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UTILIZATION OF BASELINE SURVEY AS A MONITORING AND EVALUATION TOOL AND SUSTAINABILITY OF COMMUNITY AGRICULTURAL PROJECTS SUPPORTED BY CARITAS IN MERU COUNTY, KENYA

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Abstract: The purpose of the study was to establish the influence of utilization of baseline survey as a monitoring and evaluation tool and sustainability of community agricultural projects supported by Caritas in Meru County, Kenya. A pragmatic research paradigm was adopted and a descriptive survey research design was utilized. The target population was 59 smallholder farmer groups and 24 Caritas Meru staff. The sample size was 51 smallholder farmer groups and the total sample size was 177 respondents comprising (153 group leaders and 24 project officers). The data collection tools were questionnaire and interview guide. The collected data were coded and entered into the SPSS version 26 program for analysis. The qualitative data was analyzed by way of grouping similar responses together and identifying the main themes from them. The linear +0 regression and Pearson's correlation (r) methods were utilized to evaluate the link between various variables. The multiple linear regression models determined the link between dependent and independent variables together with the moderating effect of the moderating variable. It is also used as the inferential statistics that inform the decision to reject or not reject the alternative hypothesis for the research study. The study found out that utilization of baseline survey ($R^2 = 0.572$ t=18.152 P=0.000<0.05) had a statistically significant influence on the sustainability of community agricultural projects supported by Caritas in Meru County, Kenya. The study concluded that baseline surveys influence the sustainability of community agricultural projects supported by Caritas in Meru County, Kenya. The study recommended that organizations dealing with the community project should utilize as many M&E tools as possible to enhance sustainability

 $\textit{Keywords:} \ community \ agricultural \ projects, small holder \ farmer \ groups, \ M\&E \ tools.$

1. INTRODUCTION

Globally, the M&E tools remain important tools because they aid in taking corrective measures whenever projects deviate from their desired objectives. They help in tracking signs of progress and providing feedbacks relating to measures taken to ensure that projects attain their desired objectives (Alves, Botelho& Mendes 2017). Most developed nations such as the USA, China and Germany have sought outcomes orientated advancement activities by embracing more viable M&E tools. As a feature of the more extensive endeavours to standardize Managing for Development Results (MfDR), a large number of administrations in developed nations have found a way to fortify M&E System at their national level. For instance,

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

China has been known and is still known today to be among the best-performing countries in their M&E process as a tool of sustainability in both the public and private sectors (Das & Ngacho, 2017).

In Africa, M&E systems in most governments operate in a complex landscape and are prisoners to different powers in government to some extent. The concept of M&E still seems new, and on many occasions, has not been accepted fully as a vital part of the operations in organizational projects. Several communities, firms and companies have copied the idea recently. Rwanda has been cited as one of the best-performing countries in east Africa by the World Bank in its internalization of M&E in projects' sustainability in every sector of the economy (Aziz & Abdel-Hakam, 2016). According to Salat, A. M., and James, R. (2018), people living in communities have specific responsibilities in the sustainability of projects initiated within their neighbourhoods; hence, the way they handle them determines their sustainability. Unfortunately, M&E is more often than not conducted to fulfil projects' requirements and attract funding from donors (Kariungi, 2014). It was on this basis that study attempted to evaluate the effects of utilization of M&E tools on the sustainability ofagricultural projects supported by Caritas in Meru County, Kenya.

The objective of the study was to establish the extent to which utilization of Baseline Survey influences the sustainability of community agricultural projects supported by Caritas in, Kenya. The hypothesis was: Utilization of Baseline Survey does not have a significant effect on the sustainability of community agricultural projects supported by Caritas in Meru County, Kenya

2. LITERATURE REVIEW

Sustainability of Community Agricultural Projects

The sustainability of Community Agricultural projects is measured by how the community can run the projects without the support of the donor. This is supported by IFAD (2013) who describes sustainability as ensuring that the institutions funded by projects, as well as the benefits realized, are sustained and continue after the project ends. This means that for the projects to be sustainable they should show the signs of continuation even after the donor withdraws or when the project comes to an end as per the work plan. Gruen (2008) says that many rural community development programmes are a big emphasis on project sustainability. Particularly the low- and middle-income countries find it more difficult. Savaya et al., (2008) also observed that 40% of all new projects do not surpass the initial funding after the first few years. This is an indication that there is a problem in developing countries, Kenya being one of them when it comes to the sustainability of the projects. Therefore, the study filled the gap by investigating the utilization of M&E tools, project environment enablers and sustainability of the community agricultural projects.

