

**An Investigation into the effectiveness of
climate-related policies on disaster
preparedness and response in Zimbabwe.
The Case of Cyclone Idai in Chimanimani
District.**

RUNGA, ABEL

SUPERVISOR
Webersik, Christian

The University of Agder, [2023]
Faculty of [Social Sciences]
Department of [Global Development and Planning]

ABSTRACT

This study investigates the efficacy of climate-related policies on disaster preparedness and response in Zimbabwe, concentrating specifically on the Chimanimani District during Cyclone Idai. This study is philosophically based on constructivist ontology, interpretive epistemology, and a qualitative methodology. The research focused on participants who have substantial or direct knowledge of the area under study. Using purposive and snowball sampling techniques, the study gathered a sample of 35 participants. Semi-structured interviews served as the main instrument for data collection. The research employed thematic analysis to interpret the data, which involved identifying patterns and themes. To validate the findings, the study used methodological triangulation, literature review, and theoretical frameworks, which broadened the understanding of the subject and offered a more thorough analysis of the research question/s. The theoretical framework was based on five approaches, including the Capability Approach and the Sendai Framework for Disaster Risk Reduction. The results revealed that Zimbabwe's policy framework, particularly the Civil Protect Act, concerning disaster preparedness and response, is centralized, vague, and covers a wide scope. Consequently, it fails to prioritize preparedness and response strategies adequately. The study also discovered that the policy framework relating to disaster preparedness in Zimbabwe does not adequately address the issue, focusing instead on disaster response, albeit insufficiently, and lacks clear provisions to support a robust response strategy. Nonetheless, the study found that the current policy framework, while not entirely sufficient to be deemed effective, does offer a rudimentary guide to disaster preparedness and response, and lays a foundation for the development of a more inclusive and robust policy framework in Zimbabwe. For short-term improvement, the study suggests amending the Civil Protection Act to include provisions that ensure policy framework effectiveness in disaster management and disaster risk reduction. In the longer term, the study recommends a careful review of the Climate Change Bill before its passage to avoid carrying forward the vulnerabilities found in the Civil Protection Act.

ACKNOWLEDGEMENTS

I'm deeply grateful to God the Almighty for bestowing upon me the strength, tenacity, and wisdom required to write this paper.

My sincere gratitude goes to my Supervisor, Christian Webersik, whose invaluable guidance throughout this long journey has significantly influenced this work. His benevolent criticism and yet constructive feedback have been instrumental in shaping this endeavor. Furthermore, I want to acknowledge and appreciate my lecturers and tutors in the Department of Global Development and Planning. The International office at the University of Agder also deserves a special mention for their support.

DEDICATION

I dedicate this research and work to my amazing and lovely mother and my late grandmother Mbuya Wadzingenyama, the unwavering sources of inspiration, support, and guidance in my academic journey, whose love and sacrifices have fueled my pursuit of knowledge and shaped the person I am today.

DECLARATION

I, RUNGA ABEL hereby solemnly declare that this research is my original work and affirm that it has not been submitted to this or any other University in support of any other similar qualification.

ABBREVIATIONS

AGRITEX – Agricultural Extensions

CDF – Community Development Fund

CP - Capability Approach

CPA- Civil Protection Act

DCP - Department of Civil Protection

DRM - Disaster Risk Management

DRR - Disaster Risk Reduction

ECM – Expand-Contract Model

EMA – Environmental Management Agency

EW – Early Warning

GoZ - Government of Zimbabwe

NCP - National Climate Policy

NCPF – National Civil Protection Fund

P-EWs- Participatory Early Warning Systems

PAR – Pressure and Release Model

SFFDRR - Sendai Framework for Disaster Risk Reduction

TM – Traditional Model

Table of Contents

ABSTRACT	<i>i</i>
ACKNOWLEDGEMENTS	<i>ii</i>
DEDICATION	<i>iii</i>
DECLARATION	<i>iv</i>
ABBREVIATIONS	<i>v</i>
CHAPTER ONE: INTRODUCTION	1
1.0 Introduction	1
1.1 Background and Rationale	3
1.2 Research Problem	5
1.3 Objectives of the Study.....	6
1.4 Research Questions	6
1.5 Geographic Study Area and Context.....	7
CHAPTER TWO: LITERATURE REVIEW	10
2.0 Introduction	10
2.1 Disasters	10
2.2 Disaster Management	11
2.3 Disaster Preparedness	14
2.4 The Role of Disaster-Related Policies on Informing Climate-Related Preparedness and Response Strategy	15
2.5 Impacts of Climate-related Frameworks in the Mitigation and Response to climate-related risks.....	21
2.6 Theoretical Framework.....	25
CHAPTER THREE: METHODOLOGY	41
3.0 Introduction	41
3.1 Philosophical Foundation.....	41
3.2 Research design	43
3.3 Target Population.....	45
3.4 Sampling Population.....	46
3.5 Purposive and Snowballing Sampling	46
3.6 Research instruments	48
3.7 Data Analyses.....	51
3.8 Ethical Considerations	52

3.9 Challenges and Risks.....	53
3.10 COVID-19 Preparedness Plan	54
3.11 Chapter Summary.....	55
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND DISCUSSION	56
4.0 Introduction	56
4.1 Demographic Information of Participants.....	56
4.2 The Nature of Interviews	58
4.3 LIST OF INFORMANTS	60
4.3 Department of Civil Protection (DCP)	61
4.4 Non-Governmental Organizations (NGOs).....	62
4.5 Environmental Management Agency (EMA), The Hydrological Services Department, Government officials.....	62
4.6 Key Themes and Analysis of Climate-Related Policies on Disaster Preparedness and Response.....	63
4.7 Resource allocation	63
4.8 Timely alerts	69
4.9 Evacuation procedures	75
4.10 Involvement of Citizens	82
4.11 Efficient emergency response	89
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS	97
5.1 Introduction	97
5.2 Research Findings and Recommendations.....	97
5.3 Theoretical Implications	101
5.4 Areas of Further Research.....	102
5.5 Summary and Intervention Strategies	103
REFERENCES	105
APPENDIX A.....	121
APPENDIX B.....	122

LIST OF FIGURES

Figure 1: Zimbabwe's DRM institutional framework	5
Figure 2: Disaster risk vulnerability map of Zimbabwe	7
Figure 3: The disaster (risk) management cycle (and typical phases it is composed of).....	12
Figure 4: The Capability Approach Revisited	27
Figure 5: The Sendai Framework for Disaster Risk Reduction Chart	30
Figure 6: Traditional Model.....	34
Figure 7: Expand Contract Model.....	36
Figure 8: Pressure and release model.....	38
Figure 9: Research Philosophy	41
Figure 10: Coordinating Structure of Civil Protection from National Level to ward level	61

LIST OF TABLES

Table 1:Frequency table showing gender, age, and level of education.	57
Table 2:List of Informants	59

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Climate change represents a substantial worldwide problem with considerable implications for our societies (Munich Re, 2018; Kunze, 2021). An array of research has emphasized the harmful influence of global warming on economic development, alongside the increasing regularity and severity of natural calamities (Kunze, 2021). Munich Re's (2018) data suggest that nearly half of the global damage from natural disasters can be attributed to tropical cyclones, with destruction exceeding billions of United States Dollars. Furthermore, Kunze's (2021) findings underscore the destructive power of tropical cyclones on a global scale. Nations in Africa, particularly those located south of the Sahara, are notably susceptible due to their geographical positioning, frequently falling victim to weather-related catastrophes (Klomp & Valckx, 2014). Specifically, Mozambique has experienced an increase in temperature of 0.6 C and a decrease in rainfall over the past 50 years (Arndt et al., 2012).

In 2019, the country suffered significant damages from two major successive cyclones, leading to losses amounting to USD 3 billion. The cost of recovery and reconstruction was projected to be around USD 3.4 billion (UNDP, 2019). Mozambique's geographical position and topography continue to heighten its vulnerability to the damaging effects of climate change (Arndt et al., 2012). The country's vast coastline, spanning 2,470 km, and its socioeconomic fragility increase its exposure to natural disasters such as tropical cyclones, recurring droughts approximately every three to four years, and storm surges along rivers and the coast (UNDP, 2019). This fragility increases the vulnerability of infrastructure, coastal agriculture, vital ecosystems, and fisheries to the detrimental effects of climate change (Relief Web, 2019). There is a growing body of scientific research indicating that climate change is likely contributing to the increase in tropical cyclone intensity and frequency that we are observing. Warmer ocean temperatures, driven in part by climate change, provide more energy for tropical cyclones to develop and intensify. In addition, the warming atmosphere is causing an increase in the amount of moisture in the atmosphere, which can lead to heavier rainfall and flooding associated with tropical cyclones (Knutson et al., 2019). One study found that for every 1-degree Celsius increase in sea surface temperature, the likelihood of a tropical cyclone reaching Category 3 or higher intensity increased by about 30% (Emanuel, 2017). Studies has noted the implications contributed by climate change in relation to an increase in the number of tropical

cyclones in certain regions, such as the North Atlantic (Knutson et al., 2019). In order to mitigate the effects of climate change on society and the economy, it is essential to understand the impacts of climate change. Natural hazards such as tropical cyclones, droughts, and floods continue to be a problem in Zimbabwe. Among these, flooding caused by cyclones stands out as one of the most prevalent and devastating occurrences, accounting for nearly half of all casualties resulting from natural hazards in Zimbabwe (Rana & Routray, 2018; Mhlanga et al., 2019). The devastating floods during Cyclone Eline in 2000 claimed over 700 lives, rendered more than 500,000 people homeless, and inflicted USD 1 billion worth of infrastructural damage in Zimbabwe and Mozambique combined (Wamukonya & Rukato, 2001). Recent tropical cyclones, such as Cyclone Dineo in 2017 and Cyclone Idai in 2019, also triggered flooding and inflicted immense suffering upon communities, giving rise to socioeconomic challenges (Kunze, 2021).

The district of Chimanimani experienced the impact of Cyclone Idai from March 14 to 17, 2019, resulting in strong winds and heavy rainfall that severely affected at least 50% of its population, estimated to be around 135,000 individuals residing in 15 out of 23 wards (UNICEF, 2019). The cyclone triggered landslides, as well as riverine and flash floods, leading to loss of life and extensive destruction of property and livelihoods. Reports by the Chimanimani District Development Coordinator revealed that Cyclone Idai claimed approximately 300 lives, left more than 325 people missing, and displaced around 4,000 individuals (Matsvange et al., 2020).

The occurrence of Cyclone Idai exposed policy and capacity gaps within Zimbabwe's disaster risk management (DRM) system. The magnitude of this disaster underscored the inadequacies present in both the national and local disaster risk management systems, as well as other community factors that amplify household vulnerability to hazards. Consequently, this study aims to address the knowledge gap by evaluating the effectiveness of climate-related disaster management policies within the Chimanimani district. The thesis of this study posits that climate-driven disaster preparedness and response mechanisms have proven ineffective in Zimbabwe, attributing this to weak institutions and inadequate disaster legislation that can exacerbate the impact of natural hazards in vulnerable communities located in disaster-prone areas, such as mountainous and coastal regions. Specifically, this study assesses how

Zimbabwe's deficient national disaster legislation and policies provided an opportunity for Cyclone Idai to impact the mountainous Chimanimani District to the extent that it did.

1.1 Background and Rationale

In the 21st century, there has been renewed global attention on the necessity for effective climate-related disaster preparedness. The Hyogo Framework for Action (HFA) was a global policy directive aimed at reducing disaster risks and promoting preparedness (Muzenda-Mudavanhu et al. 2019). However, the impact of this policy framework was limited, as many countries lacked the necessary policy and national frameworks for disaster preparedness and response. The Paris Agreement of 2015 is an example of a global initiative that sought to encourage nations to commit to combating climate change and its effects on society. Notably, the 2015 Paris Agreement stressed the need for collective efforts by nations to tackle climate change, recognizing that environmental disasters and climate change have significant economic implications on a country's fiscal status and overall development (Catalano et al. 2020; Hong et al. 2020; Ferrari and Pagliari 2021). Therefore, developing effective policy and legal frameworks for climate-related disaster preparedness remains a top priority for both developed and developing countries to establish functional legal structures that will guide the transformative agenda.

Globally, climate change and its associated impacts have become a significant concern, especially for developing countries like Zimbabwe, which are vulnerable to environmental disasters (Chipangura et al., 2021). Zimbabwe has experienced a series of environmental disasters, including floods, droughts, and tropical cyclones, resulting in loss of life and property (Mushore et al., 2021). Cyclone Idai, which hit Chimanimani District in 2019, was one of the most devastating disasters to have affected Zimbabwe, causing significant loss of life and property (Government of Zimbabwe, 2019). In response to these disasters, the Zimbabwean government has implemented several policies and legal frameworks aimed at mitigating the impact of disasters and promoting disaster preparedness and response.

One of the most significant policies aimed at promoting disaster preparedness and response in Zimbabwe is the Civil Protection Act (CPA) [Chapter 10:06] of 1989 (Mavhura, 2017). The CPA serves as the legislative basis for disaster risk management in Zimbabwe and is managed by the Department of Civil Protection (DCP), a division of the Ministry of Local Government, Public Works, and National Housing (MLGPWNH). The CPA provides a legal framework for

disaster preparedness, response, and recovery, including the establishment of disaster management committees at the national, provincial, and district levels (Mavhura, 2017). Despite the existence of the CPA, Zimbabwe's disaster management institutions face significant challenges in carrying out their duties, resulting in inadequate disaster preparedness and response.

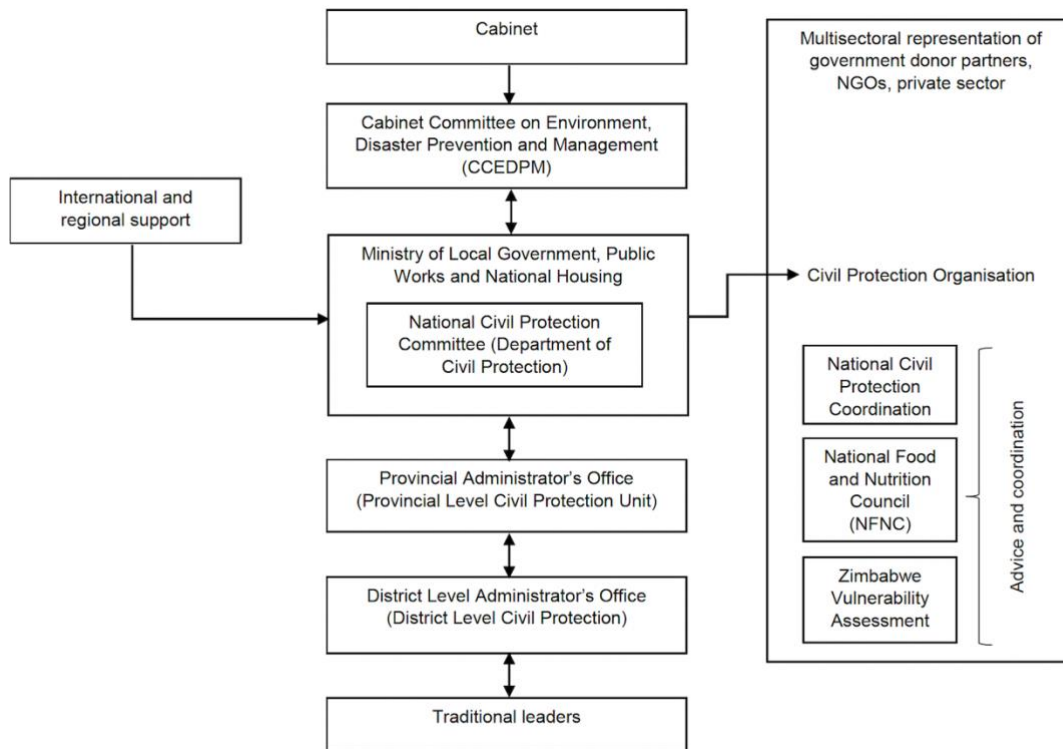
In addition to the CPA, Zimbabwe has also implemented several policies and strategies aimed at mitigating the impact of climate-related disasters. The National Climate Policy (NCP), launched in 2018, provides a framework for climate change adaptation and mitigation (Government of Zimbabwe, 2018). The policy outlines strategies for promoting sustainable development and reducing greenhouse gas emissions, among other measures aimed at addressing the impact of climate change. The NCP also recognizes the need to strengthen disaster preparedness and response mechanisms to address the increasing frequency and severity of climate-related disasters in Zimbabwe.

The Zimbabwean government has also implemented the Sendai Framework for Disaster Risk Reduction (SFDRR), a global policy framework aimed at promoting disaster risk reduction and resilience (UNISDR, 2015). The SFDRR outlines four priorities for action, including understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction, and enhancing disaster preparedness and response (UNISDR, 2015). Zimbabwe's implementation of the SFDRR has focused on strengthening disaster risk governance and enhancing disaster preparedness and response mechanisms through the establishment of disaster management committees and the training of first responders (UNISDR, 2019).

Despite the existence of these policies and legal frameworks, Zimbabwe's disaster preparedness and response mechanisms remain inadequate, as evidenced by the impact of Cyclone Idai in Chimanimani District in 2019. The disaster resulted in significant loss of life and property, highlighting the need for more effective disaster preparedness and response mechanisms in Zimbabwe. To address this gap, this study aims to investigate the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe, using the case of Cyclone Idai in Chimanimani District as a case study.

Figure 1: Zimbabwe’s DRM institutional framework

Management and coordination architecture of Zimbabwe’s disaster preparedness and response systems



Source: Government of Zimbabwe (2019)

1.2 Research Problem

The study investigates the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The global policy frameworks for climate change and disaster mitigation and response aim to enhance resilience and adaptation in different countries. There is a projection that in the future, climate natural-related disasters will significantly increase to unprecedented levels ranging from storms, droughts, floods, and hurricanes (Yaffa 2019). These climate change impacts will have a trickle-down effect on the already downtrodden populations which are mostly rural women (Shenggen et al., 2019). From 2000 to date, Zimbabwe has suffered numerous meteorological disasters which have left devastating impacts on the livelihoods and human population. For instance, cyclone Idai struck the country in 2019 exposing the country’s disaster preparedness and response strategies as many livelihoods were

disrupted and some communities are still recovering from the devastating effects of the cyclone (Chatiza, 2019). Despite the presence of disaster risk management policies in the country, it appears that there are weak social protection schemes, early warning mechanisms, poor disaster funding, and weak coordinating mechanisms and regulations for proactive measures on climate-related risks. There is a gap in terms of empirical research on the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani area. The study, therefore, seeks to plug the gap in the body of knowledge by assessing the effectiveness of climate-related disaster management policies in the Chimanimani district. The thesis of the study is that climate-based disaster preparedness and response mechanisms have not been effective in Zimbabwe.

1.3 Objectives of the Study

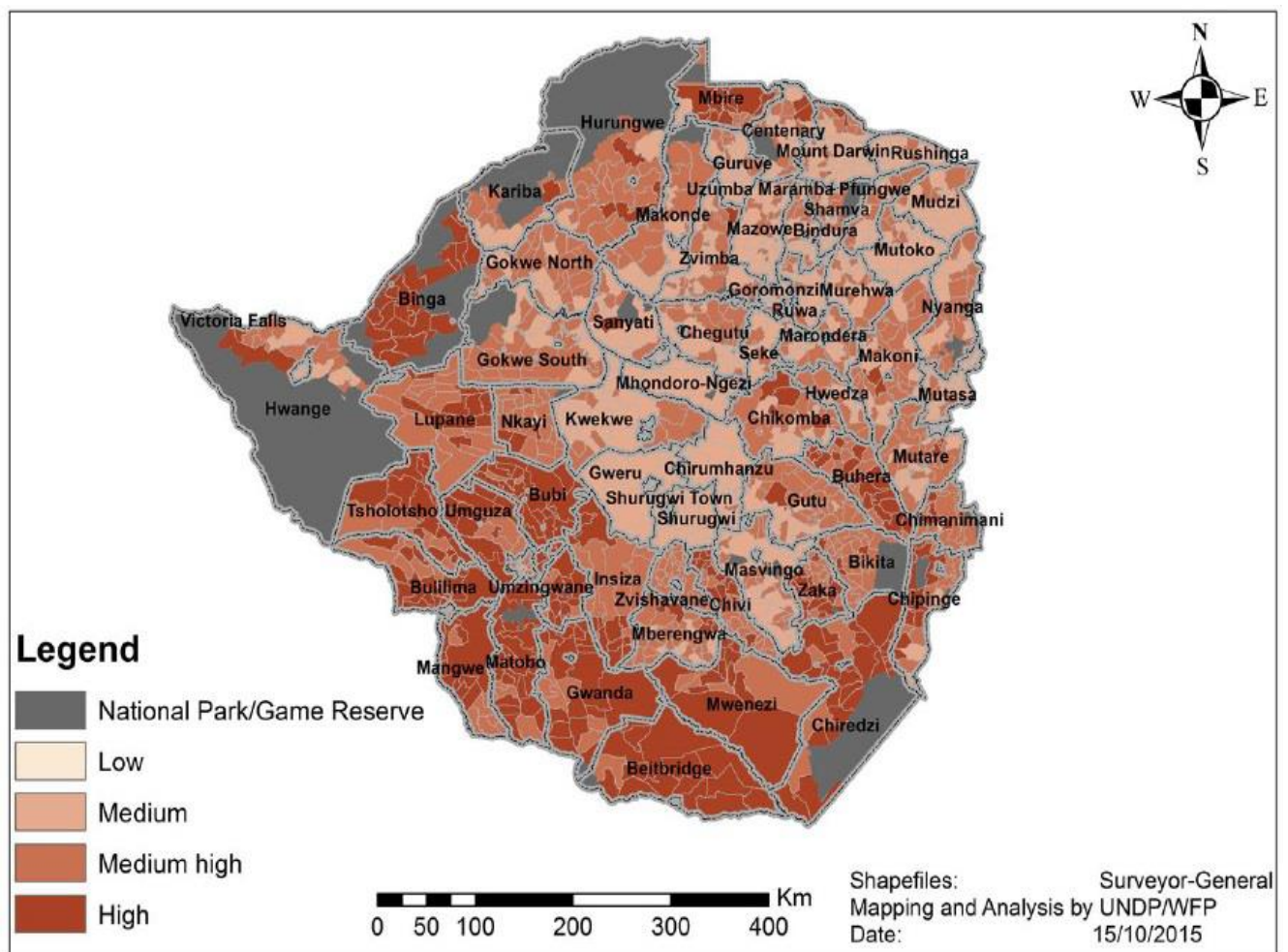
- To explore the disaster-related policies relevant to disaster preparedness and response in Chimanimani District.
- To assess the effectiveness of the disaster-related policies on disaster preparedness and response in the Chimanimani District.
- To assess the challenges affecting the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District.
- To find out possible intervention strategies aimed at policy review improvement in Zimbabwe.

1.4 Research Questions

- What are the disaster-related policies relevant to disaster preparedness and response in Chimanimani District?
- How effective are the disaster-related policies on disaster preparedness and response in the Chimanimani District?
- What challenges are affecting the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District?
- What are the possible intervention strategies aimed at policy review improvement?

1.5 Geographic Study Area and Context

Figure 2: Disaster risk vulnerability map of Zimbabwe



Source: UNDP (2016)

Situated in Southern Africa, Zimbabwe is an inland nation, sharing borders with multiple countries including Mozambique to the east and northeast, South Africa to the south, and Botswana and Zambia to the west and north respectively, and touching Namibia at the Caprivi Strip. Zimbabwe's population was roughly 11 million in 2002, with an additional 4-5 million Zimbabweans living abroad (Musarurwa & Lungu, 2016). One of the districts in Zimbabwe, Chimanimani, lies in the eastern part of the country, sharing its border with Mozambique. According to the 2012 Census data, Chimanimani has roughly 135,000 persons and covers an area of approximately 4,417 square kilometers (UNICEF, 2019). The topography of the area is characterized by high mountain ranges and deep valleys, making it vulnerable to natural calamities like landslides, flash floods, and droughts. Chimanimani District bore the brunt of

Cyclone Idai's fury, with intense rains and violent winds causing floods and landslides that led to significant loss of life and widespread destruction, including homes, farmland, schools, and transportation infrastructure (Chatiza, 2019). This devastating event underscored the urgent need for more effective disaster risk reduction and management in areas prone to such disasters. To address this, a study was conducted in Chimanimani District to identify gaps in the national and local disaster risk management systems and laws that may have exacerbated the disaster (Matsvange et al., 2020). The research findings emphasized that weak institutions and insufficient disaster legislation could potentially heighten the impact of natural disasters in vulnerable, disaster-prone communities.

Efforts are now in progress to enhance disaster risk reduction and management in Chimanimani District and other similar regions in Zimbabwe. The government has devised a National Disaster Risk Management Framework to steer disaster management initiatives (World Bank, 2019), and community-based disaster risk reduction programs have been launched to equip local communities with the tools needed to identify and mitigate their own disaster risks (UNDP, 2019). The climate of Chimanimani is categorized as warm and temperate (Government of Zimbabwe, 2016; Chingombe & Musarandega, 2021). The region's topography is distinguished by its mountainous terrain, featuring Mount Binga, Zimbabwe's second-highest peak at 2440 m above sea level. With high average annual rainfall and being directly in the path of tropical cyclones from Mozambique and the Indian Ocean, the region is highly susceptible to cyclones (DCP, 2013). Despite the region's rough topography, with numerous peaks and ravines acting as natural barriers to the movement of tropical cyclones, Cyclone Idai significantly impacted the eastern highlands of Chimanimani due to heavy localized rainfall. The region's soil is highly productive agriculturally, partly owing to its location in agroecological Region 1 (Musasa et al., 2015; Chingombe & Musarandega, 2021). The soil is well-structured and consolidated, minimizing erosion and supporting farming even on slopes and hilly terrains.

However, scarcity of suitable land has led to the establishment of communities on dangerously steep slopes and near waterways, putting them at risk of landslides. In some cases, local authorities have sanctioned settlements in clearly high-risk areas. Logging, housing, infrastructure development, and other activities on landslide-prone slopes are on the rise. Loss of tree cover due to illegal deforestation activities for agricultural purposes has been significant.

The Environmental Management Agency (EMA) reported in 2019 that the areas most impacted by water-related issues were typically situated in floodplains, near water bodies, and on steep slopes. Poor watershed management in the district poses a significant threat to biodiversity, characterized by low river volumes, poor forest cover, rangeland degradation, and heightened vulnerability to floods and landslides (Munsaka et al., 2021). Planting non-native trees near river sources is also contributing to decreased water volumes. Evident land degradation is marked by soil compaction, increased water run-off, loss of soil fertility, and diminished vegetation cover. Furthermore, there is noticeable cultivation near stream banks surrounding several rivers and river sources.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

Zimbabwe has been grappling with a rise in both the frequency and intensity of natural disasters due to the impact of climate change. In March 2019, Cyclone Idai struck Chimanimani District, leading to tragic loss of life, infrastructure damage, and the displacement of numerous individuals. In response, the government of Zimbabwe has implemented a range of climate-related policies with the objective of enhancing disaster preparedness and response. This literature review delves into an examination of the efficacy of these policies in the specific context of Cyclone Idai.

Frequent and severe disasters caused by climate change require proactive policy responses aimed at building resilience to reduce vulnerability to future disasters (Vanhala et al., 2006). The effectiveness of Zimbabwe's climate-related policies in addressing climate change concerns remains uncertain. According to Zhang et al. (2020), human activities such as urbanization and industrialization have contributed to increased rainfall intensity and frequency in central-western China. This study highlights the importance of considering human activities when formulating climate-related policies. Similarly, Ren et al. (2020) found that human activities, specifically greenhouse gas emissions, have led to rising temperatures during a night-time heatwave in northeast China. The study emphasizes the crucial need for climate-related measures aimed at reducing greenhouse gas emissions. Overall, these studies underscore the significance of considering human activities and their impact on climate when developing effective disaster management and response systems.

2.1 Disasters

Disaster is a complex and unavoidable phenomenon that causes significant suffering and strain on human societies (Tierney, Bevc, & Kuligowski, 2006). The term has been subject to the ongoing debate surrounding its definition, with some scholars defining it based on practical terms, while others focus on its theoretical aspects (Comfort, 2015). Fritz (1961) as cited in (Merton & Nisbet, 1976) defines a disaster as a severe danger that occurs within a society, leading to losses for its members. O'Leary (2004) describes it as a state or condition destabilizing a social system. Tierney et al. (2001) propose a view of disasters as external agents that attack and disturb a social system, a manifestation of vulnerabilities in society, and a phenomenon rooted in uncertainty. CRED (2018) shares a similar notion, defining a disaster

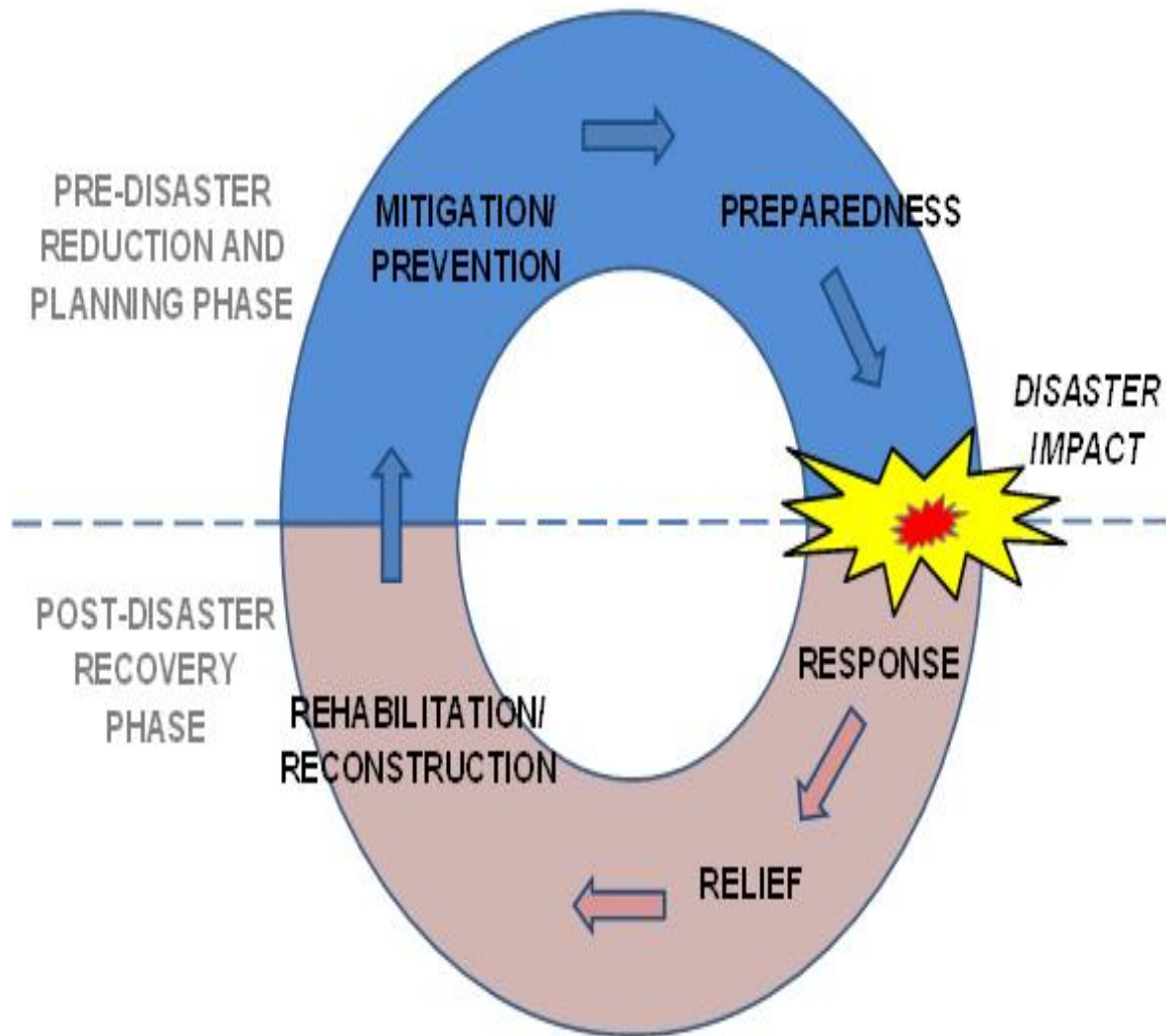
as a situation where more than ten people are killed and hundreds are affected, there is a declaration of a state of emergency, or an appeal for international assistance is made. These definitions highlight the undesirable and yet inevitable nature of disasters, which can disable socio-economic systems within communities. Therefore, understanding the concept of disaster is crucial in developing informed preparedness, and response efforts by all stakeholders.

