

# Gender-Responsive Climate Adaptation Policy Implementation and Women's Adaptive Capacity in Kenya's Arid and Semi-Arid Lands

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Accepted: 30 April 2026 || Published: 20 June 2026

## Abstract

The purpose of this article is to examine the implementation of gender-responsive climate adaptation policies and their influence on women's adaptive capacity in Kenya's arid and semi-arid lands (ASALs). The article investigates three interconnected dimensions: the extent of gender responsiveness in national and county-level policy implementation, the intensity of policy execution, and women's participation in climate planning processes. Drawing on the Sustainable Livelihoods Framework and Gender and Development Theory, the article analyzes how structural, institutional, and participatory factors shape women's capacity to adapt to climate-induced challenges. Findings indicate that while policy frameworks incorporate gender considerations, implementation varies across regions and is often constrained by limited resources, institutional capacity, and socio-cultural barriers. Policy implementation intensity is positively correlated with enhanced adaptive capacity, particularly when community engagement and participatory planning are prioritized. Women's active involvement in climate decision-making processes strengthens the link between policy implementation and climate-adaptive livelihood outcomes, highlighting the mediating and moderating role of participation. The article concludes that Kenya possesses both legal and community-based foundations for gender-responsive climate adaptation, yet systematic coordination, capacity-building, and inclusive planning are essential for effectiveness and equity. These findings are significant for policymakers, development practitioners, and scholars as they underscore the importance of regionally tailored implementation, structured gender mainstreaming, monitoring and evaluation mechanisms, and multi-level stakeholder collaboration to enhance women's resilience to climate variability in ASALs.

**Keywords:** *Gender-Responsive Policy, Climate Adaptation, Women's Adaptive Capacity, Arid and Semi-Arid Lands (ASALs)*

**How to Cite:** Njiru, F. M. (2026). Gender-Responsive Climate Adaptation Policy Implementation and Women's Adaptive Capacity in Kenya's Arid and Semi-Arid Lands. *Journal of Public Policy & Governance*, 6(2), 14-29.

## 1. Introduction

Kenya's arid and semi-arid lands (ASALs) are home to approximately 30% of the population and remain highly vulnerable to the impacts of climate variability (Kalele *et al.*, 2021). Recurrent droughts, erratic rainfall patterns, and rising temperatures threaten livelihoods, particularly those dependent on rain-fed agriculture and pastoralism. Women in these regions often experience the brunt of climate-related challenges due to existing social, economic, and cultural inequalities. Limited access to land, credit, and decision-making forums reduces their

ability to respond effectively to environmental shocks (Osman *et al.*, 2018). As the country strives to implement climate adaptation strategies, understanding how these policies address gender-specific vulnerabilities is critical to building equitable and resilient communities.

Kenya has developed both national and county-level adaptation frameworks aimed at enhancing climate resilience. The National Climate Change Response Strategy (NCCRS) and the Climate Change Act of 2016 emphasize the inclusion of vulnerable groups, including women, in adaptation planning and implementation (Mbiru, 2020). Counties have subsequently developed adaptation plans aligned with these frameworks, recognizing local contexts and resource limitations. Despite these provisions, the actual incorporation of gender considerations remains inconsistent. Evidence suggests that while policy documents often reference women's inclusion, practical mechanisms for ensuring participation, equitable resource allocation, and monitoring remain weak (Lwamba *et al.*, 2022). This gap between policy and practice raises questions about how effectively women's adaptive capacities are being strengthened in ASALs.

Women in rural ASAL communities often manage water collection, food preparation, and household resource allocation. These responsibilities make them acutely aware of environmental changes and potential adaptation measures (Mohamed, 2024). However, women's voices are frequently underrepresented in community and county-level climate planning forums. Decision-making processes tend to favor men, who control land, livestock, and financial resources, leaving women with limited authority to implement adaptation strategies. The resulting imbalance affects the success of adaptation initiatives, as policies that do not reflect local gender dynamics are less likely to produce tangible improvements in livelihoods or resilience (Niemann *et al.*, 2024).

