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DEPARTMENT OF DEVELOPMENT STUDIES

**ASSESSING WOMEN AND GIRLS ADAPTATION TO CLIMATE
CHANGE AND VARIABILITY IN RURAL ZIMBABWE: THE CASE OF
MUTOKO WARD 15 (2000-2017)**

BY

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**A DISSERTATION SUBMITTED TO THE FACULTY OF ARTS IN
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STUDIES HONOURS DEGREE**

DECLARATION

I, **Gladys Tariro Mesoenyama** declare that this research is my own work. All the scholarly work cited in the research was acknowledged.

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APPROVAL FORM



The undersigned supervisor confirms that they have supervised the student **Gladys Tariro Mesoenyama**'s dissertation entitled: “**Assessing Women and Girls Adaptation to Climate change and Variability in Rural Zimbabwe a case of Mutoko ward 15 (2000-20017)**”. The dissertation is submitted in partial fulfillment of the requirements of the Bachelor of Arts in Development Studies Honors degree offered by Midlands State University.

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DEDICATION

I dedicate this work to my family. It was tough but with your love and support it was possible. To my late parents Mr. and Mrs. Mesoenyama and to my late uncle Mr. Maxwell Kagoro, I also dedicate this to you hoping that wherever you are I have made you proud. Rest in Peace my beloved. This work is also dedicated to everyone who was there financially, emotionally and in every way possible. To my friends, the Kagoro family, the Kafamba family, Dambiranwa family and the Mesoenyama family, I would like to say thank you for being there words alone cannot describe how grateful I am to you. May the good Lord bless you abundantly and grant all the desires of your hearts. Finally this work is also dedicated to the women and girls of Mutoko ward 15 for making this dissertation a reality and everyone around the world and who is affected in one way or the other by climate change.

ABSTRACT

This study assesses women and girls adaptation to climate change and variability. It identifies the impacts of climate change on women and girls and the reasons why they are more vulnerable as compared to their male counterparts. The study also identifies the adaptation strategies being employed by rural women and girls in trying to cope with the impacts of climate change and the extent to which these adaptation strategies have been successful. The research was centered in Mutoko ward 15. In trying to gather information the researcher made use of structured questionnaires, interviews, focus group discussions and direct observations. The researcher found out that women and girls are more exposed to the impacts of climate change because of their gender constructed roles. The researcher found out that women and girls in ward 15 were exposed to the impacts of climate change which included sexual exploitation, scarcity of water and energy sources and food insecurity. They are exposed to such impacts because they do not have access to and control over resources; they lack information about climate change, they are not educated and lack participation in decision making on issues which affects them like climate change. In trying to adapt to climate change, women and girls in ward 15 have employed various adaptation strategies. Some of the adaptation strategies which they are employing include irrigation, growing drought resistant crops, borehole drilling, and migration and off farm activities. However, the research found out that these adaptation strategies have not been effective. This is due to the fact that they do not have access to money or means of production, they also do not have control over resources and land and also they lack the decision making power in the society. It is in this light that the research makes various recommendations towards the empowerment of women so that they can participate in the decision making process of the issues that affect them.

ACRONYMS

AIDS-	Acquired Immune Deficiency Syndrome
AFDB-	African Development Bank
CBD-	Convention of Biological Diversity
CSO-	Central Stastical Office
EMA-	Environment Management Agency
GHG-	Green House Gases
GSCVA-	Gender Sensitive Climate Vulnerability Capacity Analysis
FAO-	Food and Agriculture Organization
FDGs-	Focus Group Discussions
HIV-	Human Immune Deficiency Virus
IPCC-	Intergovernmental Panel on Climate Change
LEAP-	Local Action Environmental Plans
NGOs-	Non Governmental Organizations
REDD-	Reducing Emissions from Deforestation and Forestry Degradation
SIA-	Soroptimist International of Americas
STIs-	Sexual Transmitted Infections
UKICIP-	United Kingdom Climate Impacts Program
UNICEF-	United Nations International Children Emergence Fund
UNDP-	United Nations Development Program
UNIFAD-	United Nations Fund for Agricultural Development
WEDO-	Women Environment and Development Organization
WHO-	World Health Organization
ZIMSTAT-	Zimbabwe National Statistics Agency

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Chapter 1: The Problem and Its Setting

1.0 INTRODUCTION

This study seeks to assess the coping strategies of women and girls in ward 15 of Mutoko district to climate change and variability. It begins by tracing impacts of climate change and variability in a bid to then establish how they have coped or adapted to the impacts. It particularly seeks to evaluate the extent to which the adaptation strategies adopted by women and girls to survive in the context of climate change and variability have enabled them to survive the impact. This is particularly given the concurrence among scholars that women and girls evaluate the impacts of climate change and variability. Climate change is a global problem affecting the whole world; however studies have shown that, women and girls are the most affected by this phenomenon.

