Invention Journal of Research Technology in Engineering & Management (IJRTEM)
ISSN: 2455-3689
www.ijrtem.com Volume 3 Issue 2 ǁ February 2019 ǁ PP 32-46

Determinants Of Implementation Of County Water And Sanitation Programme In Maseno Division Of Kisumu West Sub-County, Kisumu County, Kenya

[1]Babu Karan Charles, [2]Dr. Raphael Nyonje, [3]Kwama Leonard Ogweno, [4]Professor Peter Anyang Nyongo
[1,] University of Nairobi, Department of Extra Mural Studies;
[2]MasenoUniversity, School of Computing and Informatics, Department of Information Technology. P.O Box 3207-40100, Kisumu, Kenya:

EXECUTIVE SUMMARY: *The provision of water and sanitation globally, is threatened by climate change and pollution. Many industrialized and developing countries alike are struggling to achieve universal safe water coverage of 100% piped water connection to households and adequate sanitation. Water scarcity has imposed burden on women in their daily lives. Inadequate sanitation and outbreaks of infections have affected the health of the general population in Africa, Kenya in particular. Further to the above background, this study endeavored to establish the overall influence of determinants of implementation of water and sanitation programme in Maseno Division of Kisumu West Sub-county. Anchored on the role's theory, the target population for the study was 31600 households. From this, a sample size of 380 respondents plus one water company manager and two field officers was drawn for Maseno division under study. Data was collected through questionnaire forms administered by research assistants. Pilot testing of the study was administered at Manyatta slums in Kisumu Central Sub-county. To uphold the content validity, the contents of qualitative data was discussed with the supervisors before conclusions and generalizations were made. Reliability was tested by Kunder-Richardson(K-R)20 formula based on the split half reliabilities of data from all possible halves of instruments. Quantitative approaches using statistical package namely frequencies, means and percentages were analyzed and presented in tables.*

On the first objective, the study established that the majority of the households (48.7%) noted that lack of adequate financial allocation led to underdeveloped pipe network. The County government did not put in place adequate measures to address the issues of rural water capital investment programmes in successive financial budgetary provisions. On the second objective, the study established that there was lack of skilled human resource on the ground to ensure sustainability in service delivery. On the third objective, the study established that, although 89.5% of the respondents were aware of the county government's role in the provision of water and sanitation services, most of the water projects in the community were initiated by the community themselves and donor NGOs. The study further established that necessary active participation by stakeholders was not fully accommodated by the county government and this did not promote the decision-making process to ensure commitment, accountability and sustainability. The forth objective established that majority of respondents (60.5%), cited inadequate infrastructure of pipe network for proper waste disposals and hence the majority (95.5%) used pit latrines for waste disposal. For findings, it was strange to note that very few households had septic tank connections. Since sanitation is a component of water safety, the county government was required to partner with relevant development agencies to construct safe latrines, well covered for proper waste disposals. As for effective management, majority of respondents (63.7%) returned the verdict of not effective. The study concluded that most people draw water from natural sources like rivers, wells and there was shortage of skilled man-power. It was therefore recommended that there is need for adequate financial allocations, adequate community participation and efficient management. For further studies, devolution as a concept and management challenges need to be investigated further. Secondly, the impact of failure in water and sanitation sector in the other sub-counties of Kisumu County need further attention.

KEY WORDS; *water accessibility, water sustainability*

I. INTRODUCTION

Background to the study : The study reflected on the provision of water and sanitation services across the world in terms of determinants of implementation for example finances, management capacity, stakeholders' participation and infrastructure. It captured the overall situation across the world, regionally, nationally and up to the local level. Globally, in the United Kingdom the main threat to safe water resources is pollution and climate change. The same is encroaching into Sub-Saharan Africa, Kenya notwithstanding. Despite the looming threats in UK's water resources, it has remained one of the few industrialized counties that have achieved universal safe water coverage of 100% piped water connection. (WHO/UN1CEF, 2010) and adequate sanitation. In the United States (US), outbreaks of infections, etiology associated with drinking water were reported with increased risk of gas troenteritis (WHO, 2004). In the Philippines, an odds ratio (OR) of 1.92 for diarrhea was reported following consumption of water contaminated with levels of Escherichia Coli (a faucal indicator of bacteria) from an unprotected water source (WHO, 2004). During 2000 millennium summit held in New York, member counties of the United Nations agreed on eight set goals to reduce poverty by 2015 one of which was to be reduced by half the proportion of households that do not have access to clean water and proper sanitation (Guilanin et al, 2005).

In America, there is still significant number of areas where water scarcity imposes burden on women in their daily lives and inadequate sanitation has affected the health of the general population. Japan has made it a priority through JICA to help other counties to attain the UN millennium Development Goals (MDGs) by 2015.Japan has been the largest donor in clean water and sanitation and has spent Us $7 billion in five years from 2003-2007 being 38% of all the bilateral donor funds (Stockholm,2010). In Ludz Poland with a population of 800,000 people, use most of the rivers as sewerage thus leading to pollution that has diminished deficiency of sewerage purification by waste water plant during wet weather (Kostzyn et al). The same effect is in Niragua, Canada with 110,000 inhabitants whereas sanitation sewerage systems are lacking leading to contamination of creeks with waste water which in turn contaminated Lake Cocibocas. Since this Lake is a potential source of water supply source for the region, it is crucial to stop its pollution. A similar fate threatens Lake Victoria in Kisumu County of Kenya. Proper management of positive addition to the environment that lead to improved food security, health and economic development (WHO/UNICEF J.M.P, 2004).

