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THE ROLE OF STAKEHOLDER ENGAGEMENT ON THE SUSTAINABILITY OF DISASTER PREPAREDNESS AND RESPONSE PROJECTS: A CASE STUDY OF BARINGO COUNTY, KENYA

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ABSTRACT
This study investigated the role of stakeholder engagement in ensuring the sustainability of disaster preparedness and response projects in Baringo County, Kenya, a region prone to recurrent droughts and floods. Utilizing a descriptive research design, data was collected from 120 Disaster Risk Management committee members through structured questionnaires, analyzed using descriptive statistics and multiple regression. The results demonstrated that robust engagement of community members, government agencies, NGOs, and private sector stakeholders significantly enhanced ownership, resource mobilization, and effective project implementation, accounting for 68% of the variance in project sustainability ($R^2 = 0.68$, $p < .001$). Community involvement in planning and inter-agency coordination during evaluation emerged as key predictors of sustained outcomes. Barriers such as conflicting agendas and weak feedback mechanisms were identified as impediments. The study recommends establishing formal stakeholder forums, capacity-building workshops, standardized feedback systems, and policy incentives to foster inclusive and sustained collaboration, thereby strengthening the resilience and longevity of disaster management initiatives in Baringo County.

Keywords: *Stakeholder Engagement, Project Sustainability, Disaster Preparedness, Baringo County, Kenya*

INTRODUCTION
Disasters are occurrences that happen, causing disruptions in the normal conditions of existence. Those affected by disasters do not have the appropriate resources to withstand the impact or the capacity to organize themselves to mitigate it. According to Mizutori (2020), disasters are broadly classified as natural and man-made (technological). The former results from natural forces and includes events such as floods, hurricanes, tsunamis, drought, famine, pest infestations, and volcanic eruptions, among others. In today's globalized world, disasters have become more frequent and catastrophic. A World Vision report by Omer (2020) highlights some of the worst disasters that occurred in 2020, including the Coronavirus Pandemic, locust swarms in Africa, a chemical explosion in Lebanon,

hurricanes in South America, and civil wars and refugee crises in various continents. Disasters result in human and economic losses, injuries, and displacement of people, often leading to long-term damage to the environment and political instability. The United Nations office for Disaster Risk Reduction (UNDRR), spearheaded the development of policy frameworks and updates to member states on the progress of implementing the Hyogo Framework for Action (HFA 2005-2015), with the aim of substantially reducing disaster losses. However, during the ten-year period of monitoring and managing disasters through the HFA, the United Nations reported that more than 700,000 deaths occurred due to disasters, while over 1.4 million people were injured, and 23 million others were displaced. The total economic loss as a result of disasters was estimated at $1.3 trillion (UNISDR, 2015). The UN continues its role through the Sendai Framework for DRR (2015-2030), emphasizing enhancing understanding of disasters, strengthening disaster risk governance, and expanding global cooperation and access to financial support.

Kenya's disaster preparedness and response strategies are anchored in global and national frameworks, notably the Sendai Framework for Disaster Risk Reduction 2015–2030 and the National Disaster Risk Management Policy (NDRMP) of 2017. The Sendai Framework emphasizes a shift from reactive disaster management to proactive disaster risk reduction, highlighting the importance of understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction for resilience and enhancing disaster preparedness for effective response and recovery. Complementing this, Kenya's NDRMP aims to establish a robust disaster risk management system that contributes to and safeguards the nation's developmental achievements.

Baringo County, situated in Kenya's Rift Valley, is increasingly vulnerable to climate-induced hazards such as recurrent droughts and floods. Disaster risks in the County are characterized by recurrent droughts and floods, necessitating sustainable preparedness and response initiatives (Muia et al., 2021). These events have led to significant environmental degradation, displacement of communities and disruption of livelihoods. For instance, extreme flooding of Lake Baringo between 2012 and 2014 inundated entire villages, displacing families and impairing agricultural activities, fisheries, and tourism, thereby exacerbating food insecurity and poverty levels (Muia et al., 2021). Additionally, the county has experienced the emergence of sinkholes linked to alternating periods of drought and flooding, further threatening the safety and stability of local communities (Mongabay, 2021). The implementation of these frameworks has led to the establishment of early warning systems and emergency response centers.

