

Gender Roles in Wetlands Conservation and Restoration in Murang'a County, Kenya

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ABSTRACT: Women are the majority vulnerable in wetlands access and control, yet livelihood provisioning services bring her in direct contact with and control of wetlands on a daily basis. Murang'a County is majorly a patriarchal society and women continue to experience the worst forms of oppression and exploitation in environmental management. Therefore, the purpose of this paper is to determine the gender roles in community-based strategies aimed at Wetlands conservation and restoration in Murang'a County, Kenya. It adopted a descriptive survey design with a target population of 144,376 divided into four Sub-Counties of Murang'a. Simple random sampling was used for each stratum to select a sample of 404 respondents. Key Informant interviews, focus group discussion, and documentary analysis were used to corroborate responses from the questionnaires. Qualitative data were coded before the analysis. Quantitative and qualitative data were analyzed using SPSS software version 26.0. Continuous variables were analyzed using a Chi-Square test and P-values of <0.05 at 95% confidence interval level was considered significant. The study revealed that there is gender inequality in conservation efforts due to poor policies, beliefs, lack of knowledge, and skills. The study thus recommends effective gender role equity in wetlands conservation efforts.

KEY WORDS: Gender Role, Wetland Conservation, Restoration, Riparian Community

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I. INTRODUCTION

Gender conservation and restoration mainstreaming is all about institutionalization of gender equity in the platform of policies, sensitivity practices and norms in the structure processes. The participation of women into wetlands conservation and restoration is a timely paradigm shift because gender inequality has been an issue of concern for quite a long time at policy level (Aditya, 2016). Kenya National Action Plan (2020-2024) revealed that vast effects of climate change have negatively impacted on women's livelihoods and majority of countries in Africa, Latin-America, and Asia are making some progress in accelerating women's participation on gender mainstreaming and desertification programs compared to Sub-Saharan region (Aditya, 2016). Kenyan Constitution (2010), was considered a step forward in providing legal framework for the public participation and engagement at all level of environmental conservation and restoration. However, in the platform of devolution, it also came with its own challenges (KNAP, 2020-2024).

Alston (2011) studied the effects of long-term drought reported that there is significant relationship between health, overall welfare and adaptation to climate change and she concluded that lack of gender awareness on climate change, is not only a challenge in Australia, but in the whole world (Alston, 2011). Rhman and Belgium (2011) observed that a community that depends on wetland for livelihood like the riparian's in Murang'a County, has indigenous knowledge and skills and enhancing their gendered participation in the conservation and restoration process may give them an opportunity to equitable distribution, gender inclusiveness to own and access resources, and sustainable exploitation of natural resources, hence improving their food security. It is on this background that the study was carried out to determine the existing gender roles in community-based strategies aimed at wetlands conservation and restoration in Murang'a County, Kenya.

II. THEORETICAL FRAMEWORK

The five stages theory was developed by environmental ministries from the G8+5 Countries through the initiative termed as Economics of Ecosystems and Biodiversity (TEEB, 2010). Five stages theory is pegged on five processes of analyzing global economic benefits of biological diversity: (i) Policy analysis (ii) stake holder analysis (iii) function (inventory) (iv) valuation of wetland services including trade off analysis (v) communication and dissemination.

The five stages theory anchors the study because it explains wetland ecosystem benefits that involves the policy analysis in the context of wetlands conservation laws, stakeholder's identification and prioritization in regards to social networks, livelihood assets sustainability technical and gender equality in wetlands conservation, analysis of value of wetlands services. It is done in the lens of multi functioning use (MFU) of wetlands and total economic values (TEV) which ensures that individuals derive the benefits from the wetlands with an option for future use. five stages theory also tries to explain the nexus between wetland valuation in terms of Ecology, Social, Cultural and Economics while taking into consideration the Tradeoffs in the Participatory approach (PA), Environmental Impact Assessment (EIA), Decision Support Systems (DSS), Cost Benefit Analysis (CBA) and Multi-Criteria Analysis (MCA). The information is then disseminated to all the stakeholders through effective communication for environmental conservation quality. It further reveals the biodiversity threat and loss which are invisible but has a serious impact on poverty and well-being of the poor women as it affects their ability to access the provisioning services such as water, food and medical herbs. Hence, impacting on their physical health. The five stages Theory therefore attempts to validate the gendered stakeholder's involvement in wetlands conservation and restoration for a sustained livelihood and enhanced sectors benefits.

