SMART cities and protecting THE climate: URBAN SUSTAINABILITY AND governance

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Abstract

Cities are a central part of local and global sustainability and environmental protection; a solution for climate change. As centers of innovation they can advance clean energy systems, sustainable transportation and waste management to reduce greenhouse gases. With access to up to date climate science, they can also work with scientists and experts to assess impacts and vulnerability, and with local stakeholders to design and implement effective adaptation strategies to respond to unavoidable impacts of climate change. This however, requires a dramatic shift from government to governance on multiple scales – from the local neighborhood, across urban areas and sectors and at the metropolitan level – as part of the strategic urban sustainability agenda. Building on the results of the Intelcity Roadmap Project, which built visions and scenarios of the intelligent European cities in 2030, the current paper presents the Environment City Scenario to show how current environmental and social problems can be gradually addressed, resolved or ameliorated with the use of Information and Communication Technologies (ICTs). Specifically, the important role of the ICTs is demonstrated through their integration into society in ways that are both enabling and contributing to the quality of life, with climate change being a key variable.

Recent studies e-governance in Europe have found that ICTs can be a powerful tool for building the collaborative digital environment that enhances the intelligence capacity of localities that helps them become a ‘smart city’, one that takes advantages of the opportunities offered by ICTs in increasing local sustainability and competitiveness - an approach which implies integrated urban development based on multi-actor, multi-sector, and multi-level governance. The current paper makes a step further and discusses how cities can protect the climate using governance approaches and ICTs in the context of sustainable urban development. The latter offer tremendous opportunities for structural shifts in society, replacing commuting with tele-work, shopping with e-Commerce, air travel with teleconference, enabling digital transmission of many goods to help optimize resource use (energy, materials, space, etc.) and foster a high-tech, knowledge-based economy that is both cleaner and greener. ICTs have the potential to foster much more collaborative working and integration between stakeholders, thus boost governance. The possible democratization of the urban development process, in context of governance, is seen to offer enormous potential in terms of seeking a much more sustainable way of life that leads to reducing climate pollution. Based on these premises, the paper attempts to define the key challenges facing our cities and the strategic pathways to an integrated process of urban sustainable development through governance. Finally, the key research strategies towards the intelligent use of ICTs to reorganize the city for more effective e-forms of governance that can ensure climate protection in European cities are outlined; this being done against strategic European ICTs challenges for mobility, environmental sustainability and energy efficiency aiming increased awareness for climate change impacts and the importance for sustaining urban quality of life.