

## POLICY PERSPECTIVE ON GOVERNANCE STANDARDS SETTING USING COMMUNITY PARTICIPATION FOR SUSTAINABLE MANGROVE MANAGEMENT IN LAMU KENYA

Jamila AHMED<sup>1,\*</sup>, Bessy KATHAMBI<sup>1</sup>, Robert KIBUGI<sup>2</sup>

<sup>1</sup>Department of Earth and Climate Sciences, University of Nairobi, 00100, Kenya

<sup>2</sup> Faculty of Law, University of Nairobi, 00100, Kenya

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### Abstract

*Community Participation is fundamental for sustainable mangrove management which enhances environmental sustainability. This study analyses the setting of governance standards using policy frameworks. The study adopted a correlational research design and used a mixed methods approach. It shows awareness of policies supporting community participation in mangrove conservation was at 94.6%. The respondents who knew existing policies of the forest conservation and management act were at 27.80% closely followed by those with knowledge of local agreement with Kenya Forest Service at 25.40%, and those who practiced community/traditional by-laws at 21.80%. Notably, 18.40% of the respondents indicated knowledge of the national mangrove management plan while only 6.70% expressed awareness of the public participation law. Community participation is overly affected by gender perceptions in the education level, age, and knowledge of governance standards. The findings indicate 71% of women have not participated in setting governance standards as well as 69.20% of men. 81% of respondents disagree with the existence of county government policies in mangrove conservation. There is a lack of enough participation in setting governance standards towards the existing policy framework, affecting mangrove management.*

**Keywords:** Community Participation; Sustainable Mangrove Management; Governance standards; Policy Framework

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### Introduction

Sustainable Management is a dynamic and evolving concept that aims to maintain and enhance the economic, social, and environmental values of all types of forests, including mangroves, for the benefit of present and future generations. Community participation becomes a requisite for sustainable management of mangroves where the outcome is to provide healthy ecosystem goods and services such as timber and coastal protection or carbon sequestration back to the community [1]. Community participation plays a vital role in the sustainable management of natural resources by enforcing core values of equitable relationships and improving livelihood [2]. To complement community participation, governance standards highlight the essence of community participation in sustainability [3].

The four pillars of governance standards that the study focused on, comprise of accountability, transparency, equity, and inclusivity [4, 5]. Accountability simply refers to the governing body taking responsibility and being answerable for its decisions [6]. Whereas Transparency refers to the rationale for decision making being clearly communicated and

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\* Corresponding author: jamilaa168@gmail.com

information being freely available and accessible [6, 7] This is very fundamental in mangrove discussion. It prompts the community to be responsible and take ownership in conservation efforts on sustainable mangrove management. Notably, from a community perspective equity promotes fairness and justice to mangrove conservation related efforts. It supports genuine community engagements and assures sustainable change. Lastly, Inclusivity is another major governance standard which refers to society having a voice in decision making, directly or through legitimate intermediate institutions representing their intention [8, 9]. These governance standards play a major role in enforcing policies on sustainable mangrove management.

Policies are vast and quite focused on the management of natural resources underscoring the importance of community participation [10]. The recent International Union for Conservation of Nature (IUCN) report on World Mangroves status indicates that in the last two decades, mangrove loss is at 60% affecting livelihoods and threatened species [11]. In 2008, the United Nations General Assembly (UNGA) adopted an ordinary resolution on a non-legally binding instrument on all types of forests. The resolution, an example of a global policy impacting mangroves, emphasized that the implementation of sustainable forest management is critically dependent upon good governance at all levels. As demonstrated earlier, mangrove governance, is critical because of its potential in climate change mitigation and adaptation serving as good carbon sinks habitat for biodiversity [12, 13].

In Kenya, Mangroves are an important livelihood resource providing income alternatives from mangroves wood value chains that the coastal communities use and also play a critical role in both restoration and protection [14]. According to the Forest Conservation and Management Act 2016, public participation and community involvement, together with good governance are core principles guiding the management of forests [15]. Good governance together with transparency and accountability, public participation and sustainable development are anchored under Article 10 of the Constitution of Kenya, as values and principles of national governance that are mandatory in all spheres including mangrove management.