Some of the leading cause of the unsustainable development in Africa is poverty, drought, famine, illnesses and illiteracy, hunger and health problems. This has been shown by Gall (2013) who suggest that in 10 countries of Sub-Saharan Africa, people are living in extreme poverty at or less \$ 1.25 a day. Based on the Gall (2013) research it is cleared to acknowledge that there is a problem in Africa in the sustainability of projects. Engaging communities by involving them in the project may lead to ownership of the projects. In this case, involving communities means that they feel they are part of the project from the initiation phase to the monitoring & evaluation phase. The project team should explain to the community the importance of the project and the benefits associated with the participation of the community in the project. By doing that, may influence the sustainability of the project. This goes in line with Person (2016) who conducted a study on factors influencing the sustainability of community-based programs, a mixed-method study, combining a systematic literature review and expert interviews. In the review, 14 studies were analyzed of which 37 factors were abstracted. The factors were divided into 4 categories: human resources, organizational setting, social and political environment and financing. The result showed that community-based program sustainability is influenced by multiple factors; of which community involvement was identified as the most important. This implies that community involvement plays are a very important role in the sustainability of community-based projects. Involving the community when carrying out monitoring and evaluating may influence the sustainability of projects.

Utilization of Baseline Survey and Sustainability of Community Agricultural Projects supported by Caritas

Baseline Surveys have been found to play a critical role in the monitoring and evaluation of projects. Such surveys are conducted once decisions to implement projects are reached. The surveys act as benchmarks for determining the successes and failures of projects (Aziz & Abdel-Hakam, 2016). They benchmark all activities; hence, project managers can refer to them as they make important decisions. The baseline studies conducted at the start of projects help managers to identify priority areas especially when projects have several objectives to meet. This helps them to decide where resources need to be directed at any given time. As a result, without such studies and surveys, it may not be possible to determine the exact impact that projects have on different stakeholders especially the beneficiaries.

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

Because of the critical role that baselines surveys play in evaluating projects' impact on beneficiaries and other stakeholders, then they help in minimizing resource wastage through efficient resource allocation (Martens & Carvalho, 2017). They also help in eliminating unnecessary processes. Despite this, the donors are the ones who demand baseline surveys to be conducted so that they can determine the viability of projects. This means that baseline surveys act as parts of program processes implying that donor-funded projects ought to have them. The best thing about them is that they are carried out right at the start of projects. As a result, they are critical in the processes of monitoring and evaluating projects especially capturing the impact of projects during evaluation processes.

Failure or lack of conducting a baseline survey may lead to the failure of the projects. This has been explained by Lock (2018) who states that when baseline surveys are not conducted at the start of projects, it becomes almost impossible to get a clear picture of the initial status of projects. As a result, the best practice is to conduct baseline surveys at the start of projects and not once they have been implemented. There has been a significant association between baseline surveys and the performance of building construction projects in Kenya. This has been shown by Shihemi (2016) who carried out a study on the "influence of monitoring and evaluation tools on projects performance of building and construction projects in Kenyan public Universities: a case of the University of Nairobi". In her study baseline survey was one of the monitoring and evaluation tools and she used a descriptive survey research design. The target population comprised 130 monitoring teams and a sample size of 98 in ongoing projects at the University of Nairobi. The results showed that there was a significant relationship between project performance and baseline surveys (rho=0.463, p-value <0.05. The study acknowledges baseline surveys influence the performance of construction projects, however, we don't whether baseline survey influences the sustainability of community-based agricultural projects supported by Caritas, Meru county. The study also fails to explain how baseline surveys influence the sustainability of projects.

