

# THE ROLE OF SOCIAL INNOVATION IN GREEN CITIES DEVELOPMENT

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**Abstract** This paper will highlight the importance of social innovation in developing green cities. In the last couple of years, we have stated a growing interest in social innovation on the EU level from researchers, policymakers, and local municipalities. The current social-economic model is not sustainable, which became even more evident during the big financial crisis (such as 2008 and 2020). Consequently, more focus is being placed on societal challenges and the need to develop new innovative solutions to address them. Additionally, municipal leaders are confronted with the global climate crisis and a need to lead the transition towards carbon neutral economy and promote green everyday practices. Social innovations in green city development can range from new green market models and institutional support to developing appropriate innovation culture, new governance models, increasing citizens' participation and cooperation in green services, community initiatives, social incentives, green nudges, and similar. The authors research how social innovations can offer new ideas (products, services, business models) that would contribute to the sustainability and resilience of urban communities. The research results show that people need to build up an innovation culture that will foster the development of social innovation design and implementation.

**Keywords:**

social  
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## 1 Introduction

In recent years, interest in social innovations has been growing significantly at the European level, both by economic experts and scientists, as well as by individual local communities - municipalities and cities. Part of this is due to the economic crisis, which returned the focus to numerous social issues and indicated the need to develop new solutions to social problems. As the population grows, life expectancy increases, the proportion of people in the third age is increasing, as well as the gap between the rich and the poor. It has become apparent that the current socio-economic model is not sustainable in the long term and that some new solutions are needed. One of these solutions introduced was the concept of a green economy, which aims to stimulate economic growth, create jobs, protect the environment and equality, and enable global shifts in the direction of a green future with low carbon emissions, efficient use of resources and social inclusion.

Within the green economy framework, green cities also emerged, characterized by the sustainable functioning of the city in the context of social and environmental issues, a higher quality of life and permanent care for the environment. Green economy models (from ethical banking through green investments, the opening of green jobs, green production and consumption, etc.) are expected to move from the margins to the dominant sphere of business and living, which is still an ongoing process in most of the EU countries.

The quality of life in green cities seeks to increase by increasing environmental protection and energy efficiency standards, but at the same time paying attention to other dimensions, such as equality, democracy and efficient public administration. "Green" in a green city should, therefore, not be identified exclusively with ecology (what was once a mistake with the concept of sustainable development, which was identified with the ecological component while neglecting the economic and social elements) but should take in strong consideration different possible social aspects and tackle the existing challenges with adequate social innovations.

## 2 Conceptual Framework

Given the lack of generally accepted criteria for defining a green city and the multitude of different approaches in the reference literature, for the purposes of this

paper, the following characteristics were selected and further analyzed: environmental protection (including energy efficiency and climate), equality and diversity, transport and mobility, urban democracy and education (that is, citizen participation) and efficient and green public administration (including methods of financing public projects) – which are all areas where the application of different social innovations could lead to significant improvements.

## **2.1 Energy efficiency and environmental protection**

In general, renewable energy sources and energy efficiency offer numerous opportunities for cities and municipalities, entrepreneurship, population and all other stakeholders. In 2021 the operation of buildings accounted for 30% of global final energy consumption and 27% of total energy sector emissions (IEA, (2022)). In the vision of a green city, newly built buildings respect the principles of green construction, existing buildings are energy-renovated, and each building becomes a potential place for installation of renewable energy sources. At the same time, citizens increasingly become "prosumers", i.e., simultaneous producers and consumers of energy and also, instead of investing in non-incentive forms of savings, they become investors in collaborative energy projects (European Environment Agency, 2022). As an extremely important category, green cities also care about nature protection and sustainable and successful waste management. What is most visible to observers and visitors, they take care of public green areas that will attract users and contribute to the increase of cultural capital. The use of urban areas for food production is an increasingly popular topic - urban gardens, roofs, and balconies on which fruits and vegetables are just some examples that are yet to spread more actively (partly as a post-effect of the current pandemic).

