BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY IF SCIENCES AND ENGINEERING

DEPARTMENT OF DISASTER RISK REDUCTION

The Sustainability of Livelihoods Portfolios in the Aftermath of Cyclone Idai in Ward 12, Chimanimani District, Zimbabwe.

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B213137B

BACHELOR OF HONORS DEGREE IN DISASTER MANAGEMENT SCIENCES

(HBSc.DMSc)

SUPERVISOR: DR MANYANI

THIS DISSERTATION IS SUBMITTED TO THE DEPARTMENT OF DISASTER RISK REDUCTION, IN PARTIAL FULFILLMENT FOR THE BACHELOR OF SCIENCE HONORS DEGREE IN DISASTER MANAGEMENT SCIENCES REQUIREMENTS.

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Abstract

The research study assessed the sustainability of livelihood portfolios in the aftermath of Cyclone Idai in Ward 12, Chimanimani District, Zimbabwe. The study mainly focused on three objectives which are identifying the livelihood portfolios developed in the aftermath of Cyclone Idai in Ward 12, Chimanimani District, to examine the sustainability of these livelihood portfolios, and to evaluate community-led strategies aimed at improving the affected livelihood portfolios post-Cyclone Idai. In order to obtain relevant information in line with the research both qualitative and quantitative data collection methods were employed. Survey questionnaires were distributed to sixty households, the researcher carried a participant observation in-person, fifteen Key Informant Interviews were conducted, and five Focus Group Discussions were carried out. The study showed that many women were more active in the research than men and also the middle aged participated more than other age groups. The results also show that many have engaged in multiple livelihood portfolios following occurrence of Cyclone Idai, and several community-led strategies have been introduced. I recommend that the community continue to diversify their livelihoods for sustainability and resilience. Government agencies and Non-Governmental Organizations should promote livelihood portfolios in Ward 12, Chimanimani through various schemes and programs until households and individuals are sustainable and resilient enough to face future shocks without crumbling.

Keywords: Livelihood portfolios, Cyclone Idai, Community- led strategies,

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List of Acronyms

DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
KII	Key Informant Interview
NGO	Non-Governmental Organization
SDGs	Sustainable Development Goals
SLA	Sustainable Livelihood Approach
SME	Small to Medium Enterprise
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund

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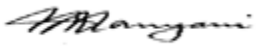
Approval Form

The undersigned certify that they supervised the student, Nicolae Tadiwa Mukau's dissertation and have approved to its submission for marking after confirming that it confines to the Faculty of Science and Engineering, Disaster Risk Reduction Department and HBSc.DMSc requirements.



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Declaration

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Dedication

This dissertation is dedicated to the one who have contributed significantly to my academic journey, Mr Mukau , whose love, sacrifices, and unwavering belief and support in me have been a constant source of inspiration and strength. His selflessness and dedication to our family has taught me the value of hard work and perseverance. I am highly honoured make you proud. All thanks for your contribution to my success, this achievement would not have been possible without your support, guidance, love, and presence.

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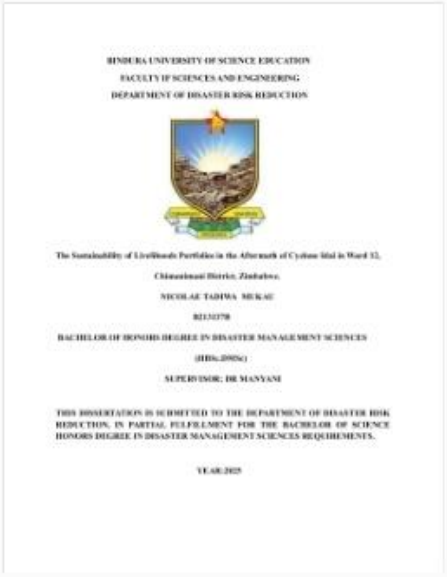

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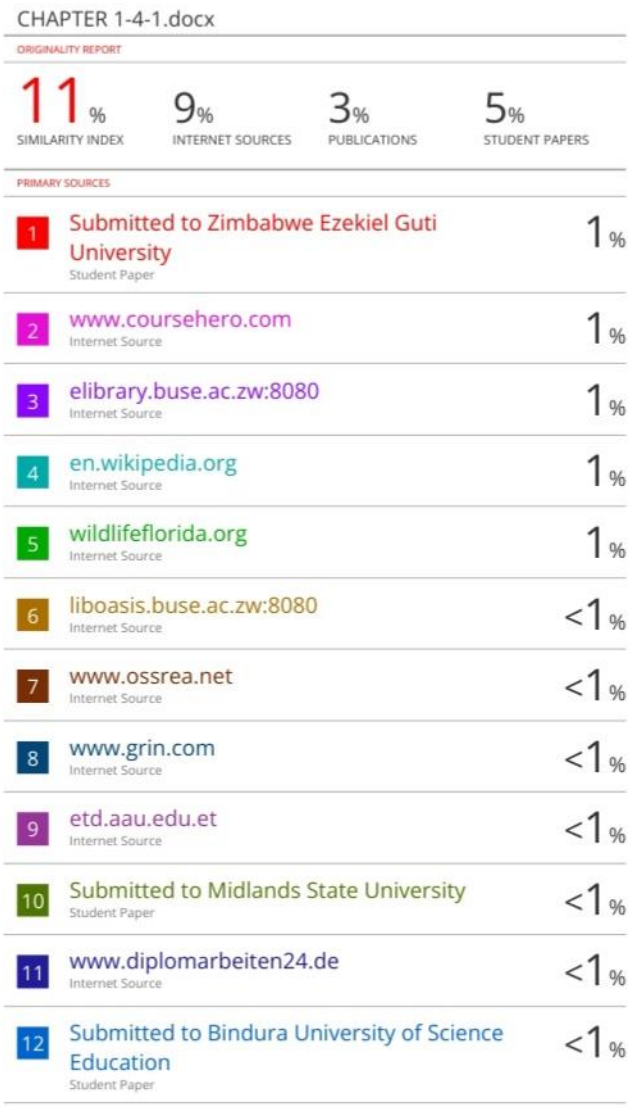

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CHAPTER 1

1.1 Background of the Study

The impacts of tropical cyclones are increasingly recognized as a profound reality that poses significant challenges across social, economic, political, and environmental dimensions, particularly in vulnerable developing countries. As highlighted by Pierrot and Seymour (2020), the global nature of tropical cyclones necessitates collaborative international responses that encompass preparedness and adaptive measures. The occurrence of these cyclones is primarily attributed to climate change, indicating that any nation can be affected, regardless of its contribution to the climate crisis. This universal vulnerability emphasizes the need for collective action to mitigate the human-induced factors leading to cyclones. Research indicates that poorer nations bear the brunt of cyclone impacts, struggling with recovery due to inadequate resources and capacities (UNICEF, 2021).

In rural Africa, communities may have some awareness of impending cyclones; however, limited resources, lack of educational initiatives, and insufficient technological advancements often hinder effective response strategies. As noted by Ray et al. (2015), many of these communities remain ill-prepared to deal with the aftermath of such disasters. Furthermore, the challenges facing African nations ranging from pervasive poverty to political instability exacerbate the detrimental effects of tropical cyclones.

According to Chari et al. (2021), Zimbabwe experiences tropical cyclones infrequently, with an average occurrence of about twice a decade. The majority of the population remains largely unaware of the implications of these cyclones, particularly following the significant impact of Cyclone Idai, which primarily affected the southeastern regions of the country, including Manicaland and Mashonaland East. While the country possesses the capability to detect cyclones before they make landfall, the challenge lies in developing adequate adaptation and preparedness measures to mitigate their complex impacts.

Despite efforts from the government and non-governmental organizations to alleviate the repercussions of Cyclone Idai, many survivors continue to grapple with its effects. The cyclone's occurrence has severely disrupted livelihoods, development, and the natural environment in the Chimanimani area, as detailed by Goronga et al. (2020). The combination of the region's

geography and the cyclone itself led to catastrophic outcomes, including loss of life, missing persons, infrastructure devastation, and destruction of crops and livestock. The aftermath has seen a spike in food insecurity, health crises, and the spread of infectious diseases.

