Data Article

Survey data on cost and benefits of climate smart agricultural technologies in western Kenya

S.K. Ng'ang'a [a,*], C.M. Mwungu [b], C. Mwongera [b], I. Kinyua [b], A. Notenbaert [b], E. Girvetz [b]

[a] International Centre for Tropical Agriculture (CIAT), Sub-regional Office for Africa, Pan-Africa Bean Research Alliance National Agricultural, Research Laboratories, Kawanda, P. O. Box 6247, Kampala, Uganda
[b] International Centre for Tropical Agriculture (CIAT), Regional Office for Africa, Kasarani, Road, ICIPE Complex, P.O. Box 823-00621, Nairobi, Kenya

A R T I C L E   I N F O

A B S T R A C T

This paper describes data that were collected in three counties of western Kenya, namely Siaya, Bungoma, and Kakamega. The main aim of collecting the data was to assess the climate smartness, profitability and returns of soil protection and rehabilitation measures. The data were collected from 88 households. The households were selected using simple random sampling technique from a primary sampling frame of 180 farm households provided by the ministry of agriculture through the counties agricultural officers. The surveys were administered by trained research assistants using a structured questionnaire that was designed in Census and Survey Processing System (CSPro). Later, the data was exported to STATA version 14.1 for cleaning and management purposes. The data are hosted in an open source dataverse to allow other researchers generate new insights from the data (http://dx.doi.org/10.7910/DVN/K6JQXC).

* Corresponding author.
  E-mail addresses: s.karanja@cgiar.org, stanley.karanja@gmail.com (S.K. Ng'ang'a).

Specifications Table

Subject area	*Agricultural economics*
More specific subject area	*Soil technologies, Farm production, Cost-benefit, Climate Smart soil technologies*
Type of data	*Tables of household general information and site characteristics, household respondent type, soil practices, trend in physical productivity (business as usual and climate smart soil technology (CSA)), changes in inputs, changes in implementation costs, changes in maintenance cost, changes in operation costs, and change in external effects*
How data was acquired	*Household survey using a structured questionnaire that was designed in CSPro*
Data format	*Stata files (containing categorical and numeric variables) in raw format *.dta*
Experimental factors	–
Experimental features	–
Data source location	Kenya
Data accessibility	*Data package title: Household Survey Data on Cost Benefit Analysis of Climate-Smart Soil Practices in Western Kenya* *Resource link:* https://dataverse.harvard.edu/dataset.xhtml?persistentId=http://dx.doi.org/10.7910/DVN/K6JQXC *Identifier: doi: 10.7910/DVN/K6JQXC*

Value of the data

- The data allows researchers to compute cost benefit indicators of climate-smart soil practices in Western Kenya in order to understand the perceived benefits and cost from a private and social point of view.
- The data can help researchers to understand what explains farmers' decision to implement climate-smart soil (CSS) practices while allowing comparisons with soil management practices from other countries in sub-Sahara Africa.
- This data can provide a significant contribution to the literature on economic assessment of climate-smart agricultural (CSA) technologies on the costs that accrue to the stakeholders in both the short- and long-term.
- The data can be used to identify barriers to adoption and implementation of different soil practices at the micro level and macro level.

1. Data

This article presents data collected by CIAT with an aim of assessing the climate smartness, profitability and returns of soil protection and rehabilitation measures. The data was collected using a structured questionnaire by means of Computer Aided Personal Interview (CAPI) technique to make the collection process effective and to minimize errors such as outliers and missing values. It is estimated that researchers spend about 80% of their time cleaning and organizing data [1] and only 20% generating findings from the data. Thus, CAPI technique minimized time spent on transcribing the results into a computer, cleaning and formatting the data for statistical programs that statisticians can use easily. The questionnaire was divided into eight sections. Section 1 provided general information about the study site, section 2 provided demographic data including the household head age,