ABSTRACT

The current investigation focuses on employing Geographic Information System (GIS) and Multicriteria Evaluation Technique (MCE) to identify suitable locations for urban development in the Chikodi taluk of Belagavi district, Karnataka, which is characterized by hilly terrain. Eight key factors were taken into account, including slope, elevation, population, proximity to amenities, proximity to roads, proximity to river, proximity to built-up and land use/land cover. These factors were assessed and standardized using the Analytical Hierarchy Process (AHP), assigning weights to each based on their relative importance. The resulting thematic maps were converted into raster format and integrated to produce a comprehensive site suitability map for urban growth. The final map delineated areas into five suitability categories: very low, low, moderate, high, and very high suitability. The analysis identified specific areas totalling 15.17 km², 72.14 km², 186.88 km², 294.84 km², and 690.07 km² respectively for each category. This study provides valuable insights for local residents and urban planners to effectively plan for sustainable urban development and land use.

Keywords: *Geographic Information System (GIS); Multicriteria Evaluation Technique (MCE); Analytical Hierarchy Process (AHP); Land Use Land Cover (LULC); Urban Development.*