MANAGING CLIMATE INDUCED DISASTERS: A CASE STUDY OF DECENTRALIZED POLICY IMPLEMENTATION IN VIHIGA COUNTY, KENYA

KHATASIA OTUYA INGABO

MASTER OF ARTS
IN
INTERNATIONAL DEVELOPMENT

SCHOOL OF SOCIAL INNOVATION
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ABSTRACT

This study investigated the implementation of disaster management policies in Kenya's devolved governance system, with Vihiga County as the case study. The study explored the decentralized policy implementation systems, the nature and effectiveness of public participation in climate and disaster management policy interventions, and the county government's incorporation of the Sendai Framework in its policy initiatives. The study assessed policy formulation and execution, using a mixed-methods approach that included surveys, interviews, and focus groups, as well as policy documents review.

The findings demonstrate a hierarchical policy implementation structure at both the national and local levels. Significant hurdles including; political influence, limited stakeholder participation, separation of climate and disaster management policies, as well as budgetary and resource mobilization issues, were seen to have an impact on the success of climate and disaster policy initiatives. In terms of public engagement, the study observed weak efforts to involve the public in policy exercises, but also found laudable measures to institutionalize grassroot involvement through ward climate change committees comprised of local community residents. The study revealed noteworthy integration and reference to the Sendai framework in strategic policy documents by the county administration, but actualizing these policy commitments remained challenging.

The research findings point to the need for more people-centered and inclusive policy exercises that incorporate input from the population and other non-state stakeholders in the development of long-term climate-disaster resilient and adaptive communities. In terms of policy implementation, there is also a need to take into account the input of policy implementers by policy makers, and mitigate the effect of underlying influences in order to guarantee disaster policy implementation success.

Keywords: Policy Implementation, Disaster Management, Climate Change, Public Participation

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CHAPTER 1

INTRODUCTION

The crux of this research was to probe the intricate relationship between climate change and disasters, exploring existing research and contributing to a better understanding of climate-related disasters and how best they could be managed, starting at the grassroot level and supplemented by national and international efforts. While climate change and disaster management have been extensively studied, some significant gaps remain, which this work tries to address. The vast majority of highly cited scholarly writings on climate change in Africa originate outside of the continent. Many case studies on decentralization focus on large city contexts, but this study examined decentralized disaster management in a small-town rural setting in Kenya. Kenya has adopted a number of policies to combat climate change and disaster management, but their implementation barely been researched on. This chapter presents a background to the study, problem statement, objectives, research questions, significance of the study and the assumptions and limitations of the study.

1.1 Background of the Study

For much of our lives, climate change has been perceived as a distant concern looming on the horizon, that has not merited drastic action to resolve, but the poignant reality of its enormity is gradually unfolding before our eyes. Although some of its effects are visibly obvious now, forecasts indicate that the most worrying political and ecological challenges are still to come (Wainwright & Mann, 2018). Understanding both the concerns and promises presented by climate change is essential for developing better strategies to manage it. While weather and climate overlap in many respects they are very distinct from one another. Weather refers to the everyday atmospheric fluctuations, and climate refers the long-term average of these fluctuations over a prescribed 30-year period (UN Habitat, n.d.).

The climate change phenomenon exhibits a slow onset pattern, with its impacts gradually manifesting and progressively escalating into rapid onset disaster causing events over time. Gradual buildup of Greenhouse Gases (GHGs) change the planet's energy balance system, which controls how much radiation is absorbed and emitted naturally. This causes global warming, which is seen in the warming of the oceans, melting of glaciers, and shrinking of the Arctic Sea ice. These events cause the widespread fluctuation of the natural climate system, sustaining a cycle of climatic changes that increases climate unpredictability (UN Habitat, n.d.). The potential negative impacts of short-term climatic changes may initially seem unsubstantial; however, upon careful examination over an extended duration, their long-term consequences become increasingly concerning (UNFCCC Secretariat, 2012). The gradual onset of climate change is primarily responsible for the little attention it receives in comparison to rapid onset disaster causing events. The minimal focus given to slow onset climatic events in research and policy is also directed to the nature and causes, and with little emphasis on the actual mitigation and adaptation initiatives (van der Geest & van der Berg, 2021)

Climate change is primarily to blame for the vast majority of today's actual and projected risks, vulnerabilities, and exposure to hazards. The increasing complexity of these risks is exacerbated by the simultaneous occurrence of hazards and the interplay of various risks which are readily transferred in an interconnected globalized world. Climate change heightens the frequency and potential severity of triggering factors that are responsible for disaster occurrence. To effectively address climate induced disasters thus necessitates a change in long term disaster management approaches, and most importantly a keen focus on the contextual nuances of climate change in local and regional contexts. This study combines climate change and disaster management in a decentralized policy implementation framework.

Human activity is largely to blame for the climate fluctuations that have further degraded our natural environment and its life sustaining systems. The complex nature of these hazards increases the risks and implications, making them even more difficult to control (Intergovernmental Panel on Climate Change [IPCC], 2021). The severe exposure to risks overwhelms existing frameworks, resulting in adverse human and environmental impacts that humanitarian agencies, government and households struggle to cope with and force the incurring of unbudgeted expenditure or diversion of resources from other

important issues (Hillier, 2018). Observations on climate trends have indicated a sharp increase in the occurrence of extreme events in the past and projections anticipate further increases, occurrences that a Intergovernmental Panel on Climate Change (IPCC, 2012) special report attribute to climate change.

Sustainable development and disasters are inextricably linked, which calls for states and individuals to protect, conserve, sustainably utilize ecosystem goods and services, and restore degraded ones (Kaylani, 2019). Efforts by individuals, governments and international organizations to address these challenges using sustainable strategies, are continually derailed by climate related disasters. Sustainable development is thus an important pillar for environmental and socioeconomic progress for managing disaster risks, and facilitating climate change education and awareness (Dzvimbo et al., 2022). Kelman (2017) notes The Sendai Framework for DRR and Hyogo Framework for Action (2005-2013) mention sustainable development 15 and 13 times respectively, and with the Hyogo Framework seeking to harness knowledge and education for resilience to disasters (Dzvimbo et al., 2022).

For many states in the developing world, climate change does not appear to be a pressing problem, when considered amongst other more urgent problems they grapple with such as economic development and poverty. The attainment of sustainable development however, is strongly reliant on how well climate change is addressed, through policy, which Davidson et al. (2003) advocate should be cross cutting to factor in climate change vulnerability reduction and achieving sustainable development. Wu et al. (2015) argue the primary contributors to the rising impact of climate induced disasters around the world are vulnerability and exposure. According to them, empirical evidence from manifold other studies appears to suggest an inverse relationship between vulnerability and income, with economic vulnerability to disasters reducing with increases in income. They also attribute vulnerability to climate induced disasters, both economic and human, to levels of economic development. According to World Meteorological Organization (WMO), (2021), nearly 12,000 weather and climate induced disasters were recorded between 1970 and 2021 globally, costing the world economy an estimated USD 4.3 trillion in economic losses. Over the same period Africa, suffered USD 43 billion in direct economic losses.

In a study on disasters and economic growth, Klomp and Valckx (2014) further identify an inverse relationship between overall growth and disaster prevalence.

Developing countries, they argue, face the most severe economic growth per capita impacts from climate induced disasters. The rapid increase in the economic impacts of disaster occurrences over the preceding four decades they attribute to the frequency and magnitude of disaster events.

The increased scope and magnitude of climate disaster occurrences underscores the need for transformation of disaster governance in order to enhance coherence, planning, policy making, finance, and coordination among all parties involved in order to reflect the increasingly broad nature of disaster risks (Centre for Research on the Epidemiology of Disasters [CRED], 2020). Despite worldwide contestations on the extent of climate change, a scientific agreement seems to be emerging on the chasmic reality of its occurrence, as well as its effects on not just the environment but also the economic and sociopolitical challenges in dealing with it. Regardless of the debates however, the only rational response lies in an immediate and far-reaching reconstruction of human society (Wainwright & Mann, 2018).

Hazards and disasters frequently overlap, yet there is a fundamental difference between them. A hazard in a general sense is a dangerous phenomenon with the potential to cause a disaster, whereas a disaster results from severe exposure to hazards, in combination with weaknesses in coping mechanisms and existing vulnerabilities (Banholzer et al., 2014). Greve (2016) defines disaster management as efforts to reduce the long-term damage posed by disaster events to life and property, and classifies it into three categories: prevention and preparedness, emergency and response, and recovery and rehabilitation. They observe that the inclusion of climate change into disaster management occurs mostly during the prevention and preparedness stages, but that it should also occur during recovery and rehabilitation.

Owing to the perception of climate change as a ‘problem of the future’, climate action has often been characterized by weak commitments that are barely followed through to address the pressing concerns it presents (United Nations Environmental Program [UNEP], 2021). Two approaches to dealing with climate change are preferred: adaptation and mitigation. Mitigation could be understood as the policies and human interventions seeking to increase carbon sinks and reduce GHG emissions and global warming, while adaptation refers to actions taken to adjust both human and natural systems, and to lessen the vulnerability of these systems to the impacts of climatic changes (UN Habitat, n.d.).

While mitigation is primarily the duty of high emitting nations it presents substantive benefits to all countries and localities. They further observe that mitigation seeks to address climatic changes, but adaptation is geared towards the alleviating the localized impacts of these changes.

Many international efforts have resulted in the adoption of landmark policy documents to address climate change and disaster risks, albeit independently despite their inextricable linkage. For climate change globally; The UN Framework Convention on Climate Change (UNFCCC), The Kyoto Protocol and Paris Agreement have been adopted, while for disaster management; The Hyogo Framework for Action (HFOA) and The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) have provided guidance in addressing their respective target issues. Multiple other policy commitments have been adopted across various regions and their respective states, but the implementation of these policy aspirations has often been ineffective in addressing the concerns they seek to address.

Addressing climate change, however, presents a difficult challenge due to its interconnection with various other issues and influencing forces, particularly in the current 'Anthropocene' era (Wainwright & Mann, 2018). Several initiatives to mitigate climate change are springing up all over the world, all with lofty pronouncements and pledges. However, a trilemma emerges as to whether a global, national, or local approach would be most suited to handle the problem. Localized responses seem to be too limited for a problem with a worldwide scale, unilateral national action has inhibited international collaboration on numerous occasions, and a globalized approach may be too broad for a problem with localized implications. Climate disaster management efforts are necessary at all levels, but the local level appears the best suited approach for the success of such initiatives. Greve (2016) argues that this is because local governments and the stakeholders at that level have the best suited social capital, situational awareness, community connections and culture critical for implementation.

Climate Change and Disasters in Kenya

An Intergovernmental Panel on Climate Change (IPCC) (2022) report observes the uneven distribution of vulnerability to climate change hazards across the world, with Africa, Asia and South America experiencing high vulnerability caused by governance problems, slow socioeconomic development, conflicts and reliance on climate dependent

sources of livelihoods. According to Dell'Angelo et al. (2014), the rural population in these regions is the most susceptible to climate change, with most of their vulnerability driven by climate change-induced processes. Climate projections for East Africa observe an expected increase in precipitation and the risk of flooding, as well as the rise in drought that affect food production and migration patterns (Atwoli et al., 2022; Serdeczny et al., 2017).

Kenya is a signatory to various international climate change and disaster risk reduction endeavors. The nation is a signatory to the 2015 Paris Agreement, for which the National Climate Change Action Plan (NCCAP) is modelled, to mainstream climate change into government sectoral operations and guided by the Climate Change Act (Government of Kenya, 2018). In terms of disaster management, the country adheres to the Sendai Framework, for which its national policies such as the National Disaster Response Plan (NDRP) of 2009, and Disaster Risk Management Policy of 2017 align with.

Just as in other countries around the world, disaster risks are increasing faster than Kenya's efforts to build coping mechanisms to address them. Over recent decades, African countries have awoken to the threat of climate change and its impacts on exacerbating disaster risks and as such taken notable action towards upscaling their capabilities for both Disaster Risk Reduction (DRR) and Climate Change Action (CCA) in the pursuit of sustainable development.

Kenya's progress toward sustainable development, as envisioned by the Vision 2030 development blueprint, has been impressive, although vulnerability to climate-related hazards and other factors hamper the full realization of their aspirations. The nation has a complex climatic environment that is vulnerable to a variety of severe climate events, most notably droughts and floods, which pose disastrous risks. The national economy is also strongly based on agriculture and tourism, both of which are very vulnerable to climate change. Rapid population growth has exacerbated environmental stress, which has resulted in rising urbanization, posing significant challenges for urban development planning (Kithiia & Dowling, 2010; Vigren Skogseid, 2017). Climate change has also increased exposure to transmission vectors for diseases such as malaria, typhoid, and cholera.

Despite their close relationship, disaster management and climate change action in Kenya are coordinated through different policy and institutional frameworks. Climate Change action is guided by the Climate Change Act 2016 and NCCAP, directed by the National Climate Change Council (NCCC) that is chaired by the president. For disaster

management, the National Disaster Management Unit (NDMU) department under the Ministry of Interior and Coordination of Government, is the primary governing agency guided by the National Emergency / Disaster Plan and Standard Operating Procedures of 2014. According to Parry et al. (2012), the implementation of these respective policies is impeded by some human, technical, and financial shortcomings, which include risk awareness by policymakers, risk assessments and the inclusion of climate change in disaster risk management, financing, information gathering and dissemination, and strategy coordination amongst actors involved. Despite the country's high vulnerability to climate change and the resultant disasters, its disaster efforts have mostly been reactive rather than proactive. The country's disaster management structure is largely geared toward emergency response and does little in prevention.

Research focused on enhancing the understanding of climate disaster risks is becoming increasingly important, with proven benefits accruing in policy coherence and effective policy implementation. The New Constitution of Kenya 2010 heralded a new devolved system of government, through which climate change and disaster management policies are implemented. The constitution prescribes a separation of power between these two levels and assigns functions that are crucial for disaster management. County governments have their own budgets and have the liberty to develop their own policies to reflect their own unique needs, but are also required to align their policies to those of the national government. Despite very little research, county governments' incorporation of climate disaster risks into development plans has been noted to be insufficient (Smucker et al., 2020).

1.2 Problem Statement

While climate change and disaster management have been extensively studied, the following notable gaps in the literature were identified, which this study aimed to address.

Much of the existing research on decentralized disaster management has focused on major cities and large urban centers contexts, often ignoring rural settings and small towns. This emphasis on urban areas does not capture the specific opportunities and challenges that exist in minor cities and countryside areas. García (2024) and Jerolleman

(2020), attempt to explores some of the unique challenges and strategies in rural disaster management. This study investigated decentralized disaster policy implementation using Vihiga County in Kenya as a case study for a small-town and rural context.

There are also very limited research perspectives on climate change and disaster management from the developing world, particularly from Africa. A lot of the highly cited research about climate change and disaster management in the developing world have been written by scholars and perspectives from the developed-world (Simpson et al., 2022). These studies do not capture the unique nuances in these places, which is essential in formulation and implementation of strategies that apply to their unique environmental and socio-political settings. This study addresses the need for research that represents the distinct socioeconomic and environmental conditions in Africa by focusing on Vihiga County and thus contributing an African viewpoint to the body of current literature.

There is also insufficient research focus on policy implementation in Kenya. Kenya has adopted a number of measures to mitigate climate change and improve disaster management, but their implementation has received little attention. Current literature focuses on policy formation rather than implementation at both the national and local levels. By focusing on a grassroots policy implementation challenges encountered by local governments in the implementation of both national and their own policies, this study fills this knowledge gap by exploring the obstacles and drivers of grassroots disaster management. Public participation is also popularly mentioned in legal and policy documents in Kenya, but its actualization has been very lackluster. This research also explores grassroot public participation in decentralized disaster policy implementation.

Despite their close connection, climate change and disaster management are often studied separately. There is limited research combining climate change and disaster management, despite the fact that both policies are implemented by the same or related organizations and based on the same governance frameworks. Existing research tends to address them as separate issues, resulting in fragmented strategies that may fail to fully exploit the linkage between climate adaptation and disaster risk reduction (DRR). This study fills that gap by examining how Vihiga County integrates climate change action and disaster management, giving a framework for understanding the benefits and limitations of a comprehensive strategy for climate action and disaster risk reduction. The study explores

the inclusion of the Sendai Framework, a global disaster management regime, to examine the efforts made to implement its provisions in building grassroot disaster resilience.

While disaster management has been researched for a long time, most research on disaster policy implementation focuses on top-down approaches, frequently overlooking the usefulness of bottom-up strategies in local contexts. There is little research on the realities of local policy implementation, and policy failure at this level of governance. Herein lies a gap in the understanding some of the causes of local level policy failure and how local governments can address them. This study's findings are intended to inform both policy and practice by making recommendations for enhancing disaster policy implementation in similar rural and small-town contexts around the world.

1.3 Research Objectives

1.3.1 To investigate the level of public participation in decentralized climate and disaster policy implementation.

1.3.2 To examine the factors influencing disaster policy implementation and the causes of policy failure

1.3.3 To investigate the incorporation of the Sendai Framework's DRR guidelines and their influence on decentralized disaster management outcomes.

1.4 Research Questions

1.4.1 How effective is public participation in devolved climate change and disaster policy implementation in Vihiga County?

1.4.2 What are the primary influences on disaster policy implementation and causes of policy failure?

1.4.3 How has Vihiga incorporated the Sendai framework's DRR guidelines, as delineated in the Sendai framework affected and its effects on grassroot disaster management outcomes?

1.5 Scope of the Study

The purpose of this research was to examine disaster management initiatives in Kenya. However, the major emphasis was on policy implementation in a decentralized framework. Decentralized disaster policy implementation was examined for efficiency, challenges encountered, and emerging opportunities presented by devolution. The research was a case study, with Vihiga county as the research site. Disaster policy documents from both the national government and Vihiga County were thoroughly evaluated. Efficiency was evaluated using a set of indicators that include overall disaster resilience, policy capacity, levels of cooperation within county agencies and between them and the national government, and their reaction time to disaster occurrence.

1.6 Hypotheses

Public participation in disaster management is quite weak, but decentralized policy implementation has had an overall positive impact on disaster management as compared to centralized policy exercises from the national government.

Disaster policy outcomes are greatly influenced by multiple factors related to policy making and implementation.

Vihiga has made efforts to incorporate disaster DRR guidelines as outlined in the Sendai Framework, but its impacts on grassroot disaster resilience remains lacklustre.

1.7 Research Outline

This thesis consists of six chapters. The first chapter introduces the study by giving the context and backdrop of the research and highlighting the problem statement, objectives, research questions, scope, and hypotheses. The second chapter outlines a review of current academic works linked to climate induced disasters, examining key concepts in policy implementation and the theoretical framework for the study and debates in literature. The methodology is detailed in chapter three, which includes the research design, research setting, data collection methods, data analysis procedures, ethical issues. Chapter

four describes the devolved system of administration practiced in Kenya. Chapter five details the research findings, and chapter six gives the discussion, conclusion and recommendations.

CHAPTER 2

LITERATURE REVIEW

This chapter gives a gist of literature on public policy implementation, including the three theoretical perspectives on policy implementation, policy failure and its causes, and some of the factors that influence disaster policy outcomes. It also delves into disaster risk reduction, drawing a connection between climate change and disaster occurrences, examining the Sendai framework. Lastly, literature on decentralized disaster governance and public participation is also reviewed. The conceptual framework employed in the study is also described in the chapter.

2.1 Public Policy Implementation

Public policies detail future aspirations and the resources and techniques to achieve them, while public policy implementation is thought to entail the actions taken to achieve the policy goals and objectives (Khan, 2016). Collective action can be traced all the way back to the earliest times of human civilizations however, their relation to present-day public policy implementation is still a subject of debate. In the study of policy implementation, the focus in on understanding who the decision makers and implementors are, and their different duties and responsibilities in the policy process. Hill and Hupe (2002) contend that policy implementation can be analyzed based upon two issues: authority and the state. Legitimate authority according to them is founded in the rule of law, where government actions align with set rules that are known to the population, and the presence of accessible channels to seek redress for illegitimate action by governments. The state provides a complex system of rules within which other subsets

of rules operate, in democratic governance systems. The nature of public participation relies upon the relationship between bureaucracy and democracy. They also

note the importance of institutions and their influences on the policy implementation process.

Peters and Pierre (2006) argue that policy studies often seclude policy from other important influences, and in so doing oversimplify a complex puzzle. In the study of policy, three concerns arise. First, focusing on one particular policy on its own overgeneralizes the interaction of multiple policies whose interactions affect the population. Secondly a presupposition to examine public policy from a myriad of theoretical perspectives to get a holistic understanding of them, citing Allison (1969) as one such example. Third and most importantly, concerns what exactly is studied in public policy, asking whether we should focus on policy decision making or implementation.

There exists a general consensus that policy implementation needs a robust theoretical infrastructure, a problem Khan (2016) attributes to the relative infancy of the discipline as well as the socio-political, economic and organizational contexts and nuances that shape implementation outcomes. Birkland (2011) argues that implementation is a critical stage in the policy cycle and thus, comprehending it provides an opportunity to learn from past challenges while advancing new innovative policy models.

2.1.1 Evolution of Policy Implementation

Contemporary scholarship on policy implementation can be traced back to the 1960s and 1970s, the evolution of which is widely grouped into three perspectives; top-down, bottom-up and the synthesis approach.

