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A New Combination for Agribusiness Development or Disruption? Climate Change, Commodity Price and Cocoa Output Reaction to Nigeria Agribusiness

Anthony Oko-Isu[1], Maria-Stella Etomchi Njoku[2], Joseph Onwumere[3], Christiana Igberi[4], Robert Ugochukwu Onyeneke[5], Johnny Onyema Ogunji[6]

[1]*Federal University, Ndufu-alike, Ikwo, Ebonyi State, Nigeria, Department of Agriculture, Nigeria*
[2]*Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria, Department of Agricultural Economics,*
[3]*Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria, Department of Agribusiness and Management,*
[4]*Federal University Ndufu-Alike Ikwo, Dept. of Agriculture, Nigeria*
[5]*Imo State University, Dept. of Agricultural Economics, Extension and Rural Development, Nigeria*
[6]*Federal University Ndufu Alike Ikwo , Dept. of Fisheries and Aquaculture, Nigeria*

Abstract

It is acknowledged that cocoa represents an agribusiness commodity that merits special attention for climate change adaptation planning as it underpins an array of ecosystem services vital to the wider adaptive capacity of natural systems. Additionally, the macroeconomic impacts of commodity prices are important because they affect the level of per capita income, which is a key determinant of living standards for individuals and families in developing economies. In Nigeria, the matter of international commodity price may be immediately transmitted to the food security, imposing pressure to Nigeria's macroeconomy to a certain extent. This paper examines the response of cocoa output to climate change and commodity prices volatility in Nigeria from 1961–2015. In this paper, the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and Autoregressive Conditional Heteroscedasticity (ARCH) were applied to examine the volatility of daily cocoa commodity price with the daily data from January 1961 to December 2015. In addition, the Fully Modified-ordinary least square (FM-OLS) regression is utilised to study the effects of climate variations and cocoa commodity price on cocoa output. The results reveal that there is volatility in international commodity prices of cocoa. More so, the yield of cocoa is positively affected by temperature, cocoa commodity price and combination of rainfall with cocoa commodity price while it is negatively influenced by real exchange rate and combination of temperature with cocoa commodity price. Ultimately, we present some sound reasons to explain the statistical results and propose some policy suggestions aimed at Nigeria's food security, agribusiness and macroeconomic development.

Keywords: Climate Change, Cocoa, Commodity Price, Nigeria, Output, Volatility

Contact Address: Anthony Oko-Isu, Federal University, Ndufu-alike, Ikwo, Ebonyi State, Nigeria, Department of Agriculture, 40 Uloanwu Street by Steve Omege Street through Nna Street Road, Abakaliki,, Nigeria, e-mail: anthony.oko-isu@funai.edu.ng