




Article

# Rural Agriculture and Poverty Trap: Can Climate-Smart Innovations Provide Breakeven Solutions to Smallholder Farmers?

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**Abstract:** Agriculture is widely recognized as a solution to food insecurity and poverty, especially in rural areas. However, 75% of the world's poor live in rural areas, and agriculture is the primary source of their livelihood. One may wonder if the observed correlation between agriculture and poverty also suggests causation. If that is the case, then what such causal relationship might exist? Is agriculture a vehicle for poverty alleviation or a source of poverty trap? The role of climate change is rather undisputed: associated extreme weather phenomena cause severe negative impacts on agriculture, exacerbating rural poverty. However, climate-smart agriculture (CSA) is acclaimed to potentially reverse the situation by eliminating poverty and food insecurity. Against this backdrop, the paper investigates whether smallholder farmers who adopt CSA could achieve food security and better income. This aim was approached through three key research objectives (i) to examine the effects of climate change on smallholder farmers, (ii) to examine the extent to which smallholder farmers adopt CSA and the barriers to adoption, and (iii) to investigate empirically the effects of CSA practices in terms of food security and poverty alleviation. The Upper West and Upper East regions in Ghana were selected purposively for the case study, and the data collected were analyzed using inferential and descriptive techniques. The results revealed no statistically significant positive relationship between the adoption of CSA with food security and income. Poor socioeconomic and market conditions marred the expected positive effects of CSA, hence the need for the provision of agricultural infrastructures and inputs as well as the creation of market for commodities.



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