2.2 Disaster Management

Disaster management encompasses three crucial stages thus preparation, response, and recovery. Given the escalating impact of climate change, disaster management has gained substantial significance as an indispensable element in realizing sustainable development within the country. The effectiveness of climate-related policies on disaster preparedness and response has come under scrutiny in Zimbabwe, particularly considering the devastating effects of Cyclone Idai in the Chimanimani district. The story of Cyclone Idai in Chimanimani district exemplifies the necessity for efficient disaster management techniques capable of mitigating the effects of climate-related disasters.

Marchau et al., (2019) proposed that disaster management encompasses the activities of planning, organizing, coordinating, and implementing measures to avert, prepare for, respond to, and recuperate from both natural and man-made calamities. The discipline of disaster management is focused on managing and evading risks and generally involves four stages, namely Mitigation, Preparedness, Response, and Recovery (Bosher & Chmutina, 2017). The primary objective of this practice is to diminish the adverse effects of disasters on human lives, built environments, and natural habitats. To ensure successful disaster management, it's crucial to have a collective effort from different parties such as government institutions, non-governmental bodies, community organizations, and individuals (Habte et al., 2018).

Figure 3: The disaster (risk) management cycle (and typical phases it is composed of)



Source: (Bosher & Chmutina 2017)

Collaboration models that involve the active participation of government agencies, non-governmental organizations, and community groups have been shown to be effective in disaster management (Pasaribu & Adela, 2019). Chanza et al. (2020) highlights the need to close the gaps in disaster management and response, drawing on local experiences with Cyclone Idai in Chimanimani. The authors emphasize the importance of local knowledge and experience in disaster management and underscore the need for disaster risk reduction measures that prioritize the needs of vulnerable groups. Similarly, Dube (2018) emphasizes the need for effective disaster management strategies in Zimbabwe, specifically the use of models to deal with hazards, disasters, and the importance of integrating disaster risk reduction measures into

development planning, and the need for a comprehensive disaster management framework grounded in local knowledge and experience.

Participatory Early Warning Systems (P-EWS) has emerged as an important component of disaster management. P-EWS involves the active participation of communities in identifying and responding to early warning signs of impending disasters (Marchezini et al., 2018). The goal of this strategy is to foster self-sufficiency in communities when dealing with their own disaster readiness and action. A comprehensive grasp of the awareness, mindsets, and activities of employees is essential for competent disaster management, given their pivotal role in disaster interventions (Habte et al., 2018). Mavhura (2016) critically examined Zimbabwe's Civil Protection Act, emphasizing the necessity of a legal and institutional structure conducive to proficient disaster management. His review shed light on the challenges and prospects the existing law and institutional arrangement in Zimbabwe offer and advocated for a shift towards a more preemptive and community-inclusive approach to disaster management. Correspondingly, Schneiderbauer and Ehrlich's (2005) investigation into population density approximations for disaster management in rural Zimbabwe underlined the value of accurate and current data for disaster readiness and reaction.

Efficient disaster management requires a cooperative and interdisciplinary method, considering the intricate and unpredictable characteristics of disasters while focusing on the needs and vulnerabilities of the impacted communities. The process of decision-making within disaster management is frequently marked by profound uncertainty, necessitating a holistic approach that takes into account the viewpoints and experiences of diverse stakeholders. Additionally, the politics of climate change adaptation must be considered in disaster management, as it involves addressing issues of social justice, inequality, and power dynamics (Dolšak & Prakash, 2018). Higher education institutions can play a crucial role in promoting sustainable development goals, particularly in the context of climate and disaster management in Zimbabwe (Dzvimbo et al., 2022).

Ray et al., (2022) underscore the significance of consolidated and interdisciplinary approaches in disaster management, focusing primarily on the health and welfare of impacted communities, especially children. This perspective aligns with Sillah's (2015) appeal for a disaster management plan centered around children, taking into account their unique needs and vulnerabilities during disaster planning and response stages. Additionally, an evaluation by

Tevera et al., (2021) of the ramifications of Cyclone Idai on local food supply systems and disaster management responses in Mozambique and Zimbabwe underscores the necessity for a well-coordinated and cooperative disaster management approach. Their research accentuates the critical role of community-driven disaster management initiatives that cater to the needs of the communities affected.

2.3 Disaster Preparedness

Disaster preparedness is a fundamental concept that informs this study. According to Coppola and Maloney (2009), preparedness involves equipping people who may be affected by a disaster or who may be able to help those affected with tools to increase their likelihood of survival and minimize losses. Disaster preparedness involves the creation of strategies and plans by governmental agencies, non-governmental organizations (NGOs), communities, or individuals in anticipation of a potential threat. The goal of these measures is to minimize the loss of life, injuries, and property damage in the event of a disaster (Mabuku et al., 2018, UNISDR, 2015). Anton and Lawrence (2016) describe disaster preparedness as a multidimensional construct consisting of individual psychological and physical preparedness, which together constitute community preparedness. It is critical to note that disaster preparedness issues cannot be addressed satisfactorily without incorporating individual, household, community, national, regional, continental, and global preparedness.

According to Nakanishi and Black (2018), disaster preparedness involves developing the necessary capabilities to predict and manage threats, with the goal of transitioning from emergency response to long-term recovery. However, a mere understanding of the disaster preparedness discourse is not enough to ensure stakeholder awareness and high commitment levels to be better prepared for disasters. The National Research Council (2010) notes that coordinated disaster preparedness links cultural, socio-economic, and political sectors, thereby constituting national strength. It is therefore essential to consider early warning mechanisms, strategic planning, disaster risk reduction, and training and development of human resources in disaster preparedness. Failure to prioritize disaster preparedness can lead to heavy casualties, as seen in many countries with low-level preparedness mechanisms. Thus, it is crucial to recognize the importance of disaster preparedness as a coordinated effort to reduce deaths and destruction caused by natural phenomena.

2.4 The Role of Disaster-Related Policies on Informing Climate-Related Preparedness and Response Strategy

The section presents the role of disaster-related policies in climate change preparedness and response. The Paris Agreement of 2015 is one of the global initiatives that was meant to ensure that there is a commitment to the nations to fight against climate change and its implications for society. This was against the notion that with the increase in the global population, many people are settling in areas that are prone to natural disasters which increases the vulnerability of the rural folks to natural disasters. Further, human activities have also increased the levels of destruction to the natural systems causing alterations in the climatic conditions which in turn causes environmentally induced disasters affecting mankind. To this end, it remains imperative for any proactive government to finance community resilience before the strike of disasters to enhance the resilience capacity of the community. Important to note from the 2015 Paris Agreement is its emphasis on nations making concerted efforts in fighting climate change as a global collective agenda. This was from the realization that climate change and environmental disasters impose a huge burden on the fiscal status of the country and the overall development of the country (Catalano *et al.* 2020; Hong *et al.* 2020; Ferrari and Pagliari 2021). It remains unknown the role of disaster-related policies and preparedness strategies to address in addressing climate-related shocks and trends. The impetus of the study is to understand how the policies and disaster-related response preparedness plans have been able to address the climate shocks and trends in Zimbabwe.

The Global Initiative on Green Economy (GIGE, 2010) also recommended states change the modes of farming that increase greenhouse gas content in the atmosphere and adopt those that make the achievement of a green environment attainable. Soil carbon sequestration is an initiative to increase soil carbon content by changing the environmental management systems. According to Fuss *et al.* (2018), soil sequestration can be achieved by inputs that increase growth in agriculture and reduce losses. The discussion is that this initiative can increase soil fertility which in turn increases crop yields yet at the same time increases carbon accumulation in the soil and reduces it in the atmosphere. According to Nakajima *et al.* (2018), the new farming techniques that can reduce carbon gas concentration in the atmosphere and increase it in the soil include zero tillage, mulching, the use of biochar fertilizers, and nutrient management techniques such as the use of animal manure. The need to have a behavioral change or attitudinal change in the communities through policy interventions to help

communities cope with the different climate-related shocks and trends seems not to be effective across the globe. This raises a question about the ability of Disaster preparedness and response strategies in addressing the effects of climate shocks and trends in different communities. This remains the gap that the study aims to address.

A variety of policies are incorporated into Zimbabwe's disaster management regulations, including the Constitution (Amendment Act of 2013). Other acts like the Traditional Leaders Act, the Rural District Councils Act, and the Provincial Councils are indirectly linked to DRM in Zimbabwe. The Civil Protection Act (Chapter 10:06) is the major legislation that focuses on disaster management though it has a broad meaning in its definition of what entails disasters. Other local regulations, such as the Chimanimani Rural District Council Environment Policy and the Chimanimani District Climate Change Response and Watershed Management Policy, also form part of this comprehensive framework (Dube et al., 2021). Despite the comprehensive policy framework in place, a significant deficit remains in empirical studies evaluating the effectiveness of these individual policies regarding readiness and response to climate-driven shocks and changes. This represents a conspicuous gap in current scholarly literature that necessitates further investigation. Therefore, the goal of this study is to expand our understanding of how each policy framework operates in terms of strengthening disaster preparedness and response mechanisms to effectively manage climate shocks and trends, particularly in the Chimanimani region of Zimbabwe (Dube et al., 2021).

The concept of preparedness before a disaster is a crucial aspect in mitigating the impacts on people, their livelihoods, and other significant components of society (Chapungu, 2020). To this end, the Civil Protection Act proposes strategies to manage the consequences of a disaster directly. One of these provisions, as outlined in Section 32 of the Act, advocates for a reserve fund to cover disaster-related damages and support essential resources needed to survive such calamities.

Zimbabwe has made strides in this direction by establishing the National Civil Protection Fund. This fund proves beneficial in providing the financial backing required for civil protection agencies to function (Mavhura, 2015). However, when Cyclone Idai struck, the government's response reached the affected communities approximately four days to a week after the disaster. The Disaster and Civil Protection (DCP) department's capacity to respond promptly

and effectively was significantly hampered due to a lack of readily available funds at various levels (Rina, 2019)

For climate-related disasters in Zimbabwe, the meteorological department is responsible for providing early warning alerts to the public regarding upcoming disasters. These alerts enable citizens to evacuate from specific areas, if necessary, receive training for search and rescue, and develop contingency plans. Emergency service committee meetings are also held prior to disasters such as Cyclone Dineo and Cyclone Idai, and early warnings are issued in accordance with the Civil Protection Act (Chiimba & Verne, 2022). The early warning communication system, unfortunately, is generic, and those delivering warnings may not fully understand the requirements and priorities of vulnerable populations, leading to a lack of responsiveness to their needs (Gwimbi, 2007).

Despite the efforts made in issuing early warnings, the accuracy and specificity of these warnings have been a subject of concern. For instance, before the Cyclone Idai disaster in 2019, early warnings provided were not precise enough to indicate which areas were most vulnerable. As a result, the Meteorological Services Department (MSD) warnings lacked the necessary detail to allow the civil protection community to take immediate action, including evacuating people, thus significantly impacting disaster preparedness and response (Chatiza, 2019).

The importance of early warning systems (EW) in enhancing disaster risk reduction (DRR) is emphasized in the Hyogo Framework of Action (HFA) under priority number two, which calls for identifying, assessing, and monitoring disaster risks and enhancing early warnings (United Nations International Strategy for Disaster Reduction [UNISDR], 2006b). Although investing in EW may be costly and challenging, the savings accrued in the long run can outweigh the investment (UNISDR, 2006b). However, the current EW system in Zimbabwe is still insufficient. Gwimbi (2007) observed that the existing centralized one-way warning system neglects the needs and priorities of vulnerable communities, making the warnings unresponsive to the people's needs. The United Nations Environment Programme ([UNEP], n.d.) highlights that this could be due to the rich cultural heritage of local communities that draws from vast experience in observing nature.

Zimbabwe has adopted several mechanisms for early warning systems, which include sending alert SMSs to the communities. Others include the Zimbabwe Emergency Preparedness and

Response Plan (ZEPRP), which outlines the different stages of emergency preparedness, and the Zimbabwe Vulnerability Assessment Committee (ZIMVAC), which identifies the risk of food insecurity and malnutrition in the country (Mugandani et al., 2022). Additionally, the country also has the Early Warning and Early Action (EWEA) approach that focuses on drought and flood risk management. It identifies, monitors, and assesses the risk posed by extreme climate events and provides information to relevant stakeholders in a timely and effective manner (Zimbabwe Humanitarian Situation Report, 2021).

However, the effectiveness of these early warning systems is questionable, given the limited resources and capacities available. For example, the limited technical capacity of the Zimbabwe Meteorological Department in the acquisition and processing of meteorological data poses a significant challenge to the effectiveness of early warning systems. The low level of community preparedness for disasters, particularly in rural areas, is another factor that hinders the effectiveness of early warning systems (Wamukonya & Rukato, 2001).

In a nutshell, Zimbabwe's early warning systems have been put in place to provide timely and effective alerts to the public regarding potential disasters. However, the accuracy and specificity of these warnings have been a concern, as well as the capacity and resources available to ensure the effectiveness of the early warning systems. It is imperative to strengthen the technical capacity of the meteorological department, improve community preparedness for disasters, and prioritize the requirements and priorities of vulnerable populations to enhance the effectiveness of early warning systems.

Chatiza (2019) pointed out that survivors of Cyclone Idai did not receive adequate information and support. Ineffective early warning communication from the Disaster and Civil Protection (DCP) at both the district and national levels did not allow for appropriate response time for the communities affected. Crucial details about Cyclone Idai and its projected impact on Chimanimani did not reach the local communities in a timely and effective manner (Chanza et al., 2020). Furthermore, the received information appeared to be confusing, inadvertently increasing the community's exposure to the cyclone's effects (Chingombe & Musarandega, 2021). This confusion was compounded by past experiences with less destructive cyclones, such as Cyclone Japhet in 2003 and Cyclone Eline in 2000. The World Bank (2019) highlighted an apparent lack of community engagement with key disaster risk management (DRM) actors

in terms of awareness initiatives and evacuation drill exercises. The DCP's understanding of the risk was also lacking, as shown by their reports on the disaster.

It's worth emphasizing that disaster-related policies rely on local institutions to play their part in reducing community vulnerability to climate-related risks (Chatiza, 2019). When communities are educated and informed about climate hazards, their capacity to prepare and respond to climate risks improves. In the context of Cyclone Idai in Chimanimani, despite Agricultural Extension (Agritex) officers providing training on climate change hazards to a large portion (39.5%) of the population, as mandated by the Constitution of Zimbabwe (2013) and the Civil Protection Act (Chapter 10:06), studies revealed a low overall knowledge level on climate-related hazards among the people in Chimanimani. The level of vulnerability tends to increase when such information is lacking (Chatiza, 2019).

Such findings bring into question the level of disaster risk knowledge. Despite disaster-related policies mandating responsible authorities to provide education and training on preparedness and response, implementation appears to be inadequate (Chatiza, 2019). As a result, low community knowledge of climate hazards undermines effective disaster preparedness and response (Ngwenya, 2018). This situation deteriorates further when officials are unprepared to instruct communities on how to respond to climate-related hazards (Chatiza, 2019), reinforcing the necessity to enhance the capacity of vulnerable communities to help them cope with such hazards.

The attitude of community members can also affect climate-related preparedness and response (Kunze, 2021). A survey conducted in Chimanimani found that approximately more than half of the population received early warnings about the cyclone, but only a quota of that evacuated the communities (Ngwenya, 2018). Most people underestimated the severity of the floods based on experiences with previous cyclone events (Chapungu, 2020). This could suggest that a significant number of people who did not take action lacked knowledge about what to do, underscoring the need for community-level training on disaster mitigation strategies (Chapungu, 2020).

Zimbabwe, just like any other country, continues to experience major challenges in disaster mitigation, preparedness, and adaptation (Chatiza, 2019; Global Crisis Response Platform 2020; Chanza et al. 2020; Muzenda-Mudavanhu 2016). The country has numerous policy

frameworks for disaster mitigation, preparedness, and response (Samu and Akintug, 2020; Chatiza 2019). However, the effectiveness of the climate-related disaster preparedness and response strategies in the country. The gap in the body of knowledge of the need to assess the effectiveness of the climate-related disaster preparedness and response strategy. Further, despite the European Union and other international development partners funding disaster planning and preparedness in Zimbabwe, the impact of these initiatives toward a resilient disaster-free community has not been realized to date (European Union 2022). Research has not effectively focused on the funding mechanisms that are provided by the climate-related disaster preparedness and response strategy in the country (Muzenda-Mudavanhu, 2016; Samu and Akintug, 2020). This implies that there is still a lack of evidence in the body of knowledge on the structures of the civil protection initiatives in the country toward a prepared and effective disaster response strategy. The study, therefore, seeks to build evidence that supports effective climate-related disaster policy formulation and implementation in the country.

Worldwide at least 70% of all disaster occurrences are weather associated (Musarurwa & Lunga 2012). It is expected that continuing climate change processes will result in an increased frequency of extreme weather events. Several disasters have hit Zimbabwe albeit at a different scale relative to disasters that hit other countries and regions in the world (Musarurwa & Lunga, 2012). Most natural hazards are hydro-meteorological in origin, and these are floods, drought, and tropical cyclones. Some are, however, non-hydro meteorological in origin such as the Covid-19 pandemic. Zimbabwe, like numerous other African countries, is increasingly threatened by hydro-meteorological disasters (HMDs) and non-hydro-meteorological disasters. Droughts, floods, water-related infections, storms, and cyclones are becoming more common, greatly disrupting communities and restricting opportunities (Tall & Fritz, 2013). The repercussions of escalating disasters, particularly on Zimbabwe's climate-dependent local communities, are alarming (Ngwenya et al., 2018).

In response to these far-reaching impacts, numerous initiatives have been launched in recent years to mitigate disaster vulnerability, not only in Zimbabwe but also across the wider African continent (Munsaka et al., 2021). These initiatives, integrating disaster-related policies, signify a strategic shift from merely reacting to disasters to proactively preparing for them and reducing associated risks. This is being achieved using current climate and weather forecasts,

as well as hazard monitoring tools, a novel strategy that has been termed effective disaster risk management (DRM) (Munsaka et al., 2021). As a result, DRM has been widely endorsed as a crucial approach to enhance the effectiveness, specificity, and planning of disaster preparedness. It seeks to mitigate the devastating effects of climate-related hazards on local communities.

2.5 Impacts of Climate-related Frameworks in the Mitigation and Response to climate-related risks

The influence of climate change on societies worldwide is taking new and unforeseen forms. An analysis by Klomp and Valckx (2014) demonstrates the negative impact of climate change on per capita economic growth. Moreover, Felbermayr and Gröschl (2014) propose that the effects of climate change can decrease per capita GDP by up to 6.8% in the year they transpire. A report by Munich Re (2018) establishes that from 1980 to 2018, tropical cyclones were accountable for almost half of all losses globally related to natural hazards.

The success of global initiatives mainly relies on administrative capacities in the local tier governments to implement the global objectives. For instance, the initiative to create a green climate by UNFCCC requires cooperation between the central government and the local counties and countries. According to Marlon (2017) in the African case, even a cheap initiative such as reforestation and afforestation is carried out by non-state actors and not the government. For instance, in South Africa, the Nyaradzo group is responsible for planting many trees while there is little effort from the government. The government should work hand in hand with the private sector as the private sector may have certain experience and expertise which the government may be lacking. The key challenge in this regard is the lack of human capital, which is well-versed and familiar with issues to do with climate adaptation measures. For instance, Africa lags in terms of technology most of the strategies require the use of technology such as the Carbon gases capture and storage initiative which Africa lack. According to Füssel et al. (2019) cited that lack of expertise and awareness are two factors that are affecting the climate change adaptation measures in developing countries. The key factor for such a problem is that climate change is wholly a new concept that many people had not indulged in. This creates a challenge of information discrepancies and discrepancies among different departments in a country. The discussion is that climate change is still a new concept, and most developing countries are not yet apt with the current technologies in this field hence the rate of implementing climate change adaptation measures is minimal.

This being a new concept information diffusion is very difficult to ensure since most members of the public may not be aware of the effect of climate change noted Füssel et al. (2019). According to Smithers et al. (2019) in the developing world, the issue of climate changes it's a new concept and the public is not aware of what that meant. This creates a challenge of lack of local buy into the implementation of the strategies to reduce the effects of climate change since the citizens may not be aware of what that means. As noted by Ma et al. (2020) the issue in Africa may not necessarily be a lack of political will but it may also be because of a digital divide that exists between the urban areas and the rural areas. The rural areas lacked even the required infrastructure to access information about climate change or to research their strategies to mitigate the effects. According to Füssel et al. (2019), administrative capacity is a major challenge in developing countries, this is due to plenty of information available in a limited space of time. According to Füssel et al. (2019), climate change is a new concept, however, a lot of information had been generated in a limited period. This had created a challenge for most developing countries they do not know what to masticate first and what to follow, this creates a challenge of gobbling everything which creates a risk of chalking. The discussion is that information may be a source of power, however, the presence of such information at the same time may be equally disastrous. The Climate change adaptation frameworks are adopted in phases, the presence of too much information creates a catch-up dilemma which creates ad hoc implementation of strategies ending in numerous incompletely implemented frameworks.

Generally, various disaster-related policies vary in terms of their impact on mitigating climate-related risks over the past years (Rina, 2019). The humanitarian responses, as stated in various policies, to the scourges of climate change-related disasters usually do not meet the impact as expected (Matsvange, et al. 2020). Although it would be usually against the backdrop of climate-induced disasters that have plagued the nations before, with some of its consequences are visible in the present day. Looking at the case of Cyclone Idai, there was no commendable response from humanitarian organizations in addressing the destructive consequences of the cyclone (Matsvange, et al. 2020). Some of the response strategies included the provision of food and non-food items, psychosocial support and counselling services, the protection of women and girls from abuse, reconstruction, and rehabilitation of infrastructure (Rina, 2019).

Despite the existence of various disaster management policies, the government and local institutions seem unprepared to confront the challenges posed by different natural disasters.

Evidence of this unpreparedness was seen during Cyclone Idai, when the alert and training systems were found lacking (Munsaka et al., 2021). Deficiencies in infrastructure, equipment, funding, human resources, and coordination contributed to this failure. It is clear that when disaster risk management systems are deficient, the repercussions of natural hazards can be devastating for vulnerable communities, as demonstrated in the case of Chimanimani (Munsaka et al., 2021).

In Zimbabwe, the Department of Civil Protection, which is affiliated with the Ministry of Local Government Public Works and National Housing, is entrusted with the task of reducing disaster risk. The National Civil Protection Coordination Committee assists the Department of Civil Protection (Mavhura, 2015). Therefore, the Department of Civil Protection is responsible for formulating policies, supervising, and coordinating Disaster Risk Reduction (DRR) efforts at the national level. The department supervises the legal and regulatory environment in which all agencies providing DRR responses in Zimbabwe operate and, therefore, all necessary elements for prevention, preparedness, recovery, and response (Musarurwa, 2012).

Despite the Department of Civil Protection's disaster prevention plans and efforts, the aftermath of Cyclone Idai in 2019 has revealed that Zimbabwe has experienced numerous disasters over the years, some of which have been exacerbated by climate change (Munsaka et al., 2021). Following a decline in state capacity in the year 2000, vulnerabilities in Zimbabwe became increasingly apparent, correlating with significant policy changes, rising poverty, and societal transformations (Oxfam, 2019). Based on the analysis, Chapungu (2020) proposes the necessity for a new policy model, indicating a need for more explicit funding for risk assessments, the completion of DRM policies and structures, and aligning them more closely with the Sendai Framework and relevant local experiences.

The rate of amending the Civil Protection Act (Chapter 10:06) has been very slow to keep abreast with the prevailing international frameworks (Mavhura, 2015). The key informants also revealed that the proposed Emergency Preparedness and Disaster Management Bill has remained a draft since 2011. Thus, the finalization of the DRM policy, legislation, and organizational structures based on the Constitution of Zimbabwe, the Sendai Framework, and relevant local experiences such as cyclones Idai and Deneo and those from other jurisdictions is becoming more urgent than ever (Munsaka, et al. 2021).

On International Humanitarian Day, various institutions recommended the Government of Zimbabwe finalize the Disaster Risk Management and Civil Protection Bill (DRMCP) to promote disaster management structures that have fully devolved powers, competencies, responsibilities, and resources to sub-national levels. With an inclusive new and robust disaster risk reduction policy framework, Zimbabwe could greatly reduce the number of people who require humanitarian assistance every year (Chingombe, 2021). Interestingly, there has also been a marked change in behavior by farmers in Zimbabwe as they seek to transfer risk (Mavhura and Collins. 2017). It is now common practice for farmers to insure their livestock and crops. This has been hastened by increasing uncertainties about the weather phenomenon (Musarurwa, 2012). At the national level, the effort has been on the utility of the Early Warning System (EWS). The Zimbabwe Meteorological Services usually provides a pre-season assessment and another one midway into the rainy season. These press releases are meant to help the farmers make informed decisions about an impending growing season and hence maximize returns (Musarurwa, 2012). However public policy is much more complex and broader and its success hinges on the interplay of other various policies such as environmental, land-use, agricultural, and education & training policies.

On the other hand, the impact of policies in mitigating climate-related risks is somehow commendable (Chanza, 2020). In Zimbabwe, mitigating climate change-related risks and disasters, particularly droughts, has been carried out at two levels that are, the Individual or household level, and the public or national level. At the individual level, efforts have centered on crop diversification, the growing of drought-tolerant crops, and the sustainable use of wetlands. People in drought-prone areas have also been encouraged to turn to small-scale irrigation as an alternative to rain-fed cropping (Chanza, 2020). Instead of discussing climate change, a concept that many people from communal or rural areas would find it difficult to digest, agricultural extension officers have been stressing a good choice of dates for planting crops (Mavhura and Collins. 2017). Thus, farmers have to choose dates wisely or else change to short-season varieties.

Zimbabwe has been very slow to revise and enact a robust disaster risk reduction policy framework but still clings to the old Civil Protection Act (Chingombe, 2021). Majoko & Dudu (2022) observed that the country does not have a comprehensive National Policy on Disaster Risk Management, a situation of great concern in the face of rising climate change-related

disasters. Although the Cabinet approved the principles of the DRMCP on 7 June 2022, the nation is likely to see a stagnation of the process going forward due to the government's lack of political will to finalize the DRMCP into law (Majoko & Dudu 2022). This bill has been in the pipeline for more than a decade, despite the growing threat from the surging disasters in the past years Majoko & Dudu (2022).

The government of Zimbabwe has also taken steps to replace the law that governs disaster and risk preparedness that is the Civil Protection Act (Kunze, 2021). It is set to be replaced by the Emergency Preparedness and Disaster Management Act which will see the establishment of an Emergency Preparedness and Disaster Management Authority (Dzinamarira, et al. 2021). The Authority will have as its main mandate to develop a risk reduction strategy to minimize vulnerability to both natural and man-induced hazards (Kunze, 2021). Under the proposed new dispensation, Disaster Management will be built into the Education curriculum (Dzinamarira, et al. 2021). In the event of a disaster or emergency in Zimbabwe, the National Civil Protection Coordination Committee leads the process of responses. At the helm and playing a coordinating role is the UN's Disaster Management Team. This team coordinates donor activities to avoid duplication of effort and resources.

Through the Department of Civil Protection, the country has in the past conducted a multi-sectoral hazard and vulnerability mapping exercise throughout the country (Dzinamarira, et al. 2021). This map has not however been proactively availed to the public. The reason could be as suggested by Holloway (2003) that since the same maps are used for relief operations political interference could have complicated the process. In contrast to that, in the past leadership gave primacy to disaster relief (Kunze, 2021). Today, responsible governance prioritizes opportunities to reduce disaster risk through partnership, not relations characterized by patronage and dependency.

2.6 Theoretical Framework

Several renowned scholars and academics have proposed theories related to disaster management, response, and preparedness in the past decades. Lunenburg and Irby (2008, p. 122) defined theory as "an organized body of interrelated concepts, assumptions, and generalizations that systematically explains regularities in behavior". Nojavan et al. (2018, p.1) noted that one of the critical justifications for developing theories in disaster management and preparedness is to simplify the method of understanding critical elements to mitigate and

prepare for natural disasters. This research leverages five theoretical frameworks to gain a comprehensive insight into disaster preparedness and response. These frameworks include the Capability Approach, Sendai Framework for Disaster Risk Reduction, Traditional Disaster Theory, Expand-Contract Model, and Disaster Pressure and Release Model. The Capability Approach aligns closely with the study's objectives as it underscores the role of socioeconomic policies in fostering an environment that preserves individual liberties and enables people to actualize their abilities. This, in turn, bolsters community resilience in disaster response. The Traditional Model provides guidelines for disaster management, but it does not explain why developing countries suffer heavy losses during natural disasters. The Expand-Contract Model aims to fill in the gaps of the Traditional Model (TM) by providing a holistic model for disaster management. The Disaster Pressure and Release Model highlights the underlying root causes of disasters, including political and social issues, and suggests strategies to address them.