Despite substantial investments aimed at enhancing disaster preparedness and response and the establishment of multi-agency response teams, the sustainability of these initiatives remains a challenge. A critical factor contributing to this issue is the inadequate involvement of local communities and limited collaboration among key stakeholders, including government agencies, non-governmental organizations (NGOs), and community-based

organizations (CBOs) (Klopstra et al., 2019; Baringo County Government, 2023). Many projects falter post-implementation due to inadequate community involvement and limited collaboration with key actors (Klopstra et al., 2019). Baringo County continues to grapple with sustainability challenges in its disaster preparedness and response initiatives. These challenges are often attributed to inadequate stakeholder collaboration, limited community involvement, and insufficient integration of disaster risk reduction strategies into local development plans. This study focused on stakeholder engagement as a pivotal determinant of the longevity and effectiveness of disaster preparedness and response initiatives in Baringo County. By examining the extent and quality of stakeholder involvement, the researcher aimed to identify best practices and inform policy recommendations that strengthen stakeholder collaboration, thereby enhancing the sustainability of DRR projects in the region and building the resilience of communities to disasters.

SIGNIFICANCE OF THE STUDY

This study holds considerable significance for policymakers, project implementers, donors, and the academic community, particularly in the context of disaster preparedness and response in arid regions like Baringo County, Kenya. By examining the role of stakeholder engagement in the sustainability of disaster preparedness and response initiatives, the findings provide evidence-based insights for policymakers and practitioners. Understanding how active participation from various stakeholders, including government agencies, non-governmental organizations (NGOs), community- based organizations (CBOs), and local communities affects project outcomes can inform the design and implementation of more resilient and effective disaster risk reduction (DRR) strategies. The United Nations Office for Disaster Risk Reduction (UNDRR) emphasizes that partnerships and an all-of-society approach are central to effective DRR, highlighting the importance of systematic and structured engagement with a wide range of stakeholders.

The study contributes to the academic discourse on participatory disaster management, particularly in arid and semi-arid regions. It addresses the gap in empirical evidence regarding the impact of stakeholder participation on the longevity and effectiveness of disaster initiatives. By providing a comprehensive analysis of stakeholder engagement in Baringo County, the research offers valuable insights into the dynamics of participatory approaches in disaster management, which can be applicable to similar contexts globally. The research underscores the critical role of stakeholder engagement in building community resilience. By involving local communities in the planning and execution of disaster preparedness and response initiatives, the study promotes ownership, accountability, and the integration of indigenous knowledge systems. Such inclusive practices are essential for developing context-specific solutions that are culturally appropriate and more likely to be embraced by the affected populations.

METHODOLOGY

Research Design

This study adopted a descriptive research design to examine the effect of stakeholder engagement and the sustainability of disaster preparedness and response initiatives in Baringo County. Descriptive designs are effective for systematically capturing perceptions, behaviors, and outcomes within real-world settings (Kothari, 2004).

Target Population and Sampling

The study applied a census approach to convert the study population into a study sample. The researcher therefore reached out to the County, Sub-County and Ward Disaster Risk Management Committees comprising 143 members tasked with coordinating the DRR activities in the County. The constitution of disaster response committees in all sub-counties and wards was not complete, but was ongoing. The sub-counties with already established ward committees were Tiaty (7 wards) and Baringo South (4). The DRM members comprised both County staff and unemployed community members drawn from the 11 wards in the two sub-counties of Baringo South and Tiaty, where disasters have a high prevalence. The study, therefore adopted a census sampling technique to sample the study population as a study sample.

Table 1: Distribution of Disaster Risk Management committee

Administrative Level	Population (N)	Sample Size (n)	Percentage (%)
County	30	25	20.8
Sub-county	50	42	35.0
Ward	63	53	44.2
Total	143	120	100.0

Table 1 shows that out of the total population of 143 DRM committee members, only 120 members successfully participated in the study. Of the total respondents, 85 individuals, constituting 70.8% of the sample, identified themselves as County Government of Baringo employees. In contrast, 35 respondents, representing 29.2% of the sample, stated that they were not employed by the County Government of Baringo. The 29.2% include the opinion leaders, chiefs and village elders.

Data Collection Instruments

In this study, structured questionnaires were the main tools used to collect data. The choice of questionnaires was driven by their efficiency in reaching a broad segment of respondents, thereby facilitating the collection of data across a wide demographic and professional spectrum (Mellenbergh, 2008). The questionnaire also included Likert-scale items assessing the extent of stakeholder involvement across four critical phases of the project lifecycle:

planning, implementation, monitoring, and evaluation. Descriptive statistics, including means, standard deviations, and frequency distributions, were computed to summarize the data.

RESULTS AND DISCUSSION

The study sought to establish the DRM members' awareness of active stakeholders in disaster preparedness and response at both the County and Ward levels. From the findings, only 16.7% of respondents (20 individuals) indicated awareness of active stakeholders in disaster preparedness and response activities in the county. A significant majority of respondents (83.3%) were unaware of any active stakeholders in disaster preparedness. This data suggests a gap in stakeholder engagement or communication at both the County and Ward levels. Further, the participants in the study were asked to provide information on whether they were aware of a memorandum of understanding among the stakeholders. Among the 20 who acknowledged they were aware of the presence of stakeholders at the county, only 8 individuals, representing 40% of the sample, stated being aware of the existence of an MoU. Conversely, a significant majority, comprising 60% of the total respondents, stated that they were not aware of an MoU on DRR between the County and stakeholders. The study looked at how long stakeholders were involved in disaster reduction efforts. Among the 20 respondents surveyed who were aware of the existence of stakeholders in DRR, 15 (75%) responded that the duration of the MOU was 1-6 months, while 5 (25%) indicated a duration of 6-12 months.

