

Insights into hermetic storage use among small-holder farmers in Kenya

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Research Question

What are the trends of hermetic storage use in Kenya?

Introduction

• Grain production is one of the major means of livelihood for the rural majority of Kenya with 84% of our sampled households engaging in agriculture as their main economic activity.

• Storage losses due to insect attack have led to widespread adoption of hermetic storage technologies (HSTs) in Kenya.

• PICS project and other players have been in the forefront to facilitate training and access of HSTs to the grain producers.

• Kenya is among the more than 23 countries in Africa and Asia where PICS activities have been implemented.

• Previously studies on the effectiveness of hermetic storage technologies have been carried out extensively on- and off-farm.

• However the use and practices associated with HST use among beneficiary farmers in Kenya has been studied minimally.

• Documenting the shift from conventional grain storage to hermetic storage among small-holder farmers is a key step in designing effective storage policies and strategies.

• This study was therefore conducted with an objective of documenting the trends of hermetic storage use among farmers in three counties traversed by hermetic storage trainers and campaigns in the last few years.

Methodology

• Six hundred and thirteen (613) farmers were sampled and visited during the 2017 major harvest and storage season (October - November 2017).

• Fifty (50) villages in Kenya were selected in the Eastern region of Kenya in 3 counties : Tharaka, Makueni and Machakos.

• First, a sampling frame of all the villages where training and dissemination campaigns were done was generated.

• Next, a sampling frame of all farmers was generated from the selected villages, and simple random sampling was used to select (13) farmers from each village to have a total of 613 farmers.

• The selected farmers were interviewed using a semi-structured questionnaire.

Findings

• Our findings confirm that HSTs in Kenya are in the expansion phase of an innovation process and farmers see them as a standard practice now.

• This research contributes to the knowledge base of those working with smallholder farmers in Kenya to enhance HST use as a means of reducing hunger and poverty.

• Specifically, this research offers information about the opportunities for further expansion of HST marketing for PICS bags and other HST products .

• Our data indicates that PICS has established an early momentum as the market share leader but new technologies are also gaining popularity among small-holder farmers.

