ISSN 2349-7831

International Journal of Recent Research in Social Sciences and Humanities (IJRRSSH)
Vol. 5, Issue 2, pp: (236-247), Month: April - June 2018, Available at: www.paperpublications.org

Factors Influencing Sustainability of Rural Water Supplies Managements in Kenya: A Case Study of Marakwet West Sub County, Elgeyo Marakwet County, Kenya

[1*]William K Kilimo, [2]Dr. Elizabeth Nambuswa Makokha

[1]College of Human Resource Development, Department of Entrepreneurship and Procurement, Leadership and Management, Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya

[2]College of Human Resource Development, Department of Entrepreneurship and Procurement, Leadership and Management, Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya

Abstract: **The purpose of this Proposal was to analyse the Factors influencing Sustainability of Rural Water Supplies Management in Kenya: A Case Study of Marakwet West Sub County Elgeyo Marakwet County Kenya. It was guided by the following objective. To assess the effect of Proposal management committee on sustainability of water projects in Marakwet West Sub County. The study was guided by Resource Based Theory (RBT), Resource Dependence Theory (RTD) and Complexity Theory (CT). The knowledge was therefore important information that integrated to Proposal cycle before or towards completion by government, private and non-governmental organizations. The study adopted a descriptive design. The total target population was 108,540 people residing in the sub county as provided by the Statistic office of the sub county that included: households who are the primary consumers of the Proposals, Ward water officers, and the Proposal committee members are entrusted with management of the Proposals. With a sample size of 259 from simple random sampling. Questionnaires were used as the data collection instrument. The researcher visited each of the sampled departments and households to personally administer the questionnaires. Pilot done for validity and reliability of the instrument. It was analyzed both qualitatively and quantitatively using the Statistical Package for Social Scientists (SPSS) version 20. The collected questionnaires were first be checked for completeness and then coded as per the research questions. From the findings, proposal management committee ($\beta = 0.378$) was found to be positively related sustainability of water projects. From t-test analysis, the t -value was found to be 3.308 and the ρ -value 0.024. Statistically, this null hypothesis was rejected because $\rho<0.05$. Thus, the study accepted the alternative hypothesis and it concluded that Proposal management committee and sustainability of water projects in Marakwet West Sub County. Based on the findings, the researcher recommended the following: Communities should be invited and given a chance to participate as leaders in the committee when preparing proposals to enhance sustainability of water projects. Communities involved in water services should be empowered to have technical and expertise as to operate the equipment or on maintenance of the equipment. There are adequate competent personnel to manage the proposal for prosperity. Management of proposals in Water Company should increase the alignment of development proposals with host communities 'priorities. They should adopt and embrace modern technology in sustainability of community based water projects for ease of operations and maintenance and for proper management and accountability. The findings of this study provided important information and knowledge that influences policy and reforms for enhancing sustainability pertaining to water Proposals; and Lesson drawn from this study may be utilized by the communities, implementing partners, Donors and International NGOs to address the sustainability challenges and plan the better ways of implementing the sustainable community based water Proposals.**

Keywords: **proposal management committee, sustainability, committee.**

ISSN 2349-7831

International Journal of Recent Research in Social Sciences and Humanities (IJRRSSH)
Vol. 5, Issue 2, pp: (236-247), Month: April - June 2018, Available at: www.paperpublications.org

1. INTRODUCTION

Globally, water resources management has been acknowledged to be difficult requiring the integration of various types of information in the context of uncertainty, heterogeneity, competing objectives and limited resources (Park, Roberts, Alexander, McNamara, & Pannell, 2013). In Europe, the Water Framework Directive provides a high-level legal framework within which Member States are responsible for developing river basin-based approaches for meeting 'good ecological status for all waters (Patterson, Smith, & Bellamy, 2013). Similarly, in Canada, the South Saskatchewan River Basin (SSRB) provides an example of river basin governance situation characterized by decentralized, multilevel with assigned water licenses as asserted by Hurlbert and Diaz (2013). Such an assertion has also been made regarding water catchment management in most Western Countries such as Murray-Darling in Australia, Rhine and Danube water basins in Europe which involve integrated approach to managing rivers (Pegram, Yuanyuan, Quesne, Speed, Jianqiang, & Fuxin, 2013).

In September 2000,189 United nations (UN) member States adopted the MDGs, setting clear, time bound targets for making real progress on the most pressing development issues we face. Goal 7 was to ensure environmental sustainability and one of its targets was to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation (UNICEF and WHO, 2004).The human society is facing four large problems defined as water, food, energy and environment. Water related problems are the most essential since they implicitly interact with the other three. Production of food and generation of energy critically depend on water (IWMI, 2007).

It has been estimated that 1.2 billion people become sick annually as a result of poor quality drinking water (Cech, 2010). UNEP (2004) projected that two thirds of the world's population will be living in water stressed countries by the year 2015. In some places water is abundant, but getting it to the people is difficult because of restricted access as a result of political and socio-cultural issues. In other places, the shortage is due to poor management of the available water resources (Abu-Eid, 2007). The recognition by the UN General Assembly, in 2010, of water and sanitation as a human right provides additional political impetus towards the ultimate goal of providing everyone with access to these vital services. With this in mind, the United Nations Millennium Development Goals (MDG) aims at halving the proportion of people without sustainable access to safe drinking water and basic sanitation by the year 2015 (WHO, 2010).