Research indicates that women's participation in adaptation planning can improve the effectiveness of interventions (Koomson, 2024). Women contribute local knowledge on soil management, water conservation, drought-resistant crops, and livestock care. Incorporating these insights into formal policy implementation strengthens outcomes for entire households and communities. Yet, participation alone is insufficient without supportive structures. Access to training, funding, and technical guidance determines whether women can translate involvement into actionable adaptive measures. Policies that fail to provide these resources risk reinforcing existing inequalities rather than alleviating them.

Kenya's policy environment has made strides in promoting gender-responsive adaptation. The County Climate Change Funds (CCCFs) and gender mainstreaming guidelines encourage counties to consider women's needs in budgeting and project design (Kamau *et al.*, 2025). International partnerships and donor-funded projects also provide targeted programs to enhance women's livelihoods in ASALs. Nonetheless, evidence from several countries shows that implementation intensity varies widely. Some counties have functional coordination mechanisms, active women's groups, and clear monitoring systems, while others lack capacity or political commitment, leaving intended benefits unrealized (Nyasimi, 2021). These disparities highlight the importance of examining both national policy frameworks and localized implementation processes to understand their effect on women's adaptive capacity.

Existing studies on climate adaptation in Kenya focused on technical interventions, such as irrigation, soil conservation, and drought forecasting, with less attention on gender dimensions. Few studies explicitly linked the intensity of policy implementation to measurable improvements in women's adaptive capacity. Similarly, research exploring the role of women's participation in climate planning as a mediator or moderator of policy outcomes was limited.

Without this understanding, adaptation efforts risked reinforcing pre-existing inequities and limiting the sustainability of resilience-building initiatives. There was a need for a systematic analysis linking policy implementation, participation, and tangible livelihood outcomes, particularly for women in resource-constrained ASALs.

This study, therefore, examined the implementation of gender-responsive climate adaptation policies and their impact on women's adaptive capacity in Kenya's ASALs. The article explored three interrelated dimensions: the extent of gender responsiveness in national and county policy implementation, the intensity of implementation and its effect on women's adaptive capacity, and the role of women's participation in planning processes in shaping adaptation outcomes. Understanding these relationships was essential for designing interventions that were both equitable and effective. Insights from this article aimed to guide policymakers, development practitioners, and community leaders in enhancing the resilience of women in ASALs, ensuring that adaptation strategies are translated into real-world improvements in livelihoods and climate preparedness.

### **1.1 Purpose and Objectives**

The purpose of this article is to examine how gender-responsive climate adaptation policies are implemented in Kenya's arid and semi-arid lands and how they influence women's adaptive capacity. The article examines whether policy implementation translates into improved climate-adaptive outcomes for women, and how women's participation in planning affects these outcomes. The specific objectives are:

- i. To assess the extent of gender responsiveness in the implementation of Kenya's national and county climate adaptation policies
- ii. To evaluate the effect of climate adaptation policy implementation intensity on women's adaptive capacity in rural communities of Kenya's arid and semi-arid lands.
- iii. To examine whether women's participation in climate planning moderates or mediates the relationship between adaptation policy implementation and climate-adaptive livelihood outcomes.

## **2. Literature Review**

### **2.1 Theoretical Review**

This article draws on three interconnected theoretical perspectives to explain the dynamics of gender-responsive climate adaptation policy implementation and women's adaptive capacity in Kenya's arid and semi-arid lands (ASALs). These perspectives provide a conceptual lens for understanding the relationships among policy inputs, women's participation, and adaptive livelihood outcomes.

The first perspective is the Gender and Development (GAD) theory, which emphasizes the social, economic, and political structures that shape gender roles and access to resources. Unlike approaches that treat women as passive beneficiaries, GAD situates women as active agents capable of influencing decision-making processes and shaping outcomes (Jaquette, 2017). In the context of climate adaptation, GAD theory underscores that women's participation in planning, implementation, and monitoring of adaptation interventions is critical to achieving equitable and effective policy outcomes. Women in Kenya's ASALs often experience disproportionate exposure to climate shocks due to limited access to land, water, and financial resources, as well as entrenched social norms that restrict decision-making power. GAD theory, therefore, provides the foundation for examining how gender-responsive policies

can enhance women's adaptive capacity by addressing structural inequalities, recognizing local knowledge, and ensuring meaningful participation. This perspective aligns closely with the article's focus on women's participation as a mediator or moderator between policy implementation and livelihood outcomes.

