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## Contribution of Public Participation in Environmental Conservation to Kakamega County, Kenya

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### **Abstract:**

*Environmental conservation is increasingly becoming a pressing developmental issue. In Kenya, the implementation of conservation by the public remains poor whereas. Public participation is a critical factor in conserving the environment and safeguards against further degradation that leads to the climate change, yet the level of community participation is contingent upon the roles played by governmental and non-governmental actors. Data was primarily collected using questionnaires administered to a sample population of 385 and KII. The study employed descriptive and correlation research designs. The objectives established environmental determinants in conservation as being; Sand harvesting and construction at 27%; cultivation along rivers, and water catchment area at 22% and uncontrolled cutting of trees at 20%. Other determinants were; age, gender and knowledge. Respondents aged 40-49 were most concerned about soil conservation while most respondents aged 20 to 39 were more concerned about capacity building on environmental conservation. There is a positive correlation between environmental problems that affect the community and measures to mitigate the effects of these problems. There was little correlation on communities' knowledge on role of environmental committees in the study area. The correlation between what Government and community can do to protect the environment: and how degradation affects the community was significant. Equally significant was the correlation between what Government and community can do to protect the environment and measures to mitigate the effect of degradation. The study findings helped to enhance policy implementation, and to equip the public with knowledge on the benefits that accrue from environmental conservation.*

**Keywords:** Environment, public participation, livelihoods, household

### **1. Introduction**

Conservation is defined as the management and use of the biosphere, so that it may yield the greatest sustainable benefits to present generations while maintaining its potential to meet the needs and aspirations of future generations (IUCN-UNNEP-WWF, 1980). The thin layer of soil that covers most of the earth's land surface is key to human well-being and survival. Without it, there would be no plants, crops, animals, forests and people. However, about 40% of the earth's land surface and more than one billion people are affected by land degradation and it is noteworthy that degraded lands are home to the poorest segments of the rural population, IFAD (2001). Thus, conservation is positive embracing of preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment.

Public involvement in environmental conservation enforcement is a very important aspect for every citizen. Each citizen has a right to live in a healthy environment and the obligation to protect it (GOK, 2010). Following the lead set by the Rio Earth Summit<sup>1</sup> in 1992, every environmental sustainability meeting closes with a unanimous commitment to improved citizen participation in environmental decision making (UNCED 2012). Despite significant improvements on environmental protection over the past several decades, over 1.3 billion individuals worldwide still live in unsafe and unhealthy physical environments (UNISRID; Bullard R 2001). Hazardous waste generation and international movement of hazardous waste and toxic products pose some important health, environmental, legal, political, and ethical dilemmas. The role of citizens in environmental compliance and enforcement is fairly a new phenomenon in most countries (INECE, 1998). Historically, the public was not conscious about participating in environmental enforcement as it was the work of government agencies. In fact, in many instances, government agencies did not include clear mechanisms for citizen involvement in programs and actions to achieve compliance with and enforce environmental laws. Perhaps the most well-known mechanism is citizens going to court to enforce environmental laws (Wu, 2008).

The County and sub-county environment committees are a primary mechanism for NEMA to undertake these functions. The committees are responsible for the proper management of the environment within the province (region) or Counties in which they are appointed. In Kenya, citizens must contend with both polluted air and drinking water as well as poorly located noxious facilities such as municipal dumps for biomedical wastes, e-wastes, municipal wastes, wastes incineration, hazardous waste treatment among other wastes (Bullard R, 2001). However, there are many other opportunities for citizens to supplement governmental efforts. For instance, where a public complaint process exists, citizens are an important source of information concerning potential violations. Citizens have much to add to the negotiation and settlement process of environmental compliance assurance or enforcement actions.

## 2. Research Design and Methods

### 2.1. Study Area

The study was carried out in Kakamega County in western Kenya lying about 30 km north of the Equator. The County headquarters is Kakamega town which is 52 km north of Kisumu, and is 1,535 metres above sea level and is one of the most populous counties, being second only to Nairobi County. The study focused on three sub-counties; Kakamega North, Navakholo and Kakamega East which lies between Latitude of  $00^{\circ} 10' N$  and  $00^{\circ} 21' N$  and longitudes of  $34^{\circ} 47' E$  at about 1600m above sea level, this is since Kakamega North and Kakamega East are majorly covered by the Kakamega Forest and are drained by two rivers: Isiukhu to the north and Yala rivers to the South. The forest is the only remaining rain forest in Kenya and is the furthest east remnant of the Guinea-Congolese rain forest.