Water and sanitation are essential services and all the eight millennium development goals (MDGs) are directly or indirectly related to access to water. Goal No.7 Target 10 aims to halve the proportion of world population without sustainable access to safe drinking water between 1990 and 2015. It is a key target in its own right but achieving that target is critical to the attainment of other goals (UNDP, 2006). The importance of water for health and development has been shown in outcomes of a series of international policy forums such as the World Water Conference in Mardelpiata, Argentina (WHO, 1977), Almar-Atta Primary Health Care Declaration, (WHO, 1978), the Millennium Development Goals (MDGs) (WHO, 2000) and the Johannesburg World Summit for Sustainable Development Goals, (WHO 2000). The UN General Assembly declared the period from 2005-2015 as International Decade for Action on water for life (WHO, 2005).

The United Nations as part of its millennium development goals expressed its commitment by 2015 to reduce by half, the people without sustainable access to safe drinking water and adequate sanitation. Current estimates are that there are still 1.1 billion people without this access (WHO/UNICEF, 2006). A lot of progress is being made in widening coverage of 'improved water samples' such as protected wells, springs, boreholes and household connections. However, results from recent assessment in six pilot countries found that 31% of drinking water samples form exceed WHO guideline values (GV) and national drinking water standards in the pilot countries for fiscal contamination as the leading source of infection and disease (RADWG, 2006).

In 2010, The people of Kenya recognizing the aspirations of all for a government based on the essential values of human rights equity, freedom, democracy, social justice and the rule of law, exercised their sovereign and inalienable right to determine the form of governance of their country and having participated fully in the making of a new constitution, adopted and enacted a devolved system of Government (The Constitution of Kenya, 2010).Through Legal Notice No. 16 of 2013, TA identified and transferred the functions: these included, Agriculture, health services, water and sanitation, cultural activities, transport (roads) animal control, trade development, planning and developments. No environmental Conservation (some specifics), public works (storm water/sanitation services) and control of drugs. The rider to these devolved functions was that the county government was to ensure the coordinating of the participation of communities and locations in governance at the local level and assist communities and locations to develop the administrative exercise of the functions and powers and participation in governance at the local level. To what extent this was achievable in Kisumu County is well articulated at the abstract section of this research paper (Legal Notice No.16 of 2013).

The Kenya Vision 2030 blueprint aims at transforming the country into an industrialized middle-income country providing high quality life to its entire citizens by the year 2030. Water sector has developed policies and strategies to support attainment of vision 2030 goals. These include Medium Term Plan (2012) and National Water Services Strategy [NWSS] (2015). The goal of the NWSS is to ensure sustainable access to safe water and basic sanitation to all Kenyans and also to halve the proportion of people without sustainable access to quality services by 20I5. The progressive goals of both the Medium-Term Plan (2012) and NWSS (2015) are to increase investments in water services (new facilities, extensions, augmentation etc), to reverse the declining per capita availability of water, to increase access to safe water to 72% and 59% in urban and rural areas respectively as well reduce non-revenue water to about 30%. In addition, it aims at increasing access to safe sanitation to 70% and sewerage coverage to 40% and 10% in urban and market growth centers in rural areas respectively. It also intends to strengthen a national/county monitoring and information system on water services (Kenya Vision 2030 Blueprint).

In this region, Kisumu County in particular, there has been water services boards mandated to achieve the above scenarios namely, Lake Victoria South Water Services Board (LVSWSB) mandated to source for funds, develop infrastructural assets, implementation and licensing of water companies e.g. Kisumu Water and Sewerage Company (KIWASCO) through service provision agreements (SPA) others include, NY ANAS, Nyakach, Nyando and Nandi Services-covering Nyakach and Nyando Sub-Counties of Kisumu County, Gulf Water Co-covering Kisumu West and Seme Sub-Counties. However, the Nandi wing has since been withdrawn to Kericho County (LVSWSB, 2014).

The funds required are for electricity bills, salaries for staff, repairs and maintenance, water treatment and distribution. The stakeholders' support is expected to ensure success of the entire process of water provision programme. This study endeavored to establish the overall influence of determinants for water provision in Kisumu West Sub-County so as to give a general overview of any achievements by county Government of Kisumu, water and sanitation being amongst the devolved functions of the county governments according to the 2010 constitution (Constitution of Kenya, 2010).

Further to the above background, this study endeavoured to establish the overall influence of determinants for water provision in Kisumu West Sub-County so as to give a general overview of any achievements by County Government of Kisumu, water and sanitation being amongst the devolved functions of county governments according to the 2010 Constitution (Constitution of Kenya, 2010).

Statement of the Problem: The main problem is with the management of water and sanitation and supply of clean water services under devolved system of governance as provided for in the Constitution of Kenya (2010). This is a new concept in the water services sector. Resource allocation that is perceived to be adequate to support the implementation of provision of clean water and sanitation services is one critical issue in most parts the country. Kenya's key water provision indicators have deteriorated over time yet water and sanitation services are key compliments to health. Water can be a dangerous conveyor of known health problems like bilharzia, malaria, typhoid to name but a few and if not managed could lead to other menaces like floods, landslides, runoffs. Water is therefore an important commodity for the survival of human kind (WHO/UNICEF, 2013).

