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Ecosystem-Based Approaches To Climate Adaptation – Possibilities And Conflicts In Urban Areas

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ABSTRACT

Effects of climate change are particularly challenging in urban areas. The high concentration of impervious surfaces significantly modifies energy exchanges and hydrological processes leading to heat islands and a higher rate and volume of surface runoff of rainwater. Meanwhile, humanity is rapidly urbanising and there are significant technical, social and institutional vulnerabilities due to uncertainties and surprises in climate impacts that cannot be avoided.
Policymakers and urban adaptation strategies are increasingly accepting and calling for the need to work actively with ecosystem-based adaptation approaches, i.e. nature's capacity to absorb and control impacts of climate change while offering a number of co-benefits such as aesthetics, biodiversity, improved mental welfare and proper-ty/neighbourhood improvements. Using an ecosystem based approach can be more economically, socially as well as ecologically just and efficient compared to focusing ex-clusively on technical solutions, where co-benefits are absent.
In this study, we investigate the prospects and conflicts of systematically applying an ecosystem based approach in the municipality of Copenhagen. We take the case of green roofs as one example of implementing green infrastructure. The project quanti-fies the potential for green roofs in the Municipality of Copenhagen; examines the prospects of integrating ecosystem-based climate change adaptation in urban policies; and analyses areas of potential conflicts between ecosystem-based approaches and other drivers of urban development in cities, such as the increasing urbanisation and expanding built environment.
We combine quantitative and qualitative methods from the fields of environmental economics and environmental sociology.