



# How much sustainability substance is in urban visions? – An analysis of visioning projects in urban planning



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## ABSTRACT

Cities are hubs of social interaction, trade, and innovation. Yet, they face sustainability challenges of economic decline, social injustices, and environmental degradation. Urban planning is a critical instrument to cope with these challenges. Visioning, the process of constructing desirable future states, can provide direction for sustainability-oriented planning and decision-making and is increasingly used in this capacity. However, there is ample evidence that urban visions are often not designed along a robust set of sustainability principles. We analyze nine explicitly sustainability-related urban visions from Sweden, Germany, Ireland, Canada, USA, and Australia with respect to their sustainability substance, i.e. in how far they, broadly and in detail, adhere to sustainability principles. Using rough set analysis, we identify a number of procedural components that enable or obstruct the inclusion of sustainability substance in urban visions. Results indicate that the sampled urban visions do not substantially and comprehensively include sustainability substance, instead narrowly focus on optimizing the built environment, for example. Furthermore, the sustainability substance of visioning processes benefits from stakeholder engagement that includes capacity building, whereas some other types of participation obstruct the inclusion of sustainability substance. The study concludes with recommendations for visioning processes to yield urban visions with sustainability substance inclusive of a diverse and integrated set of sustainability principles.

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## 1. Introduction

Cities are hubs of innovation in social interaction, technology, ways of living, and possibly sustainability (Grimm et al., 2008; Weisz & Steinberger, 2010). However, cities also host intensive consumption, production, and trade that impact water resources, land use, and biodiversity, among others, at local, regional and global scales (Bolund & Hunhammar, 1999; Ernstson et al., 2010; Weisz & Steinberger, 2010). In 2008 urban areas released 71 per cent of the global carbon emissions and consumed 60 to 80 percent of the world's energy (International Energy Agency, 2008). During last centuries, the inflow of ecosystem services and the consumption of direct material per capita has outpaced population growth in most cities (Ferrão & Fernández, 2013; McGranahan & Marcotullio, 2005: 805). Detrimental health effects, social segregation, and access equity issues threaten the well-being and quality of life of the urban population. Sustainability transitions are needed within cities to meet the demands of growing urban

populations amid resource scarcity. This requires leadership committed to sustainability and knowledgeable about its implementation (Grimm et al., 2008; WBGU, 2011).

Urban sustainability efforts are increasingly initiated and led by municipal planning departments and often aim to build capacity within a city to endure dramatic changes, while fulfilling the basic needs of all residents, and reducing resource consumption and improving efficiency (Ernstson et al., 2010; Roseland & Connelly, 2005; Smith & Wiek, 2012). Around the 1960s, a significant shift in the planning paradigm occurred, which, in the past, strove to build physical cities based on architectural ideals, such as LeCorbusier's 'Ville Contemporaine'. Today, planning is strongly tied to community development, facilitated in part by the urban form. Since the 1990s visioning has been an important tool to define community priorities and, increasingly, to develop sustainability goals for cities. These approaches in urban planning can promote and direct innovation and decision making within cities on a variety of topics, and are apt to address sustainability challenges and facilitate sustainability transitions (Ferguson, Frantzeskaki, & Brown, 2013; Minowitz & Wiek, 2012; Swilling, Robinson, Marvin, & Hodson, 2011; UN Habitat, 2010).

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Visions, defined as desirable future states (Shiple, 2002; Wiek & Iwaniec, 2013), can orient strategic operational planning as well as monitoring and adaptation of implemented plans. Interested communities can use visioning (i) to engage diverse publics or incorporate community perspectives and expertise in planning (Hammer, 2010; Weisbord & Janoff, 2008); (ii) in collaborative settings with different forms of participation (Rowe & Frewer, 2004); (iii) using different media – such as pictures and other visuals – to stimulate engagement; (iv) to generate target knowledge to guide strategy development (Kaplan & Norton, 2008; Wiek, Binder, & Scholz, 2006) which is (v) communicated to the broader public in a variety of ways, including visioning reports, videos, or newspaper articles (Eickhoff & Geffer, 2007; Lennertz, 2007).

Conceptual and empirical studies have been conducted to strengthen the theoretical underpinnings of visioning and to understand, in particular, how visioning works, when and with what outcomes (Shiple, 2002; Shiple, Feick, Hall, & Earley, 2004; Wiek & Iwaniec, 2013). These studies provide evidence that visioning serves communities through tangible and intangible outcomes. For participants of visioning processes, intangible outcomes include: the capacity to engage in large group deliberations, consensus about targets for city development, and support for and willingness to participate in strategies to achieve visions, which can extend to the broader community. Tangible outcomes include visioning documents that are salient and legitimate to the community and which can be linked to internal city administration and documentation to facilitate implementation of strategies derived from visions (Costanza, 2000; French & Gagne, 2010; Lachapelle, Emery, & Hays, 2010; Moss & Grunkemeyer, 2010).

