

Examining the institutional capacity of subnational disaster risk reduction platforms in Western Kenya

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ABSTRACT

Disaster impacts are becoming severe and costly. Disasters result in approximately US\$202 billion in direct economic losses annually, while the wider economic consequences, including disruptions to livelihoods, infrastructure, ecosystems, and supply chains, exceed US\$2.3 trillion per year, representing nearly 2% of global Gross Domestic Product. Recent estimates also show that natural disasters in 2024 alone resulted in over 18,000 deaths worldwide and economic losses amounting to approximately US\$368 billion, highlighting the escalating human and financial costs associated with disaster events. Governments are inventing strategies of managing the severe impacts of disasters. One of the strategies for managing disasters is formation of sub-national platforms on disaster risk reduction (DRR) with the aim of reducing the impacts of disaster to the communities. However, risk informed development founded on institutional capacity remains a question in the sub-national platforms. The purpose of the study was to examine the institutional capacity of subnational DRR platforms in Western Kenya. Institutional and Social Inclusion Theories were used in this study. The study utilized mixed methods research design. The target populations were derived from three counties (Kakamega, Kisumu and Busia) out of which a study sample of 151 was picked. The three counties were selected to represent the 11 other counties that exhibit significant exposure to recurrent hazards. The sampling strategy included multi stage, proportionate, simple random, and purposive sampling. Data was collected from primary sources using questionnaires, KII and FGD Guides from ward disaster management committee members. Secondary data was obtained from publications, journals, and newspapers. Data analysis was through descriptive statistics using Statistical Package for Social Scientists (SPSS) version 27.0 and results presented in frequency tables, charts and figures. Results reveal moderate structural efficacy on existence of legal and policy frameworks (78%), organizational structures and leadership (65%), effective multistakeholder forums (75%) with low operational ability in critical areas such as financial resource allocation (27%), technical capacity (27%), capacity building (32%) and mainstreaming DRR into development planning (31%). The study concludes that there is existence of institutional structures in DRR subnational platforms but face challenges in functional execution and gaps in financial and technical expertise. The study recommends the adoption of preventive financing and measurable accountability systems. The findings will help the national and county governments in strengthening DRR governance in Western Kenya.

Keywords: Disaster Risk, Institutional Capacity, Sub National Platform

I. INTRODUCTION

Disasters result in approximately US\$202 billion in direct economic losses annually, while the wider economic consequences, including disruptions to livelihoods, infrastructure, ecosystems, and supply chains, exceed US\$2.3 trillion per year, representing nearly 2% of global Gross Domestic Product (UNDRR, 2025). Recent estimates also show that natural disasters in 2024 alone resulted in over 18,000 deaths worldwide and economic losses amounting to approximately US\$368 billion, highlighting the escalating human and financial costs associated with disaster events (Statista, 2025). In Kenya, recurrent droughts and floods cause deaths, displacement, food insecurity, livelihood losses, infrastructure damage and disruption of essential services. These impacts are particularly severe among vulnerable populations and households with limited capacity to recover. The increasing frequency, intensity and complexity of disasters have heightened the need for strong institutional mechanisms to manage disaster risks effectively. The escalating impacts of disasters have shifted global attention from disaster response to proactive disaster risk reduction (DRR) emphasizing the importance of institutional capacity in preventing, mitigating and managing disaster risks (Milenkovic, 2025).

Disaster Risk Reduction governance has evolved considerably from a predominantly reactive approach towards a more proactive, preventive and multi-level governance approach. UNDRR defines disaster risk governance as the

system of institutions, legal frameworks and other arrangements used to guide, coordinate and oversee DRR (Djalante & Lassa, 2019). Globally, the adoption of the Sendai Framework for Disaster Risk Reduction 2015–2030 marked a significant milestone in strengthening disaster risk governance. The framework identifies disaster risk governance as one of its four priority areas and emphasizes the need for capable institutions, coordinated multi-stakeholder platforms, adequate resources, effective policies and inclusive decision-making processes to reduce disaster risks and enhance resilience (UNDRR, 2015). Countries have established and strengthen national and sub-national DRR platforms that facilitate coordination among governments, civil society, the private sector, academia, and communities. The effectiveness of these platforms largely depends on their institutional capacity, including leadership, technical expertise, financial resources, legal frameworks, coordination mechanisms, and stakeholder engagement.

In Africa, disaster risk governance has gained prominence due to the continent's growing exposure to climate-related and human-induced hazards (Omoyo et al., 2022). Recurring droughts, floods, disease outbreaks, landslides, and conflicts continue to undermine socio-economic development and disproportionately affect vulnerable populations. The African Union, through its Programme of Action for the Implementation of the Sendai Framework in Africa, has emphasized the need to strengthen institutional capacities at national and local levels to improve disaster preparedness, response, and resilience. Consequently, many countries have established DRR platforms to coordinate risk reduction activities, although their effectiveness varies depending on available institutional capacities (Djalante, 2012).

DRR in Kenya has become a national development priority due to the increasing occurrence of floods, droughts, landslides, disease outbreaks, fires and other hazards. These disasters have caused loss of lives, displacement of populations, destruction of infrastructure and significant economic losses. In response, Kenya has adopted various legal, policy and institutional frameworks aimed at strengthening disaster risk governance including the National Disaster Risk Management Policy (2018) and the establishment of disaster management structures at both national and county levels (Nyandiko, 2020). Following the promulgation of the Constitution of Kenya 2010 and the devolution of governance functions, county governments assumed greater responsibility for disaster risk management, thereby increasing the importance of sub-national institutional arrangements in DRR implementation.

