



Julius Nyerere School of Social Sciences

**CLIMATE CHANGE ADAPTATION RESPONSES AND POVERTY AMONG
RURAL WOMEN IN BINDURA MANHENGVA VILLAGE, ZIMBABWE.**

BY

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Submitted to Nehanda Centre for Gender & Cultural Studies

Great Zimbabwe University

*In partial fulfilment for the requirements of the Master of Science Degree in Gender and
Policy Studies*

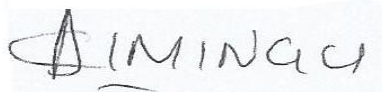
Masvingo, Zimbabwe

2023

Declaration form

I Caroline Dimingu declare that this research project entitled, "*Climate change adaptation responses and poverty among rural women in Bindura Manhenga village, Zimbabwe*", is my own research work, approved under the observation and supervision of Dr M Sibanda. This research project has not been submitted in part or full to any institution for the award of a diploma, degree, or master's programme.

Signed:

A handwritten signature in black ink that reads "DIMINGU". The signature is written in a cursive style with a large initial 'D' and is placed on a light blue rectangular background.

Date: 05 June 2023

APPROVAL FORM

The undersigned certify that they have supervised Caroline Dimingu dissertation entitled, ***“Climate change adaptation responses and poverty among rural women in Bindura Manhenga village, Zimbabwe”***, submitted in the partial fulfilment of the Master of Science in gender and policy studies at Great Zimbabwe University (GZU).

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.....

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Dedication

This dissertation is dedicated to my family who have been supportive throughout my period of study.

Acknowledgements

I thank God for giving me the wisdom and perseverance to compile all the information for my research project. My utmost gratitude extends to my loving and caring family, my husband the Reverend Wilfred Dimingu and daughters Tanyaradzwa, Tamiranashe and Talic, for their unweaving support and unconditional love they showed during my study and research period. My profound appreciation goes to the Great Zimbabwe University, Julius Nyerere School of Social Sciences, Nehanda Centre for Gender, and Cultural Studies, for equipping me with competences and theoretical knowledge which I utilized throughout my studies and compilation of this research. My gratitude further extent to my project supervisor Dr M Sibanda for his guidance and encouragement in carrying out this research project, may God continue to bless and protect you as you continue with this great work of nurturing students.

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Abstract

Natural disasters disproportionately affect the communities that are the poorest and most vulnerable. Despite several attempts to mitigate the effects of climate change, women are having a significantly tougher time adapting than males. More crucially, the key question that arises is how well rural women in Bindura have been able to adjust to the impacts of climate change. These women have implemented several different strategies, including winter ploughing and growing crops that are resistant to drought. In gathering information, the study successfully employed interviews, observations, and focused group discussions. As a result, this study finds that climate change has had several adverse effects on rural populations, mostly affecting livestock and crops and consequently changing rural economies, with women in Bindura Manhenga village being the most impacted. Additionally, it has been noted that women in rural Bindura are extremely dependent on natural resources for both their survival and means of subsistence. As a result of climate change, natural resources are depleting, further escalating the amount of poverty among women. This study raises concerns about the gendered adaptation to climate change. However, it's crucial to remember that, despite their vulnerability, women are not only the hapless victims of climate change; rather, as this study will show, they are actively engaged in efforts to adapt to and mitigate the effects of the change. This dissertation makes the case that key players should implement sensible policies to ensure that women are given the economic and social freedom they need to cope with the devastating effects of climate change.

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CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

The poorest and most vulnerable populations are hit first and worst by natural catastrophes. Women are finding it much harder than men to adjust to the effects of climate change, despite repeated efforts to lessen its effects. As a result, this study finds that climate change has had several adverse effects on rural populations, mostly affecting livestock and crops and consequently changing rural economies, with women in Bindura Manhenga village being the most impacted. Additionally, it has been noted that women in rural Bindura are extremely dependent on natural resources for both their survival and means of subsistence. As a result of climate change, natural resources are depleting, further escalating the amount of poverty among women. This study raises concerns about the gendered adaptation to climate change. However, it is crucial to remember that, despite their vulnerability, women are not only the hapless victims of climate change; rather, as this study will show, they are actively engaged in efforts to adapt to and mitigate the effects of the change. This dissertation makes the case that key players should implement sensible policies to ensure that women are given the economic and social freedom they need to cope with the devastating effects of climate change.

1.2 Background of the study

The threat of climate change to human life and sustainable development has spread beyond national borders. Globally, the adverse effects of climate change are already resulting in significant socioeconomic and environmental loss as well as human suffering. A critical adaptation issue is the differentiated impacts of climate change on women, the youth, the elderly, which are related to differential adaptive capacity (UNESCO 2021). In India, more women than men, especially women of lower castes, work as wage laborers to compensate for crop losses (Lambrou and Nelson, 2013) while in Tanzania, wealthier women hire poorer women to collect animal fodder during droughts (Muthoni and Wangui, 2013). Climate variability amplifies food shortages in which women consume less food (Lambrou and Nelson, 2013) and suffer from reproductive tract infections and water-borne diseases after floods (Neelormi et al., 2008; Campbell et al., 2009). Women farmers in the Philippines relying on high-interest loans were sent to jail after defaulting on debts following crop failure (Peralta, 2008). In Uganda, men were able to amass land after floods while droughts reduced women's non-land assets (Quisumbing et al., 2011). In Ghana, some husbands prevent their wives from

cultivating individual plots as a response to gradually shifting rainfall seasonality, thereby undermining both women's agency and household well-being (Carr, 2008).

The impacts of climate change are more severe in Africa. The two largest forecasted drops in rainfall on the planet are likely to occur over northern Africa and the southwestern parts of South Africa. No other region of the world has undergone longer or more widespread droughts than Africa. The anticipated rise in precipitation in east Africa contrasts with droughts. Different subregions of Africa are affected in different ways, thus complicating the crisis. Summer rains in southern Africa begin later and end earlier than in other parts of the world. Central Africa is a sub-region that drives the rest of the planet's weather system and is now perilously close to the rainfall minimum needed to support this second largest rainforest system in the world after the Amazon (Niang et al., 2014). Africa's complex climate system and events are also influenced by the three main oceans. Out of one of these warming oceans, tropical cyclones Idai and Kenneth Africa Climate Change Strategy emerged killing and displacing thousands and destroying parts of Mozambique, Zimbabwe, Malawi, and Tanzania in 2019.

In Zimbabwe, especially, the rural populous who largely depend on rain-fed agriculture, are increasingly worried about unfamiliar climate and weather dynamics including erratic rainfalls and prolonged winter seasons. To transform the socioeconomic situation of women and other socially excluded and vulnerable groups, it is crucial to achieve gender equality and social inclusion. However, over the past few years, climate change has been reversing progress in achieving these goals. About 85% of women in Zimbabwe depend on agricultural activities for their livelihoods and are responsible for ensuring that water needs at household levels are met (ZIMSTAT 2016). Most subsistence farmers in rural areas are women who depend on climate-sensitive economic activities like farming and livestock raising as well as rain-fed crops. The burden of climate change falls disproportionately on women since potable water is not readily accessible in rural places. Women and children, who are often responsible for fetching water in most rural communities, are compelled to trek farther in search of water due to decreasing rainfall and the drying up of water sources. Given that rural women already bear the burden of caring for children, the elderly, and the sick, the effects of climate change might be anticipated to add to their already heavy caregiving burdens.

Climate change is a direct threat to the socio-economic development of the country, as the economy is linked to the climate and the state of water resources (both quantity and quality). (Zimbabwe's Initial Adaptation Communication to the United Nations Framework Convention

on Climate Change 2022). Future climate change impacts on the nation will become more and more significant. Less rain after several dry months and from September to November, the hot season, may cause the soil to lose its ability to retain water, increase the risk of soil erosion, and cause wells and boreholes to dry up, endangering sanitation, human health, irrigated agriculture, and livestock production. The production of hydroelectric power could also be stopped. As such, this dissertation notes that climate change has resulted in water scarcity among rural communities, which largely affects livestock and crops and subsequently altering rural economies; with women being the most affected group in Bindura, Manhenga village. Climate change is therefore a serious threat to poverty eradication. Women and men depend differently on energy, land, water, and other natural and social resources for their everyday life and long-term existence (Doss 2001; Terry 2009; Otzelberger 2011).

Many synergies between climate change mitigation policies and poverty alleviation have been identified in the literature (Klein et al., 2005; Üрге Vorsatz and Tirado Herrero, 2012), but evidence of positive outcomes is limited. Impacts of current mitigation policies on livelihoods and poverty are controversial with polarized views on the potential of such policies for sustainable development in general and poverty alleviation (Collier et al., 2008; Böhm, 2009; Hertel and Rosch, 2010; Michaelowa, 2011). Therefore, to reflect the extent to which Climate Change has affected rural lives, livelihoods, and the feminisation of poverty is particularly a major cause for concern. In this regard, the major question which will be answered in this research is why is it that despite the numerous methodologies put in place to try and deal with the problem of climate change by the government in Manhenga village Bindura, women are still being more vulnerable to poverty? More-still, this research derives from the realization that community-based adaptation responses such as communal pooling, storage of food, systems of mutual support, to mention just a few, have somehow been gender insensitive, as, in several cases, the grave implications of climate change largely affect women than men. Simultaneously, the structural make-up of societies, especially, rural communities such as Manhenga village in Bindura, is that which is rooted on discriminate cultural norms and practices. These strategies have been found to have positive effects on poverty reduction in certain contexts, especially when supported by policy. However, it is important to note that some autonomous strategies such as diversification and storage are unavailable to the poorest who lack the required resources or surplus (Silva 2009). Autonomous adaptation strategies may increase vulnerability, this dissertation will examine these strategies. It is also important to note that national action plans of adaption tend to over emphasize technological and infrastructural

measures while overlooking poor people's needs, gender issues and livelihood and adaptation strategies (Perch 2011).

1.3 Problem statement

Not only has the issue of climate change and community-based adaptation been global, but it has also been gendered. Women are especially susceptible to endemic poverty and low reproduction rates in the face of climate variability and change. The causes of women's increased susceptibility to the harmful consequences of climate change will be looked at in this study. The study will investigate how the responses of women in Manhenga village, Bindura rural, to the variability of the climate are influenced by gender, class, location, and age. However, it is especially important to reflect how much Climate Change has impacted rural lives, livelihoods, and the feminisation of poverty despite government initiatives like water harvesting, winter ploughing, and planting drought-resistant crops among other strategies is particularly a major cause of concern in this research.

