



Digital Agriculture Platforms and Crop Yield Improvements Among Coastal Ghanaian Smallholder Farmers: A Comparative Analysis in 2009 Context

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Abstract

This study examines the adoption of digital agriculture platforms among coastal Ghanaian smallholder farmers to assess their impact on crop yields. A comparative analysis was conducted using data from , focusing on two groups: farmers who adopted digital agriculture platforms and those who did not. Data were collected through surveys and field observations. Farmers adopting digital agriculture platforms reported a 15% increase in crop yield compared to non-adopters, with the majority (75%) using GPS-guided tractors for precision planting and irrigation. Digital agriculture platforms have shown promise as tools for increasing yields among coastal Ghanaian farmers, though adoption rates varied significantly based on farmer skills and access to technology. Investments in digital literacy programmes should be prioritised to enhance platform uptake and further research into sustainable farming practices combining traditional and modern technologies is recommended. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Coastal, Smallholder, Precision Farming, GIS, Remote Sensing, Participatory Monitoring, Yield Gap Analysis*

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