1.2 Statement of the Study

The effects of Cyclone Idai present a devastating reality for affected communities, particularly in developing countries like Zimbabwe. As reported by Chari (2021), the cyclone has resulted in heightened hunger, unemployment, and the proliferation of disease among others. The increasing frequency of such disasters is expected to further exacerbate poverty and food insecurity which increase unsustainability of livelihoods, underscoring Zimbabwe's vulnerability due to its reliance on external aid and the unequal distribution of resources among its citizens. Thus, enhancing disaster recovery resources is imperative.

While the communities Chimanimani acknowledge the severity of cyclone impacts, these issues have not garnered sufficient attention from various societal sectors, including political leadership. The ramifications primarily affect rural, vulnerable areas, leaving them in dire conditions. Although cyclones are a global concern, developing countries experience their effects most acutely due to lower adaptive capacities. Consequently, raising awareness about the adverse impacts of cyclones is essential for fostering effective disaster preparedness and response strategies.

The residents of Ward 12, Chimanimani have faced severe repercussions from Cyclone Idai, resulting in significant changes to their livelihoods, environment, and development prospects. The ongoing struggles of disaster survivors highlight the urgent need for implementation of effective interventions to improve conditions for those lacking the resources to cope with the cyclone's aftermath. This study aims to bridge the gap in understanding the effects of Cyclone Idai in Ward 12 of Chimanimani District.

1.3 Aim of the Study

This study aims to assess the sustainability of livelihood portfolios in the aftermath of Cyclone Idai in Ward 12, Chimanimani District.

1.4 Objectives of the Study

1. To identify the livelihood portfolios developed in the aftermath of Cyclone Idai in Ward 12, Chimanimani District.

2. To examine the sustainability of these livelihood portfolios.

3. To evaluate community-led strategies in Ward 12 aimed at improving the affected livelihood portfolios post-Cyclone Idai.

1.5 Research Questions

1. What livelihood portfolios were developed in the aftermath of Cyclone Idai in Ward 12, Chimanimani District?

2. How sustainable are these livelihood portfolios?

3. What community-led strategies are being implemented to enhance the affected livelihood portfolios in Ward 12?

1.6 Limitations of the Study

The research is anticipated to encounter several challenges that could affect the depth and quality of the findings. Respondents may provide limited or incomplete information, and factors such as unstable internet connectivity, potential political implications, and resource shortages may hinder the research process.

There is a risk that respondents might withhold sensitive information due to concerns about confidentiality or political repercussions. Building trust and ensuring confidentiality will be crucial for eliciting accurate responses. Additionally, accessibility issues due to cyclone-related infrastructure damage may restrict the researcher’s ability to reach certain areas, potentially leading to gaps in data collection.

Resource constraints may also limit the duration of fieldwork, impacting the comprehensiveness of data gathered. The researcher will need to explore potential funding opportunities to support extended research activities.

1.7 Delimitation of the Study

This study will focus specifically on assessing the effects of Cyclone Idai in Chimanimani, Ward 12, utilizing both qualitative and quantitative research methodologies. Data collection will involve focus groups, observations, surveys, and interviews over a seven-month period, with a dedicated month for on-site research. The researcher will actively engage with local communities to gather insights, including distributing informational flyers to enhance participation.

1.8 Justification of the Study

The effects of tropical cyclones represent one of the most significant threats facing global populations, particularly in Africa. Zimbabwe has not been immune to these threats, with the frequency of cyclone-related events on the rise (Sibanda, 2019). Preliminary evidence suggests a correlation between poverty in cyclone-prone areas and the adverse effects of cyclones. Anticipated consequences include increased domestic violence, malnutrition, food insecurity, loss of life, and environmental degradation.

The primary beneficiaries of this study will be the rural communities in Chimanimani, who will gain a deeper understanding of the impacts of Cyclone Idai on the sustainability of their livelihoods and the environment. This knowledge will aid in developing appropriate adaptation strategies. Furthermore, the findings will inform governmental and non-governmental organizations about the needs and challenges faced by the communities, facilitating targeted resource allocation for recovery efforts.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews an overview of the existing literature on livelihood strategies, disaster recovery, and sustainability in the context to natural disasters particularly focusing on tropical cyclones. It highlights relevant theories, key concepts, and frameworks that guide the assessment of livelihood portfolios in post-disaster contexts.

Other several researchers also have noted various things about the effects of tropical cyclones. The most immediate and direct impact is typically felt through damage to infrastructure (Smith et al 2008). People are left homeless after buildings are destroyed by the heavy rains, winds, and landslides. This is a great disruption in the people's livelihoods as they needed to start seeking for proper shelter and rebuilding homes which will still be a challenging factor to other people as the cyclone wiped away all their capacities which could have helped to recover from cyclone damage. Loss of life is another effect which interrupted with people's livelihoods (Simpson 2000). According to Wood and Ritchie (2020), most children were orphaned which left them without any other options than looking after themselves at very early ages. Therefore, this has led to an effect of numerous child-headed families. Livelihoods are also being affected in that there were disruptions in essential services such as healthcare, power and water supply which had not been restored yet due to the scarcity of resources in the country.

In addition, cyclone Idai affected the livelihoods by its effects on the transportation systems and production of agriculture (Nhundu et al., 2021). Roads had been massively degraded and roads and bridges were severely damaged which obstructed the movement of people and goods leading to shortages in food supply and increased prices. All of these impacts led to a decrease in consumer spending and business activity.

Cyclone Idai also has made some effects on the development of Chimanimani by set backing its development progress (Mutsaka., 2019). Bridges and roads had been damaged which has stopped transportation of products to markets. Development had also been setback by damage of infrastructure such as shops and schools some of which had been failed to be reconstructed to their previous shapes. Clinics and community centres were also affected causing a huge regression in development.

In the long term, cyclones can also cause changes in demographics as people may be displaced

from their homes and need to relocate (Vigh 2009). According to McCloskey and Liu (2013), cyclones also destroyed energy and chemical production facilities, gas stations, and other businesses, causing the release of toxic chemicals and pollutants into the environment. Cyclones have also been known to spread invasive plants and animals. Wind and water can move exotic plants to new locations and invasive fish that were concentrated in a small area may ride floods to new locations and increase their range (Carragher et al., 2014). Cyclones also distribute heat Zbalance in the atmosphere leading to global warming.

2.2 Livelihood Portfolios

2.2 .1 Definition and Importance

A livelihood portfolio refers to the combination of different activities, assets, and strategies that a household or individual uses to generate income and secure their means of living, essentially representing a diverse set of options to manage risks and improve their overall wellbeing. According to Scoones (1998) it can include assets like land, buildings, and equipment, as well as skills and social networks. Malleson et al (2008) suggest that a livelihood portfolio is important because it helps alleviate poverty in a sustainable way and improve their standard of living. Livelihood portfolios allow people to withstand shocks and recover from setbacks such as natural disasters and economic fluctuations.

2.2.2 Components of Livelihood Portfolios

According to Rakodi (1999), the components livelihood portfolios include a combination of capabilities, activities that individuals or communities use to achieve their livelihood goals and maintain or enhance their well-being, and various assets which comprise of;

Human capital assets: these are skills, knowledge, health, and the ability to work (Mayo, 2016).

Social capital assets: these are social networks, relationships, and access to social support (Lin, 2017).

Physical capital assets: these are basic infrastructure, tools, and equipment. According to Hastings (2010), these are tangible assets.

Natural capital assets: these are natural resources and environmental services for example water, land, forests among others (Raymond et al., 2009).

Financial capital assets: these are cash, savings, credit among others (Pew Tan et al., 200)

2.3 Sustainable Livelihoods

Sustainable livelihoods refer to the capabilities, assets, and activities required for a means of living (Chambers & Conway, 1992). The concept of sustainable livelihoods is rooted in the idea that individuals and households have the capacity to manage their own livelihoods, but may require support and resources to do so.

2.4 Disaster Risk Reduction

Disaster Risk Reduction refers to the systematic approach to identifying, assessing and mitigating the risks associated with disasters (UNISDR, 2009). The concept of disaster risk reduction emphasizes the importance of proactive measures to reduce the risks associated with disasters, rather than simply responding to disasters after they occur.

2.5 Community-Led Initiatives

Community-led initiatives refer to the actions taken by communities to manage their own development and disaster risk reduction (Twigg, 2001). The concept of community-led initiatives emphasizes the importance of community participation and ownership in disaster risk reduction and development initiatives.