1.4 Significance of study

The researcher anticipates that the findings of this study are of great benefit to various stakeholders including the government, the policy makers in making informed decision about climate change, gender, and poverty in Africa at large and Zimbabwe in particular.

1.3.1 Organizations involved in climate change initiatives.

The findings of this research can also be of importance to other organizations that are involved in climate change adaptation and mitigation who might also be interested in disaster management which is gender sensitive.

1.3.2 Other Researchers

The study also contributes to the body of knowledge by providing new information on the relationship between the negative impact of climate change, gender, and the feminization of poverty.

1.3.3 The researcher

The study broadens the researchers' knowledge in climate change, gender, and poverty as well as fulfilling his academic requirements in developing her research skills. It will also enhance the researchers understanding of the negative effects climate change on women and poverty as a gender expert.

1.5 Aim

The aim of this research is to interrogate the extent to which negative effects of Climate Change has affected rural lives, livelihoods, and the feminisation of poverty in Bindura Manhenga village, regardless of methodologies put in place by government to mitigate climate change.

1.6 Objectives of the study

1.6.1 To explore the extent to which negative effects of Climate Change has affected rural lives, livelihoods, and the feminisation of poverty in Manhenga village.

1.6.2 To assess the extent to which rural women in Bindura Manhenga village managed to adapt to the negative effects of climate change.

1.6.3 To examine the challenges faced by women while trying to adapt to the negative effects of climate change.

1.6.4 To recommend some adaptation initiatives that address gender-specific negative effects of climate change.

1.7 Theoretical framework

Because responses to climatic variability take place within the limits of a society that is laced with social inequities along the lines of gender, class, age, ethnicity, and other aspects, this research will make use of Crenshaw's intersectionality theory from 1989. These disparities prevent some parts of society from participating meaningfully in decision-making, maintain unfair gender roles, and obstruct access to, control over, and ownership of resources. As a result, the way that men and women avoid, get ready for, react to, and recover from catastrophic weather events that endanger their lives and livelihoods is different.

1.8 Methodology

The study utilised qualitative research approach. According to John Creswell (2014:4) qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. Qualitative research has the strength of being conducted in a natural context with few controlled variables, although it is less amenable to generalization to meet the criteria of validity, trustworthiness was applied to this study. To get an informed understanding of the research problems related to climate change adaptation, response, and poverty among women in Mannhenga rural, in-depth interviews and focused group discussions will be used. This study will adopt a descriptive and explanatory research design. When in-depth, narrative descriptions of small numbers of cases are involved, the

research will use description as a tool to organize data into patterns that emerge during analysis. In this case study the target population comprise of women in Manhenga village Bindura. Purposive sampling will be used to solicit data. According to Saunders et-al 2016 purposive sampling allows greater depth of information from a smaller number of chosen cases. This sampling technique will be used because it will be useful in being able to select the most suitable respondents for this research. Permission will also be sought in advance from relevant authorities and consent of participants. This research is going to utilise thematic analysis method to analyse data because it involves the categorisation of data, classification, summarisation, and coding.

1.9 Limitations of the study

The major limitation of this research is lack of resources. To overcome this problem the researcher used cheaper and effective ways of collecting data which will not compromise the quality of the research. Another limitation is the nature of the study. Most people view Climate change as a complex issue, and they do not want to involve themselves in such matters therefore the research had to explain that the research will benefit them and the whole community. The researcher also had to simplify and translate some complex terms into vernacular. This limitation was also dealt with by explaining the intentions of the researcher to gain confidence with such people.

1.10 Description of the study area

Bindura is a town cited in the province of Mashonaland Central, Zimbabwe as shown in fig 1. It is located in the Mazowe Valley approximately 86 km north-east of Harare. Results coming from the 2012 census indicate that the town has a population of approximately 46,275. In terms of its functions, the town is the administrative capital of Mashonaland central province. The town consists of several mines and chief among them include the Bindura Nickel mine. The district is dependent on mining and farming for livelihoods, with nickel, copper and cobalt being the major minerals mined. However, information coming from the interview's reviews that most of the women are not benefiting from the activities of these companies on gender related reasons. This research focused on Manhenga village in Bindura rural. By extension, a greater number of the respondents concluded that this is widening their spaces of vulnerability to poverty. Whilst cotton and maize are grown intensely in Bindura, women only have user rights of the land, compelling them to grow crops on subsistence levels and in some cases failing to acquire small pieces of land.



Figure 1.1 A map of Mashonaland Central province showing Bindura and Mount Darwin districts.

Source: OCHA (2009).

1.11 Definition of terms

Definition of terms is problematic in many disciplines of study and this research is not an exception. An attempt shall be made to give meaning to selected terms. However, it is critical to note that meanings may be attached to words or phrases by different readers, because words have the potential to express diverse meanings. This research will not attempt to give full description or meanings of words but rather a working idea of the concept.

1.11.1 Climate Change

Climate change is defined and contextualised differently. Article 1 of the United Nations Framework Convention on Climate Change (UNFCCC) defines Climate Change as the changes in the properties of the global Climate which are largely attributed to anthropogenic activities.

Whilst the UNFCCC definition of Climate Change emphasises that human activities are largely to blame for the occurrence of climate change, this paper notes that there is a problem common with such international instruments as they seldomly quantify the extent to which anthropogenic activities triggers climate change. However, the Inter-Governmental Panel on Climate Change (IPCC, 2007) is spot on especially considering its engagement with the statistical aspect

associated with Climate Change. As such, the IPCC defines Climate Change as a change in the state of the climate that can be identified using some statistical tests. The definition emphasises that climate change should be understood as the changes in the mean and/or the variability of the climatic properties (IPCC, 2007).

1.11.2 Definition of Climate Change Adaptation Strategies

The third assessment report of the Inter-Governmental Panel on Climate Change (2001) defined climate change adaptation as realignments in the natural or human structures in reaction to real or anticipated climatic stimuli or their effects, which lessens damage or exploits beneficial opportunities. From the foregoing, it can be inferred that part of climate change adaptation techniques includes, but is not limited to, setting up structures and procedures that will eventually lessen the negative effects of climate change. The other body of research on climate change adaptation defines adaptation as all measures taken to lessen the hazards that could endanger people's ability to support themselves. According to such study, this is possible through diversifying one's sources of income. This article shares the "opinion" that such efforts are successful, particularly because many communities heavily rely on rain-driven initiatives like growing maize. Such populations may turn to growing wheat and sorghum, which are drought-resistant crops, as adaptation measures. Therefore, this study's focus is on studying the Bindura rural scenario from a gendered standpoint.

1.11.3 Definition of Poverty

Amartya Sen (2000) defines poverty as capability failure or capability deprivation, his definition captures both material and non-material aspects of poverty. 1 in 3 Africans, that is, 422 million people, live below the poverty line representing 70 per cent of the world's poor people (Hamel, Tong, and Hofer, 2019), the economic landscape of African countries depends essentially on the dynamics of climate change. Key sectors driving their economic performance and livelihoods such as agriculture, forestry, energy, tourism, coastal and water resources are highly vulnerable to climate change (Abiodye and Ayodele, 2015). Resource scarcity, endemic rural poverty and complex governance systems compound the matter, further threatening millions of lives and livelihoods. According to the World Bank (2020), 210 million Africans are affected by conflicts and climate change is likely to add increased political, societal, economic, and environmental instability. Current estimates state that the 'negative effects of climate change are already reducing Africa's GDP by about 1.4 per cent according to the Africa Climate Change Fund (ACCF) (2020).

1.11.4 Climate Vulnerability

The IPCC defines climate vulnerability as the degree, to which a system is susceptible to, and unable to cope with the adverse effects of climate change including climate variability and extremes'... (Schneider et. al, 2007). Despite having contributed the least to the GHGs that are the cause of global warming and still having the lowest emissions, Africa remains the most vulnerable and least prepared continent to deal with climate change. Africa faces exponential collateral damage, posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods, threatening to undo its modest development gains and slip into higher levels of extreme poverty (AfDB, 2020). Developing countries are more vulnerable to the effects of climate change because they have a lower adaptive capacity (Guillaumont and Simonet, 2011). Africa's peculiar vulnerability to climate change is brought about by the effects of multiple stressors notably; low adaptation and mitigation capacities fuelled by scant finance and investment sources. Africa's social vulnerability stems from poor governance, conflicts, weakened capacities, high disease burden, food insecurity and poverty resulting in a low human development index.

1.11.5 Gender

Gender refers to the social attributes and opportunities associated with being male and female. These attributes, opportunities and relationships are socially constructed and learned through the socialization process (Haralambos and Holborn (2004:52). It is important to note that, these roles, norms, and values determine how women and men prepare for, react to, and recover from disasters, and they often cause unequal distribution of power, economic opportunities, and sense of agency. Like the variable concepts of class, race, ethnicity, culture and economics, gender is an analytical tool for understanding social processes that affect human beings.

1.12 Chapter summary

This chapter dealt with the introduction and background of the study which included statement of the problem, aim, objectives, theoretical framework, methodology, limitations, description of study area and definition of key terms. The chapter also highlighted the questions that this research seeks to answer and contribute to new knowledge on the discourse of gender, poverty, and climate change. The following chapter will review related literature and bring out the gap that this research intends to fill.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter explores the literature as well as views of other authors concerning climate change, responses, adaptation, and poverty among women. Forms of literature will include recent textbooks, articles, book chapters, online resources, and many other forms of literature. The literature review is divided into the following sections: theoretical framework, Effects of climate change on women and the poor, Adaptation strategies used by rural women to adapt to the negative effects of climate change. Challenges faced by women while trying to adapt to the negative effects of climate change and the chapter summary.

According to Justus Randolph 2009:2 conducting literature review is a means of demonstrating the author's knowledge about a particular field of study including vocabulary, theories, key variables and phenomena and its methods and history. Furthermore, literature review also informs the researcher of influential researchers and research groups in the field. Apart from the above other reasons for writing a review are delimiting the research problem, seeking new lines of inquiry, distinguishing what has been done from what needs to be done, discovering important variables relevant to the topic and many other reasons. Of importance to note also is the fact that it is difficult to establish how the new research advances previous research without a literature review. For instance, in this case, review of literature has shown that there is a gap because there is scarcity of literature that has been produced specifically looking at gender, climate change and poverty.

