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MONITORING AND EVALUATION PRACTICES AND SUSTAINABILITY OF AGRICULTURAL PROJECTS IN BARINGO COUNTY

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ABSTRACT

This study examines the influence of monitoring and evaluation (M&E) practices on the sustainability of agricultural projects in Baringo County, focusing on two key areas: M&E planning and participatory M&E. A high percentage of agricultural projects end with the projects' life cycle and fail to achieve the sustainability criteria. This prompted the researcher to examine above variables to determine their relationship with sustainability of agricultural projects. The research design employed in this study was a mixed-methods approach combining correlation and descriptive survey designs to analyze both descriptive and inferential data. The target population consisted of 620 participants, including 500 farmers, 100 project staff, 12 agricultural officers, 6 extension officers, 1county agricultural officers and 1 M&E officer in Baringo County. A sample of 243 respondents was determined using Yaman's formula which ensured a 95% confidence level. Stratified random sampling was used to select participants from the six sub-counties of Baringo county including Tiaty constituency, Baringo North constituency, Baringo Central constituency, Mogotio constituency, Baringo South constituency and Eldama Ravine constituency. Data collection involved administering questionnaires through drop-and-pick and Google forms for respondents who had working knowledge of online data collection instruments, supported by research assistants to ensure a high rate of feedback from the respondents. Ethical considerations were observed during the study, including confidentiality and anonymity of the respondents were upheld throughout the process and by informing the respondents to consent and know that the data they provide were for academic purposes only. The study achieved an 85.2% response rate, with reliability and validity tests confirming the appropriateness of the data. M&E planning was found to be critical for project sustainability, with stakeholder involvement and timely feedback identified as essential factors. Participatory M&E emerged as a vital contributor to project sustainability, fostering transparency, bringing locals a sense of ownership and trust. The study concludes that structured monitoring and evaluation planning and participatory approaches are key drivers of sustainability in agricultural projects. Projects should prioritize structured M&E planning, and incorporate participatory M&E practices to enhance sustainability. Future research should explore M&E practices in diverse agricultural sectors and examine the role of advanced technologies in improving M&E efficiency and effectiveness.

Key Words: Monitoring And Evaluation (M&E) Practices, Sustainability of Agricultural Projects, M&E Planning Participatory M&E

Background of the Study

Agriculture plays a crucial role in the economic development of many developing countries, providing livelihoods and employment for a significant portion of the population. The agricultural and food supply industry is the most affected sector affected by climate change (Act, C. W. (2017. In the context of Baringo County, Kenya, Agriculture constitutes a substantial portion livelihood in terms of food security and employment. Ensuring the sustainable production of agricultural food crops is not only essential for food security but also for the economic well-being of the local communities (Odhiambo, 2021). Above has attracted several agricultural projects in all parts of the county which include Planting Climate Resilience Project (PCRP) 2022-2023, The Baringo resilience program (Self-help Africa), Kimose Irrigation scheme, Kenya livestock commercialization project (Kelcop). We have project from the national government, they county government and also local and international NGOs.

It is well acknowledged that monitoring and evaluation (M&E) procedures are crucial for determining the efficacy of agricultural interventions and encouraging sustainable practices (IFAD, 2018). Monitoring and evaluation (M&E) systems facilitate the tracking of progress, identification of obstacles, and effective use of resources (Murigia, 2019). The function of M&E in agricultural practices has not been thoroughly investigated in the particular context of agricultural projects in Baringo County. Understanding the current M&E mechanisms and their impact on agricultural sustainability is crucial for informing policy decisions and improving the overall efficiency of agricultural initiatives.

Sustainability in agriculture involves balancing economic, social, and environmental factors to ensure the long-term viability of farming practices (Pretty, 2008). Agricultural activities in Baringo County face various challenges, including climate variability, soil degradation, droughts, floods etc. Assessing the sustainability of their agricultural practices is vital for designing targeted interventions that address these challenges and enhance the resilience of the farming communities (Rosenstock et al., 2017).

Several studies have emphasized the importance of M&E in promoting sustainable agricultural practices (Janker & Mann, 2020). However, there is a gap in the literature concerning the integration of M&E practices and their impact on sustainability within the specific context of agricultural projects in Baringo County (Kipruto, 2020). Investigating how M&E processes are currently implemented and how they contribute to the sustainability of agricultural projects will provide valuable insights for policymakers, development practitioners, and local farmers.