2.1.1.1 The Top-down Approach

Jeffrey Pressman and Wildavsky are primarily considered the godfathers of policy implementation studies and the top-down perspective. Hill and Hupe (2002) conceive the top-down policy perspective as a way of analyzing public policy hinged upon the goals of top-level policymakers and how they trickled down to policy implementers. Pressman and Wildawsky, as cited by Hill and Hupe, argue that implementation could be understood based on its linkage with policy, just as in linguistics where a verb such as ‘implement’ would only be applicable alongside an object, in this case ‘policy’, which spells out the aspirations and techniques for attaining them. They introduce the idea of implementation deficits, through which they contend that, since implementation relied upon connections across multiple organizations and levels, these connections needed to be

much close to optimal as possible, to avoid small deficits that could cumulatively affect the implementation process. Hill and Hupe (2002) however, are critical of this view for assuming that the involvement of multiple actors negatively affected purposive action.

In their analysis of factors influencing the success of policy implementation in the works of other top-down scholars and research customs, Birkland (2011) identifies several defining assumptions of the top-down approach;

1. Goals are clearly defined in the policy, upon which performance can be assessed.
2. Implementation tools are clearly outlined in the policy.
3. Policy is outlined in formal enactments or definitive policy pronouncements.
4. Implementation occurs in a chain, usually from the top.
5. Policymakers understand the capabilities and dedication of the policy implementers (p. 265)

Birkland further argues that in these assumptions lies the weaknesses of the top-down model, the most significant being the focus on goals and objectives, which frequently vary between policy makers and implementers. The evaluation of outcomes is thus made easier when the goals are clarified.

In top-down policy implementation, Dye (2013) asserts that top level management often take political credit for enactment of very ambitious policies, which they then delegate to subordinates to implement, and blame them in the event these policies are unpopular or fail to achieve the intended outcomes. van Meter and van Horn (1975) building upon the works of pioneering scholars proposed a theoretical model for policy implementation. As cited by Hill and Hupe (2002) they theorize that '*implementation is only successful when marginal change is required and goal consensus is high*' (p. 46) and better analyzed vertically through a top-down setting. According to them, successful policy implementation relies upon six factors: standards and objectives, incentives and available resources, levels of relationships amongst institutions, inherent characteristics of the implementing agencies, the socio-political and economic environment, and the dispositions of the implementers.

Paul Sabatier and Mazmanian, whose starting point of analysis closely aligns with Van Meter and Van Horn, go further to introduce the idea of political and administrative variables which gives rise to four critical concerns (Hill & Hupe, 2002, p. 49);

1. Consistency of implementing officers' actions with objectives and tools outlined in the policy.

2. The levels of attainment of objectives through time and the consistency of objectives and impacts.

3. The primary factors determining policy outcomes and their relevance to formal political policies.

4. The influences of experiences on the policy reformulation and how it was done.

2.1.1.2 Bottom-Up Perspective

This perspective resulted from attempts to account for the divergence between policy objectives and outcomes, by analyzing the behaviors of policy practitioners across the implementation chain (Lindquist & Wanna, 2015). Earlier studies did little to explain how policies were translated into actions through implementation, which was due to the cardinal assumption that once policies are developed, they are adequately implemented to produce the intended results as envisioned by policymakers. van Meter and van Horn (1975) suggest a theoretical model for explaining policy implementation informed by; organizational theory, public policy impacts, and relations among government agencies. For organizational theory they zeroed in on behavioral compliance through which conformity to policy directions could be examined. According to them, different types of organizations utilized different systems to attain conformity, for instance coercion when organizational alignment to the policy was negative and normative power when it was positive. Administrators who do not supervise their juniors, ceded great policy implementation power to them.

Regarding public policy impacts, they cite Krislov (1965) who argues that subordinates are more inclined to comply with the directives of their superiors when the incentives of compliance outweigh those of noncompliance. Regarding intergovernmental relations, they contend that public servants at all levels in the policy cycle are interdependent, while emphasizing the importance of autonomy of the subordinates. Their model stresses six variables that affect implementation:

1. The relevance of policy standards and objectives
2. Policy Resources
3. Enforcement activities and interorganizational communications

4. Characteristics of implementation agencies
5. Economic, social, and political environment of implementation
6. The discretion of implementers in carrying out policy decisions (p. 483)

Lipsky (2010) places the bureaucracy at the heart of policy implementation asserting that despite the perception of them being subordinate employees, their cumulative actions influence, become or are actual policy. Their place is crucial because they directly interact with the citizens and usually are the first line of contact between the government and the people. Their influence on policy occurs in two ways; their discretion on whom to serve and their autonomy which collectively becomes institutional behavior. Lipsky further notes that frontline officers, whom he labels street-level bureaucrats, are often vilified without considering how their environment and working conditions influence their perceptions of problems and their selection of solutions. In addition, resource limitations, tremendous pressure, difficulties in acquiring reliable information and the intricacies of the cases they handle significantly influence the policy implementation process.

Hudson (1989) concurs with the influence of street bureaucrats, pinpointing discretion as the most significant power they wield, which empowers them to impact the output of their agencies. This allows them to individually alter their goals and perceptions of their clients and duties, to fit their own preferences and circumstances. In so doing, a disconnect between what they ought to do and what they actually do is more than likely to emerge, affecting effective policy implementation. The bottom-up perspective uncovers a stark realization about the top-down approach, that high-ranking officers and decision-makers underrate and overlook the crucial role played by street-level bureaucrats (Inpin, 2011).

2.1.1.3 The Synthesis Approach

The weaknesses of the earlier two approaches engendered the need for a new comprehensive approach, that integrated both of them. Elmore (2002) is widely credited for pioneering this transition, suggesting a blended approach to policy implementation involving both backward and forward mapping. In using such an approach, he argues, top level decision makers can understand the plight of lower-level implementers when making decisions and selecting implementing tools. Utilizing different models provides a broader perspective, from which different conclusions and perceptions can be drawn, echoing

Allison (1969) who argues that the conceptual lenses we use to examine issues influence our interpretations and inferences about issues.

Sabatier and Mazmanian (1980) also suggest an alternative comprehensive policy implementation framework, that considers the ever-changing implementation landscape that was responsive to various forms of influence; public opinion, socio-economic and so much more. A multi-actor approach is suggested by O'Toole (2000) in his earlier works, agreeing on the need to transcend the bottom-up versus top-down debates. Citing various policy scholarly works, he suggests that a synthesis of the two approaches is warranted by the sufficiency of evidence for the partial validity of both approaches.

2.1.2 Policy Failure

Understanding the occurrence of policy failure is essential to comprehending how to improve policy implementation. While failure represents the extreme end of the spectrum, policy failure is not absolute since some unsuccessful policies also produce some notable successes. Policy failure across various contexts results from manifold factors, which Hudson et al. (2019) broadly categorize into four groups.

First are overambitious expectations. Implementation weaknesses are not unique to any country, but are a common occurrence across the world, a problem majorly resulting from overly optimistic policy aspirations. A United Kingdom National Audit Office (2013) report points out over optimism as the key contributor to government policy failure, which it attributes to complexity (underestimation of challenges in addressing complicated issues), evidence base (weaknesses in the quality of data for decision making and ignorance of these weaknesses), stakeholders (government overoptimism about policy alignment with stakeholder views), behaviors and incentives (interested parties pulling to their advantage), and independence and accountability (poor accountability by decision makers and implementers).

Secondly, policy implementation in multilevel governance. When subnational levels of government enjoy some autonomy from central governments, ensuring consistency across the different levels of government involved in policy implementation becomes problematic. Successful policy implementation even in centralized structures of governance is also highly reliant on local contextualization. Policies could be successful in one locality while failing in others, thus reinforcing the need to understand local contexts

in policy implementation. Top level bureaucrats as such ought to understand the nuances and contexts on the policy implementation frontlines.

Thirdly, uncollaborative policy making. Policy making is mostly a preserve of the government and administration, despite these policies having far reaching consequences for those not involved in decision making. Difficulties in implementation are seen to result from uncollaborative policy making and the desire to seek for common ground in problem solving. Crafting public policies should involve multistakeholder collaboration.

Fourth, is the erratic nature of politics. Politicians are hardly held accountable for policy outcomes, and oftentimes avoid taking responsibility for them. They are habitually motivated by short term results and thus quickly enact policies without proper attention to details about their applicability. Their long-term political goodwill to follow through policy enactments to implementation, also tends to weaken over time. Policy makers have had a tendency of taking political credit for adopting policies but distance themselves from the responsibility of implementation. According to Ilott et al. (2016) political behavior around policy formulation and implementation falls into three phases; rising salience, where an issue gets politicized and draws the attention of policy makers; building blocks, where policies, institutions and targets assembles to address problematic issue; and embedding, where political interest in issue wanes, at a critical time when building blocks are put to action.

2.1.3 Factors Influencing Disaster Policy Outcomes

2.1.3.1 Dilemma Between Mitigation and Recovery

According to Birkland (2009), mitigation in a disaster management context consists of actions intended to reduce the severity of damage after a catastrophe, but do not eliminate it. Anderson (1991) defines recovery as activities taken upon occurrence of a disaster, geared towards restoring a society back to its previous state. Frank et al. (2021) argue that efficient disaster management requires a clear balance between government and humanitarian altruism on the one hand, and laxity and comfort from those affected when such bailouts are expected. When bailouts are guaranteed, those most vulnerable to disasters give little concern to building their resilience to absorb and recover from disasters.

A report by the United States Federal Insurance Mitigation Administration (FEMA) points out the distressing reality on expenditure on resilience building versus

recovery. For every 7 dollars spent on recovery, a paltry 1 dollar is spent on building resilience to future disasters, despite evidence showing a return on investment of 6:1 ratio for investment in preventive mitigation (Federal Insurance and Management Agency [FEMA], 2018). According to Anderson (1991), prevention and recovery oftentimes overlap in practice. Societies are thus presented with a dilemma of choosing either one or the other, for which they try to balance a little bit of both in consideration of the resources at their disposal. Viewed in an economic sense, a reasonable level of disaster prevention is that which can be acquired for less than the costs of the losses prevented.

2.1.3.2 Stakeholder Involvement and Policy Outcomes

Mainstream global DRR frameworks, including the Hyogo Framework for Action, the Sendai Framework encourage multistakeholder involvement in the implementation process. Disaster governance has for a long time been state dominated and centralized, but their inefficiencies amplify the need for multi actor involvement. Stakeholder multiplicity however, affects the effectiveness of DRR policy implementation.

The global research community plays a crucial role in climate and disaster policy research, providing the expert knowledge upon which policy makers and implementers refer to. Commercialization and commodification of research through contract research by influential firms seeking to shape narratives, or government funded research projects that are obligated to align their findings with the desires of their financiers, all affect the reliability of research output (Radder, 2010). The focus of such research is constrained to what the financiers want, and as such policy making and implementation based upon such research, may not be reflective of the actual societal needs.

Non-Governmental Organizations (NGOs) provide crucial assistance for communities faced in the face of disasters across the world, but similarly present challenges that could affect the overall efficacy of disaster policies. Many NGOs are dependent on external funding to finance their activities and have been seen to channel their initiatives towards their financiers' interests and would try to influence government policies to suit them. NGOs also introduce new ideas, which albeit well-meaning and probably having successfully worked elsewhere, disregard local knowledge, local contexts and their unique needs and wants. Some NGOs also operate with questionable motives in their provision of relief and disaster assistance, such as credit financing schemes to local communities' groups

and members who may struggle to repay upon the occurrence of disaster (Seddiky et al., 2020).

The media also bears significant influence on public policy making and implementation outcomes. Lomborg (2003) paints the media as mouthpiece for researchers and organizations, and since we hardly question the facts presented by the media, we perceive it as reality. The media informed reality they argue is problematic because; it provides very scanty information to make informed decisions, deludes us to think we have sufficient information for proper decision making and gives us biased and distorted abstraction of reality. Lomborg recommends that environmental public policy decision makers and implementers should be cognizant of the reality about the information they are presented with by researchers, organizations and the media is imbalanced, and thus should be guided by rationality.

2.1.3.3 Policy Capacity

Wu et al. (2015) define policy capacity as; '*the set of skills and resources, or competences and capabilities, necessary for performing policy functions'* (p. 166) for which they categorize into three groups; analytical capacity that comprises of staff with adequate analytical skills to properly implement policies; operational capacities that stems from the internal organization of public agencies and how the collaborate amongst each other in addressing public issues; and political capacity that comprises of the relations between government and its population, and how the government involves the public in the resolution of issues of public interest.

Williams (2021) argues that implementation capacity as the most influential concept in international development, evidenced by the popular reference to it in contemporary development policy practice and research. In a research study assessing disaster risk management policy capacity in Dewa et al. (2021) identify the biggest hurdle for implementation capacity as the insufficiency of funds for disaster management agencies to carry out their duties. A study by Munsaka et al. (2021) on the failure of disaster risk management in Zimbabwe in the aftermath of Cyclone Idai in 2019, notes that despite the existence of good disaster management policies the government and local authorities were still caught flat footed. This they attribute to capacity shortfalls including finances, equipment and infrastructure, human resource and weak coordination. With the failure of such crucial systems, hazards vulnerable communities as it happened in Zimbabwe.

In summary, policy implementation is concerned with the transition from policy aspirations to policy actions. Theoretical literature on policy implementation is generally divided into three categories: top down, bottom up, and synthesis. Aside from the implementation approaches, other significant elements determine disaster policy implementation outcomes, such as the dilemma between mitigation and recovery, multilevel governance systems, uncollaborative policy making, and the unpredictable character of politics. Understanding policy failure, when policy outcomes differ from objectives, and its causes is also critical to understanding policy implementation.

2.2 Climate Change and Disaster Risk Reduction (DRR)

2.2.1 The Climate Change and Disaster Nexus

Disasters are caused by exposure to hazards; both human-made or natural that cause widespread socio-economic and environmental destruction. The United Nations Office for Disaster Risk Reduction (UNISDR) (2004) defines a disaster as;

'*Serious disruption of a community or society causing widespread human, material, economic and environmental losses which exceed the ability of the affected community/society to cope using its own resources.'* (p. 9)

IPCC (2022) attributes a majority of recent global disasters and the resultant human and ecosystem vulnerabilities to anthropogenic climatic changes. These climatic changes according to Valente et al. (2022) exacerbate extreme weather events that lead to climatic disasters, which alongside other human actions heighten disaster risks and vulnerabilities.

According to O'Brien et al. (2006), climate change is directly responsible for the long-term variability in weather patterns and the increasing frequency of severe weather events. By reducing the resilience of human sustaining systems, the intensification of climate change is also to blame for the increase in hazards that have an adverse effect on the severity and frequency of disasters. As such, the exponential increase in climate change points to the multifariousness its impacts and highlights the necessity for integrating climate risk management into development.

The multifaceted nature of climate induced disasters impacts is further supported by Cacciotti et al. (2021), in their study on the impacts of climate induced disasters on

cultural heritage in central Europe. They observe that the escalation of severe weather events has considerably damaged and deteriorated ancient architecture and monuments of great cultural significance in historic towns. Such items are regarded as non-renewable resources with both economic and social cultural value in these societies. Floods and droughts are expected to become more frequent and severe in the future, according to forecasts. Heavy precipitation and floods, for example, have overloaded protective structures, costing Central European governments cultural assets worth billions of dollars in damage.

Bahadur et al. (2010) observe the usage of the term resilience in reference to disaster risk reduction and climate change policy discussions. This they argue is made possible by the close intersection in practice and research between these fields, and as a result engendered the catchphrase 'climate resilient development' to acknowledge this intersection. They further contend that resilience thinking is operationalized through the integration of complex social and ecological systems through which climate change and disasters are addressed.

While a clear separation may exist between natural and human-made disasters, their outcomes are intersectional (Alexander, 2018). In an increasingly interconnected world, these risks and vulnerabilities transcend international boundaries which according to UN University (UNU-EHS) (2021) can be evidenced through the co-occurrence of disasters, their connections to both personal or collective human behaviors, and their sharing of primary causes. This interconnection of disaster risks has triggered concerted international efforts to address them including: the International Strategy for Disaster Reduction (1990-1999), International Strategy for Disaster Reduction (1999), The Yokohama Strategy (1994), Hyogo Framework for Action (2005-2015) and most recently the SDGs and Sendai Framework in 2015 (Mal et al., 2017). These efforts have reverberated across various regions, states and localities of the world, through adopting the disaster governance measures and embracing risk informed development planning (UNISDR, 2019).

2.2.2 Disaster Risk Reduction

According to Ishiwatari and Surjan (2019), climate change not only intensifies the effects of pre-existing disaster risks, but also gives rise to new vulnerabilities. They further

argue that this underscores the necessity for increasing investments in Disaster Risk Reduction (DRR) and climate action, which have received significantly less funding in comparison to other sectors like infrastructure. According to Kelman et al. (2015), climate change is merely one factor among several that contribute to the risks associated with disasters. They contend that there is a strong interconnection between climate change, disaster risks, and sustainability, and question the adoption of separate processes and policies for addressing them. They additionally maintain that linking climate change to DRR presents a valuable prospect to capitalize on its political prominence in the realms of policy and research. Kelman (2015) suggest that this could be achieved by making climate change mitigation a subset of sustainable development and climate action as a subset of DRR. Prabhakar et al. (2009) provide support for the integration of disaster, climate change, and policy, asserting that such integration is imperative in order to initiate dialogue aimed at understanding the complexities associated with future DRR endeavors at the grassroots level.

Of crucial importance to DRR is resilience (Kawasaki & Rhyner, 2018; Wamsler & Johannessen, 2020; Imperiale & Vanclay, 2021) whose conceptualization Kelman et al. (2015) observe revolves around 'returning to normalcy' in the aftermath of disasters. They maintain that this idea is flawed, particularly in socioeconomically disadvantaged societies where a restoration of normalcy means a return to poor development, impoverishment, and vulnerability to disasters. The evaluation of resilience to disaster risks is crucial for making significant progress and effectively mitigating both current and future disaster risks. Almutairi et al. (2020) critique existing DRR frameworks for primarily focusing on the economy, governance institutions and societal infrastructure, while giving little focus to the significant risks resulting from climate change and environmental alterations.

2.2.3 The Sendai Framework

The Sendai Framework, was a landmark agreement endorsed by member states of the United Nations, aimed at guiding global endeavors in achieving disaster resilience through enhancing the implementation of DRR strategies (Olu, 2017). Its adoption heralded a remarkable shift from reactive to proactive disaster management, by moving from addressing impacts of disasters to minimizing disaster risks which was notably more

ambitious than the preceding Hyogo Framework (Mizutori, 2020). The document establishes four primary areas of focus aimed at mitigating the adverse impacts of disasters and enhancing the governance of disaster risk: developing a comprehensive understanding of the multidimensional nature of disaster risks; strengthening disaster risk governance at all levels; reorganizing investments in DRR; and enhancing preparedness for disasters (United Nations, 2015).

Rahman and Fang (2019) emphasize the importance of developing DRR policies that is informed by a multidimensional understanding of various risks, vulnerabilities, adaptive capacity, hazard types, and levels of exposure to them. The Sendai Framework as Bennett (2020) observes, is one of the few disaster policies that gives attention to individuals with disabilities. They argue that understanding disaster risk should be wholesome by taking into account all levels of vulnerability, and is crucial to upscaling the capacity of vulnerable populations in the face of disasters. According to Clarke et al. (2018), the successful achievement of the framework's priority target areas is heavily contingent upon the effective collection, analysis, and utilization of disaster data. Central to understanding disaster risk, the Sendai Framework's first priority action area for instance, Panwar and Sen (2020) argue requires a standardized and systematic disaster database accessible to all stakeholders.

According to Marchezini (2020), a crucial factor for effectively implementing the framework is ensuring that all stakeholders, including those at the frontline levels, have access to relevant information and are able to provide their input. Additionally, it is important to consider vulnerabilities and political influences, as well as establish channels for deliberation on the causes of disaster risk. According to Tozier de la Poterie and Baudoin (2015), the active participation of local communities is essential for achieving the targets set by the Sendai Framework. They observe a shift, wherein the appreciation of their expertise and local wisdom in DRR has significantly diminished, with them being reduced to mere recipients of top-down aid and policy directives. They additionally advocate for a reassessment of DRR policy development and implementation, emphasizing the significance of incorporating multistakeholder input.

Azadi et al. (2020), assert the importance of accuracy of risk assessment as a crucial factor in the creation and selection of suitable risk mitigation strategies. They also emphasize the significance of incorporating sustainable development into disaster risk

reduction (DRR) efforts, as outlined by the framework, at all levels of the policy cycle, in order to foster the establishment of resilient and sustainable societies.

Summarily, the link between climate change and disaster appears to be very apparent, with a vast majority of present-day disaster hazards and vulnerabilities resulting from human-induced climatic changes, and the resulting extreme weather events. Linking climate change to DRR also provides an avenue to capitalize on climate change's global prominence in addressing its effects on disaster prevalence. The Sendai Framework, adopted by UN member states, informs global DRR efforts by focusing on four areas: a holistic knowledge of the nature of disaster risks, enhancing DRR governance at all levels, restructuring DRR investments, and improving disaster preparedness.

