase	Number and type of new recreation facilities and installations	NBS site	Counting	Absolute numbers (#)	X	
LSJ-KPI5	Increase overall satisfaction with the NBS site	Increase	Degree of satisfaction with NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X
LSJ-KPI6		Increase	Degree of perceived safety at NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
LSJ-KPI7		Increase	Degree of perceived aesthetic of the NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X

Knowledge & Awareness								
KPI-ID	**Objective**	**Target Trend**	**Metric**	**Scale**	**Calculation**	**Unit**	**TA**	**KA**
KA-KPI2	Raise citizen climate change adaption and NBS knowledge and awareness	Increase	Number of actions/publications implemented/released for citizens to raise knowledge and awareness of climate change adaptation and NBS	Citywide	Counting	Absolute numbers (#)		X
KA-KPI4		Increase	Number of citizens reached by knowledge and awareness campaigns on climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Counting	Absolute numbers (#)	X	X
KA-KPI5	Raise city staff climate change adaption and NBS knowledge and awareness	Increase	Number of city officials working in NBS-related departments aware of/knowing about climate change adaptation and NBS / report an increase in their knowledge	Administration intern	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Mean value (M)		X

KPI lists per climatic zone – MEDITERRANEAN - Madrid, Parma, and Athens

Mobility

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
MOB-KPI1	Decrease motorized transport	Decrease	Share of motorized traffic in the modal split	NBS surrounding area	(Journeys or route of motorized vehicles / Total journeys or routes) x 100	Percentage (%)		X	
MOB-KPI2		Decrease	Total number of motorized vehicles (+ timespan?)	NBS surrounding area	Counting	Absolute Numbers (#)		X	X
MOB-KPI3	Decrease traffic speed	Decrease	Allowed traffic speed	NBS surrounding area	Capturing the value	Kilometres per hour (km/h)	X		
MOB-KPI9	Promotion of pedestrian traffic	Increase	Expansions of sidewalks and pedestrian paths	NBS surrounding area	Measurement	Metres (m) or square metres (m^2)	X	X	

Biodiversity

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
BIO-KPI1	Expand greened areas	Increase	Total greened area	NBS site	Measurement	Square metres (m^2)	X	X	X
BIO-KPI2	Expand high-quality biotope areas	Increase	Biotope Area Factor (BAF)	NBS site	VC Planner	BAF 0 - 1		X	X
BIO-KPI6	Increase flora diversity	Increase/Preservation	Total number of trees per species	NBS site	Categorisation and counting	Absolute numbers (#) per species	X	X	
BIO-KPI7		Increase	Share of total area covered by tree canopy	NBS site	VC Planner	Percentage (%)	X	X	

Climate Resilience

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
CR-KPI1	Decrease flooding risk	Increase	Water infiltration rate	NBS site	EXUS	Millilitres per hour (ml/h)		X	
CR-KPI2		Increase	Total area of permeable surfaces	NBS site	Measurement	Square metres (m^2)	X	X	
CR-KPI7	Decrease Urban Heat Island (UHI) Effect	Decrease	Surface Temperature	NBS site	LAT40	Degrees Celsius (C°)	X	X	
CR-KPI8		Increase	Shaded areas	NBS site	VC Planner	Square metres (m^2)	X	X	

Livability & Social Justice

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
LSJ-KPI1	Improve natural area access for recreation	Increase	Number of users/visitors of the NBS site	NBS site	Counting	Absolute numbers (#)		X	X
LSJ-KPI2		Increase	Size of accessible NBS area per capita	NBS surrounding area	Total accessibie NBS area / total population	Square metres per capita (m^2/capita)	X		
LSJ-KPI3		Increase	Degree of perceived recovery from the stay at the NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)			X
LSJ-KPI4		Increase	Number and type of new recreation facilities and installations	NBS site	Counting	Absolute numbers (#)		X	X
LSJ-KPI5	Increase overall satisfaction with the NBS site	Increase	Degree of satisfaction with NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)		X	X
LSJ-KPI6		Increase	Degree of perceived safety at NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)		X	
LSJ-KPI12	Prevent "Green Gentrification"	Preservation	Median housing value in NBS area	NBS surrounding area	Inflation-adjusted housing value = Median housing value in n years / (1 + inflation rate)n	National currency		X	
LSJ-KPI13	Provide public sanitation and premises	Increase	Provision of drinking water fountains	NBS surrounding area	Counting	Absolute numbers (#)	X		