The current (2021) draft forest policy seeks to give the mandate to community participation through enhanced governance structures in mangroves forest. Interestingly, Kenya has a robust National Mangrove Forests Management Plan (2017-2027) whose focus is to enhance sustainable mangrove management at a national level and similarly at the county level as it develops the place for community participation. The 2010 constitution of Kenya, through devolved counties, requires to have county laws that can support national government plans such as National Mangrove Management Plan which is still underway despite efforts for its inclusion [16, 17]. The gap that exists lies in the involvement of the community in the creation and implementation of mangrove management plans and policies for the restoration, protection, and conservation of mangrove forests.

This study focused on Lamu County, which has a unique ecological existence accounting for over 61% of the national mangrove cover [18]. Lamu County also enjoys diverse cultures and social interactions being a UNESCO heritage site that brings out the community participation component substantively whereby they uphold traditional values and custom systems [19]. Moreover, communities have their source of livelihood from the immense presence of mangrove forest which provides a variety of good and services such as breeding sites for fish and crabs which they sell for economic empowerment. Notably, sustainable mangrove management's vision revolves around community participation to deescalate the growing environmental degradation from competing interests and the effects of climate change experienced by the community [14, 20, 21].

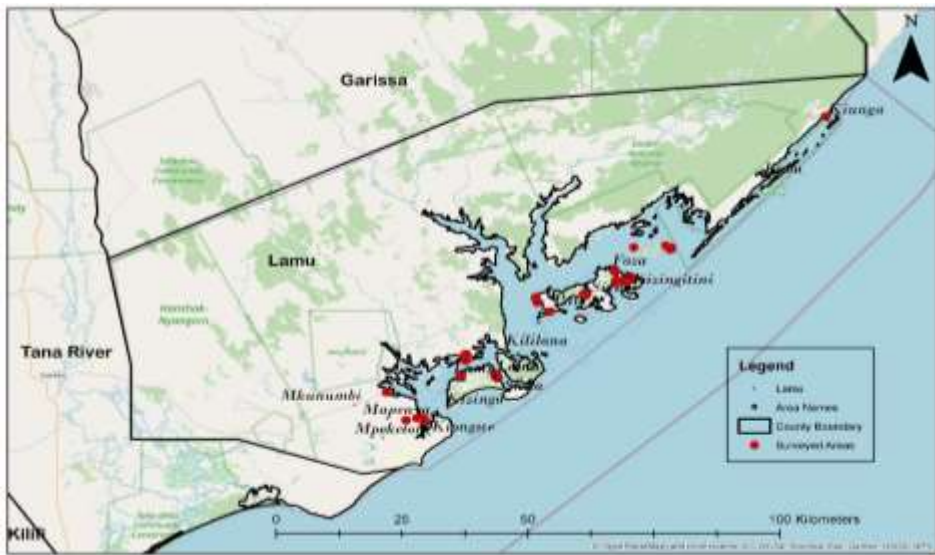
The underlying Rio principle 10 of sustainable development enhances economic progress by protecting the environment through enforcing guidelines on green economy policies which prevent the loss of biodiversity and its ecosystem services. Implementation of the National Mangrove Ecosystem Management Plan in Lamu county appears to be limited by inadequate community involvement. The community believes that mangroves are a God-given resource,

and they should be involved in policy formulation and implementation for conservation and protection. The Forest Conservation and Management Act through section 30(2) classifies mangroves forests as part of public forests in Kenya, meaning that the primary role of management is conferred on the Kenya Forest Service, a national government agency. Importantly, this law makes provision for members of a local community to participate in the management and conservation of a public forest (including mangroves) having formed a Community Forest Association. An important concern for this paper is to what extent this enables or enhances ability of community members to influence policy making and governance standards for the sustainable management of mangroves at that decentralized level. Thus, the cascading of the good governance and public/community participation standards in the forest law and Constitution to foster active roles for communities is important to this research. These governance standards of accountability, transparency, equity, and inclusivity are fundamental but require support from the existing policies on sustainable mangrove management [22-24]. The objective of this paper is to analyze existing policies on community participation in setting and implementing governance standards for sustainable mangrove management.

