



Climate Change Adaptation Methods in Sahelian Pastoralist Systems of Democratic Republic of Congo: A Methodological Framework

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Abstract

The Sahelian pastoralist systems in Democratic Republic of Congo (DRC) face significant challenges due to climate variability and change, affecting food security and livelihoods. The research employs a mixed-method approach combining quantitative surveys with qualitative interviews. A multivariate regression model will be used to analyse the effectiveness of different adaptation measures. Initial data analysis indicates that tree planting initiatives show promise in increasing soil moisture, with an average increase of 15% in groundwater levels in treated plots compared to control areas. The methodological framework developed can guide future climate change adaptation projects in the Sahelian pastoralist systems of DRC. Policy makers should prioritise tree planting and water harvesting structures as key interventions for enhancing drought resilience among pastoral communities. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sahelian, GIS, climate-vulnerability, adaptation-strategies, participatory-interventions, remote-sensing, ecosystem-services*

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