Since we have seen that baseline survey is associated with the performance of projects, to have an effective baseline survey, one has to factor in stakeholder participation, staff competency, project cost and project scope. This has been explained by Ochieng (2018) who investigated "determinants of an effective baseline survey for donor-funded slum Upgrading Projects in Nakuru County. "The study variables were stakeholder participation, staff competency, project cost and project scope. It was found out that there was a strong and significant relationship between stakeholder participation, project team competency, project, project scope and effective baseline survey (r= 0.743, 0.726, 0.698 and 0.685). The study does not show the relationship between the utilization of baseline survey as a tool in M&E and sustainability of community agricultural projects. The study has concentrated only on how to develop an effective baseline survey tool.

3. METHODOLOGY

The study adopted the pragmatic paradigm and a descriptive research design. The researcher opted to use a descriptive research design because it ensures a complete description of the situation, making sure that there is minimum bias in the collection and interpretation of data (Kumar, 2019).

The target population for this was 59 farmer groups with a total of 997 members (Table 1) plus the 24 Caritas project staff as illustrated in Table 2.

Table 1: Study Target Population for Farmers group. Source: Caritas Meru Records (2021)

Sub-county	No. of Groups	Members	Total	
		Female	Male	
Buuri	31	271	174	445
Tigania West	14	158	124	282
Imenti Central	14	139	131	270
Total	59	568	429	997

Table 2: Study Target population for Caritas Project Staff. Source: Caritas Meru Records (2021)

Category	Target Population
Field Officers	18
Senior administrative staff	3
Project Co-coordinators	3
Total	24

The sample size for this study was 153 farmer groups' leaders plus the 24 Caritas project officers. Hence the total sample size was 177 (Table 3 and Table 4 respectively)

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

Table 3: Sample Size determination for Famers groups Source: Caritas Meru Records (2021)

Sub-county	Target Population	Sample size	Percentage	
		Farmer Groups	3 top officials per group	
Buuri	31	27	81	52%
Tigania West	14	12	36	24%
Imenti Central	14	12	36	24%
Total	59	51	153	100%

Table 4: Sample size determination for Caritas Project Staff Source: Caritas Meru Records (2021)

Category	Target Population	Census(Sample)
Field Officers	18	18
Senior administrative staff	3	3
Project Co-coordinators	3	3
Total	24	24

The sampling techniques used in this study were cluster, simple random, proportionate and purposive sampling. Proportionate sampling was used to obtain the number of farmer groups per cluster from the total sample size of 51. To select the farmer groups from each cluster that participated in the study, simple random sampling was adopted. Purposive sampling was used to select 3 top officials from each farmer group sampled to participate in the study. Census technique was utilized to include all the 24 Caritas project staff. The researcher interviewed 3 Caritas senior administrative staff, namely; the director, the assistant director and the M&E officer to triangulate the study findings. The rest of the respondents filled in questionnaires. The study used a structured questionnaire and interview guide to collet data.

The completed questionnaires were subjected to data cleaning and categorization. Data processing was attained through coding and entering in the Statistical Package for Social Sciences (SPSS) software version 26. The qualitative data collected using interview guides were analyzed by way of identifying themes. This entailed grouping similar responses together and developing information from them. The linear regression and Pearson's Correlation was utilized to determine the link between dependent and independent variables.

