

COMMUNITY CAPACITY DEVELOPMENT AND SUSTAINABILITY OF COUNTY GOVERNMENT- FUNDED WATER PROJECTS IN MAKUENI COUNTY, KENYA

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ABSTRACT

The research project aimed to study community capacity development's influence on project sustainability in Kilome Sub-County, Makueni County, Kenya. People in the county walk approximately eight kilometers to access water compared to the WHO recommended one kilometer. Though most development agencies have developed tools and techniques to track project implementation and meet its key constraints, few organizations produce periodic assessment reports on the operation, maintenance, and on whether projects are essentially generating the anticipated benefits. In Kenya, twenty-five to thirty percent of community-managed water projects will be non-operational in the first three years after completion. The research project focused on investment in community capacity and community organizing parameters of community capacity development to determine their influence on water projects' overall sustainability in the county. The research project used stakeholders' and resource dependency theories to provide background on the application of community capacity development in project management to ensure project sustainability. The research project employed probability and a cluster-sampling technique to divide the sub-county into geographical clusters called sub wards and randomly collected data from the respondents in the clusters. The research project targeted a sample population of a hundred and fourteen PMCs and five project staff of the respective projects. The research project

used a single designed tool to collect qualitative and quantitative research data for each specific project. Descriptive analysis design was used to analyze data into quantifiable information from the sample and reporting on the results of the research project. The study findings found that investment in community capacity and community organizing parameters of community capacity development had a direct relationship with the sustainability of Makueni County Government-funded water projects. The results showed a significant positive relationship between community capacity development parameters and project sustainability with a significance value of 0.000, $p < 0.05$. The parameters influenced project sustainability by 55.7%, with a standard error estimate of 0.4313. Investment in community capacity influenced project sustainability by 0.375, while community organizing by 0.499. The study recommends that development agencies establish new or strengthen the existing water user groups and strengthen the skills of the community in project management. The agencies should also involve community VMGs, community member experts, and partner/support with local institutions to enhance project performance in the long run. That will ensure the continuity of the project into the future, way after the donor exit.

Key words: Project sustainability, community capacity development, investment in community capacity, community organizing, project agency, Kenya

INTRODUCTION

Background of the Study

Project sustainability is one of the subjects that is poorly addressed (Project Management Institute, 2017), and a large gap remains unaddressed (Brones, de Carvalho, & de Senzi Zancul, 2014). The number of failing projects is extremely high. According to Project Management Institute (2013), more than one-third of projects fail to reach their objectives leading to many pending questions concerning sustainability in project development. Most temporary organizations hardly consider project sustainability (Gareis, Huemann, & Martinuzzi, 2010).

Water scarcity affects more than 40% of the world population. The proportion is expected to rise as temperatures do. Although water sanitation services has been improved, supply of drinking water is affecting every continent. Water scarcity is worsening due to the increasing drought and desertification trends. Dealing with the menace requires investment in water infrastructure and facilities. It is projected that, by 2050, one in every four people will be experiencing recurring water shortage worldwide (UNDP, 2020). Sustainable development goals aims by the year 2030, among others to achieve universal access to safe water, implement integrated water resources management at all levels and capacity build local communities in improving water management.

While water demand is increasing, water availability is decreasing due to limited resources, and increasing population. Population growth means intensifying demand and competition for water for domestic, agriculture and industrial use (Wada, et al. 2016). The total number of people living in an area determines the available per capita water resource in that area. When it comes to water scarcity, population growth tops climate change. Agriculture sector accounts for about 70-95% of global water use. As population grow, more food is required. Therefore, there is a close interrelation between water scarcity and hunger. Thus, posing an increased pressure on water resources (Mogelgaard, 2012).

According to Lutz and Desai (2014), based on research, donor agencies, and government of Afghanistan reports, many projects executed have no positive impact on their targeted beneficiaries. According to a study by IRC International Water and Sanitation Centre (2011), in the last two decades, despite the relative achievement on the supply of rural water infrastructure, researchers in various countries indicated that 30-40 % of complete facilities are either dysfunctional or operating below capacity. According to Braimah, Amponsah, & Asibey (2016), an evaluation done in Sekyere East District Water and Sanitation Plan (2008-2012) in Ghana, showed that about 28% of water projects implemented by the district had stalled in spite presence of the water and sanitation committee and water board.

In Kenya, 25-30 % of community-managed water projects will be non-operational in the first three years after completion. Unsustainable programs have a low impact on the community in the long term, thus wasting human, financial, and technical start-up investments. They can

weaken community trust and support for future programs (Riggs, 2012). Today, project managers must not only be concerned with achieving the traditional functions of management but also deliver projects with sustainability potential (Hwang, & Ng, 2013).

