SESSION DESCRIPTION

ID: X12

Ecosystem-oriented approaches for urban, peri-urban and environmental resilience under Climate Change

Hosts:

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Abstract:
In advancing global sustainability objectives, Europe has set climate change mitigation and adaptation as key principles for promoting sustainable and resilient human settlements.

In this context, the potential of ecosystem restoration has long been acknowledged in the scientific debate, particularly for its capacity to foster simultaneous protection and enhancement of ecosystems while supporting human activities. Integrating the ecosystem services approach into climate and energy planning thus promotes strategies that are environmentally effective, socially equitable and economically viable. This also aligns with the broader goal of sustainable development.

However, although ecosystems' health and the services they provide are currently recognized as crucial elements to be safeguarded and enhanced along the urban-rural-natural gradient, evidence shows that they are experiencing a steady decline across Europe. This trend, as evidenced by the IPBES (2019) and MAES (2020) reports, heightens the exposure and vulnerability of both urban and rural areas to extreme events, thereby exacerbating a negative feedback loop that undermines the security and well-being of local communities.

This decay can be partially explained by the operational and knowledge gaps that still prevent such solutions from being properly implemented in the processes and interventions shaping modern urban areas. According to the European Climate Risk Assessment (2024), a poor understanding of the relationship between urban resilience and ecosystem services, as well as the interactions between climate change, urbanization, and socio-environmental factors, remains a significant issue. These barriers to the correct implementation of ecosystem-oriented approaches can be related to different interpretations, priorities, terms, and intervention strategies.

The objective of this session is to foster lateral thinking and stimulate innovative and cross-sectoral perspectives on the design and implementation of ecosystem-based approaches, to advance their role in climate change adaptation and mitigation. The session aims to bring together contributions on ecosystem-based adaptation (EbA), urban adaptation plans, disaster risk reduction measures, and ecosystem restoration initiatives, focusing on approaches that deliver measurable and tangible ecosystem benefits to human well-being. A particular focus will be related to:

- The interplay between recent European frameworks (including e.g. Nature Restoration Regulation; EU Adaptation Strategy; EU Biodiversity Strategy 2030) and the opportunities they create for advancing sustainable, climate-resilient urban and rural development through ecosystem-oriented thinking.
- Approaches that generate reflections and insights into the synergistic use of both emerging and well-established technologies (e.g. Artificial intelligence, remote sensing data, geographic information systems), to support decision–making processes and planning ecosystem-oriented solutions for risk reduction and climate change adaptation and mitigation.
- Studies on urban biodiversity through participatory planning actions and effective management models that represent a key pathway for sustainable urban development for Climate Change adaptation. A thorough understanding of urban ecosystem dynamics is a fundamental prerequisite for designing and implementing resilient urban regeneration strategies.
- Development of methodological approaches and assessment frameworks to evaluate the effectiveness of Nature based Solutions (NbS) and ecosystem-oriented approaches, while providing guidance for their effective incorporation into ordinary planning practices.

Goals and objectives of the session:

The aim of this session is to foster lateral thinking and stimulate innovative, cross-sectoral perspectives on the design and implementation of ecosystem-based approaches, with the aim of advancing their role in climate change mitigation and adaptation.

Main objectives are:

- Exploring the interplay between policy and planning frameworks on climate, environmental, and social issues, and assessing how these frameworks create opportunities for implementing sustainable, ecosystem-oriented solutions at the local and regional levels
- Showcasing contributions that stimulate debate on strengthening urban and rural resilience while promoting biodiversity and enhancing human well-being
- Presenting methodological approaches and assessment frameworks to evaluate the effectiveness of nature-based and ecosystem-oriented solutions, providing recommendations for better integration into planning practice and decision-making processes

Planned output / Deliverables:

The session aims to produce an edited volume gathering the contributions of the participating authors, to further disseminate knowledge, case studies, and policy insights emerging from the discussions.

Session format:

Session format will follow the structure of a Scientific debate. Contributions will be presented in a maximum time span of 10-15 minutes. The scientific debate will take place after the presentations and will be supported by the questions that emerged from the participants during the ongoing presentations, as well as by the ones previously calibrated by the session hosts (by analysing the contributions presented in the session).

The estimated duration will depend on the number of contributions presented.

Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

Related to ESP Working Group:

Other