



Climate Change Adaptation Strategies in Sahelian Pastoralist Systems: A Multi-Year Intervention Study

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Abstract

Sahelian pastoralist systems are vulnerable to climate change impacts such as prolonged droughts and unpredictable rainfall patterns. Understanding how these communities adapt can inform strategies for resilience. A multi-site longitudinal study was conducted over three years across five pastoralist communities. Data collection included household surveys, participatory workshops, and remote sensing for monitoring vegetation health and soil moisture content. Livestock weight gain significantly improved in communities implementing integrated water harvesting techniques (mean increase of 15% compared to control groups). Interventions targeting both technical (water management) and socio-economic aspects of pastoralist livelihoods show promise in building resilience against climate change. Continue scaling up successful interventions, with particular focus on training women leaders in water resource management and promoting diverse agricultural practices. Pastoralism, Sahel, Climate Change Adaptation, Water Management, Livestock Productivity The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: Sahelian, pastoralism, adaptation, resilience, climate-vulnerability, inter-cropping, participatory-governance

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