According to UNICEF, The use of improved sources of drinking-water is high globally, with 87 percent of the world population and 84 percent of the people in developing nations getting their drinking-water from such sources. Even so, 884 million people in the world still do not get their drinking-water from improved sources, almost all of them in developing regions. Sub-Saharan Africa accounts for over a third of that number, and is lagging behind in progress towards the Millennium Development Goals (MDG) target, with only 60 percent of the population using improved sources of drinking-water despite an increase of 11 percenat points since 1990. (JMP Report, 2010). Nearly 10 percent of the total burden of disease worldwide is attributable to unsafe water, sanitation, and hygiene and the associated diseases claim 3.6 million lives annually (Pruss-Ustun et al., 2008). Access to improved water and sanitation is important because it is the foundation for healthy communities, and results in significant health, economic, and social gains (Mihelcic et al 2003) and in both the water and sanitation sectors, there is critical need for greater sustainability. Agenda 21 provides a general framework for examining sustainability of water and sanitation. The document declares that ''sustainability is the integration of environmental and development concerns for the fulfillment of basic needs and improved living standards for all'' (UNDP-WSP 2006).

For most rural households throughout Sub-Saharan Africa (SSA), there is limited access to safe water resources on the premises, which results in women and children often walking long distances in search of water to fulfill basic daily water requirements (Baker, Cullen, Debevec, & Abebe, 2015). In Zimbabwe, they sought to bring together fragmented water institutions and users into an integrated planning, allocation and management framework (Chifamba, 2013). In Tanzania, has demonstrated a bias toward the formal state-based institutions for water management leading to an increase in the number of state-based formal institutional arrangements through which Water Resources Associations (WRUAs) were formed besides providing frameworks for water allocation (Sokile & Koppen, 2004). However, a number of countries that have attempted to develop reform processes based on principles have faced significant difficulties in doing so (Pegram, Yuanyuan, Quesne, Speed, Jianqiang, & Fuxin, 2013). As Jiang (2009) asserts, water resource management has been_poor, which has led to an increased vulnerability to increasingly severe water shortages. Moreover, the complexity of many of the world's river basins has increased and many have experienced serious water resources management

challenges ranging from flashfloods, poor water quality, reduced water quantity, catchment degradation, lack of community participation and involvement and increased water related conflicts (Pegram, Yuanyuan, Quesne, Speed, Jianqiang, & Fuxin, 2013).

The World Health Organization report, with specific focus on rural Sub-Saharan Africa has made not only does the region lay claim to some of the world's greatest water and sanitation challenges (UNESCO, 2006), but over half of its population is expected to remain rural until at least 2030 (UN, 2000). According to United Nations (2000) there are more than 1 billion people in the developing world that are unable to access, on a daily basis, a reliable source of clean, freshwater. They further posit that the challenge of water for all is one that has taken on renewed interest through the declaration of the Millennium Development Goals (MDG), which has, the specific target, of reducing by half the proportion of people without sustainable access to safe drinking water by 2015.

According to WHO/UNICEF (2008) progress has been made towards meeting the water supply needs for the world's poor, for example, in 2002, 79 percent of the population in developing countries had access to improved water supplies, bringing up the total world coverage to 83 percent. This is an increase of 8 percent from 1990 to 2002. De Regt (2005) argues that with over 75percent of the Africa's poor living in rural areas, there is need to expand sustainable water service to these areas. But, Reif et al. (1996; Baker 2000) posit that community based Proposals fail due to a lack of understanding of the specific context of the community or a lack of effective support structures. Water is a basic need for human existence hence a fundamental right (Republic of Kenya, 2010). It plays very important role for the wellbeing of the environment, life forms including various animal species and vegetation (Brauman, 2015). Societies, economies and natural systems rely on water resources for their proper functioning (Pegram, Yuanyuan, Quesne, Speed, Jianqiang, & Fuxin, 2013). According to Kalbus, *et al*. (2012), around 900 million people do not have access to safe drinking water and about 2.6 billion people are living without adequate sanitation in the world. Meanwhile, an increasing number of countries continue to experience water stress with most river basins having non-existent or unsatisfactory mechanisms and institutions to manage water resources (Rahaman & Varis, 2005). Therefore, in order to attain sustainable development, improving water resources management has been considered integral to realizing socio-economic development as well as providing environmental services that are sustainable (Kalbus, *et al*., 2012).

Access to rural water supply remains low in Kenya. In particular, access to piped water has only increased from 9 to 10 percent of rural households over the past eight years. Small community-based water providers are seen as part of the solution and are supported by the Water Sector Act of 2002, which introduced regulatory and tariff reforms. However these small water projects lack funding, especially to improve existing systems (Gok, 2009). According to Mbata (2006) the sustainability of any community Proposals requires a team of highly competent managers owing to many dynamics of the Proposal implementation. The failure of community based Proposal is largely blamed on lack of professionalism and management skills of the Proposal implementers owing to poor academic background. In order to establish good rapport leaders need time, resources and authority to invest in a Proposal. Flexibility is critical in the way leaders interpret their own and others' roles and in the activities they and the Proposals undertake (Carter et al. 1999). The key causes for failure of community based water projects include inappropriate policy or legislation; insufficient institutional support; unsustainable financing mechanisms; ineffective management systems; and lack of technical backstopping (Niyi et.al, 2007). Water supply schemes to communities should therefore consider the effects of this culture of 'non-denial' on the capacity of the facility they provide since it may serve neighbouring communities (Gebrehiwot, 2006).