2.3 Decentralized Disaster Governance

Decentralization has gained traction across the world, taking center stage in the global governance policy reform agenda, and elicited scholarly enthusiasm about its outcomes. Across various contexts decentralization has varying definitions, but in a governance context Faguet and Sanchez (2014) define it as;

Devolution by central government of authority over specific functions, with all of the administrative, political and economic attributes that these entail (e.g., tax-raising, expenditure, and decision-making powers), to democratic local governments that are independent of the centre within a legally delimited geographic and functional domain. (p. 228)

Mainstream disaster governance architecture such as The Sendai Framework, encourage a more pronounced local level involvement in disaster risk reduction, with the primary aim of strengthening their authority in managing disasters (Uddin et al., 2021). Decentralization is seen to facilitate the upscaling of local capacities, improve preparedness by incorporating local wisdom and handing down local expenditure regulation to local communities. Another key allure of decentralization is the reinforcing of disaster management activities to address disaster risks that have localized implications. Local level disaster risk reduction and response activities are also more nuanced to unique local contexts, and could be customized according to local needs and capabilities (Hermansson,

2019). From a holistic view of decentralization of disaster management, Ainuddin et al. (2013) observe that decentralized disaster governance systems are better placed insofar as preparation and responses to disasters as compared to more centralized systems of managing disasters.

While decentralization has existed and been studied for a long time, its application in the context of disaster management have barely been researched on. Its importance in disaster management is noted by Nyandiko (2020) who views it an important enabler for building disaster resilience and risk reduction. Its great potential in disaster governance as Ahrens and Rudolph (2006) note, stems from the relative proximity to the people, local knowledge and the social capital that could be utilized for tailoring disaster policies to local needs and circumstances.

Whereas disaster occurrences transcend systems and borders or even structures, majority of studies in disaster governance focuses on the centralized structure as is the practice in governance (Tierney, 2012). This overlooks the place and importance of localizing responsibility where the implications are mostly felt.

Much of the literature on disaster governance also emphasizes on the weaknesses of centralized approaches, while doing very little to expound on how decentralization could be positioned to better address these gaps (Comfort et al., 2010). Documented research on decentralization and disaster management for instance Putra and Matsuyuki (2019) note the positive effects on budgeting, planning, and institutional strengthening. In an exploratory study across 50 countries on decentralization on disaster impacts, Vaillancourt (2013), the proximity of local governments to the people is essential in reducing the numbers of people affected by disasters and reducing disaster response wait times.

2.3.1 Decentralized Public Participation

Public participation refers to the active involvement of relevant stakeholders, both directly and indirectly, in the process of developing and implementing policies that affect them (Abdulkasan et al., 2022). Decentralization has been widely perceived, to a commendable degree, to help address the age concern of expanding public participation of citizens at the local level (Angell, 2005; Lyon, 2015; Quaranta, 2013). A study by Putra and Matsuyuki (2019) observed that disaster management plays a significant role in regulating, allocating resources, establishing institutions, and enhancing overall preparedness.

Abdulkasan et al. (2022) observe the expansiveness of the potential impacts of disasters on populations and suggest public participation as an important tool for identifying vulnerabilities for disaster management and risk reduction.

Witvorapong et al. (2015) observe the beneficial impacts that participation of local communities has on disaster mitigation particularly in local level disaster management initiatives. Samaddar et al. (2015) observe the acknowledgement of the importance of public participation in climate action and disaster management by practitioners, but note that its realization remains difficult to attain. This difficulty they argue stems from the lack of clearly defined rules regarding the extents or levels of community engagement and the ability of these communities to comprehend and take advantage of available participation channels, which creates challenges for researchers and practitioners when selecting the most appropriate methods of public participation.

In order to understand public participation, the goals sought could be a viable examination tool. The International Association of Public Participation (IAP2) (2020), coined a five goals public participation spectrum for this this purpose; informing, consulting, involving, collaborating and empowering. According to Zivari et al. (2019), the active engagement of the people is crucial in the context of disaster risk management. They propose several fundamental elements that are necessary to facilitate this involvement, including the creation of awareness, acquisition of skills and knowledge, creation of an enabling environment, organizational development, and active participation. They further contend that the promotion of awareness and knowledge are of utmost importance in facilitating active public engagement, but they caution against neglecting the other elements as it may lead to ineffective disaster management.

In summary, decentralization has been advanced in governance reforms across the world, seeking to bring governance closer to the people and also recognizing the influence of local communities on policy outcomes at their local level. Mainstream disaster governance also actively encourages decentralization as an avenue for enhancing public participation, which is seen to be essential in the nuanced identification of vulnerability and risk reduction at the local level.

Therefore, taking into account all of the aforementioned, this study presents two basic arguments. First off, since a large proportion of the disasters that the world is presently dealing with are climate-related, either directly or indirectly, focusing on managing climate

disasters has the potential to drastically minimize disaster losses and impacts. Secondly, decentralization offers a valuable approach to effectively managing disasters due to its close proximity to both the disaster causing events and the affected population. Additionally, it provides opportunities for collaboration among different government entities and encourages public participation.

2.4 Conceptual Framework

Table 2.1 Theoretical framework, research questions and hypotheses

Theoretical Theme	Major Concepts	Research Questions	Hypotheses
Policy Implementation	Top-down approach: Clarity of policy goals, hierarchical policy implementation	RQ1: How effective is public participation in devolved climate and disaster policy implementation?	H1: Public participation in disaster management is weak but decentralized policy implementation improves outcomes.
		RQ3: How has Vihiga incorporated the Sendai framework's DRR guidelines?	H3: Vihiga's incorporation of DRR guidelines has positively impacted grassroots disaster management.
	Bottom-up approach: Street level bureaucracy and their exercise of autonomy and discretion	RQ2: What are the primary influences on disaster policy implementation and causes of policy failure?	H2: Disaster policy outcomes are influenced by factors related to policy-making and implementation.
	Synthesis approach: Forward and backward mapping	RQ1: How effective is public participation in devolved climate and disaster policy implementation?	H1: Public participation in disaster management is weak but decentralized policy implementation improves outcomes.

Table 2.1 (continued)

Theoretical Theme	Major Concepts	Research Questions	Hypotheses
Policy Implementation		RQ3: How has Vihiga incorporated the Sendai framework's DRR guidelines?	H3: Vihiga's incorporation of DRR guidelines has positively impacted grassroots disaster management
Disaster Risk Reduction	Sendai Framework Priority Areas	RQ1: How effective is public participation in devolved climate and disaster policy implementation?	H1: Public participation in disaster management is weak but decentralized policy implementation improves outcomes.
		RQ3: How has Vihiga incorporated the Sendai framework's DRR guidelines?	H3: Vihiga's incorporation of DRR guidelines has positively impacted grassroots disaster management.
Decentralized Disaster Governance	Public Participation	RQ1: How effective is public participation in devolved climate and disaster policy implementation?	H1: Public participation in disaster management is weak but decentralized policy implementation improves outcome
		RQ2: What are the primary influences on disaster policy implementation and causes of policy failure?	H2: Disaster policy outcomes are influenced by factors related to policy-making and implementation.

There is a tendency in the study of disaster governance to concentrate on disasters in general, which typically pays less attention to climate change despite it being the primary cause of a substantial majority of present-day disasters. As a consequence, research and initiatives to address these closely connected issues are fragmented. This study focused on climate-induced disasters and how climate change is included into mainstream disaster policy implementation, for the reasons stated above.

Thus, this study investigated how effective climatic disaster governance could possibly be accomplished by decentralized disaster policy implementation. Managing climate induced disasters is the dependent variable, while disaster policy implementation is the independent variable. Decentralized disaster governance and DRR are the intervening variables.

As such, in this study the attainment of effective climate disaster management, relies upon how well policy implementation is done. Decentralized governance and public participation provide a great avenue for disaster management through public participation. Through DRR we can link climate change and disaster, and leverage on the opportunities it presents for disaster management.

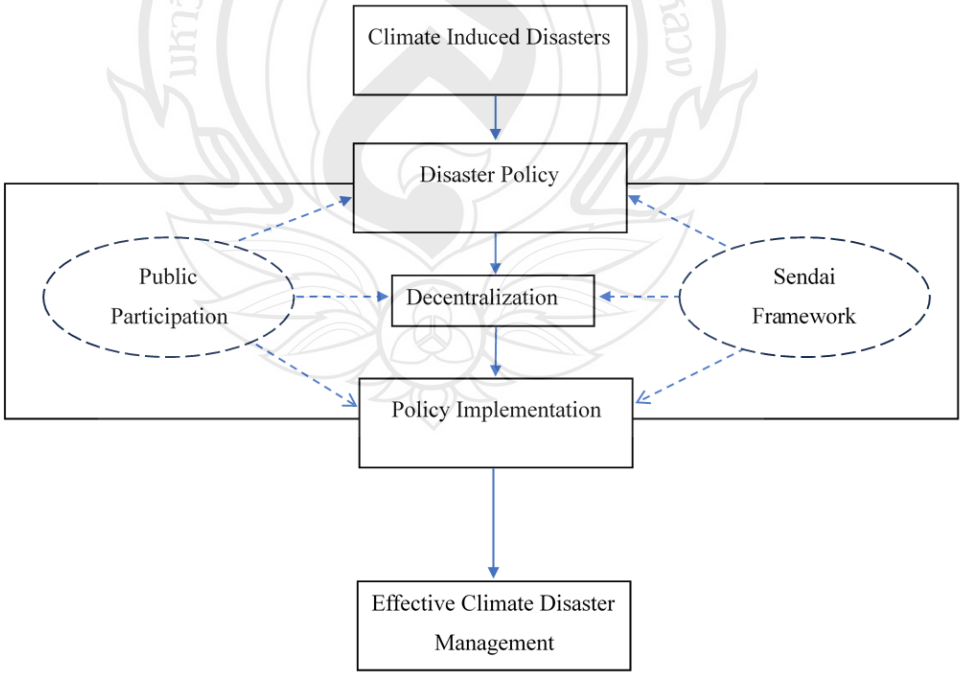

Figure 2.1 Conceptual framework

CHAPTER 3

RESEARCH METHODOLOGY

This chapter lays out the methodologies that were employed in conducting this research. It comprehensively outlines the research design, the research setting, target population, sampling technique, sample size, methods of data collection, data analysis techniques, and ethical considerations that were adhered to during the research exercise.

3.1 Research Design

The aim of this study was to investigate the efficacy of decentralized disaster policy implementation in Kenya as a means of addressing climate-related disasters. This study examined the inclusion of climate change in disaster policies and its implications on the management of climate disasters. It also evaluated the effectiveness of decentralized policy implementation in addressing these disasters. Additionally, it analyzed the factors that influence policy implementation and how they shaped the outcomes of these policies.

This study employed a mixed research design, incorporating both quantitative and qualitative data collection methods, in order to investigate the implementation of decentralized disaster policies in response to climate-induced disasters. The utilization of mixed design in social science and policy implementation is supported by various scholarly arguments. Baškarada and Koronios (2018) propose the concept of mixed research as a comprehensive integration of qualitative and quantitative methodologies, effectively merging the fundamental principles of interpretivism and positivism to leverage the strengths of both approaches. According to Palinkas et al. (2015), the use of mixed research is based on the recognition that research phenomena are often complex and multifaceted, requiring more than one approach to adequately address them. According to their argument, this assertion holds particular significance in the context of policy implementation, as it

encompasses the intricate dynamics and collaborations among various stakeholders, both in vertical and horizontal dimensions. According to Creswell (1999) the utilization of multiple lenses and approaches in the examination of social research phenomena allows for the considerations of concerns from various stakeholders, which is difficult to accomplish by employing a single approach. To attain an in-depth understanding of the intricacies concerning the implementation of disaster policy, it is evident that the utilization of a mixed method approach offers a sufficient level of insight. The research employed various methods, including document analysis, questionnaires, in-depth interviews, and focus group discussions, to actively involve the participants and gather the necessary data for the study.

3.2 Research Site

The research concerned the decentralization of policy implementation in Kenya. The designated research site was Vihiga county, one of the devolved administrative regions in western Kenya. The choice of Vihiga County as the primary research site was based on two factors. Firstly, the disaster management architecture in the area; through the elaborate prioritization of climate change and disaster management through respective policy enactments. Secondly, the area has historically seldom experienced extreme weather occurrences, but gradual changes in climate patterns have occasioned heavy rains and resultant floods and landslides. Vihiga county's economy is also predominantly agricultural and as such, heavy and delayed rains affect agricultural production which has a resultant effect on food and economic wellbeing of residents in the area. The equatorial location also makes it vulnerable to is susceptible to projected climatic changes and their impacts in tropical regions across the world.

Vihiga County is located in the extensive western region of Kenya. The population of Vihiga County is estimated to be around 600,000, as reported by the County Government of Vihiga (2017). Within this demographic, 45% are below the age of 15, 25% youth, 6% aged 65 and above, and with 49% within the age ranging between 15 to 64. Administratively, the county is comprised of five constituencies and twenty-five wards.

3.3 Population

The study primarily focused on policy practitioners from both the county government, as well as NGOs, researchers and local community members affected by climate disasters. From the county government I targeted personnel from, the disaster management and climate change agencies, and personnel from the Department of Environment, Water, Energy and Natural Resources. For the general population Ward Climate Change committee members and Vihiga county residents were targeted. For non-governmental stakeholders local NGOs and advocacy groups were targeted.

3.4 Sampling Techniques

To facilitate the engagement of diverse stakeholders and ensure that the collected data was sufficiently representative, the study utilize purposive and stratified sampling methodologies. Mugenda and Mugenda (2003) assert that purposive sampling enables researchers to deliberately choose informants and cases that possess the requisite information and knowledge relevant to their research objectives. Purposive sampling was utilized in the selection of key informants who had specific knowledge, and also played roles directly relevant to the issues under study. These comprised county government officials from the Department of Environment, Water, Energy, and Natural Resources, members of NGOs and advocacy groups, climate change and disaster management researchers, and Ward Climate Change Committee representatives. Informants were chosen from official directories and contacted by email or phone based on their expertise and engagement in disaster policy implementation. Possible biases in participant selection from purposive sampling were minimized by broadening participant selection. As recommended by Mugenda and Mugenda (2003), the sample size chosen through stratified sampling aimed to provide proportionate representation of all demographic subgroups in this study. To reflect the county's diversity, the population was categorized according to age, residential location, and socioeconomic standing. Random samples were taken from each category to assure proportional representation, and questionnaires were circulated to 110 county government officials involved across the policy implementation

cycle. This was in an effort to capture a diverse range of views on the issues under investigation.

These procedures guaranteed that the data gathering process was both thorough and without bias, hence ensuring the findings were valid and reliable.

3.5 Sample Size

Fifteen interviews were conducted with informants drawn from; the Vihiga County climate change and disaster management agencies, The county government Department of Environment, Water, Energy, and Natural Resources; local NGOs and researchers. Additionally, a survey targeting 110 participants was circulated to the street level county government staff, responsible for the day-to-day implementation of policies. Lastly, two Focus Group Discussion were used to collect views from members of the public resident in Vihiga county. The researcher endeavored to achieve data saturation during the data collection process to ensure the comprehensiveness of the collected data. This was however informed by considerations of practicality, time constraints, and unforeseen developments encountered at the research site.

3.6 Data Collection

Prior to commencing data collection, and in compliance with research regulation in Kenya, the researcher obtained a research permit from Vihiga County government. Qualitative data collection utilized interviews and document review. The reviewed documents were regulations and policy documents relating to disaster management and climate change from Vihiga County and the national government of Kenya. From the national government, I reviewed the National Climate Change Action Plan (2017-2022), The Climate Change Act (2016) and the National Disaster Risk Management Plan of 2017, Emergency Response Plan and Standard Operating Procedures (SOPs) while at the county level I reviewed the County Integrated Development Plan (CIDP), The Disaster Management Act (2020), The Environmental Management Policy (2019) and the Climate Change Finance Act (2019).

Representatives from the selected entities involved in disaster and climate policy implementation were interviewed. The interviews were conducted in a semi-structured manner, utilizing closed-ended questions formulated in line with the research objectives. Additionally, occasional probing was employed through follow-up questions to gain a deeper grasp of key aspects pertaining to the research. The interview questions interrogated the perception of policy aspirations and roles played by the various key stakeholders in the policy implementation exercise. They also examine the institutional, technical and financial capacity to implement policies, as well as the mechanisms for monitoring and evaluation for their effectiveness. These included; examining the processes of policy decision making, exploring the extent of stakeholder collaboration, identifying any inconsistencies between the intended policy goals and the actual outcomes, and investigating the underlying factors contributing to these inconsistencies.

Quantitative data was collected through survey questionnaires, seeking to obtain additional perspective on policy implementation. The questionnaires for this study consisted of closed-ended questions. These questionnaires were distributed to county government staff involved in various stages of policy implementation, ensuring representation across the entire implementation chain. The structure of the questions was based upon the key issues on disaster policy implementation under investigation including; their understanding of policy aspirations as espoused in policy documents and the applicability in meeting intended objectives, their day-to-day experiences on the policy implementation frontlines and the obstacles they face, the support and resources availed to them to carry out their duties, and their suggestions on probable adjustments to improve policy implementation.

3.7 Data Analysis

After concluding the data collection, the data underwent a preliminary analysis. The researcher carefully reviewed all the collected data in order to obtain a comprehensive understanding of the data before proceeding to systematically organize it for the purpose of analysis. Subsequently, the collected data underwent a series of procedures including sorting, coding, and cleaning in preparation for analysis. The analysis was dependent upon

the specific data collection instrument in question. The interview data was coded and categorized, utilizing both emerging and preset themes. This process involved thematic analysis, enabling the identification of trends within the data.

During the process of document review, meticulous examination was conducted on policy and regulatory documents in order to extract valuable insights pertaining to their content, strategies for implementation, and intended outcomes. The extraction of information was done in line with the research objectives, focusing on relevance to the study. For observation, the data collected was analyzed based on observed outcomes of policy implementation.

The quantitative data obtained from the questionnaires was analyzed using spreadsheets and involved the identification of percentages, frequencies, and trends. This analysis was to provide insights into the perspectives of policy implementers regarding the key aspects of disaster policy implementation that were investigated.

After conducting a comprehensive analysis of the data collected from each instrument, the information was then organized thematically. Subsequently, a comparative examination was undertaken across all instruments. This was then be interpreted and reported based upon the notable implications on disaster policy implementation.

3.8 Ethical Considerations

The study strived to adhere to universally recognized research best practices and ethical requirements established by the university, in order to ensure compliance with ethical considerations. The researcher completed a certification course in ethics research training with the purpose of gaining proficiency in ethical research methodologies, as required by the university.

After obtaining ethical clearance from the university, a research permit was acquired from Vihiga County government in Kenya. During the data collection process, the researcher actively sought informed consent from the participants. The participants were provided with extensive details regarding the research objectives, methodologies employed, their entitlement to seek clarification about the study, and their freedom to

withdraw their involvement. Furthermore, they were assured that their personal information would be kept confidential.

The collected data was subject to stringent confidentiality protocols and exclusively utilized for its designated purposes. The researcher additionally also ensured the data was properly safeguarded and protected against unauthorized access. Participation in the research study was completely voluntary, devoid of any form of coercion, and participants retain their prerogative to discontinue their participation at any stage of the research. The researcher made efforts to uphold objectivity and impartiality in order to minimize the possibility of exerting undue influence throughout the stages of data collection, analysis, and reporting.

CHAPTER 4

STRUCTURE OF GOVERNMENT IN KENYA

This chapter provides a basic outline of Kenya's government structure. A brief history of decentralization since the country's independence in 1963, followed by a description of the present system of devolved governance, as envisioned under the 2010 constitution, beginning with the 2013 election cycle. A brief description of the executive's retention of the former provincial administrative system is provided following the shift to devolved governance. Frameworks to facilitate cooperation among the national and county authorities are also outlined. Finally, the disaster management policy and institutional architecture are also discussed.

4.1 Structure of Government in Kenya

The Kenyan government has three arms; the legislature, judiciary and executive. Under the presidential system of government in Kenya, the presidency is constitutionally bestowed with extensive executive power, and the office bearer serves as head of state, head of the executive arm of government, and commander-in-chief of the military. As the chief executive, the presidency is responsible for directing and overseeing the running of the government.

The legislative arm consists of two houses of parliament; the national assembly (lower house) and the senate (upper house). The lower house is responsible for overseeing allocation, expenditure and conduct of state officers. The senate, amongst other national legislative duties, was primarily tasked with protecting devolutionary interests. It is responsible for legislating bills concerning devolution, deliberating on matters of revenue sharing between the two levels of government, and investigating allegations of impeachment against county governors (The Senate, n.d.).

The judiciary promotes the principles of legal governance and influences public policy by interpreting the constitution and ensuring the availability of legal remedies. Its mission is to protect the constitution by promoting national values and principles of effective governance.

