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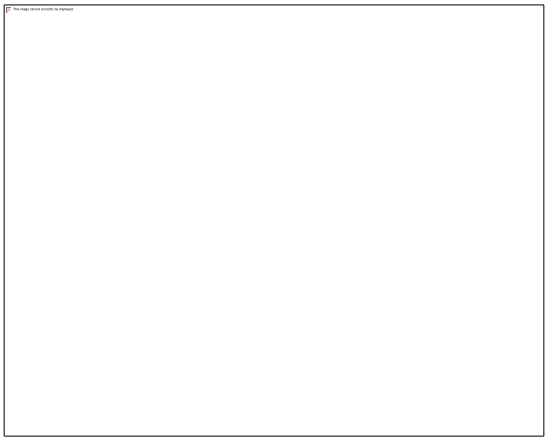

COPING STRATEGIES ADOPTED BY RURAL COMMUNITIES IN RESPONDING TO CLIMATE CHANGE IN ZIMBABWE (2020-2025). A CASE OF CHIHOTA WARD 15 IN MARONDERA.

BY

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Approval form

This certified that B211061B's dissertation, Coping Strategies Adopted by Rural Communities in Responding to Climate Change in Zimbabwe (2020-2025), was completed. This case study of Chihota ward 15 in Marondera, which was presented to partially fulfill the criteria for the Bachelor of Honors degree in Peace and Governance, complied with university norms and satisfied established standards for quality and originality.

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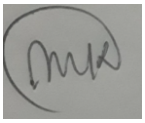
Signature: 

Date:

Dedication

This dissertation was dedicated to my family.

Acknowledgements

This dissertation was the result of several people's combined efforts. I therefore wanted to express my gratitude to everyone who made this study possible for me. I wanted to express

my gratitude to my supervisor for helping me with this study. Additionally, I would have liked to express my gratitude to Mr. and Mrs. B211061B for their unwavering encouragement, support, and presence throughout difficult times. I was also grateful to the Marondera Ministry of Local Government for their approval. I greatly valued the cooperation of the residents of Chihota Ward 15 in the Marondera district. I appreciated their time and efforts.

Abstract

The study sought to assess the coping strategies adopted by rural communities in responding to climate change in Zimbabwe (2020-2025), using a case study of Chihota Ward 15 in Marondera. The study's objectives were to identify and analyze these strategies, assess their sustainability and efficacy, and create a Sustainable

Livelihoods Framework (SLF) that was suited to the community's unique needs. Using a qualitative research methodology, data were gathered through semi-structured interviews with 25 participants representing a range of demographics. The results showed that traditional agricultural practices, like crop diversification and livestock management, were essential coping mechanisms that provided resilience against climate variability. Participants did, however, confront some obstacles, such as a lack of funding and societal and cultural opposition to using new procedures and technology. The study emphasized the significance of incorporating sustainable energy solutions into the community's adaptation plans, as well as the necessity for better understanding of contemporary agricultural practices and financial instruments. Improving water management systems, expanding educational opportunities, and encouraging community involvement in climate change solutions were the main goals of the planned SLF.

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ACRONYMS

UNFCC – United Nations Framework Convention on Climate Change

UNICEF – United Nations International Children's Education Fund

ZimVAC – Zimbabwe Vulnerability Assessment Committee

NDCs – National Determined Contributions

FAO - Food Agriculture Organization

SLF – Sustainable Livelihoods Framework

NGOs – Non-governmental organizations

IPCC – Inter-governmental Panel on Climate Change

CHAPTER 1

1.1 Background of the study

Climate change had a growing impact on the African continent, hitting the most vulnerable hardest and contributing to food insecurity, population displacement, and stress on water resources. According to the United Nations Framework Convention on Climate Change(UNFCCC, 2012), climate change refers to a shift in the Earth's climate patterns that is either directly or indirectly linked to human actions. These actions modify the global atmospheric composition and exacerbate the natural variability of the climate over similar periods. The global impacts of climate change were experienced through a rise in frequent and severe disasters, escalating temperatures, and shifting rainfall patterns, all of which have considerable consequences for society. Climate security recognized that climate change has the potential to jeopardize peace and elevate violence by influencing the underlying causes of

conflict. Climate change could, and in some instances had already, acted as a threat multiplier in the sense that it interacted with other factors, complex societal dynamics, and politics toward causing conflicts.

A major concern influenced by both natural and human forces, climate change in India had a substantial impact on its diversified geographical landscape. Indeed, 17 out of 20 Indians were then at risk of severe hydrological and meteorological (or "hydromet") calamities such as floods, droughts, and cyclones as a result of climate change-related extreme weather occurrences. Sharma (2019) highlighted that India, which historically contributed less to global carbon emissions, had seen a rapid increase due to industrialization and urbanization, particularly since the early 2000s. The nation then became the third-largest emitter of greenhouse gases as a result of this increase. Particularly at risk were important industries, including agriculture, biodiversity, water resources, and health. Shiva (2016) emphasized that erratic monsoons and rising temperatures threatened food security, especially for rural communities dependent on agriculture.

A complex problem, climate change in Brazil was closely related to the nation's large landmass, abundant biodiversity, and socioeconomic processes. Deforestation caused by logging, infrastructure development, and agricultural expansion posed a serious threat to the Amazon rainforest, a crucial global carbon sink. As Santilli(2018) emphasized, land-use change and forestry activities, primarily deforestation, were responsible for nearly 44% of Brazil's total greenhouse gas emissions. This contribution equated to roughly two billion tons of carbon dioxide released into the atmosphere each year. This reduction in forest cover not only affected the storage of carbon but also jeopardized the nation's abundant biodiversity. The rate of species extinction had increased, especially in fragile ecosystems, as a result of rising temperatures and changing rainfall patterns. Nobre (2019) noted that if current trends continued, the degradation

of the Amazon could have resulted in the loss of up to 40% of its species. For instance, the income and livelihoods of farmers were negatively impacted by a 30% decrease in coffee production in the southeast due to a 2015 drought. Rodrigues (2020) argued that these climatic changes exacerbated socio-economic inequalities, particularly in rural areas reliant on agriculture, where smallholder farmers faced heightened risks to their livelihoods. In order to counteract deforestation through foreign financial contributions, Brazil actively participated in international climate negotiations and sought assistance for initiatives like the Amazon Fund, which raised over $1 billion since its founding in 2008. The fund garnered attention for its innovative approach to financing conservation efforts but also faced challenges related to governance and accountability, as pointed out by Lima (2021).

The complicated issue of climate change in South Africa was impacted by the nation's varied topography, socioeconomic circumstances, and dependence on natural resources. Schipper(2017) identified South Africa as one of the continent's foremost contributors to carbon emissions, a status largely driven by its energy sector. The nation's reliance on coal for approximately 80% of its electricity generation plays a significant role in its substantial greenhouse gas output. The nation's urgent problems included water scarcity, which was made worse by climate change. Severe droughts, especially in the Western Cape, were caused by changing rainfall patterns and higher evaporation rates. The 2017-2018 drought had profound impacts, resulting in water shortages in cities like Cape Town, which Turton (2018) highlighted as a critical example of climate vulnerability. Additionally, agriculture was heavily impacted, with shifts in rainfall patterns threatening crop yields; research suggested that yields could decline by 30% by 2050 if current trends continued, according to Fitchett (2019). South Africa's rich biodiversity was also at risk, with changing climates leading to species migration and habitat loss, particularly in biodiversity hotspots like the Cape Floristic Region, as discussed by Hughes (2020). However, climate change exacerbated existing social inequalities,

disproportionately affecting vulnerable communities, particularly those in rural areas reliant on agriculture, as noted by van Zyl (2021).

A major threat in Mozambique was climate change, influenced by the nation's geographic characteristics, socioeconomic circumstances, and dependence on natural resources. Situated on Africa's southeast coast, Mozambique was extremely susceptible to severe weather conditions, such as cyclones and torrential rains. Cyclone Idai in 2019 exemplified this vulnerability, affecting over 1.5 million people and causing widespread destruction, as reported by the United Nations (2019). Agriculture, a vital sector employing a large portion of the population, faced threats from changing rainfall patterns and increased temperatures, with studies indicating that agricultural productivity could have declined by 20% by 2050, particularly affecting staple crops like maize and cassava, according to Nhantumbo (2020). Water resources were increasingly stressed, leading to health risks from waterborne diseases, especially for vulnerable populations in rural areas, as emphasized by Meirinho (2021).

Climate change was a notable challenge that affected the people of Zimbabwe, specifically in Marondera Chihota Ward 15. Rising temperatures, altered rainfall patterns, and extreme weather events were notable impacts of climate change that Zimbabweans faced. The agricultural sector, a cornerstone of Zimbabwe’s economy, was particularly threatened; Chikozho (2020) highlighted that climate variability could have led to yield reductions of up to 50% for key crops like maize by 2030, threatening food security for millions. Droughts and floods were extreme weather events to which Zimbabweans were prone, and they had become more severe and more frequent in recent years. The 2019-2020 drought severely impacted water availability and agricultural productivity, affecting over 5 million people, as reported by the Zimbabwe Vulnerability Assessment Committee (ZimVAC, 2020). The country’s water resources were under stress, with reduced rainfall leading to diminished river flows and a

declining capacity of reservoirs, as noted by Nyamadzawo (2019). Vulnerable communities in rural areas faced significant risks from socio-economic factors due to poor access to resources.

