

Working title: 'Which Governance Aspects Inhibit or Promote the Uptake of Nature-Based Solutions in Cities?'

Evaluation of the governance of Sustainable Urban Drainage Systems
in Tampere (FI) and Eindhoven (NL)

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Background

The topic of global climate change and the urgent need to react to its consequences is omnipresent today. The problems and threats associated with this man-made phenomenon demand for changes in many aspects of human life. At the same time, more and more people are moving into cities. This trend adds to the problems, as urbanised structures are one of the major factors in anthropogenic climate change. The United Nations note that although covering “less than 2 percent of the earth’s surface [,] cities consume 78% of the world’s energy and produce more than 60% of all carbon dioxide and significant amounts of other greenhouse gas emissions, mainly through energy generation, vehicles, industry, and biomass use” (United Nations, 2017). This trend can be expected to become even stronger, as already more than half of the world’s population will live in cities by the end of 2017, and a projected 75% of the population will live in urbanized areas by 2030. Moreover, rising living standards result in an increase in energy and material consumption (see bpb, 2015; United Nations, 2016). Cities therefore need to cope with climate change as a current phenomenon and considering it needs to become part of many municipal planning acts in order to build up resilience to future changes in climate and the environment.

While agendas of many modern cities already consider climate change, so far other problems have often been perceived as more important by many municipal administrations. City administrations grown over time often do not have sufficient capacities and adequate resources and structures to deal with the complex problem of climate change and its manifold impacts on urbanized areas. Sustainability science puts forward many approaches, ideas and visions towards policy and public administration to cope with the results of climate change, contribute to its mitigation and to prepare for future developments.

One group of such approaches are the so-called ‘Nature-Based Solutions’ (NBS). The European Commission defines NBS as “[...] actions which are inspired by, supported by or copied from nature and [...] use the features and complex system processes of nature [...] in order to achieve [...] reduced disaster risk, improved human well-being and socially inclusive green growth [...]” (European Commission, 2017). NBS combine desired climate change adaptation and mitigation techniques whilst also considering ethical and social values to achieve a sustainable and inclusive development of urban areas.

In particular, NBS in water-related climate change adaptation and mitigation are often referred to as Sustainable Urban Drainage Systems (SUDS). They come in the form of e.g. rainwater harvesting systems, green roofs and facades, permeable pavements, bioretention systems - so-called raingardens, simple trees, swales, detention basins, retention bonds and wetlands or soakways. SUDS stand in clear opposition to traditional grey infrastructure and engineering approaches to water management in cities and they require different management practices and different resources than their traditional grey infrastructure counterparts. This includes all phases of the project from planning over construction to maintenance and repair. In some cases, SUDS have proven to be more cost-effective than traditional grey management approaches. They furthermore provide numerous other benefits in addition to their core task of water management, e.g. ameliorated air quality and improved quality of urban living.

In my master thesis, I will thoroughly assess the development of SUDS in the two cities of Tampere, Finland and Eindhoven, Netherlands. These two cities already faced water and climate related issues in the past and have come up with different SUDS solutions and approaches.

Several knowledge gaps regarding the overarching concept of NBS and their implementation within SUDS-projects have been identified. Among others, Keskitalo and Andersson (2017) and Kabisch et al. (2016) state that there is a great need of “locally-attuned research” to facilitate scaling-up and mainstreaming of climate change adaptation and mitigation strategies using NBS. The two cities will be thoroughly assessed in terms of their decision-making process towards the implementation of NBS and SUDS. The thesis aims at identifying strong and weak points in the local implementation of SUDS. These points can incorporate e.g. the changes in legislation or the changes in how the city administration is organized. A special focus is laid on the different prevailing governance and administrative paradigms. These paradigms shape the approach of how the cities try to implement these novel solutions. They also shape the different tools used to activate set off a change in local practices. By looking closely into the processes of the two cities insights relevant not only for the two sample communities will be generated. Special attention will be given to the prevalent policy processes and development strategies within the two communities.

Aims/Research questions

The study will follow these guiding questions:

- How did the municipalities of Tampere and Eindhoven integrate SUDS into their urban development projects?
- Why did the municipalities prefer SUDS over classical grey-infrastructure solutions?

- What individual changes in governance did the communities pursue to foster the implementation of SUDS? Which of them are perceived as barriers and strong points?

Methods

The design of this work follows a qualitative research approach drawing on the case-study concept proposed by (Yin, 2014). Prior to semi-structured expert interviews, a literature review on the topics of SUDS, NBS, municipal governance, urban governance and sustainable urban development will be carried out.

The literature analysis ensures sufficient covering of the topics' breadth while the semi-structured expert interviews provide the study with a deeper understanding of the topic at hand.

A case study combined with interviews allows the collection of a lot of data whilst achieving greater depth than other research designs. This is an advantage, especially in complex environments like public administrations and regional governance networks. Knowledge can be generated from rare and individual cases (Yin, 2014). Administrations and urban governance processes differ from nation to nation and even from city to city. Individual circumstances and special characteristics of each object of investigation demand for rich in-depth analyses.

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Literature

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