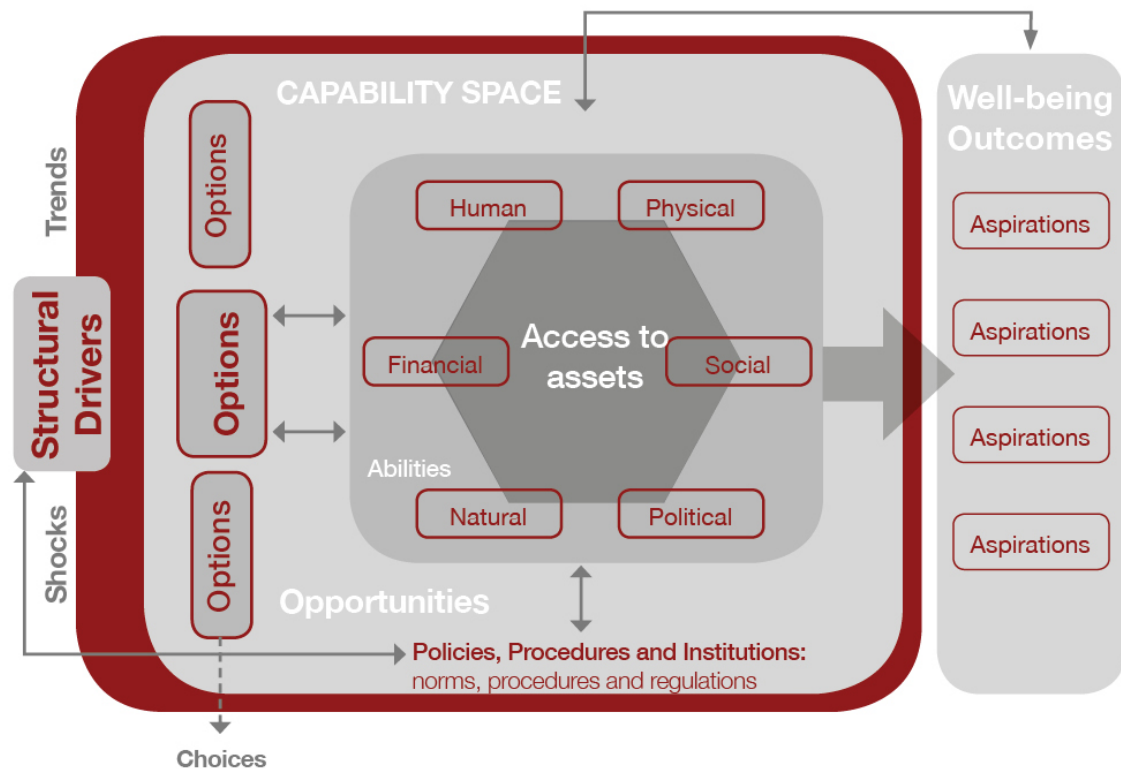
2.6.1 The Capability Approach

The study uses the capability approach as the main theoretical framework for this study. The capability approach was pioneered by Amartya Sen (1980) whose perspective of poverty was premised on the view that poverty is a result of deprivation. The capability approach can be defined as *“the degree to which people can express and enjoy their capabilities depends on structural factors, namely the degree to which economic and social policies provide fair and adequate resources”* (Marmot and Wilkinson, 2006, p. 13).

It is imperative to note that Marmot and Wilkinson's (2006) definition involves social systems particularly social factors that can undermine and improve the effectiveness of climate-related disaster policies, preparedness, and response systems. Most social policies in Zimbabwe have been crafted based on patriarchal values and as a result, this posits limitation of participation in socio-economic development. The capability approach from an econometric approach argues that peoples' capabilities differ from person to person in their ability to change the same resources into valuable capabilities thus beings and doings. The capability approach provides that the government, through crafting socio-economic policies; should create a viable environment that ensures people's freedoms and functioning. The concept of freedom entails the ability of people to freely solve their problems without any socio-economic and political barriers put in place by the government. Therefore, if the government can develop a good policy that upholds individual freedoms and allows people to realize their capabilities, it paves the

way for social development. This implies the ability of disaster-related policies in addressing the shocks and trends of the communities prone to natural disasters.

Figure 4: The Capability Approach Revisited



Source: (Frediani & Hansen, 2015)

The Capability Approach, developed by Nobel laureate Amartya Sen, emphasizes the importance of promoting human capabilities and functioning, rather than focusing solely on economic growth and material possessions. This methodology is extensively employed in development and poverty alleviation sectors, and it's also acknowledged as a potent theoretical structure for disaster preparedness and mitigation. According to Alkire (2002), the Capability Approach seeks to identify and promote the capabilities that individuals and communities need to lead valuable lives and achieve their goals, even in the face of adversity.

The Capacity to Aspire, as described by Appadurai (2004), is an essential component of the Capability Approach. Aspiration is a key capability that enables individuals and communities to imagine and strive for a better future, even in the face of difficult circumstances. This

capability is particularly important in the context of disaster preparedness and response, as it can motivate people to act and invest in their own resilience.

The UK Department for International Development's Sustainable Livelihoods Guidance Sheets (1999) underscore the need for bolstering resilience and fostering capacities in managing disasters. They underscore the complex interplay among different components of livelihood assets such as human, social, natural, physical, and financial capital. By channeling investments into these diverse assets, individuals and communities can strengthen their resilience and curtail their susceptibility to disasters.

The Capability Approach has also been applied in the context of informal settlement upgrading, as discussed by (Frediani & Hansen, 2015). Upgrading informal settlements is a complex process that requires the participation and empowerment of the communities involved. By using the Capability Approach to identify and prioritize the capabilities that are most essential for informal settlement upgrading, policymakers and practitioners can ensure that the upgrading process is inclusive, participatory, and effective. In the same vein, the approach shows essential and adequate components that can be used in disaster management processes.

The importance of participation and empowerment are key components of the Capability Approach, as discussed by Crocker (2008). In the context of disaster preparedness and response, participation and empowerment can enable communities to take ownership of the disaster management process and shape policies and programs that meet their specific needs. This approach also emphasizes the importance of social justice and equity, ensuring that vulnerable and marginalized groups are not left behind.

Within the scope of disaster management, the Capability Approach directs the creation of initiatives and strategies that underscore essential abilities for resilience. For instance, cooperative enterprises are presented as a powerful mechanism to foster resilience and encourage capabilities in regions vulnerable to disasters, as suggested by Ibrahim and Tiwari (2014). These cooperative enterprises, through promoting teamwork and reciprocal assistance, aid communities in the enhancement of their social and economic resources, thereby increasing their resilience in the face of disasters. The Capability Approach has also been applied in the context of disaster risk reduction, as discussed by Dreze & Sen (2002). The authors argue that disaster risk reduction should focus on promoting the capabilities that enable individuals and

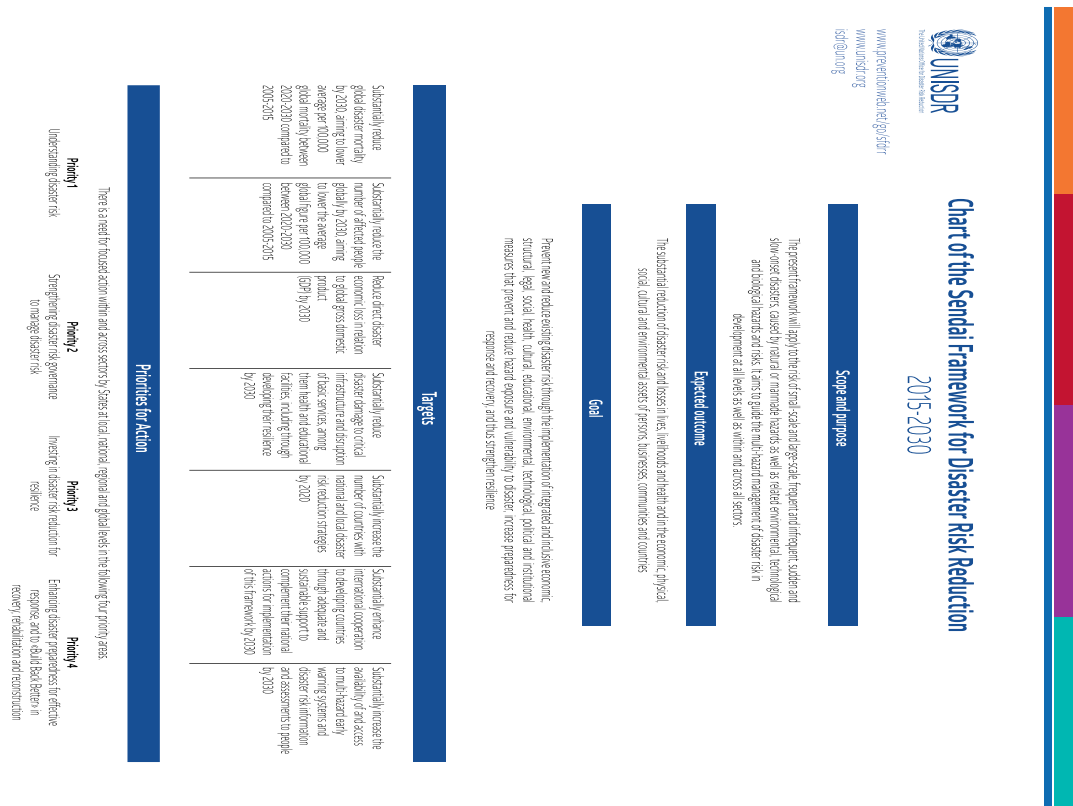
communities to anticipate and respond to disasters, rather than simply reducing their exposure to risk. This approach emphasizes the importance of preparedness and response, as well as the need to address the underlying causes of vulnerability and risk.

Areas located in rural regions, which already face the greatest social protection deficits, are likely to bear the brunt of disaster impacts in most nations (Shenggen et al., 2019). This underscores the importance of establishing equal opportunities for all genders to bolster community resilience in disaster response. Preparedness for disasters involves a series of actions taken in advance by governments, organizations, communities, or individuals to improve their capacity to respond and manage the immediate consequences of a disaster, whether human-made or natural. The goal, as informed by the Capability approach (Sen, 1980), is to minimize losses of lives and livelihoods. Simple, yet impactful activities can include implementing early warning systems, crafting contingency plans, preparing for search and rescue operations, and storing necessary supplies and equipment. The response to a disaster represents the second stage of the disaster management cycle. It encompasses numerous components, such as evacuation, search and rescue, provision of immediate aid, damage assessment, and immediate infrastructure restoration or creation (for instance, temporary storm drains or diversion dams).

This study uses the capability approach as an interpretive framework to assess the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. In the context of cyclone Idai preparedness and response, the Capability Approach can be used to identify the capabilities that are most essential for resilience. These may include access to early warning systems, knowledge and skills for disaster preparedness and response, social networks and community organization, and access to resources and services. By prioritizing these capabilities and promoting participation and empowerment, disaster management policies and programs can become more effective, equitable, and sustainable. The Approach is a valuable theoretical framework for disaster preparedness and response, as it emphasizes the importance of promoting human capabilities and resilience. By prioritizing capabilities and participation, disaster management policies and programs can become more inclusive, effective, and equitable. The Capability Approach can also guide the design of policies and programs that prioritize the capabilities that are most relevant to the needs of different communities, considering their unique social, economic, and cultural contexts.

2.6.2 The Sendai Framework for Disaster Risk Reduction (SFFDRR)

Figure 5: The Sendai Framework for Disaster Risk Reduction Chart



Source: (UNISDR, 2015)

The theoretical framework of this study is aligned with the four main priorities established by the Sendai Framework. Firstly, it underscores the need for a comprehensive understanding of specific disaster risks, notably those related to climate, faced by Zimbabwe as a country and more specifically the Chimanimani District. Secondly, it assesses the readiness and efficacy of various institutional levels in Zimbabwe to manage these disaster risks. In the pursuit of enhancing resilience, the third priority advocates for investments in infrastructure, early warning systems, and education aimed at reducing disaster risk. The fourth priority of the framework emphasizes the necessity for disaster preparedness to facilitate an effective response and ensure resilient recovery, especially in scenarios akin to Cyclone Idai. These priorities will be instrumental in evaluating the effectiveness of climate-related policies in Chimanimani and Zimbabwe, in terms of disaster preparedness and response. This evaluation will be conducted by analyzing the extent to which these priorities are implemented in actionable measures that align with the Sendai Framework.

The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), adopted by United Nations Member States in 2015, outlined four action priorities to guide the development and execution of disaster risk reduction (DRR) policies: understanding disaster risks; strengthening disaster risk governance; investing in disaster risk reduction; and enhancing disaster preparedness (Mizutori, 2018). This international blueprint promotes a comprehensive approach to minimize disaster risk by integrating multiple aspects of disaster risk. In essence, the Sendai Framework encourages the improvement of disaster risk understanding, enhancement of disaster risk governance, accountability in disaster risk management, preparedness to "Build Back Better", acknowledgement of stakeholders, and advocacy for risk-sensitive investment (UNISDR, 2015).

Mizutori (2018), in support of this approach, asserts that knowing the nature and degree of disaster risk is critical. This understanding is especially important considering climate-related disasters such as Cyclone Idai, which severely damaged Chimanimani District and Zimbabwe as a whole. This goal lays the groundwork for implementing educated disaster risk reduction (DRR) policies and strategies. Enhancing the capacity of individuals prone to disasters may help reduce their vulnerability. However, numerous researchers have found that neglecting the aspects of human, social, and economic capital could undermine these efforts (Bennett, 2020).

The SFDRR, with its emphasis on education, disaster resilience, and risk reduction, serves as a platform for assessing the efficacy of climate-related policies in Zimbabwe. The Sendai Framework for Disaster Risk Reduction (SFDRR) represents a strategic guide for comprehending and reducing disaster risks (Sakurai & Sato, 2016). One of the weaknesses of the SFDRR is that it is a non-binding framework (Munene et al., 2018). In the context of this research, understanding the intricacies of Zimbabwe's disaster-related situations, particularly the Cyclone Idai disaster in Chimanimani District, is crucial. Mavhura and Aryal (2023) investigated disaster fatalities and SFDRR in Zimbabwe, providing insight into the local reality of disaster risk reduction. Furthermore, Mudavanhu, Manyena, and Collins (2016) expanded on children's knowledge of disaster risk reduction in the Muzarabani District, emphasizing the importance of community-level education and awareness to minimize catastrophe risks.

Building on the theoretical framework of SFDRR, a focus on the role of education in disaster resilience is required. Sakurai and Sato (2016) asserted the need of strengthening disaster resilience education, which is consistent with the SFDRR principles. Mutsau and Billiat (2015)

expanded on this by stressing the use of school systems as a hub for disaster risk reduction in Zimbabwe. This argument emphasizes the critical role of educational institutions in raising awareness and preparing for potential disasters.

The Sendai Framework's second emphasis is on enhancing disaster risk governance for effective disaster risk management (Mizutori, 2018). In a similar vein, Nyamayaro (2008) advocated for the updating of frameworks utilized by local planning authorities in Eastern and Southern Africa, Zimbabwe included. Johnson and Wilson (2000) illustrated the need of institutional sustainability in effective DRR by focusing on trash management in Zimbabwe as a critical part of local administration. Governance in disaster resilience is another important component of this theoretical paradigm. Bongo and Manyena (2015) investigated the transition from 'government' to 'governance' in the Zimbabwean context, highlighting difficulties in disaster-resilience leadership. This shift emphasizes the importance of increased engagement and collaboration among all stakeholders in disaster preparation and response. In the same vein Maswoswere et al., (2023) explored the role of town planning and development in disaster preparedness, demonstrating how urban development policies can have a substantial impact on disaster preparedness. This viewpoint is consistent with the SFDRR's emphasis on minimizing disaster exposure and vulnerability while boosting preparedness for response and recovery (Sakurai & Sato, 2016).

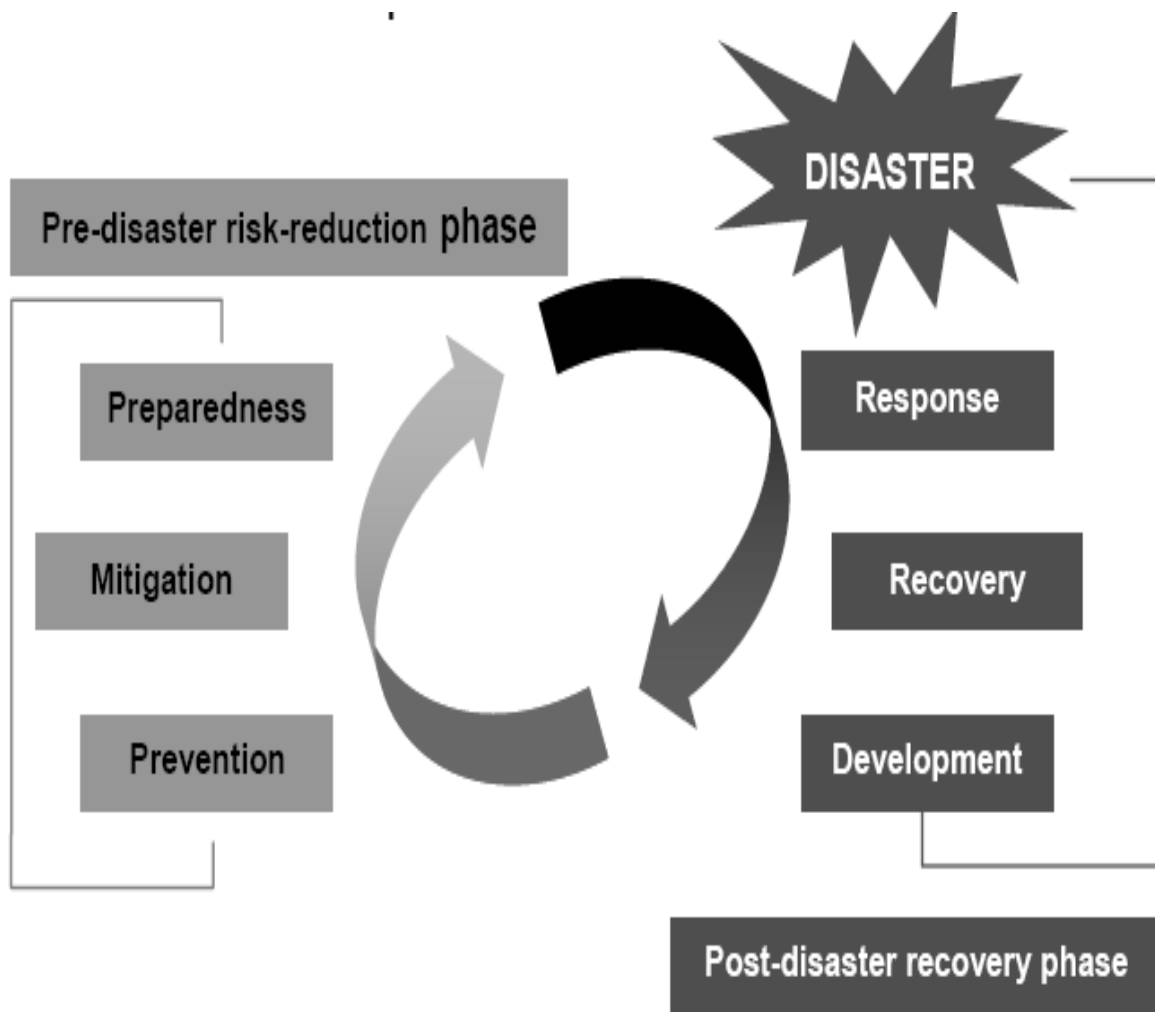
Dube et al., (2021) highlighted lessons from the Cyclone Idai-induced floods in Zimbabwe in terms of post-disaster recovery and the notion of building-back-better (BBB). In the case of Zimbabwe, the BBB concept as a catastrophe risk reduction method is very applicable (Dube, 2020). It fosters constructive reconstruction and long-term development in the aftermath of disasters, which is also an objective of the SFDRR. Evaluating the economic losses caused by disasters such as Tropical Cyclone Idai is crucial for grasping the full extent of the disaster and the effectiveness of disaster response efforts (Mavhura & Aryal, 2022). Additionally, Zimbabwe's capacity for managing disasters needs to be considered in light of Africa's Agenda 2063 (Chikowore et al., 2021). This aligns with the Sendai Framework's third priority, which emphasizes investment in resilience building through disaster risk reduction, specifically focusing on aspects such as infrastructure, education, and early warning systems (UNISDR, 2015). The UNISDR Strategic Framework for 2016-2021 reinforces this approach, underlining the importance of directing investments towards areas sensitive to risk.

In a nutshell, this theoretical framework, founded on the Sendai Framework's four primary themes, provides a sound foundation for analyzing the effectiveness of climate-related policies in Zimbabwe's disaster preparedness and response. The framework will also analyze the above-mentioned factors incorporated in the SFFDRR for the purposes of this study, which include education, town planning, governance, economic effect evaluation, and management capabilities.

2.6.3 Traditional Model

Natural disasters pose a significant threat to the socioeconomic development of countries, and their effects are far-reaching. The need for disaster preparedness and response has gained prominence in recent years, with policymakers and stakeholders prioritizing disaster management strategies to mitigate the adverse effects of natural disasters. This study to fully investigate the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe, focusing on the case of Cyclone Idai in Chimanimani District adopted the Traditional Model as well as the second theoretical framework tool to gain a robust insight in this research. The model consists of two distinct stages: pre-disaster risk reduction and post-disaster recovery. The first stage includes activities such as prevention, mitigation, and preparedness, while the second stage involves response, recovery, and rehabilitation.

Figure 6: Traditional Model



Source: (Asghar et al., 2006)

This model assumes that disasters can be managed through a sequence of activities in the main four phases mitigation, prevention, preparedness, response, development, and recovery (Asghar et al., 2006; Dube, 2018). The Traditional Model provides guidelines or procedures on disaster management, informing policymakers of what is expected of the government before putting in place control mechanisms to be followed during disasters. This model is imperative for this study because it provides a foundation for understanding disaster management strategies and emphasizes the importance of preparedness and response as critical stages in the disaster management process.

A review of the literature on disaster management highlights the importance of disaster preparedness and response in mitigating the adverse effects of disasters. For instance, Kimberly

(2003) notes that preparedness planning is critical in enhancing response capabilities and reducing the impact of disasters. Hampel (2004) emphasizes the need for a comprehensive emergency management cycle that encompasses preparedness, response, recovery, and mitigation. Kelly (1998) emphasizes the need to develop a model for complex non-linear events to enhance disaster preparedness and response.

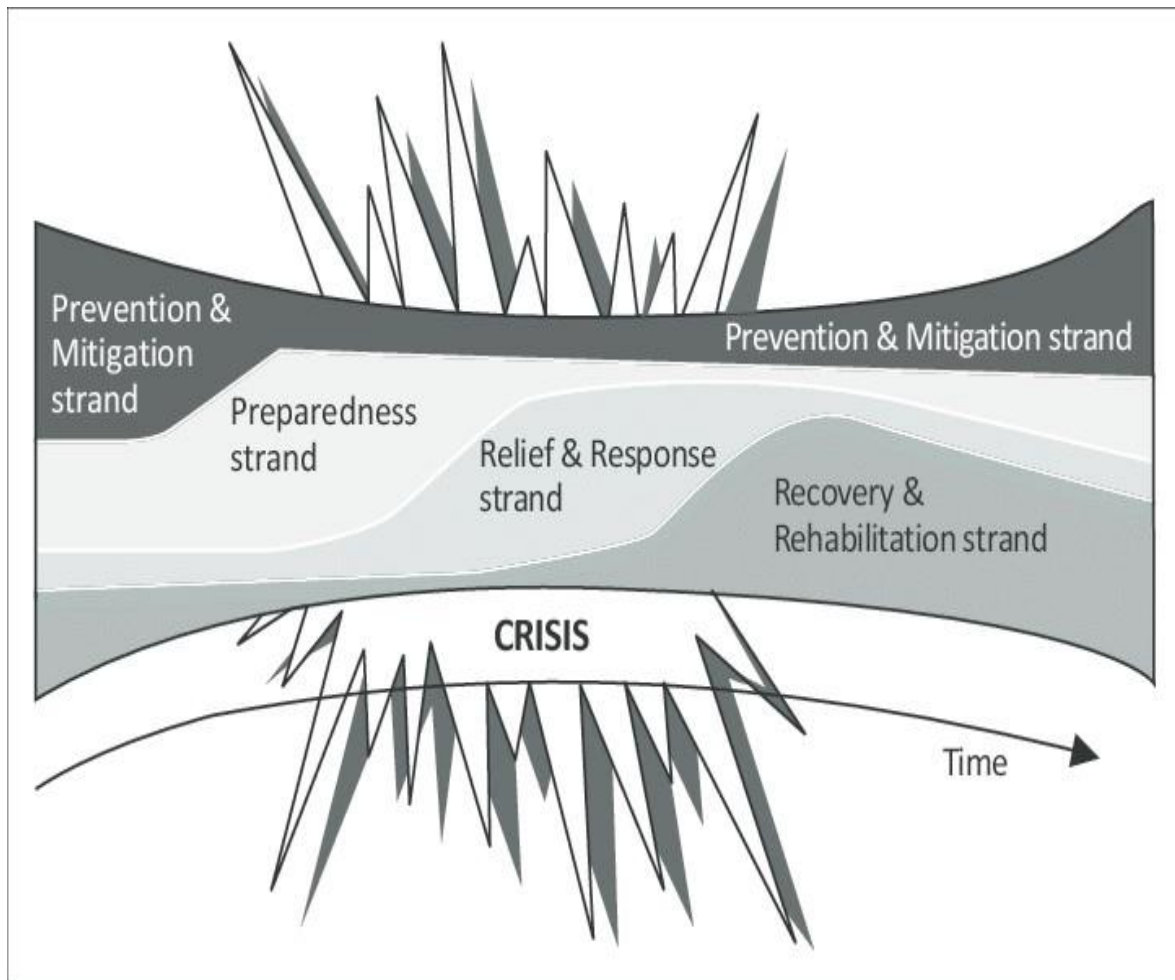
However, while the Traditional Model emphasizes the importance of disaster preparedness, the model lacks consideration for the specific timing of the crisis, and it is difficult to integrate data and make decisions effectively (Albtoush et al., 2011), it does not provide methods for mitigating, preparing, responding, and recovering from natural disasters. Additionally, it does not explain why developing countries suffer heavy human losses due to the failure to embrace disaster preparedness discourse. As such, this study will also examine the Expand-Contract Model (ECM), which was established to fill in the gaps of the Traditional Model (Asghar et al., 2006; Dube, 2018). The Expand-Contract Model provides a framework for enhancing disaster management strategies, emphasizing the need for stakeholders to work together to develop holistic disaster risk reduction structures to carry out disaster mitigation, preparedness, response, and recovery.

Overall, this study's theoretical framework highlights the importance of disaster preparedness and response in mitigating the adverse effects of meteorological disasters. The Traditional Model provides a foundation for understanding disaster management strategies, emphasizing the importance of preparedness as a critical stage in the disaster management process. The Expand-Contract Model builds on the Traditional Model, providing a framework for enhancing disaster management strategies and emphasizing the need for stakeholders to work together to develop holistic disaster risk reduction structures.

2.6.4 Expand-Contract Model

The theoretical framework for this research employs the Expand-Extract Model as one of the theoretical frameworks. The Expand-Extract Model is a comprehensive conceptual model for disaster management that identifies the key components of a disaster management system and how they interact to ensure effective disaster management (Asghar et al., 2006). The model underlines the significance of planning, readiness, response, and recuperation in disaster management, along with the necessity for successful collaboration, communication, and synchronization among all participants involved in disaster management procedures.

Figure 7:Expand Contract Model



Source: (Bosher et al., 2021)

Previous studies have also highlighted the importance of disaster management models in addressing disasters (Nojavan et al., 2018; Dube, 2018). Moreover, to enhance the effectiveness of disaster relief, specific models for disaster management have been devised, addressing particular aspects related to disasters such as transportation logistics, agreements on structural frameworks, and the distribution of supplies (Gossler et al., 2019). Therefore, using the Expand-Extract Model as a theoretical framework will provide a holistic view of the key components of disaster management and how they can be integrated to ensure effective disaster preparedness and response.

The Expand-Contract Model is a theory developed to inform disaster preparedness and management. Asghar et al., (2006, p. 4) note that the persistent escalation of deaths despite the large-scale technology transfer led to the need for a holistic model. Dube (2015, p. 5) agrees,

stating that the Expand-Contract Model offers an alternative view of disaster risk reduction efforts as a continuous process. The model suggests that each component "contracts" or "expands" based on the relationship between the vulnerable community and the natural hazard (Victoria, 2002).

Dube (2015) views the Expand-Contract Model as a supplement to the Traditional Model, which he believes has central flaws in viewing hazards as managed in stages. The Expand-Contract Model challenges this by involving the community in disaster management, recognizing them as vulnerable groups in times of disaster. Nojanova (2018, p. 4) notes that the sequential nature of the Expand-Contract Model, where actions are done simultaneously, sets it apart from the Traditional Model.

The unique aspect of the Expand-Contract Model is incorporating vulnerable communities into the disaster equation. By involving previously unengaged communities in disaster management discourse, the model has made significant strides on the social dimension. The model emphasizes the bottom-up approach to public policymaking, believing it matters the most in disaster management discourse. The paper suggests that disaster-related policies must involve ideas from both top-level bureaucrats and the communities. The flexibility of the model lies in carrying out activities side by side, expanding and contracting simultaneously (Asia Disaster Preparedness Centre, 2000; Dube, 2015, p. 6).

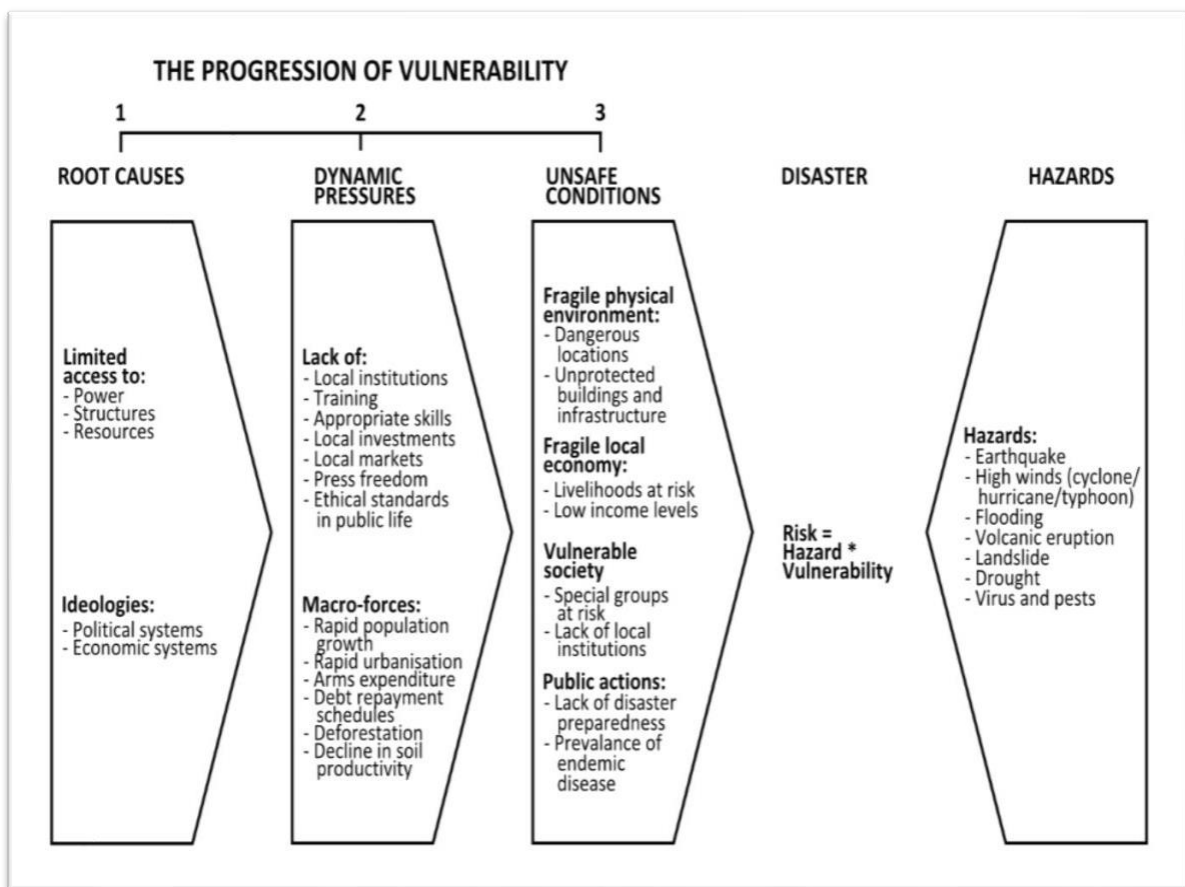
Overall, the Expand-Extract Model provides a theoretical framework for the study of disaster management systems, and its application in this research will enable an assessment of the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. However, the model has its challenges, with some government officials abusing it for political gains, especially in many developing countries worldwide. Despite these challenges, the Expand-Contract Model offers a unique perspective on disaster management that challenges the sequential nature of the Traditional Model.