2.2 Theoretical Framework

2.2.1 Intersectionality

The main theoretical instrument developed to challenge feminist hierarchy, hegemony, and exclusivity is intersectionality, the idea that subjectivity is generated by mutually reinforcing vectors of race, gender, class, and sexuality. The intersection of race and gender has long been a focus of intersectionality, which has existed since its creation. The word itself was first used by scholar and civil right advocate Kimberlie' Crenshaw in 1989. While still a student studying to be a lawyer, she saw that gender and race were looked at as separate issues. To Crenshaw, studying them in isolation to each other made no sense. She saw that women of colour, for example, are doubly discriminated against, particularly in law. Making feminism intersectional makes perfect sense because life experiences are based on how your multiple identities intermingle. This has been very influential,

leading to an interest in the production of data or policy research and practice that recognise the specificity of the discriminations experienced by racialised women, who have suffered from intersectional invisibility (Crenshaw, 2000). They are escalating the multiple types of prejudice that women encounter daily in various spheres of life. Today, there are more intersections than only those between race and gender. It is currently frequently used to show how many forms of discrimination interact, including those based on gender, color, age, class, financial status, physical or mental ability, gender identity, sexual orientation, religion, or ethnicity.

Finally, intersectionality invites scholars to come to terms with the legacy of exclusions of multiply marginalized subjects from feminist and anti-racist work, and the impact of those absences on both theory and practice (Crenshaw, 1989, 1991; Williams, 1989). As a response to the lengthy history of essentialism and exclusion that has plagued both feminist and anti-racist scholarship, the intersectional project centres the experiences of subjects whose voices have been ignored. Undergirding this approach is a belief that those who have experienced discrimination speak with a special voice to which we should listen' (Matsuda, 1987: 324). For intersectional theorists, marginalized subjects have an epistemic advantage, a particular perspective that scholars should consider, if not adopt, when crafting a normative vision of a just society. Critical race scholars have evoked an array of terms to describe this methodology of drawing upon marginalized subjects' vantage points including 'looking to the bottom' (Matsuda, 1987), exploring 'iterative energy' (Wing, 1990: 182), and drawing on black women's 'multiple consciousness' (Harris, 1989: 584) or 'outsider scholars' status (Matsuda, 1992). These strategies enable intersectional theorists to draw on the ostensibly unique epistemological position of marginalized subjects to fashion a vision of equality and this research is going to use this theory as a lens to explore the connection between climate change responses, adaptation, and poverty among rural women in Zimbabwe in general and Manhenga village.

Even though women and girls are disproportionately affected by climate change globally, this theory demonstrates that the effects are not all the same. When viewed through the lens of intersectional feminism, which emphasizes how different types of inequality frequently coexist and exacerbate one another, climate change risks are particularly severe for migrant women, older women, LGBTIQ+ individuals, women and girls with disabilities, indigenous and rural women, and girls, as well as those residing in rural, remote, conflict-ridden, and disaster-prone areas. While women and girls experience disproportionate impacts from climate change at the global level, the effects are not uniform, and this research is going to explore this gap.

The climate crisis is not ‘gender neutral.’ Climate change has a disproportionately negative impact on women and girls, amplifying existing gender disparities and posing special risks to their livelihoods, health, and safety. Women around the world rely more on natural resources, but they also have less access to them, which is a bad condition that needs to be changed. Women are disproportionately responsible for securing fuel, water, and food in many areas. In low- and lower-middle income nations, agriculture is the most significant area of employment for women. During droughts and seasons of irregular rainfall, women labor even harder as agricultural workers and primary procurers to provide supplies and money for their family. This increased the burden on girls, who frequently must quit school to assist their mothers in managing the increased burden.

As a "threat multiplier," climate change amplifies social, political, and economic pressures in unstable and conflict-affected environments. Women and children are more susceptible to all types of gender-based violence because of the globalization of conflict, including human trafficking, child marriage, and sexual assault related to conflict.

2.3 Effects of climate change on women and the poor

Zimbabwe climate is predominantly semi-arid and is extremely variable, being strongly influenced by the Inter-Tropical Convergence Zone (World Bank Climate Change Knowledge Portal 2021). As a result, the country is prone to shifting rainfall patterns, droughts, and periodic floods, which have severe implications for climate-sensitive economic sectors and food security. Climate change is exacerbating these problems by increasing the frequency and intensity of such extreme weather events. For example, the 2015/2016 El Niño event caused a significant drought, which was declared a State of Disaster and left over 4.1 million people in need of food support (United States Agency for International Development (USAID) 2017). Therefore, ending poverty will not be possible if climate change and its negative effects on poor people are not accounted for and managed in development and poverty-reduction policies. Fewer studies have explored how exposed settings in rainfed small-scale agriculture in sub-Saharan Africa experience climate change and poverty in relation to gender as a core analytical category. Research in sustainability science has identified key conditions that are crucial for understanding the scope for climate change adaptation and poverty alleviation. (Gabrielsson et al. 2013; Gabrielson 2014). The food and health condition imply that small-scale farmers strive to secure food and fend off threats to their health (Gabrielsson et al. 2013; Jerneck and Olsson 2013; Gabrielsson 2014). Climate change adaptation also entails structural and intersectional power. Since available evidence is ‘limited, patchy, varied and highly contextual’ it is not yet widely confirmed that/how climate change has differential impact on women and men in terms

of assets, agency, and achievements, but data are fairly consistent with the two propositions that ‘climate impacts may affect men and women differently’ and ‘women tend to suffer more negatively in terms of their assets and well-being’ (Goh 2012). This vulnerability, as documented by several studies, is not intrinsic to women but due to the gendered distribution and organisation of land and labour (Pearse 2017). Due to likely uneven impacts of climate change, there is need for critical research that not only describes but also explain such gender irregularities especially in the Zimbabwean context. Climate change debate has therefore been less localised, community-based, or centred on agency, identity, and gender.

Climate variability amplifies food shortages in which women consume less food (Lambrou and Nelson, 2013) and suffer from reproductive tract infections and water-borne diseases after floods (Neelormi et al., 2008; Campbell et al., 2009). Women farmers in the Philippines relying on high-interest loans were sent to jail after defaulting on debts following crop failure (Peralta, 2008). In Uganda, men were able to amass land after floods while droughts reduced women’s non-land assets (Quisumbing et al., 2011). In Ghana, some husbands prevent their wives from cultivating individual plots as a response to gradually shifting rainfall seasonality, thereby undermining both women’s agency and household well-being (Carr, 2008).

Most of the Zimbabwe's population has remained impoverished, making it particularly vulnerable to problems brought on by the effects of climate change. More than 70% of Zimbabwe’s population lives in rural areas where they lack diversified livelihood portfolios and are dependent on subsistence rain-fed agricultural food systems. (Zimbabwe’s Initial Adaptation Communication to the United Nations Framework Convention on Climate Change 2022). The bulk of people who engage in commercial agriculture are involved in low-value agricultural chains, lack access to inputs, financing, and appropriate market connections. Evidence suggests that little is known about alternative agricultural (livestock and cropping) systems that are effective at coping with climate change. Additionally, there aren't enough resources, both human and financial, to conduct climate-smart agriculture. Decisions cannot be made with current climate data and early warning systems. Neither disaster risk reduction nor investments in climate-resistant infrastructure have been properly mainstreamed into development planning. Therefore, it is essential that Zimbabwe's resilience capacity be strengthened by ensuring that the nation has adequate absorptive, adaptive, and transformative capacities at all scales, from the national to the local level, as the government moves from raising awareness of adaptation to developing and implementing adaptation plans and policies. As observed, much of Africa and Zimbabwe in particular is still struggling with poverty

eradication, therefore dealing with the negative effects of climate change is of paramount importance and this research is going to look at that.

Some climate change projections indicate the possibility of large impacts that may exceed thresholds of detrimental shocks to livelihoods and poverty, unless strong adaptation and/or mitigation responses are implemented in a timely manner (Kovats and Hajat, 2008; Sherwood and Huber, 2010). Because women do most of the agricultural work, they will suffer disproportionately from heat stress; for instance, in parts of Africa, women carry out 90% of hoeing and weeding and 60% of harvesting work (Blackden and Wodon, 2006). Toward the end of the century, the risk of heat stress may become acute in parts of Africa.

Observed impacts of weather events and climate on livelihoods and poverty and impacts projected from the subnational to the global level suggest that livelihood well-being, poverty alleviation, and development are already undermined and will continue to be eroded into the future (high confidence). Climate change will slow down the pace of poverty reduction, jeopardize sustainable development, and undermine food security (high confidence; Hope, 2009; Stern, 2009; Thurlow et al., 2009; Iglesias et al., 2011; Skoufias et al., 2011b). Currently poor and food insecure regions will continue to be disproportionately affected into the future (high agreement; Challinor et al., 2007; Assuncao and Cheres, 2008; Lobell et al., 2008; Liu et al., 2008; Thornton et al., 2008; Jones and Thornton, 2009; Menon, 2009; Nordhaus, 2010; Burke et al., 2011; Jacoby et al., 2011; Skoufias et al., 2011a; Adano et al., 2012).

Women make up many poor people in communities that are highly dependent on local natural resources for their livelihood and are disproportionately vulnerable to and affected by climate change. Zabbey (2011) opined that women's limited access to resources and decision-making processes increases their vulnerability to climate change. Additionally, women in rural areas in developing countries have greater responsibility for household water supply, energy for cooking and heating, and for food security. Thus, women are negatively affected by drought, uncertain rainfall, and deforestation. Again, because of their roles, unequal access to resources, and limited mobility, women in many contexts are disproportionately affected by natural disasters, such as floods, fires, and coastal erosion (Zabbey, 2011). This therefore means that there is need to build high levels of awareness and consciousness across Zimbabwe especially in the rural areas where they are adversely affected by the negative effects of climate change.

Furthermore, Chasi (2008) in her study focussed on examining the gender differentiated impacts of climate change and climate variability in Southern Africa specifically Botswana.

