

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

Press Release

29th, Feb 2024

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New Horizon Europe project launched to develop a new strategy for greening cities!

URBREATH project aims to integrate transformative technical and nature-based solutions by leveraging community participation, Local Digital Twins, and AI technologies.

Rising temperatures, extreme weather, and biodiversity loss paint a stark picture of our planet's climate crisis. In fact, Europe's land temperatures are rising significantly faster than the global average, leading to heatwaves, droughts, and wildfires. In addition, rather frequent and intense flooding, storms, and weather-related disasters pose a risk to lives and infrastructure, and not only in coastal regions. But not least, shifting weather affects water availability, creating challenges for agriculture, human consumption, and industry. Climate crisis threatens our future, and cities worldwide stand at the frontline. As significant contributors to carbon emissions, urban areas not only fuel climate change but also bear the brunt of its dire consequences.

The EU has been a strong leader in addressing climate change, undertaking key initiatives such as the European Green Deal, the Fit for 55 Package (incl. Emissions Trading System, Renewable Energy & Energy Efficiency Directives), the European Climate Law and more. In that context, a new assessment framework highlights the vital role Nature-Based Solutions (NBS) can play in mitigating climate change and promoting a more sustainable future. This innovative approach leverages the power of nature to reduce greenhouse gas emissions, protect ecosystems, and create a more resilient world.

Yet, international collaboration is crucial to meet these targets and ensure all sectors of its economy transform sufficiently. Within this spectrum, programs like Horizon Europe support research and development of clean technologies and innovative climate solutions.

Enter URBREATH, a groundbreaking initiative co-funded by the European Union, poised to revolutionise our urban landscapes. This project isn't just about adapting to climate change; it's about transforming

our cities from the ground up, making them not only sustainable but resilient against the ever-growing threats of a warming world.

URBREATH is about reimagining urban living, where concrete jungles give way to lush green havens. By weaving nature into the fabric of our cities, from expansive green roofs to vibrant urban forests and thriving wetlands, we aim to combat the urban heat island effect, mitigate flood risks, and purify our air. But URBREATH goes beyond just planting trees and creating green spaces. It's a synergistic blend of nature's wisdom and cutting-edge technology.

Through the engagement of local communities, the utilisation of Local Digital Twins, and the application of AI technologies, URBREATH is setting the stage for a new era of urban planning. A collaborative effort involving leading researchers, urban planners, policymakers, and tech innovators, this project seeks to harness the full potential of nature-based solutions (NBS) across diverse climate zones, each facing unique climate challenges. By doing so, URBREATH not only aims to make our cities more livable and inclusive but also sets a blueprint for how urban areas can be at the heart of combating climate change, turning our greatest vulnerability into our strongest defense.

At the opening event of the project, which was held at the beginning of February 2024 in Leuven (Belgium), all demo cities of the URBREATH project presented their pilot solutions, including Tallin (Estonia), Leuven (Belgium), Madrid (Spain) and Cluj-Napoca (Romania). Based on the activities piloted in cities, the project framework will develop systematic co-creation-based nature-based solutions implementation assistance tools for climate change adaptation and mitigation.

According to Dr. Francesco Mureddu, Senior Director at The Lisbon Council and project coordinator, *“NBS are actions that protect, manage, or restore natural or modified ecosystems to address societal challenges and benefit both people and nature. The project will provide key knowledge and tools for the design and implementation of NBS that can close urban water loops, mitigate pollution and runoff, and enhance urban biodiversity and well-being.”*

Still, the project team also aspires to foster community engagement and knowledge sharing and ensure that NBS are not only effective, but also socially inclusive and culturally relevant. In fact, this 4-year journey is expected to contribute to the adaptation of nine cities around Europe, by working closely with citizens and stakeholders. The findings of this groundbreaking project will be shared widely, providing valuable insights and best practices for cities around the world seeking to embrace nature as a powerful tool for building a more resilient future.

The project brings together a consortium of 37 partnering organisations, from 12 countries, which will all work under the experienced lead of The Lisbon Council for Economic Competitiveness (Belgium).

The extended list of the consortium members includes:

- **RTOs and Universities:** Polytechnic University of Milan, Fraunhofer Institute for Industrial Engineering IAO, University of Stuttgart, Tallinn University of Technology, Institute of

Communication and Computer Systems, VITO, Polytechnic University of Madrid, Kajaani University of Applied Sciences

- **Public Agencies:** Digital Flanders Agency
- **Large Enterprises:** Engineering, Municipia, Deda Next
- **Small and Medium Enterprises:** Athens Technology Center, virtualcitySYSTEM, Urbasofia, Diadikasia Business Consultants, Latitudo 40, South Pole, Telesto, EXUS Software, Traza, Dark Matters Lab
- **Non-profit Organisations and Networks:** Open and Agile Smart Cities, Climate Alliance, Climate Research Foundation, Basurama, BLOXHUB
- **Frontrunner Cities:** Madrid, Leuven, Tallinn, Cluj-Napoca
- **Follower Cities:** Parma, Athens, Aarhus, Kajaani, Pilsen

The URBREATH project is co-funded by the European Union under grant agreement ID 101139711. The information and views set out in this document are those of the URBREATH Consortium only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.