According to Ochelle (2012), the reliability of community water based systems is based on the availability of technical skills and infrastructural facilities to sustain the systems. Also, the study suggests that the establishment of local institutions to effectively manage the water systems

Project Sustainability

Sustainability is the ability of a project to impact the community far into the future through integrating social, economic, and environmental project responsibilities (Gimenez, Sierra, Rodon, 2012). Project implementing agencies can measure the sustainability of a project by determining the level of community self-reliance towards operating the project after the exit phase of the project by the implementing agency. The implementing agency then consequently transfers the project to the community for onward management. Community self-reliance is the ability of the community to demonstrate the local capacity to meet its own needs in each project. This research studied community independence on three types of project sustainability concepts: technical, financial, and managerial sustainability (Nikkhah & Redzuan, 2010).

The adoption of self-reliance as a *modus operandi* for community development is currently increasing. Self-reliance strategy influences the sustainability of a project, in addition to setting the foundation for effective project development. Self-reliance is the ability and willingness of the community to depend on the available local resources, technology, and community independence from sourcing funds externally.

Technical self-reliance is the ability of the community to operate equipment, maintain and cost-effectively run the technology used. Technical sustainability is concerned with skills needed, methodologies, and the solutions' aptness to meet the community's economic, social, and environmental factors. The sustainability type means adopting user-friendly technologies, training, using locally sustainable technologies, and usage of local labor (Nikkhah et al., 2010).

Financial self-reliance is the community's ability to adequately draw their own budgets, mobilize their financial resources, and account for the resources received. Financial sustainability means the capacity for economic independence that project-planned activities do not terminate due to financial challenges and free from economic risks. Economic sustainability reduces the vulnerability of the household.

Managerial self-reliance is the community's ability to initiate and design, implement, and effectively monitor, evaluate, and control development projects. Development agencies should establish institutional infrastructure through which the project will be managed. The

institution facilitates the effective running of project activities without any external help (Salla, 2014).

Community Capacity Development

Community capacity development is the continuous practice of enhancing the skills, processes, and resources that communities require to endure, adapt and thrive in the current changing world (Franco, & Tracey, 2019). Community capacity development is improving the local community's abilities to developing and sustaining their projects continually and in consideration of commonly changing economic, social and environmental dynamics (Hacker et al., 2012). The research project focused on enhancing community capacity through investment in community capacity and community organizing to ensure project sustainability of water projects in Makueni County.

Investment in community capacity development refers to deliberate actions by project agencies to assist communities in addressing their development needs in sustainable ways. Community investment involves building human and capital infrastructure, strengthening partner organizations, and promoting self-reliance, thus increasing the probability of project sustainability. Community capacity development is activities to improve the abilities and infrastructure of communities or organizations to provide services.

Community organizing is the process of building capacity through identifying an individual, group of people, or organizations with common challenges, complementary strengths, or opportunities and enabling them to take action (Stewart, Lohar, & Higgins, 2011). Equity and equal involvement of all groups, applicable partnerships between implementing agencies and potential local institutions, and involving technical experts in the community can provide a beneficial relationship for capacity development in the long term. In this case, the project implementing agency collaborates with the local communities to help them do things for themselves, thus making them co-producers of support rather than consumers of support.

Statement of the Problem

Through the Ministry of Water and Sanitation, the Government of Kenya (GoK) has realized the implementation of more than 50 annual budgets-water projects since her independence. Other development agencies, both private through corporate social responsibility and not-for-profit organizations, have since supported the course—the government hand over completed projects to the community for continuity.

However, despite the past funding environment, developed policies and laws, access to reliable water for the populations in Makueni County has remained low, translating to poor social indicators. The county has a water shortage of an average of 54.7% to meet its demand. People in the county walk approximately 8KMs to access water (Republic of Kenya Government of Makueni County, 2018).

Access to the drinking water means the source is less than 1kilometre away from the place of use and reliable for at least 20litres per household member per day. Access to basic water for drinking is fetching water from an improved source in less than 30 minutes for a round trip travel time, including queuing (WHO, 2014). According to Nygren et al. (2016), fetching water over 30 minutes' travel time increases the risk of diarrheal disease.