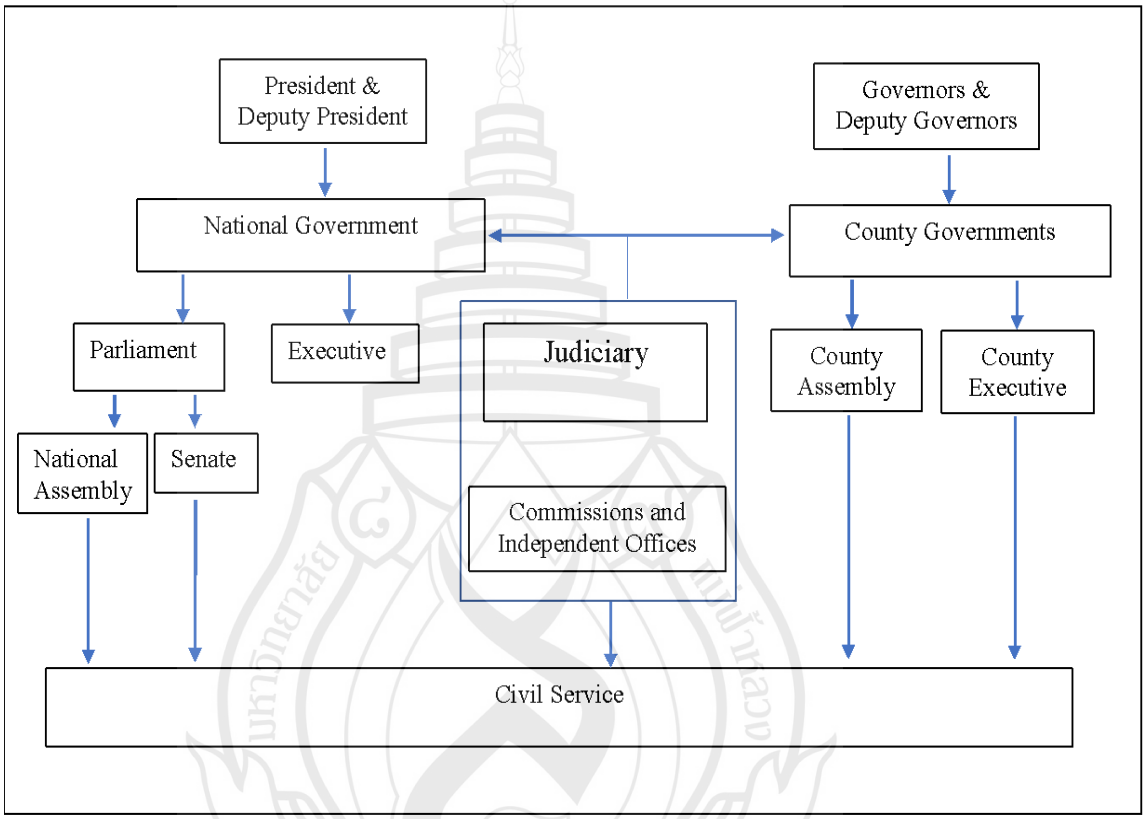

Figure 4.1 Structure of government in Kenya

In the country's pathway to democratic transition, Kenya's 2010 Constitution also created various independent offices and commissions to ensure checks and balances in the government structure, as well as to address accountability deficits that bedeviled the state. These institutions are constitutionally protected in carrying out their duties (Ochieng, 2019). These entities include the controller of budget and auditor general, who are in charge of monitoring government spending and ensuring financial accountability. The Ethics and Anti-Corruption Commission (EACC) in Kenya is tasked with the responsibility of combating graft, financial impropriety and ethical misconduct through enforcement of the

law, preventative measures, educating the public, and the promotion of transparency and ethical standards. The Independent Electoral and Boundaries Commission is mandated with administering democratic free and fair elections to constitutionally established representative offices as well as referenda. The Kenya Commission on Human Rights is the government watchdog tasked with human rights.

4.2 History of Decentralization in Kenya

The desire for devolution in Kenya can be traced back to the country's independence in 1963, but was not realized until five decades later. The 2010 Kenyan constitution, adopted through a popular referendum ushered in a promising new era of a devolved system of governance. 47 new administrative units known as counties were established, and granted a negotiated power and revenue sharing working relationship with the national government (World Bank, 2019). The implementation of devolution, which began with the 2013 electoral cycle, was the culmination of aspirations to bring the government closer to '*wananchi'*- Swahili for the public or citizenry - and allow for their participation in governance.

Prior to devolution however, a provincial system of administration, inherited from the colonial administration was practiced. The executive enjoyed overarching authority in a highly centralized system, initially under the direct instruction from the colonial governor and subsequently the president upon independence. The provincial administration, rather than serving as an agency for decentralization, was essentially an agent of the executive ensuring that direct control remained with the presidency (Gertzel, 1966).

Before delving further, it would be important to draw a little contextual distinction between decentralization and devolution. Devolution is an extensive form of decentralization, often perceived as *democratic decentralization* involving the transfer of decision-making authority, and granting self-governance by allowing the people to influence decision making at the grassroots level (Kanyinga, 2016).

The 2010 constitution established a decentralized structure of governance, by devolving the executive and legislature down to county governments. County governments were granted authority over among other things; revenue collection, policy formulation and

implementation, budgeting, auditing and evaluation at their level. Devolution through its adoption provided opportunities for equitable national resource sharing, stimulating socioeconomic development, enabling inclusion of previously marginalized areas and communities, involving the public in decision making, advancing national unity, and promoting democratic governance (Ngigi & Busolo, 2019).

The constitution in Article 174, delineates the duties and responsibilities of devolution which include among other duties; providing the people with a framework for self-governance and enhancing public participation, as well as recognizing community autonomy in the pursuit of their own development (Government of Kenya, 2010). The new county units established by the 2010 constitution had their elected governors, working with their own executive and public service to deliver their mandates (Steeves, 2015).

The Kenyan model of devolution is strikingly similar to the US system of state governments. Each county government has its own democratically elected governor, who has the authority to conduct county government business and appoint county executives. They are overseen at the county level by a representative county assembly, that comprises democratically elected Members of County Assembly (MCAs) who are directly elected by the people as ward representatives. Each county also elects a senator who serves in the national senate. In terms of revenue and financing for county governments, the constitution allocates at least 15 percent of the national budget to be shared amongst the county governments. Albeit to a limited extent, counties are also allowed to collect their own revenue through taxes and service levies (Cheeseman et al., 2016).

4.3 The 2010 Kenyan Constitution and Devolution

Devolution was introduced to address the long-standing concern about over centralization of the public administrative system which had existed since its independence in 1963. With the adoption of the 2010 constitution, the country embarked on a very ambitious government restructuring, keenly seeking to depart from the highly centralized top down system to a more participatory bottom up system of decentralization (World Bank, 2015) Chapter 11 of the 2010 Kenyan constitution, which outlines the frameworks for devolution, spells out its objectives as follows;

1. Encouraging democratic and transparent leadership.
2. Promoting national unity and inclusivity.
3. Empower citizens to self-govern and encourage their engagement in decision-making processes.
4. Acknowledge communities' liberty to self-govern and develop themselves.
5. To safeguard and advance the rights of marginalized groups and minorities.
6. Promote social and economic growth, and enhance nationwide service delivery.
7. Encourage a fair allocation of local and national endowments across the country.
8. Decentralize state institutions, duties, and services outside the capital city.
9. Strengthen oversight mechanisms and the division of authority.

4.3.1 Remnants of The Old Provincial Administrative System

While the new constitution gained significant ground in reorganizing the previous administrative system, the executive transformed the provincial administration into a peripheral but significantly powerful form that was not envisaged in the constitution. Through the National Government Coordination Act of 2013 (Government of Kenya, 2013), the old provincial administrative system despite the significant restructuring system was retained. The 2010 constitution however does not explicitly mention it, but it did retain an unofficial agency similar to its predecessor (Mutinda & Mbataru, 2020). The old provincial administrative structure appears in many ways, to hold onto some functions devolved to county governments, much to the frustration of the counties. At the onset of devolution President Kibaki appointed county commissioners, to replace the phased out provincial administrative hierarchies, a decision that was challenged in court but ultimately upheld. His successor Uhuru Kenyatta subsequently went on to appoint assistant county commissioners at the ward level (Steeves, 2015). This somewhat parallel system has oftentimes seen disputes between the county government leadership and county commissioners, much to the detriment of the constitutional dream of devolution.

4.3.2 Intergovernmental Collaboration

In order to establish the requisite legal framework for collaborative engagement both between the two levels of governments, and amongst county governments, the

Intergovernmental Relations (IGR) Act was adopted (Government of Kenya, 2012). The Act defines the objectives of this cooperative relationship as;

1. Promoting devolution in accordance with the constitution.
2. Improving collaboration and consultation between the two levels of government, and amongst county governments.
3. Creating a platform for coordinating policy actions, regulations, and processes.
4. Facilitating data exchange and disclosure.
5. Establishing power transfer procedures, duties and capabilities between both levels of government.
6. Encouraging transparency amongst county governments, and between them and the national government.

This legislation created three critical entities: The Council of Governors (CoG), the National and County Government Coordination Summit, and the Intergovernmental Technical Committee. At the very top is the Summit which is composed of the president and the 47 county governors and is primarily responsible for promoting a collaborative partnership between the two tiers of government. The Intergovernmental Technical Committee, sits in between the council and the Summit and is responsible for the day to day operations of both entities by facilitating their activities and enforcing their respective decisions. Additionally, a Council of county governors comprised of all 47 governors was instituted by the act, and mandated to provide a platform for; consultation, information sharing, deliberation of matters of shared interests, dispute resolution, building capacity, overseeing the implementation of intercounty agreements, considering matters of public interest, deliberating on government agency reports pertaining to the functioning of the counties or touching upon both national and county interests.

4.4 Kenya's Disaster Management Policy and Institutional Architecture

Following the devastating El Nino rains and the 1998 US Embassy bombing in Nairobi, an act of parliament was adopted, establishing the National Disaster Operations Center (NDOC) was created through an act of parliament, with the responsibility of

monitoring, coordinating, mobilizing resources and responding to disasters (Kertich, n.d.). The National Disaster Response Plan, adopted in 2009, was the country's first effort in mainstreaming disaster governance through a standalone policy. Multi- stakeholder input including; national government agencies, international partners, and civil society, marked the entry of a multisectoral approach to disaster management (Rotich, 2019).

This policy highlighted climate change as a major concern for Kenya, pointing out climatic disasters such as drought, landslides and flooding. The government's commitment to lead disaster management efforts, drawing from internationally accepted tools such as the Hyogo Framework in disaster resilience building undertakings is also noteworthy. The plan outlined the assumptions made in disaster planning, set out rules and procedures, allocated responsibilities to all stakeholders and established several coordination platforms for disaster responders including; The Humanitarian Service Committee, The National Platform for Disaster Risk Reduction, Kenya Food Security Steering Group and The Joint Operation Center (Government of Kenya, 2009).

4.4.1 2010 Onwards

The 2010 constitution of Kenya mandated that the government regulates land use and protects the environment (Government of Kenya, 2010). The constitution in Chapter 5 Article 66 mandates the government to implement regulatory measures to ensure safety for all, morality, wellness, and national development and planning. This, according to Nyandiko (2020), essentially regulates land usage in disaster prone areas. Article 66 of the same chapter also requires the government to ensure at least 10 percent forest cover, prevent environmentally harmful activities and empower Environmental Impact Assessment (EIA) systems which Nyandiko (2020) further argues are critical to mitigating climate change and alleviating resultant disasters.

The National Disaster Risk Management Policy of 2017 was the culmination of efforts to formulate a standalone disaster management policy, with the goal of; strengthening institutional capacity, reducing disaster risk vulnerabilities, mainstreaming disaster management into development, increasing resilience and disaster coordination (Government of Kenya, 2017). The policy notes that disaster management efforts are highly fragmented, uncoordinated and have institutional mandate overlaps which it attributes to the lack of a legal framework to provide clarity of direction.

Insofar as disaster management institutional frameworks, four key agencies exist. The National Disaster Operations Centre (NDOC), founded in 1998 monitors crisis situations, coordinates disaster management efforts, and mobilizes resources. The National Disaster Management Unit (NDMU) is an interagency institution responsible for liaison, resource mobilization and fostering collaboration, research, training and capacity building, and monitoring and evaluation of DRR programs. The National Drought Management Authority (NDMA) is in charge of early warning, contingency planning, coordination, and implementation of drought policy programs. The National Platform for Disaster Risk Management (NPDRM) provides a consultative forum that brings together state and non-state agencies with interest in disaster management.

Regarding climate change, The Climate Change Act (CCA), passed in 2016, established a legal regulatory framework for climate change action (Government of Kenya, 2016). Based on national values and principles, Wambua (2019) identifies the key provisions of the CCA as mainstreaming climate change, institutionalization of climate change action, promoting low carbon resilient development and implementing disaster governance decentralization.

In 2014 The National Emergency Response Plan and Standard Operating Procedures (Sops) policy document was also adopted, anchored in the national Vision 2030 development plan to promote national security and protect national assets from hazards and disasters. This plan attempted to build on the NDRP of 2009 by creating proper command, control and coordination structures at both levels of government, and provide the necessary tools for rapid response led by the national government.

The NDMU is the principal government agency for disaster management efforts. Under this policy NDMU is responsible for coordinating disaster efforts, mobilizing resources and fostering partnerships, budgeting, training responders, facilitating research, monitoring and assessment, and intra government liaison. The policy details both strategic and operational disaster management objectives. At the operational level, the commitment to prioritize and mainstream disaster governance through sectoral policies and planning, and annual auditing of disaster management units are the main focus areas. At the operational level emphasis is placed on the proper coordination of response, and provision of food, water, sanitation, medical services, and shelters upon the occurrence of disasters. The stakeholder coordination platforms established under the NDRP are maintained, but

for the NDMU local level disaster management planning is recommended (Government of Kenya, 2014).

4.4.2 National Disaster Risk Management Bill of 2023

The National Disaster Management Bill, which is currently in its final stages, is the first attempted legislation for Disaster Risk Management (DRM). Nationally, it aims to create the Intergovernmental Council of Disaster Management comprising the respective cabinet secretaries of ministries whose mandates align to disasters, and the Council of Governors chairperson (Government of Kenya, 2023). Amongst the council's functions will include; harmonizing and giving policy direction regarding DRM approaches, monitoring and coordinating activities of government DRM entities and periodic reporting to cabinet on DRM efforts.

The Act also aims to set forth the Disaster Risk Management Authority (DRMA), as the principal government body responsible for DRM efforts, comprised of officials from the national government, Director General of the Authority, representatives from Kenya Private Sector Alliance (KEPSA), The Kenya Red Cross and the Chief Executive Officer of the Council of Governors rep tasked with; formulating, coordinating and implementing DRM efforts, and facilitating international collaboration, advise the national and county governments on DRM, research, capacity building, creating public awareness, promote intergovernmental cooperation, monitor and evaluate disaster risk programs, coordinate the creation of disaster data repositories, resource mobilization, reporting and ensuring compliance with international disaster management obligations. The Authority is also in charge of categorizing disasters as county-level or nationwide disasters.

At the county level, the Act seeks to establish in each county a Disaster Risk Management Council (DRMC) as the principal disaster management entity at that level. The Council is to comprise of the county governor, county commissioner, County Executive in charge of DRM, County Police Chief, 2 disaster management experts, and a representative each from the respective county private sector associations, the civil society and St. John's Ambulance. Amongst the DRMCs functions include; advising the county government, coordinating DRM activities, developing county DRM policies, raising public awareness, providing civic education and capacity building.

CHAPTER 5

RESEARCH FINDINGS

This study investigated decentralized approaches to climate disaster policy implementation in Vihiga County in Kenya. The objectives were to investigate decentralized policy implementation and public participation in disaster management, to examine the factors influencing disaster policy implementation and the causes of policy failure, and to investigate the incorporation of the Sendai Framework's DRR guidelines and their influence on decentralized disaster management outcomes. This chapter presents the results of the data gathered through in-depth interviews, questionnaires, and focus group discussions.

5.1 Demography and Response Rates

The survey was circulated by Google Forms and paper copies; 110 responses were returned, representing a 110% response rate. The questionnaire employed a five-point Likert scale to collect responses on participants` ranking of issues under investigation. Two focus group discussions were held. The first group discussion consisted of seven members taken from three separate groups: Vihiga county inhabitants, one member of the county assembly, and county government workers, as layered below.

Table 5.1 Focus group 1 participants

Description of Participant	Number Present
County Government Workers	4
Member of County Assembly	1
Vihiga County Residents	2

The second group discussion consisted of 25 residents of Vihiga county, selected based on their diverse jobs as follows:

Table 5.2 Focus group 2 participants

Description of Participant	Number Present
Farmers	6
Teachers	4
Hawkers	3
University Students	4
Social Workers	5
Clinicians	3

In addition, 15 interviews were conducted with informants ranging from county government directors to street-level policy implementers, local researchers, and local non-governmental organizations. The county government's policy documents including; Forestry management policy, Agroforestry policy, Climate change policy, Solid waste management policy and water policy, and a host of other legal regulations and Acts such as the Disaster Management Bill, and Climate Change Finance Act were also evaluated.

5.2 Vihiga County Climate and Disaster Management Framework

Vihiga County government maintains a notable regulatory, policy, and institutional climate and disaster management framework. The County Disaster Management Unit leads its disaster governance efforts, which are regulated by the Disaster Management Act of 2019.

This unit includes two agencies: The Disaster Management Committee and the Secretariat. The committee's functions include coordination, serving as an information repository, advising, making recommendations to national government agencies, promoting research, disseminating disaster information, building capacity, and coordinating intercounty collaboration, and with the national government. The secretariat, on the other hand, is comprised of technical professionals who are in charge of the county government's day-to-day disaster management operations. In terms of policy, the county government develops 5-year disaster management plans that include vulnerability assessments, mitigation measures to be implemented and how they fit into their development objectives, and capacity-building initiatives. Figure 5.1 summarizes Vihiga's disaster management institutional framework.

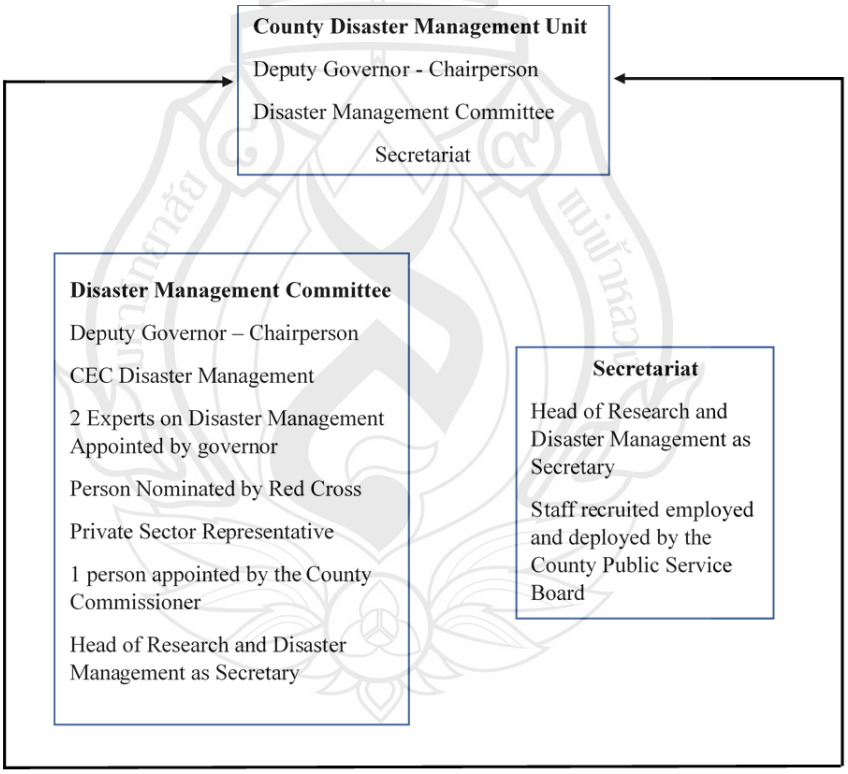

Figure 5.1 Vihiga disaster management unit

While the county government has separate policies and institutions for climate change and disaster management, their duties interlink in many ways, as observed by

Respondent 1, a county government director. *"The county government plays three key roles: one identifying climate and disaster risks, planning, budgeting and putting in place measures to respond to these risks. These actions include legislative frameworks, governance structures and real projects."*

For climate change, Vihiga has the Climate Change Fund Act as the legal framework, and with the climate change policy as the strategic plan for Climate Action (County Government of Vihiga, 2019). To operationalize these policy and legal instruments, the county maintains a number of institutions as noted by Respondent 2, from the county climate change directorate.

"We have established Ward Climate Change planning committees in all 25 wards. The county climate change committee was also established as a technical agency to coordinate climate activities at the county level, and the steering committee chaired by the governor which gives strategic direction on climate change matters. Additionally, a directorate of climate change also exists to give support to all these committees in designing and coordination of these interventions."

The county government's clear legal and policy framework was observed to be a demonstration of commitment to addressing climate change and its disaster concerns. It was additionally found that the county government had done more in terms of disaster management policy and legislation, having enacted its own disaster management Act, while the national government had yet to pass national disaster management legislation. While the national government has been slow to legislate on disaster management, county governments will be required to restructure their disaster management framework to align with the national disaster management bill, which is currently in the final stages of legislative approval in the national assembly, affecting their own existing disaster legislation and policies.

