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Effect of Climate Change on Agricultural Productivity in Nigeria: A Co-integration Model Approach

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ABSTRACT Climatic fluctuation is putting Nigeria's agriculture system under serious threat and stress. The study of the effect of climate change on agricultural productivity is critical given its impact in changing livelihood patterns in the country. Descriptive and co-integration analysis are the techniques used to analyze the Time series data used in this work. The finding demonstrates that the rate in agricultural productivity is persistently higher between 1981 and 1995, followed by a much lower growth rate in the 1996–2000 sub period. There was variation in the trend pattern of rainfall. Temperature was not relatively constant either. The Augmented Dickey-Fuller test for unit root revealed that agricultural productivity is not stationary and likewise the annual rainfall but became stationary after the differencing. Annual temperature on the other hand is stationary at its level. Temperature change was revealed to exert negative effect while rainfall change exerts positive effect on agricultural productivity. However previous year rainfall was negatively significant in affecting current year agricultural productivity. It is recommended that if agricultural productivity was to be increased and sustained, environmentally and agricultural sensitive technologies and innovations that can prevent climate fluctuation should be encouraged.