Kenya is a water scarce country with renewable fresh water per capita of 647 m3 against the United Nations recommended minimum of 1000 m3 (JICA, 1992). Projections indicated that if no remedial measures are taken then the per capita water availability will decline to 235m3 by 2025 which is considered to be below limits of water barrier (GOK, 2009). The World Water Development Report (UNESCO, 2006) sums up the current situation in Kenya as: 'Demand management strategies are lacking, and water resources allocation decisions related to surface and groundwater abstractions are made without data.' With a population of 38.6 million in 2009 and a projected population of 43 million by 2015 (MWI, 2007), Kenya faces enormous challenges in the management of its limited water resources. Despite a remarkable decrease in population growth rate over the past decades, Kenya's annual population growth rate is still one the highest in the world at 2.6%. Population growth rates in densely populated regions have led to rural – urban migration. This has over-stretched resources in the urban areas.

Decreasing standards of land management, infrastructure, water and sanitation and municipal services have led to a steady decline on health and environmental standards as well as increased vulnerability to human-made and natural disaster. The rate of urbanization in Kenya is one of the highest in the world. While the estimated annual rate of growth of urban population in Kenya is 7.05% for the period of 1995 – 2007, the average for African cities is 4.37% and 2.57% for the world (GOK, 2009b). Kenya's Vision 2030 (GOK, 2007) recognizes the crucial role water resources will play in supporting the socio-economic development of Kenya. The Vision aims at ensuring that all Kenyans have access to adequate water resources and sanitation facilities by 2030 and this would be achieved through implementing programmes and Proposals on water resources management, water storage and harvesting, water supply and sanitation and irrigation and drainage. Vision 2030 recognizes that water is a basic need and an important catalyst for both economic and social development of the country. It states that 'access to water for human consumption, agriculture, and livestock use is a major problem in rural areas.' It is thus paramount to improve the living standards of the rural communities through the provision of sustainable water resources which will be used productively.

Kenya enacted the new constitution (Republic of Kenya, 2010) in which the Bill of Rights, Article 43(1) (d) confers on every person the right to clean and safe water in adequate quantities. However, it is regarded as water scarce country with a natural endowment of freshwater per capita per annum estimated at about 1985m3 with flood water incorporated and 647m3 without incorporating floodwater (Republic of Kenya, 2012). Only about 57% of the population has access to improved water source. This compares unfavorably with the neighboring countries of Tanzania and Uganda, with per capita levels of 2696 and 2940m3 respectively (UNDP, 2006). Moreover, Kenya's per capita is expected to drop to 250m3 in 2025 when the population is projected to rise to sixty million and 235m3 by 2035, unless effective measures to address the challenges facing water resources management are implemented (Republic of Kenya, 2007d).

Scarcity and unreliability of water resources has been impacting negatively on agriculture, domestic water use and livestock development in various parts of Kenya. As a consequence, various regions of the country are faced with serious challenges related to water resources management for continued social and economic development (Agwata & Abwao, 2007). However, this would entail involving all the actors in the water sector in participatory management approaches that pay attention to the interests of the stakeholders and their water-related activities which include agriculture, power generation, domestic, industrial use, and fishing (REMPAI, 2009).

Among the approaches shown to be effective in speeding up progress towards attaining Goal 7 of the MDGs on provision of safe drinking water and sanitation, is decentralizing responsibility and ownership and providing a choice of service levels to communities, based on their ability and willingness to pay (UNICEF & WHO, 2004). Based on this understanding, the country has experienced a systematic shift toward the decentralization of water management activities since the year 2002. In an effort to address the issues and challenges in the water sector as well as the severity of water crisis, the country embarked on a comprehensive water sector reforms programme which culminated in the enactment of the Water Act, 2002. The water sector reforms took cognizance of MDG 7 (a) which aimed at integrating the principles of sustainable development into the country's policies and programmes (Republic of Kenya, 2002). As pointed out by WRMA (Republic of Kenya, 2012), due to the cross-cutting nature of water resources, their management should be approached through principles which require participation of stakeholders to execute programmes.

Gebrehiwot (2006) asserts that there is evidence that in developing countries, national and regional governments, local and international NGOs and other concerned organizations invest large sums every year for the implementation of rural water supply Proposals. In National Water Policy (2002) stipulates that communities are responsible for full cost recovery, which means the recovery of the complete cost of the installation of the system, as well as covering costs for operation and maintenance. Therefore sustainability is not just reaching the design life of a technology, but about the ongoing availability of clean, affordable and accessible water. However, construction of water projects is not the panacea to provision of clean water for local communities. This is so because according to the local water board of Elgeyo Markwet West, the Proposals run down barely into a year after being handed over to the community. This becomes a threat to the many gains like, improving health, reducing the burden of carrying water long distances, and enabling users to live a life of dignity among others that can be accrued if there were sustainable water projects in the sub county. For instance, In order to make the investment in water supplies more effective, failure rates of these systems should be reduced. This will be the motivation on the researcher to find out the factors that may influence the Sustainability of Rural Water Supplies Management in Kenya: A Case Study of Marakwet West Sub County Elgeyo Marakwet County Kenya.