She stated that, “disadvantaged positions of women mean greater difficult in coping with disasters, environmental change and climate variability”. According to her, gender divisions of labour often result in more women represented in agricultural and informal sectors which are more vulnerable to environmental and climate change. In her study, Chasi managed to come up with some of the effects of climate variability that are affecting women. Chasi further focussed on ways in which women could adapt to the effects of climate variability. She puts across that women are indeed more vulnerable to climate variability than their male counterparts because farming is a female dominated activity. Chasi examined this in Botswana and this study will focus on Zimbabwe specifically, Bindura in Manhenga village a context where this research is not yet done.

2.4 Adaptation strategies used by rural women to adapt to the negative effects of climate change.

In Africa rural farmers have been practicing a range of agricultural techniques such as coping strategies and tactics to enable sustainable food production and deal with extreme events. These include intercropping and crop diversification; use of home gardens, diversification of herds and incomes, such as the introduction of sheep in place of goats, pruning and fertilizing to double tree densities and prevent soil erosion in semi-arid areas, for example Senegal, Burkina Faso, Madagascar, and Zimbabwe; manipulation of land use leading to land use conversion, a shift from livestock farming to game farming in Southern Africa

Local responses to climate variability, shocks, and change have always been part of livelihoods (Morton, 2007). Formal policy responses to climate change, however, have developed more recently as the urgency of adaptation, in addition to mitigation, became a clear international policy mandate (Pielke Jr. et al., 2007). Even well-intentioned adaptation projects and efforts may have unintended and sometimes detrimental impacts on livelihoods and poverty and may exacerbate existing inequalities.

Adapting to climate change will entail adjustments and changes at every level – from community to national and international. Communities must build their resilience, including adopting appropriate technologies while making the most of traditional knowledge, and diversifying their livelihoods to cope with current and future climate stress. Local coping strategies and traditional knowledge need to be used in synergy with government and local interventions. The choice of adaptation interventions depends on national circumstances. To enable workable and effective adaptation measures, ministries, and governments, as well as

institutions and non-government organizations, must consider integrating climate change in their planning and budgeting in all levels of decision making.

2.5 Challenges faced by women while trying to adapt to the negative effects of climate change.

Existing gender inequality is increased or heightened as a result of weather events and climate-related disasters intertwined with socioeconomic, institutional, cultural, and political drivers that perpetuate differential vulnerabilities (robust evidence; Alston, 2011; Arora-Jonsson, 2011; Resurreccion, 2011; Heckenberg and Johnston, 2012; Zotti et al., 2012; Alston and Whittenbury, 2013; Rahman, 2013; Shah et al., 2013). When disasters strike, women are less likely to survive and more likely to be injured due to long standing gender inequalities that have created disparities in information, mobility, decision-making, and access to resources and training. In the aftermath, women and girls are less able to access relief and assistance, further threatening their livelihoods, wellbeing, and recovery, and creating a vicious cycle of vulnerability to future disasters.

Women's and girls' health is endangered by climate change and disasters by limiting access to services and health care, as well as increasing risks related to maternal and child health. Research indicates that extreme heat increases incidence of stillbirth, and climate change is increasing the spread of vector-borne illnesses such as malaria, dengue fever, and Zika virus, which are linked to worse maternal and neonatal outcomes. With increased dryness and limited water availability due to climate change, people are turning to unsafe water sources for potable water which compromises water, sanitation, and hygiene standards of communities (Zimbabwe's Initial Adaptation Communication to the United Nations Framework Convention on Climate Change 2022). It further argues that, when there is too much rain and flooding, cases of water borne diseases such as cholera and bilharzia are being recorded, putting a strain on the country's health system.

The crucial links between gender, social equity, and climate change have historically been difficult for climate scientists, academics, and policymakers to draw. It's time to discuss the uneven effects of climate change and the connections between women's empowerment and effective, global climate action as more data and study show their evident correlation. A significant obstacle to adaptation, especially for local community action, is the paucity of finance available in various forms as well as the challenges associated with accessing the monies which are available.

While earlier studies have tended to highlight women's quasi-universal vulnerability in the context of climate change (e.g., Denton, 2002), this focus can ignore the complex, dynamic, and intersecting power relations, and other structural and place-based causes of inequality (Nightingale, 2009; UNFPA, 2009; Arora-Jonsson, 2011). The complex interactions among weather events and climate, dynamic livelihoods, multidimensional poverty and deprivation, and persistent inequalities, including gender inequalities, create an ever-shifting context of risk. This shows that climate change, climate variability, and extreme events synergistically add on to and often reinforce other environmental, social, and political calamities (IPCC, 2012a). Even though these intricate relationships are recognized, there is no one conceptual framework in the literature that captures them simultaneously, and there aren't many studies that combine livelihood hazards with slow climatic changes or sudden onset occurrences. Therefore, it is helpful to pay special attention to how livelihood dynamics interact with climatic and non-climatic stresses to uncover processes that steer poor and vulnerable individuals in undesirable directions, keep them in poverty, or open avenues for improved well-being.

Weather events and climate affect the lives and livelihoods of millions of poor people (IPCC, 2012b). Even minor changes in precipitation amount or temporal distribution, short periods of extreme temperatures, or localized strong winds can harm livelihoods (Douglas et al., 2008; Ostfeld, 2009; Midgley and Thuiller, 2011; Bele et al., 2013; Bryan et al., 2013)

Poverty has several major reasons, but one of them is the effects of climate change. They frequently serve as a threat multiplier, which means that the effects of climate change amplify other sources of poverty. In low-, middle-, and even high-income nations, poverty is a complicated social and political issue that is entangled with processes of socioeconomic marginalization, cultural deprivation, institutional inequity, and political oppression. In addition to making financial poverty worse, climate change also undermines people's feeling of wellbeing, agency, and belonging. Due to this complexity, it is extremely challenging to identify and quantify the attribution of climate change. Due to their lack of access to finance, insurance, government support, and effective response choices like asset diversification, transient poor and marginalized people can be driven into chronic poverty by even little changes in seasonality of rainfall, temperature, and wind patterns. Such changes have been noticed in informal communities and urban slums, as well as drylands, the Arctic, and high mountain habitats. Extreme occurrences, such as floods, droughts, and heat waves, can severely deplete the assets of the poor and further jeopardize their way of life in terms of labor productivity, housing, infrastructure, and social networks. Indirect effects, such as rises in food

costs because of climate-related catastrophes and/or policies, can also negatively affect the poor in rural and urban areas.

Weather events and climate also erode farming livelihoods through declining crop yields (Hassan and Nhemachena, 2008; Apata et al., 2009; Sissoko et al., 2011; Sietz et al., 2012; Li et al., 2013), at times compounded by increased pathogens, insect attacks, and parasitic weeds (Stringer et al., 2007; Byg and Salick, 2009), and less availability of and access to non-timber forest products (Hertel and Rosch, 2010; Nkem et al., 2012) and medicinal plants and biodiversity (Van Noordwijk, 2010). For agropastoral and mixed crop-livestock livelihoods, extreme high temperatures threaten cattle (Hahn, 1997; Thornton et al., 2007; Mader, 2012; Nesamvuni et al., 2012); in Kenya, for instance, people may shift from dairy to beef cattle and from sheep to goats (Kabubo-Mariara, 2008)

2.6 Chapter Summary

This chapter has revealed that, though an abundance of studies exists that explore climate change impacts on livelihoods, the majority does not focus on continuous struggles and trajectories but only offers snapshots. An explicit analysis of livelihood dynamics would more clearly reveal how people respond to a series of climatic stressors and shocks over time. This chapter concludes that, few studies examine how structural inequalities, power imbalances, and intersecting axes of privilege and marginalization shape differential vulnerabilities to climate change. Although there is growing literature on climate change and gender as well as on indigeneity, other axes such as age, class, race, caste, and (dis)ability, remain underexplored. Understanding how simultaneous and intersecting inequalities determine climate change impacts shows which drivers of vulnerability are at play in one context, while absent in another. This shows that women and other vulnerable groups will continue to experience the negative effects of climate change if nothing is done about it. The gap that this research seeks to bring to the academic discipline is the relationship between climate change, gender inequality and the feminization of poverty in Bindura manhenga village. The next chapter will discuss research methods which are used to answer research questions in this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter profiled the road map of the study to explore climate change adaptation responses and poverty among rural women in Bindura Manhenga village, Zimbabwe. It clearly outlines the research methodologies used. The areas under focus included the research approach and design, population and sampling, data gathering tools, ethical considerations, data collection procedures and data presentation and analysis. The procedures which were adopted to ensure reliability and validity of the study were fulfilled.

3.2 Research approach

This research has adopted a qualitative research approach to collect data. According to Creswell (2014:4) qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. Therefore, the fact that this research is dealing with human subjects and exploring a problem makes the qualitative approach suitable. To ascertain the gender dimensions of climate change adaptation responses among women in Manhenga Village, there was need to gather information from people who were well versed with climate related issues and poverty. Qualitative research has the strength of being conducted in a natural context with few controlled variables, although it is less amenable to generalization to meet the criteria of validity, trustworthiness was applied to this study. To get an informed understanding of the research problems related to climate change adaptation, response, and poverty among women in Mannhenga rural, in-depth interviews, focused group discussions and observations were used.

3.3 Research design

According to Cresswell (2013), a research design is a structure that holds together the research and enables the researcher to address the research questions in ways that are applicable, efficient, and effective. As such research design includes an outline of what the researcher did from formulating the research question and its operational implications to the final analysis of data (Kothari, 2004). Bless and Hodgson-Smith concur with the view by saying research design is the planning of any social research from the first to the last step.

This study adopted a descriptive and explanatory research design. Exploratory research has the goal of formulating problems more precisely, clarifying concepts, gathering explanations, gaining insight, eliminating impractical ideas, and forming hypotheses. Literature research, survey, focus group and case studies are usually used to carry out exploratory research. Exploratory research may develop hypotheses, but it does not seek to test them (Darabi, 2007) The way in which researchers develop research designs is fundamentally affected by whether the research question is descriptive or explanatory.

On the other hand, descriptive research involves gathering data that describes events and then organizes, tabulates, depicts, and describes the data collection process. It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. When in-depth, narrative descriptions of small numbers of cases are involved, the research uses description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a quantitative study and its implications (Kothari, 2004).

