

RAINFALL VARIABILITY AND MAIZE YIELD PRODUCTION PATTERN IN SOUTHWESTERN NIGERIA

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ABSTRACT

Rainfall is one of the key climatic elements that determine the success of agriculture and water resource characteristics in many parts of Nigeria. However, climate and rainfall variability has impacted negatively on maize production in different regions of the country. The paper examined the impacts of Inter annual rainfall variability on the yield of maize in Southwest Nigeria for a period of 24 years (1990-2013). The three states of Ondo, Oyo and Ogun were selected for the study. The selection is due to availability of data. Climatic data of rainfall was sourced from the archives of the Nigerian Meteorological Agency (NIMET), while maize yield data were obtained from the Agricultural Development Programs (ADP) of each state. The data were subjected to descriptive statistics like percentage among others. Inferential statistics used include Pearson moment correlation, simple regression analysis and GIS interpolation analysis. The Coefficient of variation (CV) of rainfall amount in all the three states revealed that rainfall amount within the three locations is highly heterogeneous, while the Standard Anomaly Index revealed that Ondo State received the highest total amount of rainfall, followed by Oyo and Ogun State respectively. This trend was also reflected in the pattern of annual maize yield which was highest in Ondo (2.19 tons/ha), as compared to Oyo and Ogun that observed yields of 1.57 ton/ha and 1.40 tons/ha respectively. The result of Simple regression analysis showed that inter annual rainfall variability accounts for 63.40%, 38.90% and 57.00% variation in maize yield across Ondo, Ogun and Oyo States respectively. The study recommends that Maize production should be monitored to identify the most critical phase of maize growth to various climatic factors particularly rainfall among others.

Key words: Inter annual, Rainfall, Variability, Maize and Agriculture.