

Result Oriented Approach And Sustainability Of Community Water Projects In Bomet County, Kenya

Michael Bongei

MBA (Project Management): Department Management Science, Kenyatta University

Dr. Kinoti Kaburu

Senior Lecturer: Department Management Science, Kenyatta University

Abstract: Project sustainability is viewed as the continuous operation of resources in a way that it ensures the present and future generations continue to enjoy their benefits. Sustainability measures the growth, maintenance and/or degradation of resources that affect community's ability to keep itself sustained. Sustainability of community water projects have been a challenge over years and organizations are crumbling due to failure to master the importance of result oriented approach in monitoring and evaluation techniques in sustainability of their projects. The objective was to assess the effect of result oriented approach on community water projects' sustainability in Bomet County, Kenya. The study results based management theory. Descriptive survey research design was used and the target population was 25 water community projects with 192 employees working in the community water projects comprising committee board members and managers. Stratified random sampling was used to select sample size of 58 respondents. A questionnaire was used to collect primary data through drop off and pick up later method. Data was analyzed using descriptive and inferential analysis. Descriptive analysis involved percentages, frequencies, tables and charts; while inferential analysis was done using correction, analysis of variance and multiple regression equation. The findings of the study revealed that result oriented approach had a significant effect on sustainability of community water projects in Bomet County, Kenya. The study recommends that the project management committee should adopt monitoring and evaluation techniques such as stakeholders' engagement, analysis of stakeholder, goal management and capacity building to ensure that the view of all stakeholders are incorporated and the project teams acquire the necessary knowledge and skills on project construction.

Keywords: Sustainability of Projects, Community, Result Oriented Approach

I. INTRODUCTION

World Bank (2013) stated that globally, more than 783 million persons cannot access reliable as well as clean sources of water. In Africa, this situation is even worse where over 300 million people do not have access to clean drinking water (World Bank, 2013). Therefore, lack of water, is an enormous economic cost to households more so in rural areas as well as developing countries (African Development Fund, 2005). Water projects are very vital as they contribute to provision of water essential for sustenance of human life, ecological systems as well as economic and social growth. According to Burke (2014), water projects ought to be done in an organized way using available resources to achieve the set objective.

Completion of water project and achievement of set goals and objectives is accompanied by sustainability. World Bank (2013) describes sustainability as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." Similarly, Baumgartner and Ebner (2010) define project sustainability as the ability to develop growth strategies by organizations that functions unlimitedly and involves maintenance of project's goals, results and products. The key to sustainability of projects is to identify the contributing factors that would make a project remain functional and operational for a long period of time.

There has been great concern on sustainability of water projects as fewer projects are currently being sustained which

implies that implementation cost is not equal to accrued benefits (UNDP, 2009). According to Mansuri and Rao, (2004), various countries have made an effort to address the increasing water problem, growing inefficient services in the public sector as well as lack of project sustainability. Nevertheless, in Sub-Saharan Africa, attempts to the use of community management model to address the problem have not generated positive results. In the past decade, water sector has been undergoing numerous reforms aimed at enhancing projects sustainability. Moreover, there is a general belief that monitoring and evaluation techniques have an effect on community water projects but sustainability is not clear. A study carried out by Papke-Shields *et al.* (2010) found that conformity to the projects' specification would be attained when those projects are effectively evaluated as well as monitored. The researcher also accentuates successful accomplishment of a project within project duration (time) as well as approved budget (cost) when M&E are effectively carried out.

Monitoring and evaluation techniques encompass principles, tools and methods that can be employed for projects with the purpose of contributing to innovation of the system however, they vary in the processes, their vision on reality, as well as their outcome and also how to manage, adjust effectively to these processes. Monitoring and evaluation techniques have continued to play a major role in development and implementation of most projects in diverse parts of the world (Wang & Huang, 2018). Techniques of monitoring and evaluation are geared towards intervening in the various aspects of implementing and sustaining community water projects like planning and coming up with the most effective decisions that ensures that the projects perform as expected, self-financing capacity by checking on the costs of production, maximizing resource mobilization among the community members and ensuring that the members are responsible in protecting and sustaining the projects. These practices are based on assumptions as well as expectations of causality and also linearity. According to Janapati, Kopsaftopoulos, Li, Lee and Chang (2016), some of the most commonly used techniques include; result-oriented approach, constructivist approach, participatory approach, feedback systems approach among others. Although result-oriented techniques are powerful instruments in the system (innovation processes) they have their limitations (Nyamupachitu, 2018). Stimulation of unforeseen contacts is an example of famous intervention strategy in innovation of a system to trigger surprising new initiatives and insights.

