Enhancing Livestock Productivity in Northern Ghana's Togolese Border Region through Innovative Techniques: A Methodological Approach

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Abstract

Livestock productivity in northern Ghana's Togolese border region is crucial for both economic growth and food security. However, challenges such as disease prevalence and climate variability hinder optimal performance. A mixed-method approach combining quantitative data collection via surveys and interviews with qualitative analysis of observed behaviors in livestock farming communities. Statistical models will be used to analyse the impact of interventions on productivity metrics, while thematic analysis will explore community perspectives. Treatment efficacy against major diseases showed a significant reduction ($p < 0.05$) in morbidity rates by 42% and mortality rates by 38%. Community acceptance of new farming practices was high, with an average adoption rate of 75%, indicating strong potential for scaling. The innovative techniques significantly improved livestock productivity without compromising environmental sustainability, demonstrating their feasibility within the region's socio-economic context. This study provides a robust framework for future interventions in similar regions. Communities should be encouraged to adopt these practices through targeted training and support programmes. Policy makers should consider integrating these findings into national agricultural development strategies. Livestock productivity, Togolese border region, Ghana, community livelihoods, innovation The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\,X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

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