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**Farmers' willingness to participate and pay for, and agricultural extension
officers' disposition to communicate weather index-based insurance
scheme in Ghana: The case of the Upper East Region**

A thesis presented in partial fulfilment of the requirements for the degree

of

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ABSTRACT

Ghana's agriculture is rain-fed, and drought causes reductions in farm household food supply, and income especially in the Upper East Region. Due to the impact of drought on farm household livelihood, weather index-based insurance (WII) scheme for drought was introduced to cushion farmers from the impact of drought events in the region. Previous studies claimed that the demand for agricultural insurance including WII is affected by factors such as farmers' risk profiles and management strategies in place, socio-demographic, farm characteristic, institutional, and knowledge factors. Little is known about the impact of these factors on demand for the WII scheme in the region. This study attempts to assess farmers' willingness to participate and pay for the scheme, and agricultural extension officers' disposition to communicate information regarding the scheme to farmers in the Upper East Region of Ghana.

Through two surveys data on 200 farmers': risk profiles and management strategies; knowledge and attitude towards WII; and willingness to pay (WTP) for WII using a double-bounded contingent valuation technique, were collected. Data on 90 extension officers' knowledge and attitude towards WII and socio-demographic factors were also collected. Farmers' willingness to participate and WTP was analysed with a Heckman two-stage regression model. Agricultural extension officers' knowledge about the WII scheme in the region was analysed with a probit regression model.

The results revealed that the most frequent and important risk events were pest or diseases outbreak, drought and erratic rainfall. The most frequently used risk management strategies farm/crop diversification and use of improved crop varieties negatively impacted on the adoption of the WII. Few farmers were aware of WII, and of those who knew few understood the concept. Farmers had an indifferent attitude towards WII because they had little information. The WTP for WII was between 7.5% and 12.5% premium rates of maize production per acre (GH¢714). Being a landowning farmer, maize income, attitude score, drought index, and access to credit, positively influenced willingness to participate in WII; total crops income negatively influenced farmers. Farm/crop diversification, drought index, knowledge about the WII, and the bid price, negatively influenced farmers' WTP for the scheme; attitude scores positively influenced farmers' WTP. Most extension officers knew about WII, but few understood the concept of WII, hence were most likely not to communicate information regarding the scheme to farmers in the region effectively. In general, extension officers had an indifferent attitude towards WII. The number of insurance related training sessions attended by an extension officer positively influenced their knowledge about WII.

It was recommended that the insurance provider/s (GAIP) in collaboration with the Departments of Agriculture should organise regular district or regional sensitisation and or training programmes for farmers and extension officers to improve their knowledge about the scheme for adoption and dissemination of information about the scheme, respectively. The minimisation of basis risk, as well as improving the effectiveness of the scheme by the GAIP could contribute to a favourable attitude towards the scheme by farmers.

KEY WORDS: *Willingness to participate, willingness to pay, risks, risk management strategies, knowledge of weather index insurance, attitude towards weather index insurance*

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