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Scale-Dependent Diversity of Agricultural Land Uses in the Republic of Kosovo

Understanding agricultural diversity, both in composition and configuration, is essential for optimizing land use and promoting sustainable practices. This study explores the spatial diversity of agricultural land use in Kosovo, where 53% of land is agricultural but predominantly consists of small farms (90% under 5 hectares, with an average field size of 0.5 hectares), posing challenges for productivity and sustainability. Using GIS tools such as ArcGIS 10.8.2, ArcGIS Pro, and V-LATE, the research maps and analyzes land use patterns across 16 villages in the Dukagjini and Kosovo plains. Metrics like fragmentation, connectivity, and diversity indices (e.g., Shannon, evenness, dominance) were applied in hierarchical land use categorization. This provides the first detailed spatial analysis of agricultural practices in Kosovo, addressing a critical data gap in the region.
Preliminary findings highlight the spatial diversity of agricultural land, offering insights to optimize land use and promote sustainable practices. While this study focuses on the current spatial patterns, future research could explore the influence of climate, topography, historical land use practices, and socio-economic conditions in shaping the agricultural landscape. This foundational analysis supports further monitoring of land use changes, assessing biodiversity impacts, and informing policy development to balance agricultural productivity with ecological sustainability.

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