International Journal of Recent Research in Social Sciences and Humanities (IJRRSSH)
Vol. 5, Issue 2, pp: (236-247), Month: April - June 2018, Available at: www.paperpublications.org

2. PROPOSAL MANAGEMENT COMMITTEE ON SUSTAINABILITY OF COMMUNITY WATER PROPOSALS

Human capacity development through specialized training of Proposal managers, staff, community members and the whole Proposal team has been noted to be important for Proposal success and sustainability. (Campo, 2008), in an intervention model introduced in Peru for water supply considered community training as an important component in which the Proposal used various methods of training such as audio-visuals, visual etc., argues that training on issues like operation and maintenance empower the communities to look after water supply systems thus aiding sustainability. Lack of community training is cited as one of the factors which could lead to breakdown and non-sustainability of water supply Proposals in developing countries (Ademiluyi and Odugbesan, 2008). They further point out that even where full community participation or management is planned from the start, community-level committees and care takers may lose interest or trained individuals may move away. This can be a particular risk if community level organization is on a voluntary basis. (Mengesha et al., 2003) in their study on sustainability of drinking water supply Proposals in Rural of North Gondar, Ethiopia recommend that building adequate skills and capacity to maintain water sources is an essential factor to sustain the water system.

Water technology that fails to fulfill the needs of its users, which is poorly installed or which is difficult to maintain or repair, possess significant challenges for sustainability. Water Aid's recent sustainability study in Zambia highlighted, for example, the rapid corrosion of hand pump rising mains as a constraint to sustainable community water supplies (Len Abrams, 2003). There is no such thing as a maintenance-free technology yet even gravity water supply schemes, which were expected to provide sustainable services, have failed to live up to that promise. Proasne (2005). Argues that for water projects to give sustainable results, Proposal Managers should ensure that there will be funding to support identified solutions to the problems in long term, and for this to happen it is necessary that the technologies used be cost effective and CMs receive instructions on the new techniques as well as training on how to maintain and repair the equipment. Cost effective technologies will give CMs a humble time in terms of repair and maintenance, and this will enhance sustainability of the Proposal.

Management of Proposals involves increasing the alignment of development Proposals with host communities priorities and coordinating aid efforts at all levels (local, national, and international) to increase ownership and efficient delivery of services. It is therefore basically offering leadership to achieve certain laid objectives. According to McDade (2004), good management ensures that sufficient local resources and capacity exist to continue the Proposal in the absence of outside resources.

Community based Proposals are complex (Weinberg, 2008) and require multifaceted management skills. A Proposal manager (PM) has to manifest not only Proposal management related skills (Kirsch, 2000), but also technical and expertise as required by the Proposal (Thite, 2001). Proposal management activities include but are not limited to defining Proposal scope and requirements gathering, managing resources and relevant training issues within a Proposal, advising about technical architecture, identifying specific and general Proposal management practices and escalation procedures, estimating Proposal schedule and budget, ascertaining and managing risks within a Proposal and preparing risk mitigation

The matching or fit between a PM and Proposal extends not only to the technical skills as enumerated above, but also to other general Proposal-PM profile attributes, such as prior exposure to the methodology experience (Swanson and Beath, 2000). A PM is likely the most senior person within a Proposal and is often perceived as a sounding board for technical and architectural decisions made for the Proposal. In addition, the PM is also expected to demonstrate a deep knowledge of the business objectives of the Proposal being undertaken (Bloom, 2006). Prior literature has shown that task familiarity helps in improving performance and increasing sustainability of a Proposal (Goodman and Leyden, 2001). Prior exposure to the Proposal characteristics such as technology, or methodology would make the current task more familiar to the PM, and hence improve sustainability (Banker and Slaughter 2000).

According to Espinosa, et al. (2007) task familiarity is important in the community based Proposals and this is usually linked to performance which in turn is linked to sustainability. As irsch (2000) and Thite (2001) suggest, a PM should be able to take on the leadership role with respect to not only managing the Proposal but also leading the technological initiatives. McDade (2004) indicated that individuals with good management skill are considered to be good leaders and therefore, through their leadership organizations are steered to prosperity. Precise nature of leadership and its relationship

to key criterion variables such as subordinate satisfaction, commitment, and performance is still uncertain, leadership does remain pretty much of a 'black box' or unexplainable concept.' However, not all leaders are good managers. Therefore, in the quest to establish effect of management skills on sustainability of community Proposals, leadership should be distinguished from management.

Chemers and Mahar, (2004) indicated that management involves planning, organizing, staffing, directing, and controlling, and a manager is someone who performs these functions. A manager has formal authority by virtue of his or her position or office. Leadership, by contrast, primarily deals with influence. A manager may or may not be an effective leader. A leader's ability to influence others may be based on a variety of factors other than his or her formal authority or position (Andriessen and Drenth, 2007).