This study aims to fill this gap by examining monitoring and evaluation practices in shaping the sustainability of agricultural projects in Baringo County. Through a comprehensive analysis of existing M&E frameworks, agricultural practices, and socio-economic factors, the research intends to provide evidence-based recommendations for enhancing the effectiveness of agricultural interventions in the region (Janker & Mann, 2020). The findings of this study have the potential to inform policy decisions, improve resource allocation, and contribute to the development of targeted strategies that support the long-term sustainability of agriculture projects in Baringo County.

OECD-DAC reiterates that the goal of sustainable development is to strike a long-term, global balance between the social, economic, and environmental aspects of development. It suggests a broad viewpoint on the well-being of people, a long-term outlook on the effects of current actions, and the complete engagement of civil society in order to arrive at workable solutions (Openji & Osoro, 2024). This overlooks the short-term objectives and goals that global; farmers have of engaging in food crops that last their respective seasons which does not last the entire 12-month period.

Farmers worldwide encounter multifaceted challenges, including climate change, limited access to resources, and market fluctuations. These challenges have implications for the sustainable production of agricultural projects (Abraham & Pingali, 2020). The global perspective emphasizes the need for tailored M&E practices that address the specific challenges faced by farmers, such as erratic weather patterns and water scarcity, to enhance the resilience of agricultural systems (FAO, 2020).

In Africa, agricultural development initiatives often face challenges related to climate variability, especially in semi-arid and arid regions. These areas experience frequent droughts, irregular rainfall, and poor soil conditions, all of which undermine agricultural productivity (UNECA, 2021). Countries such as Kenya, Ethiopia, and Niger have adopted climate-smart agricultural practices to mitigate these challenges. These initiatives include drought-resistant crops, sustainable water management, and the diversification of livelihoods. The integration of M&E frameworks into such projects allows for adaptive management, ensuring that agricultural practices are aligned with environmental and socio-economic changes (Khwaja, 2020).

In examining the nexus between Monitoring and Evaluation (M&E) practices and the sustainability of agricultural projects, a regional local perspective sheds light on the specific dynamics within Baringo County. This region, situated in the Rift Valley of Kenya, presents a unique context influenced by local ecological, economic, and sociocultural factors. Understanding the regional dynamics is crucial for tailoring M&E practices to address the challenges faced by farmers in Baringo County. Baringo County's agricultural sustainability is intricately tied to its ecological landscape. With semi-arid conditions prevailing, water scarcity and soil fertility become critical factors influencing crop productivity. A regional perspective emphasizes the need for M&E practices that focus on water management strategies, soil conservation measures, and climate-resilient crop varieties to enhance sustainability in the face of local ecological challenges (Baringo County Government, 2018). Farmers in Baringo County are integral to the local economy. A regional lens highlights the economic dimensions, including market access, pricing mechanisms, and input availability (Chaundhary et al., 2023). M&E practices should thus be designed to evaluate the economic impact of agricultural interventions, ensuring that they contribute not only to increased yields but also to the economic empowerment of farmers within the specific economic context of the region (Kiptui et al., 2021).

Statement of the Problem

Agriculture is one of the key sectors in achieving sustainable living globally. Agriculture is also crucial to economic growth: accounting for 4% of global gross domestic product (GDP) and in some least developing countries, it can account for more than 25% of GDP (World Bank 2024 Agriculture and food). In Kenya agriculture is backbone of the economy attributing to more than 33% of the country’s GDP employing more than 40% of the total population and at least 70% in the rural population (WFP).

Agricultural projects play a crucial role in the agricultural sector, contributing significantly to the region's food production and economic development through the new technologies and smart agriculture dispensed to farmers during the life of the project (Loizou et al., 2019). However, the sustainability of agricultural projects among farmers faces challenges that necessitate a closer examination of monitoring and evaluation practices. Despite the importance of monitoring and evaluation in enhancing agricultural productivity, there is a gap in understanding how these practices impact the sustainability agricultural projects in Baringo County.

Most agricultural projects do not end up to their full realization of the long-term goals (Higginbottom, et al 2021). They are optimum during implementation stage and production

subside after the project is completed and handed over to project beneficiaries. This is attributed to a lack of comprehensive studies that specifically address the relationship between monitoring and evaluation practices and the sustainability of agricultural projects (Eitzinger et al., 2019). Key issues include inadequate access to timely and accurate information, limited resources for implementing effective monitoring and evaluation systems, and a dearth of awareness regarding the long-term benefits of sustainable farming practices.