Study sites



Examples of HSTs used in Kenya



PICS Bags



GrainPro

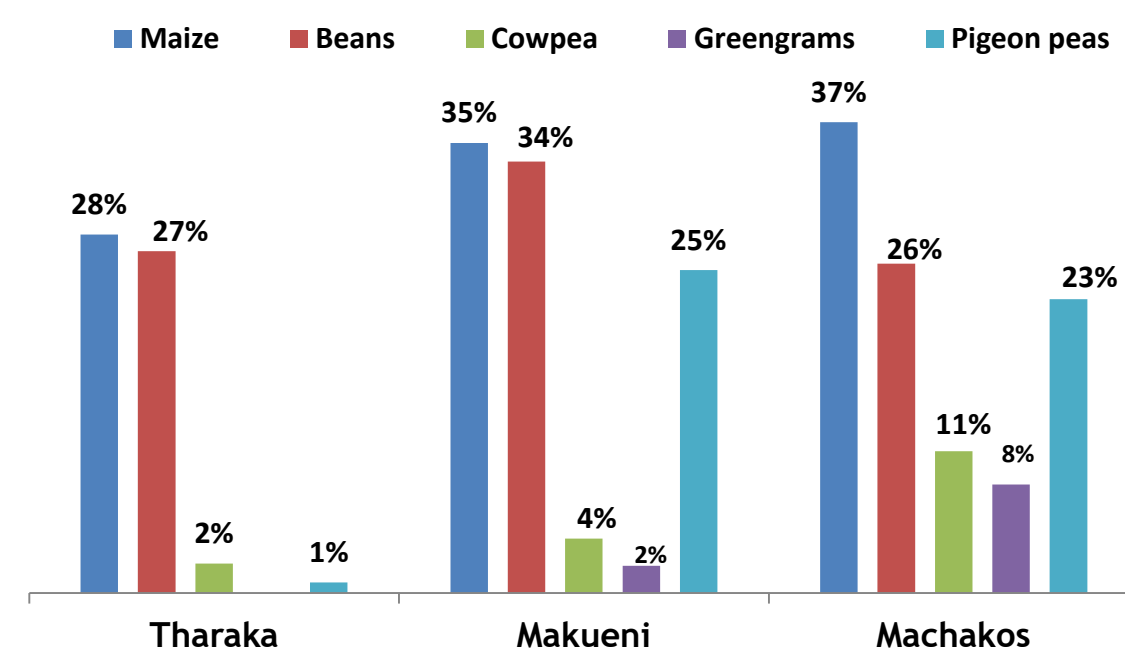


Metal silo

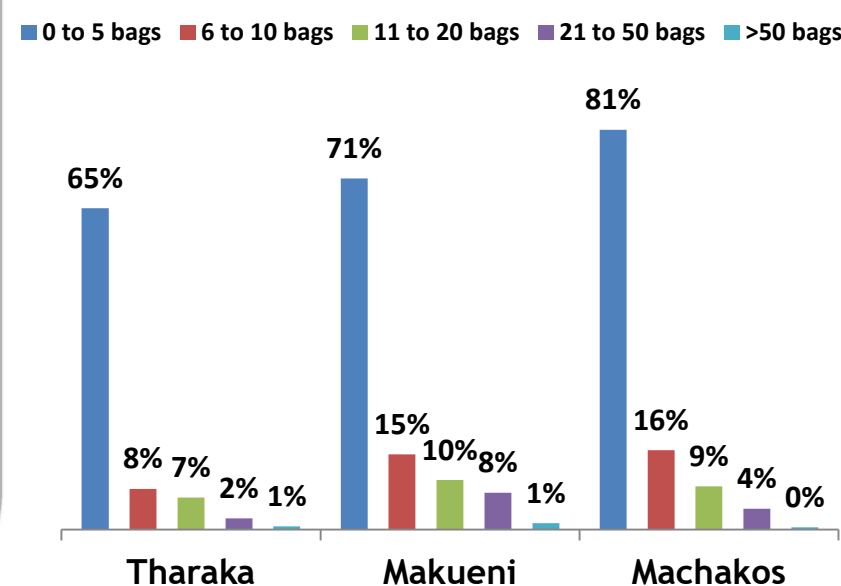


AgroZ bags

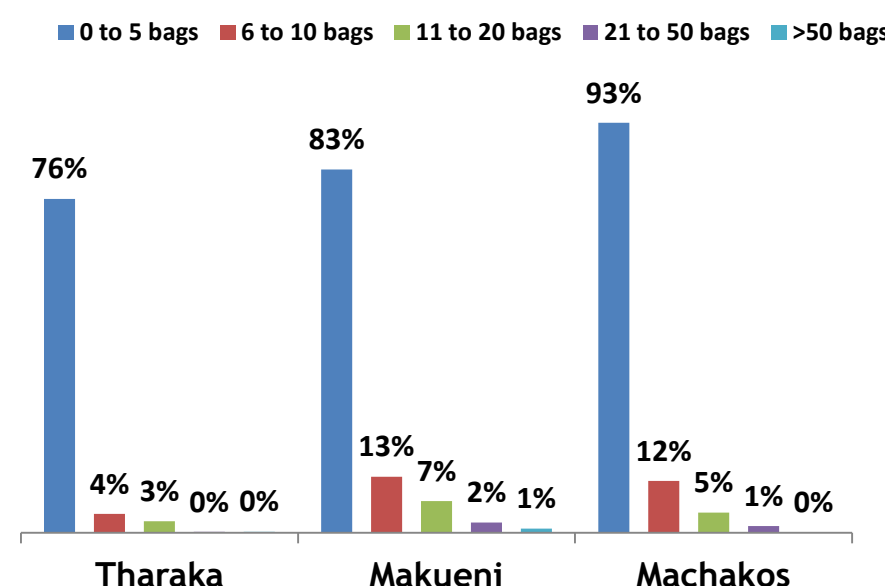
Proportion of crops grown by households by county