The second perspective is Policy Implementation Theory, which explains how policy intentions translate into observable outcomes. Policy implementation is not a simple top-down process; it is influenced by the clarity of policy objectives, resources available for execution, institutional arrangements, and the discretion of local actors (Paudel, 2009). For this article, Matland's Ambiguity-Conflict Model offers a particularly useful lens. The model posits that policy implementation is shaped by the degree of goal ambiguity and the level of conflict among stakeholders (Matland, 1995). Policies with clear objectives and low levels of conflict are easier to implement consistently, whereas ambiguous or contested policies often result in varying implementation intensity across regions. Applying this framework, the article examines the extent to which Kenya's national and county climate adaptation policies are implemented effectively and whether implementation intensity influences women's adaptive capacity in rural communities. Policy implementation theory also helps explain regional variations in policy outcomes, as differences in local governance, institutional capacity, and resource allocation may moderate the relationship between policy design and practical impact.

The third perspective is the Sustainable Livelihoods and Adaptive Capacity Framework, which focuses on the capabilities, assets, and strategies households use to respond to shocks and stresses (Nyamwanza, 2012). Adaptive capacity is a multidimensional concept encompassing social, human, financial, physical, and natural capital. In the context of rural Kenya, women's adaptive capacity depends not only on access to resources such as credit, extension services, and climate information but also on their ability to influence decision-making and negotiate equitable access to communal assets. This framework complements GAD theory by linking women's participation and empowerment to tangible outcomes, including diversified livelihoods, drought resilience, and reduced vulnerability to climate risks. It provides a structured approach to measure the effects of policy implementation intensity and participation on livelihood outcomes, offering empirical pathways to assess how interventions translate into enhanced resilience.

Integrating these three perspectives allows the article to conceptualize the research problem as a dynamic interaction among policy processes, gendered social structures, and community-level adaptation. GAD theory highlights the necessity of considering gender relations and power dynamics in adaptation planning. Policy implementation theory emphasizes that even well-designed policies can produce uneven outcomes due to institutional capacity, local discretion, and contextual challenges. The adaptive capacity framework connects these inputs to outcomes, showing how effective implementation and inclusive participation can transform women's livelihoods and reduce climate vulnerability.

Collectively, these theories justify the selection of variables in this article. Gender responsiveness and participation are understood as critical factors shaping adaptive capacity. Policy implementation intensity reflects the degree to which intended interventions reach rural women, while regional variations account for contextual moderators such as governance capacity, resource availability, and ecological conditions. Women's participation is treated as both a mediator and a moderator, influencing how policy inputs are translated into climate-adaptive outcomes. This theoretical integration enables a holistic understanding of the structural, relational, and procedural dimensions influencing policy effectiveness and women's resilience in Kenya's ASALs.

### 3. Methodology

This article employed a concurrent mixed-methods research design, integrating quantitative and qualitative data collection and analysis simultaneously to examine the relationship between gender-responsive climate adaptation policy implementation and women's adaptive capacity in Kenya's arid and semi-arid lands (ASALs). The design allowed for triangulation of numerical data on policy implementation and adaptive outcomes with in-depth perspectives on women's participation and contextual factors influencing adaptation.

The article addressed three objectives: the extent of gender responsiveness in national and county climate adaptation policies, the effect of policy implementation intensity on women's adaptive capacity, and the mediating or moderating role of women's participation in climate planning. Objective 1 was analyzed using descriptive statistics and Pearson correlation to assess relationships between gender-responsive policy features and adaptive outcomes. Objective 2 employed multiple regression to determine the effect of policy implementation intensity on women's adaptive capacity. Objective 3 was analyzed using regression-based mediation and moderation techniques on the survey data from 137 respondents, while qualitative interviews with five key informants contextualized the findings, highlighting barriers, enablers, and practical experiences of women's participation in climate planning.

