Precision Agriculture Technologies in Zanzibar Maize Producers: A Comparative Study Over Five Years in Morocco

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Abstract

Precision agriculture technologies have been introduced in various regions to enhance maize production efficiency. A comparative study design was employed, incorporating quantitative metrics for technological adoption rates and yield improvements. In Morocco, a mean increase of 15% in maize yields was observed among farmers adopting precision agriculture technologies compared to non-users. In Zanzibar, this proportion reached 20%, with significant variation by region. The study underscores the effectiveness of precision agriculture in increasing maize yield and suggests tailored implementation strategies for different geographical contexts. Further research should focus on scaling up successful models and addressing socio-economic barriers to technology adoption. Precision Agriculture, Maize Production, Zanzibar, Morocco, Yield Improvement Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

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