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Contribution of Civil Society in Climate Change Adaptation in Nairobi City County, Kenya

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ABSTRACT: The impacts of climate change, the brunt of which is experienced in the Global South, has occasioned the development of adaptation plans, policies and strategies by developing countries, with the aim of reducing vulnerability and risks. By and large however, this adaptation plans and strategies have not yielded expected results, as evidenced by the increasing manifestations of climate change, including the declining agricultural production, food insecurities and floods, among others. Against this backdrop, this study sought to explore the avenues for enhancing the contribution of civil society organizations in adapting to climate change in Nairobi City County, Kenya. The study adopted the descriptive survey design, targeting all 267 civil society organizations pertinent to adapting to climate change in Kenya. A total of 160 top administrative personnel was randomly sampled from among the civil society organizations. Primary data was gathered for the study using a standardized questionnaire. In data analysis, descriptive analysis and a Chi-square test were performed. The results established that mobilization, knowledge sharing, policy support have a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County. It was also found that institutional coordination was also found to have a significant intervening role on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya. It is thus recommended that administrators of CSOs involved in adapting to climate change in Nairobi City County, invest in mobilization, knowledge sharing, policy support and institutional coordination.

KEYWORDS: Adaptation, Climate Change, Institutional Coordination, Knowledge Sharing, Policy Support

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1. INTRODUCTION

The impacts of climate change, the brunt of which are experienced in the Global South, have occasioned the formulation of adaptation plans, policies and strategies by developing countries, with the aim of reducing vulnerability and risks (Lwasa, 2018; African Union, 2019). By and large however, these adaptation plans and strategies have not yielded expected results, as evidenced by the growing manifestations of climate change, including declining agricultural production, drought, famine, food insecurities and floods, among others. In this regard, some studies (Banks *et al.*, 2019; Daron *et al.*, 2021) propose a persistent multi-lateral involvement of all parties involved, beginning at the local, national and regional levels, and particularly the Civil Society Organizations (CSOs). CSOs are particularly reported to play a crucial role in among others, promoting new climate change legislation, programs, policies, or tactics; raising awareness; and keeping governments accountable for their obligations (Kuyper *et al.*, 2018).

In Kenya, a number of CSOs and CSO alliances including Kenya Climate Change Working Group (KCCWG) and National Environment Civil Society Alliance of Kenya (NECSA-K) have been formed with the aim of articulating and advocating for issues on natural resources and the environment in addition to confronting the causal nexus of climate change (Cook *et al.*, 2017). Conversely, in most developing countries, the contribution of CSOs is largely inadequate owing to their limited capacity attributed to among others, low awareness levels, lack of policy support as well as limited success stories to benchmark against (Dombrowski,

2018). It however remains unexplored in the Kenyan body of knowledge, the strategies for enhancing the involvement of CSOs in adapting to climate change in Nairobi City County, Kenya.

Extant studies (Ojwang *et al.*, 2017; Nderitu, 2018; M'mboroki, 2018; Kibe, 2018) have largely focused on adapting tactics to climate change and practices, overlooking the contribution of CSOs. For instance, Nderitu (2018) studied how utilizing environmental and social benefits will aid Kieni's agropastoral communities responding to climate change in Nyeri County, while M'mboroki (2018) studied the effects of pastoral communities' coping strategies and climate change in Kenya's Laikipia County's Mukogodo wooded areas. Kibe (2018) assessed the adoption of UNFCCC conventions and the efficiency of Kenya's climate change mitigation measures; while Ojwang *et al.* (2017) assessed the coastal governance to achieve coping with climate change in Kenya. In light of these, this study aimed to investigate the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya.

The study more particularly set out to shed light on the effect of mobilization on contribution of civil society organizations in adapting to climate change in Nairobi City County; examine the effect of knowledge sharing on contribution of civil society organizations in adapting to climate change in Nairobi City County; to determine the effect of policy support on contribution of civil society organizations in adapting to climate change in Nairobi City County; and to assess the intervening role of institutional coordination on the association between the avenues for enhancing the contribution of civil society organizations in adapting to climate change in Nairobi City County, Kenya.

This empirical literature review seeks to provide a comprehensive overview of existing research and scholarly discourse pertinent to the role of civil society in climate change adaptation within Nairobi City County. By synthesizing findings from a range of studies, this review aims to elucidate the role of mobilization, knowledge sharing, policy support and policy support on the participation of CSOs in climate change adaptation initiatives.

