



Research article

Land suitability evaluation for cattle grazing through multi-criteria approach using remote sensing and GIS

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Abstract

The current study aimed to map the potential grazing areas available in the Thondamuthur block of Coimbatore district in Tamil Nadu, India. Factors like distance from cattle location, distance from water sources (natural and manmade), slope, enhanced vegetation index (EVI) and land surface water index (LSWI) were considered. Various suitability classes (very high, high, moderate, low and very low) were derived for each factor and the final suitability map was prepared by using the analytic hierarchy process (AHP) and weighted overlay techniques using Sentinel-2A data. The results revealed that the high suitability category occupied the largest area (14.81%) followed by the very high suitability category (3.57%). The moderate, low and very low suitability categories occupied a small per cent of the total area viz., 1.66%, 0.20% and 0.03%, respectively. The identified areas could be brought under scientific management for pasture development.

Keywords: Analytic hierarchy process, Grazing area, Pasture development, Vector segmentation, Weighted overlay