STATEMENT OF THE PROBLEM

A report released by USAID (2012) on water project sustainability in Africa revealed that about 70% of all water projects fail in sustainability. Further a report by the World Bank (2015) shows that sustainability of water project falls below 35% while many of the sustained projects experience more failures than successes more so in developing countries. In Kenya, sustainability of water project falls below 49% and amongst East Africa, it is rated as the poorest in sustainability (World Bank, 2015). M&E of projects using results oriented approach in community water projects in Bomet County is a

very important and critical issue, and best practices require projects to be monitored and evaluated for control. Stakeholders in the project require honesty for resource usage and to impact the performance of a project. This also calls for managerial skills for effective decision making, training of staff that are involved in handling the project and equitable distribution during resource allocation (Jacobs, Barnett & Ponsford, 2010). Whereas the significance of itemized project budget is a requirement, the initial allocation as well as prioritization of M & E budget to gauge sustainability of community water projects appeals for more attention. Projects are still exemplified by poor performance, sustainability and maintenance, despite the budget associated performance based developments (Nzekwe, Oladejo & Emoh, 2015). Hence, concerns on whether better project performance is a result of allocation of M&E budget have emerged.

In Bomet county and specifically Sotik constituency, while monitoring and evaluation is considered an opportunity for learning, most of the community water projects do not use the results obtained to make improvement in the sustainability of projects. As such, despite conducting monitoring and evaluation of water projects, most of the community water projects remain unsustainable. They lack maintenance as most pumps are broken, rusted or missing this then leads to the community not benefiting from the projects.

The water projects sustainability have not been examined widely, for example Ngetich (2009) found that large number of water projects did not function to maximum capacity therefore, recommended for more research to be carried out on effect of budgetary allocation on water projects' sustainability; Imunya (2014) found out that sustainability of projects is determined by strategies like monitoring, technology adoption, financial resources and staff training.

Even though the reviewed studies highlights factors determining projects' sustainability, the studies are limited to specific fields such as education, health, environment among other sectors and they do not provide a general analysis of techniques of sustainability of every project in county governments of the country. There has been low utilization of monitoring and evaluation results in community water projects in Bomet County. The study therefore investigated the effects of result oriented approach on sustainability of community water project in Bomet County in Kenya.

II. LITERATURE REVIEW

THEORETICAL REVIEW

The study was anchored on the Results Based Management (RBM) Theory. Results based management theory indicates management plan in which outputs, processes, as well as services play major role to attainment of stated anticipated objectives. Moreover, it focuses on improving performance, achieving results, incorporating lessons learnt into management decisions as well as monitoring and also reporting on performance (Gumz & Parth, 2007). Moreover, RBM is a project management approach through which stakeholders contributing either directly or indirectly to attaining a set of results, ensure products as well as services

and their processes contribute to attainment of anticipated results (outcomes, outputs as well as higher level impact or goals). Stakeholders in turn deploy evidence and information on actual results so as to notify decision making on delivery, design, as well as resourcing of activities and programmes as well as reporting and accountability. These activities are essential in management of community water projects.

The proponents of RBM theory include Schmidt, Vahamaki and Molander (2011) and argue that performance information must be available in order to understand concepts of development and make the correct choices. Karl *et al.* (2010) identifies RBM as part of wider process of management that is employed to show results as well as improve performance. The RBM theories include two key stages; performance measurement as well as results based performance management. Moreover, Karl *et al.* (2010) widely describes the stages as follows; identification of measurable and clear objectives and development of indicators. Performance monitoring systems are formulated, actual results are analyzed and reviewed, and reporting made vis-à-vis targets during performance measurement. Lastly, assessment findings are employed to increase the understanding of comparative advantages, weaknesses and strengths and to generate lessons. The performance information is as well employed for accountability of internal management, resource management, learning and reporting to partners and stakeholders.

In this study, RBM theory was employed to show how use of result oriented approach as well as feedback systems influences the sustainability of water projects. Results of M&E are employed in identification of project weaknesses. This information was later deployed to make decisions on resources allocation as well as interventions that can be employed to ensure the project attains the set goals, is completed on time and at the right cost. In addition, results based management theory seeks to ensure participation of stakeholders for correct results to be obtained.

III. EMPIRICAL REVIEW

This section presents empirical literature on result oriented approach in relation to sustainability of community water projects.