2.5 Theoretical Frameworks

2.5.1 Sustainable Livelihoods Framework

This framework emphasizes the importance of considering the multiple dimensions of livelihoods, including the social, economic, and environmental dimensions (Chambers & Conway, 1992). The Sustainable Livelihoods Framework is pivotal in understanding how communities adapt to changes and shocks, such as those caused by natural disasters. As defined by the Sustainable Livelihoods Approach (SLA), livelihoods consist of the capabilities, assets (both material and social), and activities required for a means of living (Scoones, 1998). This model emphasizes the importance of various forms of capital which are human, social, financial, physical, and natural, and how these assets influence community resilience and recovery in the aftermath of disasters

2.5.2 Resilience Theory

Resilience Theory explores how individuals, communities, and systems adapt, recover, and grow in the face of adversity, emphasizing the dynamic process of navigating challenges and thriving, rather than viewing it as a fixed trait (Masten, 2018). It emphasizes on the ability to adapt to challenges, recover from setbacks, and even emerge stronger and more resourceful after experiencing adversity.

2.5.3 Sendai Framework

The Sendai Framework focuses on the adoption of measures which address the three dimensions of disaster risk (exposure to hazards, vulnerability and capacity, and hazard's characteristics) in order to prevent the creation of new risk, reduce existing risk and increase resilience (Aitsi-Selmi et al., 2015).

2.6 Impacts of Tropical Cyclones on Livelihoods

2.6.1 Economic Consequences

Tropical cyclones can lead to significant economic losses, particularly in developing countries where communities rely heavily on agriculture and natural resources. According to Hallegatte et al. (2017), the destruction of infrastructure, loss of crops and livestock, and disruptions to local markets can result in prolonged economic hardship. The economic impacts extend beyond immediate losses, affecting long-term development and increasing vulnerability to future shocks.

2.6.2 Social Consequences

The social fabric of communities is often strained in the wake of a cyclone. Increased food insecurity, unemployment, and health crises can lead to social dislocation and conflict. UNICEF (2021) highlights that disaster-affected populations often face elevated risks of mental health issues and domestic violence, further complicating recovery efforts. The social consequences of cyclones are particularly pronounced in marginalized communities, where existing inequalities are exacerbated.

2.6.3 Environmental Consequences

Cyclones have profound environmental impacts, including deforestation, soil erosion, and the degradation of natural habitats. These environmental changes can undermine the very resources that communities depend on for their livelihoods. Research by Goronga et al. (2020) emphasizes the need for integrated approaches to disaster management that consider environmental sustainability in recovery efforts.

2.7 Community Adaptation Strategies

2.7.1 Diversification of Livelihoods

Diversification is a key strategy for enhancing the sustainability of livelihoods in the aftermath of disasters. By developing multiple income sources, communities can better withstand economic shocks. Studies show that households that engage in various activities—such as agriculture, small-scale trade, and crafts are more resilient to the impacts of cyclones (Barrett et al., 2001).

2.7.2 Community-Led Initiatives

Community engagement and participation are crucial for effective recovery and adaptation. Research by Chari et al. (2021) indicates that community-led initiatives can foster resilience by harnessing local knowledge and resources. Empowering communities to take charge of their recovery processes not only enhances sustainability but also builds social cohesion.

2.7.3 Education and Awareness Campaigns

Education is vital for improving preparedness and adaptive capacity in cyclone-prone areas. Awareness campaigns can equip communities with information about risk reduction strategies and available resources. Ray et al. (2015) argue that increasing knowledge about cyclones can significantly reduce vulnerability and improve response outcomes.

2.8 Case Studies

2.8.1 Cyclone Idai in Mozambique

The impacts of Cyclone Idai in Mozambique serve as a relevant case study for understanding the broader regional effects of tropical cyclones. The cyclone caused widespread destruction, leading to significant loss of life and displacement. A study by Goronga et al. (2020) found that Cyclone Idai had a devastating impact on livelihoods in Mozambique, with many households losing their homes, crops, and livestock. Recovery efforts highlighted the importance of restoring livelihoods through diversified agricultural practices and community engagement (Sibanda, 2019).

2.8.2 Typhoon Haiyan in the Philippines

Typhoon Haiyan provides another illustrative example of the impacts of tropical cyclones. The disaster prompted extensive community-led recovery initiatives that emphasized sustainable practices and local resource management. Research indicates that these strategies not only

facilitated recovery but also strengthened community resilience against future disasters (Folke et al., 2010).

2.9 Gap in the Literature

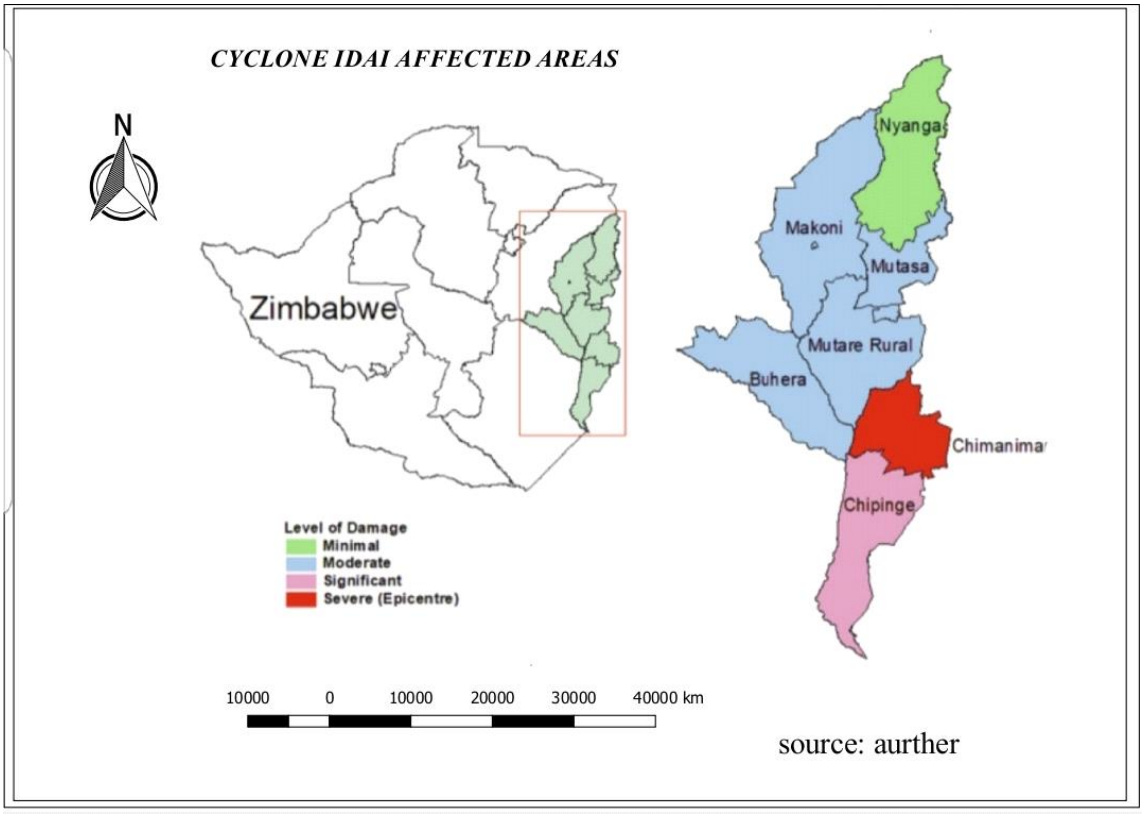
While there is a significant body of literature on sustainable livelihoods, disaster risk reduction, and community-led initiatives, there is a need for more research on the specific context of Cyclone Idai in Zimbabwe. This study aims to fill this gap by investigating the impacts of Cyclone Idai on livelihoods in Chimanimani District and identifying sustainable livelihood portfolios that can support long-term recovery and resilience.

CHAPTER 3: METHODOLOGY

3.0 AREA OF STUDY

The research was carried out in Chimanimani Ward 12 which is located in Manicaland Province , in south eastern Zimbabwe, close to the border with Mozambique. The village lies about 120 kilometres (75 miles), by road, south of Mutare, the location of provincial headquarters. Its location lies approximately 365 kilometres (227miles), by road, southeast of Harare, the capital of Zimbabwe and the largest city of the country. The coordinates of Chimanimani are 19°48'0,00"S, 32°51'36.00"E (Latitude: 19,8000; Longitude: 32,8600).