The findings suggest that the majority of stakeholders who were aware have engaged in disaster reduction efforts for a duration ranging from 1 to 6 months. This engagement reflects the need for longer stakeholders' commitment to addressing disaster challenges over time, indicating the need for a significant investment in disaster risk reduction activities. The analysis revealed that a significant majority of respondents (85%) reported involvement in at least two phases of disaster preparedness and response projects, with predominant participation in the implementation and monitoring stages. Notably, non-governmental organizations (NGOs) and community-based organizations (CBOs) exhibited the highest participation scores (Mean = 4.1, SD = 0.6), followed closely by local government officers (Mean = 3.8, SD = 0.7). Table 2 provides a summary of these findings.

Table 2: Stakeholder Participation Scores and Regression Coefficients Predicting Project Sustainability

Category	(M)	Deviation (SD)	Coefficient)	(Standard Error)	value
NGOs and CBOs	4.10	0.60	0.52	0.08	< .01
Local Government Officers	3.80	0.70	0.30	0.11	< .05
Community Involvement (Planning Phase)	—	—	0.30	0.12	< .05
Inter-agency Coordination (Evaluation Phase)	—	—	0.25	0.10	< .05

Table 2 presents mean participation scores for key stakeholder categories alongside their standardized regression coefficients predicting project sustainability. NGOs and CBOs recorded the highest average involvement ($M = 4.10$, $SD = 0.60$), followed by local government officers ($M = 3.80$, $SD = 0.70$). The regression results indicate that combined engagement from all stakeholders ($\beta = 0.52$, $p < .01$) significantly predicts the sustainability of disaster management projects ($R^2 = .68$). In particular, community involvement during the planning phase ($\beta = 0.30$, $SE = 0.12$, $p < .05$) and inter-agency coordination during the evaluation phase ($\beta = 0.25$, $SE = 0.10$, $p < .05$) emerged as the strongest individual predictors. These values illustrate the relative influence of each stakeholder group and phase-specific activities on long-term project outcomes, reinforcing the importance of sustained and inclusive engagement strategies.

The above findings align with Odongo's (2023) study on the Saka Community Development Project in Homabay County, which emphasized that active stakeholder engagement, particularly from NGOs and CBOs, is crucial for the sustainability of community programs. Similarly, the research by Gichuhi (2010) on the Kenya Red Cross Society highlighted the pivotal role of local volunteers and organizations in effective disaster response, underscoring the importance of grassroots participation in enhancing project outcomes. To meet Objective (i) "assess the mechanisms and extent of stakeholder involvement across phases" the study tested phase-specific effects by replacing the overall index with phase measures (planning,

implementation, monitoring, evaluation).

Planning engagement showed the largest association with sustainability ($\beta \approx 0.18–0.22$, $p<.05$), with additional (but smaller) effects for implementation and monitoring; evaluation-phase engagement was positive but imprecise when M&E strength is already in the model, consistent with reports that formal M&E activities are rarely undertaken. Programmatically, this dovetails with the finding that engagement often lacks institutionalization (low MoU awareness; short participation windows), so early-phase inclusion may be doing most of the work where later-phase structures (M&E) are weak. The analysis revealed that community and institutional participation strongly enhance project sustainability. Projects in which local communities, government agencies, and NGOs were actively engaged throughout planning, implementation, and monitoring were more likely to sustain benefits beyond three years. Stakeholder involvement not only improved ownership of disaster preparedness and response initiatives but also created stronger collaborative networks that reinforced continuity.

This finding underscores the importance of inclusive participation in ensuring long-term resilience and sustainability of interventions. The study further established that several barriers hinder effective stakeholder engagement and collaboration. Short engagement periods, limited awareness of stakeholder presence and roles, weak monitoring and evaluation practices, and the absence of formalized agreements such as Memoranda of Understanding were consistently cited as impediments. These barriers reduced the depth and impact of stakeholder involvement, weakening the capacity of disaster management projects to generate lasting benefits. Addressing such obstacles is therefore critical to fostering meaningful partnerships and ensuring the sustainability of disaster preparedness and response initiatives. To push benefits beyond the three-year horizon, formalized and lengthened engagements were vital through instruments such as MoUs; ward DRR committees with multi-year mandates), paired engagement with predictable resource channels, institutionalized routine M&E (closing the current activity gap), and investing in staff competence— exactly the levers that show up as significant in the county's own models and narratives.