Prolonged droughts in Kenya have led to loss of livestock, reduced food production, loss of lives due to shortage of water and yet these situations could be managed through well-known technologies of irrigation channels that could be translated into economic production for improved lifestyles of our people. It is noteworthy that implementation of country water and sanitation programme is critical to the attainment of better health standards in a manner responsive to the population needs and that decentralization of planning and implementation of water and sanitation services is a suggestion that is one of the solutions that could help narrow the gaps in health outcomes by ensuring the provision and supply of clean water services across the villages (WHO/UNICEF, 2013). Most research programmes have focused on the effectiveness of specific interventions rather than on the effectiveness (distribution networks) of the implementation process or the relationship between implementation and outcome (adequate supply), but reviews of research offer strong support that the level of implementation affects the outcomes obtained in promotion and prevention programme as it is in health care. It is therefore imperative that counties (Kisumu County) focus their attention on the way water resources program are managed in order to improve health and food security outcomes for a healthy community within the county. This study undertook to establish key determinants of implementation and management of County water supply program so that they are given proper attention in terms of provision, control offer decision making and way forward in the water sector (Durlak and Duupre, 2008).

II. LITERATURE REVIEW

The Concept of Water Supply in Kisumu County: Kisumu County concept of water supply envisages and recognizes the central role of water in human life and observes that access to clean water is a fundamental right that the entire county has access to safe and secure drinking water and sanitation facilities equitably and without discrimination as so expressed in devolved governments' structure.

Financial Allocations and Water and Sanitation Management Programme: Financial Sustainability of water services can only be ensured when a right mix of finances for all key expenditure categories, namely; capital investments (hardware software), capital maintenance (one off major repair investments) and operational expenditures (daily operation costs) can be ensured. The Kisumu County's Resources Mobilization Plan aims at making the public, politicians and technical staff aware of the way the sector should and can be financed and work hard to get the support from all stakeholders. Traditional sources on focus include government funding, donor Agencies, Consumer Private Sector funding will be sought as a new source of financing. Kisumu County further relies on the Public Private Partnership (PPP) framework to provide an opportunity to do business with private investors. It is hoped that this mutual arrangement, key for successful attraction of private sector investment will be that the county water departments WSPs and consumers create the environment where investors can expect reasonable returns with acceptable risks (Source's County Strategic Plan 2015). The Kisumu County Budget and Financial Process for financial stability of water services, assurance recognizes the fact that there will be a right mix of finances for all key expenditures. Categories (CapEX, OpEX, CapMan Ex, ExpDs). In order to achieve the mix, the County Government Budget Process observed the following steps: -

First step is to identify and estimate how big the expenditures for these categories will be for the planning period. The second step is to identify the expected costs related to the outcome areas, which all fall in the categories of CapEx, CapMan Ex and ExpDs. The third step is to identify how and by who the expenditures of these different categories can be financed.

Table 2.1: Unit Costs by MWI (2005) and Kisumu County Water Department

KES/pers	**Point source**	**Rural piped scheme <5000**	**Rural piped scheme <5000**	**Rural piped scheme >5000**	**Rural piped scheme >5000**
capEX KES/p/y	2,189	2,259	2,224	6,700	5,907
capManE	58	65	66	197	174
opEx	19	153	148	492	431
ExpDs	200	200	200	200	200

Source: Kisumu County Water Department (2005)

CapEx - Capital investments (hardware + software)

CapManEx = Capital maintenance (one off major repair investments)

OpEx = Operational Expenditures (daily operation costs)

EpxDs = Direct Expenditures (Support costs by County and NGOs)

Key: It is interesting to note from the County's budget projections that Water Service Governance was allocated Kshs.83 M as ExpDx as support costs for County and NGO's Water Service Management Kshs.13 M, infrastructure Kshs.3.1 M out of which only Kshs.163,000/= was allocated for Rural Water Capital Investment, and a whooping Kshs.200 M was set aside for capacity building i.e. Capacity Development Plan. Finally, the budget provided for Kshs.8 M for resource mobilization.

Based on the infrastructure targets an estimate is made of how much one-off capital investments will be required for new infrastructure and an estimate is made for the recurrent cost which are calculated on a yearly basis and cover daily operation and maintenance, the support cost incurred by the Water Service Authority (County Water Department) and the expenditures for major repairs and rehabilitation. The latter was an important component of the asset management plan and are yearly reservations based on the life time of system components.

Ideally the budgets for these different expenditures are based on a good analysis of the costs of running the water services in Kisumu County. Unfortunately, the required detailed information is not directly available and requires too much time and resources to retrieve in the context of this strategic plan. For water the budgets are based by using the unit costs as have been calculated in MWI (2005) and translated to the values of 2014. (See table 1.).

For the calculation a number of assumptions have been made:

- The same assumptions as were made for the target population calculation
- For direct support costs (ExpDs) no data are available and the value of US $ 2/person/year has been selected. This is the average that comes from the WASH Cost benchmark that ranges between 1-3 USD. (http://www.ircwash.org/wash.cost).

Table 2.2 below summarizes the required budgets for Kisumu County for rural infrastructure. For urban sanitation no unit costs are provided by the County Water Department, therefore estimates of the Busia Water Office have been used. Only unit costs for one-off initial capital investments are used as other data are lacking.