3.4 Population

A population is a group of units or objects considered potentially useful in the dissemination of required information for the research under study. In other words, a population is the entire pool of possible subjects that have some common characteristics that are of interest to the researcher. In this study the target population is Bindura rural district residents which has a total of 169 841 people (Zimbabwe National Statistics Agency 2022).

Table 3.2: categories, target population and sample size

Category	Target population	Sample size	Research instrument
Women	85,770	15	Face to face interviews, focused group discussion and observations
Men	84,071	5	Face to face interviews, focused group discussion and observations
Community leaders (one village head & one agriculture officer	5	2	Face to face interview
Total		22	

3.5 Sampling

Sampling is “the act or process of selecting a suitable representative part of a population for the purpose of determining the characteristics of the whole population” (Tuckman, 2001:7). Put differently, it is a finite part of a statistical population whose properties are studied to gain information about the whole population. In this study it was impossible to collect and analyze all the data available in the population due to restrictions of time, money, and access. For this reason, therefore a small group of elements were chosen from the population, and this formed the sample. The crucial question they argue is not so much whether sample respondents` characteristics differ from those of other people but rather whether such differences matter.

In the selection of women and men in this study the researcher used purposive sampling to select the participants in this study. Purposive sampling was done to select the sample for this study. Purposive sampling allows greater depth of information from a smaller number of chosen cases. According to Saunder et al 2009, purposive sampling allows the researcher to make judgment on the cases which answer the researcher`s inquiry, to meet the goals of the research. In this study the researcher relied on her experience as a gender expert to select units that would help achieve the objectives of the research. In other words, the researcher chose to administer interviews and group discussions to those participants who in her opinion were likely to supply her with the required information and who were willing to share it (Singleton and Straits, 2008). The advantage of purposive sampling is that it allows the researcher to home in on people or events which there are good grounds for believing will be critical for the research. Instead of going for the typical instances, a cross-section or a balanced choice, the researcher can concentrate on instances which will display a wide variety – possibly even a focus on extreme cases – to illuminate the research question at hand. In this sense it might not only be economical but might also be informative in a way that conventional probability sampling cannot be.

As for the participants in the community leader`s category the researcher used convenience sampling to single out who to administer the interview to. In this type of sampling the participants were selected just because they were easiest to recruit for the study and the researcher did not consider selecting participants that were representative of the entire population. The convenience sampling technique became ideal because the community leaders were not free all the time because of their busy schedules.

3.5.1 Sample size

The sample size is the number of respondents who are required to participate in the survey to ensure statistically valid conclusions (Saunders et al, 2003). In the current study a sample size of 22 units comprising 20 men and women, and 2 community leaders was selected as depicted on Table 3.1 above.

3.6 Data gathering tools.

In the words of Leedy and Ormond (2001:52) a data gathering tool is “a device used by the researcher to collect data, to answer the research question as well as an instrument designated to measure knowledge, attitude and skills of a study population.” They can be questionnaires, interviews, observations, document analysis, or field research. In this study the data gathering tools that were found to be ideal were observations group discussions and face to face interviews. Employing many data collection instruments increases and provides credibility and trustworthiness of a research.

3.7 Justification of research instruments

3.7.1 Interview

The interviewing technique was meant to probe the research participants to communicate their opinions, views, feelings, ideas, beliefs, and attitudes about the subject matter under discussion. Rubin and Rubin (2005:5) define interviewing as “a way of uncovering and exploring the meanings that underpin peoples’ lives, routines, behaviours and feelings.” Thus, interviews with a structured questionnaire as an instrument of data and information collection were also used in this research. Interviews were done in an informal setting. Through interviews respondents’ views and opinions and experiences were noted.

The researcher made use of structured interviews with women and men and unstructured interviews with community leaders. In the unstructured interview the researcher did not enter the interview setting with a planned sequence for the respondent. The objective of the unstructured interview with the community leaders was to cause some preliminary issues to surface so that the researcher could decide which variables needed further in-depth investigation. An unstructured interview had the advantage of being unbiased by any pre-ordained misconception that the researcher may have had, the disadvantage was that it was found to be very time consuming, and questions could wander away from the objectives of the research (Castillo, 2005).

A structured interview was conducted when it was known at the outset what information was needed. In this study the researcher had a list of predetermined, standardized questions (from the questionnaire) which were carefully ordered and worded in a detailed interview schedule and each research participants were asked the same question, in the same order (Castillo, 2005). Each question was pre-planned and explored a specific topic that was the content of the questions used to manage the direction of the interview. Structured interviews in this survey ensured that each interviewee answered the same questions, and their opinion was canvassed for specific areas of enquiry only. Castillo (2005) cautions against an unstructured interview, stating that the interview direction is normally heavily biased by the predetermined questions and there is usually limited opportunity for the interviewee to provide further information. In this study the researcher removed the bias by being objective and open minded during the interview process.

3.7.2 Advantages of interviews

The few unstructured interviews provided the researcher with massive data within a short space of time. Data was collected in a natural setting and facial expressions, or non-verbal communication or behavior were easily noted by the researcher. The researcher clarified the questions that could not be easily understood, and probing techniques also helped in more information being availed on the subject. The researcher 's listening skills, ability to maintain and control the interview towards answering the structured questions were brought to the test, fortunately as the researcher had done pre-tests her proficiency prevailed in this process. To improve the response rate, the researcher built good rapport with respondents, free interactive atmosphere, and assured respondents of confidentiality of their views or experiences.

3.8 Observations

To synthesise the above data gathering methodology, onsite observations also informed this research. This was because climate change adaptation responses were recorded after seeing them. This is unlike relying on prospective reports and testimonies from community leadership and the people themselves. Observation offers the social researcher a distinct way of collecting data. It does not rely on what people say they do, or what they say they think. It is more direct than that. Instead, it draws on the direct evidence of the eye to witness events firsthand. It is based on the premise that, for certain purposes, it is best to observe what happens. Classic social surveys involved observations of things like poverty and living conditions. Such observations followed the tradition of geographical and ordnance surveys, with their emphasis on looking at the landscape. Observations serve to remind researchers that they can use a range

of specific methods to collect data and that we should not get hung up on the idea of a social survey as meaning the same thing as a postal questionnaire survey. As well as asking people what they do and what they think, observations can also look at what they do. Observation checklist is attached see appendix B.

3.9 Group Discussions

To acquire the necessary information group discussions were conducted. The discussions were carried out with women, and men in Manhenga village to clarify facts about the effects of climate change in the area. The focused group discussions lasted 30 -45 minutes. Two group discussions were conducted, the sample was divided by two.

3.9.1 Advantages of focus group Discussions

The main advantage of focus group discussion is that they are useful for exploring ideas and concepts. They also provide a window into participants' internal thinking and can obtain in-depth information. It also Allows probing and most content can be tapped.

3.9.2 Weaknesses of focus group Discussions

It may be difficult to find a focus group moderator with good facilitative and rapport building skills. Reactive and investigator effects may occur if participants feel they are being watched or studied. It may be dominated by one or two participants, but this was solved by ground rules which stated that a person can contribute on an issue only once. Difficult to generalize results if small, unrepresentative samples of participants are used. Usually, should not be the only data collection methods used in a study, they must be triangulation of data collection instruments like in this case where it is used with other tools like interviews and observation.

3.9.3 Validity and reliability

According to Parker (2009) trustworthiness means the plausibility of a study's findings. The researcher took steps to ensure that the findings are accurate and supported by data. To obtain trustworthiness the researcher filled in the interview questionnaire in person. The response rate was 100%. The researcher also engaged in face-to-face unstructured interviews with community leaders to get up-to-date and relevant information. The different sources of information assured the researcher that the theories drawn from the methods were relevant, reliable, and valid.

In research validity refers to the degree to which a test measures what it purports to measure (Saunders et al, 2011). In this study the researcher enhanced the validity of the research by

taking note of the research objectives, making sure the interview questionnaire addressed the themes highlighted in the objectives and analyzing data and arriving at conclusions and making recommendations basing them on the themes obtained from the objectives formulated at the start of the study.

3.10. Ethical considerations

The researcher considered ethical issues in the research, since ethics are norms of conduct that distinguish between acceptable and unacceptable behaviour. They encompass the whole of moral behaviours and a person's philosophy of life (Blumberg and Letterie, 2008). Ethics imply preferences that influence behaviour in human relations. Quite often ethics go hand in hand with values which deal with issues pertaining to what is right or wrong and what is good and desirable (Babbie & Mouton, 2001:470).

Ethical aspects addressed by the researcher included first obtaining authority before embarking on the research, respect for a person's freedom, the right for self-determination, autonomy, volunteerism, confidentiality, consent, and respect for person's freedom. All subjects were politely asked to participate by the researcher prior to the study. Subjects were adequately informed about the nature of the study, and they were free to withdraw anytime during the period of study.

3.10.1 Permission

Literature indicates that the process of gaining access to a research site and getting permission to select subjects is viewed as a vital aspect of research. In this study, preparations to seek permission to conduct the study were dealt with well ahead of the date for the commencement of the actual study. Permission of entry was sought from Manhenga village head. Saunders et al (2003) support the importance of paying careful attention to sensitive topics when seeking permission to conduct a study.

3.10.2 The right for self-determination

The right to self-determination was fully observed by the researcher and this was demonstrated by requesting the subjects to volunteer to participate in the study on their free will (Saunders et al (2003).

3.10.3 Anonymity

Principles of anonymity involved separating subjects from the information they were giving by requesting them not to write their names on any of the papers they handled. All respondents were advised not to disclose their identity. The researcher assured the respondents that all the information regarding the study would be kept nameless (Castillo, 2005).

3.10.4. The right to decide to participate.

The right to decide to participate is based on the ethical principle of self-determination which basically is the participant 's moral right to decide concerning participation in the study or not. The researcher practiced the expected professional obligation to inform participants fully and truthfully, the purpose of the study, consequences if there were any gains or any possible risks so that participants could make appropriate decisions.

3.10.5 The right to privacy

The right to privacy is regarded as a personal value which entails the individual 's right to decide when, where, to whom and to what extent the person 's attitudes, beliefs and behaviour can be revealed. In this study the privacy of participants regarding the information and their identity were maintained and safeguarded with absolute care. Once again it must be emphasized that the researcher acted with the necessary precaution where the privacy of participants was relevant.