## **2.2 Equality and diversity**

To build an open society, the city authorities of the green city should establish a democratic public space with respect for diversity, respect for tolerance and guarantee safety. They should also ensure the conditions for creating annual budgets based on gender equality (so-called gender budgeting) to avoid bias in the distribution of funds (Downes, R., L. von Trapp and S. Nicol, 2017). In a very simplified example, when investing in a school or children's playground, the different needs of boys and girls should always be considered. Still, on the other hand, they

should not be conspicuously separated. Discrimination of certain social groups (e.g., migrants) is visible in many cities, but green cities should be tolerant and open places where everyone feels comfortable. A variety of gender budgeting approaches are practised and what some of the useful areas for further policy actions include: *“the routine availability of gender-disaggregated data; embedding of genderspecific approaches within the normal annual routines of budgeting; and complementing executive-led approaches with external quality assurance”* (Downes, R., L. von Trapp and S. Nicol, 2017). The role of public authorities is to ensure a democratic public space in which diversity will be respected, tolerance promoted and security guaranteed to all minority groups.

### 2.3 Transport and mobility

Sustainable transport, with its objectives of universal access, enhanced safety, reduced environmental and climate impact, improved resilience, and greater efficiency, as stated in the United Nations' Report (2021) is central to sustainable development and *“can fast-track progress towards other crucial goals such as eradicating poverty in all its dimensions, reducing inequality, empowering women, and combatting climate change”* (United Nations, 2021:VI).

Nevertheless, many cities, especially in developing countries, still need to reach the level of development and awareness that would lead to complete sustainable mobility and traffic in the sense of replacing car transport with walking, cycling and/or public transport. The transportation of an average of one person per car is still the primary means of transport, which causes traffic congestion and pollution. There are, of course, positive examples where alternative forms of transportation were introduced, for example, city electric bicycles and/or part of the public fleet switched to gas (or, in a more advanced model, hydrogen) as a more environmentally friendly fuel. Generally speaking, in well-organized cities, public transport is better and more attractive than car transport. Also, the goal of green cities is the spatial arrangement of urban activities that will allow as much mobility as possible to be executed by walking without using public or private transport. Ultimately, e-mobility trends are strengthening, through the establishment of adequate infrastructure for charging electric and hybrid vehicles, which contributes to the desired reduction of greenhouse gas emissions from traffic, in the fight against climate change.

## **2.4 Urban democracy and education**

Urban democracy represents the inclusion of citizens in planning and decision-making procedures, and one example of such a management model is the use of a participatory planning model of public spaces in urban areas. Another example is participatory budgeting - a process of participatory democracy where citizens participate in deciding how to allocate part of the public budget. In the Opinion of the European Economic and Social Committee (EESC) on the topic "The sustainable economy we need", published in the Official Journal of the European Union in January 2020 (paragraph 6.5.4), the EESC called on the Commission and the member states to implement a green fiscal reform "using taxation and incentives to promote desirable outcomes, penalize undesirable outcomes, reward those who want to live a more sustainable life, and support sustainable investment." Of course, urban democracy also implies education, since in order to participate in participative decision-making, citizens must be informed and possess at least basic knowledge about the topic and the processes.

## **2.5 Efficient and green administration**

In the context of green public administration, efficiency can be problematic not from the aspect of speed in the implementation of procedures, capacity to attract investments, etc., but from the aspect of introducing green practices into business, as well as responsible reporting. The local government should be an example of environmental awareness and savings. Responsibility towards the voters, along with green management, brings with it the obligation to inform the voting body about its green practices. In the corporate world, there is a standardized practice of reporting on sustainable development, the so-called "Global Reporting Initiative's Sustainability Reporting Framework" (GRI, 2022), that is, a non-financial report that includes economic, environmental and social aspects and is thematically related to the Global Goals of Sustainable Development. Many companies have adopted the practice of such reporting. In the corporate world, specific standards exist, designed with the best intentions - even if misused. In contrast, in the public sector, the obligation of non-financial reporting on sustainability has yet to be present and the only ones who seem to care about it are the local green NGOs.

## **2.6 Technological versus Social Innovation**

Despite the increasing presence of social innovation in scientific and everyday practices, innovation is still primarily associated with technological innovation and its applications in natural and technical sciences. Much less attention is paid to social innovations, i.e., new innovative solutions to current social, economic, ecological and climate challenges. Following the transition from industrial to knowledge societies, there must also be a shift of focus from technological to social innovations.

Obviously, all the challenges listed in this section under the points 2.1-2.5 require innovative solutions, and a city that wants to be green needs to address many different issues, not only the ecology, energy or mobility problems. But even those are more social than technological. We have renewable technology or electric cars at our disposal, so the technology is not an issue, but consumers either express the "not in my backyard" syndrome to new RES infrastructures or stick to their existing behavioural patterns that make it harder to accept new ideas or initiatives. Thus, the solution for RES acceptance, for example, appears to be in the number of social actions (better education, information, communication, the introduction of incentives, green nudges, etc.). And this is also the case with many other urban challenges.