This chapter introduces the study. It provides the background of the study, conceptual framework where key terms of the study are fully explained, problem statement, study objectives revealing the aim of the study, research questions which seeks to answer the requirements of the research, significance of the study which seeks to explain why this study is of so much importance, delimitations of the study, limitations of the study as well as the structure of the dissertation.

1.1 BACKGROUND OF THE STUDY

Climate change is about long term changes in weather conditions that differ significantly from the previous average. It manifests itself in droughts, floods that are caused by global warming or increases in temperatures due to greenhouse gas emissions (Shumba, 2012). Climate change has become a global problem with the developing countries being the most vulnerable. Africa, Asia and Latin America are the regions likely to experience severe effects of climate change. According to Intergovernmental Panel on climate change (IPCC) (2007), the African continent is one that will be most affected. The IPCC(ibid) further states that Africa is the most vulnerable continent because

“part of that vulnerability is simply down to geography- already the hottest continent, Africa is expected to warm up to 1.5 times faster than the global average.” Zimbabwe being a part of Africa is also experiencing the effects of climate change, there is evidence from records since 1900 that surface temperature has increased by 0,4 degrees Celsius (Brazier, 2015).

Everyone is vulnerable to climate change but the levels of vulnerability differ along gender, age and racial lines. When it comes to Zimbabwe, people in the rural areas are more vulnerable to climate change as compared to their urban counterparts. Most Zimbabweans live below the poverty datum line. Poverty is higher in rural areas with around 76% of rural people affected (Brazier 2015). Poverty in rural areas is mainly caused by adverse climate change and environmental conditions that disrupt agriculture, the main livelihood activity (Brazier, 2015).

Women who constitute the majority of the world’s poor are affected adversely by climate change. They rely on agriculture a sector which is highly sensitive to climate change thus according to Brazier (2015), women are more vulnerable to the effects of climate change, primarily as they constitute the majority of the world’s poor and are more dependent for their livelihoods on natural resources that are threatened by climate change and variability. As a result of their socially constructed gender roles, they tend to experience the effects of climate change more than their male counterparts. While men are capitalist largely concentrating on off farm activities which brings them remuneration, women and girls will be busy undertaking unpaid roles as best explained by the Marxist Feminist theory. In carrying out their socially constructed unpaid roles like securing food, water and firewood women and girls are exposed to the effects of climate change. Women are further vulnerable because they depend on males for their livelihoods who earn money while they undertake unpaid roles.

Everyone have a relationship with nature, men, women, boys and girls. Nature provides water, firewood and oxygen a necessity for human survival. However women and girls are in constant contact with nature, the relationship they have with nature exposes them more to the impacts of climate change as compared to their counterparts. The relationship between nature and women and how they are vulnerable to climate change is best explained by the eco-feminism theory. The feminist links nature and women saying that there is a relationship between women and nature thus women tend to suffer more because of the degradation of the environment hence their vulnerability. Women and girls suffer more due to the degradation of the environment because depletion of forests means they have to walk long distances in search of firewood and since they rely on agriculture degradation of the environment threaten food security of which one of their responsibilities is to secure food. Women and girls are further exposed to the impacts of climate change and variability as they are excluded in decision making processes, particularly, rural women are powerless given that they are not involved in decision making due to male domination. Brazier (2015), states that rural women and girls face social, political and economic barriers that limit their coping capacity. They usually do not have the power, voice and confidence to influence situations, hence, they are vulnerable. Therefore, this study seeks to investigate the coping and adaptation strategies that are being employed by women and girls despite of their weakened position or capabilities.

