

Assessing Residential Land Scarcity amid Urbanization in Kandy Municipal Council

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Abstract

Urbanization has significantly influenced land demand, particularly in rapidly growing cities like Kandy, Sri Lanka. As urban expansion accelerates, residential land scarcity has emerged as a critical challenge, affecting housing affordability, infrastructure development, and sustainable land use. This study aims to examine the challenges of residential land demand amid urban development in the Kandy Municipal Council area and propose effective solutions. The study area, Kandy, a historic and economically significant city in Sri Lanka, has experienced rapid urban growth in recent years. With increasing population density, expanding commercial zones, and growing infrastructure needs, the availability of land for residential purposes is shrinking. The KMC, which governs urban planning and development, faces difficulties in balancing land demand with environmental conservation and heritage preservation. This study employs a mixed-method approach, combining interviews, questionnaires with random sampling methods (68). On the other hand, Land Use and Land Cover Change analysis for understanding the transformation of land use in the selected areas in KMC between 1998 and 2023, **Spatial Interpolation Analysis (Inverse Distance Weighted)**, was used to identify patterns in environmental changes, illustrating areas most affected by land transformation, and **Suitability Analysis** also used to evaluates suitable regions for sustainable land development based on environmental and socio-economic factors, ensuring effective land management strategies. The study highlights that rapid urban expansion has led to an increase in residential land prices, reducing affordability for middle and lower-income groups. Encroachments, unplanned developments, and inadequate regulatory frameworks have exacerbated land scarcity. Furthermore, environmental constraints, including hilly terrain and protected areas, limit the expansion of residential zones. The study also finds that existing urban planning strategies struggle to accommodate the rising demand, leading to informal settlements and inefficient land utilization. To address residential land scarcity, the study recommends implementing comprehensive land-use planning strategies, promoting vertical development, and enforcing stricter regulations on unplanned construction. Additionally, enhancing public transportation and infrastructure in suburban areas could ease urban congestion

and expand residential options. Introducing incentives for sustainable housing projects and improving governance mechanisms for land allocation are also crucial for mitigating future land shortages.

Keywords: Urbanization, land scarcity, residential demand, urban planning, Kandy, Municipal Council (KMC), sustainable development, and housing affordability