Zimbabwe had pledged to combat climate change through its Nationally Determined Contributions (NDCs) under the Paris Agreement, with the goal of reducing greenhouse gas emissions by 33% by 2030, in response to these difficulties. Chikozho (2021) emphasized that achieving these targets required significant investment in renewable energy and sustainable land management practices. Additionally, community-based adaptation strategies were essential, as highlighted by Nyoni (2020), who advocated for integrating traditional knowledge and local practices into climate resilience initiatives. The situation in Zimbabwe was especially dire because the nation was dealing with both economic instability and climate change. Rural communities, particularly those reliant on rain-fed agriculture, faced heightened vulnerability to climate variability (Chipfupa et al., 2021). In this regard, ensuring food security and establishing effective policy depended on an understanding of how these communities adjusted to environmental changes. The rural Chihota Ward 15 in Zimbabwe served as the best example of these problems, as farmers there had to contend with erratic rainfall patterns and rising temperatures that threatened their farming practices and overall means of survival.

1.2Aim

The purpose of this study was to assess the coping mechanisms used by Chihota ward 15 rural communities as reaction to climate change.

1.3 Problem statement

The livelihoods of rural communities in Chihota Ward 15 were seriously threatened by the growing frequency and intensity of climate change impacts, which had an especially negative impact on their food security and agricultural production. Investigating this issue was crucial since a large number of people in the region depended significantly on rain-fed agriculture,

which left them extremely exposed to unpredictable weather patterns, protracted droughts, and warming temperatures. As per the Food and Agriculture Organization (FAO, 2021), food insecurity was a pressing issue in Zimbabwe, with rural communities facing heightened risks of malnutrition and economic instability. Ineffective coping mechanisms weakened community resilience and increased pre-existing vulnerabilities, especially for vulnerable populations like women and children, who were frequently the most impacted by diminishing agricultural yields and food shortages. The study therefore sought to assess coping strategies that could be used in response to climate change in rural communities in Chihota Ward 15

1.4 Research Objectives

1.To identify the coping strategies adopted by rural communities in Chihota Ward 15, Marondera, in response to Climate Change's effects.

2.To assess the effectiveness and sustainability of the coping strategies employed by the community.

3.To propose a Sustainable Livelihoods Framework (SLF) for enhancing rural communities' coping strategies in responding to climate change in Chihota Ward 15, Marondera.

1.5 Research Questions

1.What coping strategies were adopted by rural communities in Chihota Ward 15, Marondera, in response to the impacts of climate change?

2.How effective and sustainable are the coping strategies employed by rural communities in Chihota Ward 15 to address the challenges posed by climate change?

3.What key components should be included in a Sustainable Livelihoods Framework (SLF) to enhance the coping strategies of rural communities in Chihota Ward 15, Marondera, in response to climate change?

1.6 Assumptions

i. The study assumed that in reaction to the effects of climate change, the rural communities in Chihota Ward 15 had created coping mechanisms.

ii. The study assumed that the effectiveness and uptake of coping mechanisms by community members were strongly influenced by socioeconomic characteristics, including income level, education and resource accessibility.

iii. The study also assumed that the coping strategies used by the communities were greatly influenced by indigenous knowledge.

1.7 Significance of the study

The research benefited various stakeholders, including:

i. Farmers

The study provided farmers with useful strategies that improved farming practices and increased food security. Farmers could lessen the effects of climatic unpredictability by identifying specific measures, such as the adoption of crop types resistant to drought, better soil management techniques, and effective water conservation systems. Equipped with these knowledge, farmers could put into practice resilient, sustainable practices that guaranteed a steady supply of food for their communities and families.

ii. Community leaders and organizations

The useful information produced by this study was useful to community leaders and organizations, as it could direct neighborhood-based initiatives and policies meant to foster resilience against the consequences of climate change. Leaders could create focused programs that made use of local resources and talents by knowing the unique needs and capabilities of their communities. The creation of community gardens, courses on sustainable farming methods, and collaborative initiatives to pool resources among farmers were a few examples

of this. In addition to strengthening community cohesion, these programs established a framework for group action, which promoted resilience at the local level.

iii. Policymakers

Policymakers at the local and federal levels learned more about the particular needs and difficulties that communities like Chihota Ward 15 confronted. This knowledge was essential for creating targeted interventions and plans for allocating resources that efficiently assisted adaption efforts. Decision-makers could increase the resilience of disadvantaged populations by making sure that resources were allocated fairly and that interventions were appropriate for the culture. Strategies for climate adaptation that were more effective may result from this alignment of policy with community needs.

iv. Researchers and scholars

For researchers and academics concerned in rural development, climate change adaptation, and sustainable livelihoods, this study made a substantial addition to the body of knowledge already in existence. The study established the foundation for future research that could build on its findings and examine the intricacies of climate adaptation in comparable contexts by addressing gaps in the literature. Researchers could use this study as a basis for comparative analysis, case studies, and policy assessments. It promoted interdisciplinary collaboration and dialogue, developing a greater knowledge of how communities negotiated the problems faced by climate change.

1.8 Delimitations of the study

The study's delimitations provided the parameters that guided the research, ensuring a targeted examination of the coping mechanisms adopted by communities in Chihota Ward 15 in response to climate change. Geographically restricted to Chihota Ward 15, this study concentrated on the rural communities there rather than extending to urban areas. In order to

keep the focus on the lived experiences of those who were directly impacted by climate change, participants only comprise local farmers, community leaders, and representatives from non-governmental organizations (NGOs).

1.9Limitations of the study

One of the major challenges that the researcher faced in conducting the study was subjectivity in participant replies. Personal biases may have affected qualitative data gathered through interviews, producing subjective responses that might not have accurately reflected the experiences of the community. In order to reduce this, the study triangulated data by incorporating various viewpoints from various community members and using structured interview guides with open-ended questions to promote thorough responses while preserving consistency. The under-representation of varied views in the community, especially among marginalized groups who might not have had as much access to knowledge regarding climate change adaptation, was another issue. The study actively worked to include a wide range of participants to solve this, making sure that different demographics such as women, young people, and senior members are represented. This was be done by enlisting the help of local leaders and organizations for outreach. Finally, the results were quite context-specific, which limited their generalizability to other areas dealing with comparable climatic issues.

1.10 Definition of key terms

- **Climate Change -** Long-term changes in temperature, rainfall, and various atmospheric conditions on Earth are largely caused by human actions, including the burning of fossil fuels, deforestation, and industrial activities. These factors have led to a rise in both the frequency and severity of extreme weather events. These changes resulted in increased frequency and intensity of extreme weather events, impacting ecosystems and human societies (IPCC, 2021).

- **Resilience -** The ability of a social-ecological system to withstand disturbances while maintaining its core functions, structures, and identity. Resilience includes the capacity to adjust to changing circumstances and bounce back from disruptions, thus promoting long-term sustainability and stability (Walker & Salt, 2006).
- **Adaptive Capacity -** The ability of individuals, communities, or systems to anticipate, prepare for, and respond to climate change impacts. This included the development and implementation of strategies that enhanced resilience and reduced vulnerability (IPCC, 2014).
- **Coping Strategies -** Specific actions and approaches that individuals or communities employed to address the negative impacts of climate change. These strategies may have included agricultural diversification, resource management practices, and community collaboration aimed at mitigating risks and enhancing food security (Chikozho, 2009).

1.11 Dissertation outline of the study

In order to thoroughly examine the coping mechanisms used by communities in Chihota Ward 15 in reaction to climate change, the dissertation was divided into a number of important chapters**.**

Chapter1: The chapter gave a brief overview of the study's background, research challenge, goals, and importance**.**

Chapter 2: Chapter 2 created a theoretical foundation for the study by reviewing pertinent literature on the effects of climate change, resilience theory, and coping mechanisms.

Chapter 3: This chapter illustrated the methodology and research design, including the qualitative approach and data gathering techniques.

Chapter 4: Chapter 4 displayed the results of focus groups, interviews, and observations, emphasizing important themes and trends pertaining to coping mechanisms used by the community.

Chapter 5: This chapter analysed the findings' implications for resilience and adaptability in light of the body of previous literature.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The aim of this chapter was to give a comprehensive assessment of the existing literature relevant to the research topic, focusing on the coping strategies adopted by rural communities in Chihota Ward 15, Marondera, in response to climate change. The literature review was crucial in situating the study within the broader context of past research and theoretical frameworks, helping to identify key concepts, gaps, and opportunities for further investigation. This chapter explored previous studies on climate change adaptation, coping strategies, and the Sustainable Livelihoods Framework (SLF), providing a critical analysis of the effectiveness and sustainability of these strategies. The review highlighted the socio-economic and environmental factors influencing the community's ability to cope with climate change, thereby directly aligning with the study's objectives and research questions.

