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Climate Change, Agriculture and Food Security in Sub-Saharan Africa: What Effects and What Answers?

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Abstract : The objective of this study is to assess the impact of climate variability on agriculture and food security in 43 countries of sub-Saharan Africa. We use for this purpose the data from BADC bases, UNCTAD, and WDI FAOSTAT to estimate a VAR model on panel data. The sample is divided into three (03) agro-climatic zones, more explicitly the equatorial zone, the Sahel region and the semi-arid zone. This allows to highlight the differential impacts sustained by countries and appropriate responses to each group of countries. The results show that the sharp fluctuations in the volume of rainfall negatively affect agriculture and food security of countries in the equatorial zone, with heavy rainfall and high temperatures in the Sahel region. However, countries with low temperatures and low rainfall are the least affected. The hedging policies against the risks of climate variability must be more active in the first two groups of countries. On this basis and in general, we recommend integration of agricultural policies between countries is done to reduce the effects of climate variability on agriculture and food security. It would be logical to encourage regional and international closer collaboration on the development and dissemination of improved varieties, ecological intensification, and management of biotic and abiotic stresses facing these climate variability to sustainably increase food production. Small farmers also need training in agricultural risk hedging techniques related to climate variations; this requires an increase in state budgets allocated to agriculture.

Keywords : agro-climatic zones, climate variability, food security, Sub-Saharan Africa, VAR on panel data
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