2.6.5 Disaster Pressure and Release Model

The Pressure and Release Model offers a theoretical construct useful for examining how disasters affect communities that are vulnerable (Wisner et al., 2004). The model suggests that society is under pressure and constrained by

various vulnerabilities and hazards, which increase the risk of disasters. The pressure results from the combined effect of social, economic, and environmental factors that push a community toward a disaster. The release refers to the event of the disaster, which causes an immediate shock that destabilizes the community. The community then seeks to restore its stability and resilience by adapting to the new environment created by the disaster.

Figure 8: Pressure and release model



Source: (Winsler, 2004)

The Disaster Pressure and Release model is a crucial model in today's disaster management, according to Blaikie et al. (1998). The theory focuses on managing disaster risk and crises by understanding the interaction between vulnerability and hazards. Also referred to as the 'Crunch Model,' the Disaster Pressure and Release Model views vulnerability as a pressure deeply embedded in socioeconomic and political processes (Oxfam, 2012). This model

provides a framework for disaster practitioners to comprehend vulnerability to disasters and how to alleviate it (Awal, 2015). Awal (2015) explains that disasters occur when natural hazards intersect with processes that generate vulnerability. Oxfam (2012) argues that a natural phenomenon is not a disaster by itself; it only becomes a disaster when government policies fail to mitigate, prepare, respond, and recover from the disaster within communities. Wisner et al. (2004) found that economic, demographic, and political processes contribute to vulnerability. The Pressure and Release (PAR) Model underscores the crucial nature of catering to vulnerable communities, emphasizing that they often face challenges due to limited access to up-to-date information, resources, and governmental aid (Oxfam, 2012).

Several studies have used the pressure and release model to understand the impact of disasters on vulnerable communities in Zimbabwe. For example, Wisner (2003) investigated people's vulnerability and disasters. He used the pressure and release model. Mavhura and Mucherera (2020) also used the model to understand flood survivors' perspectives on vulnerability reduction to floods in the Mbire district. Mavhura & Manyangadze, (2021) noted that social vulnerability to natural hazards in Zimbabwe is influenced by a combination of factors, including poverty, lack of access to basic services, inadequate infrastructure, and weak disaster management systems. The study provides insights into the pressures that communities face, which result in their vulnerability to disasters. In their research, Muchapireyi (2018) examined the difficulties experienced by a community in Zimbabwe during the rapid-onset flood disaster at Tokwe-Mukosi. The study sheds light on the immediate impact and shock that the community endured, aligning with the release phase of the Pressure and Release Model.

Despite the benefits of the PAR model, it has some limitations. Wisner (2003) notes that the model omits information on the exact "pressure point" of when and where a disaster can occur. Moreover, the PAR model is considered "static" in that it does not offer a change in direction before, during, and after disasters struck communities that are deemed vulnerable (Wisner, 2003). The theory does not provide alternative communication methods to prepare vulnerable communities. According to Dube (2015), despite having disaster management models, natural hazards continue to kill many people, and disasters are often managed in a haphazard manner, leading to crisis management (disaster response). Therefore, complementary models are needed to address these deficiencies and preserve lives.

The study utilizes the press and release model as a complementary theoretical framework to explore the efficacy of Zimbabwe's disaster preparedness and response policies and the impact of disasters on vulnerable communities. The model aids in identifying the vulnerabilities and hazards that limit communities, increasing their susceptibility to disasters. Additionally, it sheds light on how communities adapt to the aftermath of disasters by employing various coping mechanisms to restore stability and resilience. Consequently, the model exposes gaps in policy, enabling policymakers to make informed decisions for improvement.

CHAPTER THREE: METHODOLOGY

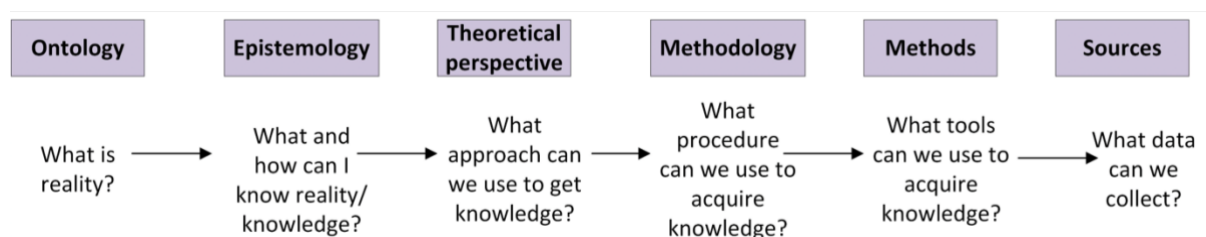
3.0 Introduction

This chapter focuses on the ways and means of achieving the study objectives. It explains the research strategies that were adopted to Investigate the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The Case of Cyclone Idai in Chimanimani District. It discusses the target population, sampling techniques, data presentation and analysis, validity and reliability, ethical issues, feasibility, and limitations of this research study.

In this research, the research carried out semi-structured interviews with 35 individuals specifically selected based on their engagement in disaster preparedness and response activities within the Chimanimani District. Informants included five (5) members of parliament, four (4) councilors, fifteen (15) NGO officers, five (5) Department of Civil Protection officials, one (1) sub-Aqua police officer, two (2) Environmental Management Agency officials, two (2) meteorological department officials, and one (1) official from the Hydrological Service Department official. The interviews were performed via Zoom and over the phone (via Skype, since it was affordable for direct calls) with the Informants' consent, and both Shona and English were used. Thematic analysis was used to study the data, which involved discovering patterns and themes in the data, and methodological triangulation was adopted to validate the findings, enhance the understanding of the subject, and provide a more comprehensive and robust analysis of the research question. This chapter's mandate is to unveil how the researcher carried out this study.

3.1 Philosophical Foundation

Figure 9: Research Philosophy



Source: (Hay, 2002, p.64)

It is crucial for a researcher to explicitly identify and articulate the philosophical foundation underpinning their study. The philosophical foundation of this study is essential to understand

the underpinning research assumptions and inform the methodology. This research employs qualitative methods, specifically semi-structured interviews, and thematic analysis, to collect and analyze data. The study is firmly rooted in the philosophical principles that underlie the ontological, epistemological, and methodological aspects of social science research. Understanding these perspectives is essential in outlining a study's research philosophy and approach (Tuli, 2011).

Qualitative research is based on the interpretive paradigm, which focuses on understanding the social world and the meanings individuals attach to their experiences (Tuli, 2011). This approach is concerned with the subjective experiences of individuals, emphasizing the importance of context and the role of human interpretation in shaping social reality (Bryman, 2012). The underlying philosophy of this research corresponds to the interpretive paradigm, given that the investigation aims to comprehend the impact of climate-related policies in Zimbabwe from the viewpoint of those directly engaged in managing Cyclone Idai. In terms of ontology, the research is grounded in a constructivist approach, suggesting that reality is a social construct and individuals' experiences and interpretations mold their world comprehension (Bryman, 2012). This viewpoint resonates with the qualitative essence of the study, which strives to unravel the intricacies of disaster readiness and response in Zimbabwe by delving into the experiences and insights of various stakeholders implicated in Cyclone Idai.

The study's epistemological foundation is shaped by an interpretive perspective, which places significance on comprehending the subjective meanings and experiences of individuals within their specific social contexts (Bryman, 2016). This approach is highly relevant to the research topic, as it enables a detailed exploration of the multitude of factors influencing the efficacy of climate-related policies and the experiences of those impacted by Cyclone Idai. By embracing an interpretive epistemology, the study recognizes that the knowledge produced is contingent upon the context and influenced by participants' interpretations and experiences.

Methodologically, the study utilizes a qualitative research design, employing semi-structured interviews as the primary data collection method. This approach is appropriate for the research objectives, as it allows for a detailed and nuanced understanding of the experiences, perceptions, and opinions of Informants (O'Reilly, 2012). Semi-structured interviews provide a flexible framework for data collection, enabling the researcher to delve deeper into the issues and themes that emerge during the interviews while maintaining a focus on the research

objectives (Bryman, 2012). Furthermore, the qualitative design is consistent with constructivist ontology and interpretive epistemology, as it seeks to explore and understand the participant's subjective experiences and interpretations of reality (Tuli, 2011).

In this study, thematic analysis was used to identify, analyze, and interpret patterns and themes within qualitative data. (Bryman, 2016). This method aligns with the study's ontological and epistemological perspectives, as it allows for an in-depth exploration of the various factors influencing the effectiveness of climate-related policies and the experiences of those that were involved in Cyclone Idai disaster management activities thus preparedness and response. By using thematic analysis, the researcher identified commonalities and differences in Informants' experiences and perspectives, providing a rich and nuanced understanding of the research topic.

Basically, this study is philosophically based on constructivist ontology, an interpretive epistemology, and a qualitative methodology, using semi-structured interviews and thematic analysis to explore the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. This research philosophy and approach are well-suited to the research objectives, as they allow for a detailed and context-sensitive understanding of the experiences and perspectives of various stakeholders involved in Cyclone Idai as a case study. By incorporating these philosophical perspectives and methodological approaches, the study endeavors to provide valuable insights into the intricate dynamics of disaster preparedness and response in Zimbabwe, particularly in the context of climate-related disasters.

3.2 Research design

A research design is considered the backbone of a research project, providing a structure that connects all its components (Crouch & Housden, 2003). According to Borg and Gall (2013), a research design is a step-by-step procedure that outlines how data is gathered, variables are examined, subjects are grouped, treatment conditions are applied, and data is analyzed. This strategic plan helps to achieve research objectives and control variances. In the current study, a case study design was utilized, which is an approach that concentrates on acquiring a comprehensive understanding of a particular entity or event at a specific time (Yin, 2003). Case study research is a cost-effective way of obtaining a concentrated pool of information from a sizable population (Saunders, 2003) and excels at bringing individuals to an understanding of a complex issue or object, extending experience, or adding strength to existing knowledge obtained through previous research (Bryman, 2016).

This study also adopted the qualitative research methodology approach to investigate the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The Case of Cyclone Idai in Chimanimani District, Zimbabwe. Wiles and Allen (2016), postulate that students appreciate a synoptic method of qualitative research as it enables them to master skills of summarizing, critique, and personal reflexive responses. Babbie and Mouton (2005) highlighted that qualitative research aims to achieve a comprehensive understanding of a phenomenon by directly engaging with it. This research approach employs flexible methods, such as semi-structured interviews, to capture the subjective experiences of individuals involved in the phenomenon under investigation. Bryman (2016) notes that, qualitative research emphasizes words rather than quantification in the gathering and analysis of data and emphasizes an inductive approach to the relationship between theory and research, in which an emphasis is placed on the generation of theories. Qualitative research rejects the practices and norms of the natural scientific model in favor of emphasizing how people interpret data. It helps to understand the role, interaction, and perception of the various actors in disaster management, risk reduction, preparedness, and response. This includes getting information from the Department of Civil Protection, the Ministry of Local Governance in Zimbabwe, the Environmental Management Agency (EMA), and the local NGOS to mention but a few.

Creswell (2014) notes that the meaning of individual actions and perceptions can be generally understood through qualitative data collection methods like participant observation, in-depth interviews, semi-structured interviews, and key informant interviews. Therefore, a qualitative inquiry using key semi-structured interviews was used to collect data for this study. For instance, to understand the extent to which climate-related disaster policies have been informing disaster preparedness and response in Zimbabwe can be understood from a perspective coined by (Bryman, 2016; Creswell 2014). Key informants were contacted by the researcher and other stakeholders in the communities and line ministries like the Department of Civil Protection to check if the disaster response strategies are informed with the climate-related policies in Zimbabwe. Data collected through qualitative methods were analyzed using thematic analysis (Bryman 2016, O'Reilly 2012). Thematic analysis is a qualitative data analysis tool that makes use of the prevalent themes in the data collected and analyses the data in the pattern of those themes (Bryman 2016; Etikan and Bala, 2017).

A case study can be defined as a systematic plan for a research project that includes determining the participants to be included in the study (sampling) and identifying the entities or variables to be compared across various dimensions. According to Burns and Groove (2003), a research design serves as a blueprint for conducting research, allowing researchers to maintain control over factors that could potentially affect the credibility of the data. It essentially provides an outline of the procedures to be carried out throughout the course of a research study. In the words of Yin (2003, p. 3), a case study is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident."

A case study design was adopted by the researcher because of its ability to present real-life contexts that do not temper any alteration of human behavior. The case study design helped the researcher to study individuals in their natural contexts. Due to the specificity and richness of cases that a case study provides, the researcher opted for the case study design due to its ability to provide rich cases of information as supported by Kothari (2004). Employing a case study approach allowed the researcher to comprehensively address the concerns and complexities surrounding disaster preparedness and response strategies in the Chimanimani District of Zimbabwe. According to Yin (2003), case studies offer distinct advantages due to their capacity to incorporate diverse forms of evidence, such as documents, artifacts, interviews, and observations (p. 8). According to Yin (2003), case studies are appropriate for the type of research designs that require no control of human behavior, posit how and why type of questions, and contemporary studies rather than historical data. Therefore, such a criterion for choosing a case study design justifies this study selection for a case study design in the understanding of the effects of the climate-related policies on the disaster preparedness and response strategies in Chimanimani District in Zimbabwe.

3.3 Target Population

According to White (2010), the population is the collection of participants who have the relevant information to the study from which outcomes are to be obtained. McLeod (2014) defines a target population as a total group of individuals from which a sample might be drawn. To ensure the representativeness of research, it should have value and relevance for the broader population from which the sample is taken. Given the impracticality of conducting interviews or surveys with every individual in a population, the selection of a representative sample

becomes essential to enable generalizations from the sample to the entire population (O'Reilly, 2012). The target population in this research comprises the Department of Civil Protection officials, NGOs, Members of Parliament and councilors, the meteorological department, and sub-aqua police.

3.4 Sampling Population

Sampling involves the procedure of choosing an appropriate sample or a representative portion of a population to ascertain the characteristics of the entire population (Barom, 2013; Walliman, 2011). In the present study, the researcher employed purposive sampling and snowballing methods to select participants for interviews. This sampling technique was chosen because it ensured that the target population and collected data were not biased, and the responses were based on the individual experiences and diverse backgrounds of the participants. Sampling techniques are crucial strategies that constitute sampling procedures (Roberts & Hair, 2011). In this research, two sampling techniques were used, namely, the snowballing and purposive sampling techniques.

Sampling can be defined as a subset of the population that is selected for a particular study Burns and Groove (2003). Therefore, data is collected from a sample rather than the entire population as it is not feasible to collect data from a whole population Polit and Hungler (2003). Therefore, the study drew its sample from the Chimanimani District, Manicaland Province, and Zimbabwe where there are cases of disasters.

3.5 Purposive and Snowballing Sampling

The researcher employed purposive and snowball sampling techniques to select semi-structured interview participants. These sampling techniques proved instrumental in identifying knowledgeable and experienced individuals within the fields of climate change, relief aid, sustainable development, disaster management etcetera. The researcher employed purposive sampling to connect with individuals as well as government ministries, agencies, and departments focused on environmental and disaster management, as mandated by the constitution. The snowball sampling technique was utilized to gain access to key informants referred by those purposively selected due to their expertise and relevance to the research topic. The snowball technique proved valuable in identifying individuals from NGOs with deeper

and more specific knowledge in the area, as recognized by those initially selected through purposive sampling.

Purposive sampling, as the name suggests, involves the deliberate selection of participants based on specific criteria or characteristics (Cohen et al., 2011). In this research, purposive sampling was used to connect with individuals known for their work in climate change, relief aid, and sustainable development within civic society. Furthermore, participants from government ministries, agencies, and departments focused on environmental and disaster management were selected, as mandated by the constitution. O'Reilly (2012) explains that purposive sampling is a method used to choose a sample based on specific criteria, targeting individuals, times, settings, or situations that exemplify those criteria. Cohen et al. (2011) noted that in purposive sampling, the researcher selects participants and cases for inclusion in the sample based on their judgment regarding their typicality or the presence of specific characteristics being sought. This technique allowed the researcher to target participants with the most relevant knowledge and expertise on the subject matter, ensuring the quality and depth of the collected data.

Snowball sampling is a method where the researcher begins by sampling a small group of individuals relevant to the research questions, and these initial participants recommend others who possess the experience or characteristics pertinent to the study. This process continues as new participants suggest additional individuals (Bryman, 2016). Snowball sampling is a method whereby current participants provide referrals to the researcher, suggesting other potential participants who fulfill the criteria of the study (Ritchie & Lewis, 2003). In this study, snowball sampling was utilized to gain access to key informants referred by those initially selected through purposive sampling. Murthy, (2008) explained that snowball sampling provides valuable access to friendship groups or extensive networks, making it particularly useful for research on such topics (as cited in O'Reilly (2012)). This technique proved valuable in identifying individuals from NGOs with deeper and more specific knowledge in the area of disaster preparedness and response. As the participants were recognized by those initially selected through purposive sampling, the snowball technique expanded the researcher's access to a wider range of perspectives and experiences, further enriching the data collected.

Both purposive and snowball sampling techniques contributed to the selection of semi-structured interview participants in this study. Using semi-structured interviews allowed the

researcher to ask open-ended questions and explore the perspectives and experiences of participants (O'Reilly, 2012). The qualitative nature of the study suited this approach, which allowed the researcher to dig deeper into its complex and nuanced aspects (Tuli, 2011).

By employing purposive and snowball sampling techniques, the researcher was able to gather diverse perspectives from a range of stakeholders involved in climate-related policies, disaster preparedness, and response in Zimbabwe. The utilization of a combination of purposive and snowball sampling techniques facilitated the acquisition of in-depth and significant data, ultimately contributing to a more comprehensive comprehension of the efficacy of climate-related policies concerning disaster preparedness and response in the specific context of Cyclone Idai in the Chimanimani District. Through the implementation of purposive and snowball sampling, the researcher was able to access a diverse pool of knowledgeable participants for semi-structured interviews. These sampling techniques, coupled with the adaptability and flexibility offered by semi-structured interviews, provided the researcher with a robust methodology to investigate the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The insights gained from these diverse perspectives and experiences contributed to a deeper understanding of the factors shaping policy effectiveness and the potential avenues for improvement in the face of ongoing climate-related challenges.

3.6 Research instruments

Research instruments are tools developed by researchers to achieve their stated objectives when carrying out a research study such as questionnaires, interviews, or focus group discussions. In this study, the researcher used semi-structured Interviews. Semi-structured interviews are widely favored in social science research for their flexibility and capacity to yield comprehensive insights. These interviews are designed to strike a balance between structured and unstructured formats, enabling researchers to pose predetermined questions while also giving participants the freedom to provide detailed elaborations. According to Bryman (2016), semi-structured interviews prove particularly valuable in cases where the research question is intricate, and the topic being explored lacks a precise definition.

Given the intricate and multi-dimensional nature of the research question, semi-structured interviews were deemed a suitable research instrument. This choice was motivated by the aim of gathering comprehensive and detailed data from various perspectives. By utilizing semi-

structured interviews, the researcher posed a set of predetermined questions about climate-related policies, as well as disaster preparedness and response in Zimbabwe. Simultaneously, participants were given the opportunity to elaborate on their individual experiences and perspectives, enriching the depth of the collected data. The researcher conducted semi-structured interviews online with respondents and utilized local contacts in Zimbabwe to share Consent forms and schedule interviews. This approach facilitated easier access to respondents, as they had established rapport and trust among each other. Due to the tense political situation in Zimbabwe and the persecution of academics, NGO officials, and human rights defenders, it was challenging to find respondents willing to participate in the interviews. This led the researcher to extend the NSD application to allow for more time to connect with the target population.

The decision to record an interview depends on the level of detail required and the potential impact on participants (O'Reilly, 2012). In this study, the researcher used edited transcription, taking notes during interviews, as prior experience indicated that respondents were uncomfortable being recorded due to numerous arrests stemming from recorded phone calls and social media content. The introduction of the Private Organization Bill and Patriotic Bill, which passed the Senate and awaits presidential approval, has further contributed to the shrinking of civic space in Zimbabwe. Some interviews, particularly those involving officials or representatives of political groups, work better without recording as the presence of recording equipment can stifle conversations and encourage guarded behavior (O'Reilly, 2012, p. 153).

Using the edited transcription approach, the researcher took detailed notes during the interview, capturing the main points and key quotes from the conversation. Developing strong listening and note-taking skills was essential to accurately and thoroughly document the information. After the interviews, the researcher used the notes to create an edited transcription, which is a condensed and organized version of the conversation, focusing on the most relevant and significant information. To address the limitations of this method, the researcher adopted methodological triangulation and paid close attention during interviews while taking notes. As noted by Bryman (2012), there are some limitations to this method, relying solely on notes may result in the loss of some details or nuances in the conversation, which could be important for data analysis.

O'Reilly (2012) notes that semi-structured interviews are particularly useful when researching topics that are sensitive or personal, as they allow participants to control the depth and level of detail of their responses. In the case of the Cyclone Idai disaster, participants may have experienced trauma during their work or fear political persecution (which was a case also noted in this research) and may be reluctant to share their experiences in a structured or formal setting. The utilization of semi-structured interviews in this research provided a conducive environment for participants to share their experiences comfortably. This approach also yielded rich and comprehensive data, which can serve as valuable insights for informing policy and practice. Considering the research's focus on disaster preparedness and response in Zimbabwe, the justification for employing semi-structured interviews lies in their capacity to generate detailed and meaningful information that can effectively guide policy and practice in this domain.

The utilization of semi-structured interviews offered notable advantages and hence the justification for the researcher, primarily it enabled the collection of in-depth and comprehensive data on the research topic in question. By employing an interview guide featuring open-ended questions, the researcher successfully elicited detailed and nuanced responses, which shed light on the informants' thoughts, beliefs, and experiences. This approach proved instrumental in gaining valuable insights into the subject matter, ultimately enhancing the overall understanding of the research area. As Bryman (2016) notes, interviews are particularly useful for exploring sensitive or complex topics that may be difficult to capture through other research instruments. Additionally, interviews can be used to build rapport with participants and establish a trusting relationship, which can lead to more honest and candid responses.

The researcher triangulated data collected from interviews in conjunction with literature and theoretical frameworks. The researcher compared the data gathered from interviews with existing literature and theoretical frameworks to identify patterns, themes, and insights. By incorporating this approach, the researcher was able to validate the findings, deepen the comprehension of the subject matter, and offer a more comprehensive and robust analysis of the research question. This utilization of a literature review, theoretical frameworks, and semi-structured interviews fall within the methodological triangulation approach. Methodological triangulation refers to the use of multiple methods or data collection techniques to study a research problem (Denzin, 1970, as cited by Bryman, 2016). In this case, the researcher

employs a literature review and theoretical frameworks to triangulate data collected in semi-structured interviews and analyzed by thematic analysis.

The reason for using methodological triangulation was to improve the credibility, validity, and reliability of the research findings. By employing different methods, the researcher can address potential biases, limitations, or inconsistencies that may arise from relying on a single data collection technique (Bryman, 2016). Incorporating methodological triangulation enables the researcher to examine various aspects of the research issue, leading to a more holistic comprehension of the subject matter (Tuli, 2011). The researcher was able to contextualize the findings from the interviews within the broader academic discourse and existing knowledge. Theoretical frameworks provided an analytical lens through which the researcher interpreted the data and draw meaningful conclusions. Semi-structured interviews, on the other hand, offer rich, firsthand insights from the participants, capturing their experiences, perspectives, and opinions on the research topic (O'Reilly, 2012). By using these instruments, the researcher managed to gather data that is difficult to obtain through other means and gained a deeper understanding of the context and perspectives related to the effectiveness of Zimbabwe's policies towards climate-related disaster preparedness and response strategies.

3.7 Data Analyses

Data analysis is a critical component of qualitative research, and there are various methods available to analyze qualitative data. This research made use of thematic analysis and was triangulated by a literature review and theoretical framework. The thematic analysis involves the identification and interpretation of patterns and themes in qualitative data. The method was useful in providing rich insights into complex phenomena.

Thematic analysis is a flexible and versatile method that allows researchers to identify patterns and themes in qualitative data, regardless of the type of data or research question. Thematic analysis can be used inductively or deductively, meaning that researchers can either generate themes from the data or test pre-existing theoretical constructs. According to Vincent et al. (2010), Thematic analysis presents numerous notable benefits, such as its adaptability in handling intricate data, its capacity to produce novel insights, and its effectiveness in identifying patterns and themes from diverse data sources, such as interviews, focus groups, and documents. In the present study, thematic analysis was specifically employed to identify and examine the themes that arose from the conducted semi-structured interviews. Thematic

analysis is a qualitative data analysis tool that makes use of the prevalent themes in the data collected and analyses the data in the pattern of those themes (Bryman 2016; Etikan and Bala, 2017). Nojavan et al. (2018) used thematic analysis to explore conceptual changes in disaster management models, highlighting the importance of rigor and transparency in the research process.

Thematic analysis is an approach to analyzing and condensing qualitative data by segmenting, categorizing, summarizing, and reconstructing it (Given, 2008; Mills, Durepos, & Wiebe, 2010). Thematic analysis, a frequently employed qualitative research method, was adopted by the researcher to examine the impact of climate-related policies on disaster preparedness and response in Zimbabwe, with a specific focus on the case of Cyclone Idai in the Chimanimani District. Thematic analysis is a process of identifying patterns, themes, and categories in qualitative data. Furthermore, methodological triangulation was adopted by the researcher to validate and provided valuable insights into the research topic.

3.8 Ethical Considerations

Ethics are a systematic study of or formalization of rules concerning the separation of good conduct from bad (David and Sutton, 2011). For research to benefit people and minimize harm, it should be conducted ethically. The researcher, therefore, seeks consent from the participants and the researcher did not disclose personal information about the participants. Voluntary participation was upheld so that the participants participate free of their will. The researcher did not write anything which might depict any form of identification of the participant. Interviews were conducted in a language they all understand, and confidentiality of the information was guaranteed. Information gathered will solely be used for academic purposes.

3.7.1 Confidentiality and Consent

The researcher ensured that there was written consent from the research participants before the collection of data to ensure that the research conforms to the University's ethical guidelines (The Norwegian National Research Ethics Committees (Etikkom) (2019). Consent forms were availed to the research participants and the researcher ensured that the information that concerns the research is detailed in the consent form. This was meant to ensure that there is clear communication with the research subjects regarding the nature and the purpose of the research. Further, the names and designations of the research participants were not collected

and were not disclosed in the analysis and presentation of data. This practice adheres to the guidelines for conducting research on the Internet, which prioritize the protection of research participants (NESH, 2016, B.7; British Academy & The Royal Society, 2017).^S The researcher used the Zoom platform and calls to conduct interviews, to collect data from the research participants in Zimbabwe. The platform conforms with the ethical requirements since it is a widely used platform that is available to different participants like the Ministry of Local Government, Civil Protection Department, Red Cross, United Nations Development Programme (UNDP), the academia, Local district council, and the Environmental Management Agency. The age groups of the target population did not include minors or children which means the research has no ethical implications for the rights of children and vulnerable groups. The study participants were provided with clear information regarding the research objectives, and their informed consent was obtained to ensure compliance with research ethics guidelines (NESH, 2016, B.7).

3.9 Challenges and Risks

The researcher faced numerous challenges and risks while conducting the study, which are detailed below:

Internet connectivity issues: In Chimanimani and Zimbabwe as a whole, poor internet connectivity and frequent load-shedding made it difficult for the researcher to effectively communicate with research participants. This issue disrupted the smooth flow of interactions and led to the postponement of interview schedules, causing delays in data collection.

Polarized political environment: The highly polarized political environment, due to the forthcoming harmonized elections, made many potential participants reluctant to engage in the research. The government's history of arresting and abusing individuals perceived to be speaking ill against them further exacerbated this situation. As a result, the researcher had to rely on the snowball sampling method to identify participants meeting the research criteria through their peers and references.

Trust issues among respondents: The researcher had to use local contacts in Zimbabwe to share consent forms and book interviews, as this facilitated easier access to respondents who had a better rapport and trust with each other. However, building trust with respondents in the current

political climate remained a challenge, with many participants remaining skeptical about their involvement in the research.

Reluctance to be recorded: Due to the risks associated with sharing recorded information, including arrests and persecution, many respondents were not comfortable with being recorded during interviews. The researcher had to adopt an edited transcription approach and take detailed notes during interviews to alleviate these concerns.

Adaptation to alternative data collection methods: The researcher had to develop strong listening and note-taking skills to accurately and thoroughly document the interviews, as well as create edited transcriptions that focused on the most relevant and significant information. This necessitated more effort and time, as well as the flexibility to quickly adapt to a new data collection strategy.

Risk of missing details or nuances in conversations: Relying only on notes may result in the loss of some details or subtleties in the conversation that may be significant for data analysis.. The researcher needed to be vigilant in capturing all relevant information while taking notes, while also considering the potential biases or inaccuracies that could be introduced when summarizing and interpreting the interviewee's statements.

Ensuring thorough and reliable analysis: Without audio recordings, the researcher had to revisit their notes multiple times to ensure a comprehensive analysis of the data. This process was time-consuming and demanded a high level of attention and organization. The researcher faced a multitude of challenges while conducting the study, including issues with internet connectivity, a polarized political environment, trust concerns among respondents, and the necessity to adapt to alternative data collection methods. Despite these obstacles, the researcher was able to collect valuable data and gain insights into the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe, specifically in the context of Cyclone Idai in Chimanimani District.