FINANCIAL ALLOCATION

- Government
- County Government
- Donor Agencies
- Public Private Partnerships
- Affordable tariffs

Table 2.2: Estimated Required Expenditures for Rural Water Infrastructure Kisumu County 2015-19

	Technology Type	Average Population Served 2015-2009	Investment Target Population Rehabilitation Extensions	Investment Target Population	KES CapEx	KES CapManEx	KES OpEx	KES ExpDs
Rural	Point Sources	502,634	0	0	0	29,336,072	9,746,364	100,426,227
	Piped Schemes with SP	63,714	17,375	40,541	103,366,854	4,172,333	9,717,681	12,730,085
	Piped Schemes with HC	28,318	20,755	20,755	60,003,839	1,857,621	4,179,648	5,657,816
	TOTAL	594,665	38,130	64,296	163,370,693	35,366,026	23,643,693	118,814,123

Source Kisumu County Water Department 2015-19 Budget

The Kisumu County budget for water and urban sanitation is shown accordingly but no provision on Rural Sanitation at all, painting a glime picture of the County's commitment to service delivery on sanitation in the rural community during the projected financial expenditure in the first phase of devolution (2013-2017).

This state of affairs shows disparity in budgeting for infrastructure (piped scheme) in rural areas as urban gets above Kshs.5000 and rural is below Kshs.5000 capitation (see table 2). (Kisumu County Budget 2015-2017).

In the year 2002, UNDP established an organization called Cap-Net, as an international network for capacity building in sustainable water management. It is addressing the need for capacity to implement reforms in the water sector. Its composition is made up of a partnership of autonomous international, regional and national institutions. Evidence available indicate that Cap- Net has partnered with European Union water initiative finance Working group to deliver training on strategic financial planning that brings together regulators, water companies and national planers to understand the gaps in financing for water and sanitation and the actions required to close those gaps. Conceptual Framework

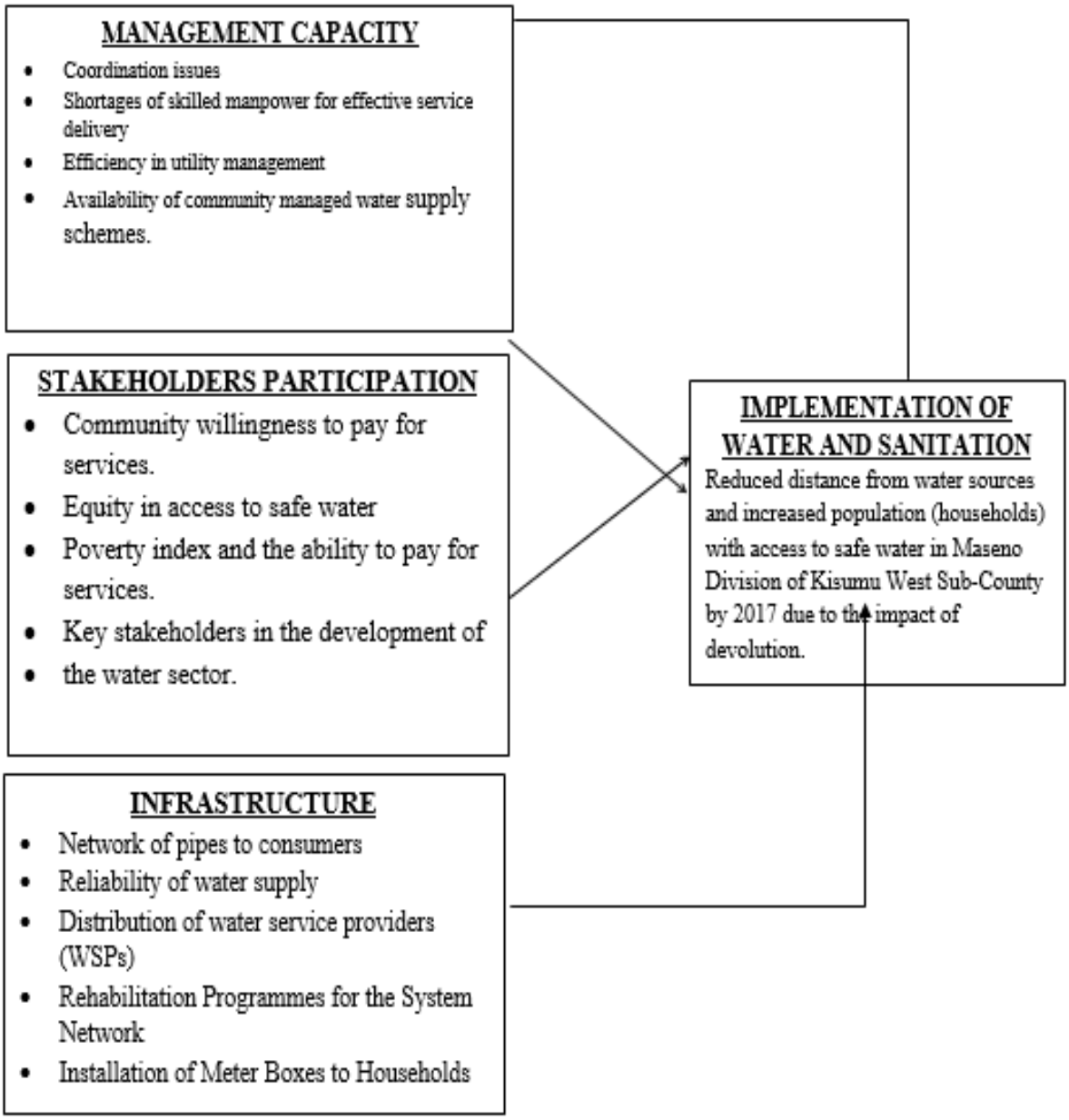

Figure 1: Conceptual Framework

The framework above conceptualized the increase in population (households) with access to safe water in Maseno Division of Kisumu West-Sub County by 2017 as the dependent on key four independent variables namely: financial allocation, management capacities, stakeholders' participation and infrastructure. The Conceptual framework thus shows the operationalization of variables under each determinant for the implementation of the county water and sanitation programme focusing on Maseno Division of Kisumu West Sub-County in particular.