O'Brien et al. (2018) adopted the descriptive research design in their study on the role of information sharing on compliance with climate change policy provisions. Employing the purposive sampling technique, the study selected 10 government and CSO officials in Norway. Results from key informant interviews show that CSOs, governmental institutions, and agencies are becoming more cognizant of the policy implications of climate change. Although it is still in the early stages, there is proof that the government, development agencies, and civil society have begun popularization of climate change into their departmental plans. However, district, community, and grassroots level understanding of climate change concerns have not yet grown.

Similarly, Filho (2017) employed the descriptive design in their study to assess the working modalities between the Nigerian government and working groups on climate change. Sampling 60 executive representatives from the working groups and 10 government officials, data was collected using both structured questionnaires and key informant interviews. The study notes that there is need for the Nigerian government to establish working groups on climate change, gathering main secretaries from the administration and leaders from the donor agencies was intended to create a coordinated strategy for carrying out climate change reduction efforts. Similar results were reported in an explanatory study by Lwasa (2018). Purposively sampling 12 government and CSO officials, it was observed that the Ugandan government has formed a national climate change task team with representatives from the administration, development organizations and civil society aimed at developing a climate change implementation action plan.

Gouldson (2019) adopted the explanatory study design to investigate the knowledge sharing practices of CSOs aligned to climate change, in Sri Lanka and the Philippines. Data obtained from 32 key informant interviews shows that there is major stakeholders' absence from dialogues and talks including CSOs. The author believes that the CSOs have noted the absence of main players from governmental agencies in these meetings where accessibility to and engagement in deliberations and discussion are accessible.

In a descriptive study, Odei *et al.* (2020) administered 75 structured questionnaires in their study on how knowledge sharing has enhanced the effectiveness of Turkish environmental CSOs' monitoring and evaluation mechanisms. Knowledge sharing was particularly found to discover that the gaps and difficulties in the Nationally Determined Contributions (NDCs) review process and NDC-allied actions at the national scale are also brought on by the absence of a responsible evaluation and monitoring procedure for stakeholder involvement.

In a desktop study, Newell et al. (2012) report that processes, rules, and regulations need to be improved to enable increased stakeholder participation in decision-making about climate change, including CSOs. Forms of multi-actor governance, according to the authors, are developed through a variety of civil sector alliances, partnerships, and linkages. These engagements frequently involve locally targeted actions as well as directly influencing formal policy.

Chan et al. (2019) sampled 86 national and sub-national officials in Hong Kong, in their study on stakeholder participation in climate processes. The descriptive survey found that legislation or regulations governing stakeholder participation in climate processes at the national and sub-national levels must be passed, along with plans for information sharing and giving CSOs access to decision-making procedures. One of the most important initiatives to take to address the need for successful participation of CSOs in the climate change policy and judgement call processes is the necessity for efficient CSO recruitment and involvement.

2. METHODOLOGY

2.1 Study area

The study was conducted in Nairobi City County, Kenya. Nairobi City County is located at 1.3107° S, 36.8250° East of Kenya (Figure 1).

