



Vol. 9 | Social and development concerns in Africa (c)

Vol. 9 Article 2/10 | October 2019

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(An International Publisher for Academic and Scientific Resources)

INFLUENCE OF COMMUNITY PARTICIPATION IN WATER RESOURCE MANAGEMENT IN LUANDA K’OTIENO BEACH IN RARIEDA SUB COUNTY, SIAYA COUNTY KENYA

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Abstract: *There is concern over the future of the world’s water resources due to rapid growth of human population and human activities such as deforestation, pollution which has led to water being scarce. This has made water resource management to become a topic which need to be discussed. In order to ensure Water resource management is sustained then integration across sectors is required and to place the emphasis on the community participation. The objective of the study was to examine the influence of community participation in managing the water resource of Luanda K’Otiemo Beach, Kenya. The study adopted descriptive research design and data collection involved administration of questionnaires to respondents. Results from the study indicated that majority of the community members in Luanda K’Otiemo beach were not involved in water resource management however majority of the community members were willing to participate in water resource management because there was great desire among community members to have reliable access to clean and safe water. The study concluded that there was generally low community participation in water resource management of Luanda K’Otiemo beach. This was largely due to perceived dysfunctional beach management committee that was not doing its coordination role effectively and low levels of awareness on the importance of water resource management. The study recommended that there should be deliberate efforts by the County Government of Siaya through the department of fisheries to streamline the management of Luanda K’Otiemo beach to address challenges with leadership and management challenges. In addition the beach management unit should mobilize and sensitize the community members around the beach on the importance of conservation of the water resources and why it is important that the such conservation efforts incorporates all members of the community.*

Keywords: *Community participation; resource management; influence*

1.1 Study background

There is a worldwide concern over the future of the world's water resources due to rapid growth of human population and human activities such as deforestation, pollution which has led to water being scarce (Taha, 2007). This has made water resource management to become a topic which need to be discussed especially in developing countries and countries that are arid and semi-arid. Water scarcity problem is anticipated to escalate in the next coming years, lest all people and development experts begin to discuss pertinent issues such as sustainable awareness of water resource management (Ayenew, 2007). In the Middle East and sub-Saharan Africa it is reported that there is massive competition of water due to bad or poor management (McCartney, 2000). Water resource Management is defined as involving the beneficial use of water resource, prevention avoidance and minimization of the effects of excess water that is floods and deficiency which is drought (Olokesusi, 2006). In order to ensure that Water resource management is sustained then integration across sectors is required which needs to take into account development, supply, use and demand, and to place the emphasis on the community, their livelihood and the ecosystems that sustain them and this can only be realized through community participation (Donkor & Wolde, 1999).

Community participation is an old concept and it continues to capture a center-stage position in many policies of nation-states and international development agencies in recent years. The common belief is that involving people in communal programs and empowering them have the potential to boost their livelihoods and foster development. As such, many project proposal in developing countries without component of community participation hardly receive any donor funding (Kakumba & Nsingo, 2008). It is therefore important that participatory ideas be applied to small scale development in ways that would allow the community to be informed participants in development with external agents acting mainly as facilitator and sources of funds (Chambers, 2013). Arguments for participatory development as advocated by Chambers, (2013) have led to the inclusion of participation as a crucial means of allowing the poor to have control over decisions. Inclusion of participatory elements in large scale development assistance came quickly at the World Bank, in social investment funds and other forms of assistance.

International community has been seeking new strategies to revitalize rural development. One such a strategy is people's participation in the development process (UNDP, 2000). Globally there has been an overwhelming emphasis on enhancing community's involvement in the water sector development from water users and beneficiaries to capable actors and water managers with increased choice and voice in the water resources management processes. As early as 1976, World Employment Conference (WEC) identified issues of basic needs and the crucial role of participation programs in the improvement of rural life (UN, 1977). Similarly in a conference held in Alma-Ata, USSR, in 1978, WHO stressed the importance of community participation in water resource management. In this respect, people's will in their development process is paramount. It is, however recognized that the mobilization of the people has been the most obvious problem facing development process in many countries (UNDP, 2000).

At regional level in Africa, the community participatory theme in the development process has become very prominent, such that development is virtually defined in terms of people's participation. African Water Vision (2025) calls for an "equitable and sustainable use and management of water resources for poverty alleviation, socioeconomic development, regional

cooperation, and the environment” (UN Water, 2010). The vision also emphasizes the need for stakeholder involvement in water resources management. In addition the vision commends gender mainstreaming in water resources management with a special call on women to occupy key positions and functions in decision-making processes on water issues. Community participation in development projects has been currently advocated strongly not only by the government and non-governmental organizations but also by international organizations such as African Union, and World Bank (UNICEF 2004). They all argue that community participation is a principal facilitating element for development and sustainability of communal development projects.