2.2 Conceptual Framework

The conceptual framework provided a foundation for understanding the key concepts that underpinned this study. The study was guided by the Sustainable Livelihoods Framework, which offered theoretical and practical insights into how rural communities could respond to the challenges posed by climate change.

2.2.1 Sustainable Livelihoods Framework (SLF)

Chambers and Conway(1992) pioneered the Sustainable Livelihoods Framework (SLF) as a tool for evaluating the means by which rural communities maintain and enhance their living standards through the strategic management of their resource base. The framework emphasized the interconnectedness of the following types of capital:

- **Human capital:** Refers to the skills, knowledge, and health of individuals, which are essential for coping with climate impacts and accessing resources.
- **Social capital:** Represents the networks, relationships, and social resources that enhance community support and collective action.
- **Natural capital:** Includes natural resources like land, water, and biodiversity, which are directly impacted by climate change and vital for rural livelihoods.
- **Physical capital:** Refers to infrastructure, tools, and technology that communities use to adapt to climate challenges.
- **Financial capital:** Involves the availability of financial resources and credit to support livelihoods, such as for purchasing agricultural inputs or investing in alternative income sources.

The SLF posited that these capitals interacted with each other, and that communities could strengthen their resilience by building and managing these resources strategically. Additionally, the framework addressed vulnerability contexts (e.g., economic, environmental, and socio-political factors) and transforming structures and processes (such as government policies or market systems) that influenced livelihood outcomes (Chambers & Conway, 1992).

The SLF was highly relevant to this study because it offered a robust framework for analyzing how rural communities in Chihota Ward 15 adapted to climate change. Given the community's

vulnerability to environmental challenges, such as changing rainfall patterns and increasing temperatures, the SLF allowed for an in-depth understanding of how different forms of capital human, natural, social, physical, and financial affected the community's coping strategies and overall resilience. The framework also helped assess the effectiveness and sustainability of these coping mechanisms, providing a deeper understanding of the resources required for long-term adaptation.

2.3 Climate Change

The United Nations Framework Convention on Climate Change (UNFCC) (2012) stated that climate change was a change attributed directly or indirectly to human activity that altered the composition of the global atmosphere and added to the natural climate variability observed over comparable time periods. The global impacts of climate change were experienced through a rise in frequent and severe disasters, escalating temperatures, and shifting rainfall patterns, all of which have considerable consequences for society. Climate security recognized that climate change has the potential to jeopardize peace and elevate violence by influencing the underlying causes of conflict. Climate change could, and in some instances already did, act as a threat multiplier in the sense that it interacted with other factors, complex societal dynamics, and politics toward causing conflicts.

A major concern influenced by both natural and human forces, climate change in India had a substantial impact on its diversified geographical landscape. Indeed, 17 out of 20 Indians were at risk of severe hydrological and meteorological (or "hydromet") calamities such as floods, droughts, and cyclones as a result of climate change-related extreme weather occurrences. Sharma (2019) highlighted that India, historically contributing less to global carbon emissions, had seen a rapid increase due to industrialization and urbanization, particularly since the early 2000s.

2.4 Effects of Climate Change

Globally, climate change caused a range of significant environmental and socio-economic impacts. Extreme weather events, such as prolonged droughts, flooding, and heatwaves, became more frequent and intense, threatening agricultural productivity, water availability, and livelihoods worldwide (Jones et al., 2021).

Regionally, Sub-Saharan Africa, including Zimbabwe, was particularly vulnerable due to its dependence on rain-fed agriculture, which was highly susceptible to changing rainfall patterns and temperature fluctuations. These environmental changes led to reduced crop yields, food insecurity, and economic instability. For example, in Zimbabwe, the changing climate resulted in droughts that affected staple crops like maize, reducing agricultural output upon which millions relied for survival (Mujuru & Chikodzi, 2020).

Zimbabwe has experienced significant effects of climate change, including a decline in biodiversity, shortages of water, and a rise in the prevalence of pests and diseases.. The agricultural sector, which constituted a large part of the economy, was severely impacted, and rural communities that heavily relied on agriculture were the most affected. Rising temperatures and water scarcity compounded these challenges, leaving many vulnerable to economic and food insecurities (Zhou et al., 2020).

2.5 Strategies to Mitigate the Effects of Climate Change

In response to the ongoing impacts related to climate change, communities worldwide employed various coping and adaptation strategies. Around the world, communities in at-risk areas have embraced climate-smart agriculture, incorporating drought-resistant crops and water-saving irrigation methods to lessen the effects of shifting weather patterns. Additionally, some diversified their livelihoods by engaging in non-agricultural activities such as small-scale trading and artisan work (Murewa et al., 2020).

Regionally, rural communities in Zimbabwe similarly embraced livelihood diversification and adopted farming techniques that focused on resilience. This included agroforestry, rainwater harvesting, and the use of climate-resilient seed varieties to better withstand unpredictable weather patterns. Some farmers also turned to livestock management and the cultivation of drought-resistant crops as means to adapt to changing climatic conditions. Furthermore, many communities began to adopt better water management practices, including the construction of water storage tanks and the use of water-efficient irrigation methods (Oxfam, 2023).

Nationally, Zimbabwe's government implemented early warning systems to alert communities about extreme weather events, allowing farmers to prepare in advance and adjust their agricultural practices. However, the implementation of such strategies required significant support in terms of infrastructure and institutional capacity, which remained a challenge (Mujuru & Chikodzi, 2020).

2.6 Challenges to Climate Change Adaptation and Coping Strategies

Despite the adoption of various strategies, the effectiveness of climate change adaptation and coping mechanisms was hindered by several challenges. A pervasive global challenge is the scarcity of financial capital and technical expertise within communities,which hinders the effective adoption and implementation of practices designed to build resilience against climate variability. Rural areas in developing countries, in particular, struggled with inadequate infrastructure, limited access to markets, and insufficient government support, making it difficult for individuals to engage in long-term climate adaptation strategies (Sivakumar & Das, 2019).

Regionally, in Sub-Saharan Africa, including Zimbabwe, there were additional challenges such as weak institutional frameworks, poor infrastructure, and limited access to capital, which hindered the implementation of climate adaptation projects. Many rural communities lacked

the support needed from both local and national governments, and many felt that adaptation efforts were not prioritized or sufficiently funded. Moreover, resistance to adopting new agricultural practices due to cultural beliefs and a lack of awareness about climate change often delayed effective responses (Chigbu & Udo, 2021).

Nationally, Zimbabwe faced challenges related to political instability, weak policy enforcement, and inadequate financial resources to implement large-scale adaptation programs. Even though climate adaptation policies are in place, their execution frequently falls short due to various limitations, which leaves rural communities exposed to the negative impacts of climate change. The failure to adequately address these barriers limited the ability of communities to fully adapt to changing climatic conditions (Jones et al., 2021).

2.7 Challenges in Adopting Coping Mechanisms

2.7.1 Limited Resources

For rural communities, especially those that were economically marginalized, limited resources posed a major challenge. Many of these communities contended with poor infrastructure, which hindered their capacity to adopt and implement effective coping mechanisms; limited credit availability restricted their ability to invest in agricultural inputs and technologies that were essential for boosting resilience; and the lack of basic resources like water, fertile land, and financial resources made them even more vulnerable, especially in areas where agriculture continued to be the primary means of subsistence. For instance, in sub-Saharan Africa, poor access to technology and irrigation systems had been identified as a key barrier to adopting climate-resilient agricultural practices (Opara & Adewale, 2021), making it difficult for farmers to cope with the adverse impacts of climate change. Additionally, Kabir et al. (2020) highlighted that these limitations hindered not only food security but also broader economic development in these vulnerable communities.

2.7.2 Socio-Cultural Constraints

Sociocultural barriers also made coping measures less effective in rural areas. Cultural norms, beliefs, and practices affected how communities viewed and reacted to environmental changes, which influenced their readiness to embrace new technologies or methods. Adger (2003) emphasized that these constraints manifested in various ways, including resistance to change, lack of trust in external interventions, or a preference for traditional practices that might not be sustainable in the face of climate challenges. Furthermore, social hierarchies and gender roles within these communities restricted access to resources and decision-making processes, further marginalizing vulnerable populations and limiting their capacity to implement effective coping strategies (Norris et al., 2008).