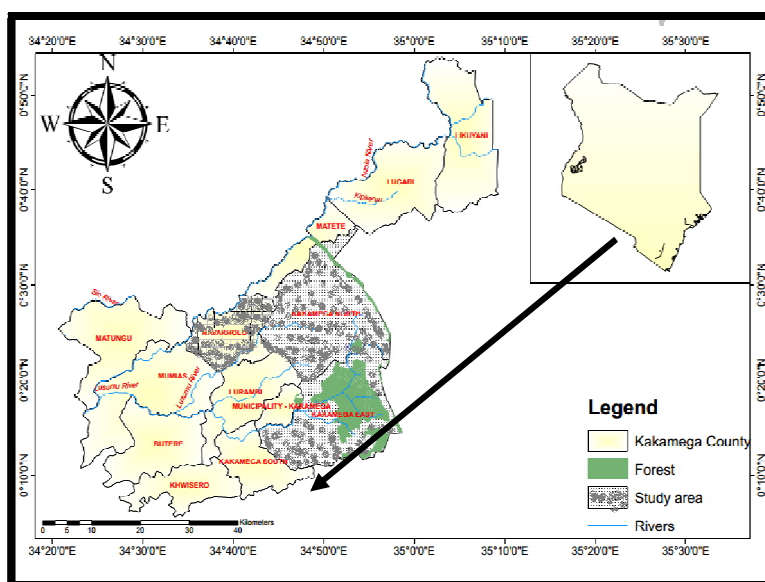


Figure 1: the map of the Study Area

Source: GoK Kakamega County Integrated 2013

### 2.2. Methods

#### 2.2.1. Data

Data for this study used both primary and secondary data. Secondary data involved reviewing reports from government reports like KWS, KFS. National and county government administration, books, periodicals, journals, newspapers and magazines by conservationists and scholars on water sector and water reforms in Kenya and other countries in order to assess the current trends of environmental degradation and public participation in conservation in Kakamega County. Primary data was obtained through observation and interviews conducted in three sub-counties; Navakholo, Kakamega North (Malava) and Kakamega East (Shinyalu), which are covered by Kakamega Forest.

#### 2.2.2. Methodology

The research designs adopted in the study were the evaluation and descriptive cross-sectional surveys. The research used the Probit model and variability of data through Means and standard deviation for inferential significance and causal relationships among the determinants of environmental conservation and public participation in Kakamega County from quantitative data collected from residents and key stakeholders.

## 3. Results and Discussion

### 3.1. Factors of public participation in Kakamega County

This section presents results on the factors influencing community-based conservation, as shown in the following sections.

### 3.1.1. Household membership to Conservation Group

The researcher sought to establish the level of community membership to Environmental Conservation committees. The results were analyzed and presented as shown in Figure 2 below.

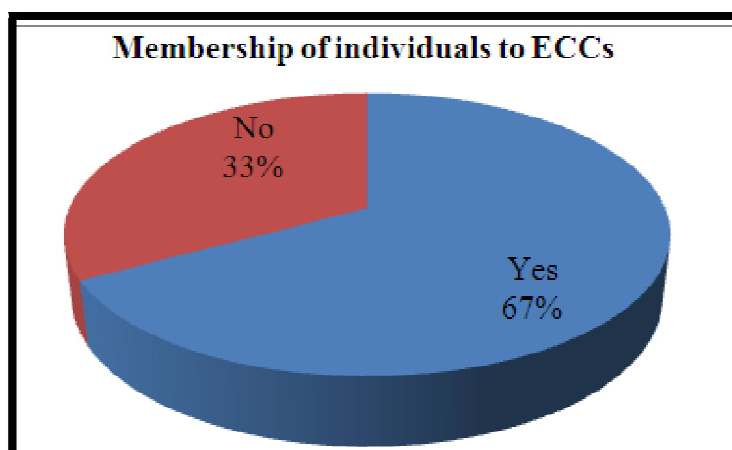


Figure 2: Membership of Households to ECC  
Source; Researcher, (2017)