Sub-national DRR platforms play a critical role in coordinating preparedness, response, recovery and resilience-building interventions among diverse stakeholders. Despite their strategic importance, concerns remain regarding the institutional capacity of sub-national DRR platforms in Western Kenya. Issues such as inadequate financial resources, insufficient technical personnel and weak coordination structures, constrain their ability to effectively reduce disaster risks and enhance resilience. Given the increasing complexity of disaster risks and the central role of local institutions in disaster governance, it is therefore important to examine the institutional capacity of sub-national DRR platforms in Western Kenya. This will help in providing evidence for strengthening disaster risk governance and improving the effectiveness of DRR interventions at the local level.

1.1 Research Objective

The objective of the study was to examine the institutional capacity of the subnational Disaster Risk Reduction platforms in Western Kenya.

II. LITERATURE REVIEW

2.1 Theoretical Review

This study is anchored on two interrelated theoretical frameworks; Institutional Theory and Social Inclusion Theory. Institutional Theory provides an important lens for understanding the functioning of sub-national DRR platforms by emphasizing the influence of formal and informal institutions on organizational behaviour. North (1990) conceptualizes institutions as formal and informal rules that structure interactions, while Scott (2008) identifies regulatory, normative and cultural-cognitive elements as central components of institutional environments. The theory is particularly relevant to this study because the existence of formal DRR structures does not necessarily guarantee effective implementation. The effectiveness of sub-national DRR platforms depends on the extent to which formal rules are supported by adequate resources, institutional commitment, coordination mechanisms and norms that promote accountability and collaboration.

Social Inclusion Theory on the other hand provides a useful framework for examining how power relations, marginalization and participation shape disaster risk reduction governance. The theory recognizes that social exclusion is not limited to the absence of particular groups from decision-making structures but may also occur when groups are formally represented but lack meaningful voice, influence or access to resources. In DRR governance, differences in power can determine whose knowledge is recognized, whose priorities inform planning, and who benefits from DRR interventions. Marginalized and vulnerable groups may face barriers to participation because of socioeconomic status, gender, disability, age, limited access to information or institutional constraints.

Participation is therefore central to inclusive DRR governance because it provides affected communities with opportunities to contribute their knowledge identify risks and influence decisions concerning preparedness, mitigation, response and recovery. However, meaningful inclusion requires more than consultation or numerical representation; it requires that participation results in substantive influence over decisions and equitable access to DRR resources and services. The theory consequently enables this study to assess whether sub-national DRR platforms provide meaningful opportunities for vulnerable and marginalized groups to participate in DRR governance and whether their perspectives are incorporated into risk-informed development interventions. While Institutional Theory establishes whether the institutional structures and capacities necessary for DRR governance are in place, Social Inclusion Theory assesses whether these structures function in ways that provide meaningful opportunities for diverse and vulnerable groups to participate and influence decisions. The combination of the two theories therefore enables the study to assess not only whether sub-national DRR platforms possess institutional capacity, but also whether that capacity is inclusive, equitable and responsive to the needs of different social groups.

2.2 Empirical Review

2.2.1 Institutional Capacity in Disaster Risk Reduction

Disaster and climate-related risks are shaped more by institutional structures and societal conditions than by natural forces (Wisner et al. 2014; Oliver-Smith et al. 2016; Alcántara-Ayala et al. 2023). Local institutions, including county governments, civil protection committees, and community-based organizations, play a key role in disaster risk governance. They translate disaster risk reduction (DRR) frameworks into action through frontline engagement. The Sendai Framework for Disaster Risk Reduction 2015–2030 emphasizes this role, urging greater empowerment of local authorities through legal mandates, funding and technical support (UNDRR 2015). Strengthening institutional structures and crafting the appropriate platform for DRR requires important decisions, particularly on the issue of mandate, jurisdiction and response capability (Domingo, 2017). Although local actors are increasingly recognized in DRR policy, translating mandates into effective local mechanisms remains a challenge. Many county governments face limited capacity, fragmented governance and weak implementation pathways (Gencer 2017; Beccari 2020). Numerous studies (Wisner et al. 2014; Cid et al. 2024) have illustrated that the institutionalization of DRR is often hindered by what can be termed “implementation asymmetries.”

Ahrens and M. Rudolph (2006) identified institutional failure as the root cause for underdevelopment and susceptibility to disasters and explore their interdependent relationship. They demonstrated that only if a country’s governance structure enables the implementation and enforcement of public policies conducive to a country’s economic and social development can sustainable livelihoods be achieved and susceptibility to disasters is reduced. Persson and Povitkina (2017) argued that while natural calamities such as earthquakes and certain disastrous hydro meteorological events are beyond human control, the governments’ capacity to protect populations largely determines the degree of human suffering in disasters.