Knowledge & Awareness

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
KA-KPI1	Raise citizen climate change adaption and NBS knowledge and awareness	Increase	Share of citizens aware of climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)		X	X
KA-KPI2		Increase	Number of actions/publications implemented/released for citizens to raise knowledge and awareness of climate change adaptation and NBS	Citywide	Counting	Absolute numbers (#)		X	
KA-KPI3		Increase	Number of schools that teach climate change adaption and NBS (in relation to the NBS on site, e.g. through a visit)	Citywide	Counting	Absolute numbers (#)	X	X	
KA-KPI4		Increase	Number of citizens reached by knowledge and awareness campaigns on climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Counting	Absolute numbers (#)		X	X
KA-KPI5	Raise city staff climate change adaption and NBS knowledge and awareness	Increase	Number of city officials working in NBS-related departments aware of/knowing about climate change adaptation and NBS / report an increase in their knowledge	Administration intern	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Mean value (M)	X		
KA-KPI6		Increase	Number of city officials working in NBS-related departments who have participated in the URBREATH training program	Administration intern	(Number of "Yes" responses / Total number of city officials working in NBS-related departments) x 100	Absolute numbers (#)	X		

Governance & Participatory Planning

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	MA	PA	AT
GPP-KPI1	Foster greater recognition and integration of climate change adaptation and NBS in local governance practices	Increase	Number of regulatory and policy frameworks on climate change adaptation and NBS that have been reworked/improved	Administration intern	Counting	Absolute numbers (#)	X		
GPP-KPI2		Increase	Implementation of governance mechanisms to foster cross-departmental collaboration in implementing and managing NBS	Administration intern	Counting	Absolute numbers (#) of new governance mechanisms	X		
GPP-KPI3		Increase	Number of projects within the city administration utilizing URBREATH tools	Administration intern	Counting	Absolute numbers (#)			
GPP-KPI4	Maintain long-term citizen interaction and local stewardship	Increase	Number of citizens involved in the local stewardship (maintenance or conservation) of the NBS site	NBS site	Counting	Absolute numbers (#)		X	
GPP-KPI5		Increase	Community garden area	NBS surrounding area	Measurement	Square metres (m^2)		X	
GPP-KPI6	Build long-term stakeholder partnerships	Increase	Number of stakeholder partnerships establiished, categorized by group representation (e.g., NGOs, businesses, etc.)	Citywide	Counting	Absolute numbers (#)	X		X
GPP-KPI7		Increase	Number of participants in city-hosted events for local partnerships related to NBS	Administration intern	Counting	Absolute numbers (#)			X
GPP-KPI8		Increase	Degree of partner satisfaction with NBS partnerships	Citywide	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)			X

KPI lists per climatic zone – CONTINENTAL – Cluj-Napoca, and Pilsen

Mobility

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
MOB-KPI1	Decrease motorized transport	Decrease	Share of motorized traffic in the modal split	NBS surrounding area	(Journeys or route of motorized vehicles / Total journeys or routes) x 100	Percentage (%)		X
MOB-KPI2		Decrease	Total number of motorized vehicles (+ timespan?)	NBS surrounding area	Counting	Absolute Numbers (#)		X
MOB-KPI4	Reduction of the area used for parking spaces	Decrease	Share of the total area used for car parking spaces	NBS surrounding area	(Total area used for car parking spaces / Total area of NBS surrounding area) x 100	Percentage (%)		X
MOB-KPI5	Promotion of cycle traffic	Increase	Share of cyclists in the modal split	NBS surrounding area	(Journeys or route of cyclists / Total journeys or routes) x 100	Percentage (%)	X	X
MOB-KPI6		Increase	Lenght of bicycle lanes	NBS surrounding area	Measurement	Metres (m) or square metres (m^2)	X	
MOB-KPI7	Promotion of pedestrian traffic	Increase	Share of pedestrians in the modal split	NBS surrounding area	(Journeys or route of pedestrians / Total journeys or routes) x 100	Percentage (%)	X	X
MOB-KPI9		Increase	Expansions of sidewalks and pedestrian paths	NBS surrounding area	Measurement	Metres (m) or square metres (m^2)	X	X
MOB-KPI10	Promotion of public transport	Increase	Share of public transport in the modal split	NBS surrounding area	(Journeys or route of public transport / Total journeys or routes) x 100	Percentage (%)		X

Biodiversity

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
BIO-KPI1	Expand greened areas	Increase	Total greened area	NBS site	Measurement	Square metres (m^2)	X	
BIO-KPI2	Expand high-quality biotope areas	Increase	Biotope Area Factor (BAF)	NBS site	VC Planner	BAF 0 - 1	X	X
BIO-KPI3	Increase fauna diversity	Increase	Number of pollinators/insects/butterflies	NBS site	Counting	Absolute numbers (#)	X	
BIO-KPI4		Increase	Number of animals (other than pollinators/insects/butterflies)	NBS site	Counting	Absolute numbers (#)	X	
BIO-KPI5	Increase flora diversity	Increase	Number of plant species	NBS surrounding area	Counting	Absolute numbers (#)	X	
BIO-KPI6		Increase/Preservation	Total number of trees per species	NBS site	Categorisation and counting	Absolute numbers (#) per species	X	X
BIO-KPI7		Increase	Share of total area covered by tree canopy	NBS site	VC Planner	Percentage (%)		X

