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Land tenure insecurity and the adoption of sustainable practices in rice production systems in Ghana

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Abstract

Current rice production systems in Ghana are significantly vulnerable to unpredictable extreme weather events. To combat drought-related losses, many farms have increased their use of irrigation. However, measures aimed at enhancing soil fertility, such as integrated fertility management, which could improve resilience to water stress, are often underrepresented. These investments in soil fertility are long-term and require continuous action. Farmers in Ghana often face land tenure insecurity, cited as a barrier to limited adoption rates. This master's thesis aims to analyse the hypothesis that perceived land tenure insecurity hinders farmers' willingness to invest in climate-smart fertility-enhancing practices. The investigation is based on Protection Motivation Theory (PMT) as an analytical framework to ascertain how perceptions of climate-related threats, maladaptive rewards, and coping appraisals related to soil fertility-enhancing practices form farmers' intention to adopt such practices. We enrich the model by incorporating perceived land tenure insecurity and exploring its role in defining threats and coping appraisals. We employ a quantitative survey, sampling randomly from the population of rice farmers in Ghana. Data analysis uses logistic regression. Pre-survey expert discussions with agronomists and local extension services were already undertaken; the survey is currently in its pilot phase. The expected findings may inform how insecure land tenure can influence farmers' willingness to adopt sustainable practices. We expect that insecure land tenure poses a threat to the current system, but also a maladaptive reward for farmers to adopt soil fertility-enhancing measures. The study contributes to the adoption of technology literature by an explicit examination of the role land tenure insecurity can play. It will further provide evidence-based policy recommendations necessary to strengthen land tenure systems and to facilitate the adoption of practices that enhance the climate resilience of rice production systems in Ghana.

Keywords: Ghana, land tenure, protection motivation theory, sustainable rice farming

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