Chimanimani is a mountainous district. It lies in the natural region 1. It has warm and temperate temperatures. The area has high rainfall more than 1000 ml. The topography is extremely rugged. The area is also very subject to cyclones as it is located in the paths of tropical cyclone originating from Mozambique and the Indian Ocean.



3. 0 A map showing Chimanimani District and other places that were affected by cyclone Idai

3.1 Research Design

The study adopted a mixed-methods approach, integrating both qualitative and quantitative research methodologies. This design allowed for a comprehensive understanding of impacts of Cyclone Idai on livelihoods by capturing numerical data alongside in-depth personal narratives. The combination of the methods enriched the analysis and provided a holistic view of the community's experiences and adaptive strategies.

3.2 Study Population

The study population comprised residents of Ward 12 in Chimanimani District who were directly affected by Cyclone Idai. This population included various stakeholders, such as farmers, traders, community leaders, members of non-governmental organizations (NGOs), and government agencies involved in recovery efforts. Engaging a diverse group of respondents ensured a comprehensive understanding of the multifaceted impacts of the cyclone.

3.3 Sampling Techniques

3.3.1 Sampling Methods

This study employed purposive sampling to select participants who had first-hand information and experience of Cyclone Idai. This method allowed for the inclusion of individuals who can provide rich, relevant information regarding their livelihoods and coping mechanisms. Additionally, stratified random sampling was be used to select households for surveys to ensure a representative distribution of responses across the community. Stratified random sampling was used because different groups were to represented in the sample.

3.3.2 Sample Size

The sample size for qualitative interviews consisted of twelve (12) participants, while quantitative surveys targeted around sixty (60) households. This sample size was deemed sufficient to capture a range of perspectives and provide statistically significant findings.

3.4 Data Collection Instruments

To achieve the objectives of this study on the sustainability of livelihood portfolios in the aftermath of cyclone idai in Ward 12, Chimanimani District, several data collection instruments were employed.

3.41 Semi-Structured Interviews

For qualitative component of the research, the researcher had to conduct Key Informant Interviews (KII) to gain deeper insights into the issues under research. According to Adams (2015), a semi-structured interview is defined by its flexibility. The interview process began by designing an interview guide based on the objectives of the study and a review of relevant literature. This guide included open-ended questions that focused on understanding the impact of Cyclone Idai on the local livelihood portfolios. Questions were structured around key areas such as changes in daily practices, challenges faced after the cyclone, and the strategies adopted to rebuild and sustain livelihoods as well as community-led strategies aimed at promoting sustainable livelihood portfolios. By keeping questions open ended, the methodology allowed participants to narrate their experiences, which created opportunities for the researcher to inquire further when a captivating aspect was mentioned.

Participants were selected using purposive sampling, which ensured that the interviewees had first-hand experience or a strong understanding of life in the affected communities. Before starting each interview, the researcher explained the purpose and importance of the study to build rapport as well as create a comfortable and trusting environment. Informed consent was obtained from every participant, and interviews were conducted in areas where respondents felt peaceful and secure, such as in their homes or community centres. As highlighted by Brown and Danaher (2019), this approach helps encourage honest and thoughtful responses .

The detailed and flexible nature of semi-structured interviews was particularly important for this research. It ensured consistency by following the prepared interview guide, and also provided the chance to consider new topics that came up during the discussion. This approach was well-suited for a study focusing on the sustainability of livelihood portfolios in a post-disaster context because it captured the difficulties of individual experiences and the distinctions of community responses to the challenges posed by Cyclone Idai. This flexible method ultimately led to richer, more detailed data that could be assessed to recommendations for sustainable recovery. During these interviews the researcher also strongly paid attention to non-verbal cues, such as facial expressions and body language, according to Duncan (1996) this could add meaning to responders words and actions.

3.42 Participant Observation

Participant observation was used as one of the main methods in this research to gather detailed and everyday insights into the community's life, behaviours, routines, and interactions of people in the natural setting in the aftermath of Cyclone Idai. In this approach, the researcher did not just ask questions from a distance but actively involved herself in the community. By being present during day to day activities, local meetings, and community events, the researcher could observe everything, noting patterns and nuances that would likely have been missed in formal interviews or surveys.

The researcher attended community gatherings, informal conversations, and daily routines, carefully noting what was seen and heard in a field diary. These notings included detailed notes about the settings, interactions among residents, and even non-verbal cues, providing a rich, contextual background to the data collected through interviews. This approach of being wholly involved allowed key observations about how local people adapted their livelihood strategies in the face of post-cyclone challenges.

Using participant observation in this study was very important because it added depth to the overall research findings. While interviews provided personal accounts, observation helped verify and expand on those accounts by showing the real-life context of everyday practices and interactions, and community resilience. Referring to Spradley (2016) this method enriches the study by highlighting how individuals and households basically collaborated with one another, used available resources, and worked towards developing and improving their livelihoods. The insights gained through being an active participant in the community not only supported but also deepened the understanding of the sustainability of livelihood portfolios in the aftermath of the disaster.

3.43 Focus Group Discussions (FGDs)

Focus group discussions were used in this study to gather a range of perspectives and to understand community dynamics in a combined setting. In this method, the researcher first identified groups in the community that could provide useful perceptions, such as women, youth, men, community projects members, and some entrepreneurs. Each group discussion involved ten to fifteen members to make sure each participant had a chance to speak out and contribute their ideas. The goal was to create an open and interactive environment where participants could reflect on their shared experiences, debate ideas, and build on each other's thoughts. Taking from O. Nyumba et al. (2018) this method not only obtains individual opinions but also reveals how community-level decisions and strategies were made.

Before the focus group sessions began, a discussion guide was prepared with open-ended questions aimed at exploring key aspects of the impact of Cyclone Idai on their livelihoods encouraging them to share their experiences, thoughts, and opinions. During the discussions, the researcher was the moderator and led the conversation, ensuring that the discussion remained focused on the research objectives while also allowing room for instinctive and in-depth responses. As the

facilitator, she encouraged every participant to contribute by asking clarifying questions and gently guiding the conversation if it strayed from the topic. This approach fosters an atmosphere of mutual respect and trust, enabling the participants to share honest, rich and detailed insights (Gammie et al., 2017).

The discussion sessions were held in neutral, comfortable places such as community centres where participants felt free. The reason for using FGDs was to benefit from the interaction among participants as they shared ideas (Wong, 2008). This method allows people to build on each other's views and sometimes express insights or concerns they might not have shared in one on one interviews (Smithson, 2008). By listening to several people discuss on one topic together, the researcher was able to get a range of perspectives and gained a better understanding on the common issues and unique challenges being faced by different individuals, groups, and households. The collaborative nature of focus group discussions provided valuable understanding into how community values and shared experiences contribute to the sustainability of their livelihood strategies in the countenance of challenges.

3.44 Survey Questionnaire

The survey questionnaire was used in this study to collect structured, quantifiable data about the community's experiences and responses following Cyclone Idai experience in a systematic way. This method involved creating a set of standardized questions related to the main objectives of the research that many participants could answer in a consistent way. These questions included both closed-ended items, such as multiple-choice or yes/no questions, and a few open-ended questions that allowed respondents to provide additional information. It provided measurable evidence that enhanced the richer details gathered from interviews, focus groups, and observations.

The design of the questionnaire was carefully aligned with the study's objectives. To reach a diverse group of community members and selected households, the questionnaires were distributed in-person. Participants were selected through random or stratified sampling to represent different demographic groups, such as various age ranges, genders, levels of education, and levels of involvement in community activities. According to Etikan and Bala (2017), this sampling method ensures that the findings are not biased towards any one subset of the community and truly reflects a wide range of experiences.

Before the participants completed the questionnaire, clear instructions were provided to explain the purpose of the study, how to answer the questions, and the importance of honest responses. Anonymity and confidentiality were strictly maintained to build trust and encourage genuine answers. Once collected, the responses were carefully coded and analyzed using statistical software, which allowed the researcher to identify common trends and compare responses across different groups.