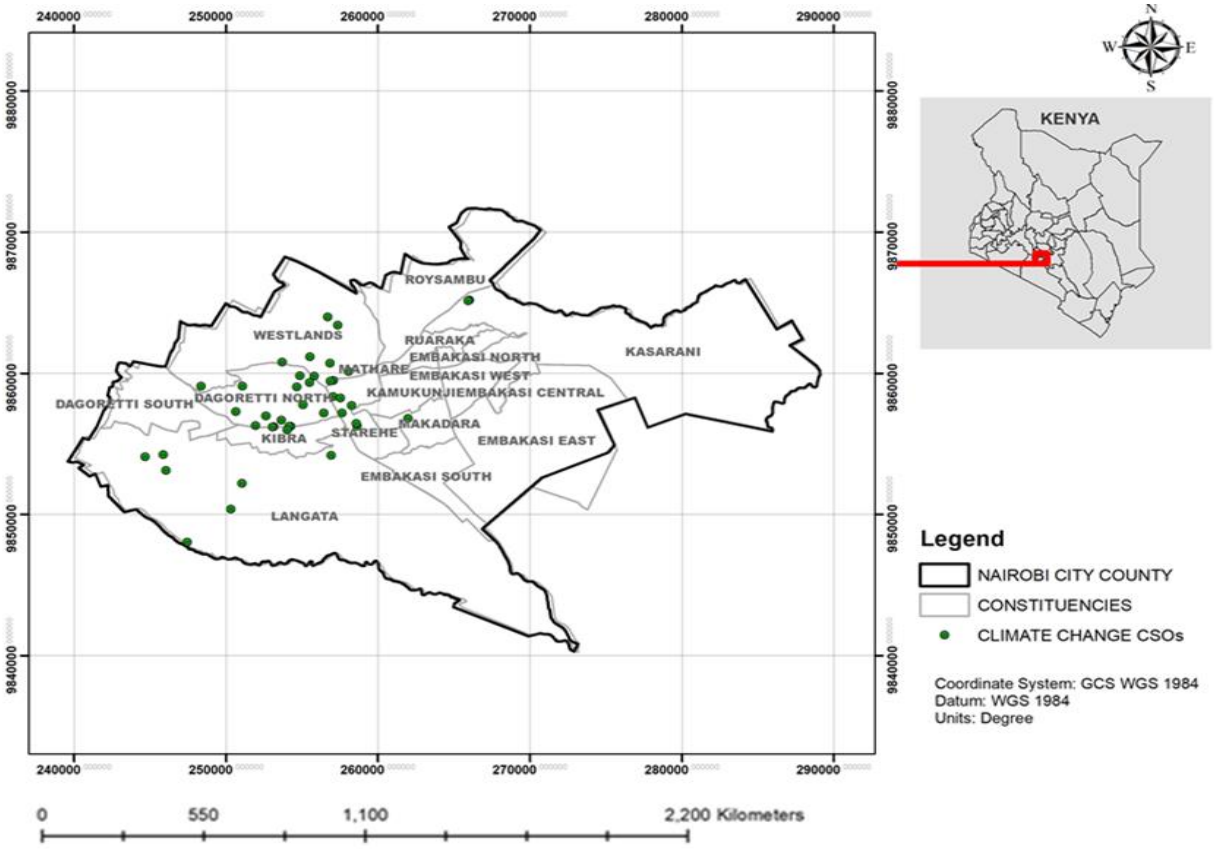

Figure 1. Map of the study area

2.2 Study design

The study adopted the descriptive survey design, targeting all 267 registered CSOs involved in climate change and environmental issues, 210 of which, registered with the KCCWG (KCCWG, 2022), and 57 individual CSOs registered with NECSA-K (NECSA-K, 2022). The unit of analysis comprised the CSOs, while the unit of observation comprises individual top administrative personnel among the CSOs. These included equivalents of Chief Executive Officers, Chairpersons and Executive Directors as per the respective CSOs' organizational structures.

To arrive at a desirable sample size, the study used the Yamane formula (Yamane, 1967):

$$n = \frac{N}{1 + N(e)^2}$$

Where: **N**=total population= 267; ***n*** = required sample; *e* = margin of error=0.05

$$\boldsymbol{n} = \frac{267}{1+267(e)^2} \qquad \boldsymbol{N} = 267$$

n= 160.12

n = 160 (sample)

A sample size of 160 top administrative personnel among the CSOs were therefore reached by simple random sampling.

2.3 Data collection

Primary data for this study was gathered via a standardized questionnaire. The structured questionnaires were administered among the 160 top administrative personnel among the CSOs.

2.4 Data Analysis

The quantitative data was analyzed by both descriptive and inferential statistics. Prevalence, proportions, averages, and standard deviation for descriptive data were displayed in straightforward tables and charts. Under inferential statistics, a Chi square test was conducted to determine the relationship between the strategies and contribution of CSO in planning and addressing climate change.

3. RESULTS

To address the study objectives, respondents were asked to indicate their respective levels of agreement with items posed in relation to each variable. Responses were given on a 5-point Likert scale: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, and 5= strongly agree. Both descriptive and chi-square test statistics were then computed as per the study objectives.

3.1 Mobilization and Contribution of CSOs

The study sought to assess the effect of mobilization on contribution of CSOs in adapting to climate change in Nairobi City County. Based on the corresponding objective, the study advanced the first alternative hypothesis that mobilization has a significant effect on the contribution of CSOs (measured by participation of CSOs in climate change adaptation initiatives) in adapting to climate change in Nairobi City County (H_{a1}). To test the hypothesis, a Chi-square test was performed, findings of which are presented in Table 1.