3.11 Data Analysis and Presentation

Qualitative data was analysed using thematic analyses according to the research objectives and software programme excel. According to Braun and Clarke (2006) and Joffe (2012) thematic analysis is a systematic way of finding answers to research questions. Furthermore, it is a method used for identifying, analysing, and reporting patterns or themes within data collected. In addition, thematic analysis is a method that works to reflect reality or to unravel the surface of reality. Braun and Clarke (2006) states that a theme captures something important about the data in relation to the research questions or questions that drive the research. There was data reduction (selecting, focusing, simplifying, abstracting, transforming), data display (organized, compressed), and conclusion drawing or verification (noting irregularities, patterns, explanations, possible configurations, propositions (Miles & Huberman 1994). Hindle (2004) identifies data analysis techniques as methods used to analyse data irrespective of either the methodical cluster within which the technique is applied, or the methods used to collect the

data. Data followed a process of transcription, coding, analysis, presentation of results and Content analysis of secondary data.

3.12 Chapter summary

This chapter discussed the methodology used to conduct this study on climate change adaptation, responses, and poverty among women in Bindura Manhenga village. A descriptive and explanatory research design was used. As for the sampling technique the researcher used judgmental or purposive sampling for women and men in the village and convenience sampling for community leaders. The chapter also discussed the data collection instruments used, which are the face-to-face interview, group discussions and observations. These instruments measured the variables, women and men's opinions and community leaders' opinion on the negative effects of climate change on the lives and livelihoods of women in Manhenga village. Validity and reliability of measurement and findings and ethical considerations were also discussed in the chapter, followed by a presentation of plans for analysis of data. The next chapter covers data presentation and analysis.

CHAPTER 4

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.1 Introduction

The previous chapter outlined the research processes and selected the suitable research methodology and the data collection methods that were used in this research. The research also justified why these methods were suitable for this research. This chapter focuses on the presentation of the gathered data. The chapter also presents the results obtained from the face-to-face interviews, observations, and focused group discussions. The layout of the chapter includes face to face interviews and focus group discussion response rate and demographic data for the participants. Thematic analysis was applied since it is recommended as a useful and flexible qualitative analytic method, (Braun, 2012:80). It was necessary to apply thematic analysis for this study to properly extract the issues that relate to the focus of this research, which is Climate change adaptation responses and poverty among rural women in Bindura Manhenga village.

4.2 Face to face and Focus group discussion response rate

The population target was 22 people and data were gathered from a sample target of 15 women, 5 men and 2 from the village head and the agricultural officer. More so, the same type of interview guide was used for all the participants. All the 22 respondents participated during the face-to-face interviews and focus group discussions, thus giving a percentage of 100% response rate. The face-to-face interview and focus group discussion response rate was favourable and acknowledgement was given to the participants who were prepared to spare their time to support and contribute to this academic research.

4.2.1 Negative effects of Climate Change affecting rural lives, livelihoods, in Manhenga village.

Socio-Demographics of Participants

AGE DISTRIBUTION

Attribute	Frequency	Percentage
Age in Years		
21-30	8	37%
31-40	10	45%
41-50	2	9%
51 and above	2	9%
Total		100%

Table4. 1 showing Age Distribution of Participants

The majority (45%) of the participants involved in the study were between the ages of 31 and 40 years, 37% were between 21 and 30 years, 9% were 41 and 50 years and the other 9% were aged 51 and above.

EDUCATION LEVEL

Attribute	Frequency	Percentage
Primary	10	45%
Secondary	7	30%
Tertiary	0	0
No formal Education	5	25%
Total		100%

Table 4.2 showing Educational Levels of Participants

About 77% of participants had primary or secondary education, and 23% had no formal education. This affirms that the participants were average education to understand and comprehend questions and discussions giving the researcher confidence that the information obtained was genuine.

MARITAL STATUS

Attribute	Frequency	Percentage
Married	9	41%
Widowed	6	27%
Divorced	7	32%
Total		100%

Table4. 3 showing Marital Status of the Participants

Whilst about 59% were single (widowed or divorced), the remaining 41% were married. The distribution percentage of participants showed all status levels were represented in the study

and this gives confidence to the researcher that information obtained is a fair representation of facts.

RELIGION

Traditional	10	45%
Christianity	8	36%
Muslim	0	0%
non-believers	4	19%
Total		100%

Table 4.4 showing religious beliefs of the participants.

Most participants were traditional/non-religious 45%, 36% were Christians and 4% were non-believers they indicated that, they neither practice traditional nor Christianity.

YEARS IN FARMING

5-10 years	5	23%
11-20 years	10	45%
21 and above	7	32%
Total		100%

Table 4.5 showing years of farming by participants.

About 23% of the participants had 5 to 10 years-experience with farming, 40% had farmed for 11 to 20 years, and only 32% had over 21 years- experience with farming.

Knowledge or understanding of climate change.

	Yes	No	Total
do you know what climate change is	15	7	22
percentage of sample	68%	32%	100%
Gender representation of sample	Yes	No	
Women	13	2	
Men	2	3	
community leaders	1	1	

Table 4.6 Knowledge and understanding of climate change.

68% of the respondents indicated that they knew about climate change and how it affected their lives, 32% indicated that they had no information about climate of 13 women knew and understood about the effects of climate change. Female respondents were aware of changes in

climatic conditions of the area. This was mainly based on their observations in changes in temperature and rainfall patterns over the years. Participants demonstrated knowledge on climate change based on their experiences with the phenomenon and linked it with rising temperature and unpredictable rainfall patterns.

During the focus group discussions most, participants indicated that climate change had affected their lives in many ways with other mocking those who had indicated that they did not understand anything about climate change. One community leader even expressed sadness and challenges brought by climate change when he narrated the disaster and destruction of the cyclone IDAI which affected the people of Chimanimani and Mozambique. He narrated the loss of lives and livelihoods in these areas reminding those who had expressed no knowledge of climate change.

“The seasons nowadays, keep on changing, it used to rain in due season, but now, it even rains in the dry season. Temperatures also continue to be higher than we used to experience. These tell me that something is really happening with the weather and climate around us.”
(Participant, in-depth interview)

“I am of the view that God sometimes ceases rain from falling on our crops simply because of our evil deeds. The other day I heard that a man killed his wife in the bush, and another killed a young girl for money, why won't God be annoyed when all these evil things are going on? I am saying this because, sometimes, it stops raining right after we have sown our crops.” -
(Participant, in-depth interview)

“I have observed some changes in weather patterns”. Normally, I plant my crops in the third month of the year, but it is not so now, the rainfall pattern has changed, and unstable now. Last two years, the rains started in the fourth month, but it was a different show all together last year. It started in the second month and stopped at the end of the third month and never came back until the sixth month when all our crops were destroyed.” (Participant, in-depth interview)

Sources of information on climate change

source of information	Female	male	Yes	no
Radio	10	5	68%	32%
Newspapers	5	5	45%	55%
community meetings	12	5	77%	23%
family members and friends	15	3	82%	18%
Marketplace	8	5	59%	41%
Other	3	2	23%	77%

Table 4.7 sources of information on climate change

Regarding sources of information on climate change, the majority 68% indicated information was received from radio that is the local FM stations, most man got their information from newspapers representing 45% of the sample, while 82% got information from family and friends with others indicating that mostly school children have this kind of information through their homework from school. Community meetings were also a major source of information, with political leaders, community leaders and even church leaders sharing this kind of information to educate and prepare communities.

“it’s my grandson who told me that he’s learned from school that the climate around us keeps changing and we’ll be experiencing worse conditions regarding temperature increases with less rainfall. As to why these changes, he was unable tell.” (Participant, interview)

“I remember we had a session with our local agriculture officer telling us about the need to change the crops we plant and monitor the changes in the seasons so that we buy seeds which are resistant to droughts and go well with short farming season.” (Participant -interview)

Some of the reasons given for the observed changes in climatic conditions ranged from ‘not knowing exactly’, to superstition.

“.....this is a difficult question, hmm, I’ am not God so I cannot explain the reasons why rains are not falling as they should, and temperatures are high. However, I think that our sins are so much that God cannot bear it any longer and has decided to punish us with heat and scanty rainfall.”

“The climate is changed in this area because there are increases in temperature over long periods of time than usual, and now we cannot differentiate between rainy and dry seasons properly, it rains anyhow during the year unexpectedly.” - (Participant, interview)

All the female-farmer respondents were aware of changes in climatic conditions of the area. This was mainly based on their observations in changes in temperature and rainfall patterns over the years. Knowledge on climate change and its impact was, however, poor. Participants demonstrated scanty knowledge on climate change based on their experiences with the phenomenon and linked it with rising temperature and unpredictable rainfall patterns, regarding sources of information on climate change, the majority indicated no information from external sources. Only a few had shallow information from few school children with limited information from local FM stations.

4.2.2 Adaption strategies to negative effects of climate change

The unpredictable rainfall pattern, coupled with high temperatures, according to the study participants, that have had some effects on their lives include poor yield, droughts, soil erosion on farmlands, wilting of crops, low and poor water resources, and failure to plant/cultivate in due season.

	Do not agree	Agree	no comment	
climate change has affected your ways of living	8	12	2	22
percentage of sample	36%	55%	9%	100%
gender representation of sample				
Women	6	9	1	
Men	2	3	1	
Total	8	12	2	
percentage of sample	36%	55%	9%	100%

Table 4.8 Shows how climate change affected your livelihoods.

The researcher asked the group how the climate change has affected their lives, 36% indicated that climate change did not affect their ways of living but highlighted that economic challenges have indeed made their lives difficult. 55% however agreed that climate change has affected their ways of living in the rural areas with 9% having no comment on the question. In the 36% who did not think that climate change affected them 6 were women and 2 were men and in the 55% 9 were women and 3 men with 1 man and woman having no comment. An in-depth interview with one participant revealed this challenge when the woman stated that:

She used to earn money through agricultural activities, where she had her fields growing maize and selling to the agents from Harare who would come to collect her produce after harvesting but now the drought has brought difficulties and has reduced her output significantly. She further indicated that she could send kids to school from the income but now she can no longer afford that she is depending on her husband income which has reduced her self-reliance and financial freedom. This was also strongly agreed to by one man respondent indicating that he used to be helped greatly by the income from farming which was earned by his wife while he worked in town they would earn enough to support the family with they would share responsibilities but now he has to shoulder all the monetary responsibilities because the wife is now earning less due to drought which has affected their community due to climate change.