This elaborate focus of climate change and its related implications by Vihiga county however, could be attributed to the present governor being a staunch environmentalist. This raises concerns regarding the continuation of this prioritizing by his successor's administration once his term ends in 2027.

5.3 Devolution and Policy Implementation

The findings revealed that, while devolution was intended to bring government closer to the people, the national government retained overarching authority on numerous issues, limiting the ability of county governments to deliver on some of their statutory duties. When asked how the two-tier structure of government affects policy implementation, county government informants appeared to open up about general issues but were very cautious when asked about the county government. Except for one executive member, the other three county government interviewees objected to having their interviews recorded, despite assurances that the research was solely for academic purposes, which the researcher thought could have been due to a perceived fear of future reproachment.

Despite the national government still holding overall significant influence, the attitude towards devolved disaster management in Vihiga county was largely positive. The findings revealed that all stakeholder groups, including county government personnel, members of the public, and researchers, agreed that devolution was critical to grassroots disaster management efforts.

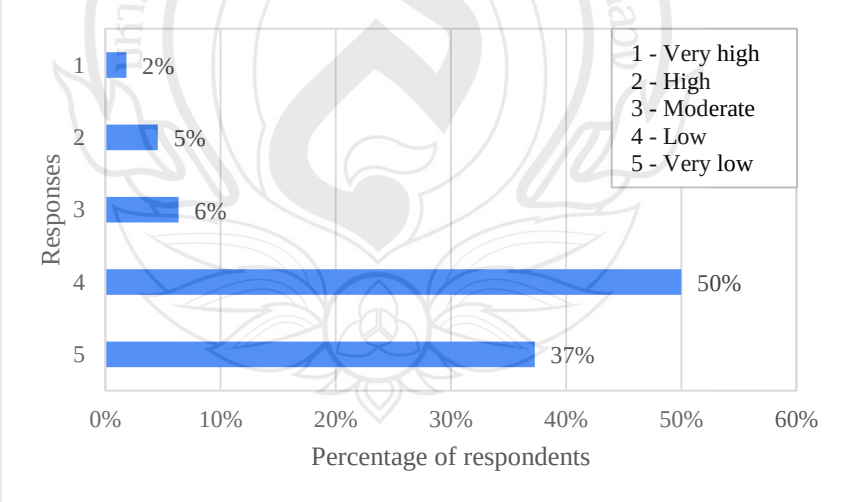

Figure 5.2 Importance of devolution in grassroot climate action and disaster governance

The majority of county government policy implementers supported devolution in climate action and disaster governance. 50% of respondents selected important, with an additional 37% selecting very important, cumulatively 87% support for devolution as shown in figure 5.2. This demonstrated a strong belief in devolution's role in grassroots disaster governance and climate action.

Specific to disaster management, the county government was observed to assign importance to disaster management by including it in its County Integrated Development Plan (CIDP), and allocating 2 percent of its budget towards it as was noted by Respondent 2 '*devolution has made significant progress in mainstreaming Disaster Risk Management for local planning through CIDPs. 2 percent of county government budgets is allocated to Disaster Risk Management (DRM)…overall, strengthening devolution will also strengthen national disaster risk management efforts*."

A local policy researcher and NGO informant also agree, suggesting that devolution brought power and resources closer to local populations, resulting in more culturally appropriate solutions and the use of locally available resources and local knowledge, which were more effective in the event of disasters. This finding was further supported by the county government staff survey, who preferred county government policies over national government policies by 70% to 30% for ease of execution as detailed in figure 5.3.

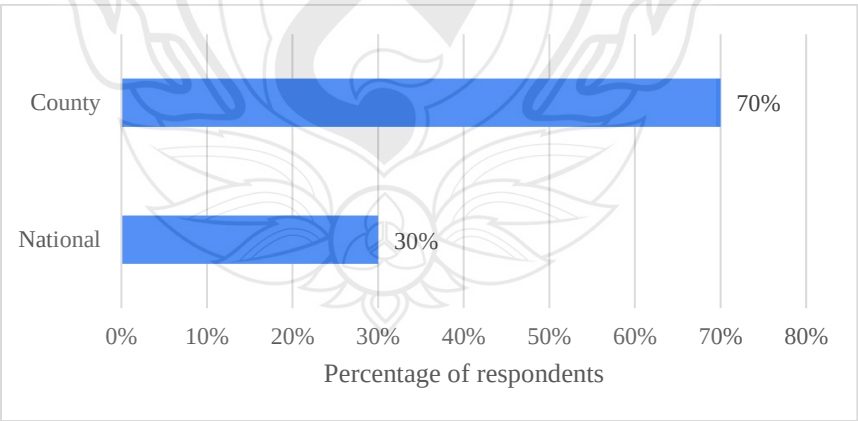

Figure 5.3 Policy ease of implementation

This suggests that either the county policy implementers preferred county government policies for their ease of implementation, or that the majority of them thought county government policies were more effective than national government policies.

Respondent 1, a county government director who shares a similar viewpoint, added that policies from the county government were easier for county government officers to implement due to people-centrism in policymaking and proximity to the people. *"Our policies at the county government are easier for our officers to implement, because they are created with the common 'mwananchi'* (Mwananchi is a Swahili word for citizens)*, in mind. Most of our officers find it easier to implement them because they live in these places they work and interact with wananchi every day.*"

It was further observed that the top-down hierarchical nature of public administration also existed at the county government. As stated by a county government employee during FGD 1, local bureaucracy at the county government necessitated frontline staff to seek approval up the chain of command, which delayed action. This was found to encourage autonomy and discretion amongst frontline policy implementers in response to complex policy directions, resource constraints, and the time-consuming nature of back-and-forth contact with their superiors. While this was troublesome for policy consistency and accountability, it was observed to have an overall positive effect that exceeded these concerns. This highlights the fact that discretion and autonomy were a common occurrence in policy exercises, indicating a potential need for their inclusion in policy implementation training to ensure alignment with policy goals and aspirations and mitigate the concerns around it.

5.3.1 Policy Failure and Its Causes

The study looked at four significant causes of policy failure: overambitious policy goals, multilevel implementation, collaboration gaps, and politics, and how these influenced the county government's policy implementation exercises.

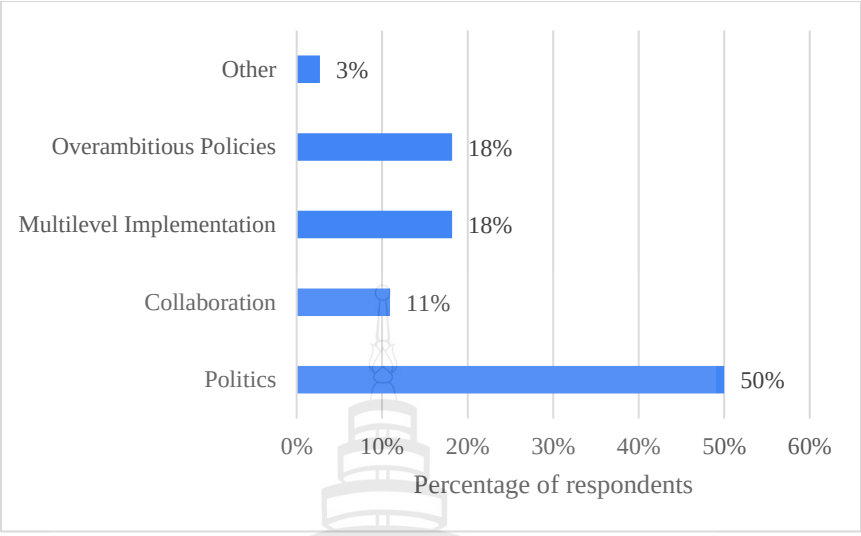

Figure 5.4 Causes of policy failure

According to the implementers survey in figure 5.4, politics was the most influential cause of policy failure, accounting for 50%, followed by overambitious policy objectives and multilevel implementation at 18% and collaboration deficits at 11%. Some other causes, aside from the four causes under investigation, also registered 3%.

5.3.1.1 Politics

The policy cycle is a political process, and it would be extremely difficult to isolate it from politics. Many respondents pointed out that a lack of political goodwill was a major influence on policy implementation. One researcher, for instance, stated that this was the reason for the weak disaster infrastructure and the delays in policy implementation exercises that undermined community efforts to mitigate risks. Another researcher also noted that politicians have a tendency of talking about issues, in reaction, after they happen.

Local political rivalry within the county government, between the governor, deputy governor, and their County Executive Committee Members (CECs) and MCAs, were identified to frequently result in lengthy legal fights and protracted motions in the county assembly aiming to impeach top county executives.

Non-county government respondents indicated recruitment based on political patronage and ethnicity rather than merit or experience, which affected the technical competence of implementation agencies. This has repeatedly politicized and delayed policy implementation exercises.

In January 2024, Vihiga County hit national news headlines due to corruption allegations, with several of its personnel being investigated by the national government's corruption watchdog, the Ethics and Anti-Corruption Commission. The National Auditor General's 2022 report singled out Vihiga for financial misappropriation due to, among other things, illegal and unexplained expenditure, inability to satisfy contractual responsibilities, and hiring and keeping ghost personnel on payroll. This demonstrates that political forces were the most major hindrance to policy execution.

5.3.1.2 Overambitious policies

Overambitious policies accounted for 18% of the survey responses. Policies appeared to have some highly unrealistic expectations in comparison to the available human and financial resources available. A researcher respondent identified a gap between policy formulation and actual community needs.

Policy multiplicity was also observed, with the existence of multiple and frequently overlapping policies seeking to address closely linked issues. At Vihiga, for example, there are numerous independent policies such as the County Forestry Management Policy, the Agroforestry Policy, the Climate Change Policy, the Solid Waste Management Policy, the Water Policy, and a host of other legal regulations and Acts that all address very closely connected issues. As a result, policy implementers face difficulties in prioritization and alignment with these policies. This also leads to discrepancies in implementation across the appropriate agencies, further complicating the monitoring and evaluation of implementation progress. Multiplicity also causes confusion regarding stakeholder participation, as their duties and obligations are not properly defined.

5.3.1.3 Multilevel Implementation and Collaboration Deficits

Multilevel implementation presents complexity and fragmentation challenges that arise when various agencies at both levels of government collaborate to implement policies without clear frameworks, resulting in incoherence and gaps. The division of authority and responsibilities between the national and county governments under Kenya's government structure is still unclear, notably in disaster management. Respondent 4 notes this reality *"The management of disaster responses by the counties and national management agencies itself has been the biggest disaster. When all these agencies meet at the scene of a disaster it becomes a tug of war affair about who should do what, instead of actually saving lives."*

This creates responsibility gaps, according to Respondent 5, who observes that disaster management is frequently characterized by finger-pointing over who should take responsibility between the national and county governments, or between political leadership responsible for policy direction and disaster management agencies. This creates coordination and accountability challenges.

In the two-tier system of governance, county administrations have to adapt national programs to meet their local needs. While this is necessary, it creates a divergence between national and county priorities, which may undermine policy objectives.

In terms of collaboration, county executives, policy academics, and non-governmental organizations all expressed support for mutually initiated projects. Respondent 6, a researcher, pointed out that this was only true in areas of common interest and that the ultimate obligation rested with the county government. *"The County and National government work very well in areas of common interest. But this does not affect how the county implements policies in the climate change area. You should know that the National government can only facilitate, but the implementation is purely an effort by the county government".*

5.3.1.4 Other Causes

Aside from the four major causes, 3 percent of 'other' responses were registered in the survey. These causes included; Conflicting interests amongst the public, the national and county priorities; lack of finances, and policies merely serve as a blueprint for show rather than actual implementation.

5.3.2 Factors Influencing Disaster Policy Implementation Outcomes

5.3.2.1 Prioritization Between Mitigation and Recovery

In the implementation of disaster policies, government agencies are presented with a prioritization dilemma, based on a number of issues.

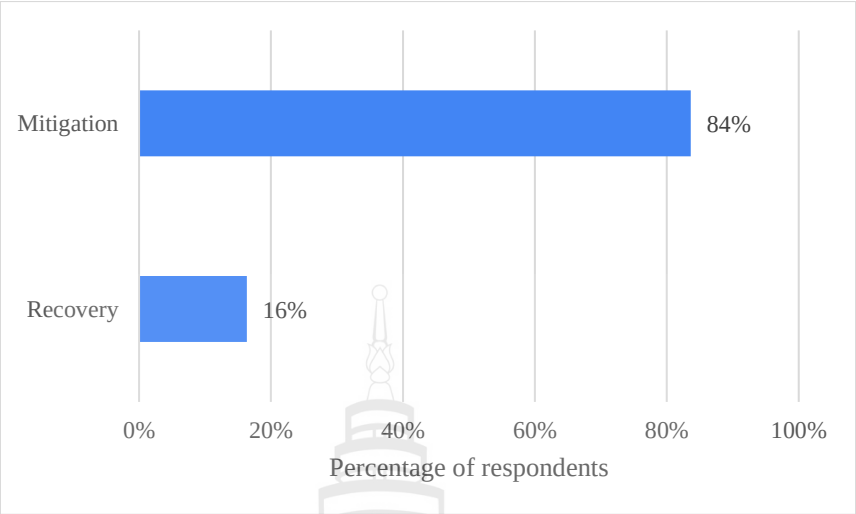

Figure 5.5 Prioritization between mitigation and recovery

According to the implementers' survey, an overwhelming 84% preferred mitigation as the emphasis area, with 16% favoring post-disaster recovery as seen in figure 5.5. This significant support for mitigation suggests that there was widespread agreement that minimizing disaster risks before they happened was critical. The little support for recovery could have been an indication of the importance of adequate recovery capabilities; however, the need for them could potentially be reduced with proper investments in mitigation. This emphasizes the importance of developing resilient communities by not just preparing them to survive disasters, but also helping them to recover once they occur.

The study did, however, note the difficulty in allocating limited climate and disaster action resources between long-term mitigation projects and short-term disaster recovery efforts. Low risk perceptions were also observed to influence the prioritization of immediate risks over long-term ones, resulting in lower investments in long-term mitigation and a greater emphasis on reactive measures to disaster occurrences.

Despite this, it was determined that the county government would need to increase overall investments in both prevention and mitigation. Respondent 6, a researcher, voiced extreme disappointment with Vihiga's preparedness and recovery efforts. *"The respondent noted that there is nothing to write home about the state of the county in the aspect. The county is not prepared for eventualities emanating from climate induced disasters"*

5.3.2.2 Policy Implementation Capacity

Policy implementation capability is an important component of public policy, primarily related to the ability to deliver the services outlined in the policies. Financial and human resources, as well as their interactions, have a significant impact on disaster management outcomes.

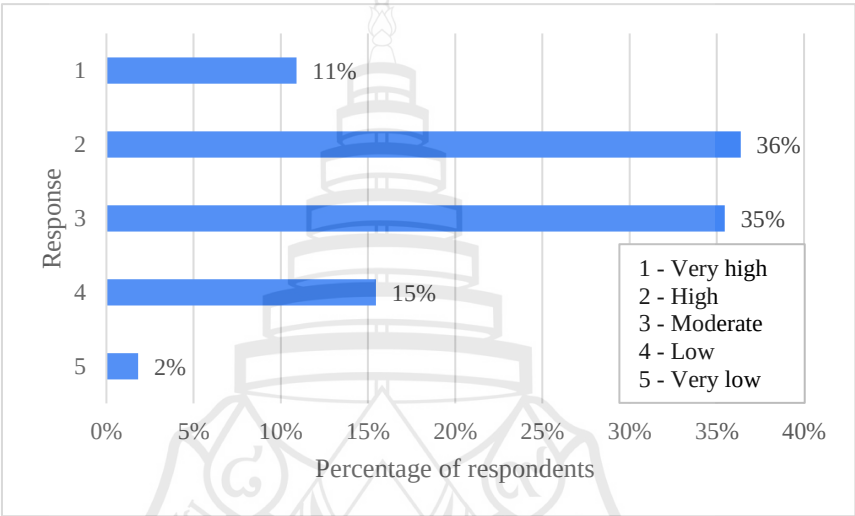

Figure 5.6 Rating of the county governments disaster management capabilities

According to the implementers survey shown in figure 5.6, participants ranked the county government's disaster policy implementation capacity as moderate to low, with 35% rating moderate and 36% rating low. With the moderate rating being the highest percentage, this could indicate that certain aspects of the county government's efforts were somewhat effective, but there was still a need for improvement. The 'low' rating, which was less than moderate by only 1%, could suggest that the county government's disaster management capabilities were inadequate, necessitating additional action to scale up disaster management efforts.

A significant minority (15%) rated 'high', indicating satisfaction with present disaster management capabilities. The extreme, very low and very high responses, received the fewest responses at 11% and 2%, respectively. Very high registered the least responses at 2% which indicates extremely low confidence in the county government's capabilities.

In summary, it could be inferred that additional capacity building is necessary for disaster management.

Financing was identified as the most significant capacity challenge. According to the County government's CIDP, insufficient funds and delayed transfers from the national government slowed the implementation of their projects.

Upon assessment of the county government's 2023-2024 budget (County Government of Vihiga, 2023a), it appeared that finance was more of an expense than an availability issue. Vihiga planned to spend 44% of the KES 5.9 billion (USD 45 million) budget on employee wages, 24% on other recurring expenditure, and 32% on programs and initiatives, with 5% on pending bills from prior fiscal years. The very high expenditure on staff salaries and significant pending bills from previous financial years could be viewed as the reason for the deferral, as well as less financing for areas such as disaster management.

The lack of requisite human resource and limited capacities was also noted by the county government in its CIDP, to affect their policy implementation exercises, but 44% of the annual budgetary allocation to employee salaries could be an indication of a bloated workforce. Respondents 7 and 8 make a similar assertion, that Vihiga's problem was a human resource problem rather than a financial availability problem. *"The county government has the financial resources but lacks the technical resources to implement the policies."*

Respondent 9 noted synergy challenges in the county civil service, stating that the hiring of staff during the transition to devolution drew from local governments, national government, and even the private sector, all of whom had different backgrounds and thus had varied approaches to issues of common interest. This synergy gap also extended to prioritization, with respondent 1 from the county government stating that their climate-related disaster focus area was water access, where much of their investments are directed. However, in the CIDP, direct disaster management spending focused on establishing a fire station, employing firefighters, and purchasing fire engines. This suggests a potential mismatch in prioritization among county agencies.

The CIDP also highlights issues such as a need for a clear project management framework, insufficient technical supervision, and the absence of a participatory project implementation framework. A local NGO respondent characterizes policy implementation

capacity in Kenya quite candidly. "As *a country we have very good policies, but our capacity to implement them is wanting. Look at the money we lose to dubious procurement and poorly executed projects such as dams which have killed people. Nobody ever knows whether the allocated money goes to the intended purposes."*

The interplay of financing, technical, and human resource capabilities has a considerable impact on disaster management policy execution.

5.3.2.3 Stakeholder Involvement

Stakeholders are crucial to the success on policy implementation, and the county government's development plans, climate and disaster policies capture this clearly.

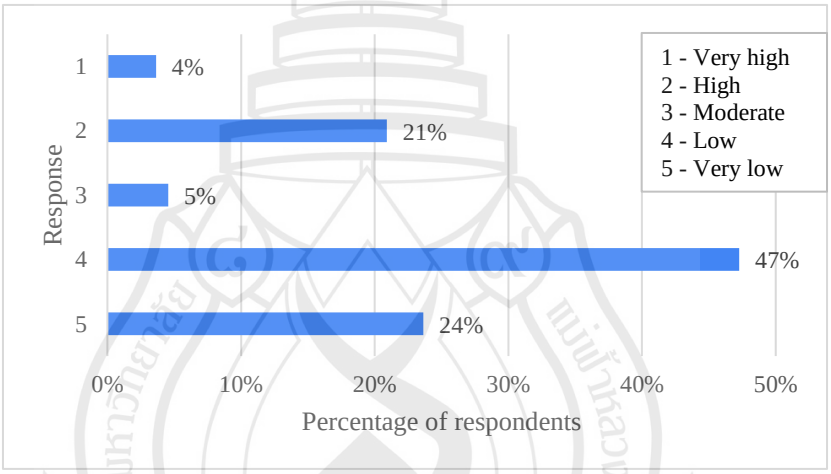

Figure 5.7 External stakeholders influence on disaster policy implementation

External stakeholders were seen to have major influence in disaster management, according to the findings of the policy implementers survey in figure 5.7, with 47% rating high influence and 24% a very high influence, for a cumulative 71% perceived influence. This indicates a greater involvement for external stakeholders such as NGOs, researchers, and the corporate sector in the media.

A substantial minority, 21%, reported little influence, implying that while external influences existed, they may not have had a significant impact on disaster management efforts. A small percentage (5%) reported moderate and (4%) very low levels of impact. The responses' tendency toward a significant level of influence indicates a need for

the county government to acknowledge the influence of these groups and engage them appropriately, but without overlooking the motives of their involvement.

Some of the local NGOs we contacted were hesitant to provide any tangible data, which the researcher presumed could have resulted from concerns about jeopardizing their relationships with county government agencies, or to avoid disclosing sensitive information about the vulnerable groups they work with. NGOs were found to be very important in promoting public engagement and resilience building. In the management of Kibiri forest for instance, Nature Kenya partners with other government agencies in facilitating participatory forest management, financing conservation initiatives, training Community Forest Associations (CFAs), conducting forest surveys on plant and animal species, and advocating for ecological sustainability.