The literature reviewed in this research project has focused on community human resource training as community capacity development parameters of ensuring project sustainability. However, according to UNESCO (2010), community capacity development includes not only human resource development but also institutional and organizational infrastructure. This research project intended to include investment in capital infrastructure to enhance capacity in community projects. Also, from the literature, little has been studied on collaboration between the project donor and exiting institutions and involvement of individuals with special skills in the community, a factor of community organizing and community capacity development.

Objectives of the Study

General Objectives

The broad objective of the research project was to evaluate the effect of community capacity development (Investment in community capacity and community organizing) on the sustainability of community-based water projects.

Specific Objectives

- i. To establish the effects of an investment in community capacity on project sustainability in Kilome Sub County, Makueni County, Kenya.
- ii. To assess community organizing on project sustainability in Kilome Sub County, Makueni County, Kenya.

Research Questions

- i. To what extent does investment in community capacity influence the sustainability of Kilome Sub County projects?
- ii. By how much does community organizing affect the sustainability of Kilome Sub County projects?

Significance of the Study

The findings of this research project contribute greatly to the benefit of communities considering that community capacity development plays an important role in the sustainability of projects. The increasing rate of project failure justifies the need for more effective, life-changing project development approaches. Project organizations considered the researched approaches when managing community-based projects to ensure that projects

meet their intended objectives. The research project also contributed to the body of knowledge in the Project Management field. Researchers will use the results obtained from this study for reference in subsequent related research studies and a basis for further research.

LITERATURE REVIEW

Theoretical Literature

The section outlined three existing theories in project management in relation to community capacity development. The theories include stakeholder's theory, resource dependency theory, and utilitarianism theory of ethics. Research in the field of project management has used the theories to elucidate results-based project development.

Stakeholders' Theory

Freeman (1984) founded the stakeholder's theory, with Jones & Wicks (1999) later advancing it. The theory argued that, in the modern enterprise, the management must serve shareholders and help the stakeholders achieve long-term growth and prosperity. A stakeholder is those groups of individuals who are vital to the survival of an organization (Freeman, 2004). An organization needs conceptualization as a grouping of stakeholders whose purpose is to manage the interests and needs of the stakeholders (Friedman & Miles, 2006). The community is the key project stakeholders and the ultimate owners and beneficiaries of the project.

Resource Dependency Theory

Pfeffer and Salancik developed resource dependency theory (RDT) in 1978. The theory describes how resources influence an organization's decision-making. According to the theory, organizational actions and decisions is the basis of the organizations' dependency on critical resources. Organizations are not autonomous but are limited to a system of interdependencies with other organizations (Barney, 1991). According to the theory, linking the interdependencies to uncertainties about the actions of the interdependent organizations, survival is uncertain. The theory is important in this study as it envisages the community PMC as an organization. Thus, the need for resources by the project management to sustain the project into the future. This study suggested investment in community capacity as a way of minimizing resource dependency and enhancing project sustainability.

RDT suggests that organizations try to minimize their dependence by reducing their dependencies on other organizations. In addition, organizations lacking certain critical resources will create a relationship with other organizations to benefit from the needed resources (Saxton, 1997). This study proposed strength-based partnerships, which involve establishing relationships with individuals and other organizations to benefit from the lack of resources and enhance project sustainability. Thus, the theory guided on determining the relationship of investing in community capacity and community organizing parameters of community capacity development on the sustainability of water projects.

Empirical Literature

Project implementing agencies can use the various parameters applied during the development of a project to measure the capacity of the community. The section discussed previous related studies and their findings related to investment in community capacity and community organizing on their influences to project sustainability.

Investment in Community Capacity and Project Sustainability

Realization of project sustainability is not a single-day endeavor; rather, it is a long-life process. Attainability of sustainability requires the community institutions and management involved in implementing the project to be empowered in human and capital resources. The empowerment enhances the individuals or groups in the management to make choices to transform into desired outcomes. According to Oino, Towett, Kirui, & Luvega (2015), effective management ensures that there exist adequate local resources and community capacity to continue the project far after the exit of the project donors.

The ultimate objective to investment in community capacity is towards creating a confident community that can address her concerns in the longer term (Bell, Elliott, Simmons, 2010). Investments are required to facilitate the information transfer, training, and opportunity to serve the community with the needed programs (Bell et al., 2010). To achieve desired sustainability on water projects, the community should focus on increased participation in resource management. The establishment of institutions acts as an avenue for identifying best practices on innovation, information sharing, and influencing policy issues to the next levels (Baur & Woodhouse, 2009).

The established institutions also help enhance community engagement and promote community commitment in the management of the resources. According to Braimah et al. (2016), establishing water committees, local management teams, and water boards at the local level to be involved in the post-implementation management of the water projects effectively achieves sustainability.

