

The Adaptation of MEFOSEP Intervention on Improving Food Production Among Farmers in Bar "A" Sub Location, Kisumu County

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Abstract

This is a Monitoring and Evaluation research that monitored the same households for the second seasons and displayed the information to the farmers on a noticeboard as a way of sensitizing them on good farm management practices. Key findings were analyzed and used to determine the quarterly Adoption-Trend's depicted from the harvest quantities, the impact of the noticeboard intervention on the harvest, to compare the Seasonality on Adoption (CAN quantities used) - Dry verse Wet seasons, to evaluate Storage and usage of the harvest in relation to the food security and to compare the effects of intervention in relation to the Kisumu regional harvest. Census was done for the 570 households. Frequency was run using SAS and STATA and Chi square test to determine the associations of farm indicators, such as quantity of fertilizer and seeds application on the production of maize, beans, groundnuts and vegetables. Descriptive analysis was conducted to determine and compare the harvest in the intervention sites to the rest of the place in Kisumu where the intervention was not affected. Logistic regression analysis was used to determine the significant influence of the variables on the production of monitored food crops. Comparative analysis was used to test the null hypothesis on the statistic significant between first season and second season.

Keywords

Monitoring Food Security, Information Asymmetry, Food Production, Target Plan

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1. Introduction

MEFOSEP program strives to boost agriculture (farming) in its areas of operation. Adoption is defined as the proportion of farmers using the information on the noticeboard installed next to their area to sensitize them on good farm management practices. As part of adoption boosting, the program has

recently conducted a farm to farm campaign with the purpose of increasing awareness and ultimately usage of good farming practices for maximum harvest. The intervention was implemented in the Bar "A" sublocation, Kisumu district in October 2015 through a combination of radio shows and noticeboard display. The intervention was focused on maize, beans, groundnuts and kales production with keen interest taken on maize farming since it was carried out by ALL the

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farmers who were participating in the study.

Indeed, a qualitative research project conducted in July 2015 (post-harvest) aimed at investigating the gap between awareness of the good farming practices and usage of the same indicated that the noticeboard displays and radio talk shows would likely be effective in accessing farmers in the region.

1.1. Study Design and Sampling Plan

This was a longitudinal study that monitored households for a long period of time. It was treated as a census type study and therefore all the farmers in Bar “A” sublocation, Kisumu District were enrolled to participate in the study.

1.2. Objectives

1. To determine the quarterly Adoption-Trend (as depicted from the harvest quantities)
2. To assess the impact of the noticeboard intervention on the harvest
3. To compare the Seasonality on Adoption (CAN quantities used) - Dry vs Wet seasons
4. To evaluate Storage and usage of the harvest in relation to the food security
5. To compare the effects of intervention in relation to the Kisumu regional harvest

1.3. Key Findings

- The proportion of farmers benefiting from the noticeboard display as a major source of information on good farm management practices and food security is high as it is depicted from the harvest results
- A majority of farmers report to have received majority of information from radio talk shows
- Most residents (90.35%) reported the radio campaign to have improved their farming habits
- After the campaign, maize harvest averages in Bar “A” rose by 19.35%
- The increase should be treated cautiously as it cannot be entirely attributed to the noticeboard displays and the radio talk show interventions
- Average harvest figures for entire Bar “A” sublocation, Kisumu also improved by 7% over the same duration (according to national figures on Agricultural production).

1.4. Narrative Findings

Quarterly Adoption in terms of the farm inputs (DAP)

The 2015 adoption (DAP fertilizer) was 15.69% in Bar “A”. All across 2015 adoption rates seem to be increasing.

Table 1. Adoption of CAN quantity for both wet and dry season.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Maize	45.26%							70.52%					57.89%
Beans	3.01%							3.15%					3.08%
Groundnuts	0.01%							1.06%					0.535%
Kales	1.13%							-					1.13%
Average	12.3525%							24.91%					15.69%

Seasonality on Adoption in terms of farm inputs (CAN) - Dry vs Wet seasons.

Table 2. Adoption does not differ depending on the seasons.

