

HAFL Master's Thesis Abstract

Year: 2017

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English Title: **Index-based insurance: An adaptation to climate change induced risks in cocoa production in Ghana**

English Summary:

Cocoa farmers in Ghana are at risk of crop failure largely due to rainfall variations, extreme temperatures and droughts. Index-based weather insurance is a financial adaptation option that pays out benefits based on a predetermined index e.g. rainfall level. It is a measure that has the potential to improve cocoa farmers' resilience and enhance their adaptability to the risks posed by the changing climate. However, cocoa farmers' willingness to pay and the factors that can influence their willingness to pay for index insurance are unknown. In addition, the complex nature of the cocoa sector and the weak organisational structure of Ghanaian farmers create uncertainty about the adoption and successful implementation of index insurance. This study aimed to build on existing information on factors influencing farmers' willingness to pay for index insurance. It highlighted organisational and institutional factors that can influence demand and adoption of index insurance in Ghana. Primary data were collected through structured surveys with 313 households in 20 communities in Bia East and Dormaa West districts of Ghana. In addition, five insurance companies were interviewed to determine their interest in and potential challenges for the establishment of index insurance products for farmers. Key informant interviews were conducted with representatives of the Ghana Cocoa Board, the Cocoa Research Institute of Ghana and Bonsu Cocoa College to determine the factors that can affect adoption of index insurance from an institutional perspective. The findings of the study were that about 91% of farmers have observed changes in the weather patterns and 68% perceive the occurrence of extreme events. About 74% have access to the national health insurance scheme and about 83% are satisfied with it. Farmers perceive insurance as a guarantee of security for an uncertain event. Econometric analysis of the data revealed that indeed the vast majority of cocoa farmers (93%) are willing to pay for cocoa index insurance. Also, 77% of them are willing to pay 10% or more of their yield as insurance premium. The main factors that can influence WTP and the amount willing to pay for index insurance are origin of respondents, land ownership, extension service, perception of extreme event occurrence and experiences with and satisfaction of insurance. Insurance companies will be willing to provide index insurance packages to cocoa farmers provided they can measure the risks involved and

quantify the cost of premiums. They are, however, concerned about farmers' level of education and organisation and how index insurance can be sold to them. The Ghana Cocoa Board and other cocoa institutions are optimistic about the adoption of index insurance. Yet, it is not clear whether the available historical time series weather and yield data is accurate and reliable enough. The main policy recommendation based on these findings is to advance the concept of index-based insurance by training the cocoa extension service division with support of the Ghana Cocoa Board to educate farmers on index insurance. A countrywide census database on cocoa farmers could promote easy access to yield data for informed decisions. Formation of farmer cooperatives could help enhance the flow of information and start-up of index insurance. Ghana Cocoa Board should as well mobilise the different stakeholders to equip themselves on index insurance policy and implementation strategies. The findings of this study sound promising. However, without clear structures and resources allocated for the adoption and implementation of index insurance, its future remains unclear.

Keywords: Cocoa farmers, Ghana, Climate change, Adaptation, Index-insurance, Willingness to pay

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