# Examining Smallholder Farmers' Perceptions of Climate Change and Barriers to Strategic Adaptation in Todee District, Liberia

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**Abstract :** Thousands of smallholder farmers in Todee District, Montserrado county, are currently vulnerable to the negative impact of climate change. The district, which is the agricultural hot spot for the county, is faced with unfavorable changes in the daily temperature due to climate change. Farmers in the district have observed a dramatic change in the ratio of rainfall to sunshine, which has caused a chilling effect on their crop yields. However, there is a lack of documentation regarding how farmers perceive and respond to these changes and challenges. A study was conducted in the region to examine the perceptions of smallholder farmers regarding the negative impact of climate change, the adaptation strategies practice, and the barriers that hinder the process of advancing adaptation strategy. On purpose, a sample of 41 respondents from five towns was selected, including five town chiefs, five youth leaders, five women leaders, and sixteen community members. Women and youth leaders were specifically chosen to provide gender balance and enhance the quality of the investigation. Additionally, to validate the barriers farmers face during adaptation to climate change, this study interviewed eight experts from local and international organizations and government ministries and agencies involved in climate change and agricultural programs on what they perceived as the major barrier in both local and national level that impede farmers adaptation to climate change impact. SPSS was used to code the data, and descriptive statistics were used to analyze the data. The weighted average index (WAI) was used to rank adaptation strategies and the perceived importance of adaptation practices among farmers. On a scale from 0 to 3, 0 indicates the least important technique, and 3 indicates the most effective technique. In addition, the Problem Confrontation Index (PCI) was used to rank the barriers that prevented farmers from implementing adaptation measures. According to the findings, approximately 60% of all respondents considered the use of irrigation systems to be the most effective adaptation strategy, with drought-resistant varieties making up 30% of the total. Additionally, 80% of respondents placed a high value on drought-resistant varieties, while 63% percent placed it on irrigation practices. In addition, 78% of farmers ranked and indicated that unpredictability of the weather is the most significant barrier to their adaptation strategies, followed by the high cost of farm inputs and lack of access to financing facilities. 80% of respondents believe that the long-term changes in precipitation (rainfall) and temperature (hotness) are accelerating. This suggests that decision-makers should adopt policies and increase the capacity of smallholder farmers to adapt to the negative impact of climate change in order to ensure sustainable food production.
**Keywords :** adaptation strategies, climate change, farmers' perception, smallholder farmers
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