According to research done by Komujuni et al. (2013), inadequate and inconsistent identification of training needs and suitable on and off-the-job training programs is an indication of poor community capacity development of professional development. The insufficiency constrained the implementation of projects. Dawe et al. (2006) also note that the identified programs should be culturally competent in all the program life cycle stages. These programs include structures that are flexible, non-threatening, informal, and lower cost to the beneficiaries. Marcelino-Sadaba., Gonzalez-Jaen, Perez-Ezcurdia, (2015) stated that training project managers are necessary but not enough. The achievement of the sustainability of community development requires resource investment.

Community Organizing and Project Sustainability

Social work aims at addressing the challenges of the needy. Communities have consequently sought to organize people to improve social services. Collaboration in community capacity development with clearly defined objectives engages the strengths of different actors to contribute to a positive project impact. Development change can come from the elite, poor, marginalized, vulnerable, and excluded groups. According to Thomas (2013), when financed, empowered, and implemented, the poor can evolve a good idea of positive change. Thus, the need to research the influence of different groups in the community on the sustainability of projects.

Different community categories need to participate in various stages of the project cycle depending on their distinct level of technical expertise, readiness to commit time and energy, and roles in the community. During the project conception and initiation phase of a project, most community members are involved compared to project planning, execution, and evaluation phases where project measurements, data collection, and analysis are required. Therefore, people with such skills are essential.

Tremolet, Koslky, & Perez (2010) researched fifteen countries on community water projects; specific projects that involved women were more sustainable than those that did not. The projects were also termed as more effective. According to the research project, women actively participate in decision-making, community capacity building, and political mobilization. Van (2008) researched and concluded that women's involvement in water projects significantly impacts the community.

Community organizing also involves project-implementing agencies collaborating with local organizations, government, private, and not-for-profit, to support community capacity development after the project closure. According to Cooperative for Assistance and Relief Everywhere (2015), working with existing civil society networks supports national advocacy on local-level issues. The collaborations help the community to draw complementary skills, knowledge, experience, and resources from the competitively advantaged collaborating actors.

RESEARCH METHODOLOGY

Research Design

The research project used a descriptive survey design. This is because it involves inquiring people about their opinions and ideas and describing what the people say. The descriptive design allows the researcher to investigate a phenomenon without manipulating the variables (Kombo, & Tromp, 2006). The research design is also appropriate where the research requires a description of phenomena. The design gives more information regarding the variables under study, establishes the degree of relationship, and makes precise predictions. The research project also used inferential statistics to describe the characteristics of the

sample population. The information helped establish the influence of each parameter of community capacity development on the sustainability of projects in Kilome Sub County.

Target Population

The government of Makueni County had 40 complete water projects implemented in Kilome Sub County between the years 2013 and 2018. Each project had seven PMCs (Republic of Kenya Government of Makueni County, 2018). PMCs are voluntary members of the project committee elected by the community project beneficiaries to manage a specific project. The PMCs directly represent the opinions of the project community beneficiaries. The study interviewed a maximum of 4 PMCs from each project to reduce on the margin of error from biasness of collecting data from one project, reduce project sample redundancy while enhancing the response rate. The study therefore targeted a total population of 160 respondents. Additionally, five project staff were interviewed as respondents in the data collection.

Sampling Design

The study use multiphase sampling where the sub-county was divided into geographical clusters existing as sub wards in the sub-county. Random sampling was done to collect data from respondents in each of the cluster selected projects. The sampling design is more purposeful and reduce on non-response rate (Acharya, Prakash, Saxena, & Nigam, 2013). The sample was then generalized to represent the entire target population of the research project.

Sample Population

The sample size of the research project was determined using Krejcie & Morgan (1970), who recommended the appropriate sample for any given population. Below is the formula.

$$n = Z^2 p \cdot q \frac{N}{e^2(N - 1) + Z^2 p \cdot q}$$

Where;

- n = Sample size to be used
- N = The total research target population
- p = Population ratio with the desired characteristics relevant for the study. The assumed ratio is 0.5, which on estimation would deliver maximum sample size.
- q = Population ratio lacking the desired characteristics relevant for the study (1-p)
- e = Research level of accuracy. (Standard error= 5%)
- Z = z value at 95% confidence level = 1.96

Thus, the sample population for this research project was 119 respondents. That is, 114 PMCs and five project staff.