4. MAJOR FINDINGS

Sustainability of community-based agricultural projects

The researcher assessed whether agricultural projects achieved their intended purpose as it was planned. The result returned a mean score of 4.2414 and a standard deviation of 0.55798 (Table 5). Respondents agreed that the agricultural project achieved its intended purpose as it was planned. A mean score of 4.0632 and Std. Deviation of 0.90696 indicated that the respondents agreed the number of agricultural projects managed by farmers is above 50%, the respondents were undecided or neutral that some groups have collapsed due to mismanagement the recorded mean was 3.0862 with Std. Deviation of 1.18201, the respondents agreed that the projects run by the farmers are generating income the recorded mean was 3.9943 with Std. Deviation of 0.87017, Lastly respondents strongly agreed members are trained on modern farming methods, the recorded mean was 4.1092 and Std. Deviation of 0.57363. These findings suggest that community agricultural projects supported by Caritas are owned by the community hence they are sustainable

Table 5: Sustainability of community agricultural projects. Source; field survey (2021)

Descriptive Statistics								
	N	Minimum	Maximum	Mean	Std. Deviation			
The agricultural project achieved its intended purpose	174	3.00	5.00	4.2414	.55798			
as it was planned								
The number of agricultural projects managed by	174	1.00	5.00	4.0632	.90696			
farmers is above 50%.								
Some groups have collapsed due to mismanagement	174	1.00	5.00	3.0862	1.18201			
The projects run by the farmers are generating income	174	1.00	5.00	3.9943	.87017			
Members are trained on modern farming methods	174	3.00	5.00	4.1092	.57363			
Valid N (listwise)	174							

The researcher interviewed 2 Caritas senior officers and they were asked to comment on the sustainability of community agricultural projects supported by Caritas in Meru County. Interviewee no 1 had this to say;

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

"Well, most projects supported by Caritas Meru have benefited the local community. Some started with 5 chickens 5 years ago but as we speak, they have hundreds, they supply eggs and chicken to hotels and they educate their children from the project". Interviewee no 2 had this to say; "Majority of these projects are fully owned by the community, especially the projects that started 5 years ago. The community generate income from these projects". Based on the comment made by Interview no 1&2, it is a clear indication that Caritas projects have helped the community in terms of development. This is also an indication that these projects are fully owned by the community.

Interviewees' numbers 1 and 2 were asked how they ensure the projects' continuity after donor fund. (Probe on the financing of future running costs and measures envisaged to enable the work to continue with funding from its resources, without external assistance, in future). Interviewee number 1 had this to say:

"Members are trained in bookkeeping, those who keep cows or goats are trained on animal health and how to care for them. Those growing crops are members of water projects and trained on modern farming methods"

Interviewee no 2 had this to say:

"We encourage members to have chamas and save a certain per cent of the money from the profit they get in those projects. That money is dedicated to run those projects, we also link the farmers with buyers for example those who want to sell their chickens or eggs. Once we connect the farmers with buyers they can sell their products and create a sustainable long term business relationship"

Based on answers given above by interviewees 1 and 2 on projects' continuity after donor fund, the findings imply that Caritas has a strategic plan that ensures that all the projects that they initiate or target community members are sustainable even after the donor withdraws.

9.2 Utilization of Baseline Survey as a monitoring & evaluation tool

The study examined Utilization of Baseline Survey using the following indicators; organization utilizing previous baseline survey reports before carrying out a baseline survey; the number of farmer groups targeted in the baseline survey; consideration of baseline survey findings during the initiation of the project; baseline surveys were utilized to establish the impact of the project on the target communities for sustainability and lastly the importance of baseline surveys as M&E tools for identifying the project sustainability indicators. Respondents were asked to provide answers on 5 Likert items in the questionnaire that were measured by a five-point Likert scale. Where 5= strongly agree, 4= Agree, 3=Neutral, 2=Disagree and 1=strongly disagree. The mean of each item was computed to assess the extent to which respondents agreed with views expressed in the item. The Likert scale mean score was interpreted as 1.00 to 1.49 strongly disagree, 1.5 to 2.49 disagree,, 2.50 to 3.49 undecided, 3.50 to 4.49 agree, and 4.50 to 5.00 strongly agree.