3.10 COVID-19 Preparedness Plan

The study was conducted under strict COVID-19 adherence to ensure that the prevention and containment issues of COVID-19 are followed. The researcher used virtual access and virtual interaction with the research participants.

3.11 Chapter Summary

This chapter covered on the various tools and methods that were used to collect data from the target population. The qualitative method was employed as an appropriate approach. It also highlighted the research design, research population, research sample, sources of data, data collection techniques, and a plan for data presentation analysis, highlighting the merits and demerits of using such methodologies. The data collected will be presented and analyzed in the next chapter.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND DISCUSSION

4.0 Introduction

This chapter is designed to showcase, analyze, and interpret the data obtained from a diverse range of sources such as members of parliament, councilors, NGO officers, the Department of Civil Protection, sub-Aqua police, officials from the Environmental Management Agency, meteorological department members, and journalists. Data were gathered through semi-structured interviews and analyzed thematically in accordance with the emerging themes from these interviews. The purpose of this discussion is to highlight these themes and connect them to the research questions. The chapter begins by presenting general demographic details, followed by variables derived from secondary data/document analysis. To maintain confidentiality, fictitious names and secondary personas will be utilized for direct quotes.

The chapter will then focus on presenting the semi-structured interview data, with a specific emphasis on the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The data showcased and examined in this chapter were procured from local participants and aligned with the research objectives, purpose, and queries. The chapter will culminate with a summarization of the key findings. The data's interpretation and discussion will be supported by appropriate literature and past research, providing a deeper comprehension of the results. This chapter will contribute to understanding how effective climate-related policies are on disaster preparedness and response in Zimbabwe, offering valuable insights for policymakers and stakeholders on how to enhance their disaster preparedness and response strategies.

In essence, this chapter will offer a comprehensive analysis and presentation of the gathered data and seek to answer the research questions. It will highlight the efficacy of climate-related policies on disaster preparedness and response in Zimbabwe. The subsequent chapter will provide recommendations for improvement.

4.1 Demographic Information of Participants

Before embarking on the investigation of the study's core issue, it was essential to collect basic demographic data about the participants, such as their age, educational attainment, and gender. Grasping these attributes was critical in gauging their level of comprehension concerning the

subject of the study. Collecting demographic data was necessary as it informed the research about individual responses, knowledge, and viewpoints.

Table 1: Frequency table showing gender, age, and level of education.

Gender	Number of participants
Male	20
Female	15
Age	
18-25 years old	4
26-35 years old	9
36-45 years old	13
46-55 years old	6
56 years or older	3
Education	
Tertiary/Diploma	12
Bachelors/Masters	20
Ph.D./ Prof.	3

Source: Author

As depicted from the frequency table above the study constituted both genders. Males contributed the majority of the Informants (20) and females were fifteen (15) that attended the interviews. The age range of the informants was between eighteen (18) to fifty-seven (18-57) years old. The thirty-six to forty-five (36-45) years old group consisted of most of the informants, followed by the twenty-six to thirty-five (26-35) years old range group, and by the

age group of forty-six to fifty-five (46-55) years old. The two least represented age groups were those between eighteen to twenty-five (18-25) years old and fifty-five plus (55+) years old. All research subjects indicated that they had achieved a tertiary level of education in their areas of specialization. This level of education demonstrated that all Informants were able to read and understand materials related to the research question, such as newspapers, parliamentary Hansard, government reports, etc. Additionally, all Informants stated that they had experience and knowledge of the research topic. The age, level of education, and experience of the Informants in the study served as a solid foundation for obtaining valid and reliable data or information regarding the effectiveness of climate-related policies in Zimbabwe on disaster preparedness and response strategies.

4.2 The Nature of Interviews

The research aimed to investigate the effectiveness of climate-related policies on disaster preparedness and response strategy in Zimbabwe, with a specific focus on the case of Cyclone Idai. Given the complex nature of disaster management in Zimbabwe, the research required engagement with various stakeholders who had the knowledge and a say in the topic in question. The study incorporated participants from both governmental and non-governmental organizations, as well as individuals and broader communities. Nevertheless, due to security considerations during the election period and in order to ensure the safety of both the researcher and the informants, semi-structured interviews were carried out via Zoom and direct phone calls with informants from national, provincial, and district levels. To ensure a comprehensive understanding of the topic, the purposive sampling method was utilized to select participants (key informants) for the interviews, and the snowballing sampling method was used to reach out to other potential Informants who could provide rich information.

Most of the Informants who were reached out to using the purposive sampling method referred the researcher to other individuals who had more detailed knowledge of areas they were not fully aware of and those whom they have conducted seminars and capacity-building activities with etc. This process worked well, particularly in reaching out to stakeholders from the Department of Civil Protection (DCP) and NGOs in Chimanimani, who were very active during the Cyclone Idai disaster.

However, despite efforts made to contact the Zimbabwe National Army, no response was received. This was unfortunate, as they provide personnel and helicopters from the Air Force

of Zimbabwe during times of disasters, and their input would have been valuable to the research.

In conclusion, the research on the effectiveness of climate-related policies on disaster preparedness and response strategy in Zimbabwe required the engagement of various stakeholders. Although the security situation during the hyped election season limited face-to-face interviews, the use of technology-enabled effective communication with Informants. The purposive and snowballing sampling methods used were successful in identifying Informants with rich information, with the DCP and NGOs in Chimanimani being particularly helpful in providing insights into the Cyclone Idai disaster.

Table 2: List of Informants

Category	Frequency	Percentage
Department of Civil Protection	5	14.29
NGOs	15	42.86
Environmental Management Agency	2	5.71
Zimbabwe's National Army and Airforce	0	0
Meteorological Department	2	5.71
Hydrological Service Department	1	2.86
Sub-Aqua Police	1	2.86
Government officials (MPs and Councilors 9)	9	25.71

Source: Author

4.3 LIST OF INFORMANTS

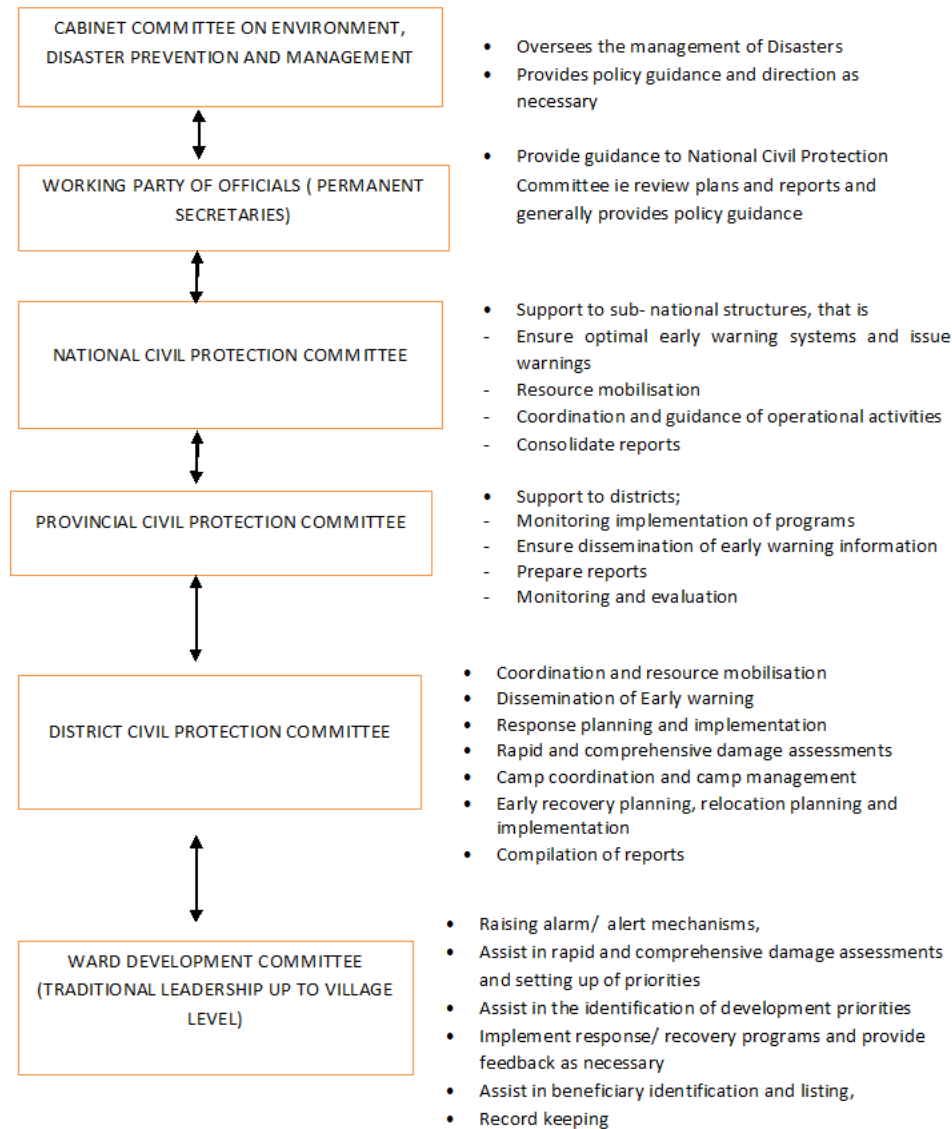
This study delves into the exploration of climate-related policies and their effectiveness in disaster preparedness and response, primarily focusing on Cyclone Idai in the Chimanimani District of Zimbabwe. The data used in this analysis comes from a variety of sources, including stakeholder interviews from several organizations like the Department of Civil Protection (DCP), (NGOs), the Environmental Management Agency (EMA), the Hydrological Services Department, and government officials. All these entities have a significant role in Zimbabwe's disaster management framework, offering a distinctive perspective on the issues under consideration. The main research questions guiding this study are:

- What are the disaster-related policies relevant to disaster preparedness and response in the Chimanimani District?
- How effective are these disaster-related policies on disaster preparedness and response in the Chimanimani District?
- What challenges affect the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District?
- What are the potential intervention strategies aimed at policy review improvement?

This study aims to answer these research questions with the goal of offering a detailed comprehension of the current policy structure, its advantages, and shortcomings, along with potential strategies that could improve disaster readiness and response in Zimbabwe, especially considering the situation of Cyclone Idai

4.3 Department of Civil Protection (DCP)

Figure 10: Coordinating Structure of Civil Protection from National Level to ward level



Source: DCP (2020)

In Zimbabwe, the Department of Civil Protection (DCP) plays a critical role in orchestrating the nation's disaster management initiatives, which include creating and executing policies and strategies for disaster risk reduction. Their specific responsibilities include addressing climate-related disasters and gathering resources for impacted communities.

For the purpose of this study, five (5) DCP officials were interviewed to delve into the department's role in disaster readiness and response and to evaluate the efficacy of climate-related policies in minimizing disaster consequences. These discussions shed light on the strategies, policies, practices, and challenges, and opportunities related to disaster preparedness and response in Zimbabwe.

4.4 Non-Governmental Organizations (NGOs)

In Zimbabwe, the civic society plays a crucial role in not only delivering social services and championing local community causes, but they are also significantly involved in disaster preparedness and response activities. A study was conducted wherein the researcher interviewed fifteen representatives from a range of these organizations, such as the Red Cross Society Zimbabwe, World Vision Zimbabwe, CARE Zimbabwe, and more. These discussions aimed to obtain direct insights into how climate-related policies are affecting disaster readiness and response. They also explored the obstacles and prospects within this sector.

The Informants, chosen through purposive and snowball sampling methods, shared their experiences and insights which were instrumental in identifying the strengths and weaknesses of current policies and practices. The feedback obtained from these NGOs will be invaluable in informing future policy development and program implementation for improved disaster preparedness and response in Zimbabwe.

4.5 Environmental Management Agency (EMA), The Hydrological Services Department, Government officials

Fifteen (15) informants from various organizations including the Environmental Management Agency (EMA), the Hydrological Services Department, and government officials were interviewed for insights into disaster preparedness and response in Zimbabwe. EMA, responsible for environmental conservation and disaster risk reduction initiatives, offered valuable perspectives on the effectiveness of environmental policies, particularly regarding Cyclone Idai. Similarly, insights were gained from the Hydrological Services Department, which monitors and forecasts water levels, and from the Sub-Aqua Police, a rescue unit during hydrological disasters.

Government officials, including Members of Parliament and Councilors, who develop policies and raise awareness of disaster risks, also contributed to the research. The semi-structured interviews provided first-hand accounts of experiences and suggestions for enhancing disaster

preparedness and response in Zimbabwe. Overall, the gathered information plays a crucial role in enhancing climate-related policies for improved disaster management in the country.

4.6 Key Themes and Analysis of Climate-Related Policies on Disaster Preparedness and Response

The following presents a detailed analysis and discussion of the key themes that emerged from the research, focusing on the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe, particularly in the case of Cyclone Idai in Chimanimani District. These themes and their sub-themes represent the challenges that affect the effectiveness of disaster-related policies in Zimbabwe and Chimanimani. The analysis of these themes has also helped the researcher to unravel the other three research questions of this study. The research objectives sought to explore the relevant disaster-related policies, assess their effectiveness, identify the challenges affecting these policies, and propose potential intervention strategies for policy improvement. The subsequent sections introduce and analyze the main themes uncovered during the research, Resource Allocation, Timely Alerts, Evacuation Procedures, Involvement of Citizens, and Efficient Emergency Response.

4.7 Resource allocation

4.7.1 Findings and Analysis

The analysis of the data revealed three sub-themes related to resource allocation that is funding, infrastructure, and capacity building. Under these three sub-themes, the informants were able to give insights into the four research questions of this study and were competent to furnish the researcher with disaster-related policies relevant to disaster preparedness and response in the Chimanimani District. All the Respondents interviewed were able to highlight the policies that govern disaster preparedness in the Chimanimani district and Zimbabwe as a whole. One of the NGO officials reiterated that *“Local policies and international frameworks adopted in Zimbabwe are valuable though local policies face still have gaps they form a foundation for disaster preparedness and response,”* (Personal Interview 1, 10.02.23). The following frameworks were identified by respondents as related to disaster preparedness and response, these include the constitution of Zimbabwe Section 56 which stipulates that all persons have the right to equal protection and benefit of the law, Civil Protection Act of 1989 (Chapter 10:06), Chimanimani District Civil Protection Plan, Chimanimani District Climate Change and Watershed Management Response, National Climate Change Response Plan and the Sendai Framework for Disaster Risk Reduction that was adopted by Zimbabwe in 2015. The same

informant noted that though Chimanimani as a district can be applauded to have its own district framework, they lack significance since the Civil Protect Act is not centralized and lacks provisions that support local efforts and frameworks. The identification of the above policies is in relation to the first objective and first research question, thus identifying relevant policies to disaster preparedness and response.

After identifying the frameworks that govern disaster response and preparedness informants highlighted the need for increased funding for disaster preparedness and response activities. Regarding the second objective of the study, the research reviewed that these policies' effectiveness also heavily depends on adequate resource allocation, including funding, infrastructure, and capacity building. One member of parliament from the opposition political party stated, *“There is a need for more financial resources to be allocated to disaster management and laws that make it easy for members of parliament to make follow-ups and ensure that we are better prepared for future disasters”* (Interview, 15.02.23). Several Informants suggested that the government should prioritize funding for disaster preparedness and response activities over other areas, such as defense and infrastructure development, and these goes directly in line with objective number three which tries to understand challenges that hinder the effectiveness of these policies. An NGO official working with the Office of the District Administrator of Chimanimani District noted, that the district should be commended for its efforts to allow researchers funded by non-governmental organizations to conduct studies in the area this has helped the District to form the basis and baseline of coming up with the Chimanimani District Climate Change and Watershed Management Response which have created a conducive environment for Chimanimani as a district to focus on effects and links of climate change to disaster management (Interview 1). This, therefore, came as one of the intervention strategies that can be adopted by communities susceptible to disasters to decentralize their unique problems. Informants also discussed the need for prioritization of infrastructure development to enhance disaster preparedness and response. One councilor stated, *“We need to invest in infrastructure such as roads, bridges, and communication networks to ensure that we can respond effectively during disasters”* (Interview, 18.02.203). Several Informants highlighted the need for better access to remote areas that are often affected by disasters. In their work, Coppola and Maloney (2009) argue that disaster preparedness involves providing the necessary tools to those who could potentially be impacted by a disaster,

or those who may assist in such situations. This is done to optimize the chances of survival and minimize damage.

However, truly efficient systems require substantial financial support. This concept has allowed stakeholders to recognize the importance of capacity building for both residents and workers involved with relevant ministries and organizations, including the Department of Civil Protection. Moreover, this perspective provides insights into the efficacy of disaster-related policies and the obstacles that hinder their effectiveness. The issue of funding priorities and of not investing in infrastructural development that will safeguard the people from disasters has been raised by the respondents as one of the challenges that affect the effectiveness of the frameworks in place. To respond to potential interventions respondents noted the need to prioritize funding of climate change and disaster management activities, therefore creating a perfect space for capacity building. Capacity building was also one of the themes that stood up from the interviews with the Informants and they also emphasized the need for capacity building, including training and skills development, to enhance disaster preparedness and response. These findings highlight several possible intervention strategies that were suggested by informants and therefore also answer the fourth research objective. One of the NGO officers stated, *“The government needs to invest in training and augment provisions that create a conducive environment for skills development for disaster management teams to ensure that they are equipped with the necessary skills to respond effectively during disasters”* (Interview, 14. 04. 23). Several Informants also suggested the need for public awareness campaigns to educate communities on disaster preparedness and response. Most of the respondents highlighted the need for a core body and inclusive policy that will focus on climate change intensely and defines disaster from a climate change-induce lens in the Chimanimani and Zimbabwean context, rather than from a current framework that depicts or defines disaster from an angle that covers a wide range of events that even includes managing pandemics like Covid-19. Civil Protection Act does not cover all components of the disaster management cycle in Zimbabwe (Mavhura, 2015). This, therefore, is a clear possible intervention strategy that can be aimed at policy review improvement in Zimbabwe.

The findings of the study on resource allocation in Zimbabwe highlight the critical role of funding, infrastructure, and capacity building in enhancing disaster preparedness and response. Informants emphasized the need for increased funding for disaster management activities,

particularly prioritizing it over other areas such as defense and infrastructure development. Infrastructure development was also noted as crucial for enhancing disaster preparedness and response, particularly better access to remote areas affected by disasters. The findings are in line with the submissions by Mavhura (2015) who postulated that local governments are underfunded, and research and training in risk and capacity assessments, early warning systems, and preparedness are underfunded. One of the Members of Parliament highlighted that *“there is a need to revisit the legislation for we only sit on the matters of disasters rigorously when it is deemed imminent and on the next scheduled parliamentary session after the proclamation of the state of disaster by the President”* (Interview, 24.02.23). This is a clear indication of the gaps that exist with the frameworks in Zimbabwe which challenges their effectiveness. In as much as the District of Chimanimani can be applauded for its ability to undertake and decentralize its own frameworks there is still a challenge that affects their effectiveness for the Civil Protection Act is silent on the issue of whether local authorities can fit into the National Civil Protection Fund. This also goes against priority number three of the Sendai Framework for Disaster Risk Reduction which stipulates the need for government policies to clearly indicate the need to invest in disaster risk reduction and implement it. According to Mavhura et al., (2014) Part IX, Section 29 of the Civil Protection Act reiterates the establishment of the national civil protection fund but there is no mention of such funds at the provincial and district levels. This therefore leaves local authorities vulnerable for there are expected to react first to the risk before seeking external assistance. Additionally, capacity building, including training and skills development for disaster management teams and public awareness campaigns, can help ensure that communities are prepared to respond effectively during disasters. These findings under the theme of resource allocation also clearly understood and answer all the research questions of this study.

To support these findings the Capability Approach, as the main theoretical framework was used in this study, to emphasize the importance of promoting human capabilities and functioning, particularly in the face of adversity such as disasters. It provides that the government, through crafting socio-economic policies, should create a viable environment that ensures people's freedoms and functioning, including the ability of people to solve their problems without any socio-economic and political barriers put in place by the government. This is in line with the literature postulated by Anton and Lawrence (2016), who describe disaster preparedness as a multidimensional construct consisting of individual psychological and physical preparedness,

which together constitute community preparedness. They further stressed that it is critical to note that disaster preparedness issues cannot be addressed satisfactorily without incorporating individual, household, community, national, regional, continental, and global preparedness. In tandem with the above literature and findings from the Informants, the Capability approach shows that the government can develop policies that uphold individual freedoms and allow people to realize their capabilities, paving the way for social development. The Sustainable Livelihoods Guidance Sheets, published by the UK Department for International Development (1999), help to understand the importance of building resilience and promoting capabilities in disaster management. The guidance sheets highlight the interconnectedness of different livelihood assets, including human, social, natural, physical, and financial capital. By investing in these different assets, individuals, and communities can build their resilience and reduce their vulnerability to disasters. This, therefore, unveils the importance of funding, infrastructure, and capacity-building spearheaded by the government can enhance the ability of disaster-related policies in addressing the shocks and trends of the communities prone to disasters.

Sentiments from most of the NGOs officers highlighted the need to provide funding that sees into it the involvement of the community and traditional practices in the policies that support processes of disaster management as one of them noted that *“most residents in some areas closer to their ancestor's graveyards and areas of historical importance to them were not willing to evacuate early and later succumbed to the crisis”* (Interview, 10.03.23). The current provisions are silent in terms of community involvement in DRR activities and how to specifically harness indigenous knowledge systems to support disaster preparedness and response. The provisions in the current policy framework lack a voice in terms of funding capacity buildings in the disaster-prone communities and the conducting robust research that will harness indigenous knowledge systems to enhance disaster management and risk reduction activities and processes in Zimbabwe. *“The current approach and structure of the civil protection act are more of a top-down approach in which more powers are vested by the minister and the director of the civil protection department”* noted an NGO officer (Interview, 22.03.23). This, therefore, goes against priority number one and two of the SFFDRR which stipulates the need to understand disaster risk and strengthen disaster risk governance, without the involvement of the citizens in these processes it defeats the rationality of understanding the risk it is the people that should also be part and parcel of the matrix. As noted by Interview

(10.03.23) NGO official informant reiterated that “*Easy understanding of the risk by the citizens makes preparedness levels easy to achieve and evacuations*”. Understanding the risk and its magnitude also strengthens the governance system of DRR initiatives for it will be people-centered. This, therefore, calls for the adoption of the Sendai framework practices into the legislations of Chimanimani and Zimbabwe. Capability approaches also focus on community participation and empowerment, particularly in disaster preparedness and response, to enable communities to take ownership of the disaster management process and develop policies and programs that meet their needs. It also emphasizes the importance of This approach and focuses on key resilience skills such as access to early warning systems, disaster planning, and response knowledge and skills, social networks and community organization, and access to resources and services. This resonates well with the data and themes noted from the interviews conducted by the researcher.

From the above findings, the Capability Approach can inform the creation of policies and programs that prioritize vital capabilities for disaster preparedness and response, especially in Zimbabwe. This research highlights the importance of clear government policies that will guarantee the government's support in funding disaster preparedness and response measures, such as infrastructure investment, and providing capacity-building opportunities for disaster management entities, communities, and individuals. The study's findings aim to guide policy-making and its effectiveness in Zimbabwe, improve disaster preparedness and response, and ultimately reduce the impact of disasters on local communities.

4.7.2 Conclusion

The study emphasizes the necessity of directing resources toward enhancing disaster preparedness and response in Zimbabwe which is lacking from the prevailing legislation. It recommends that the Zimbabwean government and parliament should amend the Civil Protect Act to clearly indicate the need to prioritize financing DRR initiatives, invest in infrastructure development, and facilitate capacity-building for disaster management teams and communities. The findings can be used to improve policy and disaster response, reducing the impact of disasters on local populations, and encouraging climate-conscious behavior. The investigation also includes a methodology for evaluating the efficacy of these actions.

4.8 Timely alerts

4.8.1 Findings and Discussion

The theme of timely alert emerged from the data as a crucial factor in investigating the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. All the Informants emphasized the importance of timely alert systems to ensure that communities are adequately prepared for disasters. Informants highlighted several challenges related to timely alert systems in Zimbabwe in the same vein answering one of the research questions which is what challenges affect the effectiveness of disaster-related policies on disaster preparedness and response in Chimanimani District, including the lack of infrastructure, inadequate communication networks, and insufficient funding. This, therefore, resonates well with the objectives of this study thus assessing the effectiveness of the disaster-related policies on disaster preparedness and response in the Chimanimani District, assessing the challenges affecting the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District, and find out possible intervention strategies aimed at policy review improvement in Zimbabwe.

Informants especially members of parliament and councilors noted that the government needs to invest more in infrastructure development to improve timely alert systems. Timely alerts/early warning systems are a crucial component in the disaster risk reduction matrix, therefore not reinforcing legislation that responds to disasters clearly undermines the effectiveness of policies that combat preparedness and response activities in Chimanimani and Zimbabwe as a whole. To cement this Mavhura (2015) noted that local governments lack money for vulnerability and capacity assessments, early warning systems, and preparedness research and training. One councilor stated, *“Not only that funds were meant for the floods and other disasters missing, but there is also a need for the government to invest in infrastructure development, the community development fund (CDF) which was given to each member of parliament was not sufficient to combat disaster-prone areas like Chimanimani from disasters, attention should be given to the construction of roads and communication networks, to ensure that timely alerts are disseminated to all communities.”* Even though the Informants showed appreciation for the establishment of a National Civil Protection Fund under the ministry of local government and pioneered by the Civil protection department there seemed a consensus that the NGOs, individuals, and private actors were allocating more funds/materials as

compared to state funding. As noted from the first theme above, the fact that the civil protection act is silent on the matter of funding at the provincial and district level undermines the effectiveness of local communities' preparedness and response as shown in the case of Cyclone Idai in Chimanimani district. This, therefore, indicates the ineffectiveness of policies that respond to the research in question, and to combat and improve the polices informants suggested that the government of Zimbabwe should accept and adopt the Climate Change Bill which reiterates the establishment of the Climate Change Authority of Zimbabwe. This is in tandem with (Chitando, 2022) who postulated that Laws and regulations can help mitigate climate change-related risks, such as crop failure, flooding, and calamities, which have caused economic damage in Zimbabwe.

Corruption has also been rampant to the extent that funds were missing without proper accountability reiterated the Informants. The above crisis resonated well with the Informants from the Meteorological department and the Hydrological department. In relation to the research question of what challenges are affecting the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District and Zimbabwe as a whole, a Meteorological Services Department (MSD) officer stated that *“acquiring up-to-date, technologically advanced equipment and providing training to operators would help them gather data faster and more efficiently, ultimately improving disaster preparedness and response”* (Interview, 28.02.23). The officer emphasized the importance of owning such equipment to ensure that the department can operate effectively and independently. This, therefore, reinforces the reaction and alertness of local authorities to be able to prepare and respond to disasters. Alexander (2010) noted that local governments are required to respond to disasters first before requesting external financial assistance, which is a significant setback in decreasing disaster risks. To cement this Mavhura (2015) further proliferated that the DCP's national civil protection fund is insufficient and local authorities are incapacitated for the country's civil protection efforts, leading to a reactive mentality and limited incorporation of early warning into emergency management planning. On the other hand, NGO officers highlighted the importance of community-based alert systems. They argued that community-based alert systems can be effective in disseminating timely alerts to communities, particularly in remote areas. The Civil Protection Act is not only found wanting for its lack of provisions that support the creation of a community-based alert system but the failure to appreciate/include words like alert, early warning, and evacuation. This is supported by Gwimbi (2007), who

observed that the existing centralized one-way warning system neglects the needs and priorities of vulnerable communities, making the warnings unresponsive to the people's needs. The NGOs officers further comprehended by noting that the prevailing policies on paper do pinpoint the importance of combating an early warning system but lack the structural know-how and implementation.

According to an informant from a local NGO, “*Communities need to be active participants in disaster management and such processes need to be funded, this involvement not only increases community awareness of disaster risk and preparedness strategies but also enhances the effectiveness of these strategies*” (Interview, 10.04.23). This is supported by Chatiza (2019) who argued that community participation plays a crucial role in enhancing disaster resilience. An officer from a non-governmental organization expressed, “*There is a necessity to fund community-based alert systems to guarantee that communities receive alerts promptly, especially in remote regions with insufficient communication networks*” (Interview, 22.03.23). This sentiment aligns with existing literature, which raises concerns about the effectiveness of early warning systems for disaster risk reduction in Zimbabwe, attributed to resource and capacity limitations. These constraints include the Zimbabwe Meteorological Department's limited technical ability to gather and analyze meteorological data and the inadequate level of community preparedness, especially in rural areas. Wamukonya and Rukato (2001) highlight these factors as significant challenges to the effectiveness of early warning systems, hence challenging the effectiveness of the policies. Manyena (2006) also believes that decentralization of power is a prerequisite for developing disaster-resilient communities. So, this indicates that as communicated by informants for the policies in Zimbabwe and Chimanimani to be effective in terms of disaster preparedness and response they should adopt community-based alert systems to ensure the full cooperation of the local communities and the effectiveness of early warning systems. Meteorological department officials highlighted the importance of accurate and reliable weather forecasting in timely alert systems. They argued that accurate weather forecasting can help to issue timely alerts and prevent disasters. One official stated that: “*We need to invest in accurate and reliable weather forecasting to ensure that timely alerts are issued to communities*” (Interview, 08.04.23). From this discussion, it is clear from a myriad of stakeholders that truly a gap exists in Zimbabwe's policies on the subject matter in question. The provisions do not mention anything to do with technological

advancement in weather forecasting or any other equipment or resources to acquire the needed tools.

In the same vein, the data stresses the importance of institutional capacity in effective disaster management. In line with the research question regarding the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District. The informants pointed out the lack of institutional capacity as a major factor affecting the implementation of disaster-related policies. The relevance of the institutions such as the Department of Civil Protection (DCP), the Environmental Management Agency (EMA), and the Meteorological Services Department (MSD) in disaster management was underscored, and it was noted that the capacity of these institutions significantly determines the effectiveness of policies related to disaster preparedness and response, especially in relation to responding quickly and issuing timely or early warning systems. According to one informant, a civic society officer and policy expert from a local NGO stated *“The effectiveness of disaster management policies is largely dependent on the institutional capacity. Policies are only as good as the institutions that are responsible for their implementation”* (Interview, 10.02.23). This point is backed up by Ncube (2016), who posits that for disaster policies to be effective, institutional frameworks must be solid, with the capacity to implement disaster preparedness and response strategies effectively. Furthering the discussion on the importance of institutional capacity, an informant from the DCP argued that *“the department lacks the necessary resources, including technical and human resources, to effectively implement disaster management strategies”* (Interview, 12.04.23). This connects to the theoretical framework of the Pressure and Release (PAR) Model, which underscores the role of vulnerability and capacity in determining a community's disaster risk. A lack of institutional capacity contributes to vulnerability, increasing disaster risk (Wisner et al., 2004). The ECM framework also recognizes the significance of institutional capacity in disaster management. The findings suggest that institutional capacity is essential in the planning, readiness, response, and recovery phases of disaster management. Given these findings, it is evident that for disaster-related policies to be effective in the Chimanimani district and Zimbabwe at large, strengthening institutional capacity is a crucial intervention strategy, this therefore responds to one of the research objectives which is finding possible intervention strategies.