The use of a survey questionnaire was important because it efficiently allowed the study to reach a larger sample size while collecting data within a relatively short space of time. This approach helped in identifying general patterns, measuring the prevalence of certain behaviours or opinions regarding the sustainability of livelihood portfolios in the aftermath of Cyclone Idai. The standardized nature of the questionnaire reduced the potential for researcher bias and provided solid evidence that could be cross-checked with the data from the other qualitative methods used in the research.

3.5 Administration of Data Collection Instruments

3.5.1 Qualitative Data Dollection

1. Focus Group Discussions

Focus group discussions (FGDs) were used to capture the collective experiences and shared perspectives of several stakeholders involved in post-disaster recovery. The groups were organised based on categories such as age, gender, or occupation to ensure that the discussions reflected the perspectives of different segments within the community. FGDs provides an interactive setting where individuals could build on each other's contributions, thereby revealing nuances that might remain hidden in one-on-one interviews (Boateng, 2012). This method not only encouraged dialogue among participants but also helped to identify common themes and collective strategies for sustainable livelihood adaptations in the of Cyclone Idai.

For the community-based discussions, five (5) focus group sessions were conducted with groups of fifteen participants each. This size was the best because it provided diversity of views and the practical need for each participant to contribute meaningfully. These groups comprised of women FDG, youths FDG, a discussion of men though two (2) of the selected failed to attend due to their own reasons, community-led projects members FDG, and another discussion which comprised of entrepreneurs from different sectors. The interactive nature of these FGDs enabled participants to compare their responses and reflect on group dynamics, enriching the understanding of community resilience strategies.

Overall, the deliberate structuring of focus group discussions with distinct group sizes tailored to different categories and stakeholders ensured a comprehensive and triangulated understanding of the post-Cyclone Idai recovery scenery. The integration of interactive groups with individual narratives from both community members and institutional actors yielded rich, varied information that deepened the assessment of sustainable livelihood strategies in disaster recovery.

2. Interviews

In this research, semi-structured interviews were conducted with a total of fifteen (15) participants as part of data collection process to ensure a diverse range of from different segments of the

community. Five (5)of the interviews were conducted with local government officials. These interviews were designed to tap into the institutional perspective on disaster management and policy implementation, particularly the techniques that were organised in the immediate aftermath of Cyclone Idai. The input from the government representatives helped understand the community data by explaining how policies and resource allocations were structured to mitigate disaster impacts (Greys et al., 2022).

Complementing these perspectives, five (5) interviews were also conducted with representatives from non-governmental organizations actively involved in disaster recovery and sustainable development initiatives. The aim for engaging this group was to add more detail of understanding regarding the operational challenges and on-the-ground realities of post-disaster recovery efforts. NGO representatives offered specialized insights into community mobilization, capacity building, and the implementation of innovative livelihood strategies that were not immediately apparent from the other groups' narratives. Their contributions helped fill in the gap between high-level policy and grassroots experiences.

The sample sizes for each group were carefully determined to enable data saturation across diverse yet interconnected narratives. While the larger number of community interviews reflected the need to capture the wide range of individual experiences, the smaller sample sizes for the local government and NGO groups were sufficient to achieve consistency among professional perspectives. Each interview, which was conducted over a time of thirty (30) to forty (40) minutes, was designed to facilitate an in-depth exploration of both the immediate effects of Cyclone Idai and the evolving strategies for sustainable recovery

3.5.2 Quantitative Data Collection

1. Participant Observations

In this study, participant observation was employed to capture the dynamic processes of adaptation and recovery following Cyclone Idai. This method was integrated to deepen the results collected from interviews by providing real-time, contextual insights into everyday practices, interactions, and decision-making processes across different stakeholder groups. Participant observation was carried out through a series of five observation sessions, each carried out at different times and locations relevant to the research topic. These sessions, each lasting up to more than an hour, typically involved observing interactions among five to ten individuals engaged in recovery initiatives, household tasks, or community-led initiatives. The extended observations in these cites allowed the researcher to document instinctive behaviours, observe emerging patterns of adaptation, and identify sly shifts in community operations over time (Musante, 2010). The decision to conduct five sessions was based on achieving a thorough concentration in the community context and ensuring that the observed trends adequately reflected the broader adaptive strategies in the wake of the disaster.

2. Questionnaire Administration

In this research, survey questionnaires were distributed to complement the qualitative methods by providing quantifiable data that enriched the understanding of livelihood sustainability in the aftermath of Cyclone Idai. The survey was designed to capture a wide range of responses related to disaster impact, adaptive practices, livelihood sustainability, and recovery measures. The questionnaires were administered to community members who carried the cyclone's impact. A total of sixty (60) questionnaires were administered to community respondents across several impacted villages. This larger sample size enabled a strong statistical analysis of diverse experiences and income recovery strategies (Martin, 2006). The broad demographic representation within these communities was important for ensuring that variations in socioeconomic status, gender, and age were adequately captured, thereby supporting a detailed segmentation of the collective response to the disaster. Structured questionnaires were administered in households in Ward 12. Where possible, questionnaires were completed face to face to accommodate varying literacy levels. Assistance was provided in local languages as needed. The surveys gathered quantitative data on livelihood portfolios before and after cyclone Idai, household demographics, income sources, access to resources, and the perceived sustainability of recovery strategies. Each questionnaire was completed by one person per household usually an adult who had knowledge about the household's state. By administering the survey questionnaires in such a way, the research was able to bring up reliable and apparent outcomes that that supported the overall study objectives.

3.6 Data Analysis

The Statistical Package for Social Sciences SPSS and Excel were used for data analysis. Descriptive statistics were used to compare the frequency of responses of demographic characteristics and livelihood portfolios, presented as percentages. The chi-square test was used to analyse the socio-demographic factors influencing participation in community disaster recover. The predictor variables were gender, age, and employment. The results were presented in the form of tables and figures.

3.7 Ethical Consideration

Research ethics according to Mantzorou (2021) include a standard for daily work, the safeguarding of an individual's dignity, and the dissemination of information in the research. Roy (2002) also

alludes that ethics are the socially accepted principles of an individual or group that are guided by certain actions to some pre-set motives. Therefore, the researcher adhered to high ethical standards such as authorization, consent, confidentiality, and, consideration of culture and tradition was done. As such, the Chimanimani Rural Council, and the headman of Ward 12, Chimanimani authorized and approved the study. Participation in the study by respondents was voluntary, and participants would ask questions or withdraw from the research. Questions were properly expressed to avoid confidential matters, and the collected data was treated strictly private and confidential as it is only meant for academic purposes. Also, information on the personal identifiers of respondents was not captured. Ethics also helped in making sure that the research was carried out peacefully.

3.8 Validity and Reliability

According to Saunders *et al.* (2019), validity is when a research instrument measures what it's set out to measure. In addition, Chism *et al.* (2008) reported that when an intended variable is successfully measured, the data will be considered reliable. The inquiries of the questionnaire were examined and rephrased to ensure validity and reliability, whereas a mixed methods design adopted qualitative and quantitative approaches which evened out the limitation.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents and interprets the main research outcomes, focusing on the sustainability of livelihood portfolios in Ward 12, Chimanimani District. The outcomes comprise of demographic profile and respondents, questionnaire, interview, and observation surveys providing both statistical and personal insights into how the community has adapted, what is being done, and what challenges remain.

4.1 Response Rates

4.11 Questionnaire Response Rate

After considering time and accessibility a total of sixty (60) questionnaires were distributed to different households, whereas those that were fully completed and returned with information were 48. Therefore, the observed response rate of the questionnaire was 80% which was very relative. As reported by Saunders *et al.* (2021), the questionnaire response rate should be above 70%. Thus, 80%as determined in the present study was acceptable

Researcher Observation:

> *Most respondents were willing to participate, however some were hesitant due to suspicion but building rapport improved situation. Illiteracy was also encountered though very slightly.*

4.12 Interview Response Rate

Out of the 15 key informants identified that comprised of local leaders, NGO members, and some entrepreneurs, 13 agreed to participate in in-depth interviews, providing a response rate of 86.7%.

Key Informant Feedback:

Those who failed to participate cited time constraints and or concerns about political sensitivity. Nevertheless, those interviewed provide important, detailed information.