RESULT ORIENTED APPROACH AND COMMUNITY WATER PROJECTS' SUSTAINABILITY

The emphasis on result-oriented M&E rests in measuring the degree to which initial project objectives as well as succeeding interventions can be attained (Eberhardt, 2016). Result-oriented approaches are mostly employed to provide answerability trail for investment in a project, each time financiers as well as their backers have to or want to know what the money has done (Nyamupachitu, 2018). Planning methods that match this kind of M&E are Log Frames, more flexible Theory of Change or Logic Charts.

Using a critical review of literature, Eberhardt (2016) conducted an evaluation of result-oriented management concepts in environmental and sustainability policies in

Pakistan. The paper evaluated and compared impact- and result-oriented management approaches in environmental planning, sustainability strategies, new public management, and development cooperation. In all these policy fields, some prerequisites for success can be identified. The results indicated that it is crucial that goals are precise, that sufficient funds are allocated and that the process of goal achievement receives political support. The study found that result-oriented management concepts should be understood as one of several, mutually supportive elements of institutional innovations for sustainable development. However, the study was only limited to Pakistan and therefore the results cannot be utilized in Kenya as a result of differences in macroeconomic environment as well as legal framework.

Using an online survey, Vainio, Tienhaara, Haltia and Pouta (2019) examined legitimacy of result-oriented as well as action-oriented environmental schemes in Finland. The data was obtained by use of internet questionnaire in spring of 2016. The study found that low legitimacy of result-oriented AES (as noted by farmers) may be as a result of factors rather than their estimated ability to yield ecosystem services. However, this study did not show how result-oriented approach influences performance of projects. In addition, this study adopted an online survey design, but the on-going study will deploy descriptive research design.

Using a mixed methods research approach, Kasule (2016) examined the factors influencing application of results based M&E system by Nurture Africa. Moreover, the research obtained data from forty sampled respondents using surveys, document review of M&E tools and key informative interviews. The study reported low application of results based M&E system (reporting outcomes and reporting impact), which was attributed to management support, managerial capacity and also usage of baseline information. However, the study did not show the effect of results based M&E on projects performance.

In a case study of the ecumenical pharmaceutical network, Nyamupachitu (2018) conducted an evaluation of the execution of RBM approach in non-governmental organizations. Quantitative as well as qualitative research techniques were deployed and questionnaires were sent via survey monkey, key informant interviews were also done in addition to secondary data review of organizational documents. The findings revealed that the monitoring and evaluation system was mostly in line with RBM practice albeit some challenges. The planning was well formulated with a strategic plan and intervention logic was well understood. The organization emphasizes on the higher level results or intended change in their planning so that the planning is done with the ultimate goal in mind. Nonetheless, the study used survey monkey, key informant interviews and secondary data review to collect data, but the current study will use a semi structured questionnaire.

SUSTAINABILITY OF COMMUNITY WATER PROJECTS

Nabifwo and Kimutai (2017) carried a study on community based projects' sustainability and revealed that water, sanitation as well as health projects continues to be a challenge. A descriptive survey was used and the study

population was 10,515 respondents. Moreover, the researcher selected a study's sample of 433 from the study population by use of stratified random sampling. The study found a positive significant effect of community participation, funds utilization, technical expertise and political factors on water sanitation as well as health projects sustainability. However, the focus of this study was water sanitation and health projects, which is different from sustainability of community water projects in terms of stakeholders.

Ibrahim (2016) carried out a study on community based water projects sustainability. A set of multidimensional indicators was used to design sustainability assessment framework to monitor and assess 8 community-based water projects in 4 diverse states in Sudan. Moreover, the assessment framework comprised of site visits, analysis (SSICA) approach, systematic secondary information collection and documents reviews. The calculation of sustainability scores was done based on weighted sub-indicators analysis system. Findings revealed that 40 percent of water projects implemented were fairly sustainable even though they are regarded as young projects (projects aged between 1 and 4 years). The weak sustainability was as a result of poor organizational as well as financial performance caused by poor post-implementation external agencies and/or governmental involvement as well as support in terms of capacity building facilities, monitoring and financial support.

Using a descriptive research design, Chumbula (2016) examined the sustainability of water projects of selected projects in Iringa District, Tanzania. A household questionnaire was administered to 180 respondents in three villages for data collection. The negative signs attached to time spent for water collection and economic activities in the water sources indicate that the greater the value of the variable, the lower the probability of maintaining sustainability of water supply. The increasing rate of failure of water project particularly in the rural areas need to be addressed so as to achieve reliable supply of clean and safe water to rural populations. However, community and other stakeholder involvement in water projects and utilization of feedback systems and result oriented approaches differ between the two countries, Kenya and Tanzania.

