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## **ASSESSMENT OF LAND SUITABILITY FOR SUSTAINABLE DEVELOPMENT OF PERI-URBAN AREAS IN COIMBATORE USING GIS, AHP AND MULTI-CRITERIA DECISION MAKING**

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### **Abstract**

For assisting in the effective utilization of land resources at the regional level, Land Suitability (LS) evaluation can be employed. If proper gauges and implementations are made, then the LS assessment can well be attained, which is useful for credible development. In the Land-Use (LU) analysis, a powerful means for taking care of spatial data is the Geographical Information Systems (GIS). Whilst attempting to assign comparative significance to the numerous criteria pondered in a suitability evaluation, this tool's application can't singly trounce the scarcity of the opinions' constancy offered by experts. The aim of the presented research study is the assessment of LS for Sustainable Development (SD) of Peri-Urban (PU) areas of Coimbatore city, in Tamil Nadu, India. For resolving the issue of individually using the GIS tool, this analysis uses the combination of GIS, Multi-Criteria Decision Making (MCDM), along with Analytical Hierarchy Process (AHP). Here, the mandatory aspects function as a key for a long SD, and the requirement for ecological planning was highlighted. Additionally, to envisage the LS of the Coimbatore PU area for SD utilizing weighted overlay analysis by means of integrating '7' thematic layers, geo-visualization technology was implemented. The presented study's result implies that only 49.80% and 31.86% of the area are highly suitable for Urban Development (UD) in the future.

*Key words:* Analytical Hierarchy Process (AHP), Geographical Information System (GIS), Land Suitability assessment, peri-urban, sustainable development

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