4.13 Focus Group Discussion (FGD) Response Rate

As reported by Hosseini *et al.* (2016) empowering communities reduces the severity of losses considerably as they are the first responders who provide initial emergency services in the event

of a disaster. Five FDGs were conducted (women, men, youth, community projects members, a group of entrepreneurs), and all of them were successfully carried out, each with a range of 15 participants. Group discussion attendance as a whole was 100%, however individual attendance in the groups was 96%. Among those that were invited 2 men didn't show up but the rest attended, reflecting a very strong community interest in group discussions.

4.14 Observation Coverage

The researcher carried out direct observations in all the sampled villages within Ward 12, visiting key community locations such as mines, community gathering places, markets, and gardens. Observation was conducted without any refusal or restrictions encountered making the conduction a 100%.

Table 4.15: Data Collection Response Rates

Data collection Method	Targeted	Achieved	Response rate
Household Questionnaire	60	48	80%
Key Informant Interview	15	13	86.7%
Focus Group Discussion	5	5	100%
Direct Observation	8 sites	8 sites	100%

4.2 Demographic Profile of Respondents

The evaluation collected demographic and socioeconomic data, including details on population size, age distribution, household size, and levels of education. The data was gathered through interviews with participants and key informants. A total of 60 households participated in the survey. The majority of respondents were female (60%) showing migration of men to urban areas or other regions for work or assistance leaving women behind to care for families and homes with. Referring to Chant (1992) men migrate in ways that are linked much more directly with access to employment. Less men were involved during interviews and community activities than women. Most participants fell under the 31-45 age range highlighting a predominance of economically active adults. The majority had only primary education, which is a limitation access formal employment.

Table 4.21: Demographic profile of respondents (n=60)

Characteristics	Frequency	Percentage
Gender: Male	24	40%
Female	36	60%
Age: 18-30	10	17%
31-45	28	47%
46-60	16	26%
61+	6	10%
No formal education	14	23%
Primary education	31	52%
Secondary education	13	22%
Tertiary education	2	3%
Household size: 1-3	10	17%
4-6	21	35%
7+	29	48%

4.3 Livelihood Portfolios after Cyclone Idai

Table 4.3: Types and diversity of livelihood activities (n=60)

Livelihood activity	Number of households	Percentage
Crop farming	48	80%
Livestock rearing	23	38%
Small trading	29	48%
Informal mining	8	13%
Remittances	15	25%
Formal employment	4	7%
Craft production	10	17%
Casual labor	19	32%

According to Mushonga and Scoones (2012), events like droughts, floods and cyclones can destroy traditional livelihoods, forcing individuals to seek alternative income sources to supplement what they have left. The majority of households practice crop cultivation with 80% of household

respondents, but many have diversified into non-agricultural activities in response to cyclone Idai's impact. Small trading follows as the dominant livelihood with a percentage of 48%, followed by livestock rearing 38%, casual labour 32%, remittances, informal mining, and craft production 25%, 13% and 17% respectively. Formal employment was the least with 7%. The shift towards other income generating sources signifies both resilience and erosion of traditional livelihoods (White, 2012).

> *A female respondent (aged 38) "... I used to depend on maize and groundnuts production however, after losing everything during the cyclone I started buying and selling vegetables at the market and sometimes engage in piece jobs."*

Table 4.31: Changes in livelihoods before and after cyclone idai

Activity	**Before**	**After**
crop farming	93%	80%
livestock rearing	68%	38%
small trading	18%	48%
artersinal mining	2%	13%
Remittances	12%	25%
casual labour	7%	32%

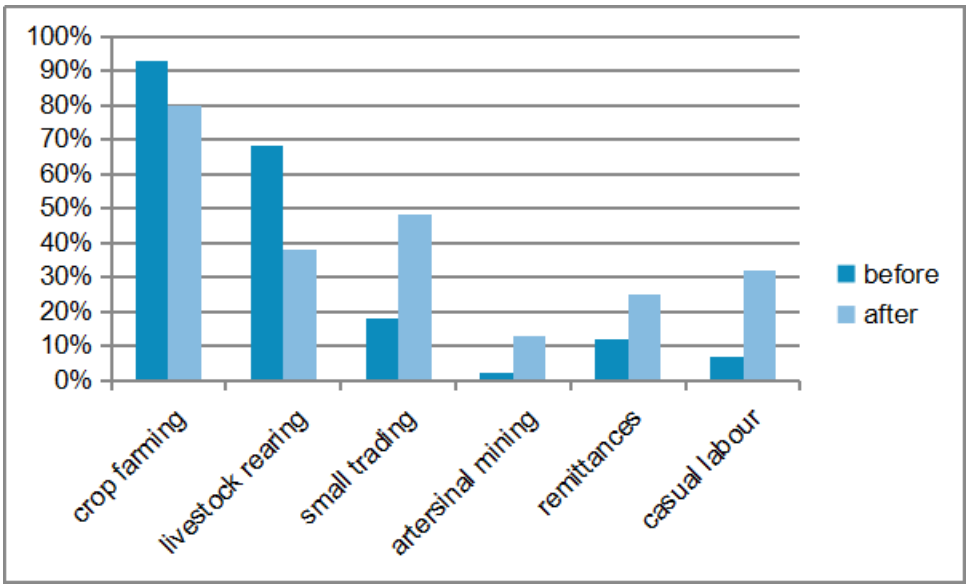


Figure 4.31: Changes in livelihoods before and after Cyclone Idai

There's a clear shift from reliance on agriculture to more diverse, often less secure, income sources. Reardon (1997) highlights that households diversify their sources of income because it provides a safety net by ensuring a stable income stream, and also reduce their vulnerability to economic shocks and environmental stressors. Crop farming dropped from 93% to 80%. Loss of livestock was significant as the data shows a huge drop down of approximately 30% from 68% to 38% with one key informant noting that, *"most of cattle and goats were swept away during the cyclone and or died of diseases post the cyclone. Only a few families have managed to restock."* Small trading boosted from 18% to 48% and artisanal mining sky-rocketing from 2% to 13%. (**Photographs 4.32)** illustrate informal mining being carried out. According to Huntington and Marple-Cantrell (2022), people engage in artisanal mining to improve and develop their livelihoods but it costs the environment and increase conflicts rate. Remittances and casual labour also increased from 12% to 25% and from 7% to 32% respectively.

Photograph 4.32: (a) gold milling site (b) gold panning taking place

4.4 Sustainability of livelihoods

Table 4.41: Perceived sustainability of main livelihoods

Livelihood asset	Perceived sustainability	Key challenges/ threats	Opportunities for improvement
Natural • Land	Somewhat sustainable	• Deforestation • water scarcity	• promote conservation • rainwater harvesting

• Water • Forests		• soil degradation	• sustainable farming methods
Human • skills • education • health	Moderately sustainable	• low access to education • outmigration of the active group • poor and shortage of healthcare facilities	• vocational training • better healthcare facilities
Physical • infrastructure • housing • tools and equipment	Not very sustainable	• poor roads • inadequate housing • outdated equipment and machinery	• Infrastructure projects like roads construction
Financial • Income • Savings • Credit	Not sustainable	• Low income generating sources • Limited credit access • Fluctuating prices	• Microfinance • Savings groups

4.42 Opportunities for Improvement to Achieve Sustainable Livelihoods

Opportunities to improve sustainable livelihoods include strengthening policy frameworks and institutional support. Governments and organizations can develop and implement policies that guarantee secure land tenure, provide affordable credit, and establish effective social safety nets. According to Roloff (2008), in crafting these policies, a multi-stakeholder approach that involves local communities, NGOs, and private sectors is crucial. Such frameworks not only protect the rights of smallholder farmers and marginalized groups but also create the enabling environment needed for long-term economic and ecological stability, especially in post-disaster contexts like those experienced after Cyclone Idai (Brunetti et al., 2020). Collaboration with NGOs and government agencies also support additional resources and expertise that benefit local communities. Such partnerships can facilitate access to funding, training, and support services that are essential for recovery and development efforts.