In Kenya, Olela and Wanyonyi (2018) examined water supply projects sustainability for rural communities in arid as well as semi-arid lands in Garbatula Sub County situated in Isiolo County. The research deployed descriptive research technique to obtain qualitative and quantitative data from a study population of 32, 226 served by seventeen boreholes, focus group discussions with 3 water management committees as well as 3 key informants. The significance values for correlation between water supply projects' sustainability and choice of technology, socio cultural factors, socio-economic factors, water tariffs as well as specialized training on technical skills and knowledge was significant. Nonetheless, the research was performed in Garbatula Sub County in Isiolo County, which differs from Bomet County.

CONCEPTUAL FRAMEWORK

Conceptual framework refers to a structure comprising of invisible blocks representing experiential, observational as

well as synthetic/analytical features of a system or process being formed. Independent variable in this study was result oriented approach while the dependent variable was community water projects' sustainability in Bomet County. Conceptual framework for this research is shown in Figure 1

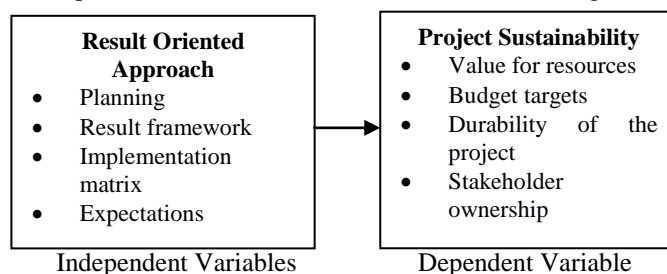


Figure 1: Conceptual Framework

IV. RESEARCH METHODOLOGY

Descriptive research design was employed in this study. The focus of the study was 25 completed water projects in Bomet County. The study carried out a census of all the 25 community water projects comprising of a total of 192 individuals. To meet the expectation of the sampling theory that all possible units in the target population be identified, a stratified sampling was employed and a sample of 10% calculated to generate 58 respondents. Mugenda and Mugenda (2003) propose that a sample of 10 percent to 30 percent of the entire population is adequate for a descriptive research. The strata in this study were project management committee, project implementation committee, board representatives, operating staff and community representatives. Therefore, 30% of the different categories of stakeholders selected in each of the categories were picked to form the sample size and hence the sample size was distributed across the categories.

Category	Frequency	Sample Size
Project management committee	46	14
Project Implementation Committee	37	11
Board representatives	34	10
Operating staff	15	5
Community representatives	60	18
Total	192	58

Table 1: Sample Size

Questionnaires were used in the collection of data. Questionnaires are an efficient way of acquiring information from big sample within short period of time and also at a minimal cost compared to other techniques. They also encourage easier way of coding as well as analyzing data. The researcher conducted a pilot test by administering the research tool to one participant from each of four categories of participants who were selected randomly in three out of the eight wards in Chepalungu Constituency within Bomet County. The study found that the research instrument (questionnaire) was valid and reliable.

Data obtained was analyzed by use of quantitative as well as qualitative technique. Data obtained using questionnaires was edited, coded as well as descriptively analyzed by use of the SPSS and presented in frequency tables as well as figures. Regression analysis was employed to establish relative

significance of all variables with regard to Sustainability community water projects. In this study, the regression model was:

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

Where: Y = Sustainability Community Water Projects' Sustainability; β_0 = Constant Term; X_1 = Result Oriented Approach; β_1 = regression co-efficient; and ε is random error term and is accountable for study variables influencing sustainability of community water projects.

V. RESEARCH FINDINGS AND DISCUSSIONS

The sample size of this study was 192 respondents selected from project management committee, project implementation committee, board representatives, operating staff and community representatives in the 25 completed water projects in Bomet County. The researcher administered 192 questionnaires during the study. Out of 192 questionnaires that were distributed, 180 respondents successfully filled and returned their questionnaires. This provided a response rate of 93.75%. According to Kothari (2003), a response rate of 75 per cent is adequate for analysis, making conclusions and making inferences about a population. In addition, Creswell (2013) indicates that a response rate of 60% and above is acceptable for analysis. This implies that the response rate (93.75%) was adequate for analysis, drawing conclusions and reporting. Therefore, the response rate of this study was within acceptable limit for drawing conclusion and making recommendations.