Additionally, factors such as climate change, fluctuating market conditions, and evolving agricultural technologies further complicate the challenge of ensuring the continuous and sustainable production of food crops among farmers in Baringo County (Akala, 2019). The lack of a well-integrated monitoring and evaluation framework exacerbates these challenges, hindering the development of tailored interventions and targeted support mechanisms. Understanding the nuanced interplay between monitoring and evaluation practices and the sustainability of agricultural projects is critical for devising informed policies, interventions, and capacity-building initiatives. Addressing this gap in knowledge will contribute to the development of a resilient and sustainable agricultural sector in Baringo County, ultimately improving the livelihoods of farmers and enhancing food security in the region.

Objectives of the Research

General Objective

The study was conducted to establish how monitoring and evaluation practices, influences sustainability of agricultural projects in Baringo County.

Specific objective of the Study.

i. To investigate how M&E planning influence the sustainability of agricultural projects in Baringo County.

ii. To investigate how participatory monitoring and evaluation influence the sustainability of agricultural projects in Baringo County.

Theoretical Framework

Theory of Change

Theory of Change (ToC) is a methodological framework extensively employed in the strategic planning, execution, and evaluation of social change endeavors. It provides a systematic approach for organizations to comprehend the mechanisms of change, articulate underlying assumptions, and delineate the causal pathways guiding their interventions towards desired outcomes (von Thiele Schwarz et al., 2021)). At its essence, ToC serves as a navigational tool, offering a structured depiction of the sequential steps or interventions required to achieve long-term goals. It aids in the identification of pivotal drivers of change and the intricate relationships between them, fostering a holistic understanding of the intervention's impact (Kolero et al., 2020).

The development of a Theory of Change encompasses several key stages. First, stakeholders collaborate to define specific, measurable, achievable, relevant, and time-bound (SMART) outcomes, outlining the ultimate objectives the program seeks to attain (Ogwebi, 2022). Subsequently, the causal pathways are mapped out, visually representing the logical connections between inputs, activities, outputs, outcomes, and impacts. This visual representation serves as a roadmap for understanding the intervention's intended trajectory and impact.

One distinctive feature of ToC is its emphasis on making explicit the assumptions underpinning interventions. Stakeholders articulate these assumptions, enabling a comprehensive understanding of the risks and uncertainties that may impact the success of the initiatives (Bacq & Aquilera, 2022). Moreover, the ToC process encourages continuous testing and iteration. Stakeholders are prompted to engage in ongoing learning and feedback mechanisms, allowing for adjustments in strategies based on collected data and evolving contextual factors.

Once formulated, the Theory of Change functions as a potent communication tool. It aligns expectations among stakeholders, fostering accountability and shared understanding of how the intervention is anticipated to instigate change. By transparently communicating the causal logic and expected outcomes, organizations enhance the efficiency, effectiveness, and sustainability of their efforts (Albu & Flyverborn, 2019).

Stakeholder Participation Theory

Stakeholder participation theory is a framework that emphasizes the involvement of various stakeholders in decision-making processes, particularly in the context of governance, development, and organizational management. This theory recognizes the importance of including individuals or groups who have a vested interest or "stake" in a particular issue or decision to ensure more inclusive, democratic, and effective outcomes (Valentionov et al., 2019)).

