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Determinants of Access and Use of Seasonal Climate Information Services among Smallholder Farmers in Makueni County, Kenya

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Abstract

Global climate change has been a major constraint towards achieving food security, poverty reduction and sustainable agricultural production. Sub Saharan Africa is the most vulnerable region to impacts of climate change due to overreliance on rain fed agriculture as the main source of livelihood. Climate information services have been herald as a prerequisite tool to enable farmers adjust their farm practices to curb negative impacts of climate change and enhance sustainable agricultural production. Compared to other climate information services seasonal information is preferred because of seasonality in rural agricultural production,changes in resilience and implementation of coping strategies against negative impacts of climate change in Africa. This study analysed the determinants of access and use of seasonal climate information services among 250 smallholder farmers in Makueni County. Makueni County which was purposively selected because its one of Kenya's arid and semi arid areas with low resilience to climate change and declining agricultural productivity. The mean age of farmers interviwed was 53 years and farming was the main source of livelihood. Among the respondents 78% had access to seasonal climate information services (SCIS) and only 40% utilised it in farm management decisions against impacts of climate change. Change in planting dates, use of drought tolerant varieties, change of crop type,and change in area allocated to crops were the various climate information services accessed by farmers interviwed. A bivariate probit model with sample selection (heckprobit model) was used to analyse the determinants of access and utilisation of seasonal climate information services among smallholder farmers in Makueni County. The results of the selection model (determinants of access of seasonal CIS) showed that age and education of household head reduced the probability of access while household size, farm size, household income, livelihood activity, TV ownership and group membership increased probability of access of SCIS. Additionally the outcome model (determinants of utilisation of seasonal CIS) revealed that age, gender and previous exposure to drought reduced probability of using SCIS while access to extension services, access to organic fertiliser, improved seed, household income, radio ownership and farming as the main livelihood activity increased farmer's probability of using SCIS in farm management decisions against climate risks.

Keywords: Agriculture, climate change, climate information services, heckprobit, seasonal forecast

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