
ASYMMETRIC IMPACT OF CLIMATE CHANGE ON AGRICULTURAL OUTPUT IN NIGERIA

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The emerging trends in climatic changes show that flooding, rising temperature, and appreciable sea level in Africa is a threat to the long-term growth of the sector. This study examines the asymmetric impact of climate change on agricultural output in Nigeria using the NARDL Bound testing to cointegration inherent in the model to ascertain long-run cointegrating relationships between climate change and agricultural output and goes further to observe the impact of positive and negative shocks in temperature and precipitation on agricultural output in both the short run and long run. Annual data on climate change, agricultural output, credit to agricultural sector, labour and per capita income for period 1981 to 2021 were used. Climate change is decomposed into the average annual changes in temperature and precipitation. Agricultural output is proxied by annual agricultural value-added while credit to agricultural sector is proxied by annual cumulative of Agricultural Credit Guarantee Scheme Fund (ACGSF) loan disbursed to the agricultural sector. The data was sourced from the World Bank Development Indicators and the Central Bank of Nigeria Statistical Bulletin. Both precipitation and temperature exhibit statistically significant effects on Agricultural value-added in the short and long-run. The Wald statistic shows a short-run and long run asymmetric relationship between precipitation, temperature and Agricultural value-added. The F-statistic value of the DBM and the PSS confirms the existence of long-run cointegrating relationship among the variables. The study recommends that effective water resource management strategies should be implemented by the government, creating measures to mitigate the impacts of drought, Climate-smart agriculture should also be promoted, focusing on agroforestry, soil fertility improvement, and crop and livestock management to mitigate the negative effects of higher temperatures.

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