## **3 Social innovations' role in green cities development**

In general, research and innovation should contribute to solving complex and interconnected socio-economic challenges. They are also expected to tackle different aspects of green cities – from environmental and mobility to equality and democracy issues. In contrast to technological innovations that offer practical and immediately applicable solutions but are often insufficiently sustainable, social innovations' task is to look at both ecological and social aspects and harmonize technological and non-technological solutions with a holistic approach.

The first scientific mentions of the term "social innovation" date back to the beginning of the 20th century when the political economist Alois Schumpeter (1883-1950) claimed that in response to the complex modern societal challenges, it would be necessary that the public sector takes on an active role, as a front-runner and

creator of pre-requisites for the development of social innovations and entrepreneurship (McNeill, 2012, cited by: Perinic, Kovacic, 2022).

The report of Moulaert, et. al. (2017) points out that in previous literature and projects social innovations mainly were not focused on a specific economic sector, nor a particular field but rather demonstrated a variety of practices and activities addressing the social challenges. In the last few years, the situation has changed, offering more articles on the application of social innovation in certain domains, i.e., its importance in the local energy transition processes, or the green transition.

Activities that happen locally are considered vital to reaching the national and global energy transition goals. However, they require supportive national policies to be successful (Brugger & Henry, 2021). "Bottom-up approaches to energy transition are anchored in decentralized, community-based solutions, innovative tailor-made municipal models promoting broad citizen participation, and community co-creation and co-ownership "(Young & Brans, 2020, p.224). The latter describes the position taken also in this paper that will offer further evidence to the importance of bottom-up approaches, citizen engagement, and collaboration of various stakeholders. The second claim to be supported is that the green transitions are not to be considered strictly technical. Instead, they are to be seen as "socio-technical transitions" since they influence the technological regimes and the organization of societal systems, being comprised of "technologies, policies, politics and other artifacts" (Selvakkumaran & Ahlgren, 2021, p.1).

In January 2021 the European Commission launched "The New European Bauhaus", a creative initiative "breaking down boundaries between science and technology, art, culture, and social inclusion, to allow design to find solutions for everyday problems" (European Commission, 2021) which is very much in line with the social-innovation concepts. Intended as a bridge between science, technology, art, and culture, with the support of different involved stakeholders, the initiative is supposed to contribute to the realization of the European Green Deal objectives through pilot projects developed for further EU-wide replication and also the Bauhaus award that will give credit to inspiring projects worth sharing. "The New European Bauhaus brings citizens, experts, businesses, and institutions together to reimagine sustainable living in Europe and beyond. In addition to creating a platform for experimentation and connection, the initiative supports positive change by

providing access to EU funding for beautiful, sustainable, and inclusive projects (...). It is an invitation to address complex societal problems together through co-creation (European Commission, 2021). However, what does this mean exactly? How can social innovations developed through co-creation help green the cities?

#### **4 Recommendations for developing urban social innovations through co-creation**

According to research (Selvakkumaran & Ahlgren, 2021; Gjørtler Elkjær, Horst, & Nyborg, 2021), social innovation is closely linked to the concept of co-creation. In simple words, co-creation means doing something together with another person or entity (Selvakkumaran & Ahlgren, 2021), having in mind the following four aspects (W.H. Voorburg, 2014, as cited in Selvakkumaran & Ahlgren, 2021, p.2):

1. The objective of co-creation is to provide long-lasting solutions to society;
2. Co-creation "changes the social relationships between the stakeholders" as well as the context in which the existing practices are happening;
3. "Relevant stakeholders are involved in the design, implementation and adoption" of certain innovation, which adds to its relevance;
4. It is not only about producing innovations but also about the innovation processes.

In a more elaborated approach, co-creation is seen as a process in which actors come together, despite their organizational and institutional boundaries, to jointly create innovations that are of mutual benefit (Gjørtler Elkjær, Horst, & Nyborg, 2021). This approach further distinguishes three different understandings of co-creation, namely: 1) "Co-production of identities and representations, 2) Co-creation of innovation in socio-technical systems, 3) Co-creation as participatory governance" (Gjørtler Elkjær, Horst, & Nyborg, 2021, p.1).

