Climate Resilient Agricultural Insurance Schemes for Smallholder Farmers in Ghana: A Longitudinal Assessment

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Abstract

Climate change poses significant challenges to agricultural productivity in Ghana, particularly affecting smallholder farmers who are highly vulnerable to weather-related shocks. A mixed-methods approach combining qualitative interviews with quantitative survey analysis was employed, utilising a structured questionnaire designed by the Ghana Meteorological Agency (Ghana Met) to assess farmer perceptions and outcomes of climate insurance schemes over two years. The study revealed that while approximately 60% of surveyed farmers reported increased crop yields following insurance coverage, there was variability in the extent of benefits across different regions and types of crops insured. Climate resilient agricultural insurance has shown promise in enhancing farm resilience but requires tailored policy adjustments to better align with local needs and climate risk profiles. Enhanced outreach strategies should be developed to ensure broader farmer participation, while targeted subsidies could be introduced for less profitable crops to increase overall coverage benefits. The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Climate Change, Ghana, Smallholder Farmers, Agricultural Insurance, Vulnerability Studies, Livelihoods Protection, Risk Management Strategies*

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