

Brief for GSDR - 2016 Update

How to achieve Urban Sustainability Transformations (UST) in real life politics?

Florian Koch, Kerstin Krellenberg, Sigrun Kabisch. Helmholtz Centre for Environmental Research, Leipzig/Germany*

Key message

We argue that three preconditions need to be fulfilled in order to achieve Urban Sustainability Transformations (UST):

1. UST need to be understood as multi-contested policy arenas
2. The goals of UST must be defined in deliberative governance processes
3. UST have to combine the dimensions quality of life, resilience and resource efficiency

Introduction

Contemporary urban development paths are often contrary to Sustainable Development Goals (SDGs) as urban areas are perceived as hot spots for driving environmental change at multiple scales (Grimm et al. 2008). Among other, cities contribute substantially to air pollution (Lelefield et al. 2015), land consumption (Seto/Fragkias 2005), and CO₂-emissions (Seto et al. 2014). This goes along with an increase of an uneven distribution of goods and burdens across the urban territory and among urban inhabitants. Accordingly, recent demographic, environmental and economic changes bear many challenges for urban areas such as increasing social inequality, vulnerability towards climate change or insufficient infrastructure systems and call for holistic and fundamental urban transformations towards sustainability.

This includes innovations in urban planning and technology, but also social innovations.

Thus, current research on sustainability transformations assume that ongoing incremental changes of established socio-technical systems are insufficient to cope with the prevailing challenges (Markard et al. 2012). This is the reason why there is a need for radical, large-scale and integrated changes, which go well beyond traditional policy approaches (van den Bergh et al. 2011). This holds especially true for the transport, energy, water and health care sectors. Cities are also seen as transformation arenas (WBGU 2011, Rink et al. 2014), and the complex relation between urban areas and sustainability transformations is foremost visible in the discussions on CO₂-emission reductions. Emissions from urban areas contribute a large degree to total global CO₂-emissions (Marcotullio et al. 2014) and are therefore one of the largest drivers of climate change. However, cities bear the potential for considerable CO₂-reduction through altering existing forms and practices of urban development (Bloomberg 2014, Creutzig et al. 2015), thus solutions need to be found and implemented that go beyond single CO₂-reduction. Solutions rather need to be holistic and fundamental, including both mitigation and adaptation approaches and leading to fundamental changes in existing planning strategies (Rosenzweig et al. 2015). This potential of cities to become key players for achieving sustainability is increasingly recognized in global agreements: one of the current new UN's Sustainable Development Goals explicitly focuses on cities (Goal No. 11: Make cities and human settlements inclusive, safe, resilient and sustainable). The Paris Agreement of December 2015 also

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acknowledges the important role of cities in combating climate change. While cities shift to the forefront of sustainability transformations, there are further considerations needed for questions on how to actually achieve these urban sustainability transformations (UST) in the real-life political platform. UST as defined by McCormick et al. (2013: 1) are “structural transformation processes – multi-dimensional and radical change – that can effectively direct urban development towards ambitious sustainability goals” and are considered to be far more a social, organizational, economic, cultural and political than a technological challenge (McCormick et al 2013: 5).

Based on a detailed lecture of relevant peer-reviewed research and our own experiences in urban transformation processes in different parts of the world (for details on our own experiences see www.ufz.de/stadt and Großmann et al. 2014, Krellenberg et al. 2013, 2014, 2015, Koch 2015) we argue that three preconditions need to be fulfilled:

1. Urban Sustainability Transformations need to be understood as multi-contested policy arenas

In contemporary cities, implementing innovative radical, large-scale and integrated socio-technical changes face political, socio-cultural, technical and economic obstacles (Geels 2002). We argue that a more holistic policy approach is needed in order to alter existing life styles, technologies, business models, legal and planning regulations as well as institutional and political structures. The transformation of the current status quo is achieved by overcoming resisting forces and deal with opposition, which is often located on regional, national or supranational level, as well as between sectors (see f.e. Moloney/Horne 2015 or Hodson/Marvin 2012).

This calls for the need for more integration of different policy goals, as UST compete with other policy goals starting with single progressive ones, and also radical goals like

social coherence or access to education or equal distribution of economic benefits. UST do not form a coherent set of goals, but a diverse, sometimes even contradictory bundle of goals which are not always compatible. For example, UST aiming at CO₂ reduction and climate change mitigation may be in conflict with climate change adaptation action (Wamsler 2015). Thus, achieving multi-contested UST requires a lot more than appealing to the good will of urban dwellers to undertake changes or the vague dream of more sustainable cities. The identification of existing power structures and urban regimes, the creation of coalitions and also public support (see precondition no. 2) cannot be overestimated when implementing UST in real life politics. Even more, as Chelleri et al. (2015) demonstrated in the example of Mexican cities, main barriers to UST are often not technical, but political.