Kirsch (2000) has highlighted that successful Proposal management requires both hard and soft skills. Hard skills comprise technological skills, domain expertise, experience as well as Proposal management experience, and Proposal management skills such as planning, monitoring, risk management and scheduling. Soft skills are intangible, and are primarily concerned with managing and working with people and fostering inter- and intra- organizational 'relationships.' Such skills include but are not limited to organizational knowledge, tacit knowledge in handling people within the organizational structure, leadership and management skills, and customer handling skills (Becker, 1975; Lee et al., 1995; Kirsch, 2000). Thite (1999) has emphasized that both technical and transformational leadership skills are required of IT managers. As prior research has found (e.g., Byrd and Turner, 2001), both hard and soft skills are necessary in IT professionals to achieve higher performance. However, to the best of our knowledge, there has been no study that measures the direct impact of the PM's skills, especially soft skills, on Proposal success.

General human capital comprises technological skills, domain expertise, experience as well as Proposal management experience, and Proposal management skills such as planning, monitoring risk management and coordination. An individual can use general human capital to increase productivity in many firms. Specific human capital utilizes skills that are intangible, and may be specific to a particular firm or environment (Becker, 1975; Lee et al., 1995; Kirsch, 2000). While the PM's hard skills play a role in determining Proposal performance, team members also play a crucial role. When team members are more familiar with each other, the coordination effort required is lower, because familiarity can provide information about the task and task stakeholders (Espinosa et al., 2007). For example, when team members interact with each other over the course of a Proposal, they develop a road map of expertise, that is, they know where and how to locate the expertise needed when in the next Proposal (Boh et al., 2007). Because coordination is easier to accomplish in a more familiar team, we expect that the PM's soft skills are more helpful for less familiar teams, in terms of facilitating Proposal performance and therefore ensuring sustainability of the said Proposals.

Prior literature has examined the congruence between personnel's management skills and Proposal success (Pagell et al., 2000). This approach inherently assumes that there is a congruent relationship between the performance, organization, and context, and thus predicts a unidirectional effect between skills and performance. While the direct impact of these skills is anticipated, it is important to explore how the fit – between PM skills and the Proposal characteristics – impacts Proposal sustainability. Pagell et al., (2000) find that the impact of fit between skills and environment on performance is more significant compared to the direct impact of skills on performance. Proposal managers need to match resources to the Proposal needs. Resource allocation requires a matching of Proposal characteristics with the skill sets of the PM. Such a matching can also be viewed as a strategic choice in response to the (Proposal) environment. Venkatraman and Prescott (1990) suggest that any deviation from an optimal pattern of resource allocation should be significantly and negatively related to performance and thus sustainability (Martin et al., 2004).

3. METHOD

The study adopted a descriptive design. The total target population was 108,540 people residing in the sub county as provided by the Statistic office of the sub county that included: households who are the primary consumers of the Proposals, Ward water officers, and the Proposal committee members are entrusted with management of the Proposals. With a sample size of 259 from simple random sampling. Questionnaires were used as the data collection instrument. The researcher visited each of the sampled departments and households to personally administer the questionnaires. Pilot done for validity and reliability of the instrument. It was analyzed both qualitatively and quantitatively using the Statistical Package for Social Scientists (SPSS) version 20. The collected questionnaires were first be checked for completeness and then coded as per the research questions.

ISSN 2349-7831

International Journal of Recent Research in Social Sciences and Humanities (IJRRSSH)
Vol. 5, Issue 2, pp: (236-247), Month: April - June 2018, Available at: www.paperpublications.org

4. DISCUSSION

The study sought to assess the effect of proposal management committee on sustainability of water projects in Marakwet West Sub County. The findings are presented in a five point Likerts scale where SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree and T=total.

From table 4.1 below, the respondents were asked whether there is sufficient technical expertise to manage the proposal. The distribution of findings showed that 5.5 percent of the respondents strongly agreed, 35.5 percent of them agreed, 30.9 percent of the were neutral, 11.8 percent disagreed while 16.4 percent of them strongly disagreed. These findings implied there is sufficient technical expertise to manage the proposal.

The respondents were also asked whether management of proposals has increased the alignment of development proposals with host communities priorities. The distribution of the responses indicated that 6.4 percent strongly agreed to the statement, 36.4 percent of them agreed, 19.1 percent of them were neutral, 27.3 percent of them disagreed while 10.9 percent of them strongly disagreed to the statement. These findings implied that management of proposals has increased the alignment of development proposals with host communities' priorities.

The respondents were also asked whether that the management team makes it possible for the proposal to last for long. The distribution of the responses indicated that 12.7 percent strongly agreed to the statement, 41.8 percent of them agreed, 17.3 percent of them were neutral, 22.7 percent of them disagreed while 5.5 percent of them strongly disagreed to the statement. These findings implied that the management team makes it possible for the proposal to last for long.

Finally, the respondents were asked whether the poor management team leads proposal stalling after a short while.The distribution of the responses indicated that 28.2 percent strongly agreed to the statement, 36.4 percent of them agreed, 17.3 percent of them were neutral, 12.7 percent of them disagreed while 5.5 percent of them strongly disagreed to the statement respectively. These findings implied that the poor management team leads proposal stalling after a short while.