2.8 Comparative Case Studies

2.8.1 Lessons Learned from Similar Rural Communities: (Kenya, Bangladesh, Mozambique, and Zambia)

Global case studies on climate adaptation highlighted the importance of community-driven solutions for ensuring the sustainability and effectiveness of coping strategies. For example, in Kenya, rural communities implemented rainwater harvesting and small-scale irrigation systems to cope with prolonged droughts. These strategies, particularly when supported by local government and NGOs, proved successful in improving food security and income stability during drought years (Mbeche et al., 2021). Similarly, in Bangladesh, communities used flood-resistant rice varieties and elevated houses to reduce vulnerability to flooding. These strategies underscored the importance of local knowledge and participation in designing climate adaptation interventions. Additionally, studies emphasized the need for collaborative partnerships between government agencies, non-governmental organizations, and local communities to foster adaptive capacity in rural areas (Tessema et al., 2021).

In the Southern African context, Zimbabwe's rural communities could learn valuable lessons from case studies in neighboring countries like Mozambique and Zambia. In Mozambique, the implementation of community-based early warning systems helped rural households prepare for climate-induced disasters, reducing vulnerability and enhancing their ability to cope with floods and droughts (Mavhunga & Muchara, 2021). In Zambia, communities that integrated traditional farming techniques with modern weather forecasting tools reported higher crop yields and better overall climate resilience (Chikozho et al., 2021).

2.9 Knowledge Gaps in Existing Literature

2.9.1 Limitations of Current Studies

Despite the significant body of literature on climate change adaptation in rural communities, several gaps remained that limited the effectiveness of these studies. Globally, while research extensively documented general adaptation strategies such as crop diversification, water management, and sustainable agricultural practices, few studies focused on rural community-specific challenges, particularly in sub-Saharan Africa. Much of the literature tended to overlook the socio-cultural and political dynamics that influenced the implementation of these strategies. For instance, studies by Mugabe et al. (2020) and Kandji et al. (2019) on adaptation practices in sub-Saharan Africa mostly focused on broad regional patterns without delving into the localized variations in climate impacts and coping mechanisms. Chirisa et al. (2021) noted that while adaptation strategies such as agroecology and water harvesting were often highlighted, there was insufficient focus on community governance systems and social capital, which were critical to the successful adoption of these strategies in rural settings.

2.9.2 Rationale for the Study

The current research aimed to address these knowledge gaps by focusing specifically on the climate change coping strategies of rural communities in Chihota Ward 15. It was well-established that rural communities in Zimbabwe faced significant vulnerabilities due to climate

change, but there was limited literature that combined the local-specific social, economic, and cultural contexts in understanding these strategies. This research sought to address this gap by examining how local cultural practices, social networks, and economic constraints influenced the adoption of coping mechanisms at the household level. Additionally, this research applied the Sustainable Livelihoods Framework (SLF) to analyze the effects of human actions, natural, financial, physical, and community resources on climate resilience within rural Zimbabwe, offering a contextual adaptation of SLF for Chihota Ward 15.

Nationally, there was a need for more research on context-specific adaptations in Zimbabwe's rural communities. While national climate policies like the Zimbabwe National Climate Policy (2017) provided frameworks for adaptation, there was a gap in terms of research that connected national-level goals with ground-level practices. By focusing on Chihota Ward 15, this study aimed to provide critical insights into local challenges and propose a customized framework for community-driven climate adaptation. This framework, rooted in the SLF, would enable stakeholders to better understand how resource constraints, social capital, and community-specific factors shaped the effectiveness of coping strategies. Through this, the research would contribute to a more nuanced approach to climate resilience in rural Zimbabwe, with lessons applicable to similar communities across the region.

2.10 Chapter Summary

In this chapter, the literature review explored the key concepts and frameworks relevant to understanding climate change adaptation in rural communities, particularly in Chihota Ward 15, Marondera. The review covered the concept of climate change adaptation, focusing on both traditional agricultural practices and socio-economic strategies as coping mechanisms, while also examining their effectiveness and sustainability. It highlighted the relevance of the Sustainable Livelihoods Framework (SLF) as a tool for analyzing community adaptation strategies. Furthermore, the chapter addressed the gaps in current research, particularly in the

context of Zimbabwe, and justified the need for this study. The insights gained from the literature provided a foundation for the research methodology, which was tailored to address these gaps and investigate the coping strategies, effectiveness, and the role of SLF in enhancing climate resilience in rural Zimbabwe.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The chapter offered a comprehensive overview of the methodology and design, focusing on how rural communities in Chihota Ward 15 coped with the impacts of climate change. Key sections covered included the research philosophy, methodology, and design, emphasizing a qualitative approach guided by interpretivism to explore the lived experiences of participants. The chapter further discussed the data collection methods, sampling techniques, and strategies for ensuring validity, reliability, and ethical considerations throughout the research process.

3.2 Research Philosophy

This study was grounded in an interpretivist philosophy.This paradigm prioritizes the comprehension of the subjective meanings and lived experiences that individuals construct within their specific social environments (Creswell, 2014). Interpretivism was suitable for this study as it allowed for an exploration of how rural community members in Chihota Ward 15 perceived and experienced the impacts of climate change and how they responded to these

challenges. By focusing on participants' lived experiences, the interpretivist approach enabled a deeper understanding of the coping strategies employed by these communities, thus aligning with the research questions that sought to explore the local perceptions and effectiveness of these strategies in adaptation efforts.

3.3 Research Methodology

This study employed a qualitative research methodology to explore the coping strategies adopted by rural communities in Chihota Ward 15 in response to climate change. Qualitative methods, such as semi-structured interviews and focus group discussions, were chosen as they allowed for the collection of rich, detailed data on participants' lived experiences, emotions, motivations, and the contextual factors influencing their adaptation strategies. These methods were particularly well-suited for investigating complex, context-dependent issues like climate change adaptation, where understanding individual and collective perspectives was crucial. The flexibility of qualitative research enabled an in-depth exploration of the subjective meanings and reasoning behind the coping mechanisms employed by community members, providing a comprehensive understanding of their responses to climate change. The use of qualitative methodology was justified by the need to capture the intricacies of human behavior and decision-making in a way that quantitative methods may not fully address.

3.4 Research Design

A case study design was used for this research, which was well-suited for understanding specific phenomena in a real-world context (Yin, 2018). By focusing on Chihota Ward 15, the case study allowed for an in-depth exploration of the coping strategies adopted by rural communities in response to climate change. This design provided a detailed examination of the local context, enabling the researcher to capture the unique challenges and adaptive strategies of the community. The case study approach was ideal for generating comprehensive insights

into the specific environmental, social, and economic factors that shaped these communities' responses to climate change.

3.5 Population and Sample

The target population for this study consisted of rural households, farmers, and community leaders in Chihota Ward 15, Marondera. These individuals were directly impacted by climate change and were key informants for understanding the local coping strategies. The focus was on those who had experienced the impacts of climate change firsthand, including those involved in agriculture, which was the primary livelihood in the area, as well as community leaders who played a role in facilitating adaptation strategies. A sample consisting of 10 farmers, 10 rural households, and 5 community leaders was selected to guarantee the acquisition of comprehensive and detailed data, all while ensuring manageability. This sample size was appropriate for qualitative research, as it allowed for in-depth exploration of the experiences, perceptions, and strategies of participants without overwhelming the researcher (Marshall, 2016).

3.6 Sampling Method

Sampling techniques referred to the methods used to select participants or cases from a larger population for the purpose of data collection. Bryman (2012) characterized sampling as a method employed to identify a sample that can represent and function as a microcosm of a larger population. In this study, the researcher used purposive sampling to identify individuals in Chihota Ward 15 who were most likely to provide rich, detailed data on the impacts related to climate change and the techniques for coping used in the society.

3.6.1 Purposive Sampling

Purposive sampling was employed to intentionally select participants who possessed specific knowledge and experience related to climate change and its impacts. As per Saunders et al.(2012), purposive sampling is a non-probability technique where the researcher employs

their expert judgment to select participants who are most suitable for providing rich, relevant data to address the research questions. This technique ensured that the individuals selected had direct involvement or insight into the issues being studied. Rural households were individuals who had experienced the effects of climate change firsthand and were implementing or involved in coping strategies. Farmers were those engaged in agriculture, the primary livelihood in the area, who had been directly impacted by climate change (e.g., altered rainfall patterns, drought, and crop failure). Community leaders were individuals in leadership roles who were involved in the implementation of community-wide climate adaptation strategies and policies. This purposive approach allowed for the selection of participants who could provide in-depth insights into the research questions. The purposive technique enabled the inclusion of participants from diverse backgrounds and experiences within Chihota Ward 15, ensuring that the research captured a comprehensive range of perspectives on climate change adaptation.

3.7 Data Collection Methods

Data collection methods referred to the techniques or tools used by researchers to gather information from participants. These methods were essential for ensuring that the research addressed the research questions and provided in-depth insights into the topic of study. Semi-structured interviews were used for information gathering.

3.7.1 Semi-Structured Interviews

Semi-structured interviews were chosen for this study as they provided the flexibility to explore individual participants' experiences and insights. This method allowed the researcher to ask open-ended questions, encouraging participants to share detailed responses, and offered the opportunity to probe deeper based on the responses. Semi-structured interviews were ideal for understanding the specific coping strategies that individuals used in response to climate change. The interviews were conducted face-to-face or via phone, depending on the availability and

circumstances of the participants, and lasted approximately 30-60 minutes. Participants for the interviews included rural households, farmers, and community leaders, as these groups had firsthand experience with climate change and its impacts.