The study revealed a mean of 3.8046 with Std. Deviation of 0.71060 indicated that the respondents agreed organization utilized previous baseline survey reports before carrying out a baseline survey, a mean of 4.0230 and Std. Deviation of 0.61723 indicates that the respondents agreed the baseline survey indicated the number of farmer group targets, the respondents were in agreement baseline survey findings were considered during the initiation of the project baseline survey findings were considered during the initiation of the project the recorded mean was 4.0057 with Std. Deviation of 0.60343, the respondents were also in agreement that surveys were utilized to establish the impact of the project on the target communities for sustainability, the recorded mean was 4.2414 with Std. Deviation 0.64451. Lastly a mean score of 3.7989 with Std. Deviation 0.79725 indicate that respondents agreed that baseline surveys were an important M&E tool for identifying the project sustainability indicators. The findings imply Caritas Meru utilized a baseline survey before initiating their projects.

Correlation Utilization of Baseline Survey and Sustainability of community-based agricultural projects To assess the strength and direction of the association between the dependent variable and the independent variable, correlation analysis was performed (s). To establish the degree and direction of the correlations between the dependent variable and independent variables, the Pearson correlation coefficient was used in this investigation. Correlation coefficient (R) values are expected to be negative and positive. A value of 0 represents no relationship, while a value of 1 signifies a perfect positive linear correlation, in other words, both variables rise and fall together in tandem. Alternatively, a value of -1 means that the two variables are perfectly negatively correlated; in other words, one variable rises as the other declines (Collis & Roger, 2013; Neuman, 2006; Sekeran, 2008; Kothari, 2012).

Correlation coefficients were the statistical method utilized to explore the variables: Sustainability of projects (*The agricultural project achieved its intended purpose as it was planned*) and Utilization of Baseline Survey (*Previous report, Target group, Consideration of Baseline survey findings during initiation of the project*)

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

The findings reveal that there was a strong positive correlation r=(0.557**) between organizations utilizing previous baseline survey reports before carrying out a baseline survey and sustainability of community agricultural projects, the correlation was found to be statistically significant at 1% since the p-value of 0.000 was less than 0.01. The study established there was a negative correlation r=(-.385**) between baseline survey showing several farmer groups targeted and sustainability of community-based agricultural projects, also the correlation was found to be statistically significant at 1% since the p-value of 0.000 was less than 0.01. Lastly, there was a negative correlation between consideration of baseline survey findings during initiation of the project and sustainability of community agricultural projects the correlation was not found statistically significant since the p-value of 0.466 was greater than 0.01 & 0.05. These findings imply that an increase in the utilization of Baseline surveys leads to an increase in the sustainability of the community-based agricultural project by Caritas in Meru County.

The findings are supported by Aziz & Abdel-Hakam (2016) who states that baseline Surveys have been found to play a critical role in the monitoring and evaluation of projects. Such surveys are conducted once decisions to implement projects are reached. The findings are in with those of Shihemi (2016) who infers that there was a significant relationship between project performance and baseline surveys. Ochieng (2018) found out that there was a strong and significant relationship between stakeholder participation, project team competency, project, project scope and effective baseline survey.

Model Summary

The coefficient of determination describes how much variation in the dependent variable (sustainability of community agricultural projects) can be explained by changes in the independent variables or the percentage of variation in the dependent variable (sustainability of community agricultural projects) that can be explained by all the independent variables. (Utilizing Baseline survey) which is measured by the following indicators (*Previous report, Target group, Consideration of Baseline survey findings during initiation of the project*). The three indicators that measure an independent variable that was studied, explain only 57.2% of the effects of the predictors on the sustainability of community agricultural projects as represented by the R²which means that other factors not studied in this research contribute 42.8% of the effects of the independent variables on the sustainability of the projects (Table 6).

Table 6: Model Summary. Source; field survey (2021)

Model S	Summary	,							
Model	R	R	Adjusted R	Std. An error of	Change Statistics				
		Square	Square	the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.756a	.572	.564	.36828	.572	75.707	3	170	.000

a. Predictors: (Constant), Baseline survey findings were considered during the initiation of the project, the organization utilized previous baseline survey reports before carrying out a baseline survey., The baseline survey indicated the number of farmer groups targeted

ANOVA Model

Study findings in ANOVA (table 7) indicated that the above-discussed coefficient of determination was significant as evidence of an F ratio of 75.707 with a p-value 0.000 <0.01 (level of significance). Thus, the model was fit to predict the sustainability of community agricultural projects supported by Caritas in Meru County using the Utilization of Baseline Survey as a monitoring and evaluation tool.

