

Analysis of Urban Green Spaces and Potential Expansion to Kandy city, Sri Lanka

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Urban green spaces (UGS) and its potential expansion are vital for urban cities to enhance the quality of urban living conditions. Recently, many studies have been conducted to identify potential urban expansion. However, detecting urban green spaces is not an easy process. Urban green spaces are changed year by year due to rapid urbanization. The main objective of this study was to identify the potential for future expansion of green spaces, with specific goals including detecting changes in urban green spaces, determining their current potential, and developing methods for future expansion. Therefore, this study demonstrated a method to detect changes in urban green spaces through the Normalized Difference Vegetation Index (NDVI) remote sensing (RS) quantifies. Furthermore, this study developed a method to validate detected green spaces. Urban potential expansion is different to urban green spaces. Thus, this study attempted to identify potential expansion based on population density and urban temperature. The study's recommendations advocate for the integration of UGS in urban planning, the adoption of innovative green infrastructure solutions like green roofs, and the prioritization of green spaces to foster resilience, sustainability, and inclusivity in the city's development. Challenges identified include land use conflicts, limited open spaces, and the impact of cultural heritage on urban planning.

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