2.2.2 Disaster Risk Reduction Governance and Institutional Arrangements

Disasters, both natural and human-induced, pose increasing risks globally. The need for robust, coordinated and legally grounded DRR framework is greater than ever. Sendai Framework for Disaster Risk Reduction (2015–2030) promotes risk-informed development. Similarly, Sustainable Development Goals & Paris Agreement integrates disaster risk reduction with climate action and sustainable development. Global institutions like UNDRR and political champions drive international coordination, funding, and innovation in disaster risk reduction (UNISDR, 2012). African Regional Strategy for DRR and the Programme of Action (PoA) align with the Sendai Framework and aims at effective and inclusive disaster risk reduction in Africa (Otwori & Nyandiko, 2024). African Union Commission, supported by regional economic communities such as IGAD, ECOWAS and SADC provides regional coordination and monitoring. These communities work together on economic integration and development—but also increasingly coordinate on peace, security and disaster risk management.

The National Disaster Risk Management Policy (2017) is Kenya’s first comprehensive DRR policy that emphasizes a multi-hazard, multi-sectoral approach to disaster risk reduction. It also strengthens coordination between national and county levels. The Climate Change Act (2016) supports integration of DRR with climate action. DRR is also embedded in Kenya Vision 2030, National Climate Change Action Plan (NCCAP), and County Integrated Development Plans (CIDPs). In Western Kenya, County governments are central to localized DRR, especially through County Disaster Committees and County Climate Change Acts, strong policies, clear regulation, and committed leadership are the backbone of effective DRR. The Disaster Risk Management Policy (2018) has been cascaded to local levels through legal delineation, county policy formulation, participatory processes, and financial instruments like emergency and climate funds and by integrating DRM into county development planning.

2.2.3 Subnational Disaster Risk Reduction Platforms

The establishment of subnational disaster risk reduction platforms worldwide traces back to the global recognition of the need to decentralize disaster management and involve local actors more directly in the 1990s which saw the launch of the International Decade for Natural Disaster Reduction (IDNDR) by the United Nations, which emphasized the importance of disaster prevention and preparedness at all levels, including local communities (United Nations, 1990). In 2000, the International Strategy for Disaster Reduction (ISDR) was created in 2000, and later evolved into the United Nations Office for Disaster Risk Reduction (UNDRR). The ISDR and UNDRR promoted frameworks such as the Hyogo Framework for Action (2005–2015) and the Sendai Framework for Disaster Risk Reduction (2015–2030) which emphasize integrating DRR into development and encouraging multi-level governance including subnational and local disaster management platforms (UNDRR, 2015). These platforms initially focused on emergency response and preparedness but evolved to include proactive risk reduction, resilience building, and community engagement (World Bank, 2012; IFRC, 2013).

In Africa, subnational DRR platforms began to be formalized mainly in the late 1990s and early 2000s, inspired by global DRR efforts and growing awareness of Africa's vulnerability to diverse hazards such as drought, floods, and epidemics (African Union, 2004). Over time, the mandate of African subnational DRR platforms has expanded from primarily coordinating emergency relief to incorporating risk reduction, community participation, gender inclusion and integration of climate change adaptation measures (UNISDR, 2015).

Kenya's subnational DRR platforms have evolved in response to both international trends and national governance reforms. The District Disaster Committees (DDCs) were established in the early 2000s under the National Disaster Operations Centre (NDOC), then part of the Ministry of Special Programmes. The NDOC was responsible for coordinating disaster response nationally, delegating operational functions to the district committees to manage emergencies on the ground Government of Kenya (GoK, 2004). Following the adoption of the 2010 Constitution of Kenya, which introduced devolution, the disaster management mandate was transferred from districts to the newly created counties. From 2013, counties established County Disaster Risk Management Committees (CDRMCs) under the leadership of the county governments, supported by the National Disaster Management Unit (NDMU) within the Ministry of Interior and Coordination of National Government (GoK, 2016).

The early focus of these platforms was on disaster response and coordination of relief services. However, with the development of Kenya's National Disaster Risk Management Policy (2019) and alignment with the Sendai Framework, the mandate broadened to include proactive disaster risk reduction, preparedness, risk-informed development planning and community participation (GoK, 2019). Kenyan subnational platforms now emphasize inclusive governance, seeking to involve vulnerable groups such as women, youth, and persons with disabilities in DRR planning and implementation. The platforms also prioritize integrating early warning systems, hazard mapping and climate adaptation into county development agendas (Mwangi & Kariuki, 2020).

2.2.4 Institutional Capacity for Disaster Risk Reduction in Kenya

Kenya's National Disaster Risk Management Policy (2017) recognizes institutional capacity as fundamental to reducing disaster losses. The policy seeks to establish a robust DRM system at both national and county levels and to integrate DRR into sectoral planning and development. The policy also recognizes that Kenya's disaster management responsibilities are shared between the national and county governments. However, it identified weaknesses in the existing institutional framework, including fragmentation, inadequate coordination and overlapping institutional mandates.

The National DRM Strategy 2025–2030 emphasizes that this institutional framework should provide clearly defined responsibilities at national and county levels and promote coordination among government institutions and other stakeholders. The Council of Governors has also provided a platform for county governments to discuss DRM mandates, intergovernmental relations, legal frameworks and county-level DRR initiatives, demonstrating the growing importance of intergovernmental coordination (Nyandiko, 2020). The National DRM Policy 2017 established an important foundation by emphasizing institutional strengthening, coordination, resource mobilization, information management and mainstreaming of DRR into development. The National DRM Strategy 2025–2030 builds on this foundation by prioritizing institutional and legal frameworks, national and county capacity, disaster information, resilience and integration of DRM into sustainable development (Cheruyiot, 2025).