Quantities of crops produced

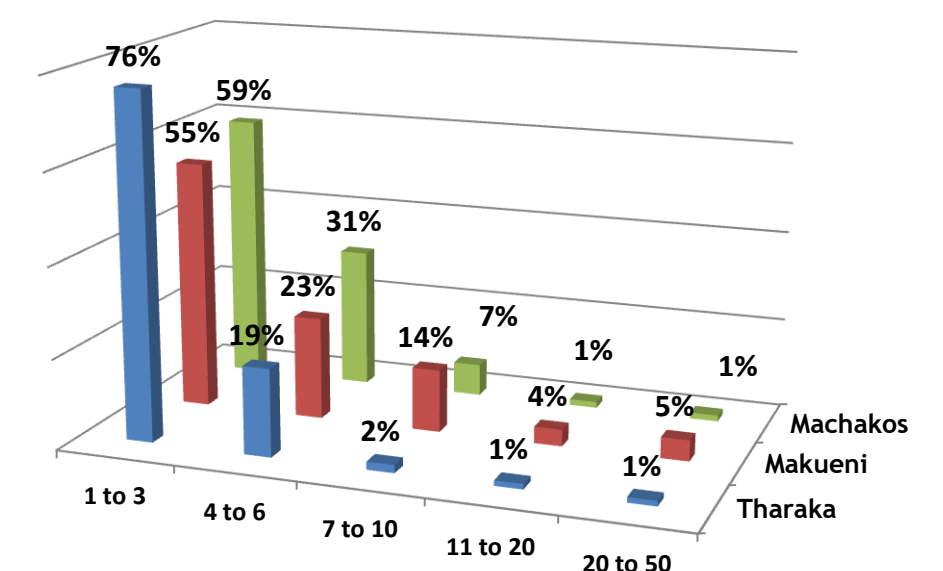


Quantities of crops stored

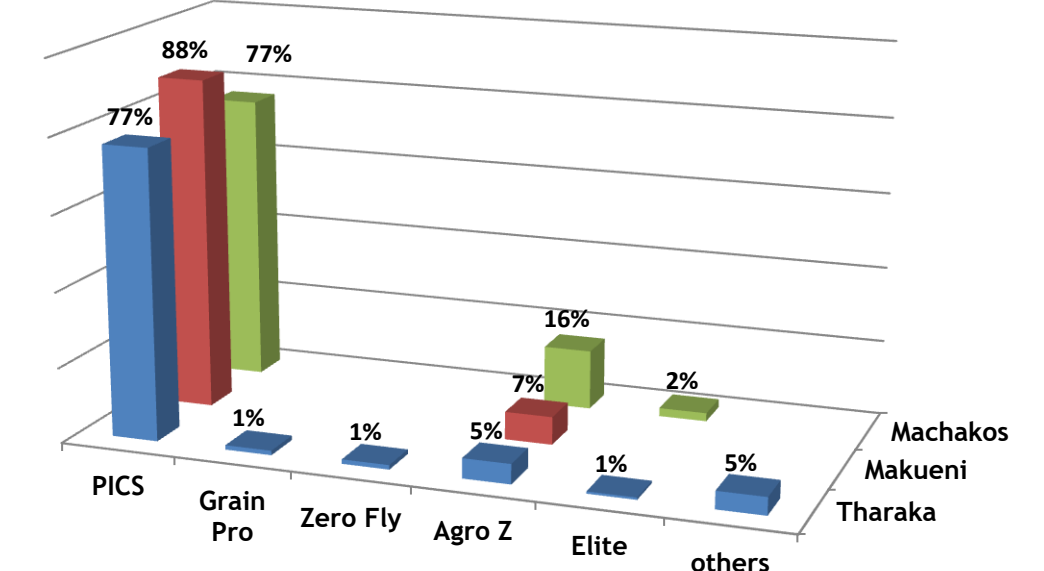


Use of HSTs among farmers

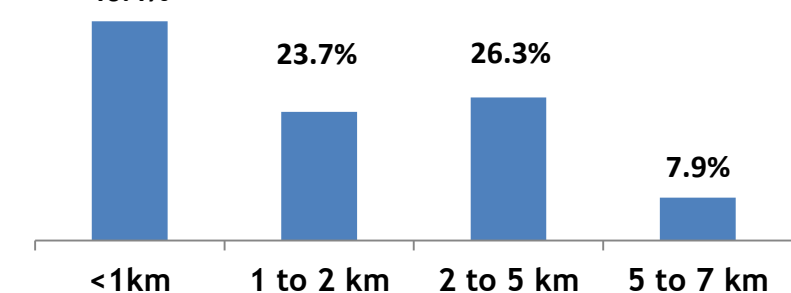
Number of hermetic storage technologies used the first time



Proportion of Households Using Different Hermetic Storage Methods



Distance to nearest market



Source of Hermetic storage technology

