

RELATIONSHIP BETWEEN RAINFAL VARIABILITY AND YIELD OF CASSAVA AND FARMERS' ADAPTATION STRATEGIES IN OTUKPO LOCAL GOVERNMENT AREA OF BENUE STATE, NIGERIA

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Abstract

This study investigated the relationship between rainfall variability and cassava yield, as well as farmers' adaptation strategies in Otukpo Local Government Area of Benue State, Nigeria. Annual rainfall and cassava yield data (1988-2021) were obtained from the Nigerian Meteorological station in Lagos to analyze rainfall patterns and relationships with cassava yield. A sample of 384 farmers was selected using Krejcie and Morgan's sample size determination method. Self-structured questionnaire titled Cassava Farmers Perception Questionnaire (CFPQ) and Key Informant Interview guide: Cassava Farmers Perception Interview Guide (CFPIG) were used to gather information. The Pearson product-moment correlation coefficient (r) was employed to analyze the relationship between rainfall variability and cassava yield. Likert-scale analysis was conducted using mean distribution. The results revealed an increase in total annual rainfall and cassava yield. A positive and significant relationship was found between the parameters. Rainfall amount showed a moderate positive correlation with years ($r = 0.34$). Similarly, cassava yield exhibited a strong positive correlation with years ($r = 0.71$). Rainfall amount and cassava yield demonstrated a moderate, significant positive relationship ($r = 0.38$), indicating that increased rainfall significantly boosts cassava yield at a moderate rate. The most effective adaptation strategies employed by farmers included using early-maturing crop varieties, pest- and disease-resistant varieties, and mixed cropping. Based on the findings, this study recommends that government agencies, farmers' cooperative societies, and farm extension agents should consistently promote the adoption of more cultivars and early-maturing seeds to enhance crop production and ensure food security.

Keywords: Adaptation strategies; Cassava; Farmers; Rainfall; Relationship, Yield