

EGERTON



UNIVERSITY

**TEGEMEO INSTITUTE OF AGRICULTURAL  
POLICY AND DEVELOPMENT**

Kindaruma Lane  
Off Ngong' Road  
P O Box 20498  
NAIROBI, KENYA  
Tel: 020 2347297, 020 3504316  
Fax: 020-717819

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**Does Establishment of Demonstration Plots Have an Impact on farmer's Awareness, Perception and Use of Improved Maize and Bean Seed?**

*Authors: Kamau M., Bagamba F., Riungu C. and Mburu J.*

### **SUMMARY**

The production and distribution of newly released improved seed varieties, farmer awareness about them, access to and use of the new improved seed varieties are important prerequisites to increasing small holder farm productivity through crop improvement. In many SSA countries, seed delivery systems are poorly developed or lacking, but even in countries where seed systems are relatively better developed, the uptake of new varieties is very low and it takes many years before small holder farmers finally take up the improved varieties, if at all. Agencies seeking to increase agricultural productivity through crop improvement often face challenges not only on how to increase farmers' use of improved varieties, but also how to speed up the adoption process amongst smallholder farmers, including women farmers. Though multiple methods are used by seed companies, government/non-governmental agencies to market and create awareness or promote new seed varieties, adoption studies show that many farmers in sub-Saharan Africa have not been reached by the promotion campaigns, and/or are not using improved seed.

Demonstration plots and field days are always among the promotion methods used by seed companies and other players in the seed industry, to create awareness and promote improved seed varieties. For example, all proposals that were presented to the Alliance for a green revolution in Africa (AGRA) between 2007 and 2013, requesting funding for seed distribution and dissemination, included substantive resources for demonstrations, field days and other approaches. There is however limited information available on their effectiveness or cost-effectiveness. This study evaluates the impact of demonstration plots (and field days) as implemented by seed companies.

The promotion strategy of a local seed company comprised radio spot adverts and hour long radio talk shows which were aired through regional radio stations in all the study areas. In addition, the seed company established demonstration plots and held field days in selected areas that had been randomly assigned to a treatment group. The demonstration plots were expected to provide the farmer hosting the demonstration plot (demo host), and other farmers in nearby villages, information about the attributes and performance of the varieties being promoted, and an opportunity to verify the same. Upon maturity of the crop, the seed company hosted farmers from villages falling in the treatment areas, extension agents and agro-dealers at the demo sites for a field day where views and more information about the varieties was shared. This awareness creation and promotion strategy was repeated in the same areas over four cropping seasons during the cropping years 2014/15 and 2015/16. The assumption behind the widespread use of demonstration plots is that farmers are more likely to adopt new varieties after witnessing performance/outcomes of the variety in demonstration plots and receiving more information about them during field days. The theory of change is that the promotion methods used by seed companies raises farmers' awareness, and influences their perception, knowledge and use of the improved seed being promoted.

This evaluation study sought to establish whether demonstration plots are effective in influencing the adoption behavior of smallholder farmers, including women farmers. The study determines the changes in the adoption behavior of a random sample of farmers drawn from the treatment areas, compared to changes which occurred amongst a random set of farmers drawn from non-treatment (control) areas. We have applied quasi-experimental methods to estimate the changes that can be attributed to the demonstration plots (& field days), namely the AIPW (Augmented Inverse Probability Weighted) estimator, commonly referred to as the doubly robust regression. The AIPW yields consistent estimators when the outcome model is correctly specified, thus providing chances to make a valid inference.

We found that boosting radio messages by establishing demonstration plots and holding field days increased farmers' awareness about the promoted new improved varieties and also induced a change in the farmers' adoption behavior (perception and knowledge). However, the effect on uptake of promoted varieties was insignificant although it significantly improved for improved varieties which were already known by farmers. Findings from the qualitative assessment showed that demos reached farmers living in close proximity to demo plots, however no change in uptake was not achieved even for those farmers.

The results showed that boosting radio messages by establishing demonstration plots and holding field days marginally increased awareness and use of promoted varieties, significantly increased awareness and use of improved seed of the already existing/known improved varieties promoted. The implication of the results is that demos and field days tend to instil confidence among farmers on the improved technologies they already know about but probably lacked adequate information. The results however, showed no effect on acreage, yields and production of maize and beans. These outcome variables tend to be intermediate and long term outcomes and less likely to be achieved in the two-year period of the impact evaluation study.

The results from individual household interviews by gender showed that exposure improved reliance on demos and personal communication as channels of information access for improved seed and reduced reliance on radio. Exposure also effectively improved awareness, perception and attitudes towards improved maize and beans seed albeit differentially between the males and females. Awareness of improved seed improved significantly more for females than males.

*For further assistance, more information or if you would like to conduct interviews with the Lead Principal Investigator, you can do so through: Judy Kimani, 0720 96 33 48, ([jkimani@tegemeo.org](mailto:jkimani@tegemeo.org)).*