

Urban Challenges
and Sustainable Technological Revolution



Special Session Proposal

Special Session Title

Transdisciplinary approaches to addressing the challenges of sustainable development in low-density territories

Organizers

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Abstract

Territorial development is a worldwide challenge that policymakers, scientists, and local and international organizations strive to address. A continuous and collective effort by various societal actors accompanied by technological advances and innovation-oriented corporate culture is needed to address sustainable development challenges in urban and rural areas. Low-density territories (LDT), comprising small urban and rural areas, are left behind in the global socio-economic development due to their aging population, outmigration, lack of capacities for innovation, and the big distance from the urban metropolitan areas. Hence, building technological and institutional capacity able to mobilize local resources to build a multidimensional and competitive economy is crucial for sustainable development.

To study the sustainable development issues of LDT in a systematic way is vital to take into account the expectations and needs of the local population. However, the implementation of participatory governance mechanisms is challenging due to the lack of effective platforms and tools for integrating local knowledge into the decision-making process. In this regard, academic institutions could play an important role in facilitating knowledge co-production and playing a bridging role between government and the local population. The concept of Transdisciplinarity (TD) emerged to address complex societal problems through systematic understanding, to initiate collaboration between

academic institutions and other societal actors, and to integrate different forms of knowledge across and beyond the scientific disciplines.

To address the challenges of LDT of Northern Portugal, we initiated and established the Data4LowDensity project at the Centre for Transdisciplinary Development Studies (CETRAD) of the University of Trás-os-Montes and Alto Douro (UTAD). Based on TD approaches, Data4LowDensity aims to co-create systematized and contextualized data for sustainable transitions and development of LDT. Data4LowDensity has three pillars to address the above-mentioned challenges:

- Co-create geography of opportunities on a local scale
- Setting up a Smart living lab
- Collect and generate data at regional and sub-regional levels to contribute to territorial intelligence

The study shows that despite many challenges, Transdisciplinarity brings a new culture of collaboration between academia and society and could contribute to the sustainable development of LDT. Information technologies (IT) and digital connectivity play a crucial role to overcome the remoteness of LDT and to stay linked with other parts of the region and country. Sustainable technologies have also a positive impact on economic growth and mitigate migration problems in LDT. Digital platforms could contribute to data collection, effective use of knowledge for the benefit of residents and entrepreneurship, and open new business opportunities for LDT. Digitalization and the use of new technologies also support overcoming inequalities in public services, as many low-density territories feel left behind due to a lower presence of public and private services compared to more densely populated urban areas. However, the digitalization and use of IT in the governance process should be developed and integrated according to a place-based approach in order to fully utilize the digital skills of local people and work effectively in a real-world context.

We would like to propose a Special Session during ERSA 2023 to present the Data4LowDensity project and to discuss with Congress participants how these approaches can be applied in other countries. We would also like to open the session to all interested participants to present their experiences in tackling the challenges of sustainable territorial development in low-density territories.