**Materials and Methods**

*Study area*

The study was conducted in Lamu county which was selected because of its high coverage of mangroves and its ecological uniqueness for carbon sinks and habitat for biodiversity. Lamu County is located on the North coast of Kenya (Fig. 1). It lies between latitudes 10° 40' and 20° 30' South and longitude 40° 15' and 40° 38' East. Covering an area of approximately 6,607 km<sup>2</sup>



**Fig. 1.** The map of Surveyed Area in Lamu County

*Data collection*

The study employed a correlational research design that incorporates a mixed methods approach that uses both quantitative and qualitative data [25, 26]. The sample size for the study was 296 derived from the Yamane sampling formula for a household greater than ten thousand sample population. The data collection methods involved the use of a survey, Key Informant interviews from Kenya Forest Service, Kenya Marine Research Institute, Community Based

organizations were interviewed as part of the triangulation to validate the data collected from the survey, and Focus Group Discussion for those who are in mangrove conservation and management. The survey was conducted using KOBO collect mobile software which gives GPS coordinates to ensure the credibility and reliability of sampled population. The data was analyzed by using R- Statistics and presented in graphs, tables, and frequencies, and correlation tests were done to show the significance between the variables. The Qualitative data was analysed using content analysis based on themes that focused on governance standards, community participation and mangrove conservation [27-29].

**Results and discussions**

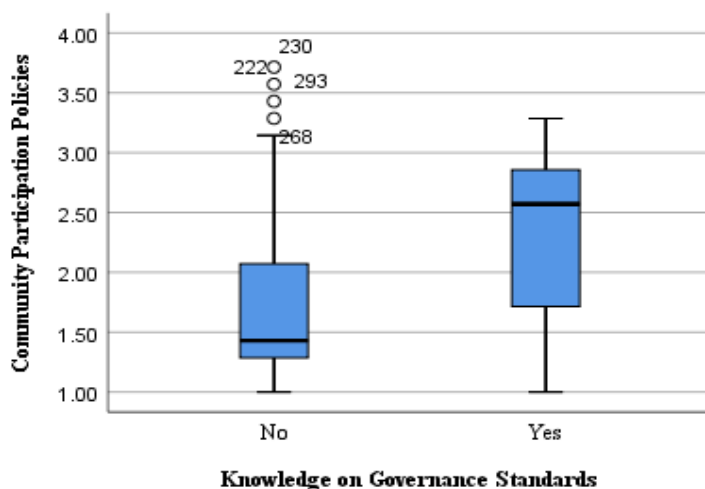
The results are from the survey conducted from 296 households which had a response rate of 98% meeting the threshold of good research [30] The results focused, on addressing the objective of this paper by examining the perceptions that respondents had towards mangrove policy framework and community participation in governance standards setting and implementation.

***Respondent’s Perception of Mangrove Management Policies and Legislation in Lamu County, Kenya***

The results categorize the different respondent’s perceptions on the role of community participation in policies for governance standards setting for sustainable mangrove management. It highlights the impacts of education level, gender perceptions on policies, and perceived impacts on the implementation of existing policies in community participation. This explicates how the community is involved in setting and implementing governance standards for sustainable mangrove management as illustrated by the results shared below.

***Respondent’s Knowledge on Policies Governing Community Participation in Setting Standards for Sustainable Mangrove Management in Lamu County***

Figure 2 below examines the correlation between the knowledge respondents had of the policies that govern community participation in setting mangrove governance standard, and how favourably the respondents perceive these policies.



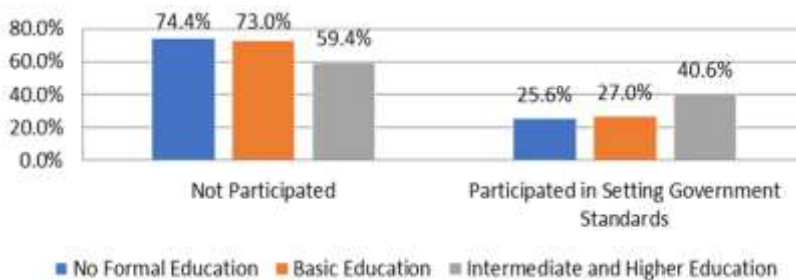
**Fig. 2.** Correlation between respondents’ knowledge of policies governing community participation

Results in the box plots in figure 2 shows that the respondents with limited or no knowledge of governance standards have a more favourable opinion (mean of 1.48 which

represents strongly agree) towards existing policies for community participation in implementing governance standards as compared to those with knowledge on governance standards who have unfavourable opinion (with a mean of 2.52 which represents strongly disagree). This is further supported by qualitative data from the Focus Group Discussions and Key Informant interviews where a significant number stated that they had limited knowledge of the policies but exhibited willingness to use the existing policies to implement governance standards.

***Role of Education on policies for Community Participation in setting and implementation of Governance standards for Sustainable Mangrove Management in Lamu County***

The Education level in Lamu community was segmented into four categories namely: no formal education, primary, secondary, and tertiary. The respondents had different education levels which impacted their participation in setting and implementing governance standards for sustainable mangrove management in Lamu County (Fig. 3).