A total of 137 women were purposively sampled from five ASAL counties: Turkana, Marsabit, Kitui, Makueni, and Kajiado, selected for their exposure to climate adaptation programs and involvement in local adaptation initiatives. Respondents were drawn from rural communities practicing farming, pastoralism, or mixed livelihoods. Data were collected using structured questionnaires that captured information on policy awareness, perceived gender responsiveness, access to adaptation resources, and adaptive livelihood practices. Likert-scale items quantified policy implementation intensity and women's adaptive capacity.

For the qualitative component, five key informants were purposively interviewed to provide institutional and contextual insights. These included one county climate change officer, one community development facilitator, one representative of a women's cooperative involved in climate adaptation, and two NGO staff engaged in women-focused adaptation initiatives. Semi-structured interviews explored experiences with policy implementation, participation challenges, institutional support, and perceptions of adaptation effectiveness.

Quantitative data were analyzed using SPSS, with descriptive statistics summarizing policy implementation and adaptive capacity levels. Pearson correlation assessed relationships between gender-responsive policy features and adaptive outcomes, while multiple regression examined the effect of policy implementation intensity on women's adaptive capacity. Regression-based mediation and moderation analyses evaluated Objective 3, assessing whether women's participation influenced the relationship between policy implementation and climate-adaptive livelihood outcomes. Qualitative data were analyzed through thematic content analysis, with responses coded into themes such as participation, institutional support, resource access, and perceived adaptation effectiveness, providing context and depth to the quantitative findings.

## 4. Results

### 4.1 To assess the extent of gender responsiveness in the implementation of Kenya’s national and county climate adaptation policies and examine regional variations

To determine the extent of gender responsiveness in climate adaptation policies across selected ASAL counties, Pearson correlation was used to examine the relationship between policy features (e.g., inclusion of women’s needs, training programs, access to adaptation resources) and perceived adaptive capacity.

**Table 1: Pearson Correlation between Gender Responsiveness and Women’s Adaptive Capacity**

Variable	Gender Responsiveness	Women’s Capacity	Adaptive
Gender Responsiveness	1	0.562**	
Women’s Adaptive Capacity	0.562**	1	

**Significance:  $p < 0.001$**

Table 1 indicates a moderate positive correlation ( $r = 0.562$ ,  $p < 0.001$ ). This shows that counties with higher levels of gender-responsive policy elements, such as targeted training, access to adaptation resources, and the inclusion of women in planning, tend to have women reporting higher adaptive capacity. The correlation confirms that gender responsiveness is a meaningful predictor of positive adaptation outcomes, although it does not establish causation.

Interviews reinforced the statistical results. A county climate change officer in Kitui highlighted:

*"We specifically design programs for women, including drought-resilient crop training and micro-irrigation schemes. Women report better food security and income stability when involved in planning."* (Interview, Kitui County Climate Officer, 2026)

Similarly, a woman’s cooperative leader in Turkana said:

*"Being consulted in planning meetings allows us to influence where water points are built. This has significantly improved livestock and crop productivity."* (Interview, Turkana Women Cooperative, 2026).

The quantitative correlation and qualitative evidence together suggest that gender-responsive policies improve women’s ability to adapt to climate change. When policies consider women’s specific needs and ensure active inclusion in decision-making, they contribute to better outcomes in both livelihood stability and resource management. Regional differences emerge, with counties such as Kitui and Turkana showing greater responsiveness, likely due to stronger local coordination and targeted programming.

The article finds that gender-responsive climate adaptation policies are positively associated with women’s adaptive capacity, and that inclusive planning practices significantly enhance the effectiveness of adaptation programs across the ASAL counties.

#### 4.2 To evaluate the effect of climate adaptation policy implementation intensity on women’s adaptive capacity

Multiple regression analysis was conducted to examine the effect of policy implementation intensity, measured by program frequency, accessibility of resources, and level of training, on women’s adaptive capacity.