Table 1: Mobilization and Contribution of CSOs

	Mean	Std. Dev
We attend advocacy trainings on various aspects of adapting to climate change	3.724	0.750
We are regularly sensitized by key climate change actors on various aspects of adapting to climate change	4.425	0.887
We attend seminars and workshops organized for lobby groups on adapting to climate change	3.761	0.662
We have improved access to pertinent information at national and local levels	4.112	0.361
We are engaged in public relation efforts in adapting to climate change	4.179	0.456
Overall Mean	4.040	0.623

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	48.298[a]	16	.000
Likelihood Ratio	44.830	16	.000
Linear-by-Linear Association	17.911	1	.000
N of Valid Cases	134		

a. 19 cells (70.4%) have expected count less than 5. The minimum expected count is .01.

Source: Survey Data (2023)

The findings presented in Table 1 depict an overall mean of 4.040 and a standard deviation of 0.623, implying strong affirmation. A majority of the respondents were particularly found to highly affirm that they are regularly sensitized by key climate change actors on various aspects of adapting to climate change (4.425); they are engaged in public relation efforts in adapting to climate change (4.179); they have improved access to pertinent information at national and local levels (4.112); they attend seminars and workshops organized for lobby groups on adapting to climate change (3.761); and that they attend advocacy trainings on various aspects of adapting to climate change (3.724).

As also shown in Table 1, Chi-square test results reveal positive and significant association between mobilization and contribution of CSOs (16, N=134) = 48.298, P = .000, implying that mobilization has a statistically significant association with contribution of CSOs. As such, the study affirms the first alternative hypothesis and concludes that mobilization has a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County.

3.2 Knowledge Sharing and Contribution of CSOs

The study sought to examine the effect of knowledge sharing on contribution of CSOs in adapting to climate change in Nairobi City County. The study advanced the second alternative hypothesis that knowledge sharing significantly enhances the contribution of CSOs in adapting to climate change in Nairobi City County (H_{a2}). To test the hypothesis, a Chi-square test was performed, findings of which are presented in Table 2.

Table 2: Descriptive Statistics for Knowledge sharing

	Mean	Std. Dev
We borrow from international best practices on adapting to climate change	4.000	0.388
We employ technology transfer on adapting to climate change from model countries	4.216	0.413
We collaborate with various climate change actors on adapting to climate change	4.030	0.346
We carry out competitive analysis to determine our strengths and weaknesses in adapting to climate change	4.022	0.415
We carry out research and development in adapting to climate change	4.358	0.481

Overall Mean	4.125	0.409

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	82.085[a]	10	.000
Likelihood Ratio	86.504	10	.000
Linear-by-Linear Association	66.063	1	.000
N of Valid Cases	134		

a. 12 cells (66.7%) have expected count less than 5. The minimum expected count is .03.

Source: Survey Data (2023)

The findings presented in Table 2 depict an overall mean of 4.125 and a standard deviation of 0.409, implying strong affirmation. A majority of the respondents were particularly found to carry out research and development in adapting to climate change (4.358); they employ technology transfer on adapting to climate change from model countries (4.216); they collaborate with various climate change actors on adapting to climate change (4.030); carry out competitive analysis to determine their strengths and weaknesses in adapting to climate change (4.022); and borrow from international best practices on adapting to climate change (4.000).

As also shown in Table 2, Chi-square test results reveal positive and significant association between knowledge sharing and contribution of CSOs (10, N=134) = 82.085, P = .000, implying that knowledge sharing has a statistically significant association with contribution of CSOs. As such, the study affirms the second alternative hypothesis and concludes that knowledge sharing significantly enhances the contribution of CSOs in adapting to climate change in Nairobi City County.

3.3 Policy Support and Contribution of CSOs

The study sought to evaluate the effect of policy support on contribution of CSOs in adapting to climate change in Nairobi City County. The study advanced the third alternative hypothesis that policy support has a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya (H_{a3}). To test the hypothesis, a Chi-square test was performed, findings of which are presented in Table 3.

Table 3: Descriptive Statistics for Policy Support

	Mean	Std. Dev
There are policy guidelines for our participation in adapting to climate change	4.224	0.453
There is policy provision for role allocation among CSOs in adapting to climate change	4.202	0.403
Our activities in adapting to climate change in the country are regulated	4.142	0.350
There are policy guidelines enabling our advocacy and accountability roles in adapting to climate change	4.269	0.445
There are policy provisions for inter-institutional coordination at local and national levels	4.030	0.346
Overall Mean	4.173	0.399

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	154.906[a]	12	.000
Likelihood Ratio	99.185	12	.000
Linear-by-Linear Association	74.325	1	.000
N of Valid Cases	134		

a. 15 cells (71.4%) have expected count less than 5. The minimum expected count is .01.