1.2 CONCEPTUAL FRAMEWORK

Adaptation

According to the Gender Sensitive Climate Vulnerability Capacity Analysis (GSCVA) (2014), adaptation is adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities. Adaptive capacity is defined as the ability of the system to adjust to climate change (including climate variability and extremes) to moderate potential damages and take advantage of opportunities or to cope with the consequences. So in the context of this study, adaptation is the ability of women and girls to cope with the effects of climate change and live with the reality of such changes when they have been exposed to the impacts of climate change and variability.

The UNPD in Levina and Tirpark (2006) defines adaptation as a process by which strategies moderate, cope with and take advantage of the consequences of climatic events are enhanced, developed and implemented. The UKCIP (2003) defines adaptation as an outcome of a process that lead to a reduction in harm or risk of harm or realization of benefits associated with climate variability and climate change. These two definitions bring out that when people are exposed to climate change adaptations is a way or means to moderate and lessen the impacts of climate change. As a result of the impacts and vulnerability to climate change, people find means and ways to cope with the impacts despite the harsh conditions hence reducing the harm and risk of climate change thus moderating the vulnerability created by climate change. The research therefore aims at looking at how women and girls in ward 15 are moderating or coping with the effects of climate change and variability.

Climate change

Climate change is a scientifically proven phenomenon that includes “any changes in the climate, due to natural factors or as a result of human activity” (IPCC, 2007). In other words, climate change can be understood as the long term change in weather patterns. Climate change has been manifested through droughts and floods which are caused by the increase of temperatures and rainfall. Such changes may all be attributed to the emissions of Green House Gases (GHG) into the atmosphere and the degradation of the environment through the loss of vegetation. It is triggered by natural causes and it is also caused by human activities such as the emission of greenhouse gases in industries.

Climate variability

Climate variability refers to the climatic parameter of a region varying from its long term mean. Prof Robert Oglesby of the University of Nebraska Lincoln defines climate variability as the climatic parameter of a region varying from its long term mean. In short it is a variation of climatic conditions from year to year of a location. The difference from year to year can be the amount of rainfall of a location or temperatures every year in a specific period. Some years are characterized by a lot of rainfall while other years might receive average rainfall or below average. Some years can have high temperatures or lower temperatures depending with the time and location. The difference between climate change and climate variability is climate change is realized after a lot of years and its impacts are felt in a long run while climate variability is the difference of climatic conditions from year to year and its impacts are imminent.

1.3 THEORETICAL FRAMEWORK

The research is framed by the Eco-feminist theory which was propounded by Vandana Shiva and Dobsche (1993). The theory is of the view that there is an interrelation between women and nature. Women tend to suffer more due to the degradation of the environment in comparison to men. Eco-feminists stress that men being the major capitalists, tend to benefit from the degradation of the environment, while women bear the day to day brunt of such degradation. The theory informs the study which seeks to examine women and girls adaptation in a context whereby, because of their gender assigned and socially constructed roles, the women and girls are in constant contact with nature. Their roles include fetching firewood and water and the provision of food. These resources are threatened by climate change which exacerbates environmental degradation.

In concurrence with the eco-feminists, Marxist feminists believe that women's oppression also stems from capitalism which they regard as the root cause of underdevelopment. They are of the view that the capitalistic nature of the economy places men at the apex of the economic ladder, relegating women to the bottom. This explains why women undertake unpaid duties which constrain them to the private sphere and they are also alienated from the means of production, further reducing their adaptation capacity.

1.4 STATEMENT OF THE PROBLEM

Women and girls depend on climate change sensitive resources which are the natural resources, the responsibility to secure food, water and firewood is entrusted to women and usually girls who alongside their mothers, carry out these duties. Climate change influences the responsibilities of women negatively as it has taken its toll on agriculture, water and energy supplies. Because women have no control over resources, and are excluded from decision making, they are more vulnerable to the impacts of climate change. Many rural communities are patriarchal in nature as men dominate, leaving women at the mercy of men. According to Mitchell et al (2007), women suffer more because they are poorer and marginalized. As such, they are less able to cope with the effects of climate change. Given such arguments which stress women and girl's high vulnerability to climate changes, this study seeks to examine how they adapt to the impacts of climate change. The study thus explores how, from their place of marginalization and high vulnerability to the impacts of climate change and variability, women and girls are adapting to climate change in rural Zimbabwe. Primarily this study aims to assess the effectiveness of these adaptation strategies in mitigating the negative impacts of climate change and variability for girls and women in ward 15

1.5 STUDY OBJECTIVES

1.5.1 General Objective

- To examine the effectiveness of women and girls adaptation to climate change in rural Zimbabwe, focusing on Ward 15 of Mutoko.