Table 1: Sample Distribution

Stratum	Population (N)	Sample Size Determination	Sample (n)
PMC	160	Krejcie, & Morgan (1970)	114
Project Staff	5	100%	5
Total			119

Source: Researcher (2021)

Data Collection

Data Collections Instrument

The research project employed probability, cluster sampling technique to divide the sub-county into geographical clusters. Data was collected from the sample population using structured questionnaires as the research tool administered to the respondents.

Data Collection Procedure

The research project used designed questionnaires to collect quantitative and qualitative data from Kilome Sub County members of the project management committee. The researcher administered the tool to the randomly selected respondents from different geographical clusters identified as sample populations. The respondents got an explanation and clarification of the data collection tool where necessary. The respondents also received essential information on the primary use of the data and confidentiality of the data provided.

Validity of the Research Instrument

Validity is the degree to which a test conducts the required measurements (Collis & Hussey, 2003). There are different types of validity testing, including face, content, criterion, and discriminant validity. A rational analysis of the research tool was necessary to test face validity and content validity. Two raters familiar with the research subject analyzed the questionnaire by carefully checking the measurement method against the conceptual definition of the research construct of interest. The raters then reviewed the questionnaire items for readability and clarity and came to some level of agreement on which items should be included in the final questionnaire.

Reliability of the Research Instrument

Reliability is the consistency of research results over time and accurate representation of the results to the total population under study (Joppe, 2000). There are different types of reliability testing, including internal consistency, test-retest, inter-rater, and parallel-forms. This research conducted a pilot study to test the internal consistency of people's responses

across the items in the questionnaire using the split-half correlation technique. Both sets of data were correlated using the Pearson correlation coefficient formula. Cronbach's alpha value of 0.7 and above was reliable for administering the questionnaires (Field, 2005).

Data Analysis

Data analysis offered both quantitative and qualitative results. The research project analyzed quantitative data through descriptive statistics such as measures of central tendency and measures of dispersion. Also, the study analyzed qualitative data through content analysis and presented it in the form of explanatory notes. The dependent variable was not binary, which ruled out applying logit, probit, and discriminant analysis models (Field, 2005). Thus, the research project employed multi-linear regression analyses to establish the relationship between the independent and dependent variables due to the dependent variable's continuous nature.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

- Y = Project sustainability
- X₁ = Investment in community capacity
- X₂ = Community organizing
- β₁- β₂ = Coefficients of X_i variables
- ε = Error term

RESEARCH FINDINGS AND DISCUSSIONS

Introduction

The chapter demonstrated data analysis, presentation of the results, and its interpretation into relevant information. The chapter described the study response rate, respondents' general information, and descriptive statistics of the data collected.

Response Rate

The study targeted 119 respondents issued with questionnaires. Ninety-one of the respondents returned their questionnaire, representing a 76.5% response rate. This indicated that the study response rate was sufficient to continue with data analysis (Rindfuss et al., 2015).

General Information

Respondents Gender

Male respondents represented 65.9% of the total sample population, while 34.1% were female—the sample included both the PMC and project staff respondents.

Education Level of the Respondents

Most of the respondents had attained a secondary level of education, representing 41.8% of the sample population. Primary and certificate/ diploma level of education tied with a representation of 22%.

Age of the Respondent

The study collected data on the age groups below 35 years representing the youth, 36-60 years representing the middle-aged group, and above 60 years representing the senior citizens in community project management. Most of the respondents were aged 36-60, representing 71.4% of the sample population. Respondents below 35 years of age were 15.4%, while those above 60 were the least, representing 13.2% of the sample population.

Experience of the Respondent

Respondents with 1-3 years of experience in community project management were 43.3%, above five years were 21.1%, and below one year were 17.8%, while 3-5 years of experience were 17.8% of the total sample population. The respondents had an average of 2.4 years of experience.

Type of Water Project

Out of the projects studied, 34.15% were boreholes, 31.71% were earth dams, 14.63% were water pipelines, 12.20% were sand dams, and 7.32% were other project types.

Project Duration after Completion/ Donor Exit

Out of the projects studied, 51.22% were 1-3 years of age after completion, 29.27% were above 5 years, while projects below one year and 3-5 years were tied with 9.76%.

Project Functionality Status

At the study time, 78.05% of the projects studied were functional, while 21.95% were not functional. Reasons for not functioning were mainly due to project vandalism, especially for earth dams and lack of water pump and power for boreholes. Table 2 below demonstrates the frequency in the percentage of the stalling rate of projects after their completion.