2. The goals of Urban Sustainability Transformations have to be defined in deliberative governance processes

The goals of UST are not clear-cut but can, or even should, consist of diverse, inconsistent and elastic bundles of goals in order to be sustainable in the broadly acknowledged sense, including for example urban planning for climate change (Wamsler et al. 2013), ecosystem-based adaptation (Wamsler 2015), new forms of public transport (Mejía-Dugand et al. 2013), water management (Childers et al. 2014) or low-carbon cities (Bulkely et al. 2011).

Thus, cities need to define the goals for their specific local context. The question of how these goals are defined is closely related to the role of “Transformation Governance”, understood as governance for transformations (What kind of Governance creates the conditions for transformation?), governance of transformation (Governance to actively trigger and steer a transformation process) and transformations *in* governance (the

transformative change in governance regimes) (Patterson et al. 2015).

But following the overall precondition of deliberative processes, questions like "Who triggers UST?" or "How do different actors like civil society, municipal authorities, nation states or supra-national institutions interact?" have not yet been sufficiently researched (UBA 2015). Despite the still blurry picture of transformation governance, the research community widely agrees on the need for deliberative forms of transformation (Pereira et al. 2015; O'Brien 2012). We also argue that without a broad involvement and participation of urban stakeholders including the local population, UST won't be implemented extensively (Krellenberg/BARTH 2014). UST designed by narrow coalitions on interest and not in participatory processes are likely to rather reproduce the economic and political status quo than to realize entire radical changes (see f. e. the Manchester example, in Hodson/Marvin 2012 or the Masdar City example, in Cugurullo 2015). In contrast, "by considering the importance of vernacular knowledge and local needs, bottom-up approaches have frequently shown to be stronger and better at facilitating the understanding of any solution's applicability to specific conditions" (Mejia-Dugand et al. 2013: 84). Only if an overwhelming share of stakeholders consider the foreseen benefits higher than the burdens, will implementation succeed. As there is a large challenge to deliberatively agree on radical changes, alterations in existing forms of participation including appropriate communication are necessary. Experiments in living labs or transition towns provide transferable good practice experiences and knowledge (Castan Broto/Bulkeley 2013, de Flander et al. 2014, Nevens/Roorda 2014). Due to the need to find compromises, the results of deliberative transformations may seem to be far away from a "great transformation" but rather piecemeal "small transformations". Thus, following the notion of transformation as a

puzzle, these small, but socially accepted transformations can be understood as puzzle piece of more holistic and radical changes (UBA 2015).

3. The three dimensions quality of life, resilience and resource efficiency need to be combined in urban sustainability transformations

The literature on UST considers the dimensions resource efficiency, resilience and quality of life as normative targets for UST (see e.g. Pickett et al. 2013, Hawkey et al. 2013, UN 2015).

Dynamic urbanization processes often put natural resources such as land, drinking water, fresh air, energy, but also minerals and fossil fuels under pressure (Kabisch/Kuhlicke 2014). Resource efficiency in cities therefore aim to reduce the negative effects of urbanization through both technical and social innovations. For example, energy efficient construction in addition with more public transport orientated forms of mobility is seen as an instrument for resource efficiency.

Quality of life based concepts addressing urban transformations also highlight issues such as food, housing or income and also the importance of environmental issues for human beings (EEA 2009). Urban environment influences quality of life through aspects such as air quality, pollution, exposure to risks, and distance and access to green spaces (see Banzhaf et al. 2014). A high quality of life can only be achieved if a) environmental (and other) risks and resources in and between cities are more equally distributed and b) this distribution process is designed in a democratic, integrative way.

The term resilience has become increasingly prominent in disaster literature but also in the broader discussion on sustainable development (Wamsler et al. 2013, Stumpp 2013). Resilience points towards the question of how to deal with rapid, mostly

unanticipated, and therefore radically surprising alterations (Kuhlicke 2013). Making cities more resilient means to strengthen a system against turbulences and construct adaptable functions and structures which can recover from a crisis and develop them further (Revi et al. 2014). Resilience indicates the future-orientation of UST. Only if resilient solutions are found, urban sustainability- in the sense of intergenerational justice- can be achieved.

Achieving resource efficiency, high quality of life and resilient cities requires financial, political and societal efforts and innovations. Instead of perceiving them as competing objectives which should be addressed independently we plea for a combination in order to create synergies (Kabisch/Kuhlicke 2014). For example, many climate adaptation actions until now aim mainly for the reduction of flood risk exposure (resilience). However, also other goals, for example the protection of cultural heritage, economic activities or the creation of new green leisure areas can be part of climate adaptation and developed deliberately by respective stakeholders to secure people's living conditions (quality of life). This may lead to more dense building structures within a given urban space through avoiding construction in flood prone areas (resource efficiency). Through the combination of these three dimensions, UST will gain political capital and will be more easily implemented in the multi-contested area of urban politics.

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