According to Mavhura et al., (2014), the policies and the Acts' inadequacy have been demonstrated by the failure to plan and design a framework for flood prediction, the lack of certainty in flood-prone areas, and the lack of early warning tools. The Department of Civil Protection officials emphasized the need for early warning systems that can detect potential disasters and issue timely alerts. They argued that early warning systems can help to prevent disasters and minimize their impacts. One official stated that: *“Early warning systems are critical for disaster preparedness and response. We need to invest in early warning systems that can detect potential disasters and issue timely alerts”* (Interview, 04.04.23). The above therefore clearly highlights the challenges that affect the effectiveness of disaster-related policies but in the same vein, it creates an avenue to potential intervention strategies that is to put more focus on the attainment of early warning systems for both local and national levels. Furthermore, Environmental Management Agency (EMA) officials noted that timely alert systems are critical in disaster response. They argued that timely alerts can help to mobilize resources and respond effectively to disasters. One official stated that *“Timely alert systems are crucial in disaster response. We need to ensure that communities are adequately prepared for disasters through timely alerts to mobilize resources and respond effectively yet the frameworks are not specific on the matter”* (Interview, 30.03.23). In support of the findings, The World Bank (2019) confirmed that there was a lack of community engagement with key actors in DRM concerning awareness-raising and evacuation drill exercises. Therefore, this does come not as a surprise as there is no legislation that focuses solely on climate-induced hazards.

The use of theoretical frameworks in disaster research is crucial to understanding the complex interactions between vulnerable communities, hazards, and disaster management policies. This research utilized two theoretical frameworks to unravel the theme of Timely Alerts thus the Pressure and Release Model (PAR) and the Expand-Contract Model (ECM), to examine the efficacy of Zimbabwe's climate-related policies on disaster preparedness and response. The PAR model aided in identifying the pressures and vulnerabilities that limit communities and increase their susceptibility to disasters. According to Awal (2015), this model offers disaster practitioners a framework to understand the susceptibility to disasters and how to mitigate it. The study's conclusions indicate the importance of early warning systems in preparing for and responding to disasters, therefore on this basis, the Zimbabwean government can appreciate the pillars of the PAR model in taking into consideration the need to clearly involve the aspect

of early warning systems in crafting a robust and inclusive policy. Investments in infrastructure development and technological advancements are fundamental to achieving effective and efficient alert systems. The research also reveals that community-based alert systems can successfully disseminate alerts promptly, especially in remote locations with insufficient communication networks. This concept is consistent with the PAR model's emphasis on managing disaster risks and crises through comprehension of the interplay between vulnerability and hazards.

Moreover, the PAR model emphasizes the importance of attending to the needs of vulnerable communities, which lack access to current information, resources, and government support. The findings highlight the need for early warning systems that can detect potential disasters and issue timely alerts. This aligns with the PAR model's focus on the release phase of disasters, which causes an immediate shock that destabilizes the community. The community then seeks to restore its stability and resilience by adapting to the new environment created by the disaster.

Conversely, the ECM provides insight into the crucial elements of a disaster management system and their interactions for effective disaster management. The study in Zimbabwe with a focus on Chimanimani District and the local Policies that govern disaster preparedness and response indicates that not only does investing in infrastructure development, community-based alert systems, early warning mechanisms, accurate weather prediction, and timely alert dissemination are vital to a successful disaster management system, but putting in place a legislation that guarantees the aforementioned is imperative and effective in dealing with disaster preparedness and response strategies. Planning, preparation, response, and recovery are all part of the ECM, along with effective communication, collaboration, and coordination between disaster management teams. This perspective is also mirrored in Asghar et al., (2006) observation, which highlights the criticality of the phases of planning, readiness, response, and recovery, as well as the significance of strong communication, collaboration, and coordination among disaster management stakeholders. The ECM also emphasizes involving vulnerable communities in disaster management discourse, recognizing them as vulnerable groups in times of disaster. The study findings align with this by highlighting the importance of community-based alert systems in disseminating timely alerts to communities, particularly in remote areas where communication networks are inadequate. The ECM's flexibility in carrying out activities side by side, expanding and contracting simultaneously, also aligns with the

study's findings that investing in infrastructure development and technological advancements is essential to ensure effective and efficient timely alert systems.

Utilizing the PAR and ECM models, this study offers an extensive perspective on disaster management in Zimbabwe and underscores the essential components required for effective disaster preparedness and response. The findings emphasize the need for investment in infrastructure development, community-based alert systems, early warning mechanisms, accurate weather predictions, and prompt alert dissemination to guarantee effective disaster management. The models assisted in recognizing vulnerabilities and hazards, as well as the necessity for effective communication, collaboration, and coordination among those involved in disaster management. These findings underscore the link between the effectiveness of climate-related policies and disaster preparedness and response in Zimbabwe.

4.8.2 Conclusion

The effectiveness of climate-related policies in disaster preparedness and response in Zimbabwe is emphasized by the theme of timely alerts, which emerged as a crucial factor in the collection of data for this research. The study emphasizes the importance of having a policy framework as noted by participants that clearly indicates who does what, when, and how to embark/acquire on investing in infrastructure development, community-based alert systems, early warning mechanisms, accurate weather forecasting, and timely alert dissemination. It underscores the crucial role of efficient and effective alert systems in disaster preparedness and response, emphasizing the need for infrastructure and technological advancements. The study also illuminates the connection between the effectiveness of climate-related policies and disaster preparedness and response in Zimbabwe.

4.9 Evacuation procedures

4.9.1 Findings and Analysis

Four sub-themes emerged from the data analysis that linked to the major theme of Evacuation Procedures include, lack of clear evacuation plans, inadequate communication and coordination, insufficient infrastructure, and cultural barriers. These four elements expose the ineffectiveness of policies and frameworks that deals with or responds to the matter of disaster preparedness and response in Zimbabwe. In the context of this research and theme on evacuation procedures, the two theoretical frameworks used to analyze the data include the

Capability Approach and the Participatory Action Research Model (PAR Model) and were crucial in providing a deeper understanding of the effectiveness of climate-related policies in Zimbabwe, challenges faced and potential solutions for improving evacuation procedures.

Füssel et al. (2019) note that while climate change is a new concept, there has been an overwhelming amount of information generated in a short period. This has created a challenge for developing countries that struggle to prioritize and implement adaptation strategies, leading to incomplete implementation of frameworks. The presence of too much information creates a catch-up dilemma, which may result in ad hoc implementation of strategies, thereby increasing the risk of failure. While information can be a source of power, its excess can be equally disastrous, especially for countries with limited resources. These sentiments resonated well with what most Informants reported that there were no clear evacuation plans in place before Cyclone Idai hit Chimanimani District. Some Informants mentioned that there were general evacuation plans for the district, but these plans were not specific to the different areas and communities that were affected. This lack of specific plans made it difficult to implement effective evacuation procedures hence showing the challenges faced by disaster-related policies in Zimbabwe, hence their ineffectiveness. Mavhura (2014) noted that DRR in Zimbabwe has been a domain of national technocrats, with little, if any, involvement of local populations. The lack of citizens' participation affects the evacuation procedures if they are any in place which is the case of the Chimanimani district where they were no clear plans to mention of. The findings highlighted that there in terms of implementation, disaster-related policies in Zimbabwe are not decentralized all the powers are vested and decisions are vested in the minister of local government and the Head of State who is the one that declares a state of emergence. This, therefore, affects the rapid response and preparedness levels of local authorities for they do not exercise organized autonomy hence everything ends up being done on an ad-hoc basis. According to an NGO officer: *“There were no evacuation plans, and we were not prepared. We didn't know what to do, where to go, or who to contact”* (Interview, 22.03.23). Even though the Informants noted that the MET department had alerted the impending disasters two days earlier there was no time and room for a better response and the level of preparedness from a wide range of stakeholders. The MET department also failed to act rapidly when they later realized the imminence of the cyclone, noted an official from the MET offices, *“The Zimbabwe Broadcasting Corporation (ZBC) waited for the regular fixed time slot on television news to broadcast the weather focus”* (Interview, 28.02.23). This,

therefore, renders failure by relevant stakeholders to respond rapidly hence forth challenging the effectiveness of disaster-related policies in disaster preparedness and response. Matsvange, et al. (2020) further complimented this by postulating that looking at the case of Cyclone Idai, there was no commendable response from humanitarian organizations in addressing the destructive consequences of the cyclone.

Disaster management's goal is to lessen the negative impacts of disasters on human lives, infrastructure, and the environment, necessitating active cooperation from various stakeholders such as government agencies, non-governmental organizations, community groups, and individuals (Habte et al., 2018). Studies in Zimbabwe (Pasaribu & Adela, 2019) show that collaboration models involving government agencies, non-governmental organizations, and community groups are successful in disaster management Zimbabwe, the Department of Civil Protection, which is connected to the Ministry of Local Government Public Works and National Housing, is responsible for disaster reduction efforts. The National Civil Protection Coordination Committee also supports the Department of Civil Protection (Mavhura, 2015). Even though The National Civil Protection Coordination Committee was created the Informants reported that there was inadequate communication and coordination between different stakeholders involved in disaster management (Interview, 8). Informants highlighted that there was a lack of communication between the Department of Civil Protection, local authorities, and the community, which hindered the effectiveness of evacuation procedures. A member of parliament stated, *“There was no coordination, and we were not informed. We had no idea what was going on”* (Interview, 10.03.23). Another NGO officer mentioned that *“There was no communication. We were not informed about evacuation plans, and there was no coordination between different organizations”* Interview, (24.02.23). In line with the data collected Kolen & van Gelder, (2018) noted that there is a need to enhance the institutional capacity for emergency evacuations, as the existing Civil Protection Act does not clearly identify the responsible institution for initiating evacuations during crises. Implementing risk-averse policy decisions, such as evacuations, can significantly reduce fatalities. In the same vein the literature further pinpoints that despite the existence of policies, the Zimbabwean government and local institutions are ill-prepared to manage the impact of disasters. As evidenced during Cyclone Idai, disaster preparedness efforts in Zimbabwe failed in terms of alerting communities and providing adequate training (Munsaka et al., 2021).

While having clearly outlined disaster response policies is a necessary first step towards a comprehensive disaster management framework, without appropriate infrastructure and resources, these policies are likely to fall short in practical application. The data collected during this research strongly points towards a pervasive lack of infrastructure as a key barrier to effective evacuation procedures and disaster response in Chimanimani District. The road networks in the region were reported as poor, causing difficulties in facilitating quick and efficient evacuation (Interview, 10.03.23). Informants highlighted the lack of infrastructure as a significant challenge in implementing effective evacuation procedures. The poor road networks, lack of emergency shelters, and inadequate transport systems made it difficult to evacuate people to safer areas. A councilor mentioned, *“There were no evacuation centers, no transport, and the roads were inaccessible, so it was impossible to evacuate people”* (Interview, 08.02.23). An Environmental Management Agency official also stated, *“We need more infrastructure, such as evacuation centers, bridges, and proper road networks”* (Interview, 30.03.23). This led the community to give a cry out to the Zimbabwe Defense Forces and Airforce which later brought in its outdated helicopters to ferry victims out of the danger zone. Adding to the above points, Ma et al. (2020) proposes that the climate change issue in Africa may not only stem from a lack of political motivation, but also from a digital divide between urban and rural areas. The rural regions lack the required infrastructure to access information about climate change or explore strategies to alleviate its impacts. From this perspective, the effectiveness of disaster-related policies on disaster preparedness and response in Chimanimani District is significantly affected by the limited infrastructure in place. While the policies themselves may be well-designed to some extent, the infrastructural barriers significantly reduce their practical effectiveness. The lack of suitable infrastructure inhibits the effective execution of evacuation plans, hence challenging the disaster preparedness and response strategies (Research Question 3).

The findings of this research further indicate that cultural beliefs and practices pose a significant challenge to the effectiveness of disaster-related policies in Chimanimani District. Informants reported that some communities were reluctant to evacuate their homes due to cultural beliefs and practices. This reluctance significantly hinders the effectiveness of disaster response and hampers the potential life-saving measures that can be initiated in the face of natural disasters like Cyclone Idai (NGO Informant, 22.03.23). Even though traditional leaders and chiefs are part and parcel of the structures of the Local government and the disaster

management structure, there is less use of traditional leaders in capacity-building events, evacuation, and disaster management training. Having education and knowledge of climate hazards is crucial in enhancing the capacity to prepare and respond to climate risks. Conversely, communities that lack such information tend to be more vulnerable. However, despite training efforts, research indicates that people in Chimanimani had a low overall knowledge level on climate-related hazards, (Chatiza, 2019). Informants reported that cultural beliefs and practices hindered effective evacuation procedures. In some communities, people were reluctant to evacuate their homes due to cultural beliefs and practices. A local councilor noted that “*Chiefs and other traditional leaders are not fully involved in the process of learning about disaster management, the majority believe that it is only for those who are well educated so do other community members believe*” (Interview, 13.03.23). However, the critical role of cultural beliefs and practices in shaping disaster response should not be overlooked. This finding, when viewed from the Capability Approach, suggests that incorporating local knowledge and cultural practices in disaster response strategies could significantly enhance their effectiveness. This theoretical framework postulates that considering the cultural aspects and context-specific capabilities of communities can result in more appropriate and accepted disaster response strategies (Sen, 2009). Therefore, addressing this challenge requires integrating the cultural beliefs and practices of the local communities into the disaster preparedness and response policies. This integration would contribute to the creation of culturally sensitive and contextually relevant policies, hence increasing their effectiveness (hence answering research objective two and research question three).

The above also entails the ineffectiveness of the policies for they lack the enforcement, assurance, and accounting to it that those responsible for the community outreach programs are vehemently involving the traditional leaders and key representatives of all ethnic backgrounds. A meteorological department official stated, “*Some people did not want to evacuate because of their cultural beliefs. They believed that they would be safe if they stayed in their homes and closer to their ancestor's spirits*” (Interview, 28.02.23). This cultural barrier made it challenging to implement effective evacuation procedures. As noted by Ngwenya, (2018). Insufficient knowledge levels of climate hazards among communities can hinder the effectiveness of disaster preparedness and response efforts. Chatiza, (2019) also noted that this problem is compounded when responsible authorities fail to adequately prepare communities on how to respond to climate-related hazards. Hence, it is essential to enhance the capabilities

of vulnerable communities, enabling them to handle such hazards effectively. As a potential intervention strategy informants supported the incorporation of local knowledge and cultural beliefs into disaster response strategies for they are critical for the attainment of acceptance by the community hence accumulation of its effectiveness, thus in line with the capabilities approach which suggests that understanding and incorporating the specific capabilities and cultural context of communities can lead to more suitable and accepted disaster response strategies (Sen, 2009). This is also in line with the priority of the SFFDRR, which reiterates the need to also understand the disaster risk. Even when a warning is disseminated promptly and appropriately reaching all levels of the community, it's equally important that people are educated on the necessary steps to take once a warning is issued. Their coordinated response is crucial in ensuring predictable community behavior when a hazard strikes. The adoption of the District Climate Change and Watershed Management Policy by Chimanimani Rural District Council is a positive development, as it is one of the few districts in the country to have done so.

The Capability Approach emphasizes the importance of emphasizing people's abilities and liberties rather than their material possessions or resources. When contemplating evacuation protocols, this approach highlights the importance of taking into account the abilities of the persons and communities affected by the disaster. This encompasses their ability to obtain information, resources, and emergency services, as well as their decision-making autonomy. As noted by Marmot and Wilkinson, (2006) the ability of individuals to fully express and enjoy their capabilities is influenced by structural factors, specifically the extent to which economic and social policies provide equitable and sufficient resources. The lack of clear evacuation plans and inadequate communication and coordination identified in the study can be seen as a violation of people's capabilities and freedoms, as they were not provided with the necessary information and resources to make informed decisions about their safety. By applying the Capability Approach, the study highlights the need for a more people-centered approach to disaster management, where the capabilities and freedoms of individuals and communities are prioritized.

The findings of this study highlight the challenges that were faced in implementing effective evacuation procedures during Cyclone Idai in Chimanimani District. The lack of clear evacuation plans, inadequate communication and coordination, insufficient infrastructure, and

cultural barriers were major challenges. These challenges are not unique to Chimanimani District, as similar challenges have been reported in other parts of the world during disasters. The lack of clear evacuation plans is a common challenge in disaster management mostly in developing countries. Evacuation plans must be specific to the different communities and areas, and stakeholders involved in disaster management must be aware of these plans. Inadequate communication and coordination between stakeholders also hinder the effectiveness of evacuation procedures. Effective communication and coordination are critical in ensuring that stakeholders are aware of evacuation plans and that their roles and responsibilities are clearly defined.

Insufficient infrastructure is also a common problem that hindered the evacuation plans and procedures, as one NGO officer noted, *“The lack of proper roads in the area made it very difficult to evacuate people to safe locations quickly”* (Interview, 10.02.23). Another NGO officer added, *“The evacuation routes were not clearly marked, and many people got delayed or lost on their way to the evacuation centers”* (Interview, 10.04.23). In terms of coordination between different agencies involved in the evacuation process, several Informants pointed out the need for better communication and collaboration. One councilor remarked that *“There was a lack of coordination between non-governmental entities or individuals, local authorities, and the national authorities.”* which led to confusion and delays in the evacuation process. Similarly, an Environmental Management Agency official noted, *“There was no clear chain of command, and everyone was trying to do their own thing”* (Interview, 13.03.23) Several Informants also emphasized the importance of involving local communities in the evacuation process. One member of parliament stressed that *“it is important to involve the community in the planning and execution of evacuation procedures,”* while another councilor highlighted the need to *“educate the community on what to do in the event of a disaster”* (Interview, 08.02.23). This is in line PAR Model which emphasizes the importance of participatory approaches in research and action, where communities affected by disasters are actively involved in identifying problems, developing solutions, and implementing actions. In the context of evacuation procedures, this approach emphasizes the need for involving local communities in the planning and execution of evacuation procedures, as highlighted by some of the Informants in the study. The lack of involvement of local communities in evacuation procedures led to a lack of trust and compliance with evacuation plans by locals especially because the traditional leaders did not fully play their roles. By applying the PAR Model, the study emphasizes the

need for participatory approaches in disaster management, where the voices and experiences of the affected communities are central to the decision-making processes.

The use of the Capability Approach and the PAR Model in the study provides a deeper understanding of the challenges faced in implementing effective evacuation procedures during Cyclone Idai in Chimanimani District. By highlighting the importance of a people-centered and participatory approach to disaster management, the study provides potential solutions for improving evacuation procedures and reducing the adverse effects of disasters.

4.9.2 Conclusion

Overall, the interviews revealed several challenges and areas for improvement in the evacuation procedures during Cyclone Idai. The following symptoms which include insufficient infrastructure, lack of coordination between agencies, and inadequate involvement of local communities reflect the bigger problem which is the missing of robust, inclusive, and detailed provisions in the Civil Protection Act, hence the ineffectiveness of the disaster-related policies in Zimbabwe. Addressing these challenges would require a multi-faceted approach to policies that vehemently stresses the implementation of investment in infrastructure, better communication, and collaboration between agencies, and community education and engagement.

4.10 Involvement of Citizens

4.10.1 Findings and Analysis

The data collected from semi-structured interviews with representatives from NGOs, members of parliament, Department of Civil Protection officers, sub-aqua police representatives, and environmental management officials revealed that citizen involvement in disaster preparedness and response in Zimbabwe, particularly in the context of Cyclone Idai in Chimanimani District, remains a significant challenge. This is a clear indication of the gap that exists within the policy framework that governs disaster management in Zimbabwe, hence compromising its effectiveness. The findings, analyzed using thematic analysis, revealed the following patterns and sub-themes contributing to the broader theme of citizen involvement, limited awareness and education, limited resources, language barriers, limited participation, inadequate coordination, the role of NGOs, and community-driven initiatives.

Scientific research suggests that climate change contributes to the increased intensity and frequency of tropical cyclones due to warmer ocean temperatures and a more humid atmosphere. These factors provide more energy for cyclone development and intensification, leading to heavier rainfall and flooding (Knutson et al., 2019). All Informants in line with the above literature noted that residents in Chimanimani District and other disaster-prone areas in Zimbabwe lacked knowledge about the impacts of climate change and disaster preparedness and response, rendering them unprepared for Cyclone Idai. The 1989 Civil Protection Act is ambiguous given its broad definition of disasters which means natural disasters, major accidents or other events howsoever caused destruction, pollution or scarcity of essential supplies, the influx of refugees, or plague/epidemic of disease. This ambiguity in the CPA creates a vacuum for office bearers not to prioritize educating citizens about climate-related disasters hence a weak framework to combat preparedness and response initiatives. This deviates from the goal of the SFFDRR that Zimbabwe is part of, which is to “Prevent new and reduced existing risk through the implementation of integrated and inclusive economic, structural, legal, social, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.” Informants cited the lack of education and awareness campaigns as a major obstacle to engaging citizens in understanding the impacts of climate change and disaster preparedness and response. One NGO participant stated, *“There is a pressing need for more educational programs to help communities understand the risks they face and how they can better prepare for disasters”* (Interview, 13.02.23). Officers from the Environmental Management Agency emphasized that it's not only crucial for residents to be knowledgeable about climate-related disasters, but there's also a need for further education on climate change and its connection to climate-induced disasters. Backing this statement, research by Knutson et al. (2019) has linked climate change to an increased frequency of tropical cyclones in certain areas, particularly the North Atlantic. Deducing on the findings it is clearly indicated that the existing framework of disaster management in Zimbabwe has a gap in terms of putting the citizens at the center of the focus when it comes to preparedness and response because of its ambiguity. This, therefore, undresses the effectiveness of the policies in Zimbabwe hence that's the reason why researchers and non-governmental organizations are advocating for a climate-change bill to be adopted and rigorously engage the masses before its inception as a policy. The adoption of the Bill has been mentioned largely by NGO officials that were interviewed in this study.

The Civil Protection Act aims to handle disasters directly, with Section 32 calling for a fund to compensate for damages and provide necessary resources. Zimbabwe established the National Civil Protection Fund (NCPF), which supports civil protection agencies (Mavhura, 2015). However, during Cyclone Idai, the government's response was delayed, reaching affected communities after about four days to a week. The lack of reserved funds at all levels caused a significant setback to the Department of Civil Protection's ability to respond efficiently and adequately (Rina, 2019). Informants from NGOs mentioned that many citizens lacked the resources necessary to participate in DRM activities hence affecting disaster preparedness and response. For instance, some did not have access to radios or mobile phones to receive early warning messages. This is because the policy framework is silent in terms of communities' involvement in DRM and their input in the managing of priorities of the National Protection Fund. Given this kind of environment where people in those remote areas are not financially capable of acquiring technological gadgets like smartphones and even televisions. Informants were concerned about the lack of information centers in disaster-prone areas, like Chimanimani that can control the flow of information and adopt community-based systems that can break down the information effectively, faster, and in an acceptable manner with the locals. This, therefore, highlights a challenge that affects the effectiveness of the local frameworks in Zimbabwe in combating preparedness and response. The top-down approach of the framework in Zimbabwe has been a cause of concern that was highlighted by the respondents. This is supported by Mavhura (2015), who postulated that even though DRR needs extensive decentralization of both powers and resources, the Civil Protection Act contains no provision for community engagement in DRR.

There was a consensus that peri-urban areas and rural areas which describe the state of Chimanimani district lacked infrastructural development to support effective communication and transportation as well. An NGO representative explained, *“Many people in remote areas have limited access to communication tools, which makes it difficult for them to receive timely information about impending disasters”* (Interview, 24.02.23). The informant went further on to reiterate that this, therefore, jeopardizes the importance and efficiency of early warning systems. The Hyogo Framework of Action (HFA) highlights the significance of early warning systems in disaster risk reduction, emphasizing the need to identify, assess, and monitor risks while enhancing early warnings as a priority (UNISDR, 2006b). Gwimbi (2007) cemented the data by noting that the current centralized, one-way warning system overlooks the needs and

priorities of vulnerable communities, resulting in warnings that are unresponsive to the people's requirements.

Education and knowledge about climate hazards play a crucial role in preparing for and responding to climate risks. In communities lacking this information, vulnerability is often high (Chatiza, 2019). In some cases, language barriers between the authorities and citizens hindered effective communication during disaster preparedness and response activities. One participant observed, *“Language barriers can be a significant challenge when trying to communicate vital information to communities, particularly in areas with diverse linguistic backgrounds.”* To support this claim Chatiza (2019) noted that although Agricultural extension officers trained many people in Chimanimani on climate change hazards, research indicates that the overall knowledge level on climate-related hazards in the area remains low. Even though Zimbabwe introduced the National Climate Change Policy in 2017 to support the National Climate Change Strategy, the policy is not well-versed in education on climate change hazards rather than education on climate change adaptation and mitigation. According to an informant from the DCP, *“There is a need to empower communities to take ownership of their disaster preparedness and response plans. This can enhance their resilience and reduce their vulnerability”* (Interview, 12.04.23). This statement aligns with the Community-Based Disaster Risk Management (CBDRM) approach, which emphasizes the significance of community involvement in disaster preparedness and response (Maskrey, 1989).

However, the research findings above identified challenges in implementing community-driven initiatives in the Chimanimani District. Key challenges highlighted included a lack of resources, limited understanding of disaster risk management, language barriers, and inadequate coordination. These challenges align with the concerns raised by Wisner et al. (2004) about the barriers to implementing CBDRM initiatives, particularly in resource-poor settings. The identified challenges underscore the need for effective interventions aimed at addressing these barriers. In line with this, informants from both NGOs and governmental bodies pointed out the need for policy review and improvement to create an enabling environment for CBDRM initiatives. This supports the theoretical argument of Twigg (2004), that policy and legislative frameworks should provide an enabling environment for CBDRM. The research findings address the research questions by identifying the challenges affecting the effectiveness of disaster-related policies and proposing intervention strategies. As such, the

study provides a valuable contribution to the ongoing discourse on improving disaster management in Zimbabwe.

This therefore clearly indicates the out-of-date challenge faced by disaster management frameworks in Zimbabwe thus the CPA, which is specifically mandated to govern DRM, hence it is silent on climate-induced disaster education. This challenge clearly affects the implementation of the activities that respond to preparedness and response since there is no legislation that creates a conducive environment for communities to understand the risk of disasters hence this is against the priority of the SFFDRR. Informants noted that it is very difficult for people to accept or partake in the activities related to climate change and disaster management. This therefore renders the policies ineffective for they do not enforce a broad knowledge-acquiring mechanism for the locals. The main ethnic groups in the district include the Shona people, who are the majority, and the Ndaou people. There are also smaller populations of other ethnic groups residing in the area which also include but are not limited to the Manyikas. These diverse ethnic groups have their own distinct language and traditional beliefs and there are no provisions that support the dissemination of knowledge to local communities in their own languages. As noted earlier from the above discussion it was also imperative to involve traditional leaders in lengthy climate change-related programs to energize the people and have trust and eagerness to learn more about the adverse impacts of climate change. In terms of intervention strategies on this matter, the informants clearly indicated that in the Climate-change bill meant to replace the Civil Protection Act the traditional leaders are supposed to be involved immensely to close the gaps that are being noted from the Civil Protection Act and its subsidiary laws which do not clearly indicate when and how should traditionally be involved in disaster preparedness and response activities. This is in line with the recommendations propounded by (Matsvaire et al., 2021) who claimed that the lack of dedicated climate change legislation contributes to insufficient targeted research on the specific hazards exacerbated by climate change in Zimbabwe and their consequent impacts on communities.

Chanza et al. (2020) stresses the importance of addressing gaps in disaster management and response, using local experiences from Cyclone Idai in Chimanimani as an example. The authors highlight the value of local knowledge in disaster management and the necessity to prioritize disaster risk reduction measures that cater to the needs of vulnerable populations.

Citizens' participation in disaster preparedness and response activities was limited due to factors such as lack of transportation, family responsibilities and traditional beliefs, and work obligations. An environmental management official mentioned, *“People often prioritize their daily responsibilities over disaster preparedness activities, making it difficult to achieve widespread community engagement”* (Interview, 14.04.23). This, therefore, supports the importance of a holistic approach to disaster preparedness and response and a robust inclusion of the traditional leaders not only for political grandstanding but for development purposes. Dube (2018) in the same vein highlights the importance of effective disaster management strategies in Zimbabwe, including the use of models for handling hazards and disasters. The author also stresses the need to incorporate disaster risk reduction measures into development planning and to develop a comprehensive disaster management framework based on local knowledge and experience.

Munsaka et al. (2021) suggest that inadequate infrastructure, equipment, funding, human resources, and coordination contribute to the overwhelming consequences of natural hazards for vulnerable communities, as experienced in Chimanimani. The shortcomings in disaster risk management systems exacerbate the impact of such events. Information from the Informants highlighted that there was inadequate coordination between the authorities and citizens during the Cyclone Idai disaster. Informants cited the lack of a clear communication strategy as a significant challenge. A Department of Civil Protection officer stated, *“There needs to be better coordination between government agencies and local communities to ensure that vital information is shared effectively and that citizens are actively involved in disaster preparedness and response efforts”* (Interview, 04.04.23). Community-based disaster risk reduction programs empower local communities to address their own disaster risks (UNDP, 2019). This, therefore, undermines the effectiveness of disaster preparedness policies in Zimbabwe since there is no clear coordination structure in terms of the engagement of NGOs and the private sector. There is mention that the National Civil Protection Committee will help the Director of the DCP and coordinate the NGOs but there is a lot of ambiguity as there are no clear stages and levels of coordination/communication in terms of disaster preparedness and response activities. Not only do the findings undermine the effectiveness they also indicate the challenges that are faced in the implementation of these policies. As noted by (Matsvaire et al., 2021), there is a lack of coordinated communication and funding allocated toward the implementation of advanced early warning systems and climate change mitigation efforts.

Participatory Early Warning Systems (P-EWS) involve active community participation in identifying and responding to early warning signs of disasters, promoting self-reliance in disaster preparedness and response (Marchezini et al., 2018). Despite the challenges, NGOs played a critical role in involving citizens in disaster preparedness and response activities. Informants cited the presence of NGOs in some communities as a significant factor in successful citizen involvement efforts. A member of parliament noted, “*NGOs have been instrumental in raising awareness about climate change and disaster risks and mobilizing communities to take action*” (Interview, 08.04.23). Accordingly, Informants noted that there were significant efforts in disaster-prone areas by non-governmental organizations, though there were no robust/holistic coordinated efforts as private entities and NGOs were not complimenting each other and the government (Interview, 10.02.23). This indicates that even though the policy framework in Zimbabwe has some gaps and faces challenges that affect its effectiveness, the informants agreed that the current legislation in Zimbabwe allows NGOs and Individuals to partake in the activities of disaster preparedness and response to some extent though it lacks clear policy coordination. This, therefore, creates a baseline for improvement in the creation of the climate-change bill that is meant to curtail the detailed challenges indicated in this study. Understanding the knowledge, attitudes, and practices of workers involved in disaster response is crucial for effective disaster management (Habte et al., 2018). In response to the challenges, some communities took the initiative to organize themselves and carry out disaster preparedness and response activities. For instance, some communities formed committees to help with evacuation and provide assistance to those affected by the disaster. An aqua-police representative shared, “*It was inspiring to see communities come together and take charge of their own preparedness and response efforts during Cyclone Idai*” (Interview, 08.04.23). Even though the community and other private individuals were involved there is also a need to have a clear coordination framework that will combine the efforts from myriad stakeholders to be effective rather than working in Silos.