III. METHODOLOGY

Research Design: The approach that was adopted was both qualitative and qualitative using descriptive survey design. Cross sectional as a form of descriptive study design was applied for the study. It is found necessary and suitable for this work since it involves gathering data in order to answer questions based on the current status of the subjects of study. According to Babbie (1993) cross sectional descriptive study design are best suitable for collecting information on population at a single point in time. In this study the effort to determine the implementation of water and sanitation program vis a vis financial resources, management capacity, stakeholder participation and infrastructure adopted questionnaire-based survey approach besides using the key informal guide. The benefits associated with the survey design include ease of establishing correlation between variables and comparison anonymous completion of questionnaires, possibility of response biases notwithstanding. Target Population and Sample Size This study targeted a population of 31,600 households of Kisumu West Sub-County in addition to one Water Company Manager, two Field Officers. This is the target population from which the sample was drawn, for Maseno Division under study.

Table 3.1: Data on Target Population for the Study

Study Population	Total Population
Households	31,600
Water Company Manager	1
Field Officers	2
Total	**31,603**

Source: KNBS (2009)

From Table 3.1 above, targeted population was 31,603 which consisted of 31,600 households, 1 water company manager and 2 field officers.

FINDINGS
Response Return Rate

Socio-Demographic Characteristics of the Respondents

This section discusses the social and demographic characteristics of the respondents. This includes gender of the respondents, age of respondents and number of people in the households.

Gender of the Respondents : This section represents findings on the gender of respondents, the study sought to know the gender representation of the respondents. Figure 4.1 illustrate the frequency and percentage of gender of the respondents.

Table 4.1: Gender of the Respondents

Response		Frequency	Percent	Valid Percent	Cumulative Percent
	Female	233	61.3	61.3	61.3
	Male	147	38.7	38.7	100.0
	Total	**380**	**100.0**	**100.0**	

The findings above illustrate that out of the 380 respondents 147 are male and 233 are female this corresponds to 38.7% and 61.3% respectively. The finding shows that majority of the respondents are female. This was considered important as it could reveal information on gender bracket of the respondents who largely took part in the study. Figure 2 illustrates the gender of respondents and which people are more likely to be affected by the outcomes and challenges on water and sanitation.

Household Population: This section discusses the household population of the respondents

Table 4.4: Household Population

Response	Frequency	Percent	Valid Percent	Cumulative Percent
<5	144	37.9	37.9	37.9
5-10	216	56.8	56.8	94.7
>10	20	5.3	5.3	100.0
Total	**380**	**100.0**	**100.0**	

The findings above illustrates that out of the 380 respondents 165 have below 5 members, 216 have between 5-10 members and 55 are members with above ten in one household, this correspond to 37.9%, 56.8%, and 5.3% respectively. The finding show that majority of the respondents are between 5-10 members in one household. (Figure 4).

Source of Water, Reliability and Safety

This section discusses the sources of water available for the community

Table 4.5 Source of Water

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Piped water	116	30.5	30.5	30.5
Lake	1	.3	.3	30.8
Wells	139	36.6	36.6	67.4
Rivers	98	25.8	25.8	93.2
Vendor	22	5.8	5.8	98.9
Others	4	1.1	1.1	100.0
Total	**380**	**100.0**	**100.0**	

This section sought to present findings on the different sources of water that is used by the community of Maseno Division of Kisumu West Sub-County. The findings illustrate that out of 380 respondents, 139 draw water from wells, 116 from piped water, 98 from rivers, 22 from vendors and 4 from other sources like roof catchments, small streams et cetera. This corresponds to 36.6%, 30.5%, 25.8%, 5.8%, and 1.1% respectively. The findings therefore show that the three major sources of water for the community were wells, piped and rivers (Table 4.5 above).

Table 4.6: Water Reliability

This section discusses reliability of sources of water in terms of percentages.

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Reliable	196	51.6	51.6	51.6
Very Reliable	91	23.9	23.9	75.5
Not Reliable	93	24.5	24.5	100.0
Total	**380**	**100.0**	**100.0**	

After identifying the main sources of water and finding out the extent to which households are connected to piped water, this section sought to find out how reliable these sources are. The findings illustrate that out of 380 respondents, 196 (51.6%) agreed that the water reliability was good, 93 (24.5%) however, said that the water was not reliable. This cohort of respondents were those relying on piped water as source, 91 (23.9% respondents) said it was very reliable. These are the households whose main source of water was either wells, rivers or both. The findings show that Maseno Division, my area of study, had water mainly from natural sources.

Table 4.7: Safe Drinking Water

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	92	24.2	24.2	24.2
Agee	105	27.6	27.6	51.8
Disagree	115	30.3	30.3	82.1
Neutral	37	9.7	9.7	91.8
Strongly Disagree	31	8.2	8.2	100.0
Total	**380**	**100.0**	**100.0**	

This section sought to find out the safety of drinking water vis-à-vis their sources. The findings above illustrate that out of 380 respondents 115(30.3%) disagreed with the safety of drinking water, 105(27.6%) agreed that the water was safe for drinking, 92(24.2%) strongly agreed to the safety, 37(9.7%) were neutral and 31(6.2%) of households strongly disagreed. If we consider those who disagreed plus those who strongly disagreed 148(38.3%), the findings show that the households are not happy with the safety of drinking water and therefore some action should be taken to remedy the fear amongst the households.