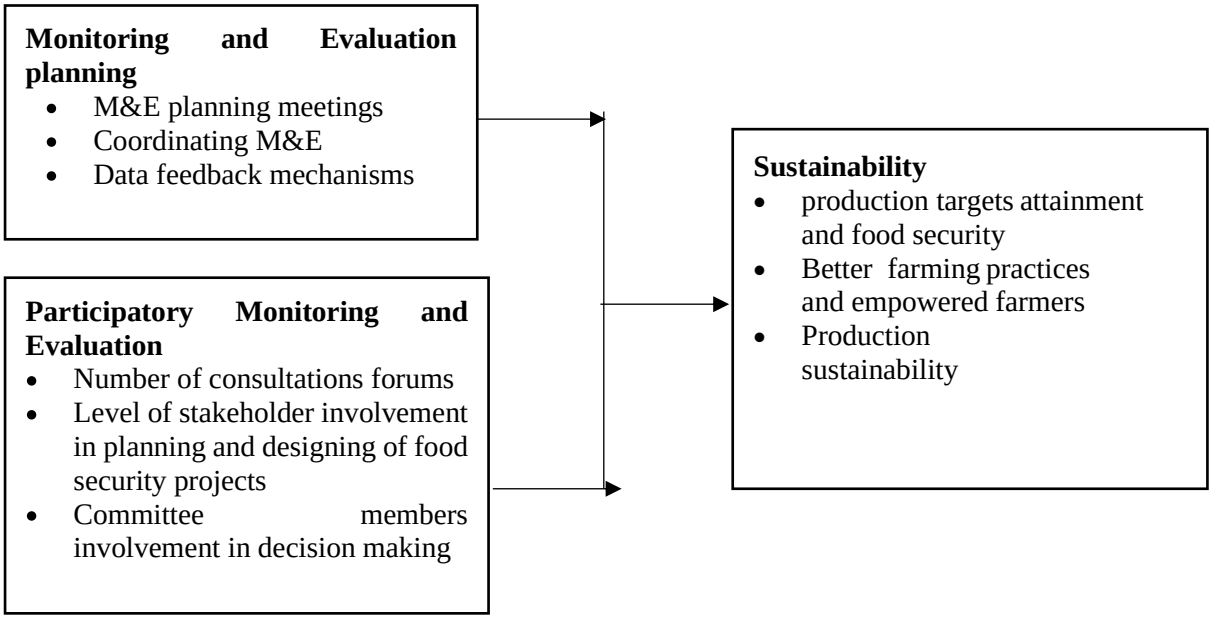
One key aspect of stakeholder participation theory is the acknowledgment that decisions affecting stakeholders should not be made unilaterally by authorities but rather through collaborative processes involving those who will be directly affected (Langrafe et al., 2020)). This approach is grounded in the belief that incorporating diverse perspectives and experiences leads to more informed, equitable, and sustainable outcomes. The process of stakeholder participation typically involves identifying and engaging relevant stakeholders, fostering open communication channels, and integrating their input into decision-making processes (Limani et al., 2024). This theory is often applied in various fields such as environmental management, urban planning, and corporate governance.

Stakeholder participation theory aligns with principles of democracy, social justice, and sustainable development. By involving those affected by decisions, this theory aims to address power imbalances, enhance the legitimacy of decisions, and improve the overall quality of governance (Christensen & Laegreid, 2020). Additionally, stakeholders may have unique knowledge, perspectives, and values that, when considered, can contribute to more effective and socially responsible outcomes.

Despite its merits, stakeholder participation also poses challenges, including managing conflicts of interest, ensuring representation of diverse voices, and navigating power dynamics among stakeholders. Scholars and practitioners continue to explore ways to enhance the effectiveness of stakeholder participation processes and address associated complexities.

Conceptual Framework

A conceptual framework is a fundamental structure or theoretical model used in various fields of study to guide research, analysis, and understanding of complex phenomena. It provides a set of interconnected concepts, ideas, and principles that help researchers organize their thoughts, formulate hypotheses, and interpret data. The conceptual framework serves as a roadmap for studying a specific problem or topic, enabling researchers to explore relationships and interactions among different variables.



Independent variable **dependent variable**

Empirical Review

Monitoring and Evaluation planning

Monitoring and evaluation planning improves knowledge of how project accomplishments will be monitored and how to manage the project cycle, according to Crawford and Bryce (2003). Additionally, it makes early problem detection possible and improves the way monitoring and evaluation operations are carried out. The verifiable indicators to be measured, the methods of verification, and the individuals in charge of gathering data should all be specified in the plan. According to Hartley, (2020), managers create directions without providing enough information to direct the project team on what has to be done, when, and with what resources to generate the project's deliverables. This is why initiatives fail.

UNDP (2011) states that a wide range of elements affect a strategy's performance. In community-based projects, planning and control systems and procedures are also the focus of monitoring and evaluation. According to Mgoba and Kabote, (2020) in order to guarantee efficiency and effectiveness in monitoring and evaluating community-based projects, the necessary components must be recognized and addressed. Spinner (1981) pointed out that certain organizations devote insufficient time and energy to project design and control. As part of coordination, project planning should specify when and how often data will be collected as well as who will be in charge of compiling and reporting to the organization, beneficiaries, or even donors (Mgoba &Kabote, 2020). In addition, systems for authentication and verification must be put in place to support sustainability.