The constitution of Kenya recognizes participation of community in development projects (GoK, 2010) and consequently the government has decentralized water management responsibilities to county governments with the aim of promoting local governance and public participation in water projects. Indeed, the decentralization strategy facilitates greater social ownership of water resources and hence more sustainable environmental outcomes. Water accessibility is outlined in the Kenyan new constitution as a human right in which every person is entitled to have access to sufficient, affordable water and sanitation of acceptable quality for personal and domestic use (GoK, 2010).

Water is a very important resource for human life and development; human beings depend on water to grow food, produce goods and generate electricity. In addition, water is a vital element for healthy ecosystems affecting biodiversity, livelihoods, health and education (Acreman, 2003). There is simply no substitute for water as every living thing depends on it. Given its importance, the management of water resources becomes of central importance to all its users. However, non-participatory development and management of water resources remains a hindrance to sustainable human development, growth and poverty reduction. Cleaver (1998) suggests that the current water crisis in many countries has neither resulted from natural limitations of water supply nor is it from the lack of financing and appropriate technologies but rather from profound failures in water management. There is a general consensus that water resources should be managed at the lowest most appropriate decision making level. This idea has led to the formation of community-based water resource management (CBWRM) bodies in many countries which work collectively to manage common pool resources (Swallow et al 2005). CBWRM supports demand-driven projects that implement innovative, low-cost water technologies for poor communities in rural areas.

This study examined the influence of community’s participation in water management at the community level. It specifically looked into community’s involvement in terms of decision making and their actual roles and responsibilities in water management activities. The study was based on the idea that all communities members should be given opportunities to participate in public development programs.

1.2 Materials and Methods

Research Design

Descriptive study design was used for this study because it allows the researcher to study phenomena that do not allow for manipulation of variables. Descriptive survey is a method which enables the researcher to collect information and to demonstrate relationships and describe a situation as it exists (Burns & Grove, 2007). The design was helpful in collecting data from the population and availing the description of existing phenomena by asking individuals about their

perceptions, attitudes, behaviors or values. The design also allows the researchers to generate both numerical and descriptive data that is used in measuring correlation coefficient between the variables.

Study Area

Luanda Kotieno beach was chosen as the site of the study and the choice was purposive, the beach has experienced water pollution and inadequate water supply. Luanda K'Otieno beach is located in Rarieda sub-County, a rural area of Siaya County in the Western part of Kenya along the banks of Lake Victoria. Rarieda Sub County has five wards namely West Uyoma, South Uyoma, North Uyoma, West Asembo, and East Asembo with a population of 134,558 (Census 2009). The area is predominantly a Luo speaking area however there are pockets of other Kenyans living and trading in the area especially in the urban centers such as Ndori and Luanda Kotieno. Its name, Luanda K'Otieno, means the Rock of Otieno in Dholuo, the beach is one of the most popular fish landing post in Rarieda Sub County and a fish-eating area on the shores of Lake Victoria. Rarieda Sub County covers an area of approximately 403.30 Square kilometer with the main economic activity being farming and fishing (KNBS, 2009).

Target Population

Population is defined as the total collection of elements about which we wish to make some inferences, (Strydom & Venter, 2002). According to Amin, (2005) a study population is a complete collection of all elements or individuals that are of interest in a particular study and where inferences are to be made. With regards to this study, the study population and the target population was composed of male and female community members within Luanda K'Otieno. Luanda K'Otieno is in Naya sub location which has a population of 19,536 (Census 2009).

Sample and Sampling Techniques

Sampling is as a systematic selection of representative cases from the larger population (Gay, 1987). It is the sub-population to be studied to make an inference to a reference population. Sampling helps in getting accurate empirical data at a fraction of the cost that it would take to examine all possible cases. A representative target population of 350 community members who are beneficiary of Luanda K'Otieno beach either directly or indirectly was sampled using simple random sampling technique from whom 187 respondents were obtained using Yamane formula as follows:

$$n = N / [1+N (e)^2]$$

where:

n = sample size

N = population size (the universe)

e = sampling error (0.05)

^ = raised to the power of

$$n=350/[1+350(0.05)^2]$$

$$n=187$$

Table 1: Study Sample

Respondents	Target Population	Sample Size
Community Members	350	187
Total	350	187

Source: Author, 2019

This sample size is appropriate for both economic and ethical reasons and as (Gay, 1987), explains, “An under-sized study can be a waste of resources for not having the capability to produce useful results, while an over-sized one uses more resources than are necessary.