The results show that 67% were members of environmental conservation committees while 33% had not registered. According to Arnstein's (1969) Ladder of Citizen Participation, findings also show a high level of non-membership in any conservation groups indicating a low human capital investment in conservation group activities studies. A study (IUCN, 1992; WRI, 1996) acknowledge that Community participation is now globally recognized as an effective strategy in the management of forest and water resources. (Enserink & Monnikh, 2003), assert that community participation improves the quality, efficiency and effectiveness of the environmental conservation project.

### 3.1.2. Morbidity and Ability to Work in Environmental Conservation Initiatives

The researcher sought to establish whether the morbidity and health status of forest adjacent dwellers affect the participation of the household members in Environmental conservation in Kakamega County.

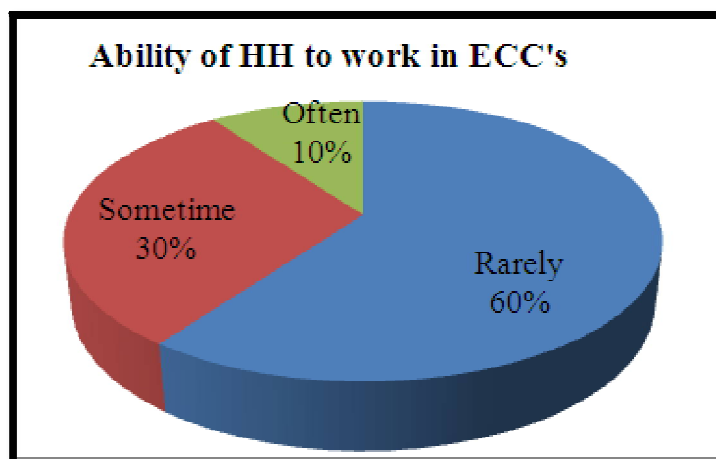


Figure 3: Members of Household Ever Too Sick to Participate in Conservation Activities in Kakamega County  
Source; Researcher, (2017)

The research established that some degree of the Members of households were ever too sick to participate in conservation activities, where 60% of the respondents were rarely sick and 30% were sick sometimes whilst 10% were sick often. The study findings show that the morbidity and ability to work in environmental conservation initiatives and in particular according to Jumbe and Angelsen, (2007) the women's inordinate work burden and role as providers of family food, fuel and water bring them into close contact with the environment and are disproportionately affected by eco-crises. This study finding further reveals that the limited role and involvement of women in decision making on land use resource leads to land degradation and restricted role in environmental conservation efforts thus far in Kakamega County (Jumbe and Angelsen, 2007).

### 3.1.3. Knowledge on Existence of Environmental Committee in Kakamega County

The researcher asked if the respondents knew of any environmental committees operating in their area, the only affirmative responses came from forest adjacent dwellers. This data is presented in Figure 4.

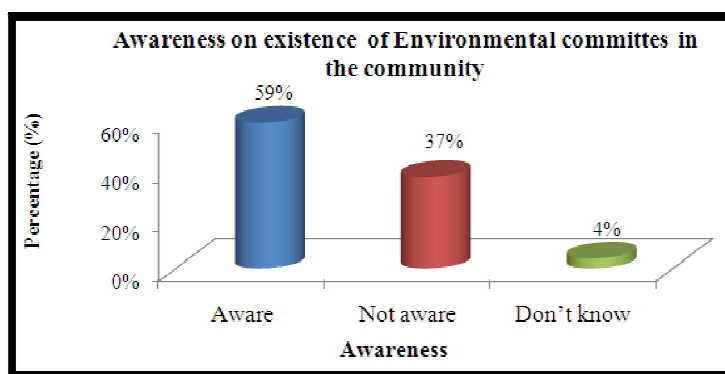


Figure 4: Environmental Committees in the Community  
Source; Researcher, (2017)