According to a survey conducted for 11 countries, planning is very fragmented and prioritizes technical and methodological issues over policy and other institutional issues (CLEAR 2012). When it comes to Monitoring and Evaluation planning, there are no mechanisms in place to guarantee that recommendations from earlier research and reports are consulted when seeking solutions to current problems. When this happens, proper planning is hampered. Interaction-based monitoring and evaluation processes foster cohesiveness, sharing, and experiences, all of which are essential to improving the realization of sustainability (Goga, 2020). Additionally, the Monitoring and Evaluation system needs to be routinely observed, evaluated, and enhanced. Stakeholders must be consulted in order to define issues, which guarantees that project goals are expressed, understood, and accepted by everybody. Proper planning is brought about by this agreement (Goga, 2020). Planning is essential to maximizing the active participation of primary stakeholders, which is the goal of monitoring and

evaluation. They ought to be included in interventions, given the initiative to monitor and evaluate the progress made toward goals that have been mutually agreed upon, and make decisions about corrective action.

Participatory Monitoring and Evaluation

According to Freeman (1984), a stakeholder is a person, group, or organization that is either directly impacted by decisions and actions—like local farmers—or has the power to influence how these decisions turn out, like governments. Effective project implementation can result from including stakeholders as much as feasible at every stage of the project lifecycle (Hart, 2002, Hinton, 2008). Stakeholder participation, according to the authors, can improve stakeholders' well-being and sense of ownership over the project throughout its duration. According to DFID (2010), there are four operational areas in which stakeholders can actively contribute to bringing about change: policy and planning, implementation, monitoring, and evaluation. These include organizational development. According to Cahill (2007), programs can be made more sustainable by involving young people and stakeholders in an active way. Stakeholder involvement also increases ownership and commitment to development projects, according to Van Beers (2003).

In Tanzania, the majority of the analytical processes include a stakeholder involvement procedure that is built up from the beginning (König et al., 2012). Current local and regional expertise on site conditions, such as resource conservation and food production, from important players like farmers, millers, stockiest, traders, intermediaries, transporters, and extension officers processing, as well as markets and society (Reed et al., 2009).

Smallholder households involved in multiple agricultural value chains had slightly higher food consumption scores and lower copying strategy index compared to those involved in only one agricultural value chain activity, according to a study by Kissoly, and Grote (2016) on the integration of smallholders in agricultural value chain activities and food security in Tanzania. These results suggest that involvement in individual traditional AVC activities has a lower welfare impact than smallholder inclusion in many activities within traditional AVCs.

RESEARCH METHODOLOGY

Research Design

This study employed mixed model that combines correlation research designs with descriptive survey research methods. This was based on the fact that the study analyzed both descriptive and inferential data. Observing relationships between variables is the goal of a descriptive survey design, according to Sproull (1988). With a descriptive survey design, the investigator can watch events unfold in their natural environments. A descriptive survey involves asking comparatively large groups of people questions and conducting interviews (Siedlecki, 2020). Additionally, the descriptive survey method makes it possible to gather data more quickly that can be utilized to comprehend the community as a whole. The degree to which the values for the components are related will be ascertained by measuring two or more factors using a correlation research design (Creswell, 2012). Regression modelling for testing hypotheses and correlation research design helped the researcher find linkages utilizing correlations, while descriptive surveys aided in the description of events.

Target Population

The target population is the total number of the subjects of interest to the researcher (Wang, 2015). This study targeted 500 farmers in Baringo county who are growing food crops in the entire region, one county Agricultural officer, 6 sub-county agricultural officers from the six

sub-counties, 100 project staff, 12 agricultural extension officers and 1 county monitoring and 1 evaluation officer.

Table 3. 1 Study Population

Population Classification	Target Population
Farmers	500
Project staff	100
County Agricultural officer	1
Sub-County Agricultural Officers	6
Agricultural Extension Officers	12
Monitoring and Evaluation Officer	1
TOTAL	620

Table 1; Target Population

Sample Size and Sampling Technique

The farmers, Sub County agriculture officials, and extension officers are included in the study's sample size. The process of choosing specific responses from different groups used the Neymann allocation method is referred to as sampling. Data was collected and analyzed by using qualitative and quantitative approaches. The study used stratified random sampling technique to select the sample that participated in the study. This means that there were six strata from the six sub-counties of Baringo County in which random sampling was be used to select respondents. The study used Yaman's formula of 1967 to calculate the sample used for the study. By following below formula, the study found the sample size to be 243 respondents.

$$n = \frac{N}{1 + N(e)^2}$$

Where;
n is the sample size,
N is the population size, and
e is the level of precision
Yaman's formula 1967 takes an assumption or the sampling error is the range in which the value of the population is estimated to be which is always expressed in a percentage of ± 5%. This means that there was a confidence level of 95%.
The study was represented as;

$$n = \frac{620}{1+620(0.05)^2}$$

$= 620 \div (1+1.55)$
$=620 \div 2.55 = 243$
n which is the sample size for this study was 243

Table 3. 2 Study Sample

Sample Classification	Target Sample
Farmers	150
Project staff	75
County Agricultural officer	1
Sub-County Agricultural Officers	6
Agricultural Extension Officers	10
Monitoring and Evaluation Officer	1
TOTAL	243

Data Collection Instruments

Data collection is a means by which information is obtained from selected subjects of an investigation (Creswell, 2003).

