

Adaptive strategies of smallholder farming systems to changing climate conditions in the vicinity of Kogyae Strict Nature Reserve within the Forest-Savanna Transitional Zone of Ghana

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Abstract

The strong climate linkages to farming systems render them and dependent communities vulnerable to climate change and variability. Knowledge of existing responses to climate change is important for the formulation of policies and adaptive strategies for resilience. The paper examines a fifty-year climatic records from 1961-2011, community perceptions, experiences and knowledge for evidence of climate change and impacts. Climate change-driven farmer adaptive responses were critically examined relative to farming practices; and crop climatic requirements for growth, development, maturity and harvesting. A mixed methodological approach was adopted to address issues of climate change, exposures, sensitivities and adaptive responses. The results showed that the area has experienced a steady rise in temperature, reduced rainfall amounts of 3.0mm per annum, reducing events of rainfall excesses and increasing deficits, narrowing of rainfall period and a shift of the double to a single rainfall maxima regime. Farmer have observed these patterns of changes and experienced the impacts. Consequently, evidence-driven adaptive responses in the transformation of farming practices, timing of cultivation and choice of crops have been developed by farmers. It is recommended that further adaptive strategies be planned to improve farmers' adaptive capacities and reduced sensitivity of crops to climate perturbations.

Key Words: Climate Change; Small-scale farming; Adaptation; Sensitivity; Adaptive capacity, Vulnerability