3.8 Validity and Reliability

To guarantee the accuracy and dependability of the data, various strategies were utilized throughout the data collection and analysis process. Triangulation was used to increase the credibility of the findings. By using interviews, the study cross-checked data, offering more robust and thorough comprehensive of the research issue (Patton, 2015). This helped mitigate bias and ensured that the results reflected the diverse perspectives of the community. Member checking was an essential procedure to guarantee data interpretation accuracy. After information gathering, key themes and interpretations were presented to participants to verify that the researcher had accurately represented their views (Lincoln & Guba, 1985). This helped address any discrepancies and confirmed the validity of the findings. To maintain consistency, the research followed standardized procedures for conducting interviews. A detailed interview protocol was used, and the same approach was applied across all interviews, ensuring that the data collection process remained systematic and reliable (Bryman, 2016). Additionally, data was coded consistently, and the analysis was conducted following established qualitative data analysis methods.

3.9 Data analysis and presentation

Data transcription involved converting the audio recordings of the semi-structured interviews into written form. This process was done manually or using transcription software, ensuring accuracy in capturing the nuances of participants' responses. Transcription was completed as soon as possible after the interviews to maintain the integrity of the data and minimize recall bias (Sullivan, 2012). The transcriptions were carefully reviewed and compared with the original recordings to ensure correctness before analysis began.

Once transcribed, the data underwent coding and thematic analysis. Coding involved categorizing the data into smaller segments or themes that captured key ideas, words, or phrases related to the research objectives (Braun & Clarke, 2006). This inductive process helped in identifying patterns and significant themes within the data. Thematic analysis was then used to explore how these patterns related to the coping strategies employed by rural communities in response to climate change. The goal was to interpret participants' responses in a meaningful way, focusing on their subjective experiences and perceptions. The findings were presented thematically, with key themes derived from the coded data. Each theme was accompanied by illustrative quotes from participants to support the findings. These quotes provided context and deepened understanding of the participants' perspectives (Creswell, 2013). The results were organized into sections that corresponded to the research objectives, with clear distinctions between the various coping strategies, their effectiveness, and sustainability. Visual aids, such as charts and tables, were used where appropriate to summarize key findings and trends, ensuring that the presentation of the findings was clear and accessible to the reader.

3.10 Ethical considerations

Ethical considerations in research referred to the principles and guidelines that ensured the protection, well-being, and rights of participants throughout the research process.

- **Informed Consent**

Informed consent was secured from all participants prior to their participation in the study. This involved providing participants with a detailed explanation of the study's purpose, the data collection methods, and any potential risks or benefits. Participants were informed that their participation was voluntary and that they could withdraw at any time without consequences. A written consent form was provided, and participants were encouraged to ask questions to ensure they fully understood the study before agreeing to participate.

- **Confidentiality**

The confidentiality of participants was strictly maintained throughout the research process. Identifying information was kept anonymous, and all data was stored securely. In any reports or publications resulting from the study, participants' identities were not revealed, and pseudonyms were used in place of real names. Data was used solely for the purpose of the study.

- **Cultural Sensitivity**

The study adhered to local cultural norms and practices to ensure respect for the community. Researchers approached participants with sensitivity, recognizing local customs, beliefs, and values. This was particularly important during the data collection phase, as the researcher worked to establish rapport with participants while maintaining cultural respect.

- **Right to Withdraw**

Participants were made aware of their right to exit the study at any point without incurring any penalties or adverse repercussions. This principle was emphasized during the informed consent process, ensuring participants felt comfortable and confident in their decision to participate, knowing that their involvement was entirely voluntary and that they could withdraw at any stage without any repercussions.

3.11 Chapter Summary

This chapter outlined the research methodology and design for the study on coping strategies in response to climate change in Chihota Ward 15. A qualitative research approach was chosen, guided by an interpretivist philosophy, which allowed for an in-depth understanding of participants' subjective experiences. The study employed semi-structured interviews as the primary data collection method, with a purposive sampling technique used to select participants. The methodology was designed to ensure reliability, validity, and ethical rigor

throughout the study. The data presentation and analysis section of the following chapter included the results from the collected data were discussed in relation to the research objectives and questions.

Chapter 4

Data Presentation and Analysis

4.1 Introduction

This study's findings and analysis were given in this chapter on the coping strategies adopted by rural communities in Chihota Ward 15 in response to climate change. The findings were organized around the research objectives, offering insights into the traditional agricultural practices, socio-economic strategies, and the challenges faced by the community. The data presented in this chapter was derived from semi-structured interviews, providing a comprehensive understanding of the lived experiences of the participants.

4.2 Demographics of the research population

This section provided an overview of the demographic characteristics of the participants in the study. The sample consisted of 25 participants from Chihota Ward 15, representing a range of ages, genders, occupations, and education levels. These characteristics were essential to understanding the context in which the coping strategies were implemented and the various factors influencing these strategies. Below was a breakdown of the demographic data.

4.2.1 Age distribution

The participants in the study had a wide age range, reflecting the diverse stages of life and experience within the rural community. The age distribution was shown in the table below:

Table 4.1 below showed the age distribution.

Age Group	Number of Participants	Percentage (%)
18-30 years	4	16%
31-40 years	8	32%
41-50 years	7	28%
51-60 years	5	20%
61+ years	1	4%

Figure4.1. Age distribution (n=25)

Source: primary data

Fig 4.1 above showed that the majority of the participants were between 31 and 50 years old, indicating that they were in the prime age for agricultural work and had significant experience with climate change adaptation strategies. The younger and older age groups had fewer participants, which may have reflected either a lower representation in the study or less involvement in direct agricultural activities.

4.2.2 Gender Distribution

Gender distribution within the study was relatively balanced, with both male and female participants sharing their experiences regarding climate change adaptation. The following table illustrated the gender breakdown:

Table 4.2 illustrated the gender breakdown.

Gender	Number of Participants	Percentage (%)
Male	12	48%
Female	13	52%

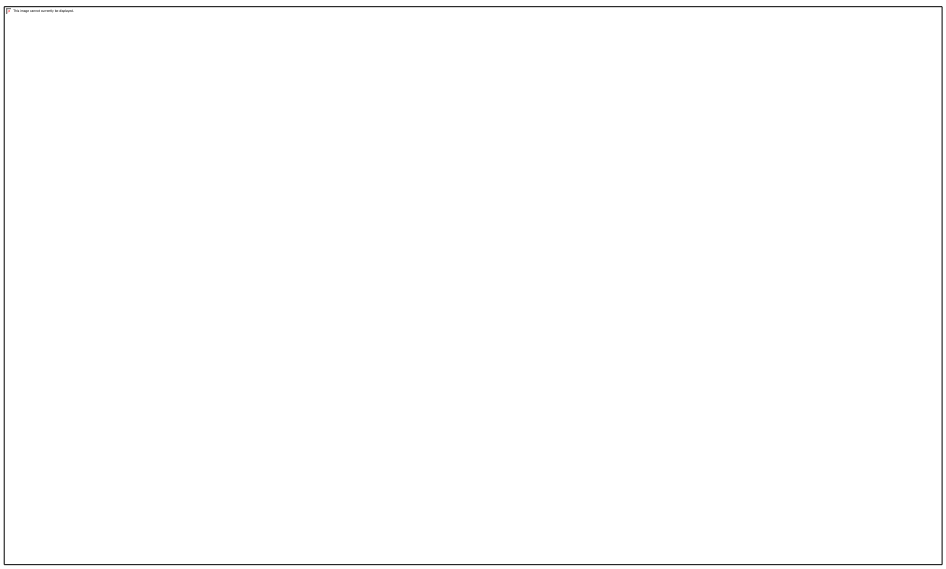

Figure 4.2 gender breakdown (n=25)

Source: Primary data

The gender distribution highlighted a slight overrepresentation of females, which may have been due to their involvement in household-level decisions and agricultural tasks, particularly those related to food security and daily coping strategies.

4.2.3 Occupational Background

The primary occupation of most participants was farming, as agriculture was the main livelihood in the area. However, some participants also engaged in additional income-generating activities such as trading, livestock farming, and small-scale enterprises. Below was a summary of the main occupations**:**

Table 4.3 below showed the occupational background.

Occupation	**Number of Participants**	**Percentage (%)**
Crop Farming	18	72%
Livestock Farming	4	16%
Small-scale Trading/Commerce	3	12%

Figure 4.3 occupational background (n=25)

Source: Primary Source

The high percentage of participants involved in crop farming reflected the region's reliance on agriculture for income and sustenance. A smaller proportion was engaged in livestock farming and commerce, indicating some diversification in livelihoods, although agriculture remained dominant.

4.2.4 Education Level

The education levels of participants varied, with most having attended primary or secondary school, though a significant portion did not have formal post-secondary education. The table below summarized the education distribution:

Table 4.4 below showed the level of education of the respondents.