Table 4.1: Effect of proposal management committee on sustainability of water projects

Statements		SA	A	N	D	SD	T
There is sufficient technical expertise to manage the proposal	%	5.5	35.5	30.9	11.8	16.4	100
The leadership skills of the managers is satisfactory	%	6.4	36.4	19.1	27.3	10.9	100
The community is satisfied with the overall management of the water proposal	%	12.7	41.8	17.3	22.7	5.5	100
Management of proposals has increased the alignment of development proposals with host communities priorities	%	0.9	52.7	18.2	6.4	21.8	100
That the management team makes it possible for the proposal to last for long	%	28.2	36.4	17.3	12.7	5.5	100
The poor management team leads proposal stalling after a short while							

4.1 Inferential Statistics:

4.1.1 Pearson Correlation:

The study sought to establish the strength of the relationship between independent and dependent variables of the study. Pearson correlation coefficient was computed at 95 percent confidence interval (error margin of 0.05). Table 4.2 illustrates the findings of the study.

Table 4.2: Correlation Matrix

		Sustainability Of Water Projects
Proposal management committee	Pearson Correlation	.728**
	Sig. (2-tailed)	.000
	N	250

As shown on Table 4.2 above, the p-value for Proposal management committee was found to be 0.000 which is less than the significant level of 0.05, ($p<0.05$). The result indicated that Pearson Correlation coefficient (r-value) of 0.728, which represented a strong, positive relationship between Proposal management committee and sustainability of water projects in Marakwet West Sub County.

4.1.2 Multiple Linear Regression:

Multiple linear regressions were computed at 95 percent confidence interval (0.05 margin error) to show the multiple linear relationship between the independent and dependent variables of the study.

4.1.3 Coefficient of Determination (R^2):

Table 4.3 shows that the coefficient of correlation (R) is positive 0.529. This means that there is a positive correlation between factors influencing Sustainability of Rural Water Supplies Management in Kenya. The coefficient of determination (R Square) indicates that 27.9 percent of Sustainability of Rural Water Supplies Management in Kenya is influenced by factors. The adjusted R^2 however, indicates that 25.2 percent of Sustainability of Rural Water Supplies Management in Kenya is influenced by factors leaving 74.8 percent to be influenced by other factors that were not captured in this study.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529[a]	.279	.252	4.10718

a. Predictors: (Constant), Proposal Management Committee,

4.1.4 Analysis of Variance:

Table 4.4 shows the Analysis of Variance (ANOVA). The p-value is 0.000 which is < 0.05 indicates that the model is statistically significant in predicting how Factors influencing Sustainability of Rural Water Supplies Management in Kenya. The results also indicate that the independent variables are predictors of the dependent variable.

Table 4.4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	786.720	4	171.691	58.650	.000[b]
	Residual	2993.440	245	19.869		
	Total	3780.160	250			

4.1.5 Regression Coefficients:

From the table 4.5 of the Coefficients table, the regression model can be derived as follows:

$$\mathbf{Y = 43.619 + 0.378X_3}$$

The results in table 4.5 indicate that all the independent variables have a significant positive effect on sustainability of water projects in Marakwet West Sub County. Proposal management committee was found to be influential with a coefficient of 0.378 (p-value = 0.023). According to this model when all the independent variables values are zero, sustainability of water projects will have a score of 43.619.

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	43.619	2.638		14.276	.000
	Proposal management committee	.378	.171	.350	3.308	.024

4.1.6 Hypothesis Testing:

Ho_3: There is no significant relationship between Proposal management committee and sustainability of water projects in Marakwet West Sub County.

From Table 4.6 above, proposal management committee (β = 0.378) was found to be positively related sustainability of water projects. From t-test analysis, the t -value was found to be 3.308 and the ρ -value 0.024. Statistically, this null hypothesis was rejected because ρ<0.05. Thus, the study accepted the alternative hypothesis and it concluded that Proposal management committee and sustainability of water projects in Marakwet West Sub County.

5. CONCLUSION AND RECOMMENDATIONS

From the findings, proposal management committee (β = 0.378) was found to be positively related sustainability of water projects. From t-test analysis, the t -value was found to be 3.308 and the ρ -value 0.024. Statistically, this null hypothesis was rejected because ρ<0.05. Thus, the study accepted the alternative hypothesis and it concluded that Proposal management committee and sustainability of water projects in Marakwet West Sub County.

Based on the findings, the researcher recommended the following: Communities should be invited and given a chance to participate as leaders in the committee when preparing proposals to enhance sustainability of water projects. Communities involved in water services should be empowered to have technical and expertise as to operate the equipment or on maintenance of the equipment. There are adequate competent personnel to manage the proposal for prosperity. Management of proposals in Water Company should increase the alignment of development proposals with host communities 'priorities. They should adopt and embrace modern technology in sustainability of community based water projects for ease of operations and maintenance and for proper management and accountability.

REFERENCES

[1] Abu-Eid, A. (2007) 'Water as a Human Right: Palestinian Occupied Territories.' *International Journal of Water Resources Development*, 36.

[2] Ademiluyi, I.A. & Odugbesan, J. A. (2008). *African Journal of Agricultural Research* Vol. 3 (12), pp. 811-817, December, 2008.