Table 2: Project Stalling Rate (n=40)

Period after completion	Non Functionality Frequency	Non Functionality Percentage	Non-Functionality Cumulative Percentage
<1	5	12.19	12.19
1-3	1	2.44	14.63

3-5	1	2.44	17.07
>5	2	4.88	21.95

Source: Research Data (2021)

Out of the total projects implemented, 12.19% were nonfunctional in less than one year after completion, 14.63% were nonfunctional by the 3rd year, and 17.07% were nonfunctional by the 5th year after project completion, as illustrated in Table 2 above.

Table 3: Distribution of Projects Functionality by Type (n=40)

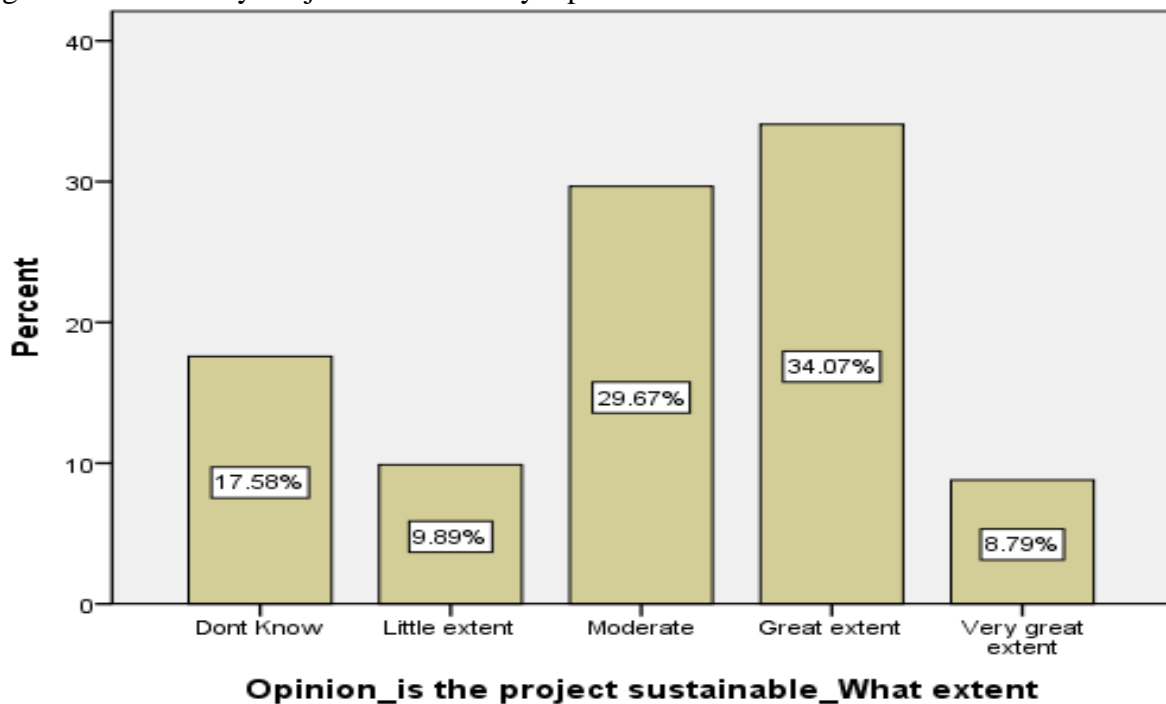
Water Type	Functionality (%)	
	No	Yes
Earth dam	30.77	69.23
Borehole	28.57	71.43
Sand dam	20.00	80.00
Water pipeline	0.00	100.00
Other	0.00	100.00

Source: Research data (2021)

Earth dams had the highest frequency of nonfunctional projects after completion with 30.77%, followed by boreholes and sand dams.

The respondents gave their opinions on how they believed the projects they managed were sustainable and able to meet the three sustainability parameters.

Figure 1: Community Project Sustainability Opinion



Source: Research data (2021)

Figure 1 above demonstrates that majority of 34.1% of the respondents believed that their projects were sustainable by a great extent, 29.7% believed that the project was moderately sustainable, 9.9% believed that the projects were sustainable to a little extent, 8.8% by very great extent while 17.6% didn't know.

Descriptive Statistics

Investment in Community Capacity and Project Sustainability

Investment in capacity community parameter of community capacity development was measured using statements rated using a scale from strongly agree strongly disagree labeled 1 to 5 respectively.