III. METHODOLOGY

The study adopted a descriptive survey design. Leavy (2017) observes that a descriptive survey brings out facts clearly about activities and people's perception on a given problem and provides solution. The study was conducted in four purposely selected Sub-Counties of Murang'a with vast characteristics of wetlands which included; Kiharu, Kangema, Mathioya, and Maragua. The target population for the study was 144,376 riparian communities living and drawing their livelihoods from wetlands. The study also targeted 24 key informants in each Sub-County which were drawn from government sectors, CBOs, NGOs, Women groups, micro finance institutions, and local trades. The target population was divided into four strata such as Kiharu Sub-County stratum, Kangema Sub-County stratum, Mathioya Sub-County stratum, and Maragua Sub-County Sratum. Thereafter, a simple random sampling was used to obtain 404 sample respondents. Questionnaire was the main research instrument and of the 404 respondents to whom questionnaires was administered, 86.6% (n=350) answered the questions well and were eligible for the final analysis. Key Informant interviews, focus group discussion, and documentary analysis were used to corroborate responses from the questionnaires. Qualitative data were coded before the analysis. Both quantitative and qualitative data were analyzed using SPSS software version 26.0. Continuous variables were analyzed using a Chi-Square test and P-values of <0.05 at 95% confidence interval level was considered significant.

IV. Literature Review

Globally, conservation and management of wetlands took a center stage after the catastrophic flood of the Yangtze River in 1998, the state council of China released a guideline of integrated flood control which formed a legal perspective of conserving wetlands in China, and the document was adopted and used internationally (Mwakanje, 2009). In embracing gender mainstreaming strategies and action plan in wetlands conservation and restoration. Some countries have adopted more gendered policies such as South Africa which borrowed heavily the white paper which stresses on the gender role of both men and women, participation and representation in the water sector in line of its Water Act of 1987. In 2000, Zambia mainstreamed gender roles into her Water and Sanitation strategy through recommendation that water and sanitation sector implement gender policies. Uganda Water Policy 1997, also recognizes the participation of both men and women at all levels (Republic of Uganda, 1997).

Human socio-economic activities are depleting the natural resource base and causes environmental degradation, through pollution, desertification, and overexploitation of ecosystem, desertification, poor waste management and encroachment. However, in this regard, the Kenyan new constitution promulgated in 2010, mandated additional large number of government bodies in environmental, wetlands conservation, restoration and management (Government of Kenya, 2010). The Kenya government has invested heavily financially and on human capital in promotion of socio-economic development towards the realization of vision 2030, However, Kenya is still lagging behind in realization of gender equality in all spheres of development World Economic Forum (2005).

Traditionally, environmental conservation and management were through legislation prohibition and guarding the important sites using soldiers and guns, but this approach is losing ground and the researchers are calling for paradigm shift to more inclusive community participation. However, there is limited data on evidence base research done in Kenya, to determine the existing gender roles in the community-based strategies aimed at wetlands conservation and restoration. It is on this background that the study was conducted in Kenya and particularly among riparian communities living and drawing their livelihood on wetlands in Murang'a County.

IV. FINDINGS

Demographic Information: It was important to look at the gender distribution of the respondents in order to understand the different opinion between the male and the females on the subject matter. As indicated in Table 1, the study found out that 51.4% of the respondents are female while 48.6% of them are male, with a mean of 1.51 and a standard deviation of 0.501.

Table 1: Gender

	Frequency	Percentage
Male	170	48.6
Female	180	51.4
Total	350	100

This showed that majority of the respondents in the study are female and the findings is consistent with the national gender distribution in which females are approximately 51% of the national population (KNBS, 2019).

Age category of the respondents: Biologically, age is a very important component of human capital in Sustainable Livelihood Approach. The study assessed the age category of the respondents and as presented in Table 2, 24.9% are in the 51-60 years age category, 24% are in 41-50 years age category, 13.7% are in the 61-70 years age category, 13.4% are in the 31-40 years age category, 11.1% are in the age category of 71-80, 6.6% are in the age category of 25-30, 5.1% are in the age category of 18-24.

