Planning models for Nature-Based Solutions: do we even check their quality? (and if yes, how?)

A meta-analysis of performance evaluation of planning support systems for nature-based solutions

Department: Copernicus Institute of Sustainable Development
Research group: Environmental Sciences
Supervisor: Martijn Kuller
Email address: m.kuller@uu.nl
Telephone number: 0625586348

Project description

A world plagued by the consequences of rapid urbanisation and climate change urgently requires innovative and sustainable adaptation. These consequences include increased urban floods and draughts, surface water quality deterioration, increased heat stress, biodiversity loss and inequality. Nature-Based Solutions (NBS) such as green roofs, urban wetlands and raingardens are increasingly popular as an alternative to traditional, centralised and “grey” urban infrastructure. To optimise NBS functionality and co-benefits, strategic placement in the urban landscape is essential. To enable this, Planning Support Systems (PSS) are widely available to help decision-making in urban planning. However, unlike for technical models such as hydrological models, the performance of PSS is seldomly systematically validated or evaluated. We have developed a framework to design evaluation approaches for NBS-PSS. To establish the status-quo in state-of-the-art NBS-PSS, we want to perform a meta-analysis of the evaluation of currently existing and published NBS-PSS. Such analysis will demonstrate the focus of PSS developers and the caveats present in current practice.

Job requirements

Your main job will be doing the meta-analysis. This includes systematically extracting information from a database of journal papers regarding evaluation methods and criteria. This meta-analysis can be done manually or with the help of software (such as NVivo) or computer scripts (e.g. in R). Furthermore, data analysis of the results as well as data visualisation are part of the tasks. We are looking for someone with an interest in doing meta-analysis, preferable some experience with this type of analysis or at least with literature study in general. Knowledge of software such as NVivo and coding in R or Python are a big plus as well.