Education Level	Number of Participants	Percentage (%)
No formal education	3	12%
Primary Education	9	36%
Secondary Education	11	44%
Tertiary Education	2	8%

While a majority of the participants had completed secondary education, the relatively low percentage of individuals with tertiary education suggested that most were working with practical knowledge and experience rather than formal academic qualifications. This influenced their coping strategies, as knowledge and skills were derived more from lived experience and community-based learning.

4.2.5 Summary

The demographic analysis indicated that the study population was predominantly made up of middle-aged adults (31-50 years), with a fairly balanced gender distribution. Most participants

were engaged in crop farming, which was the primary occupation in Chihota Ward 15. The level of education varied, with the majority having completed at least some secondary education. These demographic characteristics provided context for understanding the coping strategies discussed by the participants, especially as they related to agricultural practices, the challenges they faced, and their access to resources for adaptation.

4.3 Coping Strategies Adopted by rural communities in Chihota Ward 15

The researcher noted that the community members adopted quite a number of strategies in trying to cope with climate change effects.

4.3.1 Traditional Agricultural Practices

Traditional agricultural practices emerged as a fundamental coping strategy for many participants in response to the impacts of climate change. Several participants emphasized the importance of crop diversification as a way to manage the unpredictable weather patterns, such as droughts or floods. Many explained that planting a variety of crops like maize, sorghum, and millet helps ensure that some crops would survive even under adverse conditions. One participant shared,

> *"We had always planted multiple crops, such as maize and sorghum, because we knew some would survive the drought."*

Another participant added,

> *"We relied on sorghum and millet because they were more drought-resistant. If maize failed, at least we still had something to harvest."*

In addition to crop diversification, livestock management was another key practice discussed. Participants noted that keeping a variety of animals, such as cattle, goats, and chickens, ensured a more stable source of income and food in the event that crops failed. One participant explained,

"Even if crops failed, we could rely on selling goats or chickens to make ends meet."

Another participant emphasized that,

"Cattle provided milk, which helped feed our families, even when we didn't have enough maize."

Indigenous knowledge also played a significant role, with participants highlighting how traditional farming practices, passed down through generations, help them predict weather patterns and adapt their activities accordingly. One participant shared,

"We'd been taught to plant according to the seasons, and we trusted our elders' knowledge about when to plant or harvest, especially after the rains."

Traditional agricultural practices such as crop diversification and livestock management remained essential strategies for climate adaptation in Chihota Ward 15. These strategies provided a level of resilience against climate variability, especially for households with limited access to external resources. However, the effectiveness of these practices was increasingly challenged by the intensity and frequency of climate change impacts. The sustainability of these strategies will require further adaptation, such as the incorporation of drought-resistant crop varieties or improved livestock health management practices, to maintain their relevance in the face of ongoing climatic shifts.

The practice of crop diversification aligned with existing literature on traditional agricultural coping mechanisms. The utility of crop diversification as a common tactic for mitigating vulnerability to climatic shocks in rural settings is well-documented in the work of scholars like Adger et al.(2007) and Thomas et al. (2007). Similarly, livestock management was a well-documented adaptive strategy, particularly in regions where agriculture was the primary livelihood (Speranza et al., 2014). The reliance on indigenous knowledge was also consistent with findings in the literature, where local knowledge systems had been found to be

instrumental in helping communities adapt to environmental changes (Berkes, 2009). However, some participants in this study also reported that the impact of climate change on crop yields and livestock health had reduced the effectiveness of these practices over time, a nuance that was less often highlighted in the literature.

4.4 Effectiveness and Sustainability of Adopting Coping Mechanisms

Participants in Chihota Ward 15 expressed various ways of measuring the effectiveness of coping strategies, often through direct indicators such as food security and income stability.

i. **Food Security**

A common response from participants was the idea of sufficient harvests as a key indicator of success. The Intergovernmental Panel on Climate Change (IPCC, 2019), clams that food security was considered a critical indicator for evaluating adaptation because it directly reflected a community's ability to maintain access to food in the face of climate shocks. One farmer shared,

> "*When we are able to harvest enough crops for the year, we considered that a success*."

This meant that the achievement of food security often showed the effectiveness of coping strategies in Chihota Ward 15. Farmers who adopted mixed farming and crop rotation techniques reported fewer food shortages (Moyo et al., 2020).

ii. **Income Stability**

Income stability played a crucial role in measuring the effectiveness of these strategies, as rural households often depended on agricultural output as their primary source of income. Research

by the World Bank (2020) highlighted the importance of diversified income sources, noting that households involved in multiple economic activities were less vulnerable to climate-related income loss.

Another participant explained,

> *"If we had enough maize to feed our family and sell a little for cash, that meant our strategy worked*."

In addition to crop yields, some participants also mentioned the role of livestock as a measure of effectiveness. One participant stated,

> "*When my goats were healthy and I could sell them, it showed that our strategies were working."*

In contrast, other participants expressed that while they were able to survive, they did not necessarily thrive, indicating a more complex evaluation of success. Participants' understanding of effectiveness largely correlated with established academic indicators, such as food security and income stability. However, while these indicators were commonly used, the study also highlighted a more nuanced understanding of success. Participants indicated that their ability to merely "survive" rather than "thrive" could still represent a successful adaptation strategy. This pointed to the need for a broader definition of effectiveness that included both short-term survival and long-term resilience, as emphasized by authors like Gbetibouo and Ringler (2018). Moving forward, it might have been important to incorporate additional dimensions of effectiveness, such as ecological health or psychological well-being, as part of future assessments of coping mechanisms.

The indicators mentioned by participants aligned with existing research on measuring effectiveness in rural climate adaptation. According to authors like Thomas et al. (2020) and Nyangweso (2021), food security and income stability were commonly used metrics to assess

the success of climate adaptation strategies in rural settings. Similarly, the role of livestock as an indicator of success was well-documented (Matenga et al., 2020), where livestock served as both a source of food security and a financial buffer against climate shocks. The self-reported measures of success, such as adequate harvests and healthy livestock, resonated with the findings in the literature that suggested these tangible, locally relevant indicators were often used by farmers to assess the impact of coping strategies.

4.5 Long-Term Sustainability

When asked about the long-term sustainability of their coping strategies, participants expressed both hope and concern. Several highlighted the growing challenges posed by environmental factors like soil erosion and declining rainfall. A community leader remarked,

> "*The strategies we used were good for now, but we worried about the soil erosion and declining rainfall*."

Another participant added,

> *"We tried to adapt, but the land kept getting drier, and the rains came later each year. It was hard to say how long these methods would work*."

Some participants were more optimistic, focusing on the sustainability of certain practices, such as livestock management. One farmer commented,

> *"As long as we had cattle, we would always have something to sell or trade*."

However, the general sentiment was that current practices were becoming less effective in the long run, especially as climate change intensified.

While some coping strategies may have still appeared effective in the short term, the long-term sustainability of these strategies remained uncertain. The concerns raised by participants regarding soil erosion and declining rainfall aligned with the academic literature that emphasized the need for more sustainable farming practices, including soil conservation

techniques and water management strategies (Nhamo & Nhamo, 2021). Without addressing these broader environmental issues, the effectiveness of current coping strategies would likely diminish over time. This suggested a need for integrated approaches that combined traditional knowledge with modern technologies to ensure the long-term viability of coping mechanisms.

These concerns about long-term sustainability echoed findings in recent studies on climate change adaptation in rural areas. For instance, O'Neill et al. (2020) and Moyo et al. (2022) discussed how declining soil fertility and increasingly erratic rainfall patterns threatened the long-term sustainability of traditional agricultural practices. The emphasis on livestock as a resilient asset was supported by research by Sithole et al. (2023), who found that livestock played a critical role in the long-term survival of rural communities in dryland areas. However, the challenges of soil erosion and water scarcity were highlighted as critical threats to sustainability, consistent with findings by Moyo and Chikozho (2019) that indicated many rural communities faced diminishing returns from traditional farming systems due to changing environmental conditions.

4.6 Proposed Sustainable Livelihoods Framework (SLF)

The proposed Sustainable Livelihoods Framework to enhance rural communities' coping strategies in responding to climate change contributed to long-term resilience in Chihota Ward 15, Marondera.

4.6.1 Core Components of SLF

Participants identified several key components they believed should be included in the SLF to improve coping strategies in Chihota Ward 15. The most frequently mentioned components were access to education, improved water management systems, and better access to financial resources.

(i)**Access to Education**

One participant noted,

> "*If we had more knowledge about water conservation, it would have helped us a lot."*

Another respondent emphasized the importance of education:

> *"If we were taught better farming techniques and how to manage water, we could have improved our harvests*."

Additionally, there was a call for establishing a local knowledge-sharing network:

> *"We could have learned from each other about farming techniques and how to cope with climate change*."

Many respondents also highlighted the need for access to sustainable energy sources, with one participant stating,

> "*We needed alternative energy sources, like solar, to reduce our dependence on firewood*."