The researcher further discussed the impact of climate change with the community leaders who expressed much concern about food security due to droughts and changes of farming seasons. One leader indicated that.

'I have no idea where all these changes will take us. In the villages, if you lose property due to disasters you can only rely on neighbours' generosity to help you. In cases of thefts and crop destruction, we used to have a community field where everyone would go, and work and the produce will be kept by the chiefs to give out to the poor. However, people nowadays kept the produce for themselves because there is reduction in output and it has become each man for himself with his family leading increase in poverty, with many households being led by women in rural areas with men working in towns many rural women have been left with difficulties in adapting to climate changes and droughts.



Figure4.1 showing women with poor yields after the harvest.

Source field observations.

Some female participants noted that the unstable nature of rainfall sometimes led some people not to plant crops at all in some seasons. These have consequently impacted on their economic lives and their very existence as humans, and is witnessed as: increased poverty levels, threatened food security, increased workload of female farmers such as walking long distances in search for water, poor school performance among their daughters, migration of the men/husbands to cities in search for greener pastures, leading to increased burden of care of children on the women alone.

“I just finished harvesting my maize. The reason behind poor yield is poor rains if some crops fail others will not. maize is a good crop for some of us to plant because it matures very fast, so when it rains late, I do not cultivate any crop again apart from the maize and groundnuts”
- (Participant, interview)

“I know the rains are not falling, but the problem is, we do not have good farmlands, that is the more reason why we are not getting enough food. Though I agree that sometimes the earth gets very hot, however, if we own good and enough farmlands, we will be able to produce more food.” - (Participant, interview)



Figure 4.2 showing women and girls fetching water from a natural source and showing also dried borehole.

Source field work observations

Due to climate change most of the water sources have dried and villages have to walk for a distance of about 5km to fetch water and this has affected the performance of the girl child at school and in most cases, girls have dropped out of school to help with so called women duties in society. One participant noted that;

At times we walk for more than 5kilometers to fetch water after that we also walk for many kilometres to fetch firewood resulting us spending most of time covering distance to look for water sources or other sources of energy. I will not be able to go to school and most of the time this leads to early marriages with most girls running away from these challenges.

Some responses from other participants

When I grow vegetables in my garden, I can only rely on other villagers to come and buy or send to nearby school to sell to teachers. If sales are poor, I am forced to dry the vegetables which are very difficult to sell.’ (Female Villager Participant, in her 50s)

‘We do not have access to loans or money to support our small businesses as many of us are very poor and do not have assets to approach banks or other money lending institutions. Because of our poverty, we are afraid to borrow money since we do not have the collateral security required by the financial institution for them to recover their loans in the event we fail

to pay back. This is a big challenge to us which disadvantage us to improve our household income and reduce poverty.’ (Female Village Participant, in her 30s

‘No organisation has provided training to us on how we can grow our businesses. Only in agriculture, the Agricultural extension officer visited once but we were not given enough education on how to grow cash crops which can increase our household income. Our limited knowledge is a barrier as we venture into less attractive livelihood programmes ...’ (Female Community Participant, in her late 50s)

Adaptation Strategies

adaption strategies	yes	percentage	No	percentage
Planting of drought resistant and early maturing crops:	17	77%	5	23%
Multi-cropping/mixed farming and inter-cropping	19	86%	3	14%
Working on people’s farms in exchange for food or money	10	45%	12	55%
Migrating to other places in search of job:	5	23%	17	77%

Table 4.9 adaption strategies employed by women.

Source interviews with participants

77% of the participants indicated that they were now planting drought resistant and early maturing crops such as soya beans, millet, groundnuts, and others, 23% indicated that they were still using the old traditional crops. 86% noted that multi-cropping or mixed farming and inter-cropping was the new strategy they were using to counter the effects of climate change with 14% noting that they were not changing their ways of farming. On working in other people’s farms to complement income 45% stated that they had considered that option and 55% noted that they would not work in other farms. Some participants noted that they would take the last option of migrating to other areas for survival representing 23% of the participants while the other 77% noted that leaving their home areas was not an option they would stay and struggle on trying to adapt the climate change challenges.

Other maladaptation activities Interviews with community leaders revealed that farmers in the area are engaged in cutting down trees and selling of firewood, applying inorganic fertilizers

to increase soil nutrient which in turn influence climate change. farming in valleys and along nearby riverbanks resulting in dry up and pollution of rivers. A significant number of participants, especially the elderly, mostly plant drought resistant and early maturing crops like sorghum, cowpea, groundnut, beans, among *others*.

“.....at times I have to go and work in the nearby farm for some small amount of money or food so I can cater to some extent for my family.” - (Participant, in-depth interview)

“At times I go and cut firewood from the nearby farm to sell on the side of the main road, this practise is risky as the law enforcing agents and environmental agents are always chasing and arresting us, but we have no choice we keep going back because this has become part of the activities to complement our income.” (Participant, in-depth interview)

“If you travel along the Bindura highway you see most of us selling our sweet potato produce along the roadside for survival, one has to work hard in order to earn money or put food on the table.” (Participant, in-depth interview)



Figure 4.3 showing some women working in the fields harvesting their soya bean crop.

Source field work observations

4.2.3 Challenges faced by women while trying to adapt to the negative effects of climate change.

challenges faced by women in adapting to climate change effects	Yes	percentage	No	percentage
The lack of access to competitive markets	20	91%	2	9%
The lack of support to increase access to credit facilities	15	68%	7	32%
The lack of training of women for economic empowerment	19	86%	3	9%
Lack of modern technology to stimulate rural women's livelihoods	10	45%	12	55%
Lack of access to drought resistant crops	20	91%	2	9%

Table 4.10 challenges faced by women in trying to adapt to negative effects of climate changes.

91% of the participants indicated that there was lack of access to competitive markets for their produce, 68% felt that there was lack of support from credit institutions on credit facilities to the rural women to support their small projects. Participants also indicated that there was lack of training of women for economic empowerment with 86% of participants agreeing to this factor, however 55% noted that lack of modern technology to stimulate rural women's livelihoods. 91% also attested that they lack access to drought resistant crops.

Some responses from other participants on challenges faced by women in trying to adapt to the negative effects of climate change.

'The major problem is that we as women we do not know anything about climate change and how we can prevent it. When cyclones and heat waves occur, our agricultural production is affected. Most families rely on past seasons yields for seeds (mbeu) and must scrounge for money to buy fertilisers. It is quite sad because we have continuously lost our hard-earned produce to erratic climatic conditions either the water will be too much and drown everything or the sun comes and burns everything.' (Female Participant)

'We do not have access to technology such as computers that can be useful for improving marketing and access to information on our livelihoods. We have made several requests to the government and stakeholders to assist us without any success. Anyhow, we need technical knowledge on how to use these modern machines.' (Female Participant, early 30s)

'No organisation has provided training to us on how we can grow our businesses. Only in agriculture, the Agricultural extension officer visited once but we were not given enough education on how to grow cash crops which can increase our household income. Our limited knowledge is a barrier as we venture into less attractive livelihood programmes ...' (Female Community Participant, in her late 50s)

'When I grow vegetables in my garden, I can only rely on other villagers to come and buy or send to nearby school to sell to teachers. If sales are poor, I am forced to dry the vegetables which are very difficult to sell.' Villager Participant, in her 50s)

'We do not have access to loans or money to support our small businesses such as having a grinding mill, market gardening and many other initiatives, as many of us are very poor and do not have assets to approach banks or other money lending institutions. Because of our poverty, we are afraid to borrow money since we do not have the collateral security required by the financial institution for them to recover their loans in the event we fail to pay back. This is a big challenge to us which disadvantage us to improve our household income and reduce poverty.' (Female Village Participant, in her 30s)

4.3 Thematic Analysis of Research Findings

In this study the researcher was observing important themes relating to the effects of climate change on women's rural lives, livelihoods, and poverty in Manhenga village.

The researcher analysed the findings according to the thematic analysis based on the responses from the participants. The respondents were 22 and they all responded to all the face-to-face interviews and focus group discussion questions presented to them by the researcher which related to the major research questions listed below:

1. Negative effects of climate change affecting rural lives, livelihoods, and the feminisation of poverty in Manhenga village.
2. Knowledge or understanding of climate change.
3. Sources of information on climate change.
4. Adaptation strategies to climate change negative effects.

All the 22 respondents successfully responded to the face-to-face interviews and focus group discussion. The researcher followed the procedures of thematic analysis, and the responses were grouped under collective themes. More so, these themes are further discussed, and relevant supporting literature review was cited to support the ideas presented.

4.4 The negative effects of climate change affecting rural lives, livelihoods, and the feminisation of poverty in Manhenga village.

4.4.1 Poverty

Almost all respondents asserted that climate change brings negative effects on the livelihood of the people.

Khaday and Ali (2023) states that most people rely on natural resources for their day-to-day survival, and they have limited capacity to cope with the extremes of climate change brings. Poor people will be impacted by changes in food production, higher consumption prices and changes in rural incomes because of impacts on agricultural productivity and prices driven up by either gradual changes in long-term climate trends or more frequent and severe natural disasters due to crop yield failures. More so, harsh natural climatic environments such as extreme weather and natural disasters, cause devastating results to production activities and increase the probability of poverty.

4.4.2 Water Scarcity

Most of the participants highlighted that due to climate change water scarcity has become a major setback in Manhenga village.

McCarthy (2020) highlighted that access to water is becoming threatened by climate change, thus frequent droughts increased evaporation and changes in rainfall patterns and run-off particularly impact water availability. When droughts and extreme temperatures dry up sources of water women must travel longer distances to collect water for cooking, drinking, cleaning as a result they have less time to pursue other sources of income generating projects which prevents them from becoming economically independent. With less water available women who rely on individual gardens and farmers' markets are less able to cultivate and process produce. Furthermore, the consequences of climate change increase the burden for women and the girl child, thereby causing them to travel further to obtain daily supplies, leaving less time for other chores and potentially exposing them to greater risk to their safety.