	Phase I	Phase II
Maize	34.62%	40.40%
Beans	0.11%	1.40%
Groundnuts	1.24%	0.35%
Kales	1.39%	1.75%
Average	9.34%	10.975%

2. Results

2.1. Household Food Security Surveys

Acreage ploughed Information for the cash crops

Farmers in Bar “A” were asked their acreage ploughed for maize, beans, groundnuts and vegetables. Maize was the

most reported as having the highest acreage (81.75%) followed by beans at (38.60) and vegetables at approximately 8.25%. Groundnuts came fourth at 4.21%. However, in this area, where the intervention was implemented, the proportion reporting high acreage was higher than the average in entire Kisumu District thus pointing to an increase of access to information and awareness as a result of the MEFOSEP intervention. Almost all respondents that had high acreages and good farming practices such as the application of manure, CAN, DAP and enough weeding as good farming practices could do so at first attempt without assistance from the interviewer (CHW’s).

Both radio intervention and noticeboard information proved equally effective means of reaching farmers with almost half of the population reporting to have gotten an increased harvest. However, asked how they stored the products they had harvested, a majority of the respondents, 77% of farmers

in Bar “A” mentioned storage of less than 1 month.

2.2. Influence on the Harvest

The study sought to determine the influence of the campaign on farming habits on the farmers. At baseline, 71% percent of households reported to have been getting good maize harvest,

with 52.1% getting a comparatively low harvest. However, with the high proportion of farmers using the information on the noticeboard, an increase (90.35%) of them who reported the good harvest is attributed to the influence of the intervention. The influence is shown below:

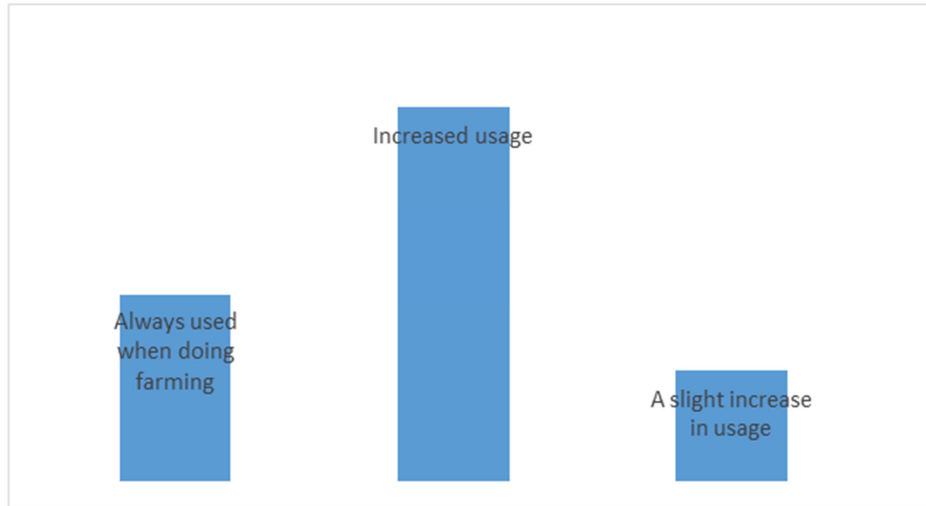


Fig. 1. How MEFOSEP intervention changed farmers farming habits i.e. maize production.

Adoption trends before and after the intervention do not indicate an appreciable increase in adoption in Bar “A” relative to average trends in Kisumu as shown below.

