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Drivers of climate smart agriculture adoption in smallholder farming households in Nigeria

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[2] *Federal University of Agriculture Abeokuta, Nigeria, Agricultural Economics and Farm ManagementOne of the greatest recognized threats to agricultural productivity in several regions of the world is climate change. In tackling its associated challenges to agricultural production, requires the adoption of i,*
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Abstract

One of the greatest recognised threats to agricultural productivity in several regions of the world is climate change. In tackling its associated challenges to agricultural production, requires the adoption of innovative sustainable practices capable of increasing resilience and mitigating the impacts of climate change while at the same time enhancing farm productivity. This paper examined the determinants of the adoption of climate smart agricultural practices (CSAP) among smallholders in Nigeria. The study employed a cross-sectional survey data of 1534 rice and/or maize farmers across six Agroecological zones (AEZs) in Nigeria. Data were analysed using Descriptive Statistics and Multivariate Probit Regression (MVP). Our result revealed that farmers across the AEZs perceived climate change differently with evidence of slight increase in daytime temperature, dry season length and a decline in the volume of rainfall. Across the AEZs, most farmers adopted "Early maturing and drought tolerant varieties" with the exception of the Sahel Savannah. The MVP result on the factors influencing CSAP adoption has shown that the adoption of the five CSAP (Early mature variety, Agroforestry, Drip Irrigation, Crop rotation and Green manure) complement each other on the same plot and the decision to adopt them is influenced by diverse factors (socioeconomic and institutional). Some of the critical factors contributing to CSAP adoption include farmer's age, non-farm income, education, landownership and access to credit. We therefore conclude that CSAP adoption remains low in Nigeria and the factors driving it adoption differs across the different technologies, by gender and across the agroecological zones in Nigeria. We therefore recommend the need to strengthen the extension mechanism in the country to facilitate the adoption of climate smart agricultural practices among both crop and livestock farmers. Likewise, efforts to develop sustainable farming methods should be well-targeted, gender- and location-specific.

Keywords: Climate smart agriculture, crop rotation, irrigation, smallholders, sustainable

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