Data Collection, Processing and Analysis

Data for the study was collected using structured questionnaire. Questionnaires included both open and closed ended questions. The questionnaires were self-administered but in scenarios where the respondent was unable to read and/or write, research assistant was enlisted to guide them through the questions. Open-ended questions were mainly used to solicit qualitative data while closed-ended questions helped in obtaining quantitative data for statistical analysis.

Filled field questionnaires from the survey was cleaned using MS Excel spreadsheet package. The cleaning was aimed at identification of incomplete or inaccurate responses, this was corrected to improve the quality of the responses. The cleaned data was then coded and exported into Statistical Package for Social Sciences (SPSS) version 21 where both univariate and bivariate analyses were conducted. Univariate analysis involved generation of frequencies and proportions, measures of central tendency and dispersion of single variables used in the study. Bivariate analysis was conducting focusing on the interaction between dependent variables and independent variables using chi-square test and interpreted at 5% level of significance.

1.3 Results and Discussion

Response Rate

In this study, 139 respondents were interviewed at Luanda K’Otieno Beach. These were distributed as follows: By age, about 69% were in their youthful ages (14-35 years); by gender, nearly as males as females were interviewed; by highest level of education attained, 61% had at least secondary level of education (secondary, tertiary, university); by employment status, 58% were in employment (self or formally employed and in civil servant) and by estimated monthly income, 61% had estimated not exceeding KES 5000. In this study, there was Low participation of community in water resource management of the 139 respondents in the study 35% reported having been involved in the management of water resources with the other 65% reporting never being involved in the management of water resources. These findings concur with Kwena (2013) he found out that there was very low community participation in management of community projects and limited awareness.

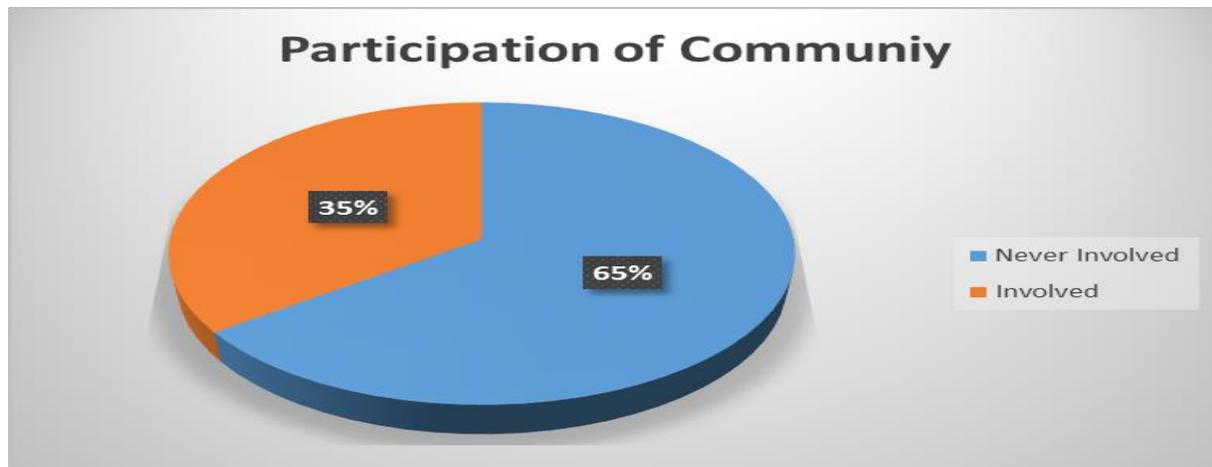


Figure 1: Rate of participation by the community
Source: Field data, 2019

Factors that influence and hinder Community from Participation in Water Resource Management

In this study, the main factors among the respondents who felt that water resource management was effective were: desire to have reliable access to clean and safe water (71%) and availability of financial resources to support the water resource management initiatives (9%) among other factors. For the community members who felt that the water resource management at the study site was not effective, the factors that mattered to them were: access to clean and safe water (36%), availability of financial resources to support the water resource management initiatives (18%) and awareness creation efforts at the community level (14%) among others. These findings agree with Ochelle (2012) findings that availability of finances, awareness through training affects community's participation towards management of resources within the community.

In terms of the factors that hinder the community from participating in water resource management, among those who felt that water resource management was not effective, lack of awareness on importance of water resource management among members (47%), poor leadership at the beach management committee level (31%) and lack of financial resources (29%) among other factors were highlighted. These findings concur with World Bank (2012) findings that lack of information makes it difficult for community to participate in water management. Among those who felt that water resource management at the beach was effective, the factors hindering participation of the community in water resource management at the beach were: poor leadership (30%), negative attitude from the community members (23%), lack of financial resources (13%) and lack of knowledge and awareness on importance of water resource management among members (13%). These findings also agrees with Jansz (2011) findings that finances and poor influences community participation on water management. In addition Cole (1996) found that it takes good leadership to manage any resource, the public ones especially, and when such leadership fails then management will also fail.