These empirical studies highlight the benefits of different visioning approaches for a broad range of applications. Some visions and visioning processes have positive, innovative effects on the dynamic of change within cities (Beers et al., 2010). Despite these benefits and the increasing application of visioning in general urban development contexts, sustainability remains an elusive goal for most cities. If visions are tailored to help facilitate urban sustainability transitions they must draw from best practices and successful sustainability solutions in order to add substance to and flesh out principles of sustainability (Opschoor, 2011; Wiek & Iwaniec, 2013). This evidence-based “sustainability substance” can act as target knowledge to orient planning and policy-making when incorporated into visioning processes that bring together different stakeholders from the community and yield shared visions that are sustainable, substantive, and reflect the communities’ culture and identity so they can assume ownership and accountability (Beers et al., 2010; Uyesugi & Shiple, 2005).

To inform sustainability transitions within cities, this research employs an exploratory case study to determine how much sustainability substance is in nine urban visions and what conditions of visioning processes contribute to or impede generating substantive sustainability visions. Results indicate critical methodical components that are intended to help urban planners design and implement visioning processes that bring about greater sustainability substance to guide urban sustainability transitions.

## 2. Method

An exploratory comparative case study was conducted, analyzing nine cases in cross-comparison using rough set analysis. The research design subdivides into (i) case sampling and database construction, (ii) the analytical-evaluative framework to categorize the qualitative data of the cases, and (iii) datamining with rough set analysis.

### 2.1. Database construction and cases sampling

We performed a web-based search using snowball technique and organizations’ platforms (e.g. ICLEI, APA), which yielded an inventory of 92 future-oriented urban planning activities in 13 countries. Following Schreier (2010) and Patton (2002), a purposeful sampling protocol was applied to this inventory using predefined criteria to select as cases those sustainability-oriented visioning activities that best illustrate the heterogeneity of methods, objectives, and city backgrounds while meeting comparative requirements for analysis. Selection criteria were: (i) adequacy of a single case, defined as a city-wide vision with existing and accessible detailed (administrative) documentation of outputs, processes and procedures in language spoken by the authors; and (ii) sufficiency of the set of cases, defined as variance in visioning methods, time horizons, city sizes, and intent for sustainable development. Based on these criteria, nine cases were selected (see Box 1).

#### Box 1 Sampled cases for analysis.

**Case #1 (GOT) the Gothenburg 2050 project** in Sweden developed from 2002 to 2005 long-term future images of the city and region aiming at a sustainable society. Initiated by Chalmers University of Technology and Gothenburg University, the project team developed a back-casting methodology and involved partners from local and regional governments and the local energy utility. Citizen participation occurred through workshops, surveys and exhibitions. The vision document included technical descriptions and short narratives of living situations (Ramnerö, 2005).

Preceding a new land use development plan, the city of **Ahrensburg (Case #2, ABG)**, Germany, organized in 2008 a future workshop following the methodology by Jungk and Müllert (1987). This process aimed to define common goals, wishes, and interests until 2030 toward a sustainable growth and development based upon a broad spectrum of societal actors. The project team included the planning department, and external consultants on regional economy, mobility, architecture, project management and communications. Citizens were involved through workshops, simulation games and sightseeing tours. The outcome was a 16-page vision document with descriptions and lists structured into four topics (Raum & Energie, n.d.).

The community visioning process from 2010 to 2011 **“Saskatoon Speaks, Shape Our Future” (Case #3, SKN)**, in Canada, was initiated to find shared values and define future opportunities and challenges until 2060 to inform Saskatoon’s strategic plans. Selected city staff of all departments formed the project team with consultants on urban design, landscape architecture and project management. Using their own visioning methodology, 7000 to 10,000 residents participated through online questionnaires, summits and roundtable discussions. A ‘do-it-yourself-toolkit’ was provided to empower citizens to continue discussions independently from official events. The result of the process is a 30-page vision document describing the future and sustainable development of Saskatoon with lists of ‘success factors’ related to eight topics (City of Saskatoon, 2011).

The community visioning **“Portland 2030: a vision for the future” (Case #4, PDX)** aimed to build a core set of shared values, involving four sustainability dimensions,

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