Source: Survey Data (2023)

The findings presented in Table 3 depict an overall mean of 4.173 and a standard deviation of 0.399, implying strong affirmation. A majority of the respondents were particularly found to highly affirm that there are policy guidelines enabling their advocacy and accountability roles in adapting to climate change (4.269); there are policy guidelines for their participation in adapting to climate change (4.224); there is policy provision for role allocation among CSOs in adapting to climate change (4.202); their activities in adapting to climate change in the country are regulated (4.142); and that there are policy provisions for inter-institutional coordination at local and national levels (4.030).

As also shown in Table 3, Chi-square test results reveal positive and significant association between policy support on contribution of CSOs (12, N=134) = 154.906, P = .000, implying that policy support has a statistically significant association with contribution of CSOs. As such, the study affirms the third alternative hypothesis and concludes that policy support has a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya.

3.4 Institutional Coordination and Contribution of CSOs

The study sought to assess the intervening role of institutional coordination on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya. The study advanced the fourth alternative hypothesis that institutional coordination has a significant intervening role on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya (H_{a4}). To test the hypothesis, a Chi-square test was performed, findings of which are presented in Table 4.

Table 4: Descriptive Statistics for Institutional Coordination

	Mean	Std. Dev
We have a coordination unit/personnel in the organization	4.202	0.403
The coordination unit/ personnel in the organization works with other CSOs and KCCWG to lobby and advocate for policy change	4.261	0.441
We liaise with other CSOs and KCCWG on various activities that require their input	4.187	0.445
The KCCWG creates synergy of activities among CSOs working together	3.978	0.357
We work with other CSOs in the country in a structured manner	4.179	0.440
The KCCWG has helped strengthen our efforts in the design and implementation of activities	4.216	0.481
We work in concert with our international partners under the coordination of the KCCWG	4.060	0.455
The KCCWG has achieved harmony between the government and CSOs	4.045	0.271
Overall Mean	4.141	0.411

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	119.821[a]	14	.000
Likelihood Ratio	121.941	14	.000
Linear-by-Linear Association	44.169	1	.000
N of Valid Cases	134		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .04.

Source: Survey Data (2023)

The findings presented in Table 4 depict an overall mean of 4.141 and a standard deviation of 0.411, implying strong affirmation. A majority of the respondents were particularly found to highly affirm the coordination unit/personnel in the organization works with other CSOs and KCCWG to lobby and advocate for policy change (4.261); the KCCWG has helped strengthen their efforts in the design and implementation of activities (4.216); liaise with other CSOs and KCCWG on various activities that require their input (4.187); work with other CSOs in the country in a structured manner (4.179); work in concert with their international partners under the coordination of the KCCWG (4.060); the KCCWG has achieved harmony between the government and CSOs (4.045); and that the KCCWG creates synergy of activities among CSOs working together (3.978).

As shown in Table 4, Institutional coordination was also found to have a significant intervening role on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya (14, N=134) = 119.821, P = .000. As such, the study affirms the fourth alternative hypothesis and concludes that institutional coordination has a significant intervening role on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya.

3.5 Contribution of CSOs in Adapting to climate change

The study sought to assess the strategies for strengthening the contribution of CSOs in adapting to climate change in Nairobi City County. To address this objective, respondents were asked to indicate their respective levels of agreement with items posed in relation to strategies for strengthening the contribution of CSOs in adapting to climate change. Table 5 presents the results.

Table 5: Descriptive Statistics for Contribution of CSOs

	Yes		No	
	n	%	n	%
Have you sponsored any new policies or laws on adapting to climate change in Kenya?	64	47.8	70	52.2
Do you have a programme/project in place on adapting to climate change in Kenya?	95	70.9	39	29.1

Source: Survey Data (2023)

As presented in Table 5, a majority of respondents (52.2%) dissented when asked whether they had sponsored any new policies or laws on adapting to climate change in Kenya; while a majority (70.9%) affirmed that they have a programme/project in place on adapting to climate change in Kenya. Respondents were further asked to indicate the extent to which they participated in any national

programmes/plans/strategies for adapting to climate change. This would give an indication into the extent of contribution of CSOs in adapting to climate change in Nairobi City County. Results are as illustrated in Figure 1.