Relating to academia and research, the county was seen to have made remarkable efforts to incorporate their technical expertise in climate and disaster response. Vihiga County in 2023 signed a memorandum of understanding with a local university, Kaimosi Friends University, and the university fund, to establish a Centre of Excellence for Climate Change Research (CECARE). This center is set to provide training to county staff and local practitioners, aid the development and implementation of community outreach programs, and undertake action-based climate research.

The private sector, particularly the media, plays an important role in raising public awareness and communicating climate change and disaster information. Radio is the most available medium for information particularly for the majority of rural residents. Many rely on local vernacular community radio stations such as Anyole and Vuuka FM, for their daily periodic weather updates. These radio stations play a critical role in understanding climate change and educating the community on the importance of preventing and responding to extreme weather events, by using their local vernacular languages that they are conversant with.

5.4 Sendai Framework in Vihiga County's Disaster Management

5.4.1 Linkage Between Climate Change and Disasters

While the risk for climate disasters was observed to be relatively low, climate change as a potential contributor to disaster risks was a concern across all groups of our respondents in Vihiga County. Respondent 1 the county director for climate change, notes this in good detail;

"*Climate Change is a major contributor to disaster risks and vulnerabilities, and especially due to the increased intensity of climate extremes such as the heavy rainfalls witnessed in late 2023. This means more people a likely to be exposed to disasters such as flooding in the coming future…other concerns from climate change include the increased prevalence of Malaria resulting from rising mosquito population, and other water borne diseases due to flooding.*"

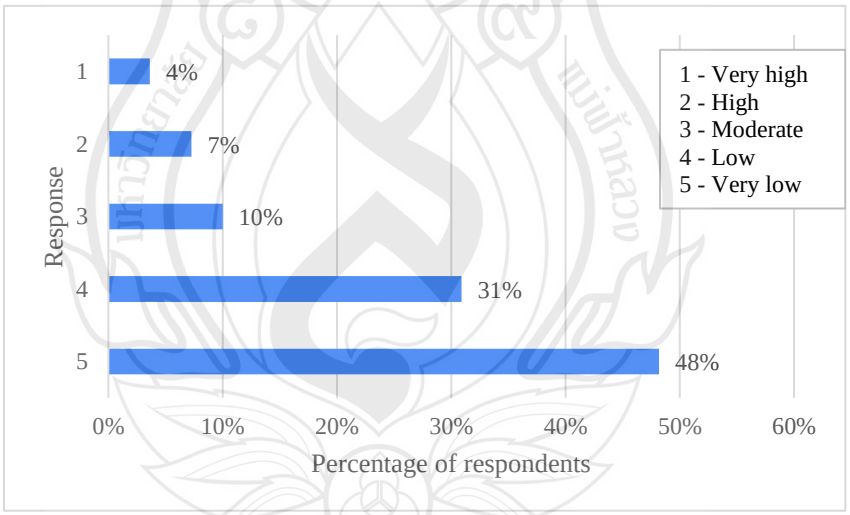

Figure 5.8 Climate change as a potential contributor to disaster occurrences

The results of the policy implementers survey in figure 5.8 indicate a strong perception of climate change as a potential contributor to disaster risks. 'very high' was the most common response at 48% and followed closely by 'high' at 31%. Asked on how the county government links climate change to disaster management in their operations, a

director notes their efforts to do so in three ways. "*First, the county executive committee member responsible for disaster programs is also a member of the climate change steering committee, which links them at the strategic level. Secondly, the directorate of climate change has conducted a climate change risk assessment whose report has informed the various actions to address climate related risks, that has been disseminated to the disaster unit for them to take adequate remedial measures. Thirdly, we are also working on a framework to develop an early warning system for climate disasters."*

5.4.2 Vihiga County Implementation of the Sendai Framework

The Sendai Framework is a global regime established in 2015 to promote the reduction of disaster risks around the world. Kenya has made significant headway in aligning national policy and institutional infrastructure with its provisions, and county governments have followed suit, incorporating it into their own ways as well. Vihiga County's CIDP (2023-2027) includes concrete promises to achieve the Sendai framework's priority areas.

5.4.2.1 Priority 1: Understanding Disaster Risk

For purposes of improving the understanding of disaster risks, the county government was found to have conducted a disaster risk assessment, whose report it was currently using to develop disaster management and climate change action plans. This risk assessment thus facilitated better planning and, in turn, informed budgeting and implementation activities, as noted by the county government director of climate change. *"Disaster risk assessment has been conducted, which has afforded us an opportunity to deeply understand whatever risks prevalent within communities and thus informing the programs and budgeting as regards responding to those risks."*

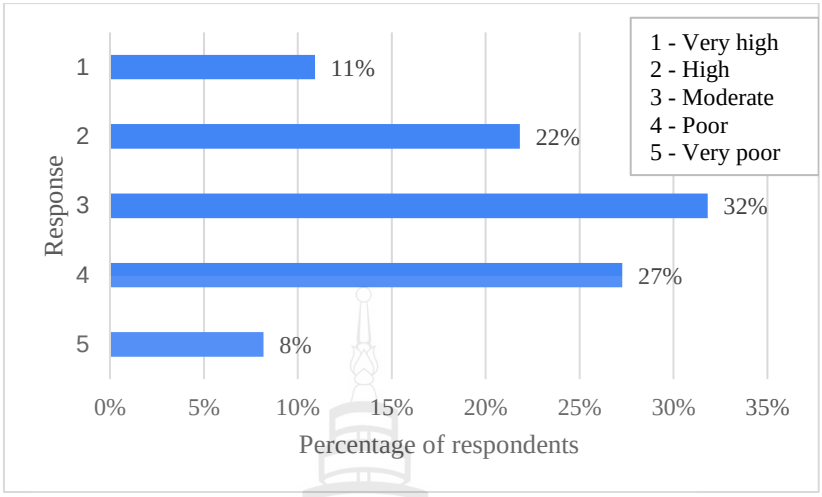

Figure 5.9 Rating of the county government's prioritization of disaster risk understanding

For the county government staff survey as shown in figure 5.9 the county`s prioritization of disaster risk understanding appeared to be concentrated in the middle range. The highest percentage of response was moderate (32%), followed by high (27%), and then poor (22%) respectively. It could be inferred that, a disconnect exists between the county government top executives and their implementers, over the prioritization of the understanding of disaster risks. While the executive conducted risk assessments to better comprehend disaster risks, policy implementers may have been excluded from this process, which could explain their moderate-leaning stance.

All three researchers interviewed agreed that Vihiga performed very averagely in terms of conducting assessments and disseminating this information to the public, which was mostly due to the interaction of politics and financing.

"The county government is a politically instituted level of government whose desire to assess and communicate risk may not always resonate with the interests at play, especially financial interests. Due to such a clash of interests, the resources assigned to assessment and communication on risks of climate-induced disasters, are minimized."

It consequently emerged that while Vihiga had taken some progressive steps toward improving the understanding of disaster risks, much more work remains to be done to close the gap with international best practices.

5.4.2.2 Priority Two: Strengthening Disaster Risk Governance to Manage Disaster Risk

This priority area comprises initiatives to improve collaboration, scale up institutional structures, and streamline governance procedures and processes for managing disaster concerns. There were noteworthy endeavors to collaborate with the national government, other county administrations, and non-governmental organizations.

The county government's director of climate change highlighted measures taken to strengthen collaborative governance between county governments, other county governments, and non-state partners. *"The county has undertaken to fence the Kakamega Kibiri forest, alongside the county government of Kakamega, Rhino Arc and others. Secondly, we are collaborating with Kaimosi University and the Universities fund to establish a climate institute at the university which shall strengthen the understanding of climate risks in the region and beyond."* In terms of engaging with other county governments, Vihiga pursues collaborative measures to strengthen regional relationships and cooperation among member counties of the Lake Region Economic Bloc (LREB).

In regards to county and national government cooperation, they work together to implement the Financing Locally Led Climate Action (FLLOCA) grassroots climate action initiative launched by the national government to empower communities by providing financial and technical assistance to local communities across Kenya. As observed by the director of climate change, there was a good working relationship between the two levels of government in this area. *"For instance, FLLOCA which is a national government program through which various partners crowd in their funding some as loans and grants into a fund at the national treasury which is disbursed to counties for climate change programs prioritized by communities. This program provides a very strong collaboration between the county and national government on climate change."*

In terms of linking climate change and disaster management at the strategic policy level, the county was seen to have tried to do so in their policy documents. As indicated in the County Integrated Development Plan (CIDP), Vihiga has made a policy commitment to improve disaster institutional frameworks by establishing a county disaster management unit, building a fire station, and purchasing disaster response equipment. In addition, the CIPD commits to strengthening disaster risk response and governance through ward platforms.

Vihiga has also attempted to link DRR to sustainable development planning in their CIDP by committing to; strengthen resilience and adaptive capacity to climate-related hazards and natural disasters, promote green economy and climate-smart agriculture, encourage usage of clean energy to reduce carbon footprint and enhancing climate change adaptation. Land use evaluation and mapping of disaster-prone areas were allocated Ksh. 6 million (USD 45,000) in CIDP over the course of five years.

At the county government level, collaborative governance between climate change and disaster management agencies was found to be inadequate. The county government has set up two units under different departments, and they operate independently. This has a significant impact on coordination and effectiveness in reacting to incidents requiring action from both authorities. This is largely because, the climate directorate has the mandate to issues early warnings to disaster units who then take requisite action. Thus, there is a need for improved intra-coordination, within the county units and governance structures that are responsible for disasters and climate change, which need to be enhanced for better collaboration between them.

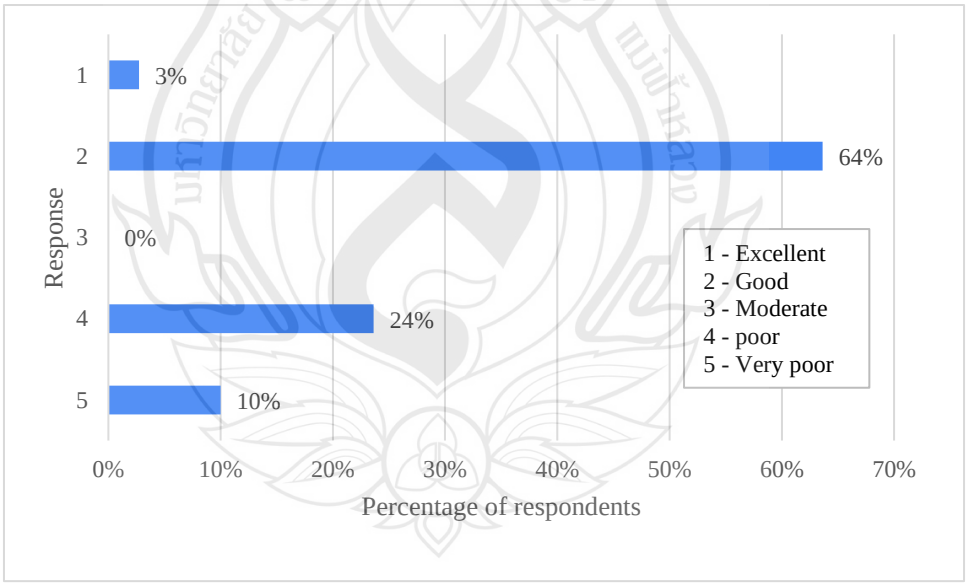

Figure 5.10 Collaborative governance between county government and other entities

The implementers survey as shown in figure 5.10 found a significant predisposition towards 'poor collaboration' with 64%. No neutral responses were registered, showing that all respondents held strong convictions regarding collaborative governance.

'Good collaboration' and 'excellent collaboration' were the second and third most prevalent responses, with 24% and 10%, respectively, demonstrating that a sizable minority thought the county government was doing a good job of partnering with other agencies to better disaster management.

5.4.2.3 Priority Three: Investing in Disaster Risk Reduction for Resilience

This priority area focuses on proactive resource mobilization and allocation to build the capacity to survive and recover from disasters when they occur. As noted in the CIDP, the county administration recognizes its financial and technical restrictions, and to alleviate them, has pledged to allocate more resources and to pursue public-private partnerships. Between 2023 and 2027, Ksh. 80 million (USD 604,000) will be invested directly in disaster management services to operationalize the unit and build regulatory frameworks. A disaster management fund will also be established, with Ksh. 200 million (USD 1.5 million) pledged for that.

One county director remarked that their climate-related disaster concerns were in the water availability sector, and hence, the majority of their investments and interventions were focused on this area. In the fiscal year 2021-2022, Vihiga committed Ksh. 37 million (USD 280,000) towards building capacity by establishing committees, training officers, and acquiring equipment in five wards. In the fiscal year 2022-2023, they committed Ksh 64 million (484,000) for similar water projects in six wards.

In terms of attracting private sector investment, Vihiga, in its CIDP, pledges to facilitate mutually agreed-upon resource mobilization activities; however, it was observed that private resource mobilization still remained a challenge. According to one researcher, the reason for this was the need for more suitable incentives and regulations to attract private investment. *"Attracting private investment is still problematic because there aren't sufficient incentives and clear regulations for that. Resource mobilization is very essential the success of DRR policies, so there is need for strategic prioritization of innovative ways for DRR financing."*

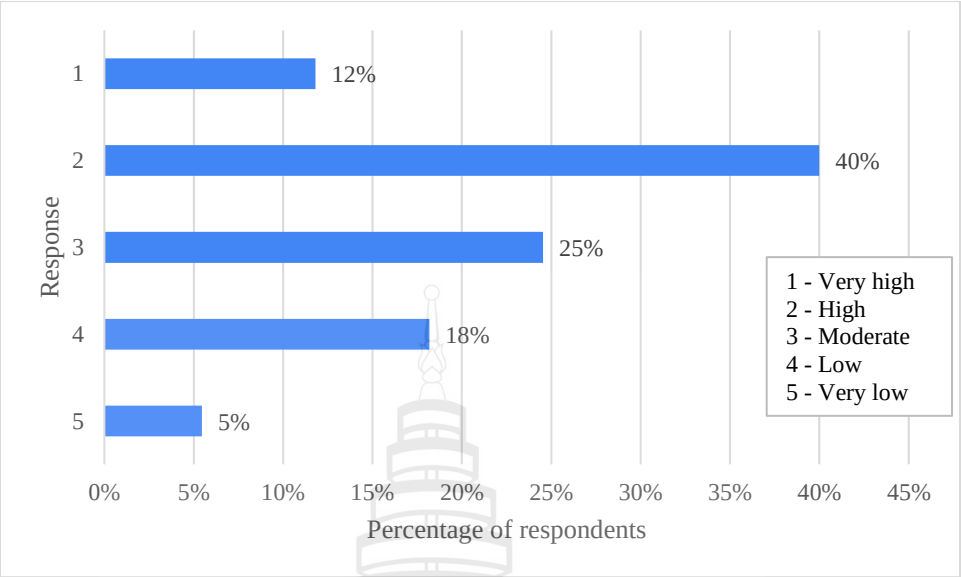

Figure 5.11 Vihiga's prioritization of investing in DRR

From the policy implementers survey in figure 5.11, 40% of respondents rated the county government's efforts 'poor', indicating significant dissatisfaction. 25% of respondents ranked 'moderate', 18% rated 'good', and 5% as very good. In general, it could be inferred that there was general dissatisfaction with the county government's efforts to invest in DRR, with only a small percentage rating the county`s efforts positively. While there was a noticeable neutral rating, there was also a noticeable dissatisfaction with the county government's efforts to invest in DRR.

Overall, investment in disaster risk reduction in Vihiga was deemed to be low. This could be attributed to the historical reality that there have been countable episodes of climate-related disasters occurring. Owing to this relatively low frequency, the current administration's perception of the probability of occurrence is very low, and as such the leadership does not find reason to prioritize investing in this area. This could also be because disaster resilience building initiatives did not provide a direct political return on investment.

5.4.2.4 Priority Four: Enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction

This priority area focuses on risk assessment, early warning systems, and the implementation of response and recovery plans to ensure disaster downtime is minimized and to ensure timely recovery. In their CIDP, Vihiga commits to ensuring accountability and

putting in place steps to rebuild better. The county government, under the directorate of climate change, has conducted risk assessments to guide their climate-related risk management strategies. The national government has also conducted a climate risk profile assessment under the National Agricultural and Rural Inclusive Growth Project (NARIGP) with the World Bank (Government of Kenya, 2022). According to these risk assessments, the principal climate-related threats are seasonal droughts, seasonal heavy rainfall in some places, delayed short and long rain seasons, and the advent of new crop pests such as armyworms. Respondent 6 highlights this. *"The county government has tried to conduct risk assessments, and put in place early warning systems and emergency response plans. However, their actual capability for disaster readiness and response is still very weak. I believe that a lot more still needs to be done in terms of investing in capacity building, and infrastructure to make the county and its people more disaster resilient."*

One researcher pointed out that the county government has done virtually little in terms of readiness. Rescue protocols and mechanisms, provision of emergency shelter, humanitarian aid efforts and the logistics involved were undefined. Respondent 9 notes this. *"The county government, unlike the national government, is not well prepared for climate related disasters. There are very few rescue and refuge centers as well as logistical support systems for disasters."* Regarding disaster early warning, nothing substantive had been done so far but the county government was currently working on putting in place a framework for early warning for climate and disaster risks.

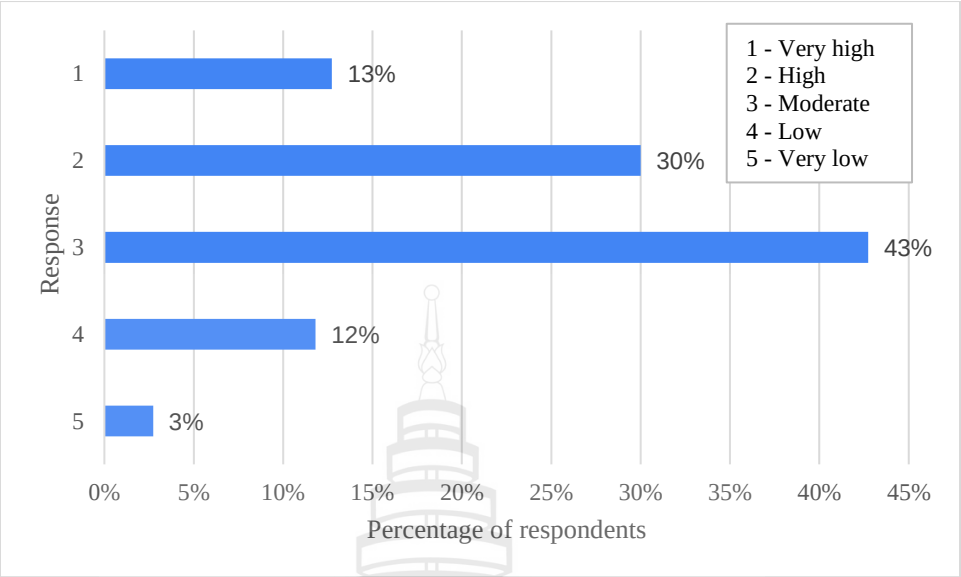

Figure 5.12 County government's disaster readiness and response capabilities

According to the implementers survey as seen in figure 5.12, 43% rated 'moderate', indicating lukewarm satisfaction with the county's disaster readiness and response efforts. 30% rated 'poor' and 13% 'very poor', translating to a cumulative significant 43% dissatisfaction sentiment. Only 15% of respondents were satisfied, with 12% rating it as 'good' and 3% rating it as 'very good'. It can so be inferred that the responses leaned towards neutral to relative dissatisfaction. The low percentage of satisfaction thus shows that much more work has to be done to improve disaster preparedness and response.

5.5 Public Participation in Vihiga County

Decentralization cultivates public involvement in governance, which is very essential for contextualizing disaster management and grassroot level resilience building. Albeit to a limited extent, the county government was more responsive to local needs than the national government. Public participation was examined using the International Association of Public Participation (IAP2) (2020) Spectrum: inform, consult, involve, collaborate and empower.

5.5.1 Informing

In public participation exercises information entails providing the population with unbiased information to help them understand the problems in question and the solutions being put forward. The informants from the county government noted radio as the most important communication medium used to reach out to the majority of residents. Nearly 85% of Vihiga's population reside in rural areas, which is why radio is the most preferred medium for information dissemination. One county government director noted *"In real work now, we have done community awareness through radio and in their communities forums."*

In the FGDs there was general consensus that information is averagely communicated to the public. There is no aggressiveness or laxity. When asked to share the communication channels that were used, both FGD 1 and FGD 2 unanimously voted for radio unanimously as their go to channel for getting information about the county government's activities. One hawker posited that, *"Radio is available in every homestead in the county of Vihiga and as such it is the most appropriate means to communicate any upcoming policy formulation and implementation. Through such channels, it will be difficult to feel left out because we will be very aware of the communication."* Other communication channels included; the Vihiga County website, and social media apps such as Facebook and WhatsApp messenger which are prominent to residents of Vihiga County.

The researchers interviewed were not very optimistic about the status of the county government's assessment and communication of disaster information to the public. One noted the clash between the desire to manage disasters and financial concerns, as the reason for the very little prioritization is given to communication with the public.

