

## Local Climate Zone Mapping Using World Urban Database And Access Portal Tools: A Study Of Colombo City Area

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Urbanization is accelerating worldwide, and Colombo city is no exception, experiencing rapid urban growth and its associated challenges. Urban heat is intensifying significantly, making up-to-date Local Climate Zone (LCZ) maps crucial for identifying urban land types and assessing urban heat islands. These maps aid in effective urban planning and management strategies. This research focuses on creating an updated LCZ map for Colombo using the World Urban Database and Access Portal Tools (WUDAPT) method. By leveraging GIS-based methods and remote sensing technologies, the study aims to provide a comprehensive understanding of Colombo's evolving urban landscape and its implications for urban heat mitigation and climate resilience. Key challenges in the map creation process include identifying suitable training areas for specific LCZ classes within Colombo's densely populated and limited spatial confines. Addressing these challenges requires a nuanced understanding of urban morphology, land use patterns, and environmental dynamics. Visual comparisons of the newly created LCZ map for Colombo with existing maps reveal significant changes over a ten-year period. The methodology involves several steps to develop LCZ maps using the WUDAPT LCZ generator, which requires comprehensive training area files covering all LCZ classes. These files are based on detailed data collection and analysis. The training area files are then input into the WUDAPT LCZ generator, which uses algorithms to generate the final LCZ maps. The output, including the final LCZ maps, is delivered via email for researchers to analyze and interpret. This organized, systematic, and clear method ensures accurate and reliable results.

**Keywords:** *LCZ (Local Climate Zone), WUDAPT (World Urban Database and Access Portal Tools), Colombo City, Urbanization*