1.5.2 Specific Objectives

- To identify the impacts of climate change as experienced by women and girls in Ward 15 of Mutoko
- To identify the various adaptation strategies adopted by women and girls in Ward 15 of Mutoko.
- To examine the extent to which women and girl's adaptation strategies have worked to reduce their vulnerability to climate change in Ward 15 of Mutoko.

1.6 RESEARCH QUESTIONS

1.6.1 General Research Question

- How effectively have women and girls' adaptation to climate change in rural Zimbabwe, focusing on Ward 15 of Mutoko?

1.6.2 Specific Questions

- What is the impact of climate change as experienced by women and girls in Ward 15 of Mutoko?
- What are the various adaptation strategies adopted by women and girls in Ward 15 of Mutoko?
- To what extent have the adaptation strategies adopted by women and girls in Ward 14 of Mutoko reduced their vulnerability to climate change?

1.7 SIGNIFICANCE OF THE STUDY

The study was necessitated by the need to understand how far the adaptation strategies adopted by women and girls are working to reduce their vulnerabilities to climate change, focusing on ward 15 of Mutoko District. It is of great importance to the residents of Mutoko at large and those of ward 15 in particular.

Women and girls

While the study will be beneficial to everyone including males, it will be most beneficial to women and girls. “Women and girls are providers,...they are the main actors in the home and in the household food production (subsistence agriculture , household nutrition, water and fuel collection) .As such, they tend to be more directly reliant on natural resources and are particularly vulnerable as resources become scarce” Demetriades and Esplen (2008).This study thus aims to brings out the plight of women and girls in ward 15 in Mutoko as they are the ones more exposed to climate change because of their gender assigned roles. It explores their levels of climate change vulnerability, how they are coping with those vulnerabilities and the extent to which these coping strategies they are employing are effective. Given the fact that that in a patriarchal country such as Zimbabwe, women are excluded from the decision making process and discussions on important issues such as climate change and variability; their impacts on livelihoods and possible interventions. The study argues for the inclusion of women in matters of climate change and even on issues that affects them.

Local Government

The study will also help various stakeholders under Mutoko district including the local authority. Local authorities are responsible for the whole district wellbeing. The local authority gives

permission to NGOs who wish to operate in the district, so they should be aware of the situation in ward 15 so that they do not turn down potential donors who wish to help with regards to climate change and variability issues. Rural women are excluded in decision making; this study is of significance to the local authorities so that they incorporate women in climate change and variability programs since they are directly affected by the impacts of climate change. The study seeks to encourage women and girls to participate in making decisions which affect them. Local authorities are male dominated hence the need to incorporate women to make decisions which affects them. .

Central Government

The study will also be important to the Environmental Management Agency (EMA) whose mandate is to create a sustainable environment. There is need for EMA to embark training activities capacitating local authorities and various stakeholders everyone with environmental action plans because the majority of rural dwellers not just women and girls are not aware of the importance of conserving the environment. The Local Action Environmental Plans (LEAP) being spearheaded by EMA is of great importance as everyone is encouraged to take part in the fight to ensure the availability of a sustainable environment. LEAPS can be divided into Ward Environmental Plans or into Village Environmental Plans hence the study is significant to EMA so that it can help women and girls in ward 15 to identify environmental problems in their area and help them solve them so as to try and reduce the impacts the degradation of the environment of the study area.

Non-Governmental Organizations

Non-Governmental Organizations (NGOs) are of great importance to this study especially those whose focus is on rural development and particularly rural women's issues. Stressing women's

situation in the context of climate change and variability and their adaptation strategies to climate change, the study seeks to provide necessary information to draw the attention so that NGOs programming helps women in coping with the impacts of climate change. NGOs plays a very crucial part in the development of the country and the empowerment of women and girls they provide financial assistance, food security through food aid and provides capacity building on climate change and variability hence they are of great importance to this study.

