TITLE: ADOPTION OF POSTHARVEST TECHNOLOGIES AND FOOD SECURITY AMONG MAIZE SMALLHOLDERS FARMERS IN KIREHE DISTRICT

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ABSTRACT

This study was conducted to describe and identify factors that influence adoption of maize postharvest management technologies by maize cooperative members and find out if personal and institutional factors of cooperative members are significantly related to food security in the study area and if adoption of postharvest management technologies of maize is significantly related to food security in the study area. It was conducted between November, 2015 and April, 2016 among smallholder maize cooperative members in Kirehe District.

The study population was 5504 cooperative members of which the sample size was 385 farmers based on Slovin size estimation formula. A simple random sampling procedure and a mixed method research design with more quantitative procedure were used in this study. Data collection was through two pre-tested and validated gathering tools namely semi-structured questionnaire and validated Key Informants Interview (KII).

SPSS 20.0 Version software was used to analyze both descriptive such as mean, frequency counts, range and standard deviation; and inferential statistics of which; simple linear regression, and Pearson Product-Moment Correlation Coefficient. Level of significance alpha was set at 0.05 upon which the null hypotheses were tested for significance.

The study revealed that majority of cooperative members are, mature, married, less educated, land lords, primarily involved in farming, primarily farming for family food and money, have had limited training and coaching, have good maize farming experience, have a number of other assets that ranges between 4 and 8. Majority of respondents (59.5%) have between 5 and 6 years of membership in cooperative and are ordinary members. The study found out that most farmers strongly agreed that the reasons for joining cooperatives was value addition, improving farming methods and link to market. Access to postharvest management technologies information is limited. Majority of respondents (62.2%) have never accessed this information for the last five years. Available infrastructure facilities for drying are cemented

drying grounds, and drying shades; for storage, there were concrete silos, and mill houses for processing. Farmers' access to electricity is very limited with a low percentage of 10.7% for those who access it. Farm distance from the road is small with an average of 361.5 meters. Maize is mainly sold through collection centers.

Majority of respondents are major adopters of cemented drying ground (77.1%), mechanical shelling machines (90.1%), mechanical winnowing machine (45%) and concrete silos (96.8%) for storage. Other postharvest management technologies like electrical shelling machine, electrical winnowing machine, metallic silos are lowly adopted in the study area.

Regarding the influence of factors on adoption, the study revealed that there is significant influence of personal factors in terms of age on electrical shelling machine, sieve on winnowing (b=-.360, P=.023*; b=.68, P=006**), education on cemented drying ground, drying shade, sheeting, mechanical shelling machine and shelling with hands, house floor sacks (b=2.38, P=005**; b=-1.532, P=.037*; b=-.813, P=.042*; b=1.73, P=.013*; b=-.848, b=.018*; b=1.07, P=.005**; b=-.86, P=.007**) size of family on shelling with hands (b=.952, P=.010**), farming experience on winnowing machines and sieves for winnow, number of asset on concrete silos and institutional factors access to information on electrical and mechanical shelling machine. This means that increase in any of the factors can proportionally lead to the increase in the level of adoption of technologies.

Pearson Product-Moment Correlation Coefficient revealed that drying technologies significantly related to food accessibility (.107*) and food availability (.113*). Drying technologies are also significantly related to food availability (.116). On the other hand, the personal factors (years in cooperative, access to information, size of land, and years in cooperative) were found to be significantly related to food security in Kirehe District.