4.10.2 Conclusion

The study highlights the importance of clear policy formulation that dovetails citizen participation in Zimbabwe's disaster readiness and response efforts. Addressing challenges such as limited awareness and education, scarce resources, language barriers, insufficient participation, and coordination, by factoring them into policies related to disaster preparedness enhances their effectiveness. It's critical for Zimbabwe to formulate informed policies like the

Climate Change Bill that prioritizes resources such as communication tools and early warning systems to be broadly accessible. A clearly stated coordination framework necessitates the collaborative efforts of government agencies, NGOs, and the private sector. The study recommends decentralized decision-making that includes local communities and traditional leaders. NGOs and community-led initiatives should be supported to promote citizen participation in disaster preparedness, through funding, capacity-building programs, and partnerships. In conclusion, by addressing identified challenges and adopting strategies that encourage citizen engagement, Zimbabwe can enhance its climate-related policies and preparedness for future disasters. This approach will improve community resilience, empower individuals, and ultimately reduce the impacts of climate-related disasters on Zimbabwean lives and livelihoods.

4.11 Efficient emergency response

4.11.1 Findings and Analysis

The thematic analysis of the data collected from semi-structured interviews revealed several patterns and sub-themes (which also emerged as challenges/gaps to the effectiveness of climate-related policies on disaster preparedness and response) related to the major theme of efficient emergency responses in the context of Cyclone Idai in Chimanimani District, Zimbabwe. These sub-themes include communication, coordination, resources, training, and community participation.

Disaster preparedness entails building the capabilities to predict and manage threats, aiming to shift from emergency response to long-term recovery (Nakanishi & Black, 2018). Effective communication is critical for efficient emergency responses. Effective communication entails effective implementation hence the overall effectiveness of the disaster-related policy framework in Zimbabwe. Effective communication has emerged as one of the challenges or gaps that affect the effectiveness of the disaster-related policies on disaster preparedness and response in the Chimanimani District and Zimbabwe. Most Informants pointed out that communication during Cyclone Idai was ineffective, leading to delays in response and loss of life. One NGO participant stated, *“The lack of effective communication during the disaster significantly hampered our ability to coordinate relief efforts and reach affected communities in a timely manner”* (Interview, 10.02.23). This is cemented by Chatiza, (2019) who noted that the accuracy and specificity of early warnings have been a concern, as seen in the case of

Cyclone Idai in 2019. The warnings provided by the Meteorological Services Department were not precise enough to identify vulnerable areas, limiting the civil protection community's ability to take immediate action, such as evacuation, and negatively affecting disaster preparedness and response (Interview, 10.04.23). Several Informants mentioned that communication was hindered due to a lack of access to communication infrastructure, such as satellites, mobile networks, and internet services, in some parts of Chimanimani District. A Department of Civil Protection officer suggested that alternative disaster communication hubs should be in place during disasters, such as radio communication and satellite phones, to ensure effective communication. Most of the informants further on reiterated that this exposes the effectiveness of the current policies for the mother of legislation related to DRM in Zimbabwe the Civil Protection Act (CPA) is not clear on the formal channels of communications, plans, and drills that should be followed in the preparation of disasters except that the president will declare the state of disaster. Not only does the lack of a clear communication plan in times of imminent disasters the Civil Protection Act is also silent in terms of prioritizing communication infrastructure and technological advancements. In terms of the use of the National Civil Protection Fund is not clear, the minister has the autonomy of directing how the funds are to be used, this lack of monetary decentralization led to the failure to prioritize needed tools to enhance the communication capacity of the people of Chimanimani and those who were emergency responders. This goes against the third priority of the SFFDRR which stresses the need to invest in DRR. It is therefore noted that not only do the policies fail to combat effective channels of communication but also fail to articulate the funding regarding the enhancement of communication, hence affecting early warning systems, and this goes all the way also to affect preparedness and emergency response activities. Thus, at the end of the day, the ripple effect of events clearly indicates the ineffectiveness of the policies in Zimbabwe, specifically in the Case of Cyclone Idai in Chimanimani.

Effective information dissemination is crucial for building knowledge and resilience. Meteorological jargon should be simplified and disseminated frequently through various channels, including mobile platforms, community gatherings, and media. Ensuring the accuracy of predictions and building community-based information systems, such as meteorological information centers managed by trained locals, can increase trust in the information and contribute to strengthening disaster preparedness (Chapungu, 2020). Efficient information and communication are essential for victims to access the necessary data and for

stakeholders to coordinate their efforts effectively. Coordination among emergency responders is crucial for efficient emergency responses. Informants noted that there was a lack of coordination among emergency responders during Cyclone Idai, which resulted in delays in response and duplication of efforts. An aqua-police representative shared, *“There was a lot of confusion during the response, as different agencies were working independently without a clear understanding of each other's roles”* (Interview, 08.04.23). Informants suggested that there should be a clear chain of command and a standard operating procedure for emergency response activities to ensure coordination among emergency responders. An environmental management official emphasized, *“Establishing a unified command structure and protocols would streamline the response process and improve efficiency.”* Although the National Civil Protection Coordination Committee was established to oversee and coordinate disaster-related activities between non-governmental entities and the local government Informants believe that it lacks adequate decentralization and therefore undermines efficient emergence response, hence pinpointing the challenges faced by the disaster legislation in Zimbabwe therefore renders it ineffective. Matvsaire et al., (2021), therefore recommend that active stakeholder engagement should be ensured during the implementation of provisions outlined in the anticipated climate change law. This approach will foster transparency and accountability in the decision-making process.

Recommendations from the auditor general report clearly indicate that there is a gap in terms of policies that governs disaster management and the treasurer department. (Economic Governance Watch, 2021) *“the CPU should work with Treasury to ensure the funds are released quickly so that recovery efforts may begin in the impacted provinces.”* This statement aligns with the data collected from the informants regarding the challenges of resource allocation and the effectiveness of disaster preparedness and response policies. The above statement from the report clearly indicated the ineffectiveness of the prevailing legislation in terms of releasing funds for preparedness activities and response. Funds even for the recovery activities are not clearly indicated how they should work, shared amongst disaster-prone areas, and coordinated in the CPA. Adequate resources, including personnel, equipment, and supplies, are necessary for curtailing the challenge of efficient emergency responses. Informants mentioned that there were shortages of resources during Cyclone Idai, which affected the emergency response efforts. Poor resource allocation affects the efficiency of emergency responses and distorts the effectiveness of disaster policies in Zimbabwe. A

member of parliament stated, *“Our responders were not adequately equipped to handle the scale of the disaster, and this led to a slower response and increased suffering for affected communities”* (Interview, 15.02.23). Informants suggested that there should be adequate resources, including trained personnel and equipment, for emergency response activities in all parts of disaster-prone areas such as Chimanimani District (Interview, 10.02.23). The legislation in Zimbabwe that is relevant to the governance of DRM is the CPA and its definition is broad and covers a wide range of aspects including climate-induced disasters. This ambiguity does not only end with how the CPA defines disasters but also how the funds are allocated. This ambiguity in terms of the use of the National Civil Protection Fund and lack of community input or decentralization affects the prioritization of climate-induced disasters and hope is given to the political will of the minister to use his own discretion, not to follow a clearly crafted legislation. This therefore led to the lack of adequate resources as mentioned by informants and thus the manifestation of only the symptoms of a weak policy framework hence ineffective to some extent as it fails to apportion resources for disaster preparedness and response activities.

Proper training of emergency responders is essential for efficient emergency responses. Informants noted that there was a lack of training among emergency responders in Chimanimani District, which affected their ability to respond effectively during Cyclone Idai. An NGO representative remarked, *“Many responders lacked the necessary skills and knowledge to handle the complex challenges presented by Cyclone Idai, which hindered the overall effectiveness of the response”* (Interview, 24.02.23). Informants suggested that there should be regular training for emergency responders on disaster preparedness and response to ensure they are equipped with the necessary skills and knowledge to respond effectively during emergencies. The prevailing policies especially the major policy which is the Civil Protection Act has limited provisions in terms of how the training should be conducted and when. In the Act, there is only a mention that the DCP director will coordinate the training of DCP officials through the assistance of the committee. There is no clear indication of what kind of training should be focused on, how often, when, and how. Drawing upon the auditor's report and the findings, there is an agreement about the need for improved strategies to bolster disaster preparedness and response policies in Zimbabwe and Chimanimani. These strategies should incorporate certain essential elements. Firstly, the policies should stipulate the prompt allocation of funds to support readiness and response efforts. Secondly, they should clearly

define the resources and personnel to be deployed in disaster-prone areas, as well as who is responsible for such allocation and the timing for it. Finally, the policies should promote training for those tasked with responding to disasters.

Evacuation is a multifaceted process that includes alerting, warning, decision-making, and preparing people before leaving unsafe areas. There is preventive evacuation, where people move to safe locations outside risk areas, and vertical evacuation, where people move to secure havens within threatened areas (Kolen & Helsloot, 2014). Informants reiterated that for there to be effective emergency response by communities evacuation strategies and plans should be communicated clearly to the people in a timely and understood manner that motivates people to participate. Community participation in disaster preparedness and response is crucial for efficient emergency responses. Informants noted that there was limited community participation during Cyclone Idai, which affected the emergency response efforts. A Department of Civil Protection officer observed, *“The lack of community involvement not only hindered the response but also made it difficult for responders to identify and prioritize the needs of affected populations”* (Interview, 12.04.23). Informants suggested that there should be community-based disaster preparedness and response programs to ensure community participation in emergency response activities. An NGO participant added, *“By involving communities in disaster preparedness and response, we can leverage local knowledge and resources to improve the efficiency and effectiveness of our efforts”* (Interview, 22.03.23). To support the above information Mvhura (2019) noted that Community participation is valuable in conducting assessments, as it allows Informants to use training opportunities to raise disaster preparedness awareness. Furthermore, community members can be involved in establishing and managing community-based early warning systems and collaborating with NGOs to educate communities about disaster mitigation and preparedness. The Civil Protection Act which is the major legislation in terms of DRR in Zimbabwe has no provisions regarding evacuation plans and budgets for the same. The provisions only mention that there may be a need to evacuate disaster-prone areas in the event of impending disasters, this therefore challenges the effectiveness of the policies in terms of preparedness and response strategies since the legislation should provide the basis or a blueprint that guide the officials in times of need or crisis to properly prepare and respond to disasters such as Cyclone Idai in Chimanimani District.

4.11.2 Conclusion

This study underlines the significance of efficient emergency response in the context of climate-related disasters, such as Cyclone Idai, in Zimbabwe. The capability approach and the PAR Model emphasize the necessity of effective communication, coordination, adequate resources, proper training, and community participation for the success of disaster preparedness and response efforts. By addressing the challenges identified in this study, Zimbabwe can enhance the effectiveness of its climate-related policies and better prepare for and respond to disasters like Cyclone Idai.

The findings under the theme of Efficient Emergency Response suggest several recommendations to bolster emergency response efficiency and thus enhance the effectiveness of the disaster preparedness and response policies in Zimbabwe. These include that the following should be clearly amended and indicated in the Civil Protection Act as the nation awaits or reviews the Climate Change Bill which is yet to be passed by the president of the republic, strengthening the communication infrastructure, and setting up alternative systems like radio communication and satellite phones for reliable communication during disasters. A clear chain of command and standard operating procedure should be formulated to ensure seamless coordination among emergency responders, government bodies, and NGOs. It's also vital to provide sufficient resources, such as trained personnel, equipment, and supplies, particularly in disaster-prone areas like Chimanimani District. It's recommended that ongoing training initiatives be established for emergency responders to boost their skills in disaster readiness and response. Further, the development of community-centric disaster preparedness and response programs is advocated to ensure active community participation and leverage local knowledge and resources.

Through the integration of these recommendations in policy design and implementation, Zimbabwe has the potential to strengthen its disaster preparedness and response proficiency, thereby diminishing the negative effects of climate-related disasters on susceptible communities. The capability approach and the PAR Model offer a valuable framework for guiding these improvements, emphasizing the necessity for a comprehensive and inclusive approach to disaster management that involves citizens, government agencies, NGOs, and other stakeholders in the process. The data analysis emphasizes several vital themes related to efficient emergency responses during disasters, including effective communication,

coordination among emergency responders, adequate resources, proper training of emergency responders, and community participation in disaster preparedness and response. These themes align with the literature on disaster preparedness and response, which highlights the importance of these factors in ensuring efficient emergency responses.

The findings imply a need for improved disaster preparedness and response policies and practices in Chimanimani District. Introducing a clearly decentralized and outlined framework with provisions that support alternative communication systems, establishing a clear hierarchy of authority, and providing sufficient resources and training to emergency responders can significantly enhance disaster response efficiency. In addition, fostering community-centric disaster preparedness and response initiatives encourages community involvement, which in turn can increase response effectiveness and mitigate disaster impacts. In essence, the results of this study can guide the formulation of effective disaster readiness and response strategies in Zimbabwe, thereby augmenting efficiency during crisis situations.

Chapter Summary

This study focused on assessing the effectiveness of climate-related policies for disaster preparedness and response in Zimbabwe, particularly in relation to Cyclone Idai in Chimanimani District. The study found that the following gaps in the policies especially the Civil Protection Act that include citizen involvement, and effective communication tools like radio, television, and social media are crucial for information dissemination and they enhance preparedness levels and response. This, therefore, calls for the policies to clearly indicate provisions that guarantee the prioritization and attainment of the above. Involving local communities and traditional leaders in disaster management was also seen as beneficial due to their ability to mobilize communities during disasters. The role of traditional leaders and their engagement phases is not clearly indicated in the policies.

Another key challenge identified was poor coordination among stakeholders, which affected policy effectiveness as the CPA lacks a clear coordination structure of NGOs but is silent to private companies, communities, and individuals even though they play a significant role in terms of resource mobilization. Decentralized decision-making and the development of early warning systems were suggested as ways to improve preparedness and response. The study also emphasized the need for resilient infrastructure that can only be attained when there is legislation that supports attainment of such, thus the SFFDRR should be also used as an

instrument for crafting the highly advocated Climate bill for it also prioritizes the need to invest in DRR. Theoretical frameworks, such as the Traditional Model and the Expand-Contract Model, highlighted the significance of preparedness, effective communication, citizen involvement, early warning systems, and resilient infrastructure in mitigating disaster impacts.

In summation, the study suggests that disaster management policies in Zimbabwe can be improved through a better legislation framework that will clearly advise in detail stakeholder coordination, citizen involvement, early warning systems, resilient infrastructure, and decentralized decision-making. These strategies could enhance Zimbabwe's disaster management policies and lessen the impacts of disasters on its populace.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The current research aimed to explore the disaster-related policies relevant to disaster preparedness and response in the Chimanimani District, their effectiveness, the challenges affecting these policies, and potential intervention strategies for policy improvement. This chapter summarizes and integrates the key findings and their implications for disaster preparedness and response in the Chimanimani District and Zimbabwe as a Nation.

The thematic analysis of the data collected from semi-structured interviews revealed several themes (that were also noted as challenges faced in Zimbabwe in terms of managing disasters, these challenges were also analyzed to investigate the effectiveness of policies in Zimbabwe and Chimanimani) and sub-themes related to the major themes that include efficient emergency responses, allocation of resources, effective communication, evacuation procedures, timely alerts (early warning systems) and involvement of citizens in the context of Cyclone Idai in Chimanimani District, Zimbabwe. The sub-themes identified include but are not limited to communication, coordination, resources, training, and community participation.

5.2 Research Findings and Recommendations

5.2.1 Effective Communication in Disaster Management

Effective communication was found to be crucial for efficient emergency responses but was lacking during Cyclone Idai, resulting in delayed responses and loss of life. This answers the third research question by revealing that ineffective communication is a significant challenge affecting the effectiveness of disaster-related policies. There is no clear line of communication prior to disasters in the current legislation thus the Civil Protection Act until the president issued a state of disaster and the framework is managed by statutory instruments to curtail or avert an already devastating scenario like Cyclone Idai. The study recommends a clear policy formulation that reiterates and enforces clearly defined communication procedures and personnel's responsible, not to work on an ad-hoc basis. There is also a need to establish alternative communication hubs, such as radio communication and satellite phones, to ensure effective communication and warnings prior to and during disasters with communities. These can only be achieved efficiently when there is a policy like the advocated Climate Change Bill which stipulates the need to have a budget from the national coffers to buy up-to-date needed

technological advancement to enhance the level of preparedness and response levels in Zimbabwean disaster-prone areas like Chimanimani District. This therefore will also avoid delays from bureaucratic red tape and the treasurer department.

5.2.2 Coordination among Emergency Responders

Coordination among emergency responders was identified as another key factor in efficient emergency responses. However, poor coordination during Cyclone Idai resulted in delays and duplication of efforts, indicating another challenge to the effectiveness of disaster-related policies. The study proposes the establishment of a unified command structure and protocols to improve coordination and response efficiency. It is imperative for the government of Zimbabwe to have a policy or policies that will only focus on climate change and its impacts like cyclones. The prevailing law in Zimbabwe that governs disasters is ambiguous and covers a wide range of disasters. This, therefore, causes confusion amongst stakeholders in terms of complementing each other's efforts. This shows that the government of Zimbabwe with the current Civil Protection Act does indeed allow input from NGOs, but the study revealed that efforts from these institutions and individuals are not clearly coordinated and responding only when it comes to recovery activities hence the aftermath of disasters not before.

5.2.3 Resource Allocation and Management

The research findings also point to a shortage of resources, including personnel, equipment, and supplies, during Cyclone Idai, which impacted the efficiency of emergency responses. This highlights the challenge of poor resource allocation affecting the effectiveness of disaster policies. The study recommends prompt and appropriate allocation of funds and resources to support preparedness and response efforts in disaster-prone areas. The current Civil Protection Act Part IX is/was credited for the creation of the National Civil Protection Fund, and it indicated the need, dedication, and attention paid to disasters though it is broad in nature. The act indicates its ineffectiveness for it is not specific to what the funds should be used for specifically, it limits public input and does not provide a minimum amount of funding which can result in insufficient funds as highlighted by informants and the prevailing literature in the Cyclone Idai case.

This, therefore, unravels the ineffectiveness of the current disaster-related policies in terms of implementation. For sound effects of the policies this research therefore recommends a further

review of the act which was already done when NGOs, individuals, and government institutions carried out the research which saw the yet-to-be-passed Climate Change Bill. The research further recommends the establishment of the minimum figure of allocated funds in the National Civil Protection Fund and its mandate should be clearly highlighted. The Act should also allow the involvement of communities and NGOs in terms of raising funds. Moreover, participation in decision-making processes will enhance the effectiveness of the policies by aligning the policies, activities, and community in the attainment of preparedness and response strategies. Involving the public and civic society organizations in the policy not only optimizes the use of resources but also expertise from the civic society and it creates a sound environment for transparency and accountability than the prevailing frameworks which give the minister responsible too much power in terms of controlling the funds.

5.2.4 Training for Emergency Responders

The study found that inadequate training of emergency responders in the Chimanmani District hindered their ability to prepare and respond effectively, contributing to the challenges affecting the effectiveness of disaster-related policies. To address this issue, regular training programs are recommended to enhance the skills and knowledge of emergency responders. The data collected highlighted that there is a lack of robust training for emergency responders and civil protection officers. The Civil Protection Act itself does not mention which training should be partaken by the officers and how often, it only reiterates that the Director of the Civil Protection Act will coordinate the training of officers. The National Civil Protection Committee as mandated by the act will be responsible for advising and assisting the Director to implement the Civil Protection Measures which presumably include the training of the responders and planners. This resonates well with the data collected and the informants also hailed the Policies for the creation of the Committee and establishing a structure at the national, provincial, and district levels.

However, the data highlights that the policies still have gaps in terms of combating preparedness and response strategies. The lack of training of the officers unravels the weaknesses of the Act and other instruments that support it. These weaknesses include vague guidelines, limited provision for regular reviews, and lack of details for funding, hence the ineffectiveness of the policies. As highlighted by the informants there is a lack of training the Act does not bring about specifics of what the training should entail, no regular review of

training protocols, and mention the funds that will supplement the training. The data collected, therefore, recommend that they should be a regular review of the Act itself and it should be clearly indicated when and how the reviews can be conducted, provide detailed training guidelines not be vague, clarify the funding mechanism and incorporate international best practices of responder training with local practices.

5.2.5 Community Participation in Disaster Preparedness and Response

Limited community involvement during Cyclone Idai was found to affect the efficiency of disaster preparedness and response activities, as it was difficult for responders to identify and prioritize the needs of affected populations. This was/is a clear indication of the weakness of the Policies in Zimbabwe and Chimanimani district, hence ineffective to an extent. To improve community participation and the effectiveness of the policies the study recommends a clear procedure and amendment of the Act which stipulates the importance of the involvement of citizens in Disaster Risk reduction activities, provision for the establishment of community-based disaster preparedness and response programs, decentralize power and funds and clearly indicate the percentage which can be controlled by local districts and provinces. These should be clearly indicated in the policies to encourage, enforce, and evaluate the participation of the disaster-prone area communities.

5.2.6 Evacuation Procedures

The research findings underscored the importance of clear evacuation plans, adequate infrastructure, and community engagement for effective evacuation processes. However, these were lacking during Cyclone Idai, thus forming another challenge for disaster-related policies and exposing the ineffectiveness of the policies on disaster preparedness and response. Findings recommend the development of clear guidelines, infrastructure investments, and community awareness and participation to enhance the evacuation processes. The challenge of evacuation procedures existed during the case of Cyclone Idai because the prevailing provisions only just acknowledge the possibility of evacuation and the need to formulate evacuation plans, but it is not clearly highlighted what plans should be followed and by whom and when, this, therefore, exposes the ineffectiveness of the policies. The act is silent on reserved funds for evacuation processes and funds for that specifically at the grassroots level and yet local authorities are expected to act and respond first before external assistance arrived. The lack of the above initiatives leaves the local authorities naked to the impacts of disasters

such as Cyclone Idai. This research, therefore, recommends the government of Zimbabwe align the act with international and regional best practices that enhances the effectiveness of the policies in responding and preparing for disasters than working only on recovery mode.

5.3 Theoretical Implications

The theoretical underpinnings of the Capability Approach, the Participatory Action Research (PAR) Model, the Pressure and Release Model (PAR), and the Expand-Contract Model (ECM) offer valuable insights to address the investigative queries surrounding disaster-related policies, their efficacy, hurdles, and potential strategies for intervention in the Chimanimani District.

The Capability Approach, as the study shows, plays a crucial role in recognizing the necessity for policies that prioritize the capabilities and autonomy of individuals and communities in disaster management. This approach was pivotal in addressing queries about the relevance of disaster-related policies in disaster readiness and response within the Chimanimani District. The results underscored the significance of effective communication, coordination, sufficient resources, appropriate training, and community involvement as critical constituents of disaster-related policies.

The PAR Model shed light on the effectiveness of climate-related policies and underscored the significance of participatory methods that incorporate the affected communities in the decision-making process. This model addressed the research queries concerning the efficacy of disaster-related policies and the challenges impacting their effectiveness. The study stressed the imperative of community engagement, awareness, and empowerment in disaster management, achievable through participatory methods and the inclusion of local communities in policy development and execution.

The ECM Model offered insight into the varying phases of disaster management and the importance of community engagement throughout these stages. It addressed the research query about potential intervention strategies for policy enhancement. The results highlighted the need for comprehensive, standardized evacuation procedures, infrastructure development, community awareness, and training programs as strategies for improving disaster preparedness and response policies.

In conclusion, the theoretical implications of these models guided the study in scrutinizing the efficacy of climate-related policies, pinpointing challenges, and suggesting intervention strategies. They established a foundational understanding of the factors that contribute to efficient emergency responses and underscored the importance of inclusive and participatory methods in disaster management.

5.4 Areas of Further Research

The study underscores the necessity for more robust disaster preparedness and response policies in Zimbabwe, especially in the Chimanimani District. It suggests further research to evaluate the efficacy of specific interventions like the creation of alternative communication systems, the formation of a unified command structure, and ensuring adequate resources in disaster-prone zones. The study also encourages exploration into community-based disaster preparedness and response programs to assess their impact on emergency response efficiency.

Recommendations for future research include:

- **Comparative Study:** A comparative analysis of evacuation procedures and disaster management strategies across various regions in Zimbabwe could identify regional disparities and contributing factors to the success or failure of these strategies.
- **Climate Change Impact:** Research focusing on the specific impacts of climate change on disaster preparedness and response in Zimbabwe is crucial. It should aim to understand the increasing intensity and frequency of tropical cyclones and explore strategies for adapting to these impacts.
- **Community Resilience:** Investigating factors contributing to community resilience in disaster-prone areas of Zimbabwe could pinpoint strategies to enhance community resilience through capacity-building, knowledge sharing, and community engagement.
- **Role of Traditional Leaders:** Examining the role of traditional leaders in disaster management in Zimbabwe could help understand their involvement in capacity-building initiatives, evacuation procedures, and community engagement. Identifying ways to strengthen their participation could enhance disaster preparedness and response efforts.

By delving into these research areas, policymakers and practitioners can gain valuable insights to devise more effective climate-related policies, improve disaster preparedness and response strategies, and enhance the overall resilience of communities in Zimbabwe.

5.5 Summary and Intervention Strategies

The study proposes several intervention strategies to improve disaster-related policies. These include an amendment to the civil protection act to clearly have provisions that guarantee increased funding, prioritization of disaster management activities, infrastructure improvement, training for disaster management teams and communities, implementing community-based alert systems, improving early warning systems, and public awareness campaigns. Whilst the Climate Change Bill is yet to be approved by the President of Zimbabwe data from this study suggest the need to make a follow-up and analyze the draft of the bill to check if it is inclusive, suffering from the same concerns raised with the current policy and not ambiguous as well. Short-term measures that can be conducted whilst waiting for an inclusive policy formulation the government can work on the amendment of the Civil Protection Act. The amendment should first focus on the increment of funding and clearly clarify the amount to be set aside for disaster preparedness and response activities. The provision should ensure that the funding is sufficient, practical, and sustainable. The CPA amendment should clearly outline the responsibilities and mandates of each entity involved in disaster management activities. The amendment should also clarify the need to develop and implement regular training programs for disaster management teams and the use of up-to-date technologies. To make it also clearly conduct regular evacuation drills in vulnerable areas to ensure the communities are familiar with the evacuation procedures. Training of local communities should also be prioritized Overall, the study's findings shed light on the importance of the policies to discard ambiguity and be clear on the following areas of resource allocation, effective communication and coordination, adequate training, community involvement, and efficient evacuation procedures in enhancing the effectiveness of disaster-related policies on disaster preparedness and response in the Chimanimani District.

The following have been recommended as policy intervention strategies that can be prioritized by the government of Zimbabwe:

- Develop legislation that focuses on evacuation plans and budgets to provide a blueprint to guide officials in times of crisis.

- Involve community members in establishing and managing community-based early warning systems and collaborating with NGOs to educate communities about disaster mitigation and preparedness.
- In legislation, specify the type, frequency, and timing of training to be provided to responders.
- Clearly outline in legislation how disaster preparedness and response funds should be allocated and coordinated, including how they should be shared among disaster-prone areas.
- Establish a unified command structure and protocols to streamline the response process and improve efficiency.
- Establish a clear communication plan in legislation that outlines formal channels of communication, plans, and drills to be followed in disaster preparation.
- Formulate provisions that encourage simplifying meteorological jargon and ensure the information is disseminated frequently through various channels, such as mobile platforms, community gatherings, and media.

REFERENCES

- Albtoush, R.M., Dobrescu, R., & Ionescu, F. (2011). A HIERARCHICAL MODEL FOR EMERGENCY MANAGEMENT SYSTEMS.
- Alexander, D. (2010). The L'Aquila earthquake of 6 April 2009 and Italian government policy on disaster response. *Journal of Natural Resources Policy Research*, 2(4), 325-342.
- Alkire, S. (2002). *Valuing Freedoms: Sen's Capability Approach and Poverty Reduction*. Oxford: Oxford University Press.
- Anton, C. E., & Lawrence, C. (2006). Does place attachment predict wildfire mitigation and preparedness? A comparison of wildland–urban interface and rural communities. *Environmental Management*, 57, 148-162.
- Appadurai, A. (2004). The Capacity to Aspire: Culture and the Terms of Recognition. In V. Rao & M. Walton (Eds.), *Culture and Public Action* (pp. 59-84). California: Stanford University Press.
- Arndt, C., P. Chinowsky, K. Strzepek, and J. Thurlow. (2012). Climate change, growth and infrastructure investment: The case of Mozambique. *Review of Development Economics* 16(3): 463–475.
- Asghar, S., Alahakoon, D. and Churilov, L. (2006). A Comprehensive Conceptual Model for Disaster Management. *Journal of Humanitarian Assistance*, 1360(0222), 1-15.
- Asia Disaster Preparedness Centre. (2000). *Disaster Management: A Disaster Manager's Handbook*. Bangkok: ADPC.
- Awal, M, A. (2012). Vulnerability to Disaster: Pressure and Release Model for Climate Change Hazards in Bangladesh. *International Journal of Environmental Monitoring and Protection*. 2 (2), 15-21. Available: <http://www.openscienceonline.com/journal/ijemp>

- Bennett, D. (2020). Five years later: Assessing the implementation of the four priorities of the Sendai framework for inclusion of people with disabilities. *International Journal of Disaster Risk Science*, *11*, 155-166.
- Bongo, P. P., & Manyena, S. B. (2015). From 'government' to 'governance': tensions in disaster-resilience leadership in Zimbabwe. *Jàmbá: Journal of Disaster Risk Studies*, *7*(1), 1-10.
- Bongo, P.P., P. Chipangura, M. Sithole, and F. Moyo. (2013). A rights-based analysis of disaster risk reduction framework in Zimbabwe and its implications for policy and practice. *Jàmbá: Journal of Disaster Risk Studies* *5*(2): Article a81.
- Bosher, L., Chmutina, K., & van Niekerk, D. (2021). Stop going around in circles: Towards a reconceptualisation of Disaster Risk Management Phases. *Disaster Prevention and Management: An International Journal*, *30*(4/5), 525–537. <https://doi.org/10.1108/dpm-03-2021-0071>
- Bosher, L.S. and Chmutina, K. (2017), *Disaster Risk Reduction for the Built Environment*, Wiley, London.
- British Academy and The Royal Society. (2017). *Data management and use: Governance in the 21st century*.
- Bryman, A. (2016). *Social research methods*. Fifth Edition. Oxford University Press.
- Centre for Research on the Epidemiology of Disasters (CRED). (2015). *The Human Cost of Natural Disasters: A Global Perspective*, Brussels: CRED
- Chanza, N., Manyena, S. B., Collins, A. E., & Chimbari, M. J. (2020). Closing the gaps in disaster management and response: Drawing on local experiences with Cyclone Idai in Chimanimani, Zimbabwe. *International Journal of Disaster Risk Science*, *11*, 655-666.
- Chanza, N., Siyongwana, P. Q., Williams-Bruinders, L., Gundu-Jakarasi, V., Mudavanhu, C., Sithole, V. B., & Manyani, A. (2020). Closing the gaps in disaster management and response: Drawing on local experiences with Cyclone Idai in Chimanimani, Zimbabwe. *International Journal of Disaster Risk Science*, *11*(5), 655-666.