1.8 DELIMITATIONS OF THE STUDY

The study focused on women and girls in Mutoko ward 15. It is concentrated on the vulnerability of women and girls to climate change and their adaptation strategies. This was largely influenced by the fact that ward 15 in Mutoko, popularly known as Makosa, is well known for receiving, low rainfall and high temperature. It is one of the most affected areas in Mutoko where climate change is concerned. With these conditions, women and girls are more vulnerable to climate change as compared to their male counterparts, thus they constitute the main focus of the study. The reason for this study is to assess the adaptation strategies being employed by women and girls in ward 15 and the extent to which they are successful. While the study does not lose sight of men, it however mainly focuses on women and girls.

1.9 LIMITATIONS OF THE STUDY

The study is focusing on ward 15 of Mutoko district. Considering the fact that Mutoko was one of the areas with the highest level of political violence in 2008, the researcher struggled to obtain information because people in that community are of the assumption that everything is related to politics. The researcher, therefore, had to communicate with traditional leaders beforehand to get

local authority consent and to build the confidence of their subjects and allow the researcher to carry out the study.

Financial and time constraints were also a hindrance to the study. With finances to print research instruments and travel back and forth between Mutoko and Zvishavane, well-wishers finally came in to provide assistance. In as far as time is concerned, the researcher had to deal with course work and hence classes at the Midlands State University, Zvishavane Campus while also travelling to and from Mutoko to collect data. She had to make full use of free days, leaving on Thursdays to return on Sundays.

Another challenge was that the majority of rural women are not educated. CSO (2007) noted that 6% of rural women do not have an education at all as compared to 1% of urban women. This means they are not well versed with the language of climate change, hence the researcher found it difficult to communicate with them to attain information. It is not surprising that conducting the field work using the English language proved to be a barrier. The researcher had to resort to Shona to obtain results and thus she had to translate testimonies to English herself.

Finally, the researcher encountered transport problems. Due to the poor condition of the road that leads to ward 15 from Mutoko center, very few motorists go to this area and this translated to a serious mobility constraint for the researcher.

1.1.1 Conclusion

The chapter managed to introduce the study as well as bring out the purpose of the study through the problem statement. It also showed why this research is very important. Its aim is to show the impacts of climate change as experienced by women and girls. The research objectives brought out the aim of the research and research questions show questions the research seeks to address.

1.1.2 STRUCTURE OF THE DISSERTATION

CHAPTER 1- The problem and its setting

This chapter introduces the study, it brings to light what necessitated the study and why there is a need to carry out the study.

Chapter 2: Literature Review

Chapter 2 provides a review of what other researchers wrote about women and girls adaptation to climate change and variability. It seeks to familiarize the researcher with the work which was written before.

Chapter 3: Methodology

Chapter 3 shows the data collecting tools and techniques used by the researcher in collecting information of the study

Chapter 4: Data analysis, presentation and Discussion

This chapter presents the data collected during the research, analysis of the data as well and it discusses the data collected during the research.

Chapter 5: Recommendations and Conclusions

Chapter 5 presents a conclusion to the whole study and try to give recommendations on what need to be done to reduce the impacts of climate change on women and girls.

CHAPTER 2: Literature Review

2.0 Introduction

The main aim of this literature review is for the researcher to familiarize herself with previous findings made by other scholars on climate change vulnerability of rural women and girls as well as their adaptation strategies to climate change. Climate change is a wide researched area of study with a variety of literature available. Literatures on climate change include climate change vulnerability, vulnerability of women and girls to climate change. The researcher aims to use this study as an opportunity to add on to the already available literature on climate change through finding out the extent of the vulnerability women and girls are exposed to in rural Zimbabwe focusing on ward 15 under Mutoko. The research also intends to find out the adaptation strategies being employed by women in ward 15 in trying to deal with climate change. The literature review will be guided by the research objectives as well as research questions.