Knowledge-sharing networks were also widely recognized in the literature as a means of fostering social capital, which was crucial for community-based adaptation (Béné et al., 2021).

(ii) **Improved Water Management System**

Another proposal was the development of local irrigation systems:

> "*If we could have had irrigation systems in our community, we would not have depended on the rains so much*."

Similarly, the inclusion of local irrigation systems was a common recommendation for enhancing water security and reducing dependence on rainfed agriculture (Nguyen et al., 2022).

(iii) **Access to Financial Resources**

One common suggestion was the incorporation of a community savings fund, with one participant stating,

> *"A savings scheme would have helped us in times of need when our crops failed. We could have used it to buy seeds or pay for healthcare*."

For example, the establishment of community savings schemes was a well-documented strategy in the SLF literature, as it improved financial capital and supported adaptive capacity (Ellis, 2020).

The components identified by participants aligned closely with the established principles of the Sustainable Livelihoods Framework (SLF) in the literature. The emphasis on education and water management systems underscored the importance of building human and physical capital, which was critical for climate change adaptation. However, participants' focus on sustainable energy sources revealed a gap in the literature, as many SLFs typically overlooked energy access as a central component. Incorporating renewable energy as a key part of the SLF could have significantly improved resilience in Chihota Ward 15, particularly in the context of reduced natural resources.

The proposed SLF for Chihota Ward 15 aligned closely with key elements of successful livelihood frameworks. The inclusion of community savings schemes, irrigation systems, and knowledge-sharing networks would have significantly enhanced the local capacity to cope with climate change. These proposals reflected a holistic approach to adaptation, addressing physical, financial, and social capital. However, the challenge lay in the implementation of these proposals, particularly in terms of securing financial resources and building local capacity for maintaining such systems. As noted by Ellis (2020) and Nguyen et al. (2022), the success of such frameworks depended on both external and internal support mechanisms to ensure sustainability and scalability.

These views on the core components of the SLF were consistent with the literature on rural livelihoods and climate change adaptation. The SLF, as outlined by Scoones (2020) and Chambers and Conway (2019), emphasized the need for a combination of physical, human, social, and financial assets. Education and water management systems were recognized as key components in enhancing adaptive capacity and fostering resilience (Béné et al., 2021). Furthermore, the importance of access to sustainable energy sources was emphasized by Moyo et al. (2023), who suggested that renewable energy could reduce the environmental pressure of traditional energy sources and improve rural livelihoods.

4.7 Discussion of Findings

The findings of this study provided critical insights into the coping strategies adopted by rural communities in Chihota Ward 15 in response to climate change. The study identified various strategies employed by residents, including traditional agricultural practices, livestock management, and financial safety nets. These strategies were found to be effective in the short term, allowing communities to withstand immediate climate shocks such as erratic rainfall and prolonged droughts. However, long-term sustainability concerns were evident, as participants expressed fears about declining soil fertility, increasing soil erosion, and worsening water scarcity. The study's alignment with previous research (e.g., Nhamo & Nhamo, 2021; Moyo et al., 2022) suggested that these challenges were not unique to Chihota Ward 15 but were common among rural communities in Zimbabwe and other climate-vulnerable regions.

A key theme that emerged from the study was the reliance on livestock as a financial buffer against climate-related losses. While this strategy was viewed as sustainable by some participants, it also posed risks due to the increasing difficulty of maintaining livestock during prolonged dry spells. The study also highlighted a strong demand for improved water management systems, particularly irrigation, as a means of reducing reliance on rainfall. Additionally, access to education and knowledge-sharing networks was identified as a crucial

factor in enhancing community resilience. Participants emphasized the importance of training in modern farming techniques and sustainable resource management, which aligned with findings from previous studies that underscored the role of knowledge and capacity-building in climate adaptation (Béné et al., 2021).

The assessment of the effectiveness and sustainability of coping strategies revealed mixed results. While certain strategies, such as community-based resource management and diversification of livelihoods, showed promise, others—such as reliance on rainfed agriculture were increasingly becoming unsustainable. The study found that environmental changes, particularly shifting rainfall patterns and soil degradation, were outpacing the community's ability to adapt using traditional methods. This finding supported the argument made by O'Neill et al. (2020) that climate change was eroding the effectiveness of indigenous adaptation techniques, necessitating the integration of modern technology and scientific approaches. Furthermore, financial constraints were highlighted as a major barrier to sustainability, with participants calling for greater access to credit facilities and community savings schemes to enhance economic resilience.

The proposed Sustainable Livelihoods Framework (SLF) was developed in response to these findings, focusing on core components such as access to education, improved water management, financial resources, and sustainable energy sources. The study found strong community support for the SLF, particularly in the areas of irrigation infrastructure and knowledge-sharing networks. However, challenges in implementation were also identified, including the need for external funding, government support, and technical expertise. These findings aligned with studies by Scoones (2020) and Ellis (2020), which emphasized that successful livelihood frameworks required both internal community initiatives and external institutional backing.

Overall, the findings indicated that while rural communities in Chihota Ward 15 had developed a range of coping strategies, their long-term effectiveness remained uncertain in the face of worsening climate conditions. The study underscored the need for integrated adaptation approaches that combined traditional knowledge with modern innovations to enhance

4.8 Chapter Summary

This chapter presented the findings and analysis aligned with the research objectives, providing insights into the coping strategies employed by rural communities in Chihota Ward 15 in response to climate change. Key findings highlighted the importance of traditional agricultural practices, socio-economic strategies, and the challenges faced in adopting new coping mechanisms. Participants emphasized the need for improved knowledge on modern farming methods and financial tools, while expressing concerns over the long-term sustainability of current strategies. The study also identified significant knowledge gaps, particularly regarding the integration of new climate-resilient practices. These findings provide a foundation for developing a Sustainable Livelihoods Framework (SLF) tailored to the community's needs. In the next chapter, a more detailed discussion will focus on drawing conclusions from these findings and exploring their broader implications for climate change adaptation in rural Zimbabwe.

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND AREAS FOR FURTHER RESEARCH

5.1 Introduction

The purpose of this chapter is to examine if the study questions and goal had been adequately addressed. It signified the conclusion of the study and consisted of a summary of the entire investigation, conclusions, and suggestions for further research.

5.2 Summary

Chapter 1 covered the study's background, problem statement, objectives, research questions, and assumptions; it also discussed the study's significance, limitations, and delimitations. Chapter 2 explained and related the literature review and analyzed previous research on the benefits of community participation in poverty reduction initiatives. Chapter 3 established the methodology the researcher used to conduct the study, which was the mixed methodology; it described the intended audience, sampling methods, information gathering methods, and ethical considerations used in the study; and it outlined procedures for gathering data.

In the fourth chapter, the research focused on data presentation and analysis based on the research findings.

The final chapter provided a summary of the entire study; the conclusion of the results was according to the objectives stated within the first section and also included recommendations for the study. The chapter also focused on connecting the literature review of earlier research conducted by other researchers on the difficulties related to depression and psychotherapy with the new findings and determining how the knowledge from the findings aimed to fill in gaps recognized previously in the studies conducted.

5.3 Conclusions

The first objective identified and analyzed various coping strategies adopted by rural communities in Chihota Ward 15 to lessen climate change's effects. Through incorporating direct quotes from participants, the research captured personal experiences and highlighted both traditional and modern adaptation strategies. Traditional methods such as livestock management and community-based knowledge-sharing were well-documented, demonstrating the reliance on local resources and informal networks. Additionally, the research acknowledged the adoption of newer strategies, such as improved farming techniques and financial safety nets, showing a transition toward diversified adaptation mechanisms. This comprehensive approach ensured that the objective was met by providing a nuanced understanding of the coping strategies available to the community.

However, while the study successfully identified various coping strategies, it could have been strengthened by incorporating quantitative data to measure their effectiveness and prevalence. A comparative analysis with other rural communities facing similar climate challenges would have provided a broader perspective on the adaptability and efficiency of these strategies. Furthermore, the research focused more on the descriptive aspects of coping mechanisms rather than evaluating the success rates of each method over time. Incorporating data such as crop yields, household income variations, or water resource availability could have enhanced the depth of analysis and provided a more evidence-based assessment of the effectiveness of these coping strategies.

The second objective highlighted both the short-term effectiveness and long-term sustainability challenges of the coping strategies employed by the community. The inclusion of participant concerns about soil erosion, declining rainfall, and the diminishing effectiveness of traditional farming methods provided critical insights into the limitations of existing strategies. By

referencing academic literature, the study reinforced the idea that while some adaptation methods might work temporarily, their sustainability was uncertain due to evolving climate conditions. The research also acknowledged that some strategies, such as livestock management, remained viable, offering an alternative income source for households affected by declining agricultural productivity.

