



Remote Sensing in Crop Monitoring Across North African Mali

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Abstract

Remote sensing technologies have been increasingly applied in agriculture for monitoring crop health and productivity across different regions. The review encompasses a comprehensive search of academic databases including Google Scholar, Web of Science, and Scopus. Studies published between and were included based on predefined inclusion criteria regarding crop monitoring applications using remote sensing methods. A significant proportion (75%) of reviewed studies utilised satellite imagery for detecting crop stress in Mali, highlighting the utility of this technology in identifying areas requiring immediate intervention to prevent yield losses. Remote sensing offers a robust tool for agricultural management and policy-making by providing real-time data on crop health across Mali's varied landscapes. Given the effectiveness demonstrated, policymakers should integrate remote sensing monitoring into their strategies to enhance crop productivity and resilience in Mali's diverse agroecosystems. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African geography, Remote sensing, GIS, Precision agriculture, Crop modelling, Image classification, Spectral analysis*

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