Table 2: Age Category

	Frequency	Percentage
18-24 Years	18	5.1
25-30 Years	23	6.6
31-40 Years	47	13.4
41-50 Years	84	24
51-60 Years	87	24.9
61-70 Years	48	13.7
71-80 Years	38	11.1
Others	4	1.1
Total	350	100

Approximately 1.1% indicated others, with a mean of 4.48 and a standard deviation of 1.618. From the finding's majority of the respondents, over 87% are aged between 31 years and 80 years.

Marital status: The study assessed the marital status of the respondents and the findings as presented in Table 3, shows that 52.3% are married, 27.7% are single, 7.4%are widowed, 5.7% are divorced, 3.1% are separated, 2.9% are widower while 0.9% indicated others, with a mean of 1.98 and a standard deviation of 1.432.

Table 3: Marital Status

	Frequency	Percentage
Married	183	52.3
Single	97	27.7
Divorced	20	5.7
Separated	11	3.1
Widowed	26	7.4
Widower	10	2.9
Others	3	0.9
Total	350	100

Household Members: The respondents were asked to indicate how many permanent residents of their families ate and spent the previous night in the household and the findings presented in Figure 1. From the study findings, 75.4% indicated 1-5 family members, 21.4% indicated 6-10 family members, and 2.6% indicated 11-15 family members while 0.6% indicated 16-20 family members. The findings imply majority of the households have between one and five family members.

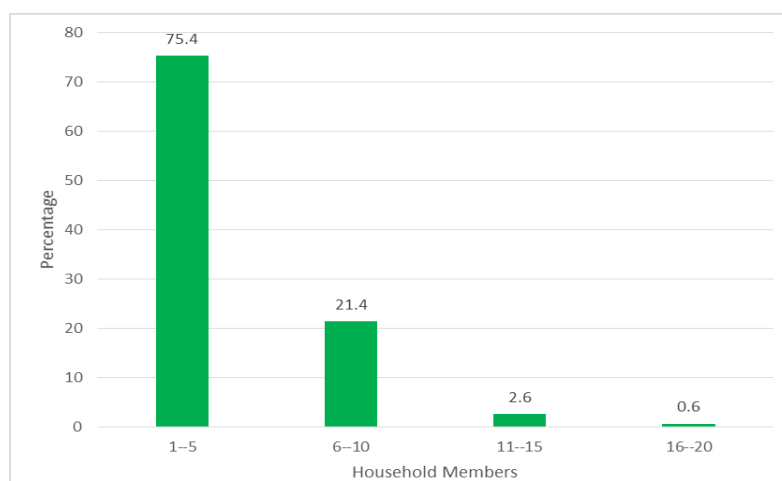


Figure 1: Household Members, $n = 350$.

The study of household permanent residents who ate and spend the previous night in household was basically important in determining assets owned, permanent residency requirements, common income intermingling and production decision making, food consumption from one pot and source. It help in meandering through the problem of extended families who lives together in a common unit and do not pool their monetary resources and do not eat at least one meal in a day together as well as clear indication of the household head who was to be interviewed.

The objective of the study was to determine the existing gender roles in the community-based strategies aimed at wetlands conservation and restoration in Kenya and specifically in Murang'a County. The study first sought whether the respondents were aware of discrepancies between men and women in wetlands conservation efforts and the findings presented in Figure 2, shows that 51% disagreed with the statement while 49 per cent agreed with the statement. The findings imply majority are of the opinion that there are no discrepancies between men and women in wetlands conservation.

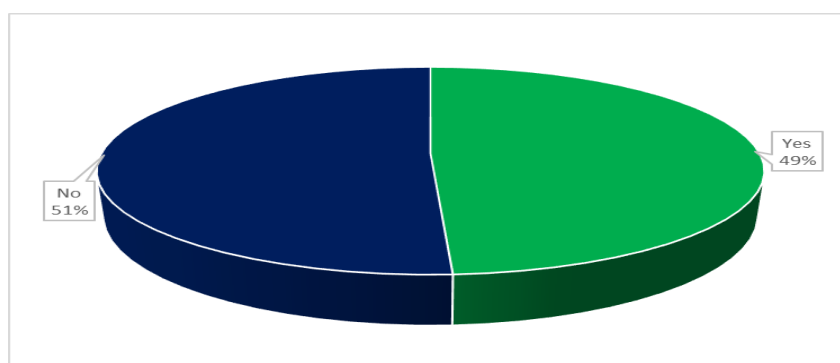


Figure 2: Gender Discrepancy in Wetlands Conservation, $n = 350$.