Pilot Test of the Research Instrument

The study randomly selected 24 farmers and project staff which represented 10% of the study population (Mugenda & Mugenda, 2013), drawn from the six sub-counties and ran a pilot study to determine the viability of the study. The researcher administered questionnaires and engaged in Interviews with the farmers and officers from the county government and project staff. This was done prior to the actual study to ascertain the validity and reliability of the research instruments.

Data Analysis and Presentation

The numerical analysis was carried out using the computer application SPSS 29. Data preparation (checking, editing, and coding), data entry (putting data into SPSS), data processing and analysis, data presentation in tables, interpretation of findings, and conclusion were all done in a systematic order after data collection. Regression and correlation were used to examine the data in order to determine the links between the independent and dependent variables. The co-efficient of the regression model were obtained from the analysis using below formula.

FINDINGS AND DISCUSSIONS

Descriptive Statistics

M&E Planning

The analysis of the descriptive statistics for M&E planning and coordinating reveals significant insights into how these practices influence the sustainability of agricultural projects in Baringo County. The respondents strongly agree that regular M&E planning meetings are essential for the long-term success of these projects, with a high mean score of 4.64. This indicates that consistent and structured planning sessions are seen as critical to ensuring that agricultural initiatives stay on course. The low standard deviation (0.798) suggests that there is widespread consensus on this point, as most respondents hold similar views. Stakeholder involvement in M&E planning also emerged as a crucial factor for project sustainability, reflected in a mean score of 4.63. This high level of agreement underscores the importance of engaging all relevant parties in the planning process to enhance the overall sustainability of agricultural projects. The standard deviation of 0.825 further suggests that this belief is shared by most respondents, with little variation in opinion. These findings emphasize the collective nature of effective M&E processes, where the input of multiple stakeholders contributes to better project outcomes.

The planning of M&E activities also plays a pivotal role in sustainability, as evidenced by a mean score of 4.53. While respondents generally agree that effective planning improves project sustainability, the standard deviation of 1.041 indicates slightly more variability in responses compared to previous factors. This suggests that while planning is valued, there may be differing experiences or perceptions regarding how well it is executed in practice. In terms of clear roles and responsibilities in M&E planning, the mean score of 4.22 shows that respondents agree on its importance, though the higher standard deviation (1.170) points to more diverse opinions. Some may feel that the delineation of roles is not always as clear as it should be, which could impact the effectiveness of M&E efforts and, consequently, the sustainability of the projects.

Timely data feedback from M&E processes is seen as contributing to better decision-making for project sustainability, with a mean score of 4.15. However, the standard deviation of 0.994 reveals that while there is general agreement on the importance of timely feedback, there are some differing perspectives. Ensuring that M&E processes consistently provide actionable insights in a timely manner is likely seen as a key factor in making informed decisions to sustain agricultural projects. The effectiveness of data feedback mechanisms in identifying potential risks to sustainability garnered the lowest mean score of 3.49. This suggests that respondents are less convinced about the strength of these mechanisms, with a standard deviation of 1.362 indicating significant variability in responses. Some respondents may feel that current feedback processes do not adequately highlight potential risks, which could pose a challenge to the long-term sustainability of the projects.

Table 4. 1 M&E Planning

M&E Planning	Mean	Std. Deviation
Regular M&E planning meetings are essential for the long-term success of agricultural projects.	4.64	.798
The involvement of all stakeholders in M&E planning meetings enhances the sustainability of agricultural projects.	4.63	.825
Effective planning of M&E activities improves the sustainability of agricultural projects.	4.53	1.041
Clear roles and responsibilities in M&E planning contribute to the successful implementation of agricultural projects.	4.22	1.170
Timely data feedback from M&E processes leads to better decision-making for project sustainability.	4.15	.994
Data feedback mechanisms established in M&E practices help identify potential risks to the sustainability of agricultural projects.	3.49	1.362

