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

Highlighting the Technical Dimension of Living Labs:
Cluj-Napoca Workshop Insights

On May 21st, 2025, during the URBREATH General Assembly in Cluj-Napoca, a dedicated technical session was held to assess progress under the Work Package 5 (Living Labs) tasks, more specifically T5.4 (Data Inventory and Digital Twin Integration), T5.5 (Dashboard Development), and T5.6 (KPI Definition and Monitoring). This session brought together the leads of each task and pilot city representatives to align technical efforts and address outstanding challenges.

Opening Remarks and Strategic Context

Jurgen Silence (Digital Flanders), lead of Work Package 5, opened the session by outlining the agenda and sharing preliminary reflections. He emphasised several critical issues currently affecting WP5 progress, chief among them the persistent lack of data across multiple pilot cities, particularly within T5.4's data inventory and T5.6's KPI framework. Jurgen underscored the interdependence of these data inputs with the functionality of the monitoring dashboards and the broader evaluation mechanisms for various URBREATH's digital tools.

To ensure feasibility and focus, Jurgen issued a clear directive: Key Performance Indicators (KPIs) deemed unmeasurable must be removed from the list, and a revised, finalised KPI selection must be submitted by a set deadline.

T5.4: Progress on Data Inventory and Local Digital Twins

Thomas Adolphi (VCS) provided a comprehensive update on Task 5.4, which has become increasingly central as the URBREATH digital tools enter the testing and evaluation phase in the pilot cities. His presentation followed a successful tool demonstration held earlier that day during the demo café, which generated considerable interest among pilot representatives.

Thomas detailed the recent activities undertaken to support the integration of Local Digital Twins (LDTs) with the broader data ecosystem. This included the development of a flexible webinar format that allows technical partners to showcase their tools, a series of webinars he gave focusing on the customisation of LDTs and their associated storytelling functionalities, and targeted one-on-one support sessions to tailor LDT configurations to local needs.

He presented an in-depth overview of the current status of the data inventory for each pilot city, along with plans for future support from **Zehra Koç**, who will assist in finalising these data sets. In addition, Thomas clarified the distinction between data types for visualisation versus those required for analysis and KPI monitoring. He concluded with a forward-looking outline of possible tool deployment scenarios at the local level, highlighting both opportunities and infrastructure prerequisites.

T5.5: Dashboard Development and Visualisation Frameworks

Antonella Tozzi (Municipia) followed with a detailed presentation on Task 5.5, focusing on the development of dashboards for monitoring and decision support. She outlined the developmental timeline and reported on the current status within that trajectory. Using a demo case, Antonella illustrated how real-world needs and stakeholder input are shaping the structure and functionality of the dashboards.

The preliminary interface design and visualisation logic were also shared, giving participants a first glimpse into the look and feel of the tools under development. The dashboards are being developed with a strong emphasis on usability, adaptability to local contexts, and the capacity to visualise both real-time and cumulative data, enabling evidence-based co-design decisions.
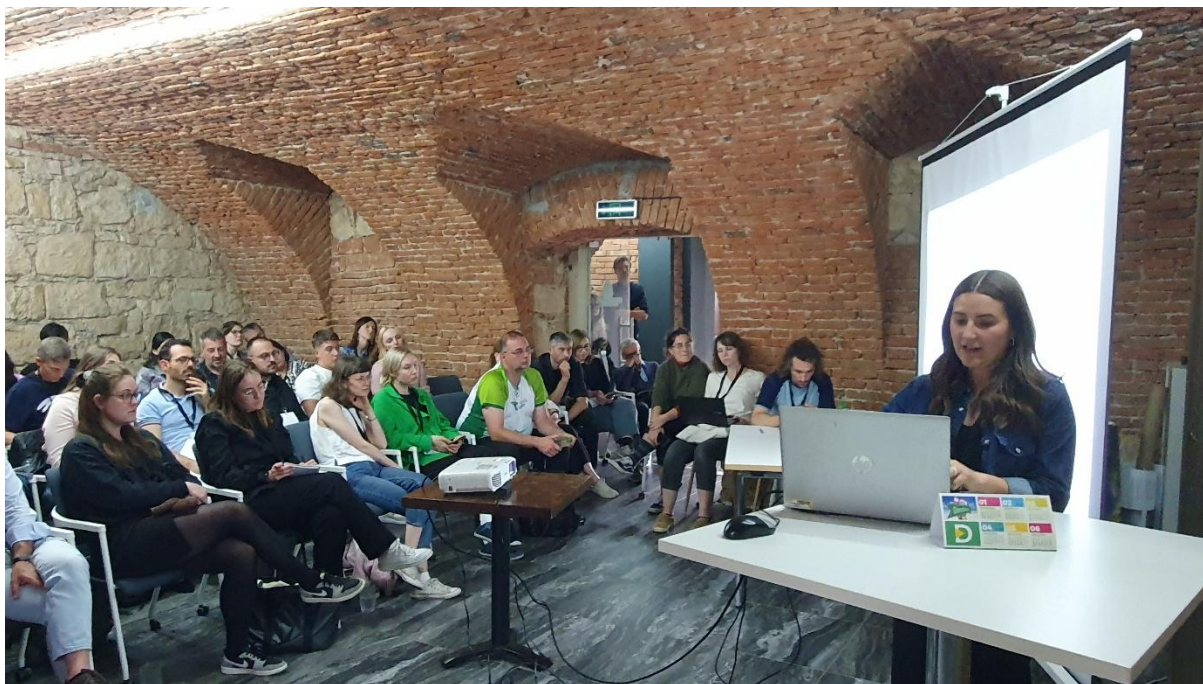
T5.6: KPI Framework and Monitoring Strategy

The final presentation was delivered by **Alisa Krumm** (Fraunhofer), who reported on the progress of Task 5.6 concerning KPI selection, definition, and data readiness. Despite extensive consultations, the KPI lists provided by the pilot cities remain incomplete. Alisa presented a detailed matrix of missing data elements of each pilot city and clarified the expectations for completion ahead of the internal deadline of June 6th.

She reiterated the critical role of KPIs in assessing the effectiveness of nature-based solutions and digital co-design processes, emphasising the importance of defining realistic target values, associated timelines, and data availability conditions. Alisa also outlined the next steps for each pilot city to meet Milestone 7 (Month 18), which requires fully defined and operational KPI frameworks by the end of June 2025.

Throughout the 3-day General Assembly, WP5 task leads engaged directly with pilot representatives, offering technical guidance and hands-on support to overcome local bottlenecks. This collaborative approach reflects the project's Living Lab ethos, grounded in mutual learning and iterative development.

Conclusion

The technical workshop in Cluj-Napoca marked a pivotal moment in the operationalisation of URBREATH's Living Lab methodology. It reinforced the essential role of structured data collection, KPI alignment, and tool customisation in supporting urban transformation through nature-based solutions. As the project enters a more implementation-focused phase, coordinated technical action across all pilot cities remains crucial to realising the full potential of the toolbox, including Digital Twins, and participatory co-design in shaping resilient, inclusive urban futures.

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