Special Issue

Spatiotemporal Variations in Land Use and Soil Quality Using Spatial Information Technology

Message from the Guest Editor

Over the past few decades, rapid changes in land use and land cover (LULC) have exerted significant pressure on soil systems, often leading to degradation in soil quality, fertility, and ecosystem services. These transformations are tightly interlinked with agricultural expansion, urbanization, deforestation, and climate variability. Spatial information technologies—such as remote sensing, GIS, GNSS, and geospatial modeling—have become essential tools in monitoring, mapping, and analyzing spatiotemporal patterns of land use and their impacts on soil health across multiple scales. This Special Issue aims to bring together original research and reviews that advance the understanding of how land use dynamics influence soil quality and how spatial data and analytics can support sustainable land management. We particularly welcome contributions that integrate multi-source Earth observation data, machine learning approaches, time-series analysis, or spatially explicit modeling to detect trends, quantify impacts, and propose data-driven solutions.

Guest Editor

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