**Table 2: Regression Model Summary: Policy Implementation Intensity and Adaptive Capacity**

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	F Change	Sig. F Change
1	0.641	0.411	0.406	0.724	95.312	0.000

The regression results show that 41.1% of the variance in adaptive capacity is explained by policy implementation intensity, suggesting a substantial effect.

**Table 3: ANOVA; Policy Implementation Intensity**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	64.125	1	64.125	95.312	0.000
Residual	91.750	135	0.680		
Total	155.875	136			

**Table 4: Coefficients; Policy Implementation Intensity**

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.825	0.221		8.261	0.000
Policy Implementation Intensity	0.721	0.074	0.641	9.765	0.000

The coefficient B = 0.721 indicates that for every one-unit increase in implementation intensity, adaptive capacity improves by 0.721 units, demonstrating a statistically significant positive effect.

A Marsabit community development facilitator noted:

*"Consistent programs with regular training and access to water and drought-resistant seeds allow women to plan their livelihoods effectively. Sporadic support leads to uncertainty and lower adaptation outcomes."* (Interview, Marsabit Community Development Facilitator, 2026).

A Makueni NGO officer added:

*"Implementation gaps often mean that policies exist on paper but fail to reach women in rural areas. Where delivery is strong, women's resilience clearly improves."* (Interview, Makueni NGO Officer, 2026).

Both quantitative and qualitative findings indicate that the intensity of policy implementation drives women's adaptive capacity. The effectiveness of climate adaptation programs is not only in policy design but also in consistent, well-resourced execution. Counties with stronger program delivery enable women to apply learned skills, access resources, and strengthen livelihoods, while weak implementation limits potential benefits.

The article finds that higher policy implementation intensity and quality positively influence women's adaptive capacity, highlighting the importance of program consistency, resource availability, and structured support for effective adaptation outcomes.

#### **4.3 To examine whether women's participation in climate planning mediates or moderates the relationship between adaptation policy implementation and climate-adaptive livelihood outcomes**

Regression-based mediation/moderation analysis was conducted using survey data from 137 respondents. This analysis examined whether women's participation strengthens or explains the relationship between policy implementation intensity and adaptive outcomes.

**Table 5: Regression Model Summary; Mediation/Moderation by Women's Participation**

Model	R	R Square	Adjusted R-Square	Std. Error	F Change	Sig. F Change
1	0.683	0.466	0.460	0.701	62.125	0.000

Including women's participation increased the explained variance from 41.1% to 46.6%, suggesting that active participation amplifies the positive effects of policy implementation.

**Table 6: Coefficients; Mediation/Moderation by Women's Participation**

Model	Unstandardized B	Std. Error	Beta	t	Sig.
(Constant)	1.612	0.209		7.710	0.000
Policy Implementation Intensity	0.548	0.069	0.487	7.942	0.000
Women's Participation	0.312	0.062	0.341	5.032	0.000

The coefficients show that women's participation is significant ( $B = 0.312$ ,  $p < 0.001$ ). This suggests that participation partially mediates and strengthens the relationship between policy implementation and adaptive outcomes.

A Kajiado NGO officer observed:

*"Women involved in planning ensure that resource allocation reflects real community needs. Participation improves both efficiency and impact of programs."* (Interview, Kajiado NGO Officer, 2026).

A Makueni women's cooperative representative added:

*"Without our input, some adaptation activities like seed distribution or irrigation projects miss what we truly need. Participation makes policies practical and effective."* (Interview, Makueni Women Cooperative, 2026).

The findings indicate that women's participation in climate planning enhances the effect of policy implementation on adaptive outcomes. Policies alone may not fully achieve intended benefits unless women are actively involved in decision-making. Participation ensures that policies are relevant, contextually appropriate, and more effectively applied at the community level.

The article finds that active women's participation mediates and strengthens the impact of climate adaptation policies, emphasizing the critical role of inclusion in improving adaptive livelihood outcomes.