DESCRIPTIVE STATISTICS

This section covers descriptive statistics on result oriented approach and project sustainability. Quantitative data was obtained from the open ended questions which were measured using a 5-point Likert scale, where 1 represented strongly disagree, 2 represented disagree, 3 represented moderately agree, 4 represented agree and 5 represented strongly agree. Ahadzie (2007) suggest that in a 5 scale Likert questions, the interpretation of arithmetic mean, strongly agree (SA) is from 4.5 to 5.0, agree (A) is from 3.5 to 4.5, moderately agree is from 2.5 to 3.5, disagree is from 1.5 to 2.5 while strongly disagree is from 1 to 2.5.

RESULT ORIENTED APPROACH

The respondents were asked to indicate their level of agreement on various statements relating to result oriented approach and community water projects' sustainability in Bomet County, Kenya. From the results, the aggregate mean was 3.343 while the aggregate standard deviation was 0.836. From the study findings, the respondents agreed with a mean of 3.689 (Std. dv = 0.892) that in Bomet County, the planning process of water projects is done by project experts. In addition, they agreed that all water projects have results framework which shows what to expect once the project is completed. This is shown by a mean of 3.667 (Std. dv = 0.805). Furthermore, with a mean of 3.622 (Std. dv = 0.904), the respondents agreed that all water projects have a plan

which shows the expected results. The respondents also revealed that they are satisfied with the level of project planning process as indicated by a mean of 3.533 (Std. dv = 1.005). These findings are in line with the findings of Wang and Huang (2018) that project planning shows the expected results which ensures projects perform as expected.

With a mean of 3.867 (Std. dv = 0.720), the respondents revealed that the projects managers always develop an implementation matrix for each water project. Moreover, they agreed that the implementation matrix developed makes the implementation work easy. This is shown by a mean of 3.711 (Std. dv = 0.780). Moreover, they agreed with mean of 3.706 (Std. dv = 0.944) that the result framework in water projects is always clear. The respondents further agreed that they are satisfied with the formulated result framework as shown by a mean of 3.656 (Std. dv = 0.861). This finding conform to Eberhardt (2016) arguments that clear result framework helps the projects' stakeholders to focus on the successful completion of a project with the key goal in mind.

The respondents agreed with a mean of 3.733 (Std. dv = 0.882) that most of the water projects in Bomet County overruns the budget expectations. Moreover, they agreed that some projects take more time to be completed than expected. This is shown by a mean of 3.667 (Std. dv = 0.872). With a mean of 2.044 (Std. dv = 0.667), the respondents disagreed with the statement indicating that they are satisfied with the quality of implementation matrix developed. In addition, they strongly disagreed with a mean of 1.222 (Std. dv = 0.698) that project outcome is always in line with the project expectations. These findings are in line with Elimelech (2014) suggestions that lack of monitoring and technology adoption, insufficient financial resources and lack of regular staff training leads to cost overruns of construction projects in Kenya and project outcome are contrary to the shareholders' expectations.

	Mean	Std. Deviation
All project have a plan which shows the expected results	3.622	0.904
The planning process is done by project experts	3.689	0.892
Am satisfied with the level of project planning process	3.533	1.005
All water projects have results framework which shows what to expect once the project is completed	3.667	0.805
The result framework in water projects is always clear	3.706	0.944
Am satisfied with the formulated result framework	3.656	0.861
The projects managers always develop an implementation matrix for each water project	3.867	0.720
The implementation matrix developed makes the implementation work easy	3.711	0.780
Am satisfied with the quality of implementation matrix developed	2.044	0.667
Project outcome is always in line with the project expectations	1.222	0.698

Most of the water projects overruns the budget expectations	3.733	0.882
Some projects take more time to be completed than expected	3.667	0.872
Aggregate Score	3.343	0.836

Table 2: Various Aspects of Result Oriented Approach

PROJECT SUSTAINABILITY

The dependent variable in this study was community water projects' sustainability in Bomet County, Kenya. The employees were requested to indicate their level of agreement on various statements relating to community water projects' sustainability in Bomet County, Kenya. As shown in Table 3, the aggregate mean was 2.428 while the aggregate standard deviation was 0.816. In addition, the respondents agreed with a mean of 3.778 (Std. dv = 0.843) that water projects have a high economic value to the county. However, the respondents disagreed with the statement indicating that projects being implemented achieve the intended purpose. This is shown by a mean of 2.156 (Std. dv = 0.818). In addition, they strongly disagreed that the water projects in the county are completed within the targeted budget as indicated by a mean of 1.311 (Std. dv = 0.814). Furthermore, the respondents strongly disagreed with a mean of 1.222 (Std. dv = 0.665) that projects are completed within the stipulated timeline. According to Ibrahim (2016), cost overrun and failure of the project to achieve the intended purpose is as a result of poor organizational as well as financial performance caused by poor post-implementation external agencies and/or governmental involvement as well as support in terms of capacity building facilities, monitoring and financial support