Environment & Pollution

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
EP-KPI1	Decrease noise pollution	Decrease	Noise level	NBS site	Measurement	Decibel (dB)	X	

Climate Resilience

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
CR-KPI1	Decrease flooding risk	Increase	Water infiltration rate	NBS site	EXUS	Millilitres per hour (ml/h)		X
CR-KPI2		Increase	Total area of permeable surfaces	NBS site	Measurement	Square metres (m^2)		X
CR-KPI5	Decrease drought risk	Increase	Soil moisture level	NBS site	Measurement	Percentage (%)	X	X
CR-KPI6		Increase	Rainwater retention capacity	NBS site	Measurement	Litres (l)	X	
CR-KPI7	Decrease Urban Heat Island (UHI) Effect	Decrease	Surface Temperature	NBS site	LAT40	Degrees Celsius (C°)	X	X
CR-KPI8		Increase	Shaded areas	NBS site	VC Planner	Square metres (m^2)	X	X

Livability & Social Justice

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
LSJ-KPI3	Improve natural area access for recreation	Increase	Degree of perceived recovery from the stay at the NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
LSJ-KPI4		Increase	Number and type of new recreation facilities and installations	NBS site	Counting	Absolute numbers (#)	X	X
LSJ-KPI5	Increase overall satisfaction with the NBS site	Increase	Degree of satisfaction with NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
LSJ-KPI8	Provide social communication spaces to reduce loneliness	Decrease	Degree of perceived loneliness in NBS area	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
LSJ-KPI9	Provide cultural offerings	Increase	Number of cultural offerings (events, etc.) in NBS area	NBS surrounding area	Counting	Absolute numbers (#)		X

Knowledge & Awareness

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
KA-KPI1	Raise citizen climate change adaption and NBS knowledge and awareness	Increase	Share of citizens aware of climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
KA-KPI2		Increase	Number of actions/publications implemented/released for citizens to raise knowledge and awareness of climate change adaptation and NBS	Citywide	Counting	Absolute numbers (#)	X	
KA-KPI3		Increase	Number of schools that teach climate change adaption and NBS (in relation to the NBS on site, e.g. through a visit)	Citywide	Counting	Absolute numbers (#)	X	
KA-KPI4		Increase	Number of citizens reached by knowledge and awareness campaigns on climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Counting	Absolute numbers (#)		X

Governance & Participatory Planning

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
GPP-KPI4	Maintain long-term citizen interaction and local stewardship	Increase	Number of citizens involved in the local stewardship (maintenance or conservation) of the NBS site	NBS site	Counting	Absolute numbers (#)	X	
GPP-KPI5		Increase	Community garden area	NBS surrounding area	Measurement	Square metres (m^2)	X	
GPP-KPI6	Build long-term stakeholder partnerships	Increase	Number of stakeholder partnerships established, categorized by group representation (e.g., NGOs, businesses, etc.)	Citywide	Counting	Absolute numbers (#)	X	
GPP-KPI7		Increase	Number of participants in city-hosted events for local partnerships related to NBS	Administration intern	Counting	Absolute numbers (#)	X	
GPP-KPI9	Provide open data on NBS to the public	Increase	Number of published governance documents on NBS (strategies, plans, concepts, etc.)	Citywide	Counting	Absolute numbers (#)		X
GPP-KPI10		Increase	Number of open datasets on NBS (geospatial data, performance, etc.)	Citywide	Counting	Absolute numbers (#)		X

Local Economy

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	CN	PI
LE-KPI1	Revitalize NBS area for businesses	Increase	Number of businesses actively using the NBS site (e.g. through outdoor seating areas)	NBS site	Counting	Absolute numbers (#)		X

KPI lists per climatic zone - ATLANTIC - Leuven, and Aarhus

Mobility

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
MOB-KPI1	Decrease motorized transport	Decrease	Share of motorized traffic in the modal split	NBS surrounding area	(Journeys or route of motorized vehicles / Total journeys or routes) x 100	Percentage (%)	X	
MOB-KPI2		Decrease	Total number of motorized vehicles (+ timespan?)	NBS surrounding area	Counting	Absolute Numbers (#)		X
MOB-KPI4	Reduction of the area used for parking spaces	Decrease	Share of the total area used for car parking spaces	NBS surrounding area	(Total area used for car parking spaces / Total area of NBS surrounding area) x 100	Percentage (%)		X
MOB-KPI5	Promotion of cycle traffic	Increase	Share of cyclists in the modal split	NBS surrounding area	(Journeys or route of cyclists / Total journeys or routes) x 100	Percentage (%)	X	
MOB-KPI6		Increase	Lenght of bicycle lanes	NBS surrounding area	Measurement	Metres (m) or square metres (m^2)		X
MOB-KPI7	Promotion of pedestrian traffic	Increase	Share of pedestrians in the modal split	NBS surrounding area	(Journeys or route of pedestrians / Total journeys or routes) x 100	Percentage (%)	X	
MOB-KPI9		Increase	Expansions of sidewalks and pedestrian paths	NBS surrounding area	Measurement	Metres (m) or square metres (m^2)		X