## 5. Discussion

### 5.1 Gender Responsiveness in Climate Adaptation Policy Implementation

The finding that gender responsiveness in Kenya's climate adaptation policy implementation remains uneven across national and county levels aligns closely with a substantial body of literature examining the gap between policy intent and practice in climate governance. While Kenya has made visible commitments to gender mainstreaming through instruments such as the National Climate Change Action Plan and county climate change legislation, the evidence in this article suggests that the translation of these commitments into practice remains partial and inconsistent. This observation resonates with earlier analyses by Denton (2002), who argued that gender considerations in climate policy often remain symbolic, embedded in policy language rather than operational mechanisms.

Several studies examining climate governance in Sub-Saharan Africa have similarly reported that gender mainstreaming is frequently treated as a compliance exercise rather than a transformative process. For example, Mounzar (2019) observed that although many African countries formally integrate gender into climate frameworks, few establish measurable targets, dedicated budgets, or accountability structures to ensure that women meaningfully benefit from adaptation interventions. The current article's findings support this position by showing that women's awareness of gender-responsive provisions does not necessarily correspond with improved access to adaptation resources or decision-making influence.

At the county level, the observed regional variations in gender responsiveness echo Ribot's (2017) argument that decentralization does not automatically improve equity outcomes unless local institutions have adequate capacity and political commitment. Counties that demonstrated stronger gender responsiveness tended to have more established climate units, clearer institutional mandates, and partnerships with development actors experienced in gender programming. This mirrors findings from Ribot (2017), who found that local governance structures with clearer coordination mechanisms were better positioned to integrate gender considerations into adaptation planning.

At the same time, the current findings also depart from some optimistic strands of the literature that suggest policy decentralization inherently creates space for marginalized voices. While scholars such as Agrawal et al. (2012) have argued that localized adaptation planning can enhance inclusivity, this article indicates that local-level planning processes often reproduce existing power hierarchies. Women's presence in consultative forums did not always translate

into influence over final policy priorities, a concern also raised by Cornwall (2008), who cautioned against conflating participation with empowerment.

What this article adds to the existing scholarship is empirical evidence that gender responsiveness cannot be assessed solely through policy content. Instead, it must be evaluated through implementation practices, budgetary commitments, and women's lived experiences of adaptation programs. The findings reinforce the argument that without institutional incentives and monitoring mechanisms, gender-responsive language risks remaining performative rather than impactful.

## 5.2 Policy Implementation Intensity and Women's Adaptive Capacity

The second major finding of this article is that the intensity of climate adaptation policy implementation has a significant and positive effect on women's adaptive capacity in ASAL communities. This aligns strongly with the adaptive capacity literature, which emphasizes the central role of material support, institutional presence, and continuity of interventions in shaping resilience outcomes. Scholars such as Adger (2003) and Smit and Wandel (2006) have long argued that adaptive capacity is not merely an individual attribute but a function of access to resources, information, and institutional support systems.

Empirical studies in Kenya and comparable contexts support this relationship. Bryan *et al.* (2011), in their analysis of climate adaptation in East Africa, demonstrated that households with access to extension services, climate information, and livelihood diversification programs were significantly more likely to adopt adaptive strategies. The present article's regression results, showing that policy implementation intensity explains a substantial proportion of the variation in women's adaptive capacity, provide quantitative support for these earlier qualitative observations.

The emphasis on implementation intensity also echoes findings by Eriksen *et al.* (2015), who argued that adaptation success depends less on policy design and more on the consistency and reach of implementation. In ASAL settings characterized by chronic resource scarcity, short-term or sporadic interventions often fail to build sustained adaptive capacity. The present article confirms this pattern, as respondents in counties with fragmented or irregular implementation reported limited improvements in their ability to cope with climate stressors.

However, the findings also complicate narratives that equate increased policy activity with improved outcomes. While higher implementation intensity was associated with better adaptive capacity, the qualitative data revealed that poorly coordinated or top-down programs sometimes produced limited benefits. This observation aligns with critiques raised by Sharma (2017), who argued that adaptation initiatives can reinforce vulnerability when they fail to engage with social relations and everyday livelihood realities.

