

AJEESH K| Dr. Priyanjali Prabhakaran

Planning Of A Blue Green Infrastructure Network For Enhanced Stormwater Management In Palakkad Municipality

Urban blue infrastructure (UBI) and urban green infrastructure (UGI) can be together seen as an integrated system called blue green infrastructure (BGI) in which services and spatial layouts complement each other. In the backdrop of climate change, urban environmental stresses are raised by population-increase-induced development of grey infrastructure that leaves minimal scope for blue green elements and systems, potentially resulting in mismanagement of storm water often leading to frequent urban flash floods. This study explores the multiple socio economic, environmental and urban micro climatic benefits of blue green infrastructure with a focus on storm water management, in the context of Palakkad municipality in Kerala, the southern state of India. The research methodology is in an exploratory framework by which the scale and scope of BGI interventions have been fixed only after exploring the best practices and different methodologies adopted in different urban scale. A framework for blue green infrastructure has been developed with the learnings from best practices of blue green infrastructure development and urban storm water management. Based on the framework derived, the existing blue and green profile of the municipality has been assessed and a demand analysis has been carried out based on three major parameters-Performances of existing BGI profile, climate change and its impact in land use and socio economic profile and agricultural livelihood. Storm water management has been analysed as a focused demand. An urban morphological study including ground space index density analysis and space syntax street integration analysis have been conducted to understand different possible BGI interventions for different urban densities. After comparing the demand analysis and morphological analysis with a GIS simulated suitability analysis, a macro framework of BGI hubs and links has been proposed for the municipality. Micro interventions have been proposed spatially for a storm water drainage catchment district delineated from the macro framework. Study concludes by the recommendations and guidelines for balancing the excess runoff in the municipality by the introduction of blue green network and green storm water infrastructure instead of grey infrastructure. The study redefines the purpose of storm water management from an ‘effective drainage system’ to drain off the excess water, to a blue –green system of ‘store-delay-retain-reuse and drain’ (only when necessary!)

Key words: Blue green infrastructure, green stormwater infrastructure, grey infrastructure, urban water management