

(ID 293)

Zoning, Land Use Management and Nature-Based Solutions in Urban Planning, Where Sri Lanka is Standing

Ranasinghe, P.R.

University of Texas at Arlington, College of Architecture, Planning and Public Affairs, USA
Padmi.ranasinghe@mavs.uta.edu

Abstract

Urbanization rapidly changes the land use pattern in Sri Lanka. Cities are important economic centers and provide opportunities for quality of life. Zoning creates prospering urban planning environments, improves construction permit efficiency, enables agency coordination, and provides widespread participation in urban planning. A comprehensive zoning plan with environmentally conscious zoning contributes to the conservation of natural resources, enhances the ability of climate change adaptation and mitigation, fosters a greener urban environment, and ensures urban sustainability. Nature-based Solutions (NbS) are incorporated by nature; use, or mimic, natural processes to contribute to improvement in given landscapes, small or large scale. Attention to NBS has significantly increased in the recent past and is trying to mainstream NbS into a wide range of policies, and urban planning. This study aimed to explore how zoning and NbS can be incorporated in an urban setting to increase urban resilience in water-born cities. The administrative capital of Sri Lanka, Sri Jayawardhanapura-Kotte was selected due to unique inland urban wetland characteristics and vulnerability to wetland ecosystem due to rapid development in the area. Sri Jayawardhanapura-Kotte is rich with its unique landscape and is a part of Ramsar-Colombo wetlands. The Sri Jayawardhanapura-Kotte Capital City Development Plan (the Plan) 2020 and other relevant national policies were assessed in terms of zoning and application of NbS as a strategy of a sustainable and resilient city. Environmental changes and disaster risk areas were assessed (spatial and temporal changes) utilizing earth observation and GIS techniques, and secondary data were obtained from official records and reports. Sri Jayawardhanapura-Kotte covers 78% of the Greater Colombo flood retention area, and 55% of the area is suitable for flood retention. However, 40% of Colombo wetlands have been lost during the last 30 years due to urbanization. Data shows that most of the wetlands are being filled for infrastructure development, including housing, and it is critically important to conserve remaining wetlands in the area with strict regulations including zoning. The Plan has no signs of incorporating or recognizing NbS in the objectives, strategies, and actions for restoration wetlands, proper zoning system for flood mitigation. Analysed policies lack recognition or incorporation of zoning for environmental conservation and disaster risk reduction. The importance of urban areas for future cannot be underestimate and proper urban planning is a necessity in Sri Lanka for mitigate present anthropogenic climate change impacts ranging but not limited to urban flooding to public health.

Keywords: Urban planning, Zoning, Nature-based Solutions, Resilience, water-born cities