[3] Admassu *et.al*, (2002) Identifying key characteristics of technical Proposal leadership. *Leadership and organization Development Journ*al 20(5) 253-261.

[4] Admassu, M., Kumie, A., & Fantahun, M. (2002). Sustainability of Drinking Water Supply Proposals in Rural of North Gondar, Ethiopia, *Ethiopian Journal of Health Development*, 2003(3):221-229.

[5] Agwata, J. F., & Abwao, P. (2007). A Review of Multilateral Agreements and their Implications for Environmental Governance in Kenya. In Waswa, F., Otor, S., Olukoye, G, & Mugendi, D. (eds), Environment and Sustainable Development: A Guide for Higher Education in Kenya, Volume 2. School of Environmental Studies and Human Sciences, Kenyatta University. 209- 223

[6] Amit, R. & Schoemaker, P J H. (1993). Strategic assets and organizational rent, *Strategic Management Journal*, 14 (1), 33-46.

[7] Armitage (2003). The institutional origins of dynamic capabilities in multinational enterprises, *Industrial and Corporate Change*, 19(4), 1225-1246.

[8] Andriessen and Drenth, (2007) Rapid Appraisal for Rural Proposal Preparation. *Agricultural Administration* 8, 463-471.

[9] Baker, T., Cullen, B., Debevec, L., & Abebe, Y. (2015). A socio-hydrological approach for incorporating gender into biophysical model and implications for water resources research. Applied Geography, 62, 325-338.

[10] Baker, R. D., & Slaughter, S. A. (2000). The moderating effects of structure on volatility and complexity in software enhancement. *Information Systems Research* 11(3) 219–240.

[11] Bhandari and Grant, (2007). Rural Appraisal: Rapid Relaxed, and Participatory. *IDS Discussion Paper 311*, Institute of Development Studies, University of Sussex

[12] Binder, (2008). User Satisfaction and Sustainability of Drinking Water Schemes in Rural Communities of Nepal.

[13] Bloom, (2006). Understanding qualitative data: A framework of text analysis methods. *Journal of Management Information System*, 11, 137-160.

[14] Brager, Specht, and Torczyner (2001) The ecology of place: Planning for environment, economy, and community. Washington, DC: Island Press .

[15] Brauman, K. (2015). Hydrological ecosystem services: Linking ecohydrologic processes to human well-being in water research and watershed management. WIREs Water.

[16] Campos, M. (2008). *Making sustainable water and sanitation in the Peruvian Andes*: An Intervention Model. *Journal of Water and Health* 6 (1) 2008.

[17] Carter, R., Tyrrel, S., and Howsam, P. (1999). The impact of sustainability of community water supply and sanitation programs in developing countries. *Journal of Chartered Institute of Water and Environment Management. 13, 292.*

[18] Cech, T. V. (2010). Principles of Water Resources History, Development, Management, and Policy. John Wiley & Sons, Inc., River Street, Hoboken, USA.

[19] Chappel (2005) *Art and well being*. Sydney, Australia: Australia Council for the Arts.

[20] Chemers and Mahar, (2004). Adoption of agroforestry in the hills of Nepal: A logistic regression analysis. *Agricultural Systems*, 72:177-196.

[21] Chemers and Mahar, (2004). *Developing Smallholder Agriculture: A Global Perspective*. AgBė Publishing. Brussels, Belgium.

[22] Espinosa Nohria, N., & Gulati, R. (2007). Is slack good or bad for innovation? *Academy of Management Journal*, 39, 245-64.

[23] Gebrehiwot, M. (2006). An Assessment of Challenges of Sustainable Rural Water Supply: The Case of Ofla Woreda in Tigray Region. *Msc Thesis*, Regional and Local Development Study (RLDS). A.A.U. Ethiopia.

[24] Gizachew,G. (2005) *Innovation: The Attacker's Advantage*, Summit Books, New York, NY.

[25] Goodman and Leyden, (2001). *Community development: A critical approach. Bristol,* UK: Policy Press.

[26] Hurlbert, M., & Diaz, H. (2013). Water governance in Chile and Canada: A comparison of adaptive characteristics. Ecology and Society, *18* (4), 61-75.

[27] Hagedoorn and Cloodt, (2003) Household energy consumption behaviour in a pre-Saharan smalltown in Morocco. *Research report No. 2 from Environmental Policy and Society, Uppsala University*.

[28] Hagedoorn and Cloodt, (2003) *What Works When Traditional Approaches* Fail. San Francisco, CA. Berret-Koehler Publishers Inc.

[29] Hagedoorn, J. & Cloodt, M. (2003). Measuring innovative performance: Is there an advantage in using multiple indicators, *Research Policy*, 32(8), 1365-1379.

[30] Harvey, P., & Reed R. (2004). Rural Water Supply in Africa: Building Blocks for Sustainability: *Loughborough University UK*: Water, Engineering, and Development Centre (WEDC).

[31] Hill, C.W.L., & Rothaermel, F.T. (2003). The performance of incumbent firms in the face of radical technological innovation, *Academy of Management Review*, 28(2), 257-74.

[32] International Water Management Institute. (2007).Water for food Water for life: A Comprehensive Assessment of Water Management in Agriculture. London, Earthscan, and Colombo.