Another opportunity is enhancing agricultural practices and encouraging diversification. Training programs that focus on sustainable agricultural methods such as organic farming, natural pest control, and soil health improvement can boost crop yields, reduce dependency on external inputs and also enhance resilience against climate shocks. These training programs that emphasize agro-

ecology and permaculture can help farmers adopt methods that are environmentally friendly as they empower farmers to increase incomes while safeguarding natural ecosystems (Dolci and Perrin, 2018). In such a region where livelihoods are predominantly agricultural, these practices are essential to build resilience and improve overall well-being

Furthermore, diversifying income sources can substantially contribute to more stronger and resilient livelihoods. In Ward 12, expanding opportunities beyond traditional agriculture such as developing small-scale enterprises, artisanal mining, small trading or casual labour can reduce economic vulnerability when one sector faces a recession. By integrating non-farm income opportunities, communities are better equipped to cope with economic shocks and environmental stressors, thereby ensuring a more balanced and secure livelihood (Ellis and Allison, 2004).

Investing in infrastructural development also plays a critical role in sustaining and improving livelihoods. Cook (2011) argues that nhancements in transport systems, storage facilities, irrigation systems, access to clean water, and digital connectivity provide rural communities with improved market access and greater integration into broader value chains. Connectivity not only facilitates the distribution of agricultural products but also opens channels for digital financial services and real-time market information. As a result, communities can achieve more efficient production processes and fairer income distribution along the supply chain as well as creation of an environment that is conducive to income growth and resilience.

Supporting technology and local innovation creates opportunities for more dynamic and adaptive livelihood strategies. The integration of digital tools ,ranging from mobile connectivity to sophisticated market information systems can transform how local producers interact with global market, it enables them to receive real-time weather forecasts, market prices and best methods for crop management (Porte and Stern, 2001). When community-led approaches merge with technological advancements, local entrepreneurship is fostered, and communities can design solutions that are both culturally relevant and economically viable. This self-reliance strengthens community autonomy and sets a foundation for sustainable growth well into the future

Access to training and education plays a pivotal role in building sustainable livelihoods in disaster-affected communities. In the aftermath of Cyclone Idai, enhancing access to both formal education and vocational training enables individuals to acquire new skills and knowledge essential for diversifying their livelihood portfolios. According to McGrath and Poewell (2016) structured

training programs ranging from technical skills development in agriculture, construction, financial literacy, or small business management to informal community-based learning initiatives equip individuals with practical tools for a living, recovery, and future resilience. Such educational interventions can foster innovative solutions to challenges that may be encountered in a post-disaster, while also boosting confidence and self-sustenance among community members.

Community savings and loan groups are also an opportunity to sustainable livelihoods as they offer an improved access to credit for households. These locally administered financial structures provide members with access to microcredit, enabling investments in new income-generating activities and the rebuilding of disrupted livelihoods. By combining resources and facilitating collective savings, these groups enhance financial security and promote a culture of mutual support within the community (Lopatta et al., 2017). The availability of small loans empowers individuals to initiate or expand entrepreneurial ventures, while regular savings help support the economic shocks during recovery periods.

4.43 Challenges hindering sustainability

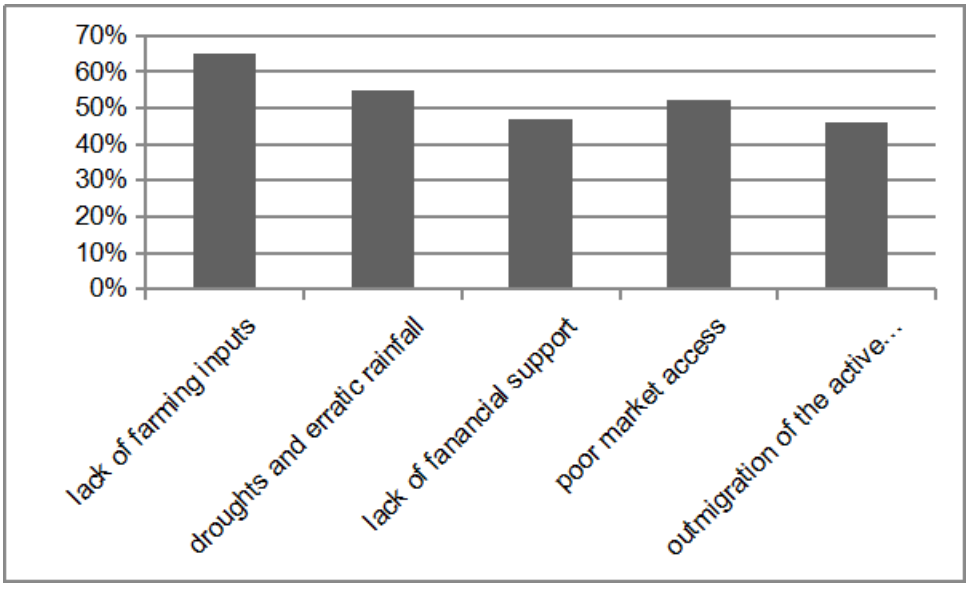


Figure 4.43: challenges to sustainable livelihoods

The major challenges hindering sustainability of livelihoods include lack of farming inputs. 65 % of the participants highlighted that they are facing challenges to get farming inputs such as seeds,

fertilizers, and effective farming equipment and tools due to financial constraints. Most households fail to set-up irrigation equipment because they cannot afford. According to Robinson-Pant (2016), agriculture is the main anchor on rural livelihoods therefore lack of farming equipment would be a real challenge to the communities in Ward 12, Chimanimani because other small and insecure livelihoods like trade depend largely on agriculture.

55% indicated that sustainable livelihood portfolios are being hindered by droughts and erratic rainfall. According to Mushawemhuka et al. (2024), although Chimanimani is located in the natural region 1, it is also facing the impacts of climate change. Droughts and erratic precipitation continue to exacerbate crop failures, livestock death, and water scarcity.. All these factors reduces agricultural productivity which is the main livelihood being conducted in Ward 12, this further push community vulnerability, increasing poverty and food insecurity.

> *Interviewee 3: "…even though we engage in agricultural activities to make a living, it is being challenged by adverse weather conditions leading to crop failure and animal death. To add on, even though we want to acquire irrigation equipment to supplement our harvests it is made impossible due to financial constraints."*

Another hindrance to sustainability indicated by 47% of the respondents is lack of financial support. Limited access to capital continue to constrain on livelihood investments because people still need to rebuild and recover their lives which is being challenged by lack of access to grants, credits, and other forms of financial assistance (Barrot et al., 2021). Due to financial constraints the community is even failing facilitation of clean water from protected sources and use water from unprotected open wells (**photograph 4.44**)

52% responded that livelihood sustainability is being challenged by poor access to markets. According to Ndlovu and Musuku (2021), due to poor market connectivity most smallholder farmers have reduced income opportunities and limited access to essential goods and services to copy with the challenges posed by the cyclone. Reduced access to markets has led to decreased income opportunities which have negatively affected food security and accessibility.

Group discussion participant quote: "…cyclone Idai damaged roads and transport has become a challenge which is limiting us from sending our agricultural outputs to markets, our supply chains have been disrupted." (woman, aged 45)

According to 46% of the respondents, outmigration of the active group is another challenging factor to achieving sustainable livelihoods. Gray and Bilsborrow (2014), highlights that outmigration from a community causes depopulation. Labor shortage had become a challenge since manpower had been reduced leading to decreased productivity especially in the agricultural sector and local businesses and services. All this is due to individuals migrating to urban areas looking for greener pastures to support their families. Community resilience is left very unstable, making it more vulnerable to future shocks

Photograph 4.44: an open unprotected well where Community member use this well as a source for domestic use water

An unprotected well used for domestic water

4.5 Community Recovery and Adaptation Strategies aimed at improving the affected livelihood portfolios.

4.51 Community-led recovery strategies

Despite the challenges that are being faced, community-led initiatives are being very useful in recovery and adaptation. Almost half of the respondents were involved in saving groups or were part of a group project mainly poultry, gardening, and or piggery. According to Simon et al. (2020), community-led initiatives are very important for adapting to a change brought by a disaster because the community is the core affected and facing difficulties. Women's groups, especially, had been very instrumental in working towards establishment of irrigation schemes. Focus group discussions mainly emphasized on the importance of these corporate strategies, mainly where there is limited outside help. Youths conduct meetings every selected day of a week teaching each other several survival skills that they can apply in their day-to-day living (**photograph 4.52**)

Photograph 4.52: Youth on a meeting teaching each other life skills

4.53 External Support Received by the Community

Following the immediate cyclone aftermath, almost three-quarters (71%) of households were getting assistance from the NGOs or government agencies, mostly in form of food stuffs and inputs for agriculture (Nyahunda et al., 2022). However, by the time of this research, only less than 30%

were still getting some form of support. This has left many households feeling neglected just as they were beginning to build up on recovery. Despite the stop of provision of food stuffs and other material goods, there are several projects that have been introduced for example a greenhouse was constructed and community members engage in agricultural production all year round, during the time that the research was being carried out they were growing green beans which were promising a bumper harvest **(photograph 4.53a)**. A borehole was also drilled at a school in Ward 12 and communities can get clean and safe water for domestic uses. The school is currently starting a garden which they will water using irrigation system drawing water from the borehole (**photograph 4.53b**).

