

Food Consumption and Adaptation to Climate Change: Evidence from Ghana

Authors : John Bosco Dramani

Abstract : Climate change is considered a principal threat to human existence and livelihood. A significant manifestation of climate change has been experienced through the occurrence of life-threatening weather conditions such as extreme average temperature and rainfall. The second goal of the Sustainable Development Goals of the United Nations is to achieve food security and improve nutrition by 2030. However, climate change has rendered the realization of this goal impossible. The persistence and intensity of droughts and floods in recent years have adversely affected food production systems and value chains, making it impossible to end global hunger by 2030. Thus, this study aims to examine the effect of climate change on food consumption for both farm and non-farm households in Ghana. An important focus of the analysis is to investigate how climate change affects alternative dimensions of food security; examine the extent to which these effects vary across heterogeneous groups; and explore the channels through which climate change affects food consumption. Finally, we conducted a pilot study to understand the significance of farm and non-farm diversification measures in reducing the harmful impact of climate change on farm households. The approach of this article is to use two secondary and one primary datasets. The first secondary dataset is the Ghana Socioeconomic Panel Survey (GSPS). The GSPS is a household panel dataset collected during the period 2009 to 2019. The second dataset is monthly district rainfall and temperature gridded data from the Ghana Meteorological Agency. This data was matched to the GSPS dataset at the district level. Finally, the primary data was obtained from a survey of farm and non-farm adaptation practices used by farmers in three regions in Northern Ghana. The results revealed that extreme average temperature and drought have caused a decrease in food consumption as well as reduced the intake of important food nutrients such as carbohydrates, protein and vitamins. The results further indicated that low rainfall increased food insecurity among households with no education compared with those of primary and secondary education. Again, non-farm activity and silos have been revealed as the transmission pathways through which the effect of climate change on farm-households can be moderated. Finally, the results indicated over 90% of the small-holder farmers interviewed had no farm diversification adaptation strategies for climate change and a little over 50% of the farmers owned unskilled or manual non-farm economic ventures. This makes it very difficult for the majority of the farmers to withstand climate related shocks. These findings suggest that achieving the Sustainable Development Goal of Zero Hunger by 2030 needs an integrated approach such as reducing the over-reliance on rainfed-agriculture, educating farmers and implementing non-farm interventions to improve food consumption in Ghana.

Keywords : climate change, food consumption, Ghana, non-farm activity

Conference Title : ICGCC 2025 : International Conference on Global Climate Change

Conference Location : San Francisco, United States

Conference Dates : September 27-28, 2025