**Fig. 3.** Impacts of Education on policies for Community Participation in Sustainable Mangrove Management in Lamu County

Results in figure 3 reveals that most of the respondents who participated in setting and implementing governance standards for mangrove conservation had intermediate and tertiary education at 40.6% as compared to those with basic primary education at 27% and with no formal education at 25.6%. Also, those who had not participated in governance standards were mainly those with no formal education at 74.4% and with basic education at 73% majorly and those with intermediate and higher education at 59.4% respectively. This is in line with qualitative data from Key Informants who highlighted that education plays an important role in their participation in setting of governance standards in mangrove management.

***Gender Perceptions of Policies in Governance Setting on Sustainable Mangrove Forest Management in Lamu County***

The respondents were of two genders, Female and Male. The results for community participation were analysed through these genders and gave different gender perceptions on existing policies known to the community such as public participation law, community/traditional by-laws, local agreement with KFS, National Mangrove Management Plan, and Forest Conservation and Management Act (Fig. 4).

In figure 4 data indicates that the female respondents were more aware than men of all the policies on sustainable mangrove forest management. Consequently, 50% of both male and female respondents were averagely aware of the national mangrove management plan. In other policies, 59% of female respondents were more aware of the Forest Conservation and Management Act and 63.50% of the Public Participation law. Additionally, the community/traditional by-laws were known more by 66.50% of female respondents as compared to 33.50% of male respondents.

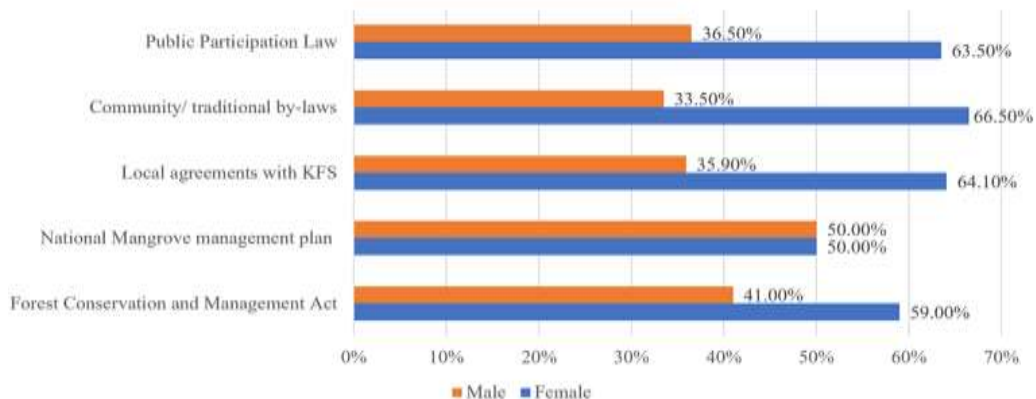


Fig. 4. Gender Perceptions of Policies in Governance Setting on Sustainable Mangrove Forest Management in Lamu County

**Perceived Impacts of Policies Implementation on Sustainable Mangrove Management in Lamu County**

The study analysed different impacts on existing policies or laws that pointed to the level of agreement on how the community plays a role in the implementation of these policies for sustainable management. It also explicates the awareness of the impacts in the implementation of existing policies in sustainable mangrove management in Lamu county (Fig. 5).

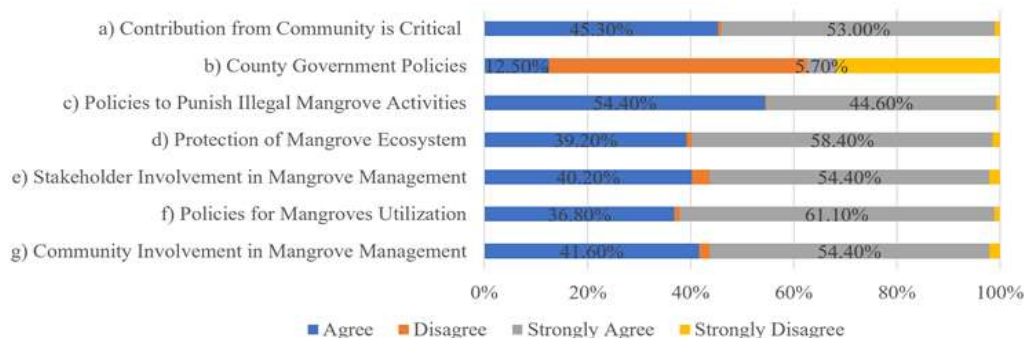


Fig. 5. Perceived Impacts of Policies Implementation on Sustainable Mangrove Management in Lamu County