With a mean of 3.667 (Std. dv = 0.846), the respondents agreed that there are few complaints concerning durability of the projects. Nevertheless, they disagreed with the statement indicating that they are satisfied with the services offered by the finished water projects in the county. This is shown by a mean of 2.044 (Std. dv = 0.633). Moreover, they disagreed that the water projects are able to continue providing water services for a long period of time as indicated by a mean of 2.222 (Std. dv =0.894). Furthermore, the respondents strongly disagreed that the project managers ensures project quality is maintained. This is shown by a mean of 1.378 (Std. dv =0.952). These findings are contrary to Gebrehiwot (2015) arguments that willingness to support, sustain and maintain the project financial management and technical support enhances the ability of water project to operate for a long of time while benefiting the end users.

As shown by a mean of 3.778 (Std. dv = 0.843), the respondents agreed that the local community exercise control of the water projects. Moreover, they agreed that they are satisfied with the level of stakeholder ownership in the water projects. These findings concur with Kerzner (2018) arguments that monitoring and evaluation improves the sense on national and communal ownership to the projects due to the emphasis it places on stakeholder involvement in all the stages of a program or project. This is shown by a mean of 3.778 (Std. dv = 0.816). However, they disagreed that the water projects are capable of ensuring service delivery in to a far near future as shown by a mean of 1.378 (Std. dv =0.853)

	Mean	Std. Deviation
The water projects have a high economic value to the county	3.778	0.843
Projects are completed within the stipulated timeline	1.222	0.665
Projects being implemented achieve the intended purpose	2.156	0.818
The water projects in the county are completed within the targeted budget	1.311	0.814
The project managers ensures project quality is maintained	1.378	0.952
The water projects are able to continue providing water services for a long period of time	2.222	0.894
There are few complaints concerning durability of the projects	3.667	0.846
Am satisfied with the services offered by the finished water projects in the county	2.044	0.633
The local community exercise control of the water projects	3.778	0.843
The water projects are capable of ensuring service delivery in to a far near future	1.378	0.853
Am satisfied with the level of stakeholder ownership in the water projects	3.778	0.816
Aggregate Score	2.428	0.816

Table 3: Sustainability of Community Water Projects

INFERENTIAL STATISTICS

The study used both correlation analysis and regression analysis to investigate the association between the independent variable (result oriented approach) and the dependent variable (community water projects' sustainability in Bomet County).

CORRELATION ANALYSIS

The current study used Spearman correlation analysis to examine the strength of the relationship between result oriented approach and community water projects' sustainability in Bomet County. In addition, the results showed that there was a positive association between result oriented approach and community water projects' sustainability in Bomet County ($r=0.906$, $p\text{-value}=0.000$). Since the correlation coefficient of result oriented approach was above 0.7, the relationship was considered to be strong. Besides that the p-value was not more than the significant of 0.05 attributing to the positive association. These findings concur with Vainio, Tienhaara, Haltia and Pouta (2019) findings that result-oriented approach (implementation matrix, result framework, reporting outcomes and reporting impact) influences the performance of projects.

Project sustainability	Pearson Correlation	Project sustainability	Result Oriented Approach
		1	
	Sig. (2-tailed)		

	N	180	
Result Oriented Approach	Pearson Correlation Sig. (2-tailed)	.797** .000	1
	N	180	180

Table 4: Correlation Coefficients

REGRESSION ANALYSIS

The study used regression analysis to examine the weight of the relationship between the independent variable (result oriented approach) and the dependent variable (community water projects' sustainability in Bomet County). The adjusted R-squared in this study was 0.425. This implied that the independent variable (result oriented approach) could explain 42.5% of the community water projects' sustainability in Bomet County. This implies that 57.5% of the community water projects' sustainability in Bomet County is explained by other factors not considered in this study.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.652 ^a	0.425	0.409	0.06539