III. METHODOLOGY

3.1 Study Area

This study was conducted in Western Kenya. The region lies between latitudes 1° 00' South to 1° 00' North and longitude 34° 00' and 36° 00' East (GoK, 2015). The coordinates were used to spatially delimit the study area and ensure that the geographical coverage of the study corresponded to the administrative boundaries of Kakamega, Kisumu and

Busia counties. The study purposively selected Kakamega County, Kisumu County and Busia County based on methodological and contextual considerations relevant to assessing subnational DRR platforms. These counties have relatively established disaster coordination mechanisms with functional DRR platforms hence allows for assessment of implementation of DRR initiatives rather than policy existence (Cheruyiot, 2025). Similarly, the three counties exhibit significant exposure to recurrent hazards (floods) which enhanced systematic relevance since DRR platforms in these areas are operational and have been tested under real hazard conditions (Lidava *et al.*, 2025).

3.1.1 Population Distribution of the Study Area

The total population of the study area is 12, 193, 199 people distributed among 11 Counties of Western Kenya. Table 1 shows the population distribution of the three sampled counties.

Table 1

Population Distribution of the Study Area

Sampled County	Total Population	Male	Female	Intersex	Population density (km ²)
Kakamega	1,867,579	897,133	970,406	40	618
Busia	893,681	476,401	426,252	28	526.8
Kisumu	1,155,574	556,942	594,609	23	554

Source; KNBS, 2019

3.1.2 Hazards and Vulnerability Profile of the Study Area

Western Kenya has over the years been characterized by climate related hazards such as floods, drought, pest invasion and other hazards such as fire outbreaks and road traffic accidents among others. According to Ouma and Tateishi (2014), communities in Western Kenya are frequently exposed to recurrent climate induced hazards and lack of inclusive disaster risk reduction strategies especially to women and youth has significantly increased the communities' vulnerabilities and losses in Western Kenya. Table 3.1 show notable disasters in the study area.

Table 2

Disaster Profile of the study area

County	Hazard	Year(s) & Details
Busia	Floods	2024 – Budalangi inundated amid national floods; displaced traders, households and submerged markets
	Floods	2002–2007 – Chronic flooding along Nzoia/Yala affecting Bunyala area in Budalangi Sub-county
	Floods	2020 - Severe flooding in Budalangi displaced >3,000 families due to Nzoia River overflow
	Petroleum tanker fire	2011 - Overturned tanker near Kisumu–Busia road spilled and exploded, killing 4 and injuring 35 people.
	Petrol tanker overturn & explosion	2021 - Malanga area explosion killed 13 people siphoning fuel
Siaya	Floods	2002–2007 – As above in Bunyala proximity
	Disease: Rift Valley Fever	1997–98 – Nationwide RVF outbreak; >400 human deaths, especially in western regions
Kisumu	Floods	1997–98 – Severe flooding tied to El Niño; river Nyando known to overflow
	Disease: RVF	2006–07 – RVF in North Eastern, but vector-favorable rains may have affected Kisumu environs
Bungoma	Road Traffic Accidents	Crash on Webuye-Eldoret road killed 11
Kakamega	Road Traffic accidents	Tanker lost control, rammed two 14-seater matatus: 10 killed
	Fuel tankers Accidents	Mar 12, 2022: two fuel tankers collided at Mukhonje explosion, fatalities/injuries; Jun 10, 2024: overturned tanker, siphoning mob averted; also 3.3 y ago another explosion
Kericho	Road Accident	2023 – Londiani lorry crash: 52 fatalities, 30 injuries
Siaya / Busia	Floods	Chronic pattern: annual flooding of lowlands (Nyando, Nzoia)

Source: National flood data (2020)

3.1.3 Economic Activities and Livelihoods in the Study Area

Western Kenya has a predominantly agriculture-based economy, with crop farming and livestock keeping forming the main livelihood activities (Tittonell, 2014). In Kakamega, Kisumu and Busia, most households depend heavily on maize, sugarcane, beans, cassava, rice and other crops, while livestock provides food, income and household assets. Fishing and aquaculture are most commonly practiced in Kisumu and Busia counties due to the presence of Lake Victoria. Other important economic activities include trade, small and medium enterprises, agro-processing, informal businesses, tourism and artisanal mining, particularly in Kakamega County (GoK, 2023)

These livelihoods are highly sensitive to disaster and climate risks. Floods can destroy crops, livestock, homes, businesses and transport infrastructure, while prolonged dry spells and drought reduce agricultural productivity, water availability and household incomes. Landslides can cause loss of farmland, property and infrastructure, particularly in susceptible areas of Kakamega. Consequently, the dependence on climate-sensitive livelihoods increases the vulnerability of communities and underscores the importance of proactive DRR, livelihood diversification, early warning systems and risk-informed development planning at the subnational level (UNDRR, 2015; GoK, 2023)

3.1.4 Infrastructure and Development in the Study Area

Infrastructure and development in Western Kenya are improving steadily, with notable improvement in the transport infrastructure, electricity access, water and sanitation, health facilities, education, ICT connectivity, housing and urban services. In Kakamega, Kisumu and Busia, improvements have been made in road connectivity, health infrastructure, energy and public services, although substantial disparities remain. For example, a World Bank assessment based on Kenya's 2018 Social Development Index found that the proportion of facilities meeting minimum infrastructure requirements was about 60% in Kakamega and Kisumu and 75% in Busia, illustrating differences in basic service infrastructure across the region.