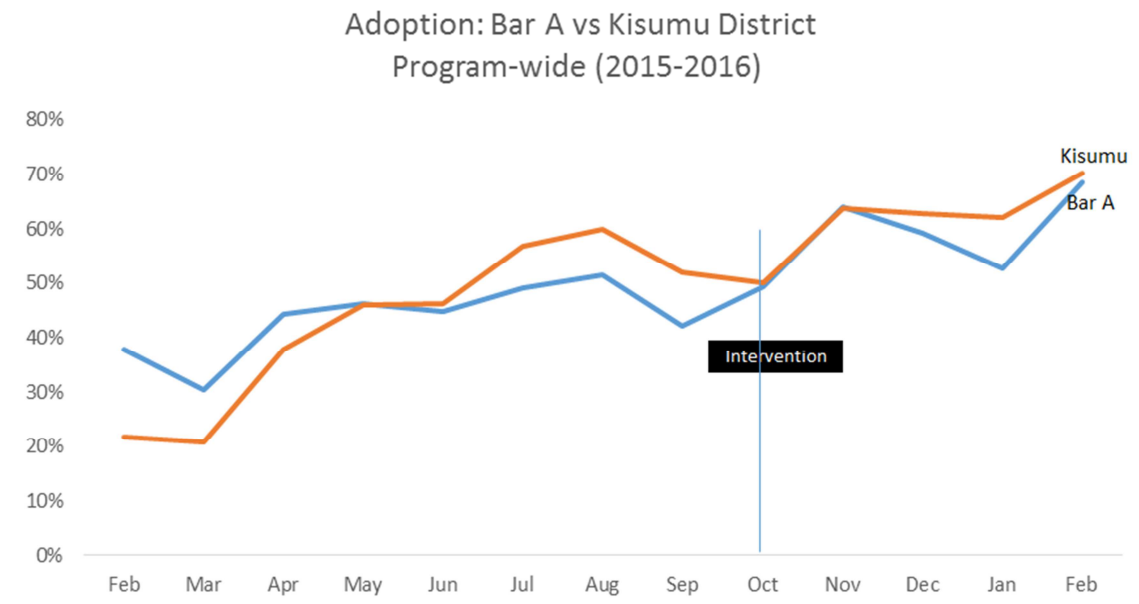


Fig. 2. Adoption: Bar “A” sublocation vs Kisumu District Program-wide (2015-2016).

Despite post-adoption figures in Bar “A” being relatively at par with Kisumu District averages, it must be noted that pre-intervention figures in Bar “A” were 8% lower. After the intervention, 3-month adoption averages in Bar “A” harvest rose by 19.35% while the regional average rose by 7%. At the end of February 2016 (4 months after the campaign), adoption

in Bar “A” is almost at par with the national average.

Table 3. 3-Month adoption before and after intervention.

3-month adoption before and after intervention			
	Pre-Intervention (Jul-Sept 2015)	October	Post-Intervention (Nov - Jan 2016)
Bar A	48%	49%	59%
Kisumu	56%	50%	63%

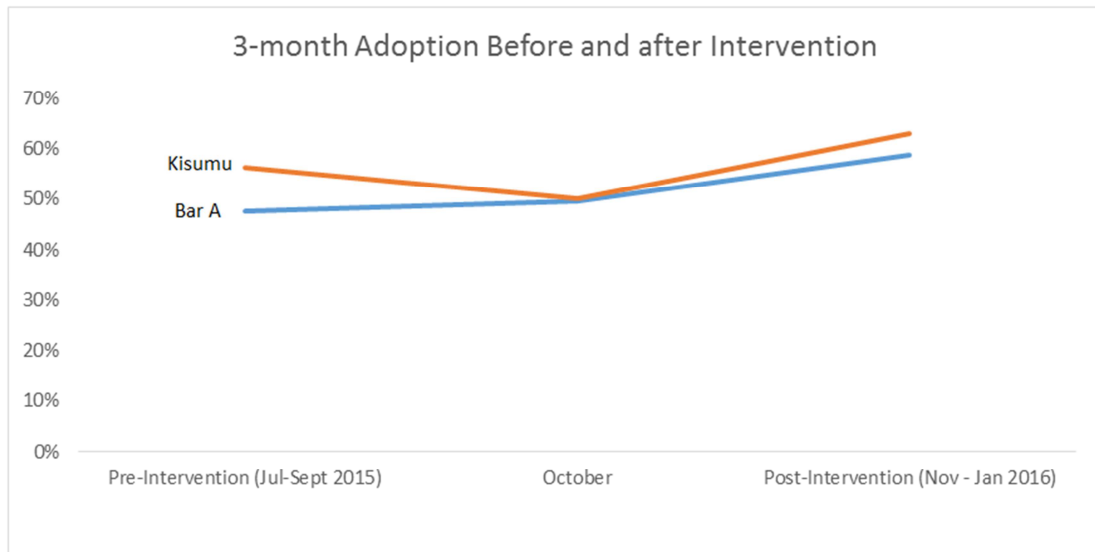


Fig. 3. 3-month Adoption Before and after Intervention.