Participatory Monitoring & Evaluation

The analysis of the descriptive statistics for participatory monitoring and evaluation (PM&E) in relation to agricultural project sustainability provides significant insights into the impact of stakeholder involvement on long-term project success. The responses strongly indicates that higher levels of stakeholder participation in planning M&E activities correlate with greater sustainability of agricultural projects, with a mean score of 4.88. This is the highest mean score in this section, underscoring the broad agreement that involving stakeholders in M&E planning is crucial. The low standard deviation of 0.592 suggests strong consensus, with minimal variation in respondent views. Similarly, the involvement of committee members in M&E activities is seen as essential for sustainability, reflected in a mean score of 4.85. This high level of agreement, along with a low standard deviation of 0.624, highlights the importance of committee members' active participation in ensuring the success and longevity of agricultural projects. The data suggests that the more these key stakeholders are involved, the more likely the projects are to achieve sustainable outcomes.

The active participation of committee members in the actual monitoring and evaluation processes also significantly impacts the long-term sustainability of agricultural projects, as shown by a mean score of 4.83. The relatively low standard deviation of 0.689 further supports this view, indicating that respondents widely agree that committee member engagement in M&E processes is critical for sustainability. The frequency and number of consultation forums held during M&E activities were also found to contribute to sustainability, though with slightly lower mean scores of 4.62 and 4.56, respectively. The higher standard deviations (1.101 and 1.146) indicate more variation in responses, suggesting that while consultation

forums are valued, there may be differences in how effectively these forums are held or utilized in various projects. Nonetheless, respondents generally agree that more frequent consultations improve the sustainability of agricultural initiatives.

Finally, active stakeholder involvement in the planning and designing of food security projects also enhances sustainability, with a mean score of 4.37. However, the standard deviation of 1.226 indicates a broader range of opinions, suggesting that while stakeholders' involvement is recognized as important, its impact may vary depending on the context or specific project dynamics.

Table 4. 2 Participatory Monitoring & Evaluation

Participatory Monitoring & Evaluation	**Mean**	**Std. Deviation**
The more stakeholders are involved in the planning of M&E activities, the more sustainable the agricultural projects become.	4.88	.592
Committee members' involvement in M&E activities is essential for the sustainability of agricultural projects.	4.85	.624
The active participation of committee members in monitoring and evaluation significantly impacts the long-term sustainability of agricultural projects.	4.83	.689
The number of consultation forums held during M&E activities directly contributes to the long-term success of agricultural projects.	4.62	1.101
Frequent consultation forums during M&E processes improve the sustainability of agricultural projects.	4.56	1.146
Active stakeholder involvement in planning and designing food security projects enhances the sustainability of agricultural initiatives.	4.37	1.226

Correlation Analysis of the Study Variables

The correlation analysis for the study indicates that all the variables are significantly positively related, with correlations at the 0.01 level. The variable Participatory Monitoring and Evaluation exhibits the highest correlation with Sustainability of Agricultural projects ($r = .902$, $p = .000$), underscoring its critical role in influencing project sustainability. This suggests that involving stakeholders actively in the M&E process is strongly associated with better sustainability outcomes. Monitoring and Evaluation Planning also shows a strong positive correlation with Sustainability ($r = .899$, $p = .000$), indicating that effective planning is vital for ensuring the longevity of agricultural projects. This practice is similarly highly correlated with Participatory Monitoring and Evaluation ($r = .932$, $p = .000$) and Monitoring and Evaluation Data ($r = .738$, $p = .000$), highlighting the interconnected nature of these M&E practices.

The correlations demonstrate that effective M&E practices, particularly participatory approaches and planning, are strongly linked to the sustainability of agricultural projects, emphasizing the importance of these practices in achieving long-term project success.

Table 4. 3 Correlation Analysis of the Study Variables

		Monitoring and Evaluation planning	Participatory Monitoring and Evaluation	Sustainability of Agricultural projects
Monitoring and Evaluation planning	Pearson Correlation	1	.932**	.899**
	Sig. (1-tailed)		.000	.000
	N	207	207	207
Participatory Monitoring and Evaluation	Pearson Correlation	.932**	1	.902**
	Sig. (1-tailed)	.000		.000
	N	207	207	207
Sustainability of Agricultural projects	Pearson Correlation	.899**	.902**	1
	Sig. (1-tailed)	.000	.000	
	N	207	207	207

Regression Analysis of the Study Variables

Regression analysis was carried out to determine the relationship between the dependent (sustainability of agricultural projects) and the independent variables (monitoring and evaluation practices) of the study. The results were tabulated and discussed as shown in the subsections here below;

Multiple Regression Model Summary

Table 4.4 shows the value of Adjusted R-square of 0.873 implies that 87.3% of the total variance of sustainability of agricultural projects is explained by the model. This means that 12.7% of the total variance of sustainability of agricultural projects cannot be explained by the model. Hence the results reveal that participatory monitoring and evaluation and monitoring and evaluation planning influence sustainability of agricultural projects. The table 4.4 below shows the results for variations between the dependent and independent variables.