Table 4: Investment in Community Capacity

Statement	Percentage					Mean	Std. Deviation
	SA	A	N	D	SD		
Creation of new/ building upon existing water user groups/ institutions	8.8	65.9	13.2	9.9	2.2	2.31	0.85
Providing support to local organizations to enhance performance	9.9	57.1	23.1	5.5	4.4	2.37	0.90
Strengthening the skills of people in the communities.	19.8	57.1	18.7	3.3	1.1	2.09	0.78
Average						2.26	0.61

Source: Research data (2021)

As demonstrated in Table 4, the respondents agreed that investment in community capacity had a general influence to project sustainability with an average of 2.26. The respondents agreed that providing support to local organizations to enhance project performance after the door exit had the strongest influence on project sustainability with an average of 2.37, followed by the creation of new/ building upon existing water management institutions with a mean of 2.31 and community training with a mean of 2.09. The respondents' responses had a mean, standard deviation of 0.61. A total of 8.8% of the respondents strongly agreed, and 65.9% agreed that the creation of new/ building upon existing water user groups/ institutions influenced project sustainability. On providing support to local organizations to enhance project performance, in the long run, 9.9% strongly agreed, and 57.1 agreed that the parameter influenced project sustainability. While 19.8% of the respondents strongly agreed, and 57.1% agreed that strengthening people's skills in the communities influenced project sustainability.

Community Organizing and Project Sustainability

The study used the community organizing parameter of community capacity development to test using three statements, as shown below in Table 5, on how they believed influenced project sustainability on a scale of 1 to 5 from strongly agree to strongly disagree.

Table 5: Community Organizing

Statement	Percentage					Mean	Std. Deviation
	SA	A	N	D	SD		
VMGs mainstreaming in community water projects development	0.0	59.3	14.3	5.5	20.9	2.04	0.76
Involving community members with specific project expertise	20.9	56.0	16.5	6.6	0.0	2.09	0.80
Partnering with other local institutions/ other development agencies	14.3	47.3	19.8	7.7	11.0	2.54	1.17
Average						2.22	0.63

Source: Research data (2021)

As demonstrated in Table 5, the respondents, on an average of 2.22, agreed that community organizing influenced project sustainability. They agreed that partnering with local institutions to enhance project performance after donor exist had the strongest influence on project sustainability with an average of 2.54, involving expertized community members in project development had a mean of 2.09 while VMGs mainstreaming had a mean of 2.04. The responses had a standard deviation mean of 0.63. A total of 59.3% of the respondents agreed that VMGs mainstreaming in community water projects influenced project sustainability. On involving community members with specific project expertise, 20.9% strongly agreed, and 56.0 agreed that the parameter influenced project sustainability. While 14.3% of the respondents strongly agreed, and 47.3% agreed that partnering with other local institutions/ other development agencies.

Project Sustainability

Project sustainability was the dependent variable in the study. The parameters used to measure the variable were technical, financial, and managerial self-reliance. Respondents rated statements used to measure the parameters using a Likert scale of 1 to 5 from ‘strongly agree to strongly disagree.’

Table 6: Project Sustainability

Statement	Mean	Std. Deviation
The technology used is community user friendly	2.21	0.90
The technology is operationally cost-effective	2.42	0.91

The technology is manageably maintainable	2.12	0.79
The community can adequately mobilize its financial resources	2.45	0.98
The community can adequately draw its budgets	2.53	0.99
The community can adequately account for financial resources received	2.45	1.00
The communities can initiate and design for projects	2.40	0.92
The communities can implement projects	2.44	0.90
The communities can effectively monitor,	2.30	1.02
Average	2.37	0.64

Source: Research data (2021)

As shown in Table 6 above, the study findings indicated that the respondents agreed that the projects met technical, financial, and managerial self-reliance. The average perception rate was 2.37, which indicated that the respondents agreed on the three parameters of project sustainability.

Inferential Statistics

The study carried out inferential statistics to establish the relationship between investment in community development, community organizing on project sustainability. Analyses done included a model summary, ANOVA, regression coefficients of regression analysis.

Regression Analysis

The results derived from the indicators of investment in community development, community organizing, and project sustainability were transformed using the SPSS package to a single variable. The study conducted a linear regression analysis of the single variables and obtained model summary, ANOVA, and regression coefficients. The results were as shown below.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746 ^a	.557	.547	.43137

Source: Research data (2021)

The coefficient of determination indicated by the adjusted R square shows the rate of variation on project sustainability influenced by investment in community capacity and community organizing variables in Kilome Sub County, Makueni County, Kenya. The results indicated an adjusted R square of 0.557, which illustrated that the two studied independent variables influenced project sustainability by 55.7%. The standard error of the estimate of 0.431, as shown in Table 7, illustrated that other variables not explained in the model influenced project sustainability by 43.1%.