To ensure access to safe and affordable water and sanitation for all will not be easy particularly in developing countries, only if the gates will be raised to investment when governments establish sound regulatory frameworks, including provisions for sustainable cost recovery for the services rendered. Investors however can measure themselves at least in one respect. As opposed to the challenges of previous years, water offers investors the refreshing alternative of stable returns all in the name of the public good.

Community Participation and Effects: This section discusses the extent of community participation and effects thereon.

Table 4.8: Community Participation

Response	Frequency	Percent	Valid Percent	Cumulative Percent
	36	9.5	9.5	9.5
Strongly Agree	68	17.9	17.9	27.4
Agree	166	43.7	43.7	71.1
Disagree	29	7.6	7.6	78.7
Neutral	21	5.5	5.5	84.2
Strongly Disagree	21	5.5	5.5	89.7
5	39	10.3	10.3	100.0
Total	**380**	**100.0**	**100.0**	

This section sought to find out whether the respondents were aware of the importance of community participation in the provision of services by the various actors, national government, county governments, NGOs and donors. The responses indicated that community participation was necessary especially by the County Government to ensure the concept of ownership, sustainability and equity are achieved. It further promotes accountability and responsibility among community members. The findings show that the stakeholders in the process of providing water services did not conduct this aspect adequately.

The concept of participation implies participation as either a means or instrumental participation and participation as an end or transformative participation. Participation as a third form is also identified as cosmetic participation (also referred to as token participation) .The quality of participation varies depending on where in the project cycle participation occurs: planning implementation, monitoring and evaluation. However, instrumental participation is the model that describe a co-opting practice, to mobilize labour and reduce costs in which they (local people) participate in our projects. Participation within this paradigm aims at transforming people from traditional to modern citizens within the political economy of the developing country. This study recommends this type of participation in the water and sanitation sector. Stakeholder participation therefore has direct influence in the implementation of water and sanitation program. It is prudent to note here that transformative participation enables local people to become involved in their own development and promotes self-reliance in decision making.

Table 4.9: Reduce Maintenance Cost

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	50	13.2	13.2	13.2
Yes	147	38.7	38.7	51.8
No	63	16.6	16.6	68.4
Don’t Know	120	31.6	31.6	100.0
Total	**380**	**100.0**	**100.0**	

The full community participation would reduce maintenance cost on infrastructural networks for the supply of water services. This could be ascertained from the responses above. Out of 380 respondents 147(38.7%) approved, 120(31.6%) were not aware since it was not a common practice by service providers to conduct adequate public participation amongst the community members, 63 (16.6%) did not feel the effect of community participation. The findings show that there was luck of community participation in this area of study.

Pipe Network and Water Availability : This section discusses the extent of pipe network and availability across the villages.

Table 4.10 Piped Water

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	150	39.5	39.5	39.5
No	230	60.5	60.5	100.0
Total	**380**	**100.0**	**100.0**	

This section sought to find out the extent to which piped water served the community under study. Out of 380 respondents, 230 responded in the negative that they were not served by piped water and 150 responded in the affirmative that they were served by piped water. This corresponds to 60.5% and 39.5% respectively. The findings show that Maseno Division under study has inadequate piped water into the households. (Table 4.9.1).

Table 4.11 Networked Water Pipe

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Adequate	31	8.2	8.2	8.2
Very Adequate	39	10.3	10.3	18.4
Not Adequate	185	48.7	48.7	67.1
Don't Know	125	32.9	32.9	100.0
Total	**380**	**100.0**	**100.0**	

This section sought to find out the rate of flow of piped water, availability and frequency. The findings below illustrate that out of 380 respondents, the majority did not know how often water came through the pipes despite the availability of the network. The findings show that the flow of piped water was irregular. This section sought to find out on cost and affordability of water charges. Most respondents were willing to pay for water at the rate of 500/- per month but since flow of water was unreliable, they felt this charge was too high. However, if there is flexibility to sooth customers by determining what local households population can afford, then the cost factor is none issue.

Cost and water affordability : This section discusses the water charges and affordability

Table 4.12: Meter Boxes

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	45	11.8	11.8	11.8
No	305	80.3	80.3	92.1
Don't Know	30	7.9	7.9	100.0
Total	**380**	**100.0**	**100.0**	

The area under study had very few meter boxes to charge the volume of water consumed by each household. They were on a flat rate charge at 500/- per month. Out of 380 respondents, 305(80.3%) said they did not have meter boxes, 30 (7.9%) did not know about meter boxes. Only a few 45(11.8%) had meter boxes in their homes.