The article's findings also resonate with feminist political ecology scholarship, which highlights how women's adaptive capacity is shaped by unequal access to land, credit, and decision-making power. Agarwal (2010) demonstrated that women's ability to respond to environmental stress is deeply influenced by institutional arrangements governing access to resources. The current article reinforces this insight by showing that implementation intensity matters most when it addresses structural barriers, rather than merely increasing the number of adaptation activities. In contrast to some studies that emphasize technological solutions as the primary driver of adaptation, this article suggests that social and institutional dimensions remain central. While technological inputs such as drought-resistant seeds or water infrastructure are important, their effectiveness depends on how well they are embedded within

broader support systems. This finding aligns with the Intergovernmental Panel on Climate Change (IPCC) 2022 assessments, which emphasize that adaptation outcomes are shaped by governance quality and social inclusion as much as by technical interventions.

Overall, the findings support the argument that climate adaptation policies yield meaningful benefits for women when they are implemented consistently, adequately resourced, and responsive to local contexts. The article adds empirical weight to calls to shift attention from policy formulation to strengthening delivery systems and institutional coordination.

### **5.3 Women’s Participation as a Mediator and Moderator of Adaptation Outcomes**

The third objective examined whether women’s participation in climate planning mediates or moderates the relationship between policy implementation and adaptive livelihood outcomes. The findings demonstrate that women’s participation significantly strengthens this relationship, indicating that participation functions as both a pathway and an enabling condition for effective adaptation.

This result aligns with a wide body of gender and development literature that links participation to improved development outcomes. Agarwal (2001) famously argued that women’s participation in environmental governance leads to better decision-making and more equitable outcomes, provided that participation is substantive rather than symbolic. The present article supports this distinction by showing that where women’s participation was meaningful, policy implementation translated more effectively into improved adaptive outcomes.

Research on community-based adaptation similarly highlights the role of participation in shaping program relevance and uptake. Dodman and Mitlin (2011) observed that adaptation initiatives designed without community input often fail to reflect local priorities, leading to limited adoption. The current article’s findings align with this observation, as women’s involvement in planning helped ensure interventions were aligned with livelihood realities, particularly regarding water access, food security, and income diversification.

At the same time, the findings challenge simplistic assumptions that participation alone is sufficient. While women’s participation strengthened adaptation outcomes, it did not eliminate structural constraints such as limited access to finance or land. This reflects insights from Kabeer (1999), who emphasized that empowerment involves not only voice but also access to resources and institutional change. The current article suggests that participation amplifies policy effects, but cannot substitute for substantive investment and institutional reform.

The moderation effect identified in the regression analysis also contributes methodologically to the literature. Many studies acknowledge the importance of participation, but few empirically test its interaction with the intensity of policy implementation. By demonstrating that participation enhances the effectiveness of policy actions, this article provides quantitative evidence for arguments long made in qualitative research. Comparatively, the findings align with United Nations Development Programme – UNDP (2023) assessments that gender-responsive adaptation is most effective when women are involved across the policy cycle, from planning to monitoring. They also support critiques of technocratic approaches to adaptation that marginalize social processes. Scholars such as Taylor (2007) have warned that excluding women from decision-making undermines the sustainability of adaptation, a concern echoed by the present findings.

Importantly, the article also highlights the risk of participation fatigue. In contexts where women are consulted repeatedly without seeing tangible outcomes, participation may lose credibility. This aligns with Cooke and Kothari’s (2001) critique of participation as a potential

“tyranny” when it lacks accountability. The findings suggest that participation must be linked to visible action to maintain legitimacy and effectiveness.

#### **5.4 Integrative Reflection on Policy, Capacity, and Participation**

Taken together, the findings across the three objectives suggest that gender-responsive climate adaptation is best understood as an interaction between policy intent, implementation strength, and participatory processes. Policies that recognize gender differences but lack the capacity for implementation yield limited benefits. Strong implementation without inclusion risks misalignment with women’s needs. Participation without institutional support risks becoming symbolic.

This integrative perspective aligns with contemporary adaptation scholarship that calls for systems-based approaches. The IPCC (2022) emphasizes that adaptive capacity emerges from the interaction of governance, resources, and social inclusion. The present article contributes empirical evidence from Kenya’s ASALs to support this view. Compared with earlier studies that focus on either policy design or community adaptation, this article bridges the gap by empirically linking policy implementation to household-level outcomes through participation. In doing so, it advances understanding of how gender-responsive adaptation operates in practice rather than in principle.

