

Empirical Investigation into Climate Change and Climate-Smart Agriculture for Food Security in Nigeria

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Abstract : The objective of this paper is to assess the agro-climatic condition of Ibadan in the rain forest ecological zone of Nigeria, using rainfall pattern and temperature between 1978-2018. Data on rainfall and temperature in Ibadan, Oyo State for a period of 40 years were obtained from Meteorological Section of Forestry Research Institute of Nigeria, Ibadan and Oyo State Meteorology Centre. Time series analysis was employed to analyze the data. The trend revealed that rainfall is decreasing slowly and temperature is averagely increasing year after year. The model for rainfall and temperature are $Y_t = 1454.11 - 8*t$ and $Y_t = 31.5995 + 2.54 E-02*t$ respectively, where t is the time. On this basis, a forecast of 20 years (2019-2038) was generated, and the results showed a further downward trend on rainfall and upward trend in temperature, this indicates persistence rainfall shortage and very hot weather for agricultural practices in the southwest rain forest ecological zone. Suggestions on possible solutions to avert climate change crisis and also promote climate-smart agriculture for sustainable food and nutrition security were also discussed.

Keywords : climate change, rainfall pattern, temperature, time series analysis, food and nutrition security

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