When the poorest cannot pay there are better ways of ensuring they have access to water and sanitation than keeping prices low for all. Tariffs can be designed so that higher income consumers cross-subsidize the most vulnerable poor households to be provided with income support to cover part of their water bills: for example in Chile, the poor are provided with water vouchers to help pay their water bills. A better option in many

developing countries like Kenya is to subsidize access not consumption. Pit Latrines Covered Vs Uncovered and Availability

Table 4.13: Pit Latrines Available

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	363	95.5	95.5	95.5
No	17	4.5	4.5	100.0
Total	**380**	**100.0**	**100.0**	

The findings above and below illustrate that most households have pit latrines for use even though some have septic tanks to dispose wastes. In East Karateng', for example, the administration of the area developed a policy that warned the community members against the disposal of wastes in the open field or nearby bushes. Billboards were affixed in those open areas with clear warnings. "East Karateng' Sub-location is an open defecation free zone (ODF)-Onge Pielo Oko E Bungu Kata E Pap East Karateng' Kae." See Billboard below.

Literature review findings for example reveal that many communities in the developing countries like in Mumbai India, one out of twenty people defecate in the open for lack of toilets. People were willing to contribute to the capital cost of constructing 330 community toilet blocks and pay for their maintenance through membership scheme and user fees. A large number of people (400000) benefited from the Mumbai Slum Sanitation project which has become a model for similar initiatives under India's Policy on national urban sanitation. The same approach could be adopted by the county government through our national clarion of harambee spirit. Pay toilet blocks are found in the urban areas of Kenya and could easily be replicated to neighboring sub-counties like Kisumu West Sub-county, the study area of this research project

Summary of Data Analysis : This section has been arranged in line with the objectives of their study; to establish the influence of financial allocation on the implementation of county water and sanitation program in Kisumu West Sub County of Kisumu County, to determine the extent to which stakeholders participation influences the implementation of county water and sanitation program and to establish the extent to which infrastructure influences the implementation of county water and sanitation program. **The first objective of this** study was to establish the influence of financial allocation on the implementation of county water and sanitation program in Kisumu West Sub County of Kisumu County, Kenya.

The study established that the majority of the respondents draw water from wells, piped and rivers. It is obvious that rivers are not safe sources of water due to uncontrolled contamination activities that are rampant along the river valleys. The community members have resorted to drawing water from the rivers due to the inability of the county government and its agencies to provide safe drinking water and sanitation program. The study also established that the majority of respondents were not connected to piped water. The county government needs to put a substantial budget to develop water network across the county to enable households to be served adequately. Financial allocation to this sector must be adequate to develop the necessary infrastructure on the ground from a main source across the village into the households. The study further established that financial sustainability of water services for capital investments maintenance and daily operational costs are inevitable but there was no evidence that the county government had put in place such measures. A rural water capital investment is necessary to ensure successful implementation program.

The second objective of the study was to determine and assess how implementers influence the implementation program, the extent management capacities would influence the process of implementation. The study established that the county government has not put in place enough human resource on the ground to provide sustainable service delivery, water being an essential commodity that needs to be properly treated and handled. Skilled manpower should be adequate to relate professionally with the consumers. The study also established that there was shortage of officers to manage the sector across the Sub-County under study. When respondents are asked how effective the management in provision of water and sanitation program was, the majority (63.7%) returned the verdict of not effective. There was poor response to repairs and maintenance of broken pipes and exhaustion of overflowed septic tanks. Key informants who were interviewed during the study confirmed that there was serious shortage of officers in the field to provide required services.The third objective of the study to determine the extent to which stakeholders' participation influences the implementation of county and water and sanitation program in Kisumu West Sub County of Kisumu County.

The study established that the respondents (89.5%) were aware of the county government's role in the provision of water and sanitation services. The respondents stated clearly that most of the water projects in the community were initiated by the public (themselves) and donor NGOS. When the respondents were probed further, of who provided the funds for water and sanitation programs the majority again said the public themselves. The findings showed that active participation by stakeholders in the process of establishing any project in the water sector, is extremely necessary to ensure commitment accountability and sustainability. The two major stakeholders in this case is County Government and the Community. The study further established from the key informants that key stakeholders should be accommodated in the water and sanitation programs to determine achievement of set objectives by involving them in decision making process.

The fourth objective of the study was to determine the extent of which infrastructure influences the implementation of county water and sanitation program in Kisumu West Sub-County of Kisumu County. The study established that in terms of Pipe Network across the sub-county the majority of respondents (60.5%) responded in the negative that they were not served by pipe water, and even the few who had pipe network into their households did not get regular flow of water' It also emerged in the study findings that a lot of pipe networks were blocked and water could not flow to the households. The County Government did not take an initiative to repair broken and blocked pipes across the village and this discouraged the consumer without proper, reliable and adequate network of pipes service delivery in this sector cannot succeed.

Apart from pipe network, the study further established that the region of study did not have main sewer line for waste disposal for a healthy sanitation program. The findings show that for sanitation purposes, the main method of waste disposal was through pit latrines, and very few houses had septic tanks despite the availability of piped water into their homes; main reason was that the flow of water into the piped households was extremely irregular and unreliable. Sanitation delivery is a component of water safety. The study found that most of the respondents require the County Government to partner with relevant development agencies to construct safe latrines for proper waste disposal as a health requirement.

IV. CONCLUSION

The main purpose of this study was to find the determinants of implementation of county water and sanitation program in Kisumu West sub-county, Kisumu County, Kenya. In terms of the stated research objectives, the following findings emerged from the study. On the first objective, the study established that the majority of the Kisumu West Sub-County community draw water from the following sources; wells, rivers and piped water, and even those whose households were connected to piped water were very few. The county government did not provide substantial budget for the water and sanitation program, siting lack of adequate funds or simply poor planning.