Proper communication of policy information is essential for the creation of public awareness and their perceptions about climate change and its potential impacts on their communities. The levels of awareness amongst the residents in the FGDs was average, indicating a need for more effort to communicate to the public.

During the first focused group discussion 1, one participant, - an area Member of County Assembly (MCA)- shared that their awareness was quite high. The participant highlighted their engagement with information campaigns, news, and scientific literature related to climate change. Another participant, a resident of Vihiga County, pointed out that she did not have much information on climate change. In her opinion, she cited that education was possibly her undoing in having access to such knowledge. *"I am not so well educated*

since I dropped out of school over 30 years ago, and that was in primary school. I am not so aware of what it may mean to discuss climate change, but I am aware that the weather patterns have changed over the recent past." The County Government workers from various departments pointed out that they had a general understanding of what climate change was, and that it may affect the overall community especially on agricultural related activities.

In the second group discussion it was established that awareness of climate change and its potential disaster implications amongst healthcare practitioners was quite limited. One clinician pointed out that the reason for this was that climate change did not greatly relate to the medical field. He, however, exhibited an eagerness to establish further awareness. *"I am not very aware of climate change and its consequences except for what is floated around social media, which is not as technical. I will try to read more about it in the context of Vihiga County."*

One constituent, a farmer cited that she is very aware of climate change and cited various implications she has noted in recent years and how they affected food production. *"We have experienced climate change in terms of changes in weather patterns. For example, we used to receive rain between April and June of every year but lately, the rains come in January, disappear in February and March, and later return in May. It is unpredictable and terrible for farming planning. We have incurred major losses as our crops dry out in the fields."*

To add on to the observation by the farmer, one university student cited that land use has changed and it may cause changes in the weather patterns. *"Much of the land we used for agriculture is now subdivided into plots that serve as residential homes. The amount of land under tree cover has greatly reduced."*

A teacher added that they were very aware of climate change and that they even taught the concepts and implications at school. Further, hawkers and social workers attributed the heat waves experienced in Kenya as an effect of climate change and this exhibited their knowledge of climate change. Lastly, one social worker pointed out that periodic drought is an effect of climate change, and they witnessed hunger due to drought during the course of their work. *"We meet many people who are affected by malnutrition due to hunger caused by drought within some wards of Vihiga County."*

5.5.2 Consulting

This entails listening to and acknowledging feedback from the population, as well as providing feedback on how their concerns were addressed by the authorities. Public consultation in policy development was found to very limited. This distressing state of consultative public participation is even acknowledged by the county governor in a local television interview. *"The current practice, when there is public participation, a few known people are called. We have 'professional public participators'. They will go to every public participation event. While there they are told what is going to be done, just like it happens in a classroom. Afterwards they are instructed to say the program is fine."*

Forums for deliberative and constructive discussions are almost nonexistent, and with the few available politicians and county government officers almost always influence whatever the outcomes are. These exercises are as such, only to fulfill constitutional requirements and not to consult the public, as is noted by one resident. "*Public participation only exists on paper. In practice politicians and the government just use it to rubber stamp decisions they have already made on their own, to fulfil legal requirements for public participation."*

While the residents decried they were not consulted in the development and implementation of climate related policies, their responses however slightly varied based on the occupation. The farmers expressed modest satisfaction with the consultation through the regular interactions with agricultural extension officers, while the university students noted there was zero effort to consult them.

5.5.3 Involving

In public participation exercises, involvement entails working with the public to ensure their concerns are properly understood and taken into account. The overall involvement of the residents of Vihiga in the policy initiatives of the county government was found to be very low. The county government participants, however, were very positive about their initiatives to involve the public. One director noted that their disaster initiatives are community initiated. *"All our programs are prioritized by the communities, and we ask them what are the most prevalent disaster risks, list them and prioritize them. Afterward we ask them what are the responses to be undertaken to address them, and you see that's a very participatory process drawing from the communities and risk assessment reports."*

Apart from the farmers, the rest of the county residents cited that they have not been involved in any initiative in the past two years and as such, feel that they are not included. *"We feel left out yet the climate change issue seems to be an emerging issue that will affect all of us. We desperately hope for a change in the area of inclusivity."* According to them there are very few chances for public participation and they opined that the available opportunities are also not effective as they are limited on time and resources and hardly reach a wide area or population of the county.

The university students communicated that they are not involved as a demographic. This was due to mobility. It happens that there are sections of the population that stay in Vihiga County but study or work outside of Vihiga County. Such sections of the population feel left out. *"We stay in Vihiga County but commute to Kakamega County for university studies. Because of that, we may not be involved in the development and implementation of climate related policies that would have been engaged with tertiary institutions. We greatly feel left out, and this plays a role in our contribution."*

Opportunities for the involvement of vulnerable groups were observed to be very limited, as one researcher opined that it could either be deliberate or a lack of knowledge on the part of the county government on how to do so. *"The county government does not address equity and inclusivity, and this is possibly due to lack of the knowledge to do so, or a deliberate inconsideration of vulnerable groups such as women, children, the disabled, and low-income county citizens."*

It was also noted that these opportunities could be limited owing to the public engagement participation exercises being very costly and time consuming, and thus resulting in final decisions on policy issues that could differ from the resident's interests portrayed in the community outreach programs.

5.5.4 Collaborating

This encompasses endeavors to cooperate with residents in the entire policy process right from decision making all the way to implementation. The county government was observed to focus more on collaboration with external stakeholders, while doing very little to get insights from the local community.

There was however, found attempts to incorporate local wisdom in rain forecasting. A county government director noted their efforts to incorporate rain predictions from a local

community known for predicting rainfall patterns in their reports which are then disseminated to the larger population. *"The Nganyi community who can predict rainfall patterns 'called rainmakers' and their information is usually incorporated in our climate outlook forums. For the long rains season we give farmers advisories on the weather and what actions they can take, and we usually incorporate indigenous knowledge in giving such advice to communities."*

The local communities, also on their own, have tried to initiate community forest protection measures and sought support from the Kenya Forest Service and county government. The Abanyole subtribe for instance has preserved the 12km^2 Omumbwa forest for over a century as a cultural shrine, with villagers forbidden from setting foot in the forest. The community recently developed bylaws for conserving this forest, which were then endorsed by both the county and Kenya Forest Service. While this conservation is mostly a cultural practice, it has also provided ecological balance essential in the mitigation of climate change and its impacts.

The researchers we interviewed however were of the view that integration of local wisdom and traditional knowledge was nonexistent. Respondent 7 local for instance, opines that *"local knowledge is hardly considered and there are no local successful integration highlights that I can note."*

5.5.5 Empowering

This entails enhancing the capabilities of the local populations to actively participate in decision making. Informants from the county government believed that adequate measures had been taken to empower the public, especially in project initiation. *"We have implemented 12 community prioritized climate projects so far, and we have built the capacity of various entities within the communities of Vihiga including county government, departments and community members to be able to mobilize, plan, and implement CC prevention response programs."*

The county government was found to have done well in facilitating inclusivity at the grassroot level and institutionalizing climate action through the creation of ward climate change committees in every ward. These committees are mandated to help raise community awareness and help monitor program implementation at the ward level. These committees are comprised of locally elected members to represent all groups at the community level, as noted by respondent 1. *"These are the governance structures for climate change at the grassroots levels, they comprise of 6 community members and 2 government officers. They competitively*

come to office through elections and they are mobilized according to different interest groups around the wards; first is the men, women, PLWD, religious organizations, the elderly and the youth. Their role is to mobilize communities to effectively respond to climate change and they serve as a linkage between the government and the communities in matters of climate change and in practice they have done a very good work. We have capacity-built them, and they are doing exciting work in the wards to raise awareness on climate change matters and monitor projects being implemented within the wards." These Ward climate change committees also play roles in the identification and prioritization of climate activities that are to be undertaken in their communities, which accords the opportunity to prioritize their own climate problems and identify solutions.

5.5.6 Perception of the Effectiveness of Disaster Policy

Regarding policy effectiveness, both FGDs were fairly in agreement that the County Government needed to do more to make the policies effective. The county government employees perceived the county government's policies to be effective and well implemented. The other residents however viewed the county government policies as ineffective. The MCA in particular pointed out that it is a Kenyan culture to have the best policies in the world, but to fail terribly at implementing them. *"We are very good at policy formulation. Policies of any kind in the world can easily be traced to a researcher in Kenya who laid out a blueprint. However, when it comes to implementation of the policies, the process becomes confused and hindered by a lot of political interests."*

A high school teacher pointed out that the policies are not effective because there is no genuine goodwill from influential leaders. *"Most of the policies are formulated to tick a requirement on a checklist, but the true work is in effective implementation which is below average."* The researchers noted that the county government workers may be biased in their sentiments, as the effectiveness of policy implementation is their responsibility. They tended to subjectively say they were effective even if the policies are not. One social worker cited that the initiatives available are not effective, since if they were, there would be no deaths due to climate-change related drought.

5.5.7 Capability of Current Policies in Addressing Climate and Disaster Vulnerabilities

In a bid to find out the population's thoughts on whether the current policies adequately address the climate disaster risks and vulnerabilities, the subject question was voted for on a Likert scale in both FGD1 and FGD 2, and the policies' performance was rated from very bad, to very good. The results from FGD1 are as below.

Table 5.3 FGD1 poll on current policies addressing climate and disaster vulnerabilities

Likert Scale Description	Frequency
Very Bad	0
Bad	5
Average	1
Good	1
Very Good	0

From the vote given, it was clear that the focus group were of the opinion that the current policies did not articulately address their vulnerabilities.

For FGD 2 The results were as below;

Table 5.4 FGD2 poll on current policies addressing climate and disaster vulnerabilities

Likert Scale Description	Frequency
Very Bad	3
Bad	5
Average	13
Good	2
Very Good	2

From the two polls, it could be inferred that the population was of the opinion that the current policies did not sufficiently address their specific vulnerabilities. The population still expected more to be done by the county government, especially in the areas of public

participation so as to ensure the population takes ownership and takes a leading role in climate and disaster management initiatives.

In conclusion, public participation by the county government was found to be very poor. Even the county governor, in a television interview, admitted to having failed in public participation, acknowledging the haphazard nature with which such exercises are conducted. This points to a need for clear guidelines to facilitate it, and to educate the public on taking advantage of the public participation channels available to them.

5.6 Summary

This research examined the devolved implementation of climate-related disaster policies by Vihiga county in Kenya, with an emphasis on alignment with the Sendai Framework's priority areas, public participation, and some of the constraints and influences on disaster policy implementation exercises.

Vihiga's proactive adoption of disaster management legislation contrasts with the national government's sluggish progress in the enactment of the same. That notwithstanding, public participation is limited by the absence of proper avenues for public participation, the hierarchical system of public administration, and overall reluctance to engage freely with researchers and the public by county government officials. Political influences such as favoritism, corruption, lack of goodwill, and leadership struggles have a substantial impact on the success of policy implementation. Furthermore, the county government struggles with financial management, which affect technical and institutional capacities for disaster management.

External stakeholders including; private sector entities such as the media, locally based NGOs, scholars based in local educational institutions all play important roles in building community resilience for DRM. Their impactfulness however, is limited by the low effort on the part of the county government to fully incorporate them in local disaster management policy planning and implementation. Obstacles in both vertical and horizontal collaboration, amongst the climate and disaster management agencies impede disaster risk reduction efforts.

In general, the research observes that the efficacy of disaster management policies at the grassroots level is influenced by a number of interconnected factors, including governance system dynamics, policy making and implementation, and public participation. While substantial attempts have been made to conform with international standards such as the Sendai Framework, significant hurdles persist, particularly in terms of understanding the nature of disaster risks, collaboration, and investments resource allocation for DRM. In order to optimize the impacts of disaster management policies at the county government level, ensuring cooperation, long term political commitment, strengthening institutional policy capacities, and enhancing public participation are very essential.

CHAPTER 6

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

This chapter briefly summarizes the main findings and discussions based on the research objectives and literature reviewed. It also provides conclusions and recommendations for future policy implementation and research.

6.1 Summary of Key Findings

This study investigated Vihiga County's implementation of climate-related disaster management policies. By carefully investigating decentralized policy implementation exercises, public participation, and the incorporation of the Sendai Framework, essential insights, and systemic issues, they highlighted the difficulties of decentralized policymaking and implementation. The results present a balanced view of the current policy environment, pointing out both areas of strength and those needing fine-tuning.

The study's examination of devolved policy implementation found a praiseworthy effort by Vihiga County to address disasters linked to climate change, as evidenced by the establishment of regulatory, legislative, and institutional structures. Vihiga has built a broad disaster management regulatory structure, coordinated by the County Disaster Management Unit, in accordance with the Disaster Management Act of 2019. This Unit is constituted comprises of the Disaster Management Committee and the Secretariat that oversees its everyday activities. Disaster management policy initiatives include the disaster management plan, and conducting vulnerability assessments. Local disaster management in Vihiga has benefited considerably from decentralized governance. Despite the national government's overriding power, residents and local government leaders were supportive of decentralized disaster management. Its inclusion in the County Integrated Development Plan (CIDP), and with a 2% annual budgetary allocation to disaster management also go to show prioritization of disaster resilience by the county government.

In terms of the key causes of policy failure under investigation, politics emerged as the most influential. Political meddling, corruption, and the absence of political goodwill had a substantial impact on policy success. In terms of overambitious policies, unrealistic targets were observed in relation to available resources, and the presence of several overlapping policies caused prioritizing and alignment issues for implementers. Gaps in multilevel implementation were identified, including an unclear division of responsibility between the national and county levels, which often leads to inefficiency and finger-pointing in the event of emergencies. Finally, collaboration gaps between county agencies and external stakeholders limit effective disaster management.

A number of observations about the key factors impacting disaster policy implementation outcomes in Vihiga County under investigation. In terms of the balance between mitigation and recovery, a preference for mitigation over recovery from the respondents was noted however, very little had been done to improve in mitigation. In terms of policy capacity, both financial and technical, the county rated moderate to low. For financial capacity it was observed that the county government's problem was more of an expenditure problem than it was about availability of finances. A technical human resource capacity was found, however, interestingly the county government spent 44 percent of its annual budget on employee wages, indicating probable overstaffing.

External stakeholders including researchers, NGOs and the media play a critical role in disaster management activities. While these stakeholders are essential in building community resilience through awareness campaigns, technical assistance, and communication, their actual involvement is very limited.

However, the delay from the national government in legislating on disaster management and the detachment of disaster governance and climate change in policy, despite their close linkage, pose substantive hurdles in developing consistent approaches.

The findings uncovered substantial deficiencies in grassroots public participation in climate and disaster management initiatives. Despite some noticeable public participation efforts in informing, consulting, involving, collaborating, and empowering the population, the study found significant areas for improvement. The dissemination of information to the public is rather average, relying primarily on radio, which reaches rural populations. In Vihiga County, public consultation on policy development is very limited. Public consultation exercises are often just to fulfil formal requirements, and with little

concern for collecting public input into policy decision making. Overall, citizens report a lack of genuine consultations. The public's involvement in disaster management is minimal, and many residents feel left out from policy initiatives. Efforts to collaborate with communities are limited, despite some attempts to incorporate indigenous knowledge, such as local rainfall forecasts. The county government also prioritizes external collaborations over engaging their residents in policy development and implementation. In terms of empowering communities to participate in policy implementation, Vihiga has done well by institutionalizing initiatives such as Ward Climate Change Committees.

Residents are however, critical of the overall success of disaster measures in increasing disaster resilience, while government officials perceive it positively. Most respondents also believed that present policies are inadequate in address climate and disaster vulnerabilities. These gaps necessitate more inclusive and participatory policy processes, particularly considering that the impacts of climate-related disasters are localized.

Regarding incorporating the Sendai Framework for Disaster Risk Reduction, the study found noteworthy efforts and shortcomings by Vihiga County that affected their policy commitments. Some of the initiatives taken to increase the understanding of disaster risks include disaster risk assessment from the top administration, however the policy implementers viewed that little had been done to improve the understanding of disaster risks. Vihiga works with both the national and other county governments to improve disaster risk governance. However, there is still a lack of cooperation among county governments' disaster management and climate agencies. Investment in climate related disaster risk reduction is mostly focused on water-related projects, however very little efforts have been made to entice private sector financing. Current disaster preparedness capacities are also inadequate, however county government officials indicated that they were focusing on creating an early warning system and disaster response plans.

While considerable endeavors have been made to develop institutional frameworks and strengthen collaboration for disaster governance, the study identified an urgent need for increased investment in disaster risk reduction and unifying disaster mitigation and response processes.

The study emphasizes the need for more inclusive governance approaches to remedy the shortcomings in public engagement, which was the most prominent theme.

Efforts by the Vihiga county government to address the complexities of managing climate-related disasters are encouraging. However, the findings highlight the need for more vital collaboration, capacity building for better implementation, and enactment of policies responsive to the population's unique needs.

6.2 Theoretical Discussions

The findings show that Vihiga has made fairly robust efforts in building legislative, policy, and institutional frameworks for managing climate change and disasters, demonstrating a commitment to addressing their challenges. By enacting their disaster management bill, the county government has gone ahead of the national government, which still needs national legislation for disaster management. However, when the national disaster management law comes into effect, county governments will be obligated to comply with and implement its provisions, even though the delay was on the part of the national government. This underscores the importance of consensus on common issues and its potential implication on devolved public administration systems.

Much of Vihiga's efforts in climate action and environmental conservation are primarily attributed to the current governor, a renowned environmentalist and climate action advocate. While this is very beneficial, it, however, raises concerns about the reliance on individual leadership when considering the long-term sustainability of such initiatives. With the current governor's term ending in 2027, the continuity of these efforts might be affected if his successor does not share in the same commitment. Despite their interdependence, the separation of climate change and disaster management policy reveals a potential misalignment in strategy, which might hinder climate disaster resilience. The effectiveness of a single comprehensive or separate policy framework for climate change and disaster management could be an area for further research.

From the reviewed literature, combining the top-down and bottom-up approaches is essential for successful policy implementation. The top-down approach is often used in disaster management because it provides clarity of policy objectives and systematic coordination (Parkash, 2015). The bottom up approach applicability in disaster management is largely because it empowers stakeholder interdependence and interactions

(Rosdiana et al., 2019). Habumugisha and Mukashyaka (2023) favour the synthesis method, but prefers the bottom up approach, holding that it is more appropriate to achieving effective disaster resilience.

Findings from Vihiga show a partial alignment with the synthesis approach that blends the other two approaches supporting partial validity as argued by. While the county has set defined policies and goals through legislation such as the Disaster Management Act and the Climate Change Fund Act, the success of implementation frequently relies on the discretion of frontline officers and public participation. This blend of approaches demonstrates the importance of combining the strengths and weaknesses of the top-down policy direction with bottom-up implementation input to attain disaster resilience.

6.2.1 Policy Implementation

The findings revealed the reality of the complicated nature of policy implementation involving the national and county governments, the behaviors of frontline policy-implementing officers, and the hierarchical nature of policy implementation in Kenya.

Implementation relies on the connections amongst multiple organizations and levels, and these connections need to be much close to optimal as possible, to avoid small deficits that could cumulatively affect the implementation process (Hill & Hupe, 2002). The national government's overall authority within a hierarchical top-down policy implementation system considerably impacts county governments' autonomy. Nji et al. (2022) similarly observe the predominance of national government agencies, particularly for disaster management, which they find to limit the responsiveness of policy exercises when adopted at the local level. This is further observed in the national disaster management policy of the Government of Kenya (2017), which bestows responsibility to the national government with little mention of the place of county government and other stakeholders. This reality emphasizes a need to balance ensuring countrywide consistency in policy initiatives and allowing for local flexibility in accordance with their respective needs. While the national government plays a vital role in giving general direction, limiting county governments' autonomy may impede their ability to tailor their approaches to local disaster and climate concerns effectively.

Public policy implementation entails the actions taken to achieve defined policy goals and objectives. There are two dominant traditional theories in policy implementation, that is the bottom up and the top down perspectives. According to Pressman and Wildavsky (1984) and Hill and Hupe (2002), the top-down approach emphasizes clarity of policy goals and a very hierarchical structure for policy implementation based on the aspirations of top-level policy makers. In their theorization they assume a clarity of goals and consistency of implementation down the implementation chain, which is contradicted in the findings about Vihiga. While the national government still maintains overall authority in setting the general policy directions, they have no authority to enforce implementation by county governments, from which implementation deficits arise, leading to a departure from policy objectives at the grassroot level.

The bottom up approach on the other hand, theorizes a more participatory policy implementation approach. Lipsky (2010) and Hudson (1989) also argues about the discretion and autonomy, wielded by street level bureaucrats and how this influences policy implementation outcomes. The findings from Vihiga confirm this assertion, with the county government enjoying their autonomy to make their own policies and implement them, independent from the national government. This has especially benefited disaster management, where the Vihiga county has adopted a disaster management legislation while the national government is yet to have a legislation for the same. Within the county government also, owing to policy multiplicity, frontline policy implementers often make tradeoffs on what policies to implement, that often results in discrepancies policy implementation outcomes. The findings also confirm van Meter and van Horn (1975) argument on interdependence amongst public servants across all levels of government in policy exercises. In areas of common interest cooperation between the county governments and national governments appeared nominal, while outside areas where common interest collaboration was lacking.