Biodiversity

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
BIO-KPI1	Expand greened areas	Increase	Total greened area	NBS site	Measurement	Square metres (m^2)	X	X
BIO-KPI2	Expand high-quality biotope areas	Increase	Biotope Area Factor (BAF)	NBS site	VC Planner	BAF 0 - 1	X	
BIO-KPI3	Increase fauna diversity	Increase	Number of pollinators/insects/butterflies	NBS site	Counting	Absolute numbers (#)	X	
BIO-KPI6		Increase/Preservation	Total number of trees per species	NBS site	Categorisation and counting	Absolute numbers (#) per species	X	X
BIO-KPI7		Increase	Share of total area covered by tree canopy	NBS site	VC Planner	Percentage (%)	X	

Environment & Pollution

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
EP-KPI1	Decrease noise pollution	Decrease	Noise level	NBS site	Measurement	Decibel (dB)		X

Climate Resilience

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
CR-KPI1	Decrease flooding risk	Increase	Water infiltration rate	NBS site	EXUS	Millilitres per hour (ml/h)	X	X
CR-KPI2		Increase	Total area of permeable surfaces	NBS site	Measurement	Square metres (m^2)	X	
CR-KPI5	Decrease drought risk	Increase	Soil moisture level	NBS site	Measurement	Percentage (%)	X	
CR-KPI7	Decrease Urban Heat Island (UHI) Effect	Decrease	Surface Temperature	NBS site	LAT40	Dogrees Celsius (C°)	X	
CR-KPI8		Increase	Shaded areas	NBS site	VC Planner	Square metres (m^2)	X	

Livability & Social Justice

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
LSJ-KPI1	Improve natural area access for recreation	Increase	Number of users/visitors of the NBS site	NBS site	Counting	Absolute numbers (#)		X
LSJ-KPI3		Increase	Degree of perceived recovery from the stay at the NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X
LSJ-KPI4		Increase	Number and type of new recreation facilities and installations	NBS site	Counting	Absolute numbers (#)	X	X
LSJ-KPI5	Increase overall satisfaction with the NBS site	Increase	Degree of satisfaction with NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X
LSJ-KPI6		Increase	Degree of perceived safety at NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X
LSJ-KPI7		Increase	Degree of perceived aesthetic of the NBS site	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	X
LSJ-KPI8	Provide social communication spaces to reduce loneliness	Decrease	Degree of perceived loneliness in NBS area	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)	X	
LSJ-KPI9	Provide cultural offerings	Increase	Number of cultural offerings (events, etc.) in NBS area	NBS surrounding area	Counting	Absolute numbers (#)		X
LSJ-KPI11	Provide inclusive NBS	Increase	Share of users satisfied with accessibility features of the NBS area	Citywide (or NBS surrounding area, depending on survey design)	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)		X

Knowledge & Awareness

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
KA-KPI2	Raise citizen climate change adaption and NBS knowledge and awareness	Increase	Number of actions/publications implemented/released for citizens to raise knowledge and awareness of climate change adaptation and NBS	Citywide	Counting	Absolute numbers (#)	X	
KA-KPI4		Increase	Number of citizens reached by knowledge and awareness campaigns on climate change adaptation and NBS	Citywide (or NBS surrounding area, depending on survey design)	Counting	Absolute numbers (#)	X	

Governance & Participatory Planning

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
GPP-KPI3		Increase	Number of projects within the city administration utilizing URBREATH tools	Administration intern	Counting	Absolute numbers (#)	X	
GPP-KPI10		Increase	Number of open datasets on NBS (geospatial data, performance, etc.)	Citywide	Counting	Absolute numbers (#)		X

Local Economy

KPI-ID	Objective	Target Trend	Metric	Scale	Calculation	Unit	LE	AA
LE-KPI1	Revitalize NBS area for businesses	Increase	Number of businesses actively using the NBS site (e.g. through outdoor seating areas)	NBS site	Counting	Absolute numbers (#)		X
LE-KPI2		Increase	Degree of satisfaction of business owners with NBS site	NBS surrounding area	Mean Value: Assign numeric values to each response (1-5) Sum all response values Divide by the total number of respondents	Percentage of the individual responses (%) and mean value (M)		X
							22	19