Despite these strengths, the study could have provided a more systematic assessment of sustainability by integrating empirical data. While qualitative insights effectively captured community perceptions, a more data-driven approach, such as measuring agricultural output over time, tracking water availability trends, or analyzing household financial resilience would have provided a clearer picture of long-term sustainability. Additionally, a more detailed discussion on policy interventions and support mechanisms, such as government programs or NGO initiatives, could have strengthened the evaluation of sustainability by highlighting external factors that influenced adaptation success.

The study made a significant contribution by proposing a Sustainable Livelihoods Framework (SLF) tailored to Chihota Ward 15, addressing key factors such as education, water management, financial resources, and sustainable energy. The research successfully linked community perspectives with academic literature, ensuring that the proposed framework was both relevant and theoretically sound. Notably, the study identified a gap in existing SLFs regarding energy access, emphasizing the need for renewable energy solutions in rural adaptation strategies. This insight added value to the research by expanding the discourse on climate resilience beyond traditional agricultural and financial interventions.

However, while the framework was well-conceptualized, its practicality and implementation strategy could have been further elaborated. The research did not extensively outline how the SLF could be operationalized, including potential funding sources, key stakeholders, and

mechanisms for monitoring and evaluating its success. A more detailed implementation plan, perhaps informed by case studies of successful SLF applications in similar contexts, would have strengthened the framework's applicability. Additionally, discussing potential barriers to adoption, such as financial constraints, policy limitations, or community resistance, would have provided a more realistic perspective on the challenges of implementing the SLF in Chihota Ward 15.

5.4 Recommendations

The researcher recommended to the government that:

- There was a need for increased government funding for research and extension services.
- Safe energy sources should be promoted.
- Livelihood diversification should be encouraged.
- Access to information and technology should be enhanced.

5.5 Area of Further Study

- Longitudinal studies on adaptation strategies
- The impact of policy interventions
- Gender dynamics in adaptation strategies
- Climate change perception and awareness

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APPENDIX 1:

INTERVIEW GUIDE FOR RURAL HOUSEHOLDS

My name is B21101B, and I attend Bindura University of Science Education to pursue a Bachelor of Science Honors in Peace and Governance. Using a case study of Chihota Ward 15 in Marondera, this study aims to evaluate the coping mechanisms used by rural communities in Zimbabwe in response to climate change (2020–2025). I would like to address the questions around this research with you. Planners interested in rural development will be able to determine which regions in your area require development with the help of your comments,

which will help them understand the difficulties people in your community are facing in adapting to climate change. In the event that the results of this study are released, your answers will be kept private and your name will not be mentioned. I truly appreciate your participation in answering the questions in open discussions.

Questions

1. What coping strategies were adopted by rural communities in Chihota Ward 15, Marondera, in response to the impacts of climate change?
2. How effective and sustainable are the coping strategies employed by rural communities in Chihota Ward 15 to address the challenges posed by climate change?
3. What key components should be included in a Sustainable Livelihoods Framework (SLF) to enhance the coping strategies of rural communities in Chihota Ward 15, Marondera, in response to climate change?

Thank you.

APPENDIX 2:

INTERVIEW GUIDE FOR COMMUNITY FARMER

My name is B211061B, and I attend Bindura University of Science Education to pursue a Bachelor of Science Honors in Peace and Governance. Using a case study of Chihota Ward 15 in Marondera, this study aims to evaluate the coping mechanisms used by rural communities in Zimbabwe in response to climate change (2020–2025). I would like to address the questions around this research with you. Planners interested in rural development will be able to determine which regions in your area require development with the help of your comments,

which will help them understand the difficulties people in your community are facing in adapting to climate change. In the event that the results of this study are released, your answers will be kept private and your name will not be mentioned. I truly appreciate your participation in answering the questions in open discussions.

Questions

1. What coping strategies were adopted by rural communities in Chihota Ward 15, Marondera, in response to the impacts of climate change?
2. How effective and sustainable are the coping strategies employed by rural communities in Chihota Ward 15 to address the challenges posed by climate change?
3. What key components should be included in a Sustainable Livelihoods Framework (SLF) to enhance the coping strategies of rural communities in Chihota Ward 15, Marondera, in response to climate change?

Thank you.

APPENDIX 3:

INTERVIEW GUIDE FOR COMMUNITY LEADERS

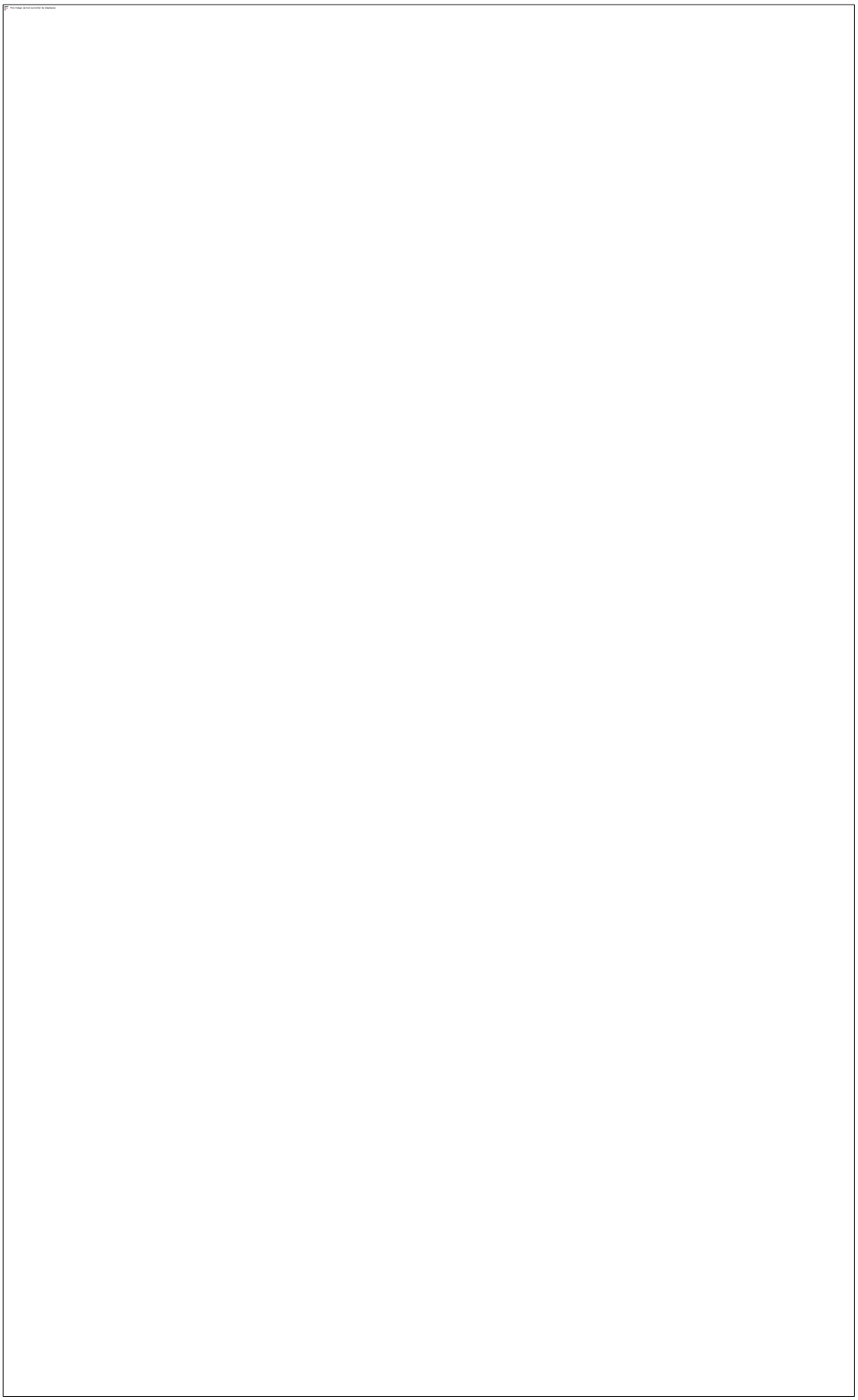
My name isB211061B, and I attend Bindura University of Science Education to pursue a Bachelor of Science Honors in Peace and Governance. Using a case study of Chihota Ward 15 in Marondera, this study aims to evaluate the coping mechanisms used by rural communities in Zimbabwe in response to climate change (2020–2025). I would like to address the questions around this research with you. Planners interested in rural development will be able to determine which regions in your area require development with the help of your comments,

which will help them understand the difficulties people in your community are facing in adapting to climate change. In the event that the results of this study are released, your answers will be kept private and your name will not be mentioned. I truly appreciate your participation in answering the questions in open discussions.

Questions

1. What coping strategies were adopted by rural communities in Chihota Ward 15, Marondera, in response to the impacts of climate change?
2. How effective and sustainable are the coping strategies employed by rural communities in Chihota Ward 15 to address the challenges posed by climate change?
3. What key components should be included in a Sustainable Livelihoods Framework (SLF) to enhance the coping strategies of rural communities in Chihota Ward 15, Marondera, in response to climate change?

Thank you.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