The research established that the forest adjacent dwellers are aware of the existence of environmental management committees, whereby 59% of the respondents had knowledge of environmental committee member, 37% were not aware of any environmental committee whilst 4% did not know anything like community involvement in environmental conservation. Following the view, recommendations for the establishment and strengthening of Environment Conservation Committee, ECCs by such studies as that by Mamo (2013) whose major finding was that the creation of environmental awareness were seen to be essential especially at the grassroots' levels for a sound environmental management. The study also evaluated the correlation of knowledge of any environmental committees in the community and Opinion on importance of environmental committees in the sub-county which showed insignificant correlation of .044

#### 3.1.4. Budgetary Allocation for Environmental Conservation in Kakamega County

The researcher sought to know whether communities are funded to undertake community conservation initiatives. The responses are as shown in the Figure 5 below.

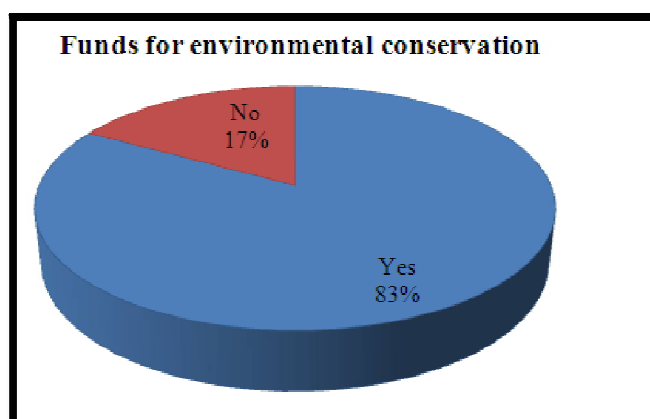


Figure 5: Funding for Your Activities Aimed at Environmental Conservation  
Source; Researcher, (2017)

The study found that 83% of environmentalists never received any funding for conservation whilst 17% acknowledged receipt of funding for conservation activities indicating a low level of funding for these activities. Budgetary allocations are integral components to an annual financial plan, or budget, of all organizations. They indicate the level of resources an organization is committing to a department or program. Without allocation limits, expenditures can exceed revenues and result in financial shortfalls. However, Contrary to findings by Wamae (2013) that the community forest associations, CFAs get funding mainly from membership contribution, voluntary contribution, selling of seeds and seedlings among others. This research established that, the government was the main financing body responsible for funding the committee activities.

#### 3.1.5. Source of Financing for the Community Conservation Initiatives

Money is often a limiting factor in conservation, and attempting to conserve the environment can be costly. The respondents were asked to list the sources of funds used to conserve the environment.

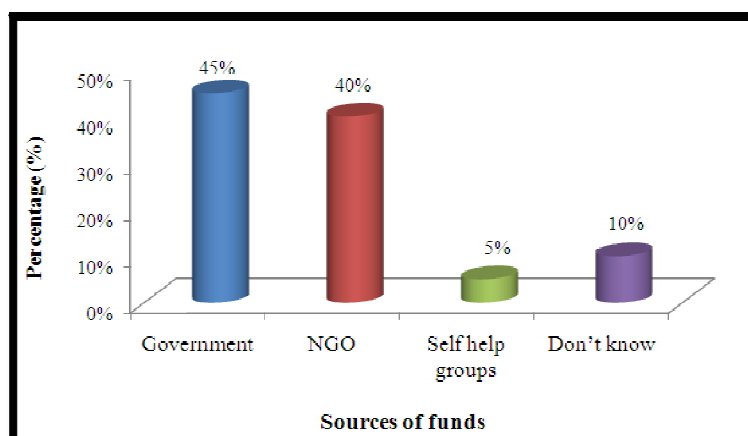


Figure 6: Sources of Financing for the Committee Activities  
Source; Researcher, (2017)

The study findings are presented in the Figure 6 above. This research established that, the government was the main financing body responsible for funding the committee activities at 45%; community 5% and NGO at 40%; 10% however did not know of any funding sources. The source of funding between government sources and NGO sources was at par with a difference of only 5%. Contrary to findings by Wamae (2013) that the community forest associations, CFAs get funding mainly from membership contribution, voluntary contribution, selling of seeds and seedlings among others.