Road connectivity, energy and access to social services are particularly important development. Kakamega has continued investing in roads, bridges, health facilities and energy infrastructure, while Busia has expanded electricity connections, solar mini-grids and road networks. However, development challenges still remain including inadequate infrastructure, uneven access to quality healthcare and education, and vulnerability of already developed infrastructure to floods and other hazards (Marigi, 2017).

3.2 Research Design

The study employed a mixed methods approach incorporating descriptive and evaluative research designs. The descriptive component was used to establish and characterize the existing institutional arrangements of the sub-national DRR platforms in Western Kenya. Quantitative data were summarized using frequencies and percentages while qualitative data were used to provide contextual descriptions of institutional practices and experiences. The evaluative component was used to assess the adequacy of the DRR platforms against predefined institutional capacity and performance criteria. The study also adopted a concurrent triangulation mixed methods design. Quantitative and qualitative data were collected concurrently, analyzed separately and integrated during the interpretation stage to triangulate findings and provide a comprehensive assessment of the institutional capacity of the subnational platforms.

The study examined the institutional capacity of sub-national DRR platforms using a multidimensional evaluative framework comprising of legal acts and policies, financial capacity, human and technical expertise, coordination and networking, information sharing and early-warning. Each dimension was assessed using specific indicators reflecting the platforms' ability to plan, coordinate, implement and sustain DRR interventions. The assessment considered both the presence of formal institutional structures and their operational adequacy. Quantitative measures were used to determine the perceived level of adequacy of each capacity dimension, while qualitative evidence provided contextual explanations of institutional strengths and constraints. The framework therefore enabled the study to distinguish between the existence of institutional arrangements and their actual operational effectiveness.

3.3 Sampling Techniques and Sample Size

Sample size determination for the ward disaster management committee members was calculated using the Taro Yamane's formula (1967) for the population given by the following equation.

Equation 1

$$n = \frac{N}{K + Ne^2}$$

Where:

n = Required sample size

N = Population of Ward Disaster Management Committee

K = Constant (1)

e = Margin of error (usually 0.05 for 5%)

$$n = \frac{204}{1 + 204 \times 0.05^2}$$

$$n = 136$$

To account for non-response, a 10% attrition rate was added:

$$\text{Attrition Adjusted Sample Size} = \frac{n}{1 - 10\%}$$

$$\text{Attrition Adjusted Sample Size} = \frac{136}{0.9} = 151$$

Thus, the final sample size for ward disaster management committee members was 151. This was distributed proportionately across the counties based on the number of committee members per ward (Kakamega: 12 per ward, Kisumu: 18 per ward, Busia: 15 per ward). The sample was then allocated proportionately to the three counties according to the size of their respective ward disaster management committee populations. The sample size was proportionately distributed as in Table 4.1 below.

Table 3

Proportionate Distribution of Sample Size by County

Selected Counties	Total No. of Wards	Members Per Ward	Total Population	Allocated Sample
Kakamega	60	12	720	58
Busia	35	15	525	42
Kisumu	35	18	630	51
Total			1875	151

3.4 Data Collection Methods

Primary quantitative data from the ward disaster management committee members was mainly collected using questionnaires, KII and FGDs while qualitative secondary data was collected from journals, reports and magazines. The questionnaire was structured with five number of items for the respondents to rank the statements based on key indicators on a scale of 1-5, whereby = strongly agree, 2 = agree, 3 = don't know, 4= Disagree, 5= Strongly Disagree) based on the statements. The instruments were tested on 15 committee members based on the 10% of the sample size (151) by Connelly (2008) in Sabatia Sub - County in Vihiga County. This helped the researcher to identify areas of concern in the instruments and also helped in reducing vagueness and improving understanding of the questions for precise responses. The researcher did 3 key informant interviews with the County Directors for DRR and 6 FGDs (2FGDs per county). The data collection was done between May 2024 and July 2024.

3.5 Data analysis

All the quantitative data from the questionnaires were analyzed using the Statistical Package for Social Scientists (SPSS) version 27.0 for both descriptive and inferential statistics and results are presented in the figures, charts and tables. Qualitative data were analyzed using thematic analysis. Interview transcripts and other qualitative responses were first transcribed, organized and reviewed repeatedly to facilitate familiarization with the data. Meaningful segments of text were assigned initial codes, which were subsequently grouped into categories based on similarities and relationships. The categories were then reviewed and developed into broader themes aligned with the study objectives.

IV. FINDINGS & DISCUSSION

4.1 Findings

This section presents results, findings and discussions on the institutional capacity of subnational DRR platforms in the study area. The study respondents were the ward disaster management committee members whose age brackets were as follows: 25% (38) were 18-30 years; 46.9% (71) were 31-50years; 19% (29) were 51-60 years and lastly 9.1% (14) were over 60 years. On gender, 61.2% (92) of the respondents were male while 38.8% (59) were female. On the marital status of the respondents, 60.2% (91) were married, 20.8% (31) were widowed while 19% (29) were single. On level of education of the respondents, 19.3% (29) had attained primary education; 36.7% (55) had attained secondary education; 26.3% (40) had attained tertiary education with 17.7% (27) attaining university education. Finally, on occupation, 38.8% (59) were practicing farming, 26.3% 40) were doing businesses, 9.6% (14) were practicing fishing while 25.3% (38) were in other forms of livelihoods such as formal employment.

