

## Abstract

### Purpose

The purpose of this paper is to investigate the effects of climate smart agriculture knowledge transfers. As well as to examine the application of climate-smart agricultural (CSA) knowledge such as conservation agriculture, irrigation systems, integrated soil fertility management, bioenergy and agroforestry by smallholder farmers in Kenya.

### Design/methodology/approach

The study applied comparative research methodology to compare climate smart agriculture knowledge application between smallholder participants in farmer field schools (FFS) and no FFS participation. This study used household data from 759 randomly selected rural agricultural households in three counties in Kenya. The study applied multivariate probit model to estimate CSA knowledge application by farmers who participated in field trainings and non-FFS participation farmers.

### Findings

This study established that climate smart agriculture knowledge transfer through FFS increases farmers' application of critical aspects of climate smart agriculture knowledge practices such as irrigation system, conservation agriculture and soil and water conservation. Such aspects have been noted as effective interventions against adverse climate change effects such as persistent droughts and flooding and soil infertility. Further findings illustrated that farmers who received CSA knowledge transfers applied agricultural insurance to mitigate rising climatic risks on their farms. Knowledge transfer interventions targeting affordability through subsidizing agricultural insurance are probable and more cost-effective measures that can be used to reduce smallholder farmers' exposure to climate change-related risks.

### Originality/value

This study provides information that was previously unknown about climate smart agriculture knowledge transfers and application among farmers who participated in field trainings and non-FFS participation farmers by using empirical data.

## Keywords

- Climate smart agriculture
- Farmer field schools

- Climate change
- Knowledge transfer