Findings in figure 5 reveal that the respondents agreed with contribution from the community is critical, county government policies, policies to punish illegal mangrove activities, protection of the mangrove ecosystem, stakeholder involvement in mangrove management, policies for mangrove utilization, and community involvement in mangrove management on existing policies. However, an interesting finding is that 50% of respondents disagreed and 31.80% strongly disagreed with the existence of county government policies for mangrove management and conservation. Policies on mangrove protection and mangrove utilization had community participation in policy implementation as compared to policies on the punishment of illegal mangrove activities and community involvement in mangrove management.

**Respondent's Roles in Policy Development on Sustainable Mangrove Management in Lamu County**

The policy is made up of different activities that are in practice by the community to develop sustainability in mangroves. Such activities involve advocacy, rehabilitation, protection, selling, and cutting of mangroves as far as mangrove policy development is

concerned. The results were measured against males and females as the only gender in the study (Fig. 6).

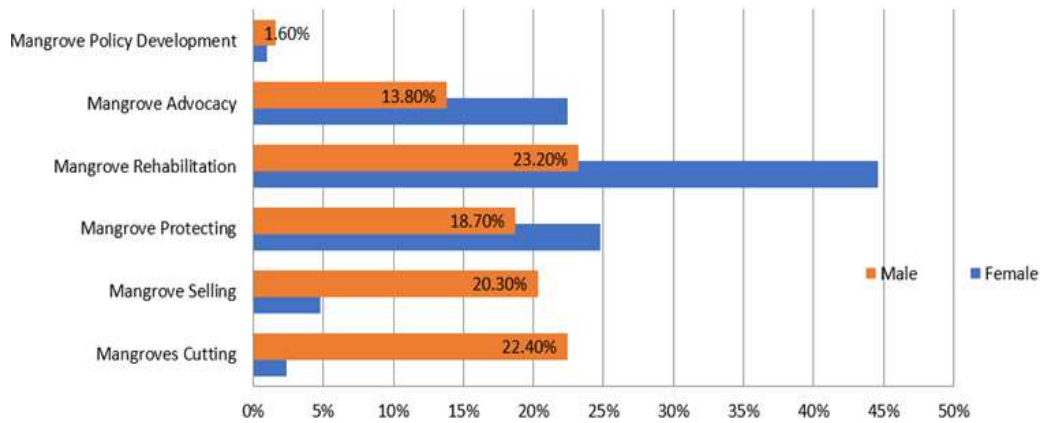


Fig. 6. Respondent's Role in Policy Development on Sustainable Mangrove Management in Lamu

In figure 6, Female roles largely consisted of rehabilitation (44.60%), protection (24.80%), and advocacy (22.40%) while male roles consisted of rehabilitation (23.20%), cutting (22.40%), selling (20.30%) and protection (18.70%). On other hand, male roles were on mangrove cutting (22.4%) and mangrove selling (20.3) which was significant. Both male and female respondents had low significant involvement in policies for sustainable mangrove management.

**Respondents Gender Roles on Governance Standards for Mangrove Conservation and Management**

The results explain the gender roles on different governance standards such as transparency, accountability, equity, and inclusivity in sustainable mangrove conservation. All these are intersected with the two genders male and Female (fig. 7).

Findings in figure 7 shows the main role played by 83.8% of men and 88.5% of women was the role of inclusivity in governance standards. The findings also indicate that there was a difference between males and females in the importance they attach to another subsidiary role they play in Mangrove conservation.



Fig. 7. Respondent's Gender Roles on Governance Standards for Mangrove Conservation and Management  
**Respondent's Participation in Governance Standards Setting for Mangrove**

### Conservation

The results show the level of participation in a different role of governance standards on sustainable mangrove management. The participation role was against the two-gender male and Female as shown in figure 8 below.