The lack of awareness of the stakeholders in the disaster preparedness and response efforts could impact the effectiveness of disaster preparedness efforts, as stakeholders and community members may not be adequately informed or coordinated in response planning. This finding highlights a potential need for improved stakeholder visibility and engagement efforts, especially at the Ward level, to enhance community preparedness and resilience. The findings indicated a low level of awareness among respondents regarding the Memorandum of Understanding. The discrepancy in awareness levels highlights a critical gap in knowledge dissemination or communication strategies regarding the MoU. Such a low level of awareness may hinder effective cooperation, collaboration, or implementation of initiatives outlined in the MoU.

The findings of the study align with the study by Mukundi and Ondara (2024), which found that stakeholder participation and effective communication are positively correlated with project performance in humanitarian organizations in Nairobi City County, emphasizing the critical role of inclusive engagement in project success. Furthermore, the results corroborate the findings of Ngugi (2023), who reported that community participation in decision-making processes significantly influences the sustainability of food security projects in arid regions of Kenya. However, it's important to note that the influence of community participation on sustainability can vary depending on the context and implementation. In summary, the regression analysis underscores the pivotal role of stakeholder engagement, particularly during the planning and evaluation phases, in enhancing the sustainability of disaster management projects.

Qualitative feedback from respondents highlighted several impediments to effective stakeholder engagement in disaster management projects. A primary concern was the presence of conflicting stakeholder agendas. Divergent priorities among various stakeholders often led to misaligned objectives, thereby hindering cohesive action and undermining collaborative efforts. This lack of effective communication can exacerbate misunderstandings and impede the timely resolution of issues, further complicating project implementation. Resource constraints also emerged as a critical challenge. Insufficient allocation of financial and human resources impeded sustained stakeholder involvement, particularly in establishing long-term collaboration frameworks. Without adequate resources, stakeholders may be unable to participate fully in project activities, leading to reduced engagement and commitment.

CONCLUSION

This study confirms that comprehensive stakeholder engagement is integral to the sustainability of disaster preparedness and response projects in Baringo County. When local communities, non-governmental organizations, county government departments, and community-based organizations participate actively throughout project stages, there is a marked improvement in project ownership. Community involvement during planning translated into higher uptake of early warning practices, while inter-agency coordination during evaluation ensured lessons learned from one cycle were applied to the next. Inclusive participation also ensures resource continuity. When stakeholders co-create budgets, allocate responsibilities, and commit in-kind contributions, projects become less vulnerable to funding gaps that often follow donor withdrawal. Areas with higher engagement scores, particularly from local NGOs and CBOs were able to mobilize supplementary resources such as volunteer labor and locally sourced materials to sustain emergency response centers beyond their initial three-year horizon. Furthermore, stakeholder engagement fosters adaptive learning.

However, structural barriers impede optimal engagement. Divergent agendas such as when county budget cycles prioritize short-term emergency response over long-term community training, undermine consistent collaboration. Limited feedback mechanisms at the ward level reduce transparency and stifle the flow of local knowledge. Resource constraints, both financial and human, often force stakeholders to withdraw from multi- year initiatives once their immediate obligations are met. Addressing these barriers requires targeted policy reforms. annual development plans will allocate dedicated human and financial resources, reducing reliance on external donors and enabling longer-term collaboration frameworks.

In summary, comprehensive stakeholder engagement enhances ownership, resource continuity, and adaptive learning. By reforming governance arrangements, strengthening communication channels, and ensuring dedicated resources, local authorities and development partners can create an environment where stakeholder engagement becomes the norm rather than the exception ultimately leading to more resilient and sustainable disaster management outcomes.

RECOMMENDATIONS

The County Government should establish formal multi-stakeholder forums at both the county, sub-county and ward levels to facilitate ongoing dialogue among all involved parties. Clearly defined terms of reference that mandate regular meetings, joint planning sessions, and budgetary allocations are crucial for successful collaborative activities. It is also essential to provide capacity-building workshops for community representatives, equipping them with project management skills and ensuring they can participate effectively. To further encourage collaboration, policy incentives such as dedicated budgetary allocations, must be implemented to support inter-agency cooperation. Finally, developing standardized feedback mechanisms will ensure continuous stakeholder input, allowing for timely adjustments and greater transparency throughout project implementation. A mobile-based reporting system will ensure transparent two-way communication between implementers and beneficiaries. Performance-based incentives tied to sustained, active participation can motivate stakeholder groups to remain engaged over multiple project cycles. Finally, integrating disaster risk reduction into the County's annual development plans will allocate dedicated human and financial resources, reducing reliance on external donors and enabling longer term collaboration frameworks.

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