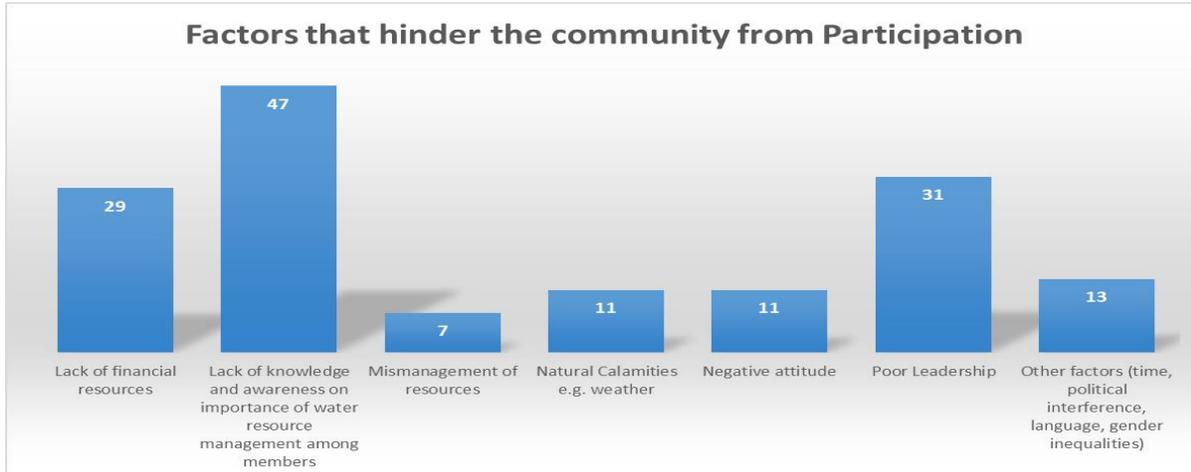


Figure 2: Factors hindering community participation
Source: Field data, 2019

Findings on Challenges of Community participation on managing the water resource of Luanda K’Otieno Beach indicated that indeed there were problem in participation of the community 67% of the 135 confirmed this, with the major challenge being lack of information. This findings agrees with the theory of common pool resource by Ostrom (1997) that stipulates that problems will exist in managing a common pool resource however it requires the ability of people to act collectively to overcome the management dilemmas inherent to common-pool resources.

Ways to improve community participation in Water Resource Management

In this study majority of the respondents opined that to improve community participation in water resource management at the beach, creation of awareness on the importance of water resource management (42%), Increased involvement of the community members in the management decision (22%), increased transparency and accountability in management (16%), enhance communication and coordination strategies (11%), increased resource mobilization for water resource management (7%) and other such as implementation of the rules and regulations and direct implementation of activities such as cleaning of the environment and planting trees (1%). These findings concur with World Bank (2003) that asserts in order for residents to participate in management of water resource and benefit, awareness creation, information sharing, consultation, decision making, and initiating action should be encouraged.

1.4 Conclusion

There is generally low community participation in water resource management. This is largely due to perceived dysfunctional beach management committee that is not doing its coordination role effectively. The participation is also low due to low levels of awareness on the importance of water resource management and participation of all in the management of water resources.

The study also concluded that in Luanda K’Otieno the desire to have adequate and reliable access to clean and safe water, availability of financial resources to support the water resource management initiatives and level of awareness of the importance of participation of the community in water resource management all influence community and motivates the community members to participate in water resource management. In addition the reason for low participation was as a

result of poor planning and organization of beach management unit, poor information management and failure to disclose information, lack of awareness of the community about beach management units' activities and political interference. Lastly the study further concluded that in Luanda K'Otieno beach there are problems that exist in managing the water resource and that the problems affect the management of water resource. The study found that the challenges are Lack of information, misunderstandings between community and the management committee, Mismanagement of fund, poor communication, political interference, poor leadership, discrimination and constant conflicts.

1.5 Recommendation

The study recommends that the County Government of Siaya through the department of fisheries to streamline the management of Luanda K'Otieno beach to address challenges with leadership and management challenges that hamper full participation of the community members in water resource management. Mobilization and sensitization of the community members by beach management around the beach on the importance of conservation of the water resources and why it is important that the such conservation efforts incorporates all members of the community is required. Scholars should consider conducting studies on the costs and benefits of community participation in water resource management at the beach with a view of making a case for wide adoption of proven water resource management strategies such as integrated population, health and environment approaches towards realization of SDGs

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