African Aquatic Veterinary Sciences

Time-Series Forecasting Model Evaluation for Yield Improvement in Smallholder Farm Systems of Ghana,

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Abstract

This study focuses on evaluating smallholder farm systems in Ghana through a time-series forecasting model for yield improvement. A time-series forecasting model was developed using historical data from to . The model incorporates autoregressive integrated moving average (ARIMA) techniques for accurate predictions of yield improvements. The ARIMA model showed a consistent upward trend in predicted yields, indicating an improvement in agricultural productivity across the evaluated farm systems. The time-series forecasting model demonstrated its effectiveness in predicting and improving agricultural yields in Ghana's smallholder farming communities. The findings suggest that implementing such models could significantly contribute to enhancing food security and economic stability within these farming communities. Agricultural yield, Smallholder farms, Time-series forecasting, ARIMA model The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, Smallholder, Time-Series, Forecasting, Econometrics, Agricultural, Evaluation*

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