The county government is also very hierarchical in its operations, meaning that lower-level staff has to obtain higher approval for almost everything they do, which delays response times, especially in disaster management. This aligns with Lipsky (2010) who argues that bureaucracy encourages discretionary decision-making by frontline officers, which, while promoting innovation and responsiveness, also creates inconsistencies between policy goals and outcomes.

County government officials' reluctance to give interviews and their opposition to recording their interviews for further research analysis during data collection reflects more significant issues of transparency and openness in Kenya's government culture. This observation agrees with Rohregger et al. (2018), who similarly observe local gatekeeping of both access to information and the selection of beneficiaries of policy interventions by local authorities. Such difficulties impede research and evaluation and highlight the need for more robust measures to cultivate accountability and collaboration.

In general, the findings about decentralized disaster policy implementation in Vihiga county, largely reflect a blend of the earlier two traditional theories of policy implementation, which aligns with the synthesis policy approach. This approach as theorized by Elmore (2002) argues for forward and backward mapping in implementation, and by Sabatier and Mazmanian (1980) who suggest an approach that is responsive to the reality of a constantly changing policy implementation landscape. Disaster management in Vihiga county is characterized by guidelines and overall direction from both the national government, as well as from the county government itself. This demonstrates and integration of the top down policy directives and autonomy at the county government, in the overall effectiveness of policy implementation.

6.2.2 Policy Failure

As Hudson et al. (2019) points out, policy failure results from the divergence between policy aspirations and outcomes, and broadly classifies these causes into four; politics, overambitious policies, multilevel implementation, and uncollaborative policy exercises. Regarding political influences in Vihiga, the absence of political goodwill, reactive policy approaches, local political rivalries, recruiting based on political patronage and ethnicity, and corruption are all indications of the dominance of politics in driving policy failure. Multiple studies on policy implementation in Kenya similarly observe the influence of politics around the entire policy cycle. Baithili et al. (2019) and Rohregger et al. (2021) both observe the role of the overall influence of political climate and political economy in shaping policy outcomes. As such, there is a need to prevent policy implementation from political influences by addressing these challenges, and with corruption being the most significant problem, more robust anti-corruption policies and transparency programs will be necessary to restore public trust.

Overambitious policies were another undoing of the county government. Policy complexity, misalignment between community needs and policy formulation, and multiple overlapping policies confuse implementers, diluting attention and resources and negatively affecting policy implementation. Findings from Vihiga, concur with observation made by Nji et al. (2022) that Kenya's vulnerability to natural disasters can be primarily attributed to the complexity of its disaster policies, which are often perceived as overly ambitious and even contribute to disaster vulnerability. This highlights the need for realistic policy aspirations based on the available resources and community needs to ensure the policies developed are realistic and address the community needs. Going forward, streamlining policy exercises to ensure clarity and overall effectiveness will be vital.

Multilevel implementation characterized by the need for established structures and defined roles between national and local governments, especially with the absence of a national disaster legal framework, was observed to cause accountability and inefficiency concerns. Kinoti (2019) also notes an occurrence of mismatches and weaknesses in coordination between the national and county governments, which impede the effectiveness of disaster management initiatives. To address these challenges, clearly defining duties and responsibilities between the two government levels delineating roles and responsibilities will be required.

Effective policy implementation in decentralized systems necessitates strong coordination between the two levels of government and within the county government itself. The apparent weak coordination in Vihiga often leads to inefficiencies and a mismatch between policy design and implementation realities. As Kinoti (2019) similarly observes in a study on disaster management institutional collaboration in Kenya, they uncover vertical and horizontal collaboration gaps in a system characterized by mostly informal structures for interagency communication. Improving collaboration mechanisms could help close these gaps and promote a more coherent approach to policy implementation.

6.2.3 Influences on Disaster Policy Implementation Outcomes

The study analyzed four key factors influencing disaster policy implementation: the dilemma of prioritization between mitigation and recovery, policy implementation capacity, collaboration deficits, and external stakeholder involvement.

Disaster policy implementation in Kenya has raised concerns about balancing measures to reduce the impact of disasters and post-disaster recovery efforts. A weakness in overall disaster preparedness and response policy implementation efforts in Kenya is observed by Mutugi and Maingi (2011). Senaratna et al. (2014) emphasize the necessity of early warning systems that include vulnerable communities, while Rusli and Fitriatul'Ulya (2018) emphasize the government's responsibility to enhance community preparedness through structural and non-structural mitigation activities. The overwhelming preference for mitigation over recovery among Vihiga county government staff in the survey demonstrates a focus on prevention as the preferred disaster management strategy. This emphasizes the long-term benefits of mitigation in decreasing disaster impacts. However, the reported difficulty reconciling long-term mitigation programs with immediate disaster recovery indicates a strategic mismatch, indicating a need for closer evaluation to improve its efficiency and responsiveness. Given Kenya's long history of experiencing floods and drought disasters, it is imperative to establish a harmonious balance between mitigation and post-disaster rehabilitation. Makhanu et al. (2007) propose that the El Nio Emergency Project in Kenya, implemented following the 1997-1998 El Nio floods, will be a successful model for post-disaster reconstruction.

The survey findings on Vihiga County's disaster management capacities uncover a system dealing with various capacity shortcomings. The expenditure problems, with the majority of annual budget revenue going to recurrent expenditure, limit funding available for disaster management. The county struggles with technical human resource shortages despite 44% of budgetary revenue going to staff salary payments, which indicates inefficiencies in their labor structures. Githae et al. (2020), while studying the influences of human capital on disaster management strategies in Kenya, similarly observe a strong influence resulting from meager investment in employee training and professional development in the civil service. Furthermore, the lack of synergy and transparent project management frameworks exacerbates capacity constraints. These constraints hinder the county government's ability to successfully implement disaster management plans, indicating the need for structural and budgetary reforms to optimize resource allocation and improve efficiency in operations.

Analyzing the extent of external stakeholders' influence in Vihiga revealed that NGOs, academia, and the media play an essential role in disaster management activities.

Ochanda (2015) also noted the significant participation of non-state players in formulating Kenya's disaster risk reduction policy. The reluctance of local NGOs to disclose information on their engagements with the county government may reflect collaboration issues, but their vital role in facilitating community resilience efforts highlights their positive contribution. Kusumasari (2012) similarly observes the importance of NGOs in facilitating local support networks for disaster management alongside local communities and governments. The plan by Vihiga County to establish a climate change research center in collaboration with Kaimosi University exemplifies a strategic approach to incorporating scientific research into policymaking and implementation. As Mbiru (2019) also observed, researchers' involvement is essential in shaping policy decisions, providing capacity development training, and executing climate change programs. Furthermore, the role of local radio stations as a communication medium in disseminating climate change information emphasizes their importance in the success of disaster management initiatives. Ingabo (2018) observes the role of vernacular radio in disseminating local and scientific knowledge on climate change.

6.2.4 The Sendai Framework

The risk perception for climate disasters in Vihiga was relatively low, but the concern about climate change as a contributor to disaster risks was relatively high across all groups of respondents, supporting Kelman (2015)'s assertion on climate change being a subset of disaster risk. This could be due to the low historical occurrence of severe climate-related disasters or a high optimism that downplays disaster vulnerabilities. This supports O'Brien et al. (2006), argument for climate change as a direct cause for the long-term variability in weather patterns and the increasing frequency of severe weather events. The survey findings from the survey in Vihiga confirm a perception about the concerns about climate change as a potential contributor to disaster occurrences in Vihiga. While the county government makes efforts to integrate the Sendai framework into its climate and disaster management policies, the success of these endeavors still requires more work.

The Sendai Framework (United Nations, 2015) is directly mentioned in the county government's 5-year CIDP (County Government of Vihiga, 2023b), with plans laid out on how to attain some of its provisions. This aligns Vihiga's activities with the provisions of

the Sendai Framework, which prescribes the incorporation of its provisions into sectoral and development plans.

Regarding priority one, the county government's dedication to understanding disaster hazards was evident through its disaster risk assessments, land use evaluation, and mapping of disaster-prone areas. Such assessments are vital for well-informed planning and successful disaster risk reduction initiatives implementation. This supports Rahman and Fang (2019), who emphasize the importance of DRR policy initiatives informed by a multidimensional understanding of various risks, vulnerabilities, adaptive capacity, hazard types, and levels of exposure to them. However, the moderate ranking of the county government's prioritization of disaster risk understanding by county staff in the survey suggested a possible disparity between policymakers and implementers. The lack of involvement of implementers in the policymaking process may cause this divergence, indicating a need to involve implementers, as Elmore (2002) suggests is essential in the policymaking process. These findings align with Marchezini (2020) who emphasizes access to information as an important element in the understanding of disaster risks.

For Sendai Framework Priority 2, Vihiga has made progress in developing institutional frameworks and collaborating on disaster governance programs with the national government and other county governments. At the strategic level, the county government included disaster management in its 5-year development plan, adopted disaster legislation, and established a disaster management unit. Coordination between the top-level officers and frontline policy implementers, as well as between the county government's disaster management and climate units was observably weak, and thus impacting on policy success. This observation supports Marchezini (2020) argument about participation and collaboration as essentials for policy exercises. Further, the county government staff in the survey rated collaborative governance efforts of the county government poorly, indicating disorganization in interagency cooperation, which is essential for disaster management. This highlights a need for increased cohesion across the various county governmental agencies whose functions directly link to climate and disaster management.

For priority three, which focuses on investing in disaster risk reduction, Vihiga has made policy commitments to establish a disaster management fund, which is a commendable measure towards enhancing resilience. As noted in the Sendai framework prioritization of investing in disaster management stands to reduce the economic

implications of disaster occurrences (United Nations, 2015). Nevertheless, their implementer's perception of the low prioritization of investment in Disaster Risk Reduction (DRR) and the difficulties in mobilizing private investment clearly indicates a significant obstacle to improving disaster resilience in Vihiga. In terms of targeted investments, the county government directs most of its climate disaster interventions to rural water accessibility projects for the population, as noted by one director, but this overlooks other key hazard areas that could potentially cause disasters.

Regarding priority four, Vihiga has made policy commitments to ensure accountability and build back better for improved disaster resilience. In practice, however, several shortfalls are evident. These efforts have however fallen shy of the prescriptions in the Sendai framework (UNISDR, 2015), requiring up to date preparation of reports, plans and programs for preparedness and response. The county lacks a disaster early warning system, but plans are underway to develop one. The absence of clear post-disaster recovery plans and the deficient rating of Vihiga's readiness and response capabilities from the survey highlight crucial areas for improvement. Vihiga had conducted their risk assessment, which was complemented by national government assessments, which identified the significant hazards as changes in rain patterns and the advent of new crop pests that they can act on.

6.2.5 Public Participation

Vihiga appeared to have done poorly in public participation, per the examination based on the International Association of Public Participation IAP2 (2020) spectrum: informing, consulting, involving, collaborating, and empowering.

According to literature, keeping the population informed is a critical pillar in public engagement, serving as the first step in engaging the public by providing vital information on the disaster impacts of climate change and some of the measures being taken to address them (Paton & Johnston, 2001). The study observed gaps in this area, around the scope of the mediums used and their impacts on raising public awareness and understanding. Although radio is an appropriate primary medium for reaching the majority rural population in Vihiga, the disparities in awareness levels attributable to factors such as level of education and occupation suggest a need for climate and disaster information dissemination to be targeted for these specific groups. The poor understanding among the

uneducated population highlights the necessity for alternative; inclusive communication approaches that take into account literacy barriers to ensure that critical information is accessible to the entire population. The information gap could be bridged through the tailored dissemination of information that catered to the particular needs of each demographic. This would guarantee that the entire population, including those who are uneducated, are sufficiently informed and able to engage in subsequent stages of the policy process actively.

The findings regarding consultation indicate a public participation process marked by shallow involvement to satisfy legal obligations, which frequently neglects to solicit or integrate input from the public authentically. This finding supports Berke et al. (2012)'s assertion on the importance of public consultation in ensuring the effectiveness of disaster policy formulation and implementation. There are concerns in Vihiga over the credibility and reliability of the information obtained from public consultation initiatives due to political influences and the domination of a few people in public consultation exercises. This lack of engagement is especially troubling for all the other groups, apart from the farmers, that feel left out. This suggests a need for more open and inclusive ways of public participation that actively seek and value the input of all groups.

Public involvement in policymaking and implementation exercises is essential for cultivating a feeling of ownership of policy outcomes among the population. The disparity between officers from the county government, who give a favorable assessment of their efforts, and the population feeling they need to do more to involve them underscores a substantial deficiency in public involvement. This supports King et al. (2015)'s views that government workers evaluate policies via conventional procedural perspectives, but the wider population perceives them on the basis of their involvement and actual impacts. Vulnerable groups, women, children, the elderly, and the physically challenged are also a significant demographic that has been largely excluded. Issues of mobility, those that reside in Vihiga but commute to other places for work and education, and their implications on public involvement are also areas for consideration by the county government. To address this gap, there is a need to make a concerted effort towards implementing more flexible and inclusive involvement initiatives, such as employing digital mediums such as social media platforms to reach residents who commute for work and education in other places across the country.

Collaborative governance is very essential to the success of disaster management exercises (Kapucu & Garayev, 2011). Although Vihiga County has made some attempts to collaborate with local communities by somewhat integrating local knowledge, such as the traditional rainfall prediction techniques from the Nganyi community, in their county government climate outlook, these efforts need to be more consistent and generally implemented as per local researchers. This indicates a misalignment between the county government efforts and the views of researchers regarding collaboration. It is necessary to establish organized structures that properly acknowledge and incorporate local knowledge into policy formulation and implementation to enhance collaboration. Collaboration can be enhanced by creating clear frameworks for collaboration and developing joint government and people initiatives.

Empowerment represents the highest level of public participation, where the community is bestowed with agency and resources to directly impact policy results or even take independent actions to build their resilience. Establishing ward climate change committees in Vihiga is a praiseworthy measure to formalize grassroots participation. However, to fully empower these planning committees, they ought to be granted substantial authority and capacity to affect climate and disaster policy implementation effectively. This finding supports, Benson and Twigg (2007), who similarly suggest public participatory tools including public empowerment as a tool for building community resilience and disaster policy making and implementation.

Based on the levels of public participation, the general perception of the constituent climate and disaster management policies' capability to address vulnerabilities by the public could have been higher. This reveals a stark disconnect between policy objectives and outcomes, mainly attributable to public participation and other policy implementation shortfalls.

6.3 Conclusion

The study explored decentralized disaster policy implementation, using Vihiga County in Kenya as a case study, with significant emphasis on; the complexities of policy implementation, the incorporation of the Sendai Framework and public participation.

Based upon the findings, this research makes valuable contributions to the field of decentralized disaster management as follows;

6.3.1 By Way of a Case Study, the Research Contributes to a Better Understanding of Decentralization in Building Grassroot Disaster Resilience if Properly Leveraged

From the exploration of literature, the major approaches to policy implementation, and the major influences of disaster policy implementation and causes of policy failure, the following challenges in decentralized disaster policy implementation are identified;

6.3.1.1 Resource allocation and budgeting: It was noted that climate change adaptation and mitigation efforts at the county level faced financial resource limitations that posed significant challenges to policy implementation. The county government needs to prioritize disaster management, leading to insufficient funding for disaster-related projects and programs.

6.3.1.2 Institutional Capacity Problems: Many county government personnel need more expertise for efficient disaster management and climate adaptation. Regarding institutional capacity, rigid organizational structures and bureaucracies were observed to delay emergency response times.

6.3.1.3 Weak Monitoring and Accountability Mechanisms: A lack of clearly defined policy protocols makes monitoring and evaluation for accountability purposes easier. Monitoring systems and accountability mechanisms must be improved to track progress and identify gaps.

6.3.1.4 Weak Community Engagement and Public Participation: Local communities, civil society organizations, and other stakeholders' meaningful engagement and participation in climate policy development and implementation processes in Vihiga County are weak. Limited awareness, communication channels, and mechanisms for stakeholder engagement inhibit efforts to build community resilience and mobilize grassroots support for climate action.

6.3.1.5 Weak Institutional Collaboration and Coordination: Institutional synergy in the county needed to be stronger observably. The climate change and disaster management agencies, for instance, whose duties and obligations closely align with DRM, tend to operate in silos and with their activities largely uncoordinated. Upon a disaster, these

agencies are likely to respond independently, posing coordination and accountability problems.

6.3.1.6 Low uptake of technology in disaster management: The county government's technological capabilities to combat climate change and address disasters are minimal. Vihiga and Kenya, in general, both lack data centers for disaster management, which are essential in recording and keeping track of disaster hazards and listing technical and specialized personnel.

6.3.2 The Study Contributes a Nuanced Understanding on the Place and Importance of Public Participation in Disaster Management

The study highlights the weak public participation efforts in Vihiga county, as a key shortcoming in disaster management exercises. Through examination based on the IAP2 public participation spectrum, a viable framework for effective public participation is recommended. The study also underscores the importance of public participation in building public support for government initiatives, and emphasizes the need for collaboration with other external stakeholders in crafting generally accepted policies and implementation initiatives. The incorporation of local knowledge is also observed to provide an avenue for public input into policy initiatives.

6.3.3 The Study Also Examines the Incorporation of the Sendai Framework in Local Governance Contexts, Which is an Essential Area for Disaster Management

Through investigating the efforts made by Vihiga county in implementing the DRR guidelines in the Sendai Framework, stands to enhance grassroot resilience. Although indirectly, several of Vihiga County's efforts correspond with the Sendai framework in terms of enhancing disaster risk understanding, disaster governance, disaster financial mobilization, and disaster resilience and recovery. Decentralization thus adds another level to disaster governance, supplementing national government efforts and resulting in increased grassroot disaster resilience.

6.4 Policy Recommendations

The following recommendations are made to remedy the identified challenges upon reviewing academic literature and cross-examining the data collected during the research.

6.4.1 Improving Resource Allocation and Budgeting

Strengthening budgetary processes and resource mobilization strategies could be essential to addressing this challenge. Direct budgetary allocation towards disaster management activities is highly recommended to ensure disaster financing availability. Austerity measures to cut down on unnecessary spending on recurrent expenditure and clearance of pending bills will also be essential to freeing up the required financing for climate and disaster management in the future.

6.4.2 Capacity Building and Strengthening Institutions

Professionalization of disaster management by operationalizing agencies to attract and retain disaster management experts is recommended. Establishing continuous and comprehensive training initiatives targeting both technical and administrative competencies, as well as disaster management drills, is further recommended. There is also a need for collaborative education initiatives amongst residents, the county government, and other non-state stakeholders to exchange innovative approaches and best practices.

Institutions need to restructure and build their capacities to become more flexible and responsive to address institutional capacity, rigid organizational structures, and bureaucracies. More emphasis should also be placed on enhancing institutional preparedness, as the disaster management agencies needed more explicit operating procedures for DRM.

In terms of policy, existing policy frameworks will be continuously revised to adapt to dynamic needs and align with international best practices. These revisions will also need to provide clarity on the roles played by the respective agencies.

6.4.3 Strengthening Policy Monitoring and Accountability Mechanisms

Empowering oversight agencies by instituting clearly laid-out frameworks to track policy projects, monitor compliance, and ensure transparency is necessary. Emphasis on promoting ethical practice in civil service is also necessary. Further improved monitoring,

evaluation, and reporting mechanisms to assess the effectiveness and impact of climate change policies and programs at the county level are recommended. Enhancing monitoring and evaluation frameworks will be crucial for adaptive management and continuous improvement of climate and disaster policy implementation in the county.

6.4.4 Enhancing Community Engagement and Participation

Promoting inclusive and participatory approaches to policymaking and implementation is essential to address community engagement and participation gaps. The IAP2 public participation spectrum is recommended as a reference guide for public participation exercises. It is also recommended that more effort be made towards developing community resilience to disasters to speed up recovery and reconstruction efforts.

6.4.5 Leveraging Technology

While the county government maintains a geographical, technological service, it has yet to be fully utilized for disaster-prone area mapping and early warnings. If properly harnessed, this system could be especially beneficial for issuing early warnings and communication with the public.

6.4.6 Enhancing Institutional Collaboration and Coordination

Building unified communication and command structures guarantees a clear delineation of power and responsibility. Implementing this would optimize decision-making processes and improve the efficiency of collaborative operations, resulting in better resource mobilization and utilization and enhancing disaster response.

Additionally, more collaborative partnerships with non-state stakeholders in private sectors and NGOs must be pursued. This can be done through joint ventures and by incentivizing their involvement.

6.5 Recommendations for Further Study

Based upon the research findings, the researcher makes the following recommendations for future study.

Further study on the integration of climate change and disaster management policies is recommended to better understand the possible advantages this could have over standalone policies. This could offer policymakers another alternative when deciding whether to pursue independent or comprehensive policies for closely related issues.

It is recommended that a comparative investigation of the effectiveness of devolved policy implementation across other counties in Kenya or even in other countries that have a similar devolved decentralized system of government to Kenya be conducted. This will be essential in identifying comparable implementation insights.

Further examination of policy sustainability and continuity of climate and disaster management policies beyond political regimes, with emphasis on insulating policies from changes in political leadership at county governments in Kenya, could also be done.

Additional research could also explore literacy levels, their impacts on public participation, possible remedies to improve public literacy, and the potential benefits of policy implementation.

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