### 3.2. Role of Community and Institutional Structures

The researcher sought to find out the role of the Environmental Conservation Committee (ECC). The respondents were asked to give the roles they play in these committees. The responses were analyzed and presented as shown in Figure 7 below.

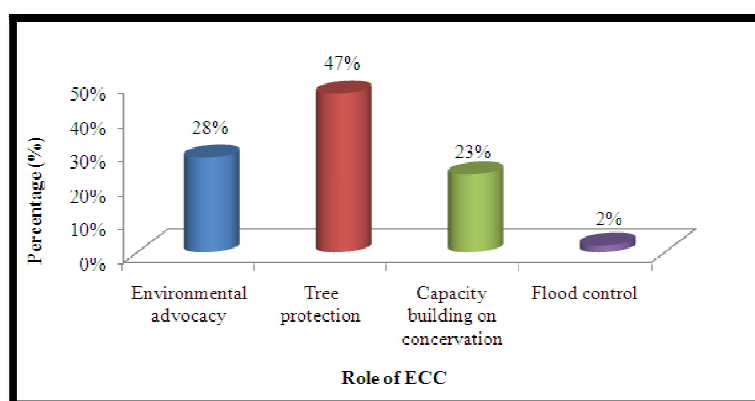


Figure 7: Role of the Environmental Committees in the Community  
Source; Researcher, 2017)

The research found that protection of trees accounted for 47% of the committee's role; 28% of the role accounted for advocacy; whilst 23% accounted for capacity building on conservation and 2% accounted for control of floods. The Environmental Conservation Committee (ECC) is the link between government institutions such as the ministry of environment, the Kenya Forest Service and Kenya Wildlife Service and the community. They typically organize different educational programmes and activities to promote public awareness of environmental issues and encourage the public to contribute actively towards a better environment. Knowledge of these local area committees is an indicator of how active these committees are. The research findings in Figure 6 shows forest adjacent dwellers knowledge of environmental committees.

The conservation political theory assumes that environmental reforms generally are opposed by business and industrial sectors which typically support conservatives (Dunlap, 1975). Secondly, an extension of government activities and regulations entailed by environmental reforms is generally opposed by conservatives. Thirdly, environmental reforms often require innovative action which is opposed by conservatives, (Dunlap, 1975). The evidences supporting this hypothesis can be found in several studies such as, (Dunlap, 1975; Hine *et al*, 1991; Samdahl *et al*, 1989; Howell *et al* 1992; and Daneshvary *et al*. 1998). However, it has been shown that the relationship between environmental concern and political ideology decreased in the 1980s (Howell and Laska, 1992).

#### 3.2.1. The Role of Non-State Actors in Conservation Activities

The researcher sought to establish the roles of non-state actors in environmental protection. The results were analyzed and presented in Figure 8 below.

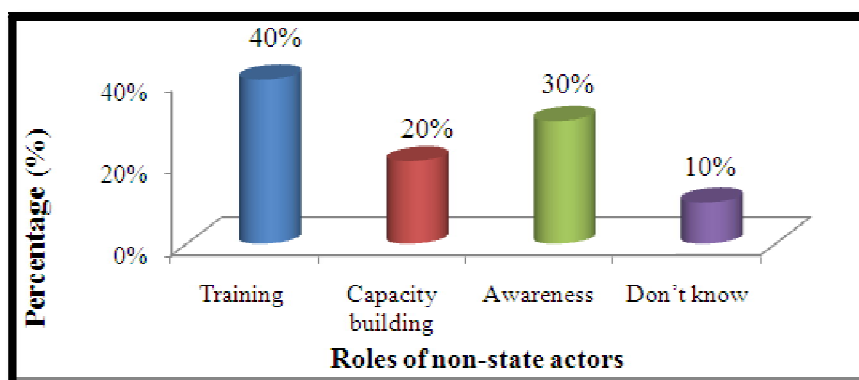


Figure 8: Roles of Non-State Actors in Support for the Public to Participate in Conservation Activities  
Source; Researcher, (2017)

When asked whether any organisation holds trainings or provides technical support for the households engaged in environmental conservation, 40% responded that they are trained by non-state organisations, 20% said that these organizations conduct capacity building on environmental protection, while 30% responded that these organizations create awareness on the importance of environmental protection.

