Urban Greening and Renaturing towards Climate Neutrality: the URBREATH approach

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Abstract

The aim of the workshop is to present the project URBREATH, to co-create some of its first outcomes, and to discuss synergies with similar initiatives. URBREATH proposes a 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. It addresses the topic HORIZON-MISS-2023-CLIMA-CITIES-01-01: Urban greening and renaturing for urban regeneration, resilience and climate neutrality. The project, almost 15 million euros in value, comprises 37 partners, out of which 9 cities from different Member States (BE, CZ, DK, EE, EL, ES, IT, RO).

Keywords

Hybrid/Nature Base Solutions, Local digital twins, climate research, Local Living Labs, co-creation and participatory tools, impact assessment and monitoring, replicability and scalability.

1. The Project URBREATH

The problem: European cities and regions face major social challenges due to global geopolitical, economical, climate and other changes. Climate Change (CC), demographic and socio-economic factors strain the very essence of our society and the resilience of the infrastructure that supports it. Extreme weather events (e.g., floods, droughts, heatwaves) are increasing in both intensity and frequency of occurrence, and the growing consensus is that this is largely due to CC. Urban areas are particularly vulnerable to these events because of the concentration of people and facilities they combine. Moreover, increased social problems, such as poverty, unemployment and tensions in concentrated and diverse multicultural populations, social exclusion and marginalization, increased criminality, health issues and negative aspects of migration and refugee crisis are even further reinforced by unfavourable liveability of the areas inhabited by vulnerable groups. These areas lack high-quality Nature Based Solutions (NBS), as part of the climate adaptation measures, which consider both technical and socio-economic factors. In addition, deprived, neglected or

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abandoned urban areas have great potential for creating attractive and inclusive spaces. Hence, it is critical to revitalise those areas in a socially and technically innovative manner that will bring new functions and improved quality of life. However, the prevailing/conventional approach to revitalisation, regeneration and greening planning is often simplified to a cost/profit criteria with simplified methodologies often lacking advanced integrated methods and concepts. Therefore, they do not often provide the necessary return on investment by failing to attract sustained funding, people, and businesses to these areas. The conventional approach also tends to neglect local communities' needs and hence often ends up with solutions (NBS or otherwise) that are imposed on the community, i.e., that are not socially acceptable. The challenge that URBREATH raises is how to underpin the EC aspirations on hybrid solutions with NBS at core with an innovative paradigm shift in restoration and renewing planning that enables the benefits provided at single micro-scale level to be "spilled-over"/replicated to regional, national and cross-boundary levels. This shift is one of a more comprehensive/integrated nature than current state of the art planning practices, such as streetscape, eco quarters and eco-cities, zero-carbon zones, zero waste and classical smart cities. URBREATH includes the creation of a framework for the development of innovative standardisation, licensing and certification, as well as the URBREATH's innovative "gluing routines" that bring together "eco-unifying mechanisms". We call this process a "Mental Setup Change" in Regional and Urban Planning, and it is calling for an interactions-based, sustainable approach to tackle social, economic, climate, and other types of stresses (incl. urbanization, unsustainable practices in urban agriculture, forestry, and fishery) in which NBS play a crucial role. URBREATH's vision is to develop, implement, demonstrate, validate and replicate a comprehensive, community participation NBS-driven urban revitalisation, resilience and climate neutrality paradigm that will ultimately radically enhance social interaction, inclusion, equitability, and liveability in cities.

2. Structure of the workshop

The workshop will consist of four main parts:

• **1st Part (30')** Presentation of the project. This first part of the workshop depicts the presentation of the main concepts/plans of the project and contextualisation in the smart city and sustainability area, going into the project's goals. Presenter: Francesco Mureddu, project coordinator

• **2nd Part (30')** Presentation of relevant topics:

- Digital twins and immersive technologies
  - exPEDite. Presenter George Kolionis (EXUS)
  - Local Digital Twins tender. Presenter Roberto Di Bernardo (ENG)
  - OPENVERSE. Presenter Francesco Mureddu (LC)
- Open Data for AI smart city services
  - BeOpen. Presenter: Luca Remof (DP)
  - SPOTTED. Presenter: Francesco Mureddu (LC)
- Urban greening and renaturing
  - ReGreeneration. Presenter: TBD.
  - GreenInCities. Presenter: TBD.

• **3rd part (1h 15')** – Working session on the first outcomes of the project and the synergies with projects funded under the same topic (GreenInCities & ReGreeneration).

- Use case scenarios and baselines
- URBREATH platform requirements
- Digital twin technologies and sustainable urban development

• **4th part (15')** –Wrap up of the main results. Presenter: Francesco Mureddu, project coordinator.