Greening cities – To be socially inclusive? About the alleged paradox of society and ecology in cities

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ABSTRACT

Greening cities, namely installing new parks, rooftop gardens or planting trees along the streets, undoubtedly contributes to an increase in wellbeing and enhances the attractiveness of open spaces in cities. At the same time, we observe an increasing use of greening strategies as ingredients of urban renewal, upgrading and urban revitalization as primarily market-driven endeavours targeting middle class and higher income groups sometimes at the expense of less privileged residents. This paper reflects on the current debate of the social effects of greening using selected examples. We discuss what trade-offs between social and ecological developments in cities mean for the future debate on greening cities and a socially balanced and inclusive way of developing our cities for various groups of urban dwellers. We conclude that current and future functions and features of greening cities have to be discussed more critically including a greater awareness of social impacts.

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1. Introduction

Global environmental change and urbanization are major issues of the international political agenda and are highly interlinked. As of today, 54% of the world's population resides in urban areas, and more than two thirds of the world's population is projected to urbanize by 2050 (United Nations, Department of Economic and Social Affairs, 2014). One of the major challenges for future urban planning is, thus, to prepare urban spaces for an increasing number of people while developing and maintaining cities as sustainable and liveable places. When urban green areas are put increasingly under pressure, e.g. because of ongoing urban land conversion for housing and transport, it becomes important to acknowledge their

multifunctionality in maintaining and improving human health and wellbeing by providing ecosystem services such as flood and climate regulation and air filtration (Larondelle, Haase, & Kabisch, 2014).

The European Commission has introduced legislation and several strategies for developing and enhancing urban green and blue spaces, such as the Green Infrastructure Strategy (EC, 2013), the Biodiversity Strategy (EC, 2011), the Habitats Directive (CEC, 1992) and the Water Framework Directive (CEC, 2000). These initiatives (more indirectly) and the current research EU research programme Horizon 2020 (EC, 2016) emphasize two concepts in particular — Green Infrastructure (GI) and Nature-based Solutions (NBS) — as important concepts in the discussion about sustainable cities and as ways to address the UN Sustainable Development Goal No. 11: Make cities and human settlements inclusive, safe, resilient and sustainable (https://sustainabledevelopment.un.org). Both GI and NBS are concepts based on the different contributions of green spaces to the urban environment: GI refers to an interconnected network of green spaces that helps stop the loss of biodiversity and enable ecosystems to deliver their many services to people and nature (Benedict & McMahon, 2002). NBS are instruments inspired by nature and using the properties and functions of ecosystems to enhance ecosystem services (EC 2013) and multiple health benefits (Kabisch et al., 2016; Mathey, Rößler, Banse, Lehmann, & Bräuer, 2015). They claim to provide solutions for a broadly contextualized 'environmental and health challenge' in cities mainly referring to air pollution, extreme heat and flood events and increasing numbers of cardio-vascular diseases, asthma or obesity on the one hand, and losses of life and disproportional property values on the other (UN Habitat, 2012). These arguments build upon the 'healthy city debate' (e.g. World Health Organization, 2012), and the discussion around climate change adaptation (Cohen-Shacham, Walters, Janzen, & Maginnis, 2016) where urban green spaces play an important role in mediating climate change related impacts.

At the same time, GI and NBS often claim to address social issues such as social cohesion, socio-spatial inequalities and an unequal distribution of goods and burdens in/across cities. EU documents on GI and NBS (European Commission, 2015) argue that the multiple benefits of their installation include 'fostering social cohesion' (p.5), and contribute to the solution of 'various societal challenges' (p.5). The EC's report uses the term social **inclusiveness** to describe the cumulative social benefits created and supported by GI and NBS in cities: „ … Nature-based solutions use the features and complex system processes of nature, […] in order to achieve desired outcomes, such as […] improved human wellbeing and **socially inclusive green growth**." (p.5). However, in reality, little is known about how the implementation of green strategies or policies affect health and wellbeing, livelihood and the living conditions of the urban poor in the mid and longer term (Anguelovski et al., 2015).

This paper (1) reflects on current debates about the relationship between greening cities and social inclusiveness; (2) provides examples from cities where trade-offs between social and ecological development can be observed; and (3) draws conclusions on what this means for the future debate on how to use greening to shape more liveable and healthy urban environments that meet the needs and wants of various groups of urban dwellers in a socially balanced and inclusive way.

2. Greening cities: the concepts of green infrastructure and nature-based solutions and what they say about social inclusiveness

To green cities is an active intervention to enlarge and to maintain the quantity, enhance the quality and improve the network of green spaces in a city. As mentioned above, two main concepts, GI and NBS are at the forefront of the agenda, in Europe and elsewhere, of innovation and demonstration relating to the greening of cities.

GI is a strategically planned and designed network of natural and semi-natural areas, integrated with other environmental features and managed to conserve biodiversity and to deliver a wide range of ecosystem services (Benedict & McMahon, 2002). In cities, it may include any kind of vegetation cover such as parks, forest, public green spaces, private gardens, and roof gardens. Furthermore, blue spaces and other physical features in terrestrial (including coastal) and marine areas are also considered as GI. GI embodies the principles of multi-functionality and connectivity and offers a strategic planning approach to make use of ecosystem properties to support human health and wellbeing (Landscape Institute, 2013; Rouse & Bunster-Offa, 2013). GI relies on the principle that conscious integration of measures to protect and enhance nature and ecosystem processes into spatial planning and territorial development support and safeguard many essential benefits for human society in cities (EC, 2013). GI is assumed to have general and largely positive effects on people's quality of life, health and wellbeing. However, whether these effects are fairly distributed over a city's population or to what extent they directly contribute to a decrease in inequalities is much less clear and awaits further more in-depth analysis including qualitative studies (e.g. as discussed by Botzat, Fischer, & Kowarik, 2016; De la Barrera, Reyes-Paecke, & Banzhaf, 2016a).

NBS are living solutions inspired by, continuously supported by and using nature. They are designed to address various environmental challenges in a resource efficient and adaptable manner and to provide simultaneously economic, social and environmental benefits (European Commission, 2015; Kabisch et al., 2016). NBS might include anything from genetically modified organisms, biomimicry developments, to small-scale land management, ecosystem restoration, greening of artificial surfaces such as rooftops or walls in cities. At a larger scale, NBS can include integrated climate change mitigation and adaptation measures such as afforestation, natural flood control and potentially geo-engineering. NBS are supposed to contribute positively to social inclusiveness even beyond their functions to increase social wellbeing, health and quality of life for urban residents. This should happen through urban gardening, ecologically well-adapted forms of housing and transport, quality of life support through activities in green and clean environments as well as the reduction of environmental burdens through nature-based technologies (European Commission, 2015). All of this is expected to have (generally) positive socially inclusive effects; however, as mentioned above for GI, empirical evidence for this relation has to be gathered yet.

3. The (dis)connection between the green space and the social space

It is this alleged straightforward relation between GI, NBS and the socio-spatial dimensions of urban life as described above that we seek to challenge and scrutinize in this paper. As these concepts become more popular and political processes mainstream their use, it is important to establish a more nuanced understanding of the social implications of greening strategies central to both GI and NBS concepts. We argue that, under certain circumstances, greening strategies carry a paradoxical risk of fostering greater inequality among social groups rather than fostering social cohesion and inclusiveness: "[…]. Projects that benefit one district may have negative impacts next door." (Wachsmuth & Cohen, 2016, p. 392) Undoubtedly, greening cities — installing new parks and using the space along the streets for diverse greenery for example —