a. Predictors: (Constant), Result Oriented Approach

Table 5: Model Summary

The analysis of variance showed whether or not the model was a good fit for the data. The F-calculated (4625.146) was greater than the F-critical (3.842), which showed that the model could be used in predicting the influence of the independent variable (result oriented approach) on the dependent variable (community water projects' sustainability in Bomet County). In addition, the p-value (0.000) was less than the significance level (0.05), which showed that the model was a good fit for the data.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	29.095	1	29.095	440.833	.000 ^b
1 Residual	11.748	178	0.066		
Total	40.843	179			

a. Dependent Variable: project sustainability

b. Predictors: (constant), result oriented approach

The regression equation was as follows;

$$Y = 0.234 + 0.629X_1$$

Table 6: Analysis of Variance

The result showed that result oriented approach has a positive and significant influence on community water projects' sustainability in Bomet County as shown by a regression coefficient of 0.629. Since the p-value (0.000) was less than the significance level (0.05), the relationship was considered significant. These findings agree with Kasule (2016) argument that result oriented approach has a positive effect on the project performance and sustainability of projects.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.234	0.113		2.071	0.037
1 Result Oriented	0.574	0.169	0.629	3.396	0.000

Approach

a. Dependent Variable: Project sustainability

Table 7: Regression Coefficients

VI. CONCLUSION AND RECOMMENDATIONS

The study concludes that result oriented approach have a positive and significant effect on the community water projects' sustainability in Bomet County. The study found planning, result framework, implementation matrix and project expectations have an effect on the community water projects' sustainability in Bomet County.

The study found that most of the water projects overran the budget expectations and some projects take more time to be completed than expected. Therefore, this study recommends that the project management committee should adopt monitoring and evaluation techniques such as stakeholders' engagement, analysis of stakeholder, goal management and capacity building to ensure that the view of all stakeholders are incorporated and the project teams acquire the necessary knowledge and skills on project construction.

The study established that the stakeholders are not satisfied with the quality of implementation matrix developed. Therefore, the study recommends that the project management committee should develop a clear format on how the water project will be implemented and the role of each shareholder in the implementation process which acts as a compass towards the achievement of the set goals.

Moreover, the study indicated that project outcome is not always in line with the project expectations. Therefore, this study recommends that the management committee should monitor and conduct regular assessment on the on-going water projects in order to detect and mitigate any possible risk that may arise.

VII. SUGGESTION FOR FURTHER RESEARCH

This study was limited to community water projects in Bomet County, Kenya hence its findings cannot be generalized to other projects in Bomet County. The study therefore suggests similar studies on the effect of result oriented approach on performance of other projects in Bomet County as well as other counties in Kenya. In addition, the study found that result oriented approach could explain 42.5% of the community water projects' sustainability. Therefore, further studies should be conducted to investigate other factors influencing the sustainability community water projects.

REFERENCES

- [1] African Development Fund (2005). African Water Facility. Retrieved from <https://www.afdb.org>
- [2] Ahadzie, D.K. (2007) A Model for Predicting the Performance of Project Managers in Mass House. Journal of Entrepreneurship & Project Management, 2(1), 20-33.