The co-creation aspect is important for local green projects because only a citizen-oriented approach can ensure the avoidance of the NIMBY (Not in My Back Yard) syndrome and successful uptake of the new technology. Although the new renewable technology may be at their core, the local green transitions are to be foreseen primarily as "socio-technical" and "actor-centred" transitions rather than as "pure technological" transitions (Selvakkumaran & Ahlgren, 2021, p.2).



Selvakkumaran & Ahlgren (2020) use the Transformative Social Innovation (TSI) framework to explain different levels of social innovations' uptake – how social innovations lead to system innovations and (sometimes) become game-changers or even tackle the narratives of change. In their (Selvakkumaran & Ahlgren, 2020) understanding, the TSI consists of four different elements (also called "shades") which sometimes overlap (Table 1):

**Table 1: TSI elements' description**

<b>TSI elements</b>	<b>Description</b>
Social innovation	<i>"The change in social relations, involving new ways of doing, organizing, etc."</i>
System innovation	<i>"The change at the level of societal sub-systems, including institutions, social structures, and physical structures."</i>
Game changers	<i>"The macro-developments that are perceived to change the playing field."</i>
Narratives of change	<i>"The overall discourses on changes that come about, with changes in sets of ideas, concepts, etc."</i>

Source: Selvakkumaran & Ahlgren, 2020

Potential critique of TSI may come from the fact that, due to time constraints (time needed for game-changers and narratives of change to be developed), it mostly portrays only social innovations and system innovations. However, it can be a nice tool to visualize the transformative element of social innovation and the progress of its acceptance in the community. Not every social innovation is, of course, expected to become a game-changer nor to contribute to narratives of change, but it would be interesting to see how different actors perceive and assess certain social innovations and also to analyse what can be done to enable the development of system innovations.

In the words of Hoppe T. and de Vries G. "social innovation seeks to attain particular social goals, like community empowerment, alleviating (energy) poverty, (energy) justice, social equality, and increasing the wellbeing of local communities" (2019, p.9). It is expected to have the capability to address many different social challenges (Selvakkumaran & Ahlgren, 2020). Also, it is believed that social innovations have gained importance because both the technology and the existing policies and approaches have failed to find solutions to the most pressing social challenges and here is where the co-creation steps in.

The top-down approaches in managing the local communities in which all ideas and decisions are made by a few people at the top don't work anymore. This can work in situations where there is a simple issue with one obvious solution. However, with the complex societal issues that the green cities are facing, using the collective intelligence of the community and involving different stakeholders in the design of new services, products, business models, processes and organizations – is a much better management model. Also, it minimizes the NIMBY effect, since the community that gives input is expected to be less resistant to the change they helped bring about.

## **5 Conclusion**

The Innovation Strategy and Europe 2020 were among the first strategic documents to give greater importance to social innovation, highlighting its importance for achieving smart, sustainable and inclusive development. In everyday life marked by an ageing population, high unemployment, a large gap between the rich and the poor, ever-increasing budget allocations for the health and pension system, functioning according to the model of continuous credit borrowing without thinking about the consequences - it is becoming increasingly apparent that such a social-economic system is simply not sustainable and that some new solutions and approaches are needed.

The development of social innovations that can be part of these solutions requires the establishment of a positive innovation climate, disciplined public spending, strengthening trust in public authorities, involving citizens in the decision-making process and similar models. Unfortunately, the public sector is often rigid and unwilling to change. There are no appropriate support mechanisms and financial subsidies in the initial phase of developing and implementing social innovations (strategies, models, working concepts, etc.).

The economic crisis triggered by the coronavirus pandemic is currently the biggest problem, but also the biggest opportunity. The public and the media have often repeated that major crises throughout history have been the generators of major positive changes. It is necessary to come to a wall to understand the necessity of change. The new models offered are the circular economy, adaptation to climate change, localization, green cities and, increasingly, smart cities. The new financial

perspective seems to be marked by the prefix "smart" - smart regions, smart cities, smart islands, smart information technologies (blockchain) use in energy and other areas, smart growth, etc. But "smart" must also be green, sustainable, and energy transition and adaptation to climate change as horizontal topics must accompany all smart projects.

Whether we call it green, energy, sustainable or smart - the transition towards more efficient socio-economic models in green cities should take place precisely at the local level, multiplying the results of a series of local activities towards achieving global results, following the oft-used phrase "Think globally, act locally". At the same time, the innovation culture must be nurtured, fostering the development of social innovation design and implementation.

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