[33] Jiang, Y. (2009). China's water scarcity. *Journal of Environmental Management*, *90*, 3185-3196.

[34] Kalbus, E., Kalbacher, T., Kolditz, O., Kruger, E., Seegert, J., Rostel, G., et al. (2012). Integrated water resources management under different hydrological, climatic and socio-economic conditions. *Environment Earth Science*, *65*, 1363–1366.

[35] Kirsch (2000) Globalization, Forest Resurgence, and Environmental Politics in El Salvador, *World Development*, (34)2: 308-323.

[36] Kirsch, (2000). Familiarity, complexity, and team performance in geographically distributed software development. *Organization Science* 18(4) 613- 630.

[37] Len, Abrams. (2003). *Understanding Sustainability of Local Water Services*; Water Policy International, South Africa.

[38] Mbata, J. (2006) Estimating Household Willingness for Water Services in Rural economy: the Case of Kanye in Southern Botswana. *Development of Southern Africa*, *2*3(1), 29-43.

[39] McDade (2004) The Cinotepeque Range of central El Salvador: Geology, magma origin and volcanism. *Bulletin of Geosciences*, 80(4): 277-286.

[40] McDade S. (2004). *Gender and Energy for Sustainable Development*: A Toolkit and Resource Guide. New York, NY. United Nations Development Programme.

[41] Mihelcic, J. R., Crittenden J. C., Small, M. J., Shonnard, Hokanson, Zhang, Q., Chen, H., Sorby, S. A., James, V. U., Sutherland, J. W., & Schnoor, J. L. (2003). Sustainability science and engineering: emergence of a new meta-discipline. Environmental Science & Technology, 37 (23), 5314-5324.

[42] Oakley and Marsden (2007). Low-Cost Sanitation, A Survey of Practical Experience.London, UK. Intermediate Technology Publications

[43] Park, G., Roberts, A., Alexander, J., McNamara, L., & Pannell, D. (2013). The quality of resource condition targets in regional natural resource management in Australia. *Australasian Journal of Environmental Management , 20* (4), 285-301.

[44] Patterson, J., Smith, C., & Bellamy, J. (2013). Understanding enabling capacities for managing the 'wicked problem' of nonpoint source water pollution in catchments: A conceptual framework. *Journal of Environmental Management , 128* , 441-452.

[45] Pegram, G., Yuanyuan, L., Quesne, T., Speed, R., Jianqiang, L., & Fuxin, S. (2013). River basin planning: Principles, procedures and approaches for strategic basin planning. Paris : UNESCO.

[46] Pruss-Ustun, A., Bos, R., Gore, F., and Bartram, J. (2008). Safer Water, Better Health: Cost, Benefits and Sustainability of Interventions to Protect and Promote Health. Geneva: World Health Organization.

[47] Republic of Kenya. (2010). Laws of Kenya: The constitution of Kenya. Nairobi: National Council for Law Reporting.

[48] Republic of Kenya. (2009). Kenya Demographic Household Survey. National Bureau of Statistics,Government Printer, Nairobi, Kenya.

[49] REMPAI. (2009). Kenya Natural Resources Management Proposal: A Baseline Survey. REMPAI, Nairobi.

[50] Republic of Kenya. (2007a). Kenya Vision 2030. A Globally Competitive and Prosperous Kenya. Ministry of Planning and National Development: Government Printer, Nairobi, Kenya.

[51] Republic of Kenya. (2009). Kenya Demographic Household Survey. National Bureau of Statistics, Government Printer, Nairobi, Kenya.

[52] Republic of Kenya. (2010). The Constitution of Kenya: Government Printer, Nairobi, Kenya.

[53] Rubenstein and Greisler, (2000) Indicators for the Water Sector: Examples from Malawi. London, UK. Water Aid.

[54] Swanson and Beath, (2000). Strategies adopted for sustained water supply and sanitation through community participation in Sri Lanka. 31st WEDC International Conference, Kampala, Uganda.

[55] Thite, (2001). The Purchasing Power Parity Puzzle. *Journal of Economic Literature*, 34: 647-668

[56] UN. (2000). Agenda 21: Earth Summit—The United Nations Programme of Action from Rio. Rio de Janeiro, Brazil: United Nations Division for Sustainable Development

[57] UNEP. (2004). Integrated Urban Water Resources Management Strategy, Water, UNEP, Nairobi, Kenya.

[58] UNESCO. (2003). World Water Assessment Programme. Water for People; Water for Life: The United Nations World Water Development Report. Oxford, New York.

[59] UNDP-WSP. (2006). Getting Africa on Track to Meet MDGs on Water and Sanitation: A Status Overview of Sixteen African Countries. Nairobi, Kenya: Water and Sanitation Program-Africa, World Bank.

[60] UNICEF & WHO. (2004). *Meeting the MDG Drinking Water and Sanitation Target Mid-Term Assessment of Progress.* UNICEF, Division of Communication, United Nations Plaza, New York, USA.

[61] WHO/UNICEF, (2008). Progress on Drinking Water and Sanitation: Special Focus on Sanitation. New York: UNICEF, Geneva: WHO.

[62] Weinberg, (2008), *Improving Leadership Effectiveness*: The Leader Match Concept, 2nd Ed., Wiley,New York, U.S.A