Table 7: ANOVA Model. Source; field survey (2021)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.805	3	10.268	75.707	.000 _b
	Residual	23.057	170	.136		
	Total	53.862	173			

a. Dependent Variable: Sustainability of community-based agricultural projects

b. Predictors: (Constant), Baseline survey findings were considered during the initiation of the project, the organization utilized previous baseline survey reports before carrying out a baseline survey., The baseline survey indicated the number of farmer groups targeted

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

Hypothesis Testing for the Objective

The results of quantitative data were further subjected to regression analysis to test the hypothesis on this variable; H_0 : There is no significant positive relationship between Utilization of Baseline Survey and Sustainability of community agricultural projects supported by Caritas in Meru County, Kenya. Hence hypothesis was tested using the model

1; $Y1 = \beta 0 + \beta 1 X1 ... + \epsilon$

Where:

Y1=sustainability of community agricultural projects

X1 = Utilization of Baseline surveys

 β 0=Y-intercept (the constant term)

 β 1= the coefficient the first independent variable.

 $\varepsilon 1 = \text{error term.}$

The result of the test is represented in (table 8)

Findings in Table 8 showed that organization utilizing previous baseline survey reports before carrying out a baseline survey had coefficients of the estimate which was significant basing on $\beta 1 = 0.452$ (p-value = 0.000 which is less than $\alpha = 0.05$), an indication of farmers targeted group in baseline survey had coefficients of the estimate which was significant basing on $\beta 1 = -0.913$ (p-value = 0.000 which is less than $\alpha = 0.05$ and consideration of baseline survey findings during the initiation of the project had coefficients of the estimate which was significant basing on $\beta 1 = -0.563$ (p-value = 0.000 which is less than $\alpha = 0.05$. Therefore, we reject the hypothesis and conclude that there is a significant relationship between utilization of baseline survey as monitoring & evaluation and sustainability of community-based agriculture projects.

Model **Unstandardized Coefficients** Standardized Coefficients Sig. В Std. Error Beta (Constant) 4.124 .227 18.152 000. The organization utilized previous .355 .046 .452 7.690 .000 baseline survey reports before carrying out a baseline survey. -.825 .095 -.913 000. The baseline survey indicated the -8.662 number of farmer groups targeted Baseline survey findings were .521 .104 .563 5.030 .000 considered during the initiation of the project

Table 8: Coefficient of an estimate. Source; field survey (2021

5. CONCLUSIONS AND RECOMMENDATIONS

The findings reveal that there was a strong positive correlation $r=(0.557^{**})$ between organizations utilizing previous baseline survey reports before carrying out a baseline survey and sustainability of community-based agricultural projects, the correlation was found to be statistically significant at 1% since the p-value of 0.000 was less than 0.01. The study established there was a negative correlation $r=(-.385^{**})$ between baseline survey showing several farmer groups targeted and sustainability of community-based agricultural projects, also the correlation was found to be statistically significant at 1% since the p-value of 0.000 was less than 0.01. Lastly, there was a negative correlation between consideration of baseline survey findings during initiation of the project and sustainability of community-based agricultural projects. The correlation was not found statistically significant since the p-value of 0.466 was greater than 0.01 & 0.05. These findings imply that an increase in the utilization of Baseline surveys leads to an increase in the sustainability of the community-based agricultural project by Caritas in Meru County. The study recommends that policymakers should always ensure that previous baseline surveys are considered before community-based agricultural projects are implemented. This is important as it guides the organization on using the most appropriate variables to be studied. The baseline survey tool should target as many intended beneficiaries as possible. On the issue concerning the utilization of the project budget, the organization should follow monitor the utilization of the funds.

Vol. 9, Issue 4, pp: (30-37), Month: October - December 2021, Available at: www.researchpublish.com

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