



Impact Evaluation of Climate-Resilient Agricultural Insurance Programmes in Sudan's Darfur Region: Policy Relevance and Community Acceptance Analysis

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Abstract

Climate change poses significant challenges to agricultural productivity in Sudan's Darfur Region, where smallholder farmers are particularly vulnerable. A mixed-methods approach combining quantitative survey data with qualitative interviews to assess programme effectiveness and stakeholder perceptions. Survey results indicate that 45% of respondents found the insurance programmes financially beneficial, while 30% expressed concerns about initial cost. Climate-resilient agricultural insurance programmes show promise in enhancing policy relevance and community acceptance among smallholder farmers in Darfur Region. Policy makers should consider incorporating climate resilience into existing agricultural insurance schemes to ensure broader uptake by vulnerable communities. Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_i (y_i - f(\theta; \xi))^2 + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, AgriculturalRiskManagement, SocioeconomicAnalysis, ClimateChangeAdaptation, QualitativeResearch, InsuranceModels, GeographicInformationSystems*

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