### 3.3. Factor Influencing Participation in Conservation Activities

Respondents were asked to indicate factors which influence participation of the local community members in environmental protection. The responses were analyzed and presented as shown in the Figure 9 below.

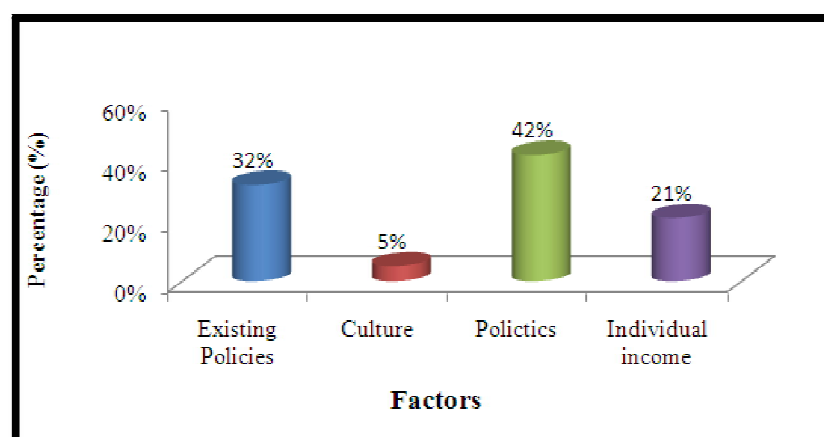


Figure 9: Factors Which Influence Participation in Conservation Activities

The results show that 32% of the respondents indicated that existing environmental protection policies affect their participation in environmental protection, 5% indicated that culture influences their participation, 42% were of opinion that politics greatly determine their level of participation, and 21% indicated that individual level of income is determinant.

The social, economic and cultural affairs of human beings are closely linked to how they view, utilize and conserve their environment (Wright, 2012). Political perspective views participation to emancipate and empower less privileged individuals/groups in society. Participation is also used to garner votes and/or gain political popularity during elections (Sewell *et al*, 1979). Kenya's burgeoning population is a stark contrast to its shrinking forests. Marginalized communities continue to cut down trees every day for firewood and charcoal use, causing the forests cover to retreat. Further, Nyagero (2016) found out that socio-cultural factors and poverty are the major causes of poor implementation of forest conservation measures in Trans Mara Sub-County.

The economic status of a livelihood includes financial as well as non-financial resources that can help improve the standard of living, and are within the control of the individual. This includes access to natural capital, which are those naturally occurring resources that can be tapped into to enhance the quality of life. Monthly income is a major indicator of income available to the family unit and needs. A change in the demand of a good or service is induced by a change in the consumers' discretionary income. Environmental degradation has variously been blamed on 'the ignorance and wastefulness of the poor' (Van Liere *et al*, 1980).

Conventional wisdom has turned to the explanation that the poor are forced to over exploit the environment by factors outside of their control (Samdahl and Robertson 1989). The linkage between poverty and environmental degradation is in terms of two main processes. First, environmental degradation is said to cause poverty because degradation involves the erosion of the resource base upon which the poor often depend for their livelihood, while the adverse impacts of environmental degradation on people's health further limits their productive potential. Second, poverty

is said to cause environmental degradation because the poor are forced into marginal resource areas. For instance, they are driven out of the best agricultural lands and into fragile and unproductive ecosystems (Tham, 1992).

## 5. Conclusions

The findings of the study revealed that fund allocation, individual income, culture, awareness and political status over natural resources are major determinants in environmental conservation of natural resources in Kakamega County. It was also found out in the research that socio-economic attributes are key determinants in conservation: they affect the degree to which individuals and age groups are motivated to acquire more income from the environment and seek to get more benefit by interfering with conservation efforts such as preservation of natural resources.

## 6. Recommendations

There is need to formulate a comprehensive policy for equitable sharing of natural resources to mitigate the practices that have a negative effect on the environment and which are caused by inequitable distribution of these resources. The Government also needs to come up with a policy to ensure that the community is involved in management of natural resources and increasing forestry cover.

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