A cross tabulation between discrepancy between men and women in wetlands conservation and the wetlands conservation activities was carried out and statistical tests indicate a Chi-Square value $\chi^2_{1, 0.05} = 50.429$ of $P = 0.000$ at 95% confidence interval and 1 degrees of freedom and Spearman Correlation $R = 0.381$ at $P = 0.000$ indicating a significant positive association between the discrepancy between men and women in wetlands conservation and wetlands activities carried out by groups and this is statistically significant to the study.

The respondent extent of agreement was sought on the statement that poor policies hinders women participation in wetlands conservation and as presented in Table 4, 66% agree, 29.6% disagree, 3.4% strongly agree and 1.% are undecided. The findings imply majority (66%) agree poor policies hinder women participation in wetlands conservation.

Table 4: Poor Policies

	Frequency	Percentage
Agree	231	66
Disagree	103	29.4
Undecided	4	1.1
Strongly Disagree	12	3.4
Total	350	100

The respondents' opinion was sought on whether gender inequalities hinder women participation in wetlands conservation and as presented in Figure 3, 56.3% agree, 38.3% disagree, 2.9% are undecided and 2.6% strongly agree. The findings imply majority (56.3%) of the respondents agree gender inequalities hinder women participation in wetlands conservation.

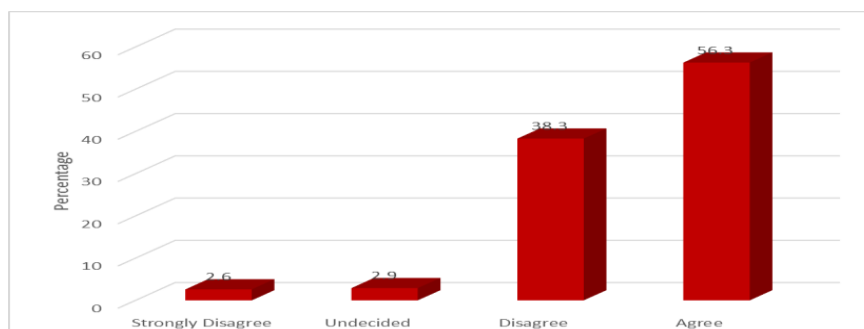


Figure 3: Gender Inequalities, $n = 350$.

Gender equality is advocating in ending all forms of discrimination against girls and women and ensuring their full participation in decision making in key leadership positions.

The study sought the respondents' opinion on whether cultural beliefs hinder women participation in wetlands conservation and the findings as presented in Figure 4, shows that 49.1% agree, 42.9% disagree, 4% are undecided and 4% strongly disagree. The findings imply majority (49.1%) agree culture hinder women participation in wetlands conservation.

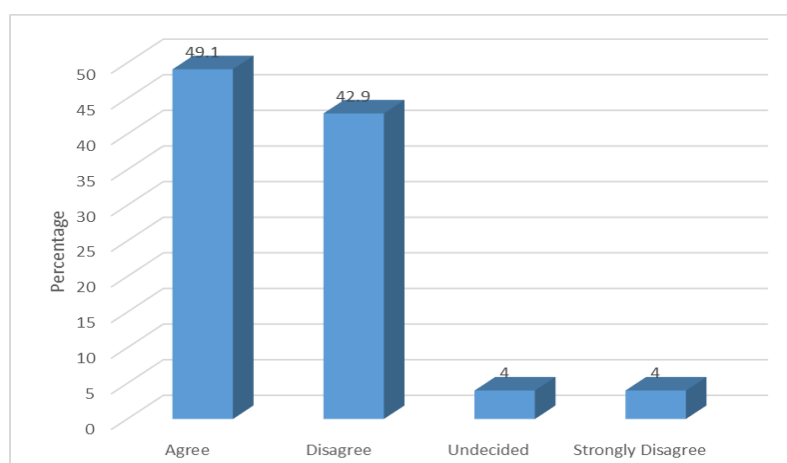


Figure 4: Cultural beliefs, $n = 350$.