- [3] Baumgartner, R. J., & Ebner, D. (2010). Corporate sustainability strategies: sustainability profiles and maturity levels. *Sustainable Development*, 18(2), 76-89.
- [4] Burke, S. (2014). Human-Capital Investment and Productivity. *The American Economic Review*, 21, 56-78.
- [5] Chumbula, J. J. (2016). Sustainability of Water Projects: A Case of Selected Projects in Iringa District, Tanzania. *Sustainable or Dispensable Community Development journal* 42 (3), 365.
- [6] Creswell, J.W. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (4th Ed.). Lincoln, NE: SAGE Publications, Inc.
- [7] Eberhardt, A. (2016). Result-oriented management concepts in environmental and sustainability policies. *Social Policy*, 15, 54-62.
- [8] Elimelech, M. (2014). Increasing Functional Sustainability of Water and Sanitation Supplies in Rural Sub-Saharan Africa. *Environmental Engineering Science*, 26, 1017-1023.
- [9] Gebrehiwot, M. (2015). An Assessment of Challenges of Sustainable Rural Water Supply: The Case of ofla Woreda in Tigray Region. *Transactions on Engineering Management*, EM-23(3), 116-123.
- [10] Gumz, J. & Parth, F. R. (2007). *Why use a hammer when you need a wrench: results-based monitoring and evaluation of projects*. Newtown Square, PA: Project Management Institute.
- [11] Ibrahim, S. (2016). Sustainability Assessment of Community-Based Water Supply Projects in Sudan using Sustainability Index and Multivariate Analysis. *Journal of Water Sustainability*, 23, 45-67.
- [12] Imunya, H. G. (2014). *Determinants Influencing Sustainability of Orphans Donor Funded Project of Church Based Organization in Kenya: A Case of Zoe Ministry*. (Master's thesis) Kenyatta University, Kenya. *Systemic Practice & Action Research*, 29(6), 597-610.
- [13] Jacobs, A., Barnett, C. & Ponsford, R. (2010). Three Approaches to Monitoring: Feedback Systems, Participatory Monitoring and Evaluation and Logical Frameworks. *IDS Bulletin*, 41, 36 - 44.
- [14] Janapati, V., Kopsaftopoulos, F., Li, F., Lee, S. & Chang, F. (2016). Damage Detection Sensitivity Characterization of Acousto-Ultrasound-based SHM Techniques. *Structural Health Monitoring*, 15, 143-161.
- [15] Karl, J., Rodrigues, S. & Sheils, S. (2010). Results based management: Theory and application. *Journal of Management*, 34(6), 1152-1189.
- [16] Kasule, J. S. (2016). Factors Affecting Application of Results Based Monitoring and Evaluation System by Nurture Africa. Retrieved from <https://utam.ac.ug/docs/>
- [17] Kothari, C. R. (2003). *Research Methodology, Methods and Techniques* New Delhi: New Age International Limited.
- [18] Mansuri, G. & Rao, V. (2004). Community-Based and -Driven Development: A Critical Review. *The World Bank Research Observer*, 19, 1-39.
- [19] Mugenda, O.M. and Mugenda, A. G. (1999). *Research Methods; Quantitative and Qualitative Approaches*, Nairobi. Acts Press.
- [20] Nabifwo, L. W., & Kimutai, G. (2018). Sustainability of Water, Sanitation and Health Projects Implemented By African Medical and Research Foundation in Nairobi City County, Kenya. *International Journal of Entrepreneurship and Project Management*, 2(4), 1-12.
- [21] Ngetich, R. C. (2009). Assessment of Factors Influencing Projects Sustainability; the Case of Community Water Projects in Keekonyokie Central Location of Kajiado North District, Kenya. *International Journal of Education and Research*, 2(2), 1-12.
- [22] Njonjo, A. and J. Lane, (2002). *Rural Piped Water Supplies in Ethiopia, Malawi and Kenya Community Management and Sustainability*. Nairobi, Kenya.
- [23] Nyamupachitu, J. (2018). An Assessment of the Implementation of Results Based Management Approach in Non-Governmental Organizations: A Case Study of the Ecumenical Pharmaceutical Network. Retrieved from <http://erepository.uonbi.ac.ke>
- [24] Nzekwe, J., Oladejo, E. & Emoh, Fs. (2015). Assessment of Factors Responsible for Successful Project Implementation in Anambra State, Nigeria. *International Journal of Energy and Environmental Research*, 3(3), 1-20.
- [25] Olela, E. S. & Wanyonyi, L. (2018). Factors influencing sustainability of water supply projects for rural communities in arid and semi-arid lands: A case of Garbatula Sub County in Isiolo County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(2), 516-537
- [26] Papke-Shields, K., Beise, C. and Quan, J. (2010). Do project managers practice what they preach, and does it matter to project success? *International Journal of Project Management*, 28(7), 650-662.
- [27] United Nations Development Programme (2009). *UN-Water Annual Report 2009*. <https://www.undp.org>
- [28] US Agency for International Development (2012). *Usaid Water and Development Strategy 2013-2018*. Retrieved from <https://www.usaid.gov>
- [29] Vähämäki, J., Schmidt, M. & Molander, J. (2011). Results based management in development cooperation. Retrieved from <http://www.gprba.org>
- [30] Vainio, A., Tienhaara, A., Haltia, E. & Pouta, E. (2019). The legitimacy of result-oriented and action-oriented agri-environmental schemes: A comparison of farmers' and citizens' perceptions. *Land Use Policy*, 10, 43-58.
- [31] Wang, P. & Huang, N. (2018). Relationship quality and satisfaction: Customer perceived success factors for on-time projects. *International Journal of Project Management*, 33, 1836- 1850.
- [32] World Bank (2013). *Water Supply and Sanitation: Sector Results Profile*. Retrieved from <https://www.worldbank.org>
- [33] World Bank (2015). *Sustainability Assessment of Rural Water Service Delivery Models*. Retrieved from <https://documents1.worldbank.org/>