These findings were mainly on legal and policy structures, organizational structure and human resource capacity in the platforms, financial resources allocation, EWS and information sharing within the platforms, and multistakeholder networking of the subnational DRR platforms in the study area. The results are as presented in Table 1 followed by an interpretation and discussion of the findings in the sub sequent sections.

Table 4*Institutional capacity of subnational DRR platforms in Western Kenya*

Key aspects of institutional framework	Kakamega		Kisumu		Busia	
	Agree	Don't Agree	Agree	Don't Agree	Agree	Don't Agree
Legal and policy structures						
Availability of formal Acts and policies	76% (115)	24% (36)	90% (136)	10% (15)	68% (103)	32% (48)
Mainstreaming DRR into CIPDs	32% (48)	68% (103)	46% (69)	54% (82)	17% (26)	83% (125)
Clearly outlined roles in policies	68% (103)	32% (48)	72% (109)	28% (42)	62% (94)	38% (57)
Existing laws support DRR implementation	68% (103)	32% (48)	71% (107)	29% (44)	81% (122)	19% (29)
Organizational structure and human resource capacity						
Availability of adequate technical expertise	26% (39)	74% (112)	38% (57)	62% (94)	17% (26)	83% (125)
Regular capacity building activities	31% (47)	69% (104)	26% (39)	74% (112)	38% (57)	62% (94)
Regular DRR meetings	34% (51)	66% (100)	46% (69)	54% (82)	37% (56)	63% (95)
Clear leadership and reporting structures	68% (103)	32% (48)	70% (106)	30% (45)	58% (88)	42% (63)
Financial resources allocation						
Adequate budgetary allocation to DRR	26% (39)	74% (112)	38% (57)	62% (94)	18% (27)	82% (124)
Timely release of DRR funds	16% (24)	84% (127)	22% (33)	78% (118)	08% (12)	92% (139)
Access to logistics for preparedness and response	28% (42)	72% (109)	30% (45)	70% (106)	20% (30)	80% (121)
Financial stability in DRR interventions	25% (38)	75% (113)	21% (32)	79% (119)	12% (18)	88% (133)
EWS and information sharing						
Timely communication of EWS information to communities	53% (80)	47% (71)	56% (85)	44% (66)	50% (76)	50% (76)
Incorporating local knowledge in DRR planning	24% (36)	76% (115)	28% (42)	72% (109)	18% (27)	82% (124)
Effective monitoring and evaluation of DRR activities	26% (39)	74% (112)	36% (54)	64% (97)	12% (18)	88% (133)
Availability and accessibility of disaster risk data to relevant stakeholders	59% (89)	41% (62)	56% (85)	44% (66)	47% (71)	53% (80)
Multistakeholder networking						
Existence of multi-stakeholder forums	58% (88)	42% (63)	64% (97)	36% (54)	59% (89)	41% (62)
Inclusivity in the multistakeholder forums	78% (118)	22% (33)	76% (115)	24% (36)	80% (121)	20% (30)
Sustainability of the forums	41% (62)	59% (89)	46% (69)	54% (82)	53% (80)	47% (71)
Influence of the forums on DRR policies	28% (42)	72% (109)	37% (56)	63% (95)	34% (51)	66% (100)

4.1.1 Legal and Policy Structure in the DRR Platforms

Results in Table 1 show indicate that averagely 78% of the respondents agreed that there are formal Disaster Risk Management Acts and draft policies in place with 67% agreeing that there are clearly defined roles to support Disaster Risk Reduction Interventions across the three counties. However, DRR has been minimally mainstreamed into CIPDs at 31% (47). Analysis revealed that subnational DRR platforms operate using legal and policy structures that guided their formation, with clear roles and responsibilities which guide their operations in DRR. However, there is uneven implementation and operationalization across the counties. At the county level, Kakamega, Busia, and Kisumu counties have developed DRR policies and strategies aligned with the Sendai Framework for Disaster Risk Reduction

(2015–2030) and Kenya’s National Climate Change Action Plan. These policies require representation of women, youth, and persons with disabilities in DRR structures and promote integration of risk information into development planning. However, while these policies provide a strong guiding framework, their influence on actual outcomes remains limited. This confirms that policies, though well-articulated, do not automatically translate into desired outcomes without sufficient resources, political will, and enforcement mechanisms.

In consistence, Okunola (2025), affirmed that existence of these platforms and stakeholder inclusion is symbolic and not backed by real authority or resources. This undermines the ability of subnational platforms to carry out meaningful DRR mandates. Sub-national DRR platforms are pivotal actors in the realization of inclusive, risk-informed development in Western Kenya. Their effectiveness depends on strong institutional frameworks, meaningful stakeholder engagement, adequate resourcing and robust information systems. Strengthening the functionality of these platforms is not only a technical imperative but also a governance and equity issue, especially in disaster-prone regions grappling with climate change, rapid urbanization and socioeconomic inequality.