Photograph 4.53a: A community greenhouse

Photograph 4.53b: a borehole being drilled at a school to provide the community with clean safe water and to aid with irrigation water.

4.54 Coping and Preparedness

The research found out that about 60% of households and individuals have adopted new coping mechanisms, such as engaging in multiple income generating activities, involvement in community-led projects, or sending family members to seek work elsewhere. Community projects promote development and reduces crime rates (Ibem, 2009) Almost everyone is concentrating on preparedness by building back stronger, and focusing on mitigation strategies for instance

irrigation schemes. Women are also engaging in collectivism, “mukando” for groceries and money. According to Masvotore and tsara (2023), women often engage in “mukando” to conquer and overcome poverty. More so, families are producing gardens that support both the household consumption as well as generating income through selling some of the crops such as cabbage, tomatoes, onions, and other several vegetables (**photograph 4.55**).

Photograph 4.55: A family garden

4.56 Respondents Involvement in Community-Led Initiative Strategies

In this hypothetical setup, the overall sample consist of 60 participants , with a total of 50 who participated in community-led recovery schemes and 10 who did not.

Table 4.57: Observed Frequencies of Participation by Age Group.

Age group	Participated (Yes)	Did Not Participate (No)	Total
18-30	11	1	12
31-35	18	0	18
46-60	11	7	18
60+	10	2	12
Total	50	10	60

Table 5.58: Detailed Calculations of Observed Frequencies of Participation by Age Group

Age Group	Outcome	Observed (O)	Expected (E)	Contribution$((O - E)^2/E)$	Contribution
18-30	Yes	11	10	1	0.1
18-30	No	1	2	1	0.5
Subtotal					**0.60**
31-45	Yes	18	15	9	0.6
31-45	No	0	3	9	3.0
Subtotal					**3.62**
46-60	Yes	12	15	16	0.6
46-60	No	6	3	16	3.0
Subtotal					**6.40**
60+	Yes	10	10	0	0.0
60+	No	2	2	0	0.0
Subtotal					**0.00**
Total		**60**	**60**		**10.6**

4.59 Interpretation of Results

The results suggest that participation in community-led recovery strategies is not evenly distributed across age groups. The 31-45 age-group presented a much higher participation rate than the expected, while deviations in the age group of 46-60 contributed to the association. The findings indicate that age may be a significant factor in determining involvement in community-led recovery efforts. As a result the findings could have meaningful suggestions for targeting interventions and policy formulation in post-disaster recovery factors (Halpin et al., 2021).

CHAPTER 5: SUMMERY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the research, providing a brief sum up of the overall study, outlining the research findings conclusively and suggesting recommendations concerning the study outcomes

5.2 Summary

The research study assessed the sustainability of livelihood portfolios in the aftermath of Cyclone Idai in Ward 12, Chimanimani District, Zimbabwe. The study objectives included identifying the livelihood portfolios developed in the aftermath of Cyclone Idai in Ward 12, Chimanimani District, to examine the sustainability of these livelihood portfolios, and to evaluate community-led strategies aimed at improving the affected livelihood portfolios post-Cyclone Idai. In order to obtain relevant information in line with the research, both qualitative and quantitative data collection methods were employed. Survey questionnaires were distributed to sixty households, the researcher carried a participant observation in-person, fifteen Key Informant Interviews were conducted, and five Focus Group Discussions were carried out. These methods gave the research a mixed approach.

The study showed that many women were more active in the research than men. The research has shown that men have out-migrated to urban areas or other places to seek greener pastures so as to support their families back in Ward 12. Also, the middle aged participated more than other age groups which. The results also showed that many have engaged in multiple livelihood portfolios following occurrence of Cyclone Idai. Diversification of livelihoods is being carried out as a way of achieving sustainability

Despite the endeavors and strategies being carried out by the community to sustain their livelihoods it is not enough thus there is help received from NGOs to supplement their efforts. Community-led strategies have also sustained the livelihoods and strengthened resilience.

5.3 Conclusion

It was revealed that most of the respondents were willing to sustain their livelihoods through diversified income generating sources that were noted and community cooperatives most of which involved women and youth. However, many were facing several challenges such as financial constraints, lack of farming inputs, adverse climatic condition and a few to mention which were reducing their production capacity and sustainability.

5.4 recommendations

- I recommend that the community continue to diversify their livelihoods for sustainability and resilience.
- Government agencies and Non-Governmental Organizations should continue to promote livelihood portfolios in Ward 12, Chimanimani through various schemes and programs until households and individuals are sustainable and resilient enough to face future shocks without crumbling.
- Ward 12 to indulge in sustainable activities such as organic farming and reduce over exploitation of resources such as uncontrolled artisanal mining which some of young men have engaged into.

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APPENDICES

Appendix 1: Semi-structured interview guide for Ward 12, Chimanimani District residents.

I am Nicolae Mukau, currently studying Disaster Management Sciences at Bindura University of Science Education. I am conducting a research study on the sustainability of livelihood portfolios in the aftermath of Cyclone Idai in the above mentioned ward.

- Livelihood activities
  a) Describe the primary livelihood activities you and your household engage in.
  b) What are your sources of income?
- Impact of cyclone idai
  a) How did cyclone idai affect your livelihood strategies?
  b) What was mostly affected by cyclone idai on your daily activities?
- Adaptations
  a) What changes have you made to your livelihood portfolio since the cyclone?
  b) How have you been coping since the cyclone?
- Support received
  What support have you received from the community, government and or organisations in rebuilding your livelihoods?
- Sustainability perception
  How do you perceive the sustainability of your current livelihood strategies? What factors contribute to your view?

Appendix 2: Focus Group Discussion (FGD) Guide

- Challenges being faced
  Sharing the challenges faced in rebuilding livelihoods, including any barriers to accessing resources or support.
- Changes in livelihoods
  Discussion on the major changes in livelihoods brought by cyclone Idai. What new strategies have surfaced?
- Community-led recovery
  Identification of the most effective community-led recovery initiatives and how these strategies have evolved.
- Future improvements
  Exploration of ideas for improving the sustainability of livelihoods in the future. What recommendations do participants have for local authorities, government, and NGOs.

Appendix 3: Participant Observation Checklist

- Types of livelihood activities that were observed include farming, mining, trading, and small businesses.
- The level of community engagement in recovery initiatives and support networks
- Conditions of infrastructure, including access to markets, transportation routes and basic services like water and electricity supply
- Social interactions and community cohesion, noting the changes in community relationships post-cyclone.

Appendix 4: Survey Questionnaire

Section A: Background Information

a) Age:
☐Under 18 ☐18-30 ☐31-45 ☐46-60 ☐Over 60
Gender : ☐Male ☐Female ☐Prefer not to say

b) Household size: ☐1-3 ☐4-6 ☐7-9 ☐10 or more

c) Education level ☐No formal education☐Primary ☐Secondary ☐Tertiary

d) Main sources of income before cyclone Idai
☐Farming ☐Trading/ business ☐Formal employment ☐Casual labour,☐Other (please specify)_____

Section B: Livelihood Portfolios after Cyclone Idai

a) Which of the following livelihood activities are you currently involved in?
(Tick all that apply)
☐Crop farming ☐Livestock rearing ☐Small business/ trading ☐Formal employment
☐Craft making ☐Remittances ☐Other (please specify)_____

b) Have you started any new livelihood activities since Cyclone Idai?
☐Yes ☐No If yes , please specify_____

c) How did cyclone idai affect your previous livelihood activities?
☐No effect ☐Slightly affected ☐Severely affected ☐Completely destroyed ☐Please describe briefly_____