Table 4. 4 Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.875	.873	.29606

a. Predictors: (Constant), participatory monitoring and evaluation and monitoring and evaluation planning.

Analysis of the Variance of the Study Variables (ANOVA)

The residuals are positive, implying that there was a significant relationship between the dependent and independent variables used in the study. From the ANOVA table 4.5 below, it was established that participatory monitoring and evaluation and monitoring and evaluation planning affected sustainability of agricultural projects since $F_{critical}$ (4, 206) degrees of freedom is 2.46< $F_{calculated}$ 338.779 at 5% level of significance. The ANOVA table was generated from the Analysis.

Table 4. 5 Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.777	2	59.39	338.779	.000[b]
Residual	16.917	204	.083		
Total	135.693	206			

a. Dependent Variable: Sustainability of Agricultural projects

b. Predictors: (Constant), Participatory Monitoring and Evaluation and Monitoring and Evaluation planning

Coefficients of the Regression Model

The co-efficient of the regression model were obtained from the analysis and presented. The regression equation is as shown below;

$$\mathbf{Y=0.108+0.246X_1+0.375X_2+}$$

Y – Sustainability of Agricultural Projects

$\mathbf{X_1}$– Monitoring & Evaluation planning

$\mathbf{X_2}$– Participatory Monitoring & Evaluation

When the independent variables are all zeros, this means that sustainability of agricultural projects was at 0.108 (that is 10.8%).

All other independent variables under consideration in this study held constant (Monitoring & Evaluation planning would contribute 0.246 (24.6%) towards sustainability of agricultural projects.

All other independent variables under consideration in this study held constant Participatory Monitoring & Evaluation would contribute 0.375 (37.5%) towards sustainability of agricultural projects.

Table 4. 6 Regression Coefficients of the Study Variables

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.108	.093		1.164	.246
Monitoring & Evaluation planning	.246	.059	.302	4.154	.000
Participatory Monitoring & Evaluation	.375	.063	.434	5.956	.000

a. Dependent Variable: Sustainability of Agricultural projects

The regression analysis for the study provides more understanding into the influence of various Monitoring and Evaluation (M&E) practices on the sustainability of agricultural projects. The constant (B = .108, p = .246) is not statistically significant, indicating that when all the independent variables are held constant, the sustainability of agricultural projects is not significantly affected. However, each of the two M&E practices examined—planning and participatory M&E—are significant predictors of sustainability. Specifically, Monitoring and Evaluation Planning has a positive and significant impact (B = .246, p = .000), with a standardized coefficient (Beta = .302) indicating a moderate contribution to sustainability. This suggests that well-coordinated M&E planning significantly improves the sustainability of agricultural projects.

Participatory Monitoring and Evaluation has the strongest influence on sustainability (B = .375, p = .000, Beta = .434), indicating that involving stakeholders in M&E processes significantly enhances the sustainability of agricultural projects. The high Beta value suggests that participatory approaches are a particularly critical driver of long-term project success. The results indicate that all four M&E practices significantly contribute to the sustainability of agricultural projects, with participatory M&E being the most influential factor.

Conclusion

The study concludes that M&E planning has a positive and significant effect on sustainability of agricultural projects in Baringo County. Findings revealed that M&E planning meetings, coordinating M&E and data feedback mechanisms influences sustainability of agricultural projects in Baringo County.

In addition, the study concludes that participatory monitoring and evaluation has a positive and significant effect on sustainability of agricultural projects in Baringo County. Findings revealed that number of consultations forums, level of stakeholder involvement in planning and designing of food security projects and committee members involvement in decision making influences sustainability of agricultural projects in Baringo County.

Recommendations

The study recommends that it is essential to prioritize structured M&E planning. Projects should ensure that M&E activities are well-aligned with project objectives and coordinated across various levels to improve decision-making and maintain momentum for long-term sustainability.

The study recommends that participatory M&E should be a central component of project design and implementation. Involving stakeholders such as community members and project beneficiaries in M&E processes enhances transparency, accountability, and local ownership. This will help ensure that agricultural projects are not only sustainable but also responsive to the needs and priorities of the communities they serve.

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