4.1.2 Organizational Structure and Human Resource Capacity in the Subnational DRR Platforms

Results in Table 1 indicate that 65% (98) of the members agreed that there are clear leadership and reporting structures in the DRR platforms. However, only 27% (40) respondents agreed that there is adequate technical expertise on DRR within the platforms with 32% (48) respondents confirming regular capacity building activities to the members. 32% (48) respondents confirming regular capacity building activities to the members. A ward committee member from Sheywe, Kakamega (respondent #047, 20 June 2024) explained:

“We have no formal training. When a disaster strikes, we try to do the best that we know in order to help during response,, but the county has trained us only once in three years.” (Respondent #047, 20th June 2024)

Analysis revealed clear leadership and reporting structures across the three counties. However, capacity building and adequate technical expertise are generally low across all counties, indicating a gap in human resource strengthening and policy frameworks for DRR. Most counties rely heavily on ad-hoc donor-driven trainings, which are not institutionalized into continuous professional development. This leads to weak knowledge transfer and low retention of DRR expertise at sub-national levels (Nyandiko, 2018).

Nevertheless, The proportion of respondents who disagreed suggests that significant barriers to effective capacity building still exist. Weak institutional frameworks, inadequate political commitment, and insufficient funding continue to constrain the implementation and sustainability of capacity-building initiatives, thereby limiting their effectiveness in enhancing disaster risk reduction capacities(UNDRR, 2015). Many counties lack finances and mandates to influence policies across all sectors in the government therefore limiting their participation in capacity building. Also, local and county leaders in Kenya usually prioritize short-term and visible projects, such as roads, which offer immediate political gain rather than long-term resilience investments (Booth & Cammack, 2013; Mitullah & Waema, 2017).

4.1.3 Financial Resources Allocation to DRR Platforms

Results in Table 1 show Results show inconsistencies in budgetary allocation, access to logistics for preparedness and response and financial stability of the DRR platforms. 27% (41) respondents agreed that there is adequate budgetary allocation to the platforms while 85% (128) respondents disagreed that DRR funds are released in a timely manner. Also, 71% (107) highlighted that there is financial instability of the DRR platforms. 26% (39) members agreed that they access logistics for disaster preparedness and response.

Analysis of performance indicators across the three counties reveal inconsistencies in budgetary allocation, spending and financial instability in disaster risk reduction (DRR) platforms. Kisumu County demonstrates strong financial capacity, ranking highest in the budgetary allocation. However, all the three counties perform relatively low in financial instability and timely disbursement of DRR funds, suggesting that budgetary allocations were often emergency oriented rather than preventive. While institutionalized DRR enhances resilience, financial instability remains a highlighting high dependence on external donor support and limited financial capacity to sustain DRR initiatives (Crossley *et al.*, 2021). This aligns with findings by the IFRC (2020), which emphasize that while community-based DRR fosters ownership, sustainability remains a challenge without strong fiscal backing. World Bank (2020) also notes that resilient DRR outcomes require both inclusive governance and robust financial support. A KII with the Busia County Director for Disaster Risk Management (Location; Busia County HQs, 23rd June 2024) confirmed;

“Inadequate funding limits our DRR activities. When funds are delayed, we cannot undertake major DRR activities and therefore derails our annual plans and activities.” (KII, Busia County Director for Disaster Risk Management, 23rd June 2024).

Discussions from key informants and FGDs further revealed that Kisumu county’s funded contingency plans supported prepositioning of resources such as boats and other rescue equipment along R. Nyando. Regular simulation exercises have also been funded and conducted with community participation across the three counties in Western

Kenya. In Kakamega County, community schools have been adapted into designated flood evacuation centers with improved WASH facilities (Nabwire, 2019). Similarly, Busia's DRR platforms mobilized funds to support community tree planting along River Nzoia flood plains as a mitigation measure (Opilo, 2023). In conclusion, inconsistent funding and inadequate budgetary allocation to the DRR subnational platforms in Western Kenya have translated into partial contingency plans being operationalized and few mitigation projects being implemented

4.1.4 Early Warning System and Information Sharing

Results in Table 1 indicate that 54% (82) of the respondents agreed that there is availability of disaster risk data and are accessible to relevant stakeholders while 75% (113) respondents cited ineffective monitoring and evaluating of DRR activities in the study area. Results further indicated that disaster risk data is available and accessible to relevant stakeholders as highlighted by more than half of the respondents (54%), who also confirmed that EWS information reaches the communities on time. However, monitoring and evaluation of DRR activities is not effective.

Findings further revealed that platform members undertake risk assessment with the help of the community members who help in identification of potential risks and hazards that might affect the communities. They also identify members of the community who tend to get affected the most in the event of a disaster. In 2023, a flood mapping and vulnerability assessment was done in Mumias Central ward, Kakamega County by the County government (Anami, 2023). This activity involved other agencies such as KRCS and St. John Ambulance. The activity involved identification of potential flooding zones and identification of households and homes which were likely to be affected by the floods. Shibale Primary School was designated as an evacuation center during floods (Opilo, 2023). An elder from Ahero, Kisumu County (FGD, Ahero Town Hall, Date: 22nd July 2024) observed:

"We get mobile alerts. That saves lives. But after the flood, no one evaluates whether the warnings reached everyone – especially the elderly without phones." (Elder FGD Participant B2, 22nd July 2024).