The study sought respondents' extent of agreement with the statement that knowledge and skills hinder women participation in wetlands conservation and the findings as presented in Figure 5, shows that 56.9% agree, 37.1% disagree, 4.6% strongly disagree and 1.4% are undecided. The study findings imply majority (56.9%) of the respondents agree knowledge and skills hinder women participation in wetlands conservation.

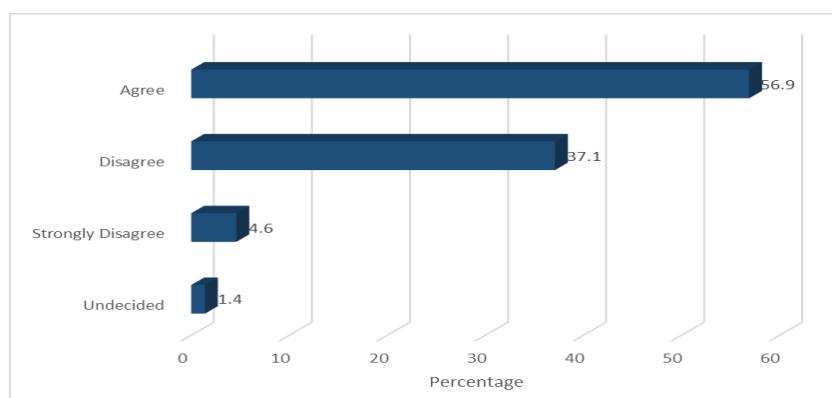


Figure 5: Knowledge and Skills, $n = 350$.

The finding corroborated with that of IFAD (2006) which observed that over 65% of the world's illiterate population are women, the notion was further corroborated with participatory structured investigation to understand factors hindering women participation in wetlands conservation as majority of participants indicated that Knowledge and skill constraints is an hindrance to women contribution in wetlands conservation. The study further sought the respondents' extent of agreement with the statement that leadership style hinder women participation in wetlands conservation and the findings as presented in Figure 6, shows that 52.5% agree, 30.35 disagree, 9.4% are undecided and 8% strongly disagree. The study findings imply majority (52.5%) of the respondents agree leadership style hinder women participation in wetlands conservation.

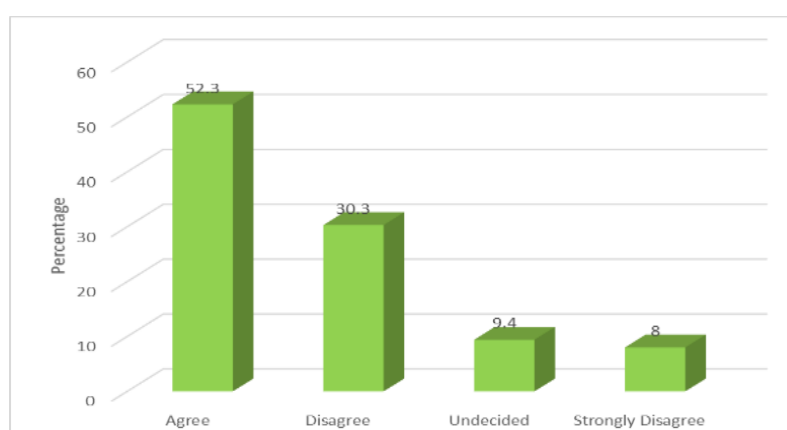


Figure 6: Leadership Style $n = 350$.

The respondents were assessed on how wetland conservation can be made gender inclusive and the findings presented in Table 5, shows that 27.3% suggested training of both men, women, boys and girls, 25.6% suggested empowering both men and women in conservation efforts, 21% suggested equal access to resources, 21% suggested equal participation, 3.4% suggested advocacy and 1.7% suggested benchmarking on good practices to developed countries.