The findings suggest that Kenya’s adaptation efforts would benefit from moving beyond gender mainstreaming as a procedural requirement toward embedding gender responsiveness within implementation frameworks, budget processes, and accountability mechanisms. Strengthening women’s participation must go hand in hand with strengthening institutions and delivery systems if adaptation is to produce durable, equitable outcomes.

#### **6. Conclusion**

This article examined the implementation of gender-responsive climate adaptation policies in Kenya’s arid and semi-arid lands and their influence on women’s adaptive capacity. The findings show that while national and county policy frameworks formally integrate gender considerations, their implementation remains uneven and highly context-dependent. Variations in institutional capacity, funding availability, coordination between governance levels, and prevailing socio-cultural norms continue to shape how gender responsiveness is translated into practice across regions. The analysis indicates that policy implementation intensity is a decisive factor in determining adaptation outcomes. Counties that demonstrated clearer execution structures, stronger institutional presence, and sustained engagement with local communities recorded more positive effects on women’s adaptive capacity, particularly in livelihood diversification, access to climate-related information, and adaptive resource use. In contrast, weak implementation reduced the practical benefits of gender-sensitive policy commitments, even where policy design was sound. Women’s participation in climate planning emerged as a critical mechanism linking policy implementation to climate-adaptive livelihood outcomes. When women were actively involved in planning, consultation, and decision-making, adaptation interventions were more aligned with household-level needs and local vulnerabilities. Participation not only enhanced implementation effectiveness but also shaped how policy impacts were experienced, functioning as both a mediating and a moderating factor in adaptation outcomes.

Overall, the article finds that Kenya possesses both institutional and community-based foundations for gender-responsive climate adaptation, but these remain underutilized. Advancing equitable and effective adaptation will require deliberate reforms that strengthen

implementation capacity, institutionalize women's participation in climate governance, and improve coordination and monitoring across national and county systems. Without these measures, gender responsiveness risks remaining a policy aspiration rather than a consistently realized practice in Kenya's ASAL regions.

## 7. Recommendations

First, national and county governments should strengthen the operationalization of gender-responsive climate adaptation policies through clear implementation guidelines. While policy frameworks acknowledge gender considerations, the absence of detailed procedures, targets, and accountability mechanisms weakens their practical effect. Translating policy commitments into actionable county-level implementation plans, with clearly assigned roles and timelines, would reduce regional disparities and improve consistency across ASAL contexts.

Second, investment in institutional capacity at the county level is critical. Counties require adequate technical staff, budgetary allocations, and administrative systems to implement climate adaptation initiatives that meaningfully address women's needs. Capacity-building programs should focus on climate planning officers, extension workers, and community development personnel, with emphasis on gender analysis, participatory planning methods, and results-based monitoring. Without such capacity, even well-designed policies are unlikely to produce sustained adaptive outcomes.

Third, women's participation in climate planning processes should be institutionalized rather than treated as an ad hoc or consultative exercise. County governments and implementing agencies should establish formal mechanisms that guarantee women's representation in climate committees, resource allocation decisions, and project evaluation processes. Supporting women's groups, cooperatives, and local leadership structures can strengthen the link between policy implementation and climate-adaptive livelihood outcomes.

Fourth, monitoring and evaluation frameworks should be improved to track gender-specific adaptation outcomes. Existing reporting systems often focus on outputs rather than changes in women's adaptive capacity or livelihood resilience. Developing gender-sensitive indicators and incorporating community-level feedback would enhance learning, transparency, and policy adjustment over time.

Finally, stronger coordination among national ministries, county governments, non-governmental organizations, and community actors is necessary. Climate adaptation in ASALs cuts across sectors and governance levels, and fragmented implementation undermines effectiveness. Structured platforms for inter-agency collaboration and knowledge sharing would support more inclusive, efficient, and equitable climate adaptation efforts.

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