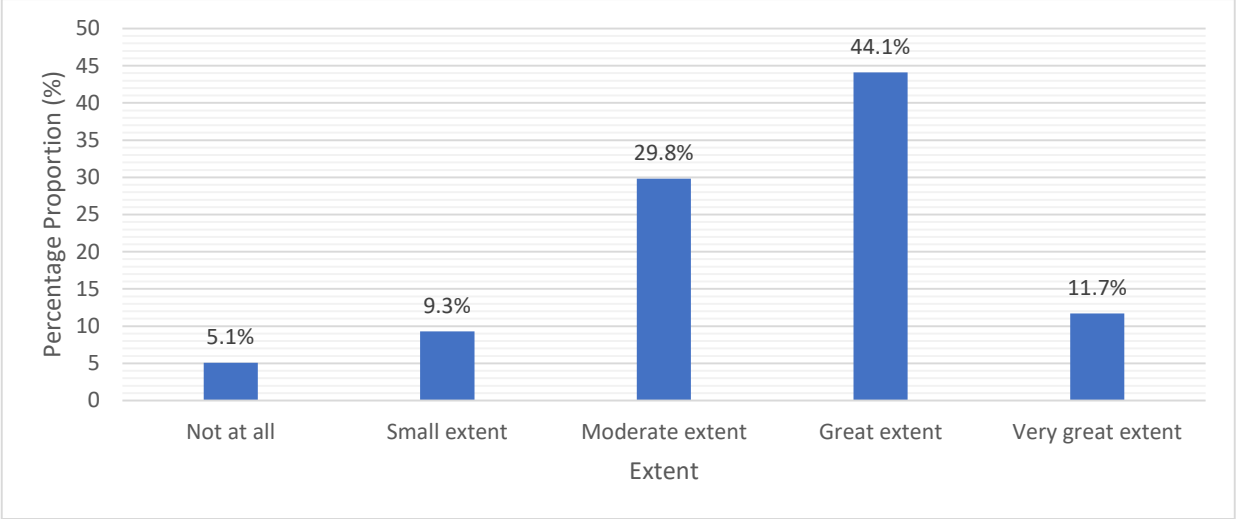

Figure 1: Extent of Participation
Source: Survey Data (2023)

As illustrated in Figure 1, a majority of respondent organizations affirmed to participating in national programmes/plans/strategies for adapting to climate change to a great extent (44.1%), followed by 29.8% having participated to a moderate extent while 11.7% affirmed to participating to a very great extent. Only 9,3% affirmed to participating to a small extent and 5.1% having not participated at all.

4. CONCLUSIONS AND RECOMMENDATIONS

The study concludes that mobilization has a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County. It is therefore recommended that executive administrators of CSOs involved in adaptation to climate change in Nairobi City County invest in mobilization to sensitize their members on how best they can contribute to adapting to climate change in the country. Specific practices in this regard may include regular sensitization by key climate change actors; engaging in public relation efforts; improving access to pertinent information at national and local levels; attending seminars and workshops organized for lobby groups; and attending advocacy trainings.

The study also concludes that knowledge sharing significantly enhances the contribution of CSOs in adapting to climate change in Nairobi City County. It is therefore recommended that executive administrators of CSOs involved in adaptation to climate change in Nairobi City County invest in knowledge sharing from international best practices in model countries and borrow valuable lessons on how best they can contribute to adapting to climate change in the country. Specific practices in this regard may include research and development; technology transfer from model countries; collaboration with various climate change actors; competitive analysis to determine their strengths and weaknesses; and borrowing from international best practices.

The study further concludes that policy support has a significant effect on the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya. It is thus recommended that policy makers in the country formulate policies that will create an enabling environment for the effective contribution of CSOs involved in adaptation to climate change in Nairobi City County. Specific practices in this regard may include policy guidelines enabling their advocacy and accountability roles; policy guidelines for their participation in adaptation activities and roles; policy provision for role allocation among CSOs; regulation of adaptation activities; and for inter-institutional coordination at local and national levels.

The study finally concludes that institutional coordination has a significant intervening role on the association between the avenues for enhancing the contribution of CSOs in adapting to climate change in Nairobi City County, Kenya. It is recommended in this regard that executive administrators of CSOs involved in adaptation to climate change in Nairobi City County invest in institutional coordination to enable the effective contribution of CSOs involved in adaptation to climate change in Nairobi City County. Specific practices in this regard may include the establishment of coordination units/personnel in the respective organizations, who work with other CSOs as well as to lobby and advocate for policy change in a structured and synergized manner.

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