4.4.3 Poor yields

Generally, the respondents felt that poor yields were caused by climate change. Changes in climate have resulted in more arid environments for agricultural production, which has shifted Zimbabwe's five main agro-ecological zones. Rainfall patterns and crop production

progressively deteriorate from region 1 to 5. It causes the reduction of available resources for plants, which fail to produce enough biomass, seeds, and yield. Extreme climatic events such as extreme heat, and drought has led to water scarcity which results in low crop yields as a result decline in agricultural productivity discourages the farmers and may lead to change in livelihood especially in the rural setting.

4.5 Chapter Summary

Climate change has enormous devastating impacts on rural women, the main challenges affecting these women' ability to cope with the current climatic problems are lack of enough knowledge and information about weather changes, illiteracy, lack of access to credit facilities, lack of access to farming implements like drought resistant crops, water scarcity and other challenges leading to abject poverty, with its attendant economic, social, psychological, and emotional problems. Over the years, rural women have found varied ways of coping with these changes, based on traditional knowledge and practices. However, a better understanding of how farmers perceive climate change, ongoing adaptation measures, and the factors influencing decision to adapt farming practices is needed to craft policies and programmes aimed at promoting successful adaptation of the agricultural sector. In making informed decisions about climate change, timely and useful information is necessary. Rural women must therefore be consistently educated on climate change and its effects, with training on the necessary sustainable adaptation strategies to build their resilience. Policies that target rural female farmers to appropriately adapt to climate change and device modern agricultural techniques and practices that boost food production among vulnerable farmers and minimize maladaptation strategies, are also necessary. A holistic approach to enhance the agrarian and entrepreneurial education of women is paramount in Manhenga village, Bindura to achieve women's economic empowerment. The next chapter will summarise the findings of this research, conclusions coming from the research and offer some recommendations to the problem of climate change responses, adaptation, and poverty among women in Manhenga village in Bindura.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter gives a summary of findings, conclusions and recommendations emanating from research findings on climate change responses, adaptation, and poverty among women in Manhenga village, Bindura. It became clear that responses to climate change take place within the boundaries of a society rife with social divisions along the lines of gender, class, age, ethnicity, and many other factors. These disparities prevent certain groups in society from participating meaningfully in decision-making, perpetuate an unequal distribution of labour, and erect obstacles to the access, control, and ownership of resources. As a result, how varied men and women adapt to and recover from extreme weather events that endanger their lives and livelihoods is shaped.

5.2 Summary of findings

This research observed that, Manhenga village in Bindura, has experienced increasingly unpredictable extreme weather events like frequent prolonged droughts that plague the area. This has resulted in the loss of vital pastures, water, and salts for livestock, all of which are necessary to produce animals. In the past few decades, the area has also experienced significant ecological and social-economic changes in the form of urbanization, and an inflow of immigrants. The communities' established coping mechanisms have been undermined by these changes and the unpredictable weather events. Along gender lines, changes in procedures, livelihood pursuits, and income sources have resulted from this.

This study discovered that women typically put in more labour to ensure household subsistence during periods of extreme weather, such as droughts and floods. Less time is available for women to access education and training, enhance their skills, or find employment. Women would have to walk further to collect drinking water and wood for fuel in such a situation, which would add to their load. In the community of Manhenga in Bindura, women face discrimination due to their gender in terms of their human rights, political and economic standing, access to land, living circumstances, exposure to violence, education, health, and access to finance/loans for their businesses. The vulnerability of women is made worse by an additional stressor called climate change.

Evidence from this research continue to show that, men and women respond differently to climate variability due to the societal norms practiced in the community. Many women are

eager to take on new jobs or duties because they are very concerned about the welfare of their children. Despite the additional burden this place on women, many have been testing social norms, which has led to some changes in how men and women interact. Even though the success of these countermeasures against more severe climate-related impacts is still unknown, they are not fool proof since the structural reasons for their vulnerability to these impacts are not being addressed by the approaches being utilized to address negative effects.

This research also revealed that, despite the vulnerability of rural women in Manhenga village, women are not only seen as victims of climate change, but they can also be seen as active and effective agents and promoters of adaptation and mitigation. For a long time, women have historically developed knowledge and skills related to water harvesting and storage, food preservation and rationing, and natural resource management. For instance, in Africa mostly in rural areas, elderly women serve as knowledge reservoirs because of their inherited skills in catastrophe preparedness and early warning systems. This generational transfer of knowledge and experience will be able to significantly improve local adaptation capacity and maintain a community's way of life. Gender responsive community-based measures must be used to do this and enhance the adaptive capacity of women, notably in Manhenga village. They will be better equipped to bring about the necessary change to achieve the objectives set forth by Agenda 2063, the SDGs, the Sendai Framework on Disaster Risk Reduction, and the Paris Agreement if they are backed by a more conducive environment.

5.3 Conclusions

According to the intersectionality theory that was utilized in this study, this research concludes that climate change is one of the biggest worldwide concerns of the twenty-first century, and its effects differ depending on the region, generation, age, class, income level, and gender. It is clear from the results of this study on climate change adaptation, reactions, and poverty among rural women in Manhenga village, Bindura, that those who are currently most disadvantaged and vulnerable would likewise suffer the worst effects of climate change. The poor are anticipated to be disproportionately affected by climate variability and change and, as a result, to be in the greatest need of adaptation techniques. The effects of climate change on gender, however, vary. As a result of their proportionately greater dependence on threatened natural resources and their representation as the majority of the world's poor, women are increasingly perceived as being more vulnerable to the effects of climate change than men. In addition to

the roles, responsibilities, decision-making, access to land and natural resources, opportunities, and requirements that are shared by both sexes, men and women differ in these areas as well.

Additionally, this study suggests that there is a connection between gender and the felt negative consequences of climate change based on the lived experiences of women in Manhenga village. Women frequently hold roles burdened by environmental change, such as water collection and smallholder farming, which instantly experience the effects of drought or disaster, because of gendered societal norms and inequality. The disproportionate effects of climate change on women amplify gender disparities, such as economic and political marginalization and lack of political participation.

According to this study's findings, strategies that aim to eliminate these disparities—such as granting women greater access to credit would be a positive move. Local farmers in Manhenga Village will be able to use adaptive methods once they have access to land, education, extension services, technology, inputs, credit, and finance. Communities and households will be better able to comprehend the risks and vulnerabilities associated with climate change because of these initiatives. Women will have the knowledge necessary to choose crops that will survive droughts. In addition to using gender-sensitive, farmer-led, community-based, and innovative techniques to improve capacity and increase food production, they will be given the freedom to discuss and analyse challenges and opportunities. Local women farmers may be helpful in encouraging the use of climate-resilient techniques in agriculture if they were given more access to tools, resources, and chances to participate in decision-making. Additionally, there is growing agreement that for development programs to be effective in reducing women's disproportionate poverty, their devalued or ignored contributions to the economy must be taken seriously.

From the above points of discussion, women are not only discriminated by men in their quest to effectively put in place climate change adaptation strategies, but they are also affected by their reproductive burden and status. This research then proposes that Laws and development programmes common in Zimbabwe should always champion gender analysis especially on issues to do with climate change adaptation strategies and poverty in Zimbabwe.

From the foregoing, the inescapable conclusion is that women have, to a larger extent been trapped into poverty owing to the weak societal structures, prejudices common rural communities and in many cases their voices are never taken up seriously further worsening their livelihood status. Equally ridiculous are the societal tags imposed on women, which at

times make women docile and becoming irrelevant in terms of crafting climate change adaptation strategies starting at family level.

5.4 Recommendation

Since agriculture is the mainstay of rural communities and women are more vulnerable to the adverse effects of climate change than males, it is important to promote awareness about climate change and its effects among these communities. While many people are aware of the causes and effects of climate change, others are unaware of them. It's important to improve our ability to adapt to the effects of climate change. It is important to promote and sustain local adaption techniques. Because it appears to be impossible for the nation to mitigate climate change, we must intensify our adaptation efforts.

The consequences of climate change on gender, particularly as it relates to water, food security, agriculture, energy, health, disaster management, and conflict, should be identified and addressed via adaptation measures. Inequalities in access to resources, including credit, extension and training services, information, and technology, as well as other significant gender issues related to climate change adaptation, should also be considered.

Planning and funding for development must consider the priorities and needs of women. At both the national and municipal levels, decisions about how to allocate funds for projects to combat climate change should involve women. Investing in programs for adaptation, mitigation, technology transfer, and capacity building must also take gender equality into consideration.

It is important to conserve and encourage local copying techniques as well as Indigenous knowledge of agriculture, livestock management, handcraft production, and coping with changing climates. It is important to encourage crop diversification and crop intensification.

Maladaptive activities must be stopped and eradicated to fully adapt to climate change. Maladaptation is the term for adaptation strategies that enhance vulnerability rather than decrease it.

APPENDIX A: Interview Guide

1. What are the negative effects of climate change affecting rural lives, livelihoods, and the feminisation of poverty in Manhenga village?
2. What do you understand about climate change?
3. Where did you get the sources of information on climate change?
4. What are the Adaptation strategies or methodologies in place to combat the negative effects of climate change in Manhenga village?
5. What are the challenges faced by women in trying to adapt to the negative effects of climate change?

APPENDIX B: OBSERVATION CHECKLIST

OBJECTIVE	YES OR NO	COMMENT
1.Negative effects of Climate Change affecting rural lives, livelihoods, and the feminisation of poverty in Manhenga village.		
1.1Poor yields after harvest	Yes	Researcher observed poor harvest of maize crop, soya beans and other crops.
1.2Water scarcity	Yes	Some boreholes did not have water in Manhenga village
1.3 Threatened food security	Yes	Farmers used to have store houses to store crops but now store houses are next to nothing, affecting lives and livelihoods.
2.Effects of climate change on women and the poor.		
Food shortage	Yes	Women as custodians of the kitchen now eating small portions of food to feed the whole family.
Water Scarcity	Yes	As nearby boreholes and well dried up women and girls were now walking long distances of about 5km to fetch water.

Shortage of firewood	Yes	Women and girls walk long distances to collect firewood putting their lives in danger and leaving less time for girls to study.
3. Adaptation strategies used by rural women to adapt to the negative effects of climate change.		
3.1 Growing drought resistant crops like, soya beans	Yes	The researcher saw people in Manhenga village harvesting drought resistant crops.
3.2 conserving water	Yes	
3.3 Use traditional methods of farming	Yes	Participating in government initiative of pfuvhudza.

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