A test of hypothesis between the proportions of farmers getting high harvest for maize before and after the intervention shows the increase in adoption to be statistically significant¹. This increase in adoption in Bar “A” cannot be entirely attributed to the MEFOSEP intervention as other agricultural programs in Kisumu experienced comparable increases in adoption towards the last quarter of 2015 as seen in Fig. 2. Besides, there could have been a spillover of the intervention resulting from the noticeboard used in the campaign reaching farmers who are not residents of Bar “A”.

3. Radio Talk Show

As part of the intervention process, MEFOSEP leader turned to local radio stations such as Lolwe and Victoria stations to be involved in the campaign to spread the information and content to the farmers during the scheduled talk shows. Information indicates that area coordinators and field officers fully explained who MEFOSEP are, and specifically the intervention program, the role of the noticeboard in enhancing good farming practices, and proper use of the farm inputs. In addition, in all talk shows monitored, the MEFOSEP leader addressed rumors associated with the intervention and safety concerns over farm inputs to the soil fertility. However, vandalism of noticeboard was not adequately covered.

The talk show hosts also afforded listeners time to call in and ask questions of interest about the noticeboard and soil fertility. One question of interest was whether the noticeboard

would be installed at every farm/farmers door step. Both male and females participated in the call-in sessions.

4. Conclusion

Results from the intervention campaign conducted in Bar “A” while this is a significant increase, it must be noted that the intervention was implemented while harvest figures in Kisumu region were on an upward trend (resulting from a previous regional boost on farm inputs) and hence the increase cannot be entirely attributed to the intervention point to an 19.35% increase in harvest. This resulted into interference/confounding. However, even with the combined effects of the MEFOSEP campaign and an earlier campaign to boost farming in entire Kisumu, adoption was still lower in Bar “A” relative to the regional average 4 months after the campaign ended.

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¹ P-value=0.0063

Appendix 1

Survey Question	Proportion on the higher side	N
What Quantity did you harvest for maize?	90.35%	570
What Quantity did you harvest for beans?	52.63%	570
What Quantity did you harvest for groundnuts?	13.51%	570
What Quantity did you harvest for kales?	4.91%	570
What Quantity of DAP did you use for maize?	70.52%	570
What Quantity of DAP did you use for beans?	3.15%	570
What Quantity of DAP did you use for groundnuts?	1.06%	570
What Quantity of CAN did you use for maize?	40.40%	570
What Quantity of CAN did you use for beans?	1.40%	570
What Quantity of CAN did you use for groundnuts?	0.35%	570
What Quantity of CAN did you use for kales?	1.75%	570
What Quantity of manure did you use for maize?	9.65%	570
What Quantity of manure did you use for beans?	1.41%	570
What Quantity of manure did you use for groundnuts?	2.10%	570
What Quantity of manure did you use for kales?	1.23%	570
What Quantity of pesticides did you use for kales?	1.75%	570

Tracking Number of People per Household

As we continue to collect more household level data during the quarterly evaluations, we will get a more accurate estimation of the *number of people per household*. This number will be updated quarterly and the number reported in each quarter tracked in a table similar to table 4 below.

Table 4. Number of people per household in a quarterly basis.

	2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
People Per HH: Bar A								

All tables will be saved in the same excel file with the date of update. Where calculations are involved, formulas will be used and notes used to explain any deviations from the norm, e.g. when using median instead of mean or where approximations have been used.

From a reporting standpoint, calculations will be saved from the date of last reporting. Thus, we will report numbers using program averages that were current at the date of reporting NOT historic numbers updated with current program averages.

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