- Chapungu, L. (2020). "Mitigating the impact of cyclone disasters: Lessons from Cyclone Idai."
- Chatiza, K. (2019). The impact of and responses to Cyclone Idai in Zimbabwe: An analysis of policy implications for post-disaster institutional development. *An Analysis of Policy Implications for Post-Disaster Institutional Development to Strengthen Disaster Risk Management*. <https://doi.org/10.21201/2019.5273>
- Chiimba, E. G., & Verne, J. (2022). Disaster communication beyond the state? community organisations, informal information flows and the mediation of (mis)trust before and after Cyclone Idai in Zimbabwe. *International Journal of Disaster Risk Reduction*, 76, 103012. <https://doi.org/10.1016/j.ijdr.2022.103012>
- Chikowore, G., Nhavira, J. D., Mashonganyika, T. M., & Munhande, C. (2021). Disaster management capabilities in Zimbabwe: the context of Africa Agenda 2063. Resilience and Sustainability in Urban Africa: Context, Facets and Alternatives in Zimbabwe, 37-54.
- Chingombe, W., and H. Musarandega. (2021). Understanding the logic of climate change adaptation: Unpacking barriers to climate change adaptation by smallholder farmers in Chimanimani District, Zimbabwe. *Sustainability* 13(7): Article 3773.
- Chitando, M. (2022, October 7). *The climate change bill: Lessons for Zimbabwe*. Retrieved (2023, May 14) <https://zela.org/the-climate-change-bill-lessons-for-zimbabwe/>
- Chitongo, L. (2013). Towards comprehensive disaster risk management in Zimbabwe: Evaluating masvingo rural district's community drought management program (MRDCCDMP).
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education*. (7th ed.). Routledge.
- Coppola, D. P., and Maloney. E. K. (2009). *Communicating Emergency Preparedness: Strategies for Creating a Disaster Resilient Public*. New York: Taylor and Francis Group, LLC.

- Creswell, J. W. (2013). *Steps in conducting a scholarly mixed methods study*. SAGE publications.
- Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, California, SAGE Publications.
- Crocker, D. (2008). *Ethics of Global Development: Agency, Capability, and Deliberative Democracy*. Cambridge: Cambridge University Press.
- DCP (Department of Civil Protection). (2013). *Disaster risk management*. Harare, Zimbabwe: DCP.
- DCP (Department of Civil Protection). (2020) *SADC DISASTER RISK REDUCTION PROJECT INCEPTION WORKSHOP 20-24 JANUARY 2020*. Country Presentation.
- Department for International Development. (1999). *Sustainable Livelihoods Guidance Sheets*. Retrieved from <http://www.eldis.org/vfile/upload/1/document/0901/section2.pdf>
- Dolšák, N., & Prakash, A. (2018). *The Politics of Climate Change Adaptation*. Annual Review of Environment and Resources.
- Dreze, J., & Sen, A. (2002). *India: Development and Participation*. Delhi: Oxford University Press.
- Dube, E. (2015). Improving disaster risk reduction capacity of District Civil Protection Units in managing veld fires: A case of Mangwe District in Matabeleland South Province, Zimbabwe. *Jàmbá: Journal of Disaster Risk Studies*, 7(1).
- Dube, E. (2018). Using Models to Deal with Hazards and Disaster: A Trajectory toward Effective Disaster Management in Zimbabwe. *People: International Journal of Social Sciences*, 4(1), 111-132.
- Dube, E. (2020). The build-back-better concept as a disaster risk reduction strategy for positive reconstruction and sustainable development in Zimbabwe: A literature study. *International journal of disaster risk reduction*, 43, 101401.

- Dube, E., Wedawatta, G., & Ginige, K. (2021). Building-back-better in post-disaster recovery: Lessons learnt from Cyclone Idai-induced floods in Zimbabwe. *International Journal of Disaster Risk Science*, 12, 700-712.
- Dube, K., Chapungu, L., & Fitchett, J. M. (2021). Meteorological and climatic aspects of cyclone Idai and Kenneth. In *Cyclones in Southern Africa* (pp. 19-36). Springer, Cham.
- Dzinamarira, T., Nachipo, B., Phiri, B., & Musuka, G. (2021). COVID-19 vaccine roll-out in South Africa and Zimbabwe: Urgent need to address community preparedness, fears and hesitancy. *Vaccines*, 9(3), 250.
- Dzvimbo, M. A., Zinyemba, A. T., & Chinyama, A. (2022). Promoting sustainable development goals: Role of higher education institutions in climate and disaster management in Zimbabwe. *Jambá: Journal of Disaster Risk Studies*, 14(1).
- Economic Governance Watch. (2021, July 12). The Auditor General's Report on Cyclone Idai Donations: A Sorry Tale of Mismanagement (No. 5/2021).
- Emanuel, K. A. (2017). Assessing the present and future probability of Hurricane Harvey's rainfall. *Proceedings of the National Academy of Sciences*, 114(48), 12681-12684.
- Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 00149.
- European Union. (2022). *European Union allocates €1.5 million to strengthen disaster preparedness structures and systems in Zimbabwe*. Online at: <https://reliefweb.int/report/zimbabwe/european-union-allocates-eu15-million-strengthen-disaster-preparedness-structures-and-systems-zimbabwe>
- Farmer, T., Robinson, K., and Elliott, SJ. (2006). Developing and implementing a triangulation protocol for qualitative health research. *Qual Health Res*, 16, 377-94.
- Felbermayr, G., & Großschl, J. (2014). Naturally negative: The growth effects of natural disasters. *Journal of Development Economics*, 111, 92-106.

- Fountain, L., Tofa, M., Haynes, K., Taylor, M., & Ferguson, S. J. (2019). Older adults in disaster and emergency management: What are the priority research areas in Australia? *International Journal of Disaster Risk Reduction*.
- Frediani, A. A. (2010). Sen's Capability Approach as a Framework for the Practice of Development. *Development in Practice*, 20(2), 173-187.
<https://doi.org/10.1080/09614520903564182>
- Frediani, A. A., & Hansen, J. (2015). Space and Capabilities: Approaching Informal Settlement Upgrading Through a Capability Perspective. In C. Lemaski & C. Marx (Eds.), *The City in Urban Poverty* (pp. 25-40). Basingstoke: Palgrave Macmillan.
- Global Crisis Response Platform. (2022). *Zimbabwe Crisis Response Plan 2020 – 2021*. Available at: <https://crisisresponse.iom.int/response/zimbabwe-crisis-response-plan-2020-2021>
- Goodings, L., Brown, S. D., and Parker, M. (2013). 'Organising Images of Futures-Past: Remembering the Apollo Moon Landings', *International Journal of Management Concepts and Philosophy*, 7: 263–83.
- Gossler, T., Wakolbinger, T., Nagurney, A., & Daniele, P. (2019). How to increase the impact of disaster relief: A study of transportation rates, framework agreements and product distribution. *European Journal of Operational Research*, 274(1), 126-141.
- Government of Zimbabwe. (2016). *Zimbabwe's National Climate Change Response Strategy*. Harare, Zimbabwe: Government of Zimbabwe.
- Government of Zimbabwe. (2018). *National Climate Policy*. Retrieved from <https://www.zimclimategov.net/wp-content/uploads/2019/05/National-Climate-Policy-Final-2018.pdf>
- Government of Zimbabwe. (2019). Report to Cabinet by the 'Cabinet Committee on Environment, Disaster Prevention, and Management' on the Prioritized Cyclone Idai and Drought Programmes and Projects.

- Gwimbi, P. (2007). The effectiveness of early warning systems for the reduction of flood disasters: some experiences from cyclone induced floods in Zimbabwe.
- Habte, A., Addisie, A., & Azazh, A. (2018). Assessment of Knowledge, Attitude and Practice of Disaster Preparedness among Tikur Anbessa Specialized Hospital Health Care Workers, Addis Ababa, Ethiopia. *American Journal of Nursing Science*, 7.
- Hampel, R. P. (2004). Tuscaloosa County Emergency Management Cycle. Retrieved from <http://www.tuscoema.org/cycle.html>
- Hay, C. (2002). *Political Analysis – A critical introduction*. Palgrave: Basingstoke.
- Ibrahim, S. & Tiwari, M. (2014) *The Capability Approach: From Theory to Practice*. Basingstoke: Palgrave Macmillan.
- Johnson, H., & Wilson, G. (2000). Institutional sustainability: community and waste management in Zimbabwe. *Futures*.
- Kelly, C. (1998). Simplifying Disasters: Developing a model for complex Non-Linear Events. In *Proceedings of the International Conference on Disaster Management: Crisis and Opportunity: Hazard Management and Disaster Preparedness in Australasia and Pacific Region* (pp. 25-28).
- Kimberly, A. (2003). Disaster preparedness in Virginia Hospital center – Arlington after Sept 11, 2001. *Disaster Management and Response*, 1(3), 80-86.
- Klomp, J., and K. Valckx. (2014). Natural disasters and economic growth: A meta-analysis. *Global Environmental Change* 26:183–195.
- Knutson, T. R., Camargo, S. J., Chan, J. C. L., Emanuel, K. A., Ho, C.-H., Kossin, J. P., Walsh, K. J. E. (2019). Tropical cyclones and climate change assessment: Part I. Detection and attribution. *Bulletin of the American Meteorological Society*, 100(10), 1987-2007. doi: 10.1175/BAMS-D-18-0189.1
- Kolen, B & Helsloot, I. (2014). Decision-making and evacuation planning for flood risk management in the Netherlands. *Disaster* 38(3):610–635

- Kolen, B & van Gelder, P. (2018). Risk-based decision-making for evacuation in case of imminent threat of flooding. *Water* 10:1–15. <https://doi.org/10.3390/w10101429>
- Kunze, S. (2021). Unraveling the effects of tropical cyclones on economic sectors worldwide: Direct and indirect impacts. *Environmental and Resource Economics*, 78(4), 545–569. <https://doi.org/10.1007/s10640-021-00541-5>
- Lunenburg, F., & Irby, B. (2008). *Writing a Successful Thesis or Dissertation: Tips and Strategies for Students in the Social and Behavioral Sciences*. <https://doi.org/10.4135/9781483329659>
- Mabuku MP, Senzanje A, Mudhara M, Jewitt G, Mulwafu W. (2018). Rural households' flood preparedness and social determinants in Mwandia district of Zambia and Eastern Zambezi Region of Namibia. *Int J Disaster Risk Reduction* 28:284–297. <https://doi.org/10.1016/j.ijdrr.2018.03.014>
- Majoko, T., & Dudu, A. (2022). Parents' strategies for home educating their children with Autism Spectrum Disorder during the COVID-19 period in Zimbabwe. *International Journal of Developmental Disabilities*, 68(4), 474-478.
- Manokore, A. (2021). *Promoting sustainable mining in Zimbabwe*. Manokore Legal Practitioners. <https://www.dlapiper africa.com/en/zimbabwe/insights/2020/promoting-sustainable-mining-in-zimbabwe.html>
- Manyena, S. B. (2006). Rural local authorities and disaster resilience in Zimbabwe. *Disaster Prevention and Management*, 15(5), 810-820. Retrieved (2023, May 14) from <http://www.emeraldinsight.com/10.1108/09653560610712757>.
- Marchau, V., Walker, W. E., Bloemen, P., & Popper, S. W. (2019). Decision Making under Deep Uncertainty.
- Marchezini, V., Horita, F. E., Matsuo, P. M., Trajber, R., Trejo-Rangel, M. A., & Olivato, D. (2018). A Review of Studies on Participatory Early Warning Systems (P-EWS): Pathways to Support Citizen Science Initiatives. *Frontiers in Earth Science*.
- Maskrey, A. (1989). *Disaster mitigation: a community-based approach*. Oxfam.

- Maswoswere, P., Matsa, M. M., & Sibanda, N. (2023). Town Planning and Development for Disaster Prevention: Insights from Gokwe Town, Zimbabwe. *Journal of Urban Planning and Development*, 149(1), 05022045.
- Matsvaire, M., Moyo, R., & Zamasiya, B. (2021, February 12). Climate change and disaster management in Zimbabwe. <https://zela.org/climate-change-and-disaster-management-in-zimbabwe/>
- Matsvange, D., C. Mudavanhu, P. Manjeru, M. Mbiriri, E. Munsaka, L. Sakala, and S. Mwacheza. (2020). Disaster risk reduction systems in the context of Cyclone Idai in Chimanimani. In *Building resilience to natural disasters in populated African mountain ecosystems, vol 66–71*, ed. D.
- Mavhura, E. (2016). Disaster legislation: A critical review of the civil protection act of Zimbabwe. *Natural Hazards*, 80, 605-621.
- Mavhura, E. (2017). Applying a systems-thinking approach to community resilience analysis using rural livelihoods: The case of muzarabani district, Zimbabwe. *International Journal of Disaster Risk Reduction*, 25, 248–258. <https://doi.org/10.1016/j.ijdr.2017.09.008>
- Mavhura, E. (2018). Disaster risk reduction policy and management in Zimbabwe. In *Handbook of Disaster Risk Reduction & Management* (pp. 589-612).
- Mavhura, E. (2016). Disaster legislation: A critical review of the Civil Protection Act of Zimbabwe. *Natural Hazards* 80(1): 605–621.
- Mavhura, E., & Aryal, K. R. (2022). An adaptation of a macroscale methodology to assess the direct economic losses caused by Tropical Cyclone Idai in Zimbabwe. *Jambá: Journal of Disaster Risk Studies*, 14(1).
- Mavhura, E., & Aryal, K. R. (2023). Disaster mortalities and the Sendai Framework Target A: Insights from Zimbabwe. *World Development*, 165, 106196.

- Mavhura, E., & Manyangadze, T. (2021). A comprehensive spatial analysis of social vulnerability to natural hazards in Zimbabwe: Driving factors and policy implications. *International Journal of Disaster Risk Reduction*, 56, 102139.
- Mavhura, E., & Mucherera, B. (2020). Flood survivors' perspectives on vulnerability reduction to floods in Mbire district, Zimbabwe. *Jàmá: Journal of Disaster Risk Studies*, 12(1), 1-12.
- Mavhura, E., and A. Collins. (2017). Flood vulnerability and relocation readiness in Zimbabwe. *Disaster Prevention and Management* 26(1): 41–54.
- Mavhura, E., Collins, A. E., & Bongo, P. P. (2014). Vulnerability to river flooding and relocation readiness: The case of floodplain residents in Zimbabwe. In *ANDROID Doctoral School in Disaster Resilience: 4th International Conference on Building Community Resilience* (pp. 161-171). Media City, Manchester: ANDROID Disaster Resilience Network.
- Mawere, M. (2013). A critical review of environmental conservation in Zimbabwe. *Africa Spectrum*, 48(2), 85-97.
- Merton, R. K., & Nisbet, R. A. (1976). *Contemporary Social Problems*. Harcourt Brace Jovanovich.
- Mhlanga, C., Mudyahoto, T., & Makara, M. (2019). Natural disasters in Zimbabwe: The primer for social work intervention. *African Journal of Social Work*, 9(1).
- Mizutori, M. (2018). Economic losses and displacement should drive disaster risk reduction efforts. *UN Chronicle*, 55(2), 30–31.
- Mozambique Cyclone Idai Post-Disaster Needs Assessment (PDNA)DNA: United Nations Development Programme. UNDP. (2019). Retrieved April 6, 2023, from <https://www.undp.org/publications/mozambique-cyclone-idai-post-disaster-needsassessment-pdnadna>
- Mugandani, R., Muziri, T., Murewi, C. T., Mugadza, A., Chitata, T., Sungirai, M., Zirebwa, F. S., Manhondo, P., Mupfiga, E. T., Nyamutowa, C., Mudereri, B. T., Mugari, Z.

- E., Mwadzingeni, L., & Mafongoya, P. (2022). Mapping and managing livelihoods vulnerability to drought: A case study of Chivi District in Zimbabwe. *Climate*, 10(12), 189. <https://doi.org/10.3390/cli10120189>
- Munene, M. B., Swartling, Å. G., & Thomalla, F. (2018). Adaptive governance as a catalyst for transforming the relationship between development and disaster risk through the Sendai Framework? *International Journal of Disaster Risk Reduction*, 28, 653–663. <https://doi.org/10.1016/j.ijdr.2018.01.021>
- Munsaka, E., Mudavanhu, C., Sakala, L., Manjeru, P., & Matsvange, D. (2021). When Disaster Risk Management Systems Fail: The case of cyclone idai in Chimanimani District, Zimbabwe. *International Journal of Disaster Risk Science*, 12(5), 689–699. <https://doi.org/10.1007/s13753-021-00370-6>
- Musandu-Nyamayaro, O. (2008). The case for modernization of local planning authority frameworks in Southern and Eastern Africa: A radical initiative for Zimbabwe. *Habitat International*.
- Musarurwa, C., & Lunga, W. (2012). Climate change mitigation and adaptation: Threats and challenges to livelihoods in Zimbabwe. *Asian Journal of Social Sciences and Humanities*, 1(2), 25-32.. Climate change mitigation and adaptation: Threats and challenges to livelihoods in Zimbabwe. *Asian Journal of Social Sciences and Humanities*, 1(2), 25-32.
- Musasa, S. T., Musundire, R., Mashingaidze, A. B., & Makuza, S. M. (2015). A preliminary study of the orange(citrus sinensis) fruit value-chain in Chimanimani Rural District, Zimbabwe. *African Journal of Agricultural Research*, 10(35), 3507–3516. <https://doi.org/10.5897/ajar2015.10041>
- Mushore, T. D., Mhizha, T., Manjowe, M., Mashawi, L., Matandirotya, E., Mashonjowa, E., Mutasa, C., Gwenzi, J., & Mushambi, G. T. (2021). Climate change adaptation and mitigation strategies for smallholder farmers: A case of Nyanga District in Zimbabwe. *Frontiers in Climate*, 3. <https://doi.org/10.3389/fclim.2021.676495>
- Musiiwa, G. and Chinembiri, V. (2021). *Mining Threatens Wildlife, Sacred Sites and People*. Global Press Journal. Available at:

<https://globalpressjournal.com/africa/zimbabwe/mining-threatens-wildlife-sacred-sites-people/>

- Mutsau, S., & Billiat, E. (2015). Leveraging Schools Systems as a Locus for Disaster Risk Reduction in Zimbabwe. *Journal of Education and Practice*, 6(29), 163-169.
- Muzenda-Mudavanhu, C., Manyena, B., & Collins, A. E. (2016). Disaster risk reduction knowledge among children in Muzarabani District, Zimbabwe. *Natural Hazards*, 84(2), 911-931.
- Nakanishi H & Black J. (2018). Implicit and explicit knowledge in flood evacuations with a case study of Takamatsu, Japan. *Int J Disaster Risk Reduction* 28:788–797. <https://doi.org/10.1016/j.ijdr.2018.02.008>
- National Research Council. (2010). *Private-Public Sector Collaboration to Enhance Community Disaster Resilience: A Workshop Report*. National Academies Press.
- Ngwenya, Bigboy, et al. "Emerging heat-related climate change influences; a public health challenge to health care practitioners and policy makers: insight from Bulawayo, Zimbabwe." *International journal of disaster risk reduction* 27 (2018): 596-601.
- Nojavan, M., Salehi, E. and Omidvar, B. (2018). Conceptual change of disaster management models: A thematic analysis. *Jambá: Journal of Disaster Risk Studies*. 10(1), 1-11. Available: <https://doi.org/10.4102/jamba.v10i1.451>.
- O'Reilly, K. (2012). *Ethnographic methods*. Second Edition. Routledge.
- O'Leary, M. (2004). *Measuring Disaster Preparedness: A Practical Guide to Indicator Development and Application*. New York: iUniverse, Inc
- Ray, S., Mutangadura, G., Nkala, B., & Zimunya, C. (2022). Climate change, disaster management and primary health care in Zimbabwe. *African Journal of Primary Health Care & Family Medicine*, 14(1), 1-3.
- ReliefWeb. (2019, May 15). Mozambique signs an MOU with African risk capacity to address recurrent episodes of drought, floods, and tropical cyclones [en/PT] - mozambique.

Retrieved April 20, 2023, from <https://reliefweb.int/report/mozambique/mozambique-signs-mou-african-risk-capacity-address-recurrent-episodes-drought>

Ren, L., Wang, D., An, N., Ding, S., Yang, K., Yu, R., Freychet, N., Tett, S. F. B., Dong, B., & Lott, F. C. (2020). ANTHROPOGENIC INFLUENCES ON THE PERSISTENT NIGHT-TIME HEAT WAVE IN SUMMER 2018 OVER NORTHEAST CHINA. *Bulletin of the American Meteorological Society*, 101(1), S83–S88. <https://www.jstor.org/stable/27032749>

RINA (Zimbabwe Rapid Impact Needs Assessment). 2019. May 2019. In *Zimbabwe Rapid Impact Needs Assessment*, Vol. 24. <https://doi.org/10.1044/leader.ppl.24052019.24>.

Sakurai, A., & Sato, T. (2016). Promoting education for disaster resilience and the Sendai framework for disaster risk reduction. *Journal of Disaster Research*, 11(3), 402-412.

Samu, R., & Akintuğ, B. (2020). Pre-disaster planning and preparedness: drought and flood forecasting and analysis in Zimbabwe. *Water Sa*, 46(3), 448-457.

Schneiderbauer, S., & Ehrlich, D. (2005). Population density estimations for disaster management: Case study rural Zimbabwe. In A. M. Meier & J. W. Schanze (Eds.), *Geoinformation for Disaster Management* (pp. 901-921). Springer.

Sen, A. (2009). *The idea of justice*. Harvard University Press.

Sillah, R. M. (2015). A call to establish a child-centred disaster management framework in Zimbabwe. *Jambá: Journal of Disaster Risk Studies*, 7(1), 1-7.

Snee, H. (2013). 'Framing the Other: Cosmopolitanism and the Representation of Difference in Overseas Gap Year Narratives', *British Journal of Sociology*, 64: 142–62.

Tall, A., Patt, A. G., & Fritz, S. (2013). Reducing vulnerability to hydro-meteorological extremes in Africa. A qualitative assessment of national climate disaster management policies: Accounting for heterogeneity. *Weather and Climate Extremes*, 1, 4-16.

The Norwegian National Research Ethics Committees (Etikkom) (2019). *General Guidelines for Research Ethics*. Retrieved from

<https://www.forskningsetikk.no/globalassets/dokumenter/4-publikasjoner-som-pdf/general-guidelines.pdf>

The Norwegian National Research Ethics Committees (Etikkom) (2019). *Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology*. Retrieved from <https://www.forskningsetikk.no/en/guidelines/social-sciences-humanities-law-and-theology/guidelines-for-research-ethics-in-the-social-sciences-humanities-law-and-theology/>

The Norwegian National Research Ethics Committees (Etikkom) (2019). *A Guide to Internet Research Ethics*. Retrieved from <https://www.forskningsetikk.no/en/guidelines/social-sciences-humanities-law-and-theology/a-guide-to-internet-research-ethics/>

Tierney, K. J., Lindel, M. K. and Perry, R. W. (2001). *Facing the Unexpected: Disaster Preparedness and Response in the United States*. Washington D. C.: Joseph Henry Press.

Tierney, K., Bevc, C., & Kuligowski, E. (2006). Metaphors matter: Disaster myths, media frames, and their consequences in Hurricane Katrina. *The ANNALS of the American Academy of Political and Social Science*, 604(1), 57–81. <https://doi.org/10.1177/0002716205285589>

Tirivangasi, H. M., Musiyiwa, K., Gombe, N. T., Shambira, G., Tshimanga, M., Ngwende, S., & Ncube, G. (2021). Exploring Humanitarian response strategies in the aftermath of disasters induced by climate change in Zimbabwe. *Development Southern Africa*, 1-16.

Tuli, F. (2011). The basis of distinction between qualitative and quantitative research in social science: Reflection on ontological, epistemological and methodological perspectives. *Ethiopian Journal of Education and Sciences*, 6(1).

Twigg, J. (2004). *Disaster risk reduction: Mitigation and preparedness in development and emergency programming*. Humanitarian Practice Network.

UNDP (2016) *Mapping Selected Hazards Affecting Rural Livelihoods in Zimbabwe: A District and Ward Analysis*.

UNICEF. (2019). Zimbabwe Cyclone Idai situation report No. 2, 15–24 March 2019. Harare, Zimbabwe: United Nations Children’s Fund

UNISDR. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030. Retrieved (20/04/2023) <https://www.undrr.org/implementing-sendai-framework/sendai-framework-disaster-risk-reduction-2015-2030>.

UNISDR. (2019). Zimbabwe: Disaster Risk Reduction National Report. Retrieved (20/04/2023) from https://www.preventionweb.net/files/68014_zimbabwennr2019revisedweb.pdf

United Nations Environment Programme. (n.d.). Integrating Indigenous and Scientific Knowledge for Disaster Risk Reduction. Retrieved from <https://www.unep.org/resources/report/integrating-indigenous-and-scientific-knowledge-disaster-risk-reduction>

United Nations International Strategy for Disaster Reduction. (2006b). Hyogo framework for action 2005-2015: Building the resilience of nations and communities to disasters. Retrieved from https://www.preventionweb.net/files/1037_hyogoframeworkforactionenglish.pdf

United Nations Office for Disaster Risk Reduction. (2015). Sendai Framework for Disaster Risk Reduction 2015 - 2030. UNDRR. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>

Universitetet i Agder. (n.d.). Retrieved April 7, 2023, from <https://www.uia.no/en/research/about-the-research/code-of-practice-for-processing-personal-data-in-research-and-students-dissertations> Various guidelines are provided by the NSD (Norwegian Centre for Research Data). You can start here: <https://www.nsd.no/en/data-protection-services/notification-form-for-personal-data>

Vanhala, L., Carbone, J. C., Pope, J. C., Hallstrom, D. G., & Darden, M. E. (2006). Adjusting to natural disasters. *Journal of Risk and Uncertainty*, 33(1/2), 37–54. <http://www.jstor.org/stable/41761237>

- Victoria, L. P. (2022). *Community based approaches to disaster mitigation*. ALNAP. Retrieved April 13, 2023, from <https://www.alnap.org/help-library/community-based-approaches-to-disaster-mitigation>
- Vincent, J., Kian, E. M., Pedersen, P. M., Kutz, A., and Hill, J. S. (2010). 'England Expects: English Newspapers' Narratives about the English Football Team in the 2006 World Cup', *International Review of the Sociology of Sport*, 45: 199–223.
- Wamukonya, N. and H. Rukato. (2001). 'Climate Change Implications for Southern Africa', background paper prepared for the Southern African Gender and Energy Network, South Africa: MEPC
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At Risk: Natural Hazards, People's Vulnerability and Disasters*. Routledge.
- Wisner, P. B. (2003). At risk: Natural hazards, people's vulnerability and disasters. In P. B. Ben Wisner (Ed.), *At risk* (pp. 50-51). Routledge.
- World Bank. (2019). *Project Information Document (PID)*. Report No. PIDA27189. Washington, DC: World Bank.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Zhang, W., Li, W., Zhu, L., Ma, Y., Yang, L., Lott, F. C., Li, C., Dong, S., Tett, S. F. B., Dong, B., & Sun, Y. (2020). ANTHROPOGENIC INFLUENCE ON 2018 SUMMER PERSISTENT HEAVY RAINFALL IN CENTRAL WESTERN CHINA. *Bulletin of the American Meteorological Society*, 101(1), S65–S70. <https://www.jstor.org/stable/27032746>
- Zimbabwe Humanitarian Situation Report. (2021). *Early Warning and Early Action Report*. United Nations Office for the Coordination of Humanitarian Affairs. Retrieved from <https://reliefweb.int/report/zimbabwe/zimbabwe-humanitarian-situation-report-january-june-2021>

Consent Form

Introduction

My name is **Abel Runga** a master's Student from the University of Agder in Norway. I am studying **Global Development and Planning**. As part of my studies, I am researching the **effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe. The Case of Cyclone Idai in Chimanimani District**. The research will be used entirely for academic purposes and feel free to ask questions on any issues regarding this research.

Purpose of the Research.

The study investigates the effectiveness of climate-related disaster preparedness and response strategy in Zimbabwe a case of Cyclone Idai in Chimanimani District. There is a projection that in the future, climate natural-related disasters will significantly increase to unprecedented levels ranging from storms, droughts, floods, and hurricanes. Despite disaster risk management policies in the country, there appear to be weak social protection schemes, poor disaster funding, and weak coordinating mechanisms and regulations for proactive measures on climate-related risks. The study, therefore, seeks to plug the gap in the body of knowledge by assessing the effectiveness of climate-related disaster management policies in the Chimanimani district.

Confidentiality

This research maintains strict confidentiality with the names of the persons interviewed and what is said in the interview. The research is purely for academic purposes and as such participating in the research is voluntary. Where the researcher might need to use names, the person will be contacted for consent.

Contact.

If you have any questions regarding this research or any other related issue, feel free to get in touch at:

abelr@uia.no, or abelrunga@gmail.com

Certificate of consent

I have read and understood the purpose of the research and consent to be a participant in this research as a representative of my organization/in my personal capacity. I have had the opportunity to ask any questions regarding the research.

Name of Participant.....

Signature.....Date.....

APPENDIX B

Interview Guide

1. Describe prevailing legislations and policies that are relevant to climate-related disaster preparedness and response strategies in Zimbabwe.
 - Are these policies decentralized as well in local communities like Chimanimani?
2. Explain How well disseminated these legislations and policies are to the local people, especially in well-known climate disaster-related prone areas like Chimanimani District.
3. Is there a link between policies and local practices, cultures, and beliefs of the local people?
4. How effective are the disaster-related policies on disaster preparedness and response strategies in Zimbabwe and local Chimanimani?
5. Is there decentralization of power embedded in the policies and legislations that govern climate-related disasters in Zimbabwe and Local Communities?
6. What Gaps do you think to exist in the prevailing preparedness and response systems and how best can they be improved?
7. What challenges are affecting the effectiveness of disaster-related policies on preparedness and response to disasters like cyclone Idai in Chimanimani?
8. What is the status of efforts that are meant to improve legislation and climate-related disaster policies to combat preparedness and response?
9. How best can possible intervention strategies aimed at policy improvement be conducted?
10. What is your overall assessment, involvement, and response to the effectiveness of climate-related policies on disaster preparedness and response in Zimbabwe and the local community of Chimanimani District?