

Delivering and Evaluating Multiple Flood Risk Benefits in Blue-Green Cities (PAP014522) - Abstract

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Abstract:

In the UK a research consortium has been funded to develop new strategies for managing urban flood risk as part of wider, integrated urban planning intended to achieve environmental enhancement and urban renewal in which multiple benefits of Blue-Green Cities are rigorously evaluated and understood. The Consortium's objectives are to: Put competent authorities, businesses and communities at the centre of the research by establishing feedback pathways between them and the FRM modellers, planners and decision makers to ensure co-production of knowledge; Model existing flood risks using coupled surface/sub-surface hydrodynamic models linked to semi-quantitative assessments of sediment/debris dynamics and habitats; Identify and assess candidate options for adaptive strategies combining hard and soft responses to flood risk that are capable of functioning as spatially-integrated, urban FRM systems; Use fieldwork to identify and understand the behavioural responses of individual and institutional stakeholders to the candidate options for FRM. Develop rules to represent these behaviours and employ agent-based modelling to simulate the responses to FRM options; Synthesise existing and novel performance measures to identify 'value added' at a range of scales and under flood/non-flood conditions, in an ensemble of contrasting, possible flood futures; Illustrate how this approach can be used to support learning from multiple feedback loops at every stage of FRM appraisal, decision making, implementation, evaluation and adaptation. In this paper we will present the initial outcomes of this project and discuss the future directions for the research.