Weather index insurance design and agricultural intensification in Northern Cameroon

About the Project

Project Name: Weather index insurance design and agricultural intensification in Northern Cameroon
Type of Facility Project: Research grantee
Country of Operation: Cameroon
Region: Africa
Sub Topics: Product development, Agriculture

Project Description

Agriculture in West African countries is mainly rain-fed. Due to inadequate amount and poor temporal distribution of rainfall during the cropping season, droughts occur frequently in the region causing significant reduction in crop production. Index-based insurance has potential to increase farmers' capacity to take risk and improve average yield, by limiting weather risk impacts on farming income.

This study calibrates an index-based insurance in order to address two major research questions that remain unresolved. First, how much can agricultural intensification improve insurance outcomes; second, how does its impact on plot-level production depend on the level of subsidization of the pooling institution's loading factor covering the risk taken. Cross-validation is used for the insurance parameters' optimization in order to address the risk of over-fitting, which leads to an overestimation of insurance impacts. Results show that weather index-based insurance is associated with huge basis risk and thus has limited potential for income smoothing. The authors use a tractable definition of basis risk to show that calibrating parameters in sub-regions allows to reduce dramatically basis risk and to avoid non-negligible balancing out between distinct geographical zones.

Source URL: http://www.impactinsurance.org/projects/research/weather-index-cameroon

Links: