

Sustainable Mitigation of Urban Stormwater Runoff: The Applicability of Green Infrastructure Approach in Finnish Climate

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Abstract : The purpose of the research project in Geography is to evaluate the applicability of urban green infrastructure approach in Finnish climate. The key focus will be on the operation and efficiency of green infrastructure on urban stormwater management. Green infrastructure approach refers to the employment of sufficient green covers as a modern and smart environmental solution to improve the quality of urban environments. Green infrastructure provides a wide variety of micro-scale ecosystem services, such as stormwater runoff management, regulation of extreme air temperatures, reduction of energy consumption, plus a variety of social benefits and human health and wellbeing. However, the cold climate of Finland with seasonal ground frost, snow cover and relatively short growing season bring about questions of whether green infrastructure works as efficiently as expected. To tackle this question, green infrastructure solutions will be studied and analyzed with manifold methods: stakeholder perspectives regarding existing and planned GI solutions will be collected by web based questionnaires, semi structured interviews and group discussions, and analyzed in both qualitative and quantitative methods. Targeted empirical field campaigns will be conducted on selected sites. A systematic literature review with global perspective will support the analyses. The findings will be collected, compiled and analyzed using geographic information systems (GIS). The findings of the research will improve our understanding of the functioning of green infrastructure in the Finnish environment in urban stormwater management, as a landscape element for citizens' wellbeing, and in climate change mitigation and adaptation. The acquired information will be shared with stakeholders in interactive co-design workshops. As green covers have great demand and potential globally, the conclusions will have relevance in other cool climate regions and may support Finnish business in green infrastructure sector.

Keywords : climate change adaptation, climate change, green infrastructure, stormwater

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