Further discussions for FGDs revealed that platform members help in the interpretation of Early Warning Systems (EWS) which is very effective in enhancing DRR in Western Kenya due to their timely communication concerning the disasters to the communities. This is supported by Owuor (2015) who states that EWS provides timely alerts to community members about the occurrence of hazards. This enables them to prepare in advance for the disaster by engaging in preventive actions. In case of flood hazards, communities move to higher and safer grounds, they move their livestock and properties to avoid destructions by floods. EWS also increases community preparedness and awareness since it strengthens local knowledge on disaster risks and encourages community members to engage in drills and simulations in preparation of the hazards. When warnings are received early, DRR platforms engage in resource mobilization in preparation towards response to the hazards (Kirpalani, 2024). County government, NGOs and Humanitarian agencies work together and mobilize resources such as food aid, rescue teams and evacuation centers in preparation for the disaster. Timely EWS allows for proactive disaster risk reduction which is essential in long – term resilience of communities in Western Kenya (Owuor, 2015).

Although Kenya's constitution devolves responsibility for DRR to counties, many counties still lack domestic legislation or capacity to operationalize reforms and undertake monitoring and evaluation of DRR projects. Similarly, DRR platforms are often peripheral to formal policy-making structures. Their engagement tends to be ad-hoc or limited to awareness activities rather than systematic institutional reform engagement. This therefore explains why there is ineffective monitoring and evaluation of DRR projects in the study area. A study by Rono-Bett, 2018 states that government entities and DRR platforms face resource constraints and lack policy drafting expertise. This limits their ability to propose or implement institutional reforms even when platforms are eager.

4.1.5 Multi-Stakeholder Networking of the Disaster Risk Reduction Platforms

Results in table 1 shows that 60% (91) of the respondents agreed that there is existence of multistakeholder forums in the study area, with 80% (121) confirming that there forums ensures inclusivity of the vulnerable groups. However, sustainability of the forums was low at 47% (71) with very low influence on policies at 33% (50). The strong performance in inclusivity of the forums reflects the existence of institutionalized climate and flood management committees supported by ward disaster committees, NGOs, and Lake Basin institutions which ensures equal participation of every community member in the projects. These platforms have enabled proactive preparedness, integration of local knowledge and translation of recommendations into county-level policies (UNDRR, 2019). Also, the strong existence and inclusivity scores show political commitment and stakeholder diversity. However, low sustainability and policy influence highlighted structural weaknesses since the taskforce remained an ad hoc without budgetary anchoring.

From the Focus Group Discussions, the participants tended to agree that the multi-sectoral nature of these platforms ensures that there is coordination and no overlap during response and recovery. They also facilitate regular DRR forums and workshops and hence feeding findings into county decisions. The county DRR symposiums held in October 2022 (Kakamega County) and October 2023 (Kisumu County) allowed local actors to engage directly with the

county government on climate resilience and disaster preparedness priorities. These platforms also advocate for budget allocation to DRR within county planning and public participation forums and also elevate the voices of vulnerable groups in shaping equitable policy integration.

The study established that coordination among county departments, NGOs such as KRCS and Winam Grassroots was moderate, resulting in smooth DRR interventions in Kisumu County, which further resulted in better preparedness and response. The institutional theory explains this pattern as a consequence of strong formal structures, clear mandates and adequate enforcement mechanisms. Although sub-national DRR platforms exist in Busia County, their institutional authority appears insufficient to compel inter-agency collaboration suggesting that the platforms function more as consultative forums than as authoritative coordination mechanisms, limiting their effectiveness in enhancing DRR in Busia County (Smucker et al., 2020)

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concludes that the institutional capacity of subnational Disaster Risk Reduction (DRR) platforms in Kakamega, Kisumu and Busia counties is characterized by established legal and policy frameworks, relatively clear leadership structures and inclusive multi-stakeholder forums, but limited operational effectiveness. Despite these institutional strengths, inadequate mainstreaming of DRR into County Integrated Development Plans (CIDPs), limited technical expertise and irregular capacity-building activities constrain the platforms' ability to fulfil their mandates. Similarly, inadequate budgetary allocations, delayed disbursement of funds and limited logistical resources undermine the implementation and sustainability of disaster preparedness and mitigation interventions.

The findings further establish that although early warning information reaches many communities in a timely manner, weaknesses in monitoring and evaluation, limited integration of local knowledge and gaps in information accessibility affect the effectiveness of DRR initiatives. Furthermore, despite the inclusivity of multi-stakeholder forums, their sustainability and influence on county-level policy decisions remain limited. Overall, institutional capacity varies across the three counties, demonstrating that formal structures alone are insufficient to ensure effective DRR implementation. Strengthening these platforms requires predictable financing, continuous capacity development, improved information management, and clear decision-making mandates to enhance coordination, accountability and community resilience to disasters in Western Kenya.

5.2 Recommendations

The study recommends that county governments in Kakamega, Kisumu and Busia strengthen the institutional capacity of subnational DRR platforms through dedicated and predictable budgetary allocations, timely disbursement of funds, continuous capacity building and improved access to technical expertise and logistical resources. County governments should also mainstream DRR into County Integrated Development Plans (CIDPs), strengthen monitoring and evaluation systems, improve early warning information sharing, and institutionalize multi-stakeholder forums with clear decision-making mandates to enhance accountability and sustainability. Further research should examine the political economy of DRR governance in Western Kenya to establish how political priorities, institutional power relations and resource allocation influence the effectiveness of subnational DRR platforms.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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