Adequate financial allocation to this sector for the development of the infrastructure was not only necessary but mandatory for project implementation, maintenance and sustainability on service delivery. To this extent we conclude that financial allocation to this sector influences the implementation of county water and sanitation program greatly. On the second objective, the study assessed the failure of county government in putting in place enough human resource on the ground to provide sustainable service delivery. Water by all standards is an essential commodity for healthy living standards and need to be handled by skilled manpower. Shortage of officers to manage the sector impacted negatively on coverage and quality of service delivery. Lack of adequate and qualified staff in this sector led to poor response to repairs and maintenance of broken/blocked pipe networks across the village. There was no initiative on capacity building to equip the consumer with necessary skills for better management of the sector. The implementers need to be effective to influence success and development of water and sanitation program.

On the third objective, the study explored the extent to which stakeholders' participation influences the implementation of county water and sanitation program. The respondents are aware that the county government has a major role in the provision of services in this sector in terms of funding and conducting public participation program to the community. Stakeholders need to be accommodated fully by involving them in decision making process, to ensure achievement of set objectives. On the fourth objective of the study, it was determined that there was lack of adequate pipe network across the sub-county, thus denying the people of Kisumu west sub-county opportunity of accessing safe drinking water and proper waste disposal. The danger to this is a likely outbreak of water borne diseases since the majority source of water were wells and rivers. The study further established that there was no sewer line infrastructure for waste disposal. The community used pit latrines which were not covered and therefore need for construction of safe latrines for proper waste disposal. Adequate infrastructure promotes the implementation of water and sanitation programme.

Recommendations : The study made the following recommendations for policy action:

1. Funds allocation for water and sanitation programs should be adequate over subsequent financial years by the county government to ensure adequate infrastructural development of the water and sanitation sector.

2. Community participation and perception as a component to safe water and sanitation facilities should be exhausted; by involving the community members in the implementation of projects from initiation stage and in decision making process to ensure a sense of ownership and sustainability.

3. In terms of water and sanitation delivery, the county government and any other development partners should ensure that there is a good efficient plan for water distribution with improved water pipe network across the sub-county and the county in general, water treatment by water providers with reduced water cost, orientation and awareness programme on improved sanitation programme.

In regard to efficient management of the water and sanitation sector, there should be a deliberate effort to recruit adequate, skilled, trained and motivated human resource well equipped with regalia for quick response and maintenance of the supply network for improved and sustainable service delivery.

Limitation of the study : This study was limited to descriptive research design. Not all respondents were prompt in answering the questions as per the expectations of the researcher. The study relied solely on the responses from the respondents that are prone to biases. As a solution to this, the researcher explained precisely to the respondents the significance of the study so as to convince them to give truthful information for the study. The researcher also ensured that the study is started at an opportune time for the smooth completion of the study at the right time within the available limited resources.

REFERENCE

1. Assat, S.A., Al-Khali, M. and Al-Hazm; M. Construction Prophets. Journal of Management in Engineering 11(2) (: pp. 45-50).
2. Babbie, K.D. (1912), Research Methods: A Qualitative Approach. London: Gower.
3. Durka and Dubre (2008).
4. Dr. S. Mwituria Maina (2012), Quantitative and Qualitative Research Methods Simplified (Copyrighted, 2012).
5. Kisumu County Strategic Plan (2015).
6. KIWASCO, Annual Report (2014).
7. Kothari, G.R. (2009), Research Methodology. Methods and Techniques, 3rd Edition (2014).
8. Krejcie and Morgan (1970). Sample Size Determination Table.
9. Legal Notice No. 16 of 2013.
10. Majid M.Z. and Mc Caffer R. (1998). Factors of Non-Excusable Delays that Influence Contractors.
11. Mugenda, O. M & Mugenda, A.G (1999), Research Methods, Quantitative and Qualitative Approach, Acts Press, Nairobi.
12. OECD Observer, No 272 April 2009
13. Republic of Kenya, (2010) Constitution of Kenya, Nairobi, Government printer. County Government Strategic Development Plan.
14. Sweis, G., Sweis, R., Hamrnad, A.A. and Shboul, A., (2008). Delays in Construction. The Projects Management 26(6): PP, 665-674.
15. Trendle, B. (2008), Skills and labour shortage definition, cause and implications. Department of Education, Training, and me Arts. Retrieved from
16. http://www./ramdemplov.qld.gov.au/resources/employmenVpdgwp54-skill- labour-shortage.pdf.
17. UNESCO (United) Nations Educational, Scientific and Cultural Organization. (2006) Water Development Report 2: Water a shared Responsibility.
18. UNICEF (United Nations Children Fund) (1992). Children and Women in Kenya, A situation Analysis in 1992.
19. United Nations (2008). African and the Millennium Government Goals (2007 Updates). United Nations (2008). Make It Happen: End Poverty 2015.
20. United Nations educational, Scientific and Cultural Organization (2003), World Water Assessment Programme (UNESCO – WWAP). Water for People, Water for Life: The United Nation World Water Development Project.
21. Vision 2030 Blue Print of Kenya Government.
22. Wang, F. (2010). China's Exporters fret, over labour shortage. My Sicnhew. Retrieved from http. //www.mysinchew.com/node/36157. World Bank /WSP - Africa (2004). Case for Water and Sanitation.

23. World Bank Water Council (2009) Dialogue and Diabetes at 5th World Water Forum Istanbul 2009.
24. Suvensen D.L, Utah State University, Utah Water Research Laboratory, 8200, Old Main Hall, Logan, Utah 84322-8200, USA