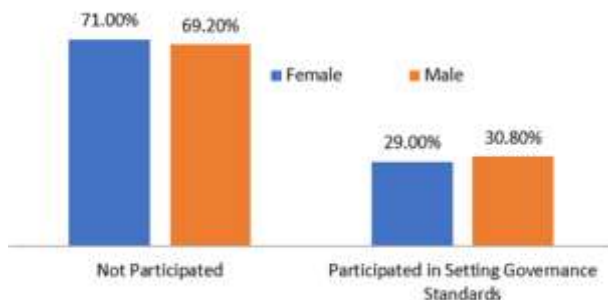


Fig. 8. Respondent's participation in Governance Standards Setting for Mangrove Conservation

Results in figure 8 illustrates that the majority of male 69.2% and female 71% of the respondents have not participated in the setting of governance standards for mangrove conservation in Lamu County as compared to 30.8% and 29% of male and female who have participated. This is also supported by qualitative data from the Focus Group Discussions and Key Informant interviews.

### Discussion

Community participation in governance standards setting is a pivotal role in sustainable mangrove management [31]. The existence of a robust policy framework for mangrove management sheds light on the importance of having community participation from the onset of policy creation to implementation for sustainability [32]. Results in Figure 1 illustrate gaps in policy development where community participation has not been fully undertaken which also influences ownership and implementation for sustainable mangrove management [33]. Involvement of communities in governance standards enhances governance pillars of accountability, inclusivity, equity, and transparency which foster better management of mangrove conservation activities [34]. Interestingly, the education of the communities affects their participation in policy development and more so in governance standards setting as indicated in figure 2 [35]. Community empowerment in training and capacity building in mangrove management would enhance their participation in governance standards setting for sustainable mangrove management. The majority of the respondents' education was significantly low which hindered their impactful participation in governance standards settings [36]. Despite the education level of the respondents being significant, their knowledge of various policies and laws that govern mangrove management was good with their awareness level of the National Mangrove Ecosystem Management Plan and Kenya Forest Conservation and Management Act scoring highly. These results in figure 3 explicate that increased capacity building could increase community participation in mangrove management [37].

The gender perspective on the policy awareness level underscores the necessity of gender equality in policy development for sustainability in mangrove management in Lamu County [38]. Additionally, the perceived impacts of the known policies illustrate that community participation is critical in mangrove management where mangrove utilization and protection are to be enhanced and sustained [39]. Results in Figure 4 elucidates perceptions that affect policy implementation when community participation is fully incorporated with outcomes such as county policies being perceived as almost non-existent[40]. The implications of this perception



impact the future of mangroves, especially by those who still perceive that mangroves are a ‘God-given resource’ and can be used without measure [41]. Lamu County government could capitalize on the high awareness level of the respondents on other national policies on mangrove management to enhance its policy assimilation and ownership by the communities [42]. Moreover, results in Figures 5 and 6 highlight the need to have community participation in governance standards-setting and policy development for better mangrove management [43]. Transparency and equity as governance standards provide an avenue for communities dependent on mangroves to be keen to full implementation of policies and laws for sustainability.

On the other, inclusivity and equity underpin why community participation would foster mangrove conservation advocacy, restoration, and protection for sustainable mangrove management [44, 45]. Community participation becomes imperative if sustainable mangrove management has to be undertaken to encompass a future outlook on a natural resource [46]. Policies that are co-created, co-designed, and co-produce through community participation enhance sustainability with the impacts going beyond motivation from policies and law to actual ownership [47].

## **Conclusion**

The place for community participation in governance standards settings is irreplaceable and becomes a critical aspect of sustainable mangrove management. Education on the importance of community participation in mangrove conservation highlights why capacity building and community empowerment can change the prospects of sustainable mangrove management. Governance standards of transparency, equity, accountability, and inclusivity are important pillars in policy development and implementation in mangrove management. Lamu County could leverage high awareness levels to assimilate their county policies on mangrove management in upscaling sustainability in mangrove conservation. Sustainable mangrove management actualization depends solely on community participation from the onset to implementation if the future of mangroves is to be secured.

## **Acknowledgements**

The author would like to thank the Mikoko project team; Dr. David Williamson, a climate change expert at IRD and Dr. Juliana Prospero, a botanist at CIRAD for reviewing this paper. The village elder and chairman of Lamu Community Forest Association Mr. Aboud Abdul for facilitating the interviews of other Lamu elders and his team on the ground. Henry Komu, an expert on mangroves at KEFRI for his assistance on relevant documents and information, John Ngala from KEFRI for his assistance and facilitation on the information needed. The entire Lamu community and especially women conservation groups led by Zulfa, Fatma, Tima, and Nuzla their efforts and dedication in providing relevant information on mangrove conservation is much appreciated.

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Received: August 12, 2022

Accepted: February 23, 2023