Table 8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.605	2	10.303	55.368	.000 ^b
	Residual	16.375	88	.186		
	Total	36.980	90			

Source: Research data (2021)

Table 8 showed a significance value of 0.000, which is less than 0.05, indicating that investment in community capacity and community organizing variables significantly influenced project sustainability.

Table 9: Regression Coefficients

Model	Unstandardized		Standardized		t	Sig.
	Coefficients		Coefficients			
	B	Std. Error	Beta			
1 (Constant)	.413	.192			2.146	.035
Investment in community capacity	.375	.089	.358		4.229	.000
Community organizing	.499	.087	.488		5.756	.000

Source: Research data (2021)

The resulting equation was,

$$Y = 0.413 + 0.375X_1 + 0.499X_2$$

Where;

Y= Project sustainability

X₁= Investment in community capacity

X₂= Community organizing

As shown in Table 9, the results indicated that holding constant all the independent variables that are an investment in community capacity and community organizing, project sustainability in Kilome sub-county, Makeni County would be achieved by 0.413.

Investment in Community Capacity

The study showed that investment in community capacity had a positive influence to project sustainability. The B value indicated that a unit change in investment in community capacity influenced project sustainability by 0.375. The significance value of 0.000, $p < 0.05$, indicated that the variable influence was significant. The study findings agreed with Komujuni et al. (2013) on investment in community capacity through training that influenced project sustainability. The findings also supported those of Marcelino-Sadaba., Gonzalez-Jaen, Perez-Ezcurdia, (2015) that community capacity development required resource investment. Thus, the study insists on suitable project community technical, management, and financial training, creating or strengthening water projects management institutions, and possible endowment of community water key infrastructures.

Community Organizing

The study showed that community organizing had a positive influence to project sustainability. The B value indicated that a unit change in community organizing influenced project sustainability by 0.499. The significance value of 0.000, $p < 0.05$, indicated that the variable influence was significant. The research findings coincided with the research findings done by Tremolet, Koslky, & Perez (2010) that the involvement of VMGs in community projects influenced project sustainability. Cooperative for Assistance and Relief Everywhere (2015) indicated that collaborating with local organizations in the community helped the community draw competitive resources advantaged to the collaborating actors.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

Investment in Community Capacity

The respondents agreed that investment in community capacity development through the creation of new/ building upon existing water user groups/ institutions, investment in community water infrastructure, and strengthening the community technical, managerial, and financial project skills influenced project sustainability. Regression analysis showed a positive significant coefficient of investment in community capacity on its influence on project sustainability. An increase in investment in community capacity led to an increase in project sustainability.

Community Organizing

The study measured community organizing variables using the parameters; involvement of vulnerable and marginalized groups, community professionals who are skilled in specific technical project areas and collaborating with local institutions that can support the community in the projects after the exit of the project donor. On average, the respondents agreed that community organizing influenced project sustainability. A statistical analysis

done showed that the community-organizing variable had a positive and significant influence on project sustainability.

Conclusions

The study's first objective was to evaluate the effect of investing in community capacity on project sustainability in Makueni County. The study revealed a significant positive relationship between the variable and project sustainability. Strengthening community project skills and establishing water institutions proved to be more effective in enhancing community project sustainability.

The study's second objective was to determine the effect of community organizing on project sustainability in Makueni County. The study revealed a significant positive relationship between the variable and project sustainability. Respondents were satisfied that mainstreaming VMGs and the involvement of skilled community members were best practices for ensuring project sustainability.

Recommendations

The study recommends project development agencies invest in community water infrastructures that the community can use to manage their projects after the exit of the donor. The agencies should establish new or strengthen the existing water user groups and strengthen the skills of the community in project management. That will ensure the continuity of the project into the future.

Also, project development agencies should involve different groups in the community to enhance project sustainability. That includes identifying members within the community who have trained in special skills to incorporate them in project development. The project should ensure the involvement of youth, women, PLWDs, and other groups from the initial stage of project planning and design and integrate their special needs. That would promote project community ownership. In addition, collaborating with local institutions is important, as it enhances support in project management to the community after the donor exit.

Suggestions for Further Studies

The research studied two capacity development variables, including investment in community capacity and community organizing. The research with a standard error of the estimate of 0.431 indicated that other variables not explained in the study influence project sustainability in Makueni County. The study suggests further studies on exploring more variables to establish their enhancement in project sustainability.

In addition, the study focused on community capacity development and sustainability of water projects in Makueni County. Research on the community capacity development and sustainability of other development projects is required.

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