Table 5. Gender Inclusivity Wetland Conservation

	Frequency	Percentage
Empowering both Men and Women in Conservation Efforts	22	25.6
Equal Access to Resources	36	21
Equal Participation	36	21
Training of Both Men, Women, Boys and Girls	47	27.3
Benchmarking on Good Practices to Developed Countries	3	1.7
Advocacy	6	3.4
Total	172	100

Several respondents reported that a part from gendered formal education empowerment programs, there is also need for informal gendered based empowerment programs targeting both the young and the old generation in the community.

V. DISCUSSIONS

The findings show that 51% of the respondents indicated there were no discrepancies between men and women in community-based strategies aimed at wetlands conservation and restoration. The findings are consistent with that of FAO (2016) who found that men and women in some instances perform complementary roles in natural resource management. The key informants were in agreement that when men build gabions, clear and cultivate the land, women would plant and attend to crops.

Factors hindering women participation in wetlands conservation and restoration: The respondent's opinion on factors hindering women participation in wetlands conservation and restoration was sought and the study found that poor policies (66%) According to GoK (2010), there are more than 77 sectorial Policies and legislations on wetlands prescribed in different Acts on environmental as well as wetlands management. These have resulted to duplication and conflict of interest. Findings from key informants indicated that of all the existing policies and legislation, none has addressed the unique challenges of women in wetlands conservation and restoration such as enhanced platform for decision making yet women play a key role in managing and safeguarding water resources and wetlands.

Gender inequalities: (56.3%) of the respondents indicated that gender inequalities hinder women participation in wetlands conservation and restoration. In support of the findings, Ramsar (2013), argue that achievements of Sustainable Development Goals (SDGs) depends on Wetlands Ecosystem as Goal Number 5 and 6 focuses on Gender Equality and water respectively. The notion is supported by Paul and Brajendra (2016), who observes that whenever natural resources are under stress, then gender discrimination and inequality put women at a sharp disadvantageous end of the natural resource shortage.

On culture: the study found that 49.1% of the respondents identified culture as a hindrance to women participation in wetlands conservation and restoration. In support of the findings, Bett (2014), observes that different community's still holds to cultural values which are male chauvinism and hinders women participation in wetlands conservation. On knowledge and skills, the study found that 56.9% of the respondents indicated that limited knowledge and skills hinders women participation in wetlands conservation and restoration. The finding is supported by IFAD (2006) which observed that over 65% of the world's illiterate population are women.

On leadership style: The study found that 52.5% of the respondents indicated that leadership style is a hindrance to women participation in wetland conservation and restoration. In support of the findings, Aditya (2016), argue that in the conservation field, there is a disconnect between research and study of transformative leadership style, women leaders who can inspire a shared vision and paint a positive picture of a scenario as to what it can be are hard to come across in a gendered wetlands conservation field.

How wetlands conservation and restoration can be made all gender inclusive: The study sought to determine how wetlands conservation and restoration can be made all gender inclusive. The study found that 27.3% suggested training of both men, women, boys and girls, 25.6% suggested empowering both men and women in conservation efforts, 21% suggested equal access to resources, 21% suggested equal participation, and 3.4% suggested advocacy and 1.7% suggested benchmarking on good practices to developed countries. Sida (2016) stretches our imagination that addressing gender inequality in the context of environment calls for a recognition that men and women are not homogenous as where they live their age, religion, sexual orientation, social class, and ethnicity variables shapes the links between gender and environmental conservation. However, this complexity should be put into consideration to enhance their effective participation in wetlands conservation and restoration.

Women and girls are inadequately involved in wetlands wise use as they are discriminated from key decision leadership positions such as regional and county commissioners, Chiefs and Assistant chiefs. Their role in livelihood provision and frequent interaction with wetlands cannot be underestimated as they possess a lot of knowledge about the benefits of wetlands to society. Their capacity building and participation inclusivity may serve as an entry point to gender equality in wetlands conservation and restoration efforts.

VI. CONCLUSION

The study concluded that gender roles in community-based strategies aimed at wetlands conservation and restoration were not well defined as there were so many factors hindering women participation in wetlands conservation and restoration in Kenya. This can be achieved through elimination of all forms of discrimination against women in environment and wetlands conservation efforts, gender mainstreaming in conservation

planning and policies perspective, good leadership styles and training managed by professionals with an aim of promoting gender equality in environmental and wetlands conservation.

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