2.1 Climate change

Climate change is a global phenomenon. It is affecting everyone globally the developing countries and developed countries. According to Brazier (2015), climate change is the long term change in the earth's climate caused by the release of greenhouse gasses such as carbon dioxide CO₂ and methane CH₄ which trap heat in the atmosphere causing the planet to become hotter global warming. The countries responsible for releasing the largest amount of greenhouse gases into the atmosphere are also the richest and the most industrially developed, Brazier (2015). The Human Development Report 2007/2008 by the United Nations Development Programme states that climate change is the defining human development issue of our generation. The detrimental effects of climate are felt in the form of natural hazards such as landslides, floods, hurricanes and droughts. Everyone on earth will be affected by climate change but the countries and communities that will

experience the most severe impacts are in the developing world, Brazier (2015). In support of Brazier (2015), the UNDP (2009), stated that every country will be affected by climate change. Because projections indicate that climate change will cause less secure means of subsistence, more vulnerability to hunger and poverty, exacerbation of social inequalities (including gender inequalities) and more environment degradation.

Stern (2006), agrees with scientific evidence presented by the IPCC and concludes that the economic impact of climate change is expected to be greater than previously expected. The report by Stern (2006) predicts that the risk and impacts of climate change will reduce global per capita consumption by at least 50% now and for the rest of the century. The report also states an increase of 3-6 degrees celsius in global temperature. The impacts of climate change is emphasized by the IPCC (2007), cited in Chigwanda (2016), where it argues that, it is estimated that by 2020 climate change will result in significantly less rainfall on the continent exposing a population of 75 million to 250 million to increase water stress and reduced yields from rain-fed agriculture up to 50%. The IPCC (2007), projections indicate that agriculture will be greatly affected in hot subtropical countries than in temperate subtropical countries.

Africa is one of the continents which will experience the detrimental effects of climate change. The IPCC (2007) stated that the African continent will be the one that will be most affected. This is synthesized by Brazier (2015) when she stated that Africa is predicted to be the continent that will be most affected by climate change mainly because of its global position, its vulnerable practices and its poor land practices. The economies of most African countries are agro-based which means with this phenomenon of climate change will affect the continent severely. In agreement with Brazier (2015), Chigwanda (2016) cites that 'Africa is partially vulnerable to climate change and disasters such as droughts because most livelihoods are agro-based.' The

Convention of Biological Diversity (CBD) points out that agricultural ecosystems and food security are especially vulnerable to climate change.

Zimbabwe being part of the developing world has been experiencing the impacts of climate change. There is evidence from records since 1900 that average annual surface temperature has increased by 0.4°C there are now more hotter days than shorter days than in the past..., Brazier (2015). According to Manjengwa et al (2014), climate change is one of the biggest threat facing humankind today and is already having adverse impacts in Zimbabwe in particular in the rural areas where the majority of the population (67 percent) lives and mostly depend on agriculture based livelihoods (ZIMSTAT, 2013a). Zimbabwe's economy is agro-based and according to the World Bank (1994) Zimbabwe's rainfall has one of the highest degrees of variability in the world. David and Hirji (2014) cited in Brazier (2015) synthesize this when they state that the World bank in partnership with the government of Zimbabwe has produced a report, predicting that climate change is likely to cause an annual rainfall decrease in all Zimbabwean catchments except in Mazowe and Manyame. In their report David and Hirji (2014) further states that the largest decline...will be in Runde and Mzingwane catchments where the average rainfall could decrease by between 12% and 16% by 2050. This analysis shows that climate change is happening and it is adversely affecting the world with the African continent being the most vulnerable.

Debates which have been put forward about climate change focuses on the scientific and technical solutions. The scientific and technical solutions offered include Reducing Emissions from Deforestation and Forestry Degradation (REDD), the Kyoto Protocol and in Zimbabwe there is the Environment Management Agency (EMA). These technical solutions have been trying to solve the problems which are related to climate change however despite these efforts climate change effects are still being experienced all over the world with the less developed experiencing the

severe impacts of climate change. The IPCC (2007) argued that those in the weakest economic position are often the most vulnerable to climate change, putting the developing countries at the most risk when it comes to climate change. Shumba (2012) asserts that ‘climate change contributes to food insecurity. Manjengwa (2014) and Brazier (2015) who says that most of the countries in Africa are agro-based and are the most affected by climate change. This is because climate change is affecting the rainfall patterns resulting in low yields thus food insecurity in Africa. The developed countries contribute a lot in terms of greenhouse gases but the developing countries suffer the consequences of climate change. The UNDP (2009) put it across that,...the poorest and most vulnerable countries will be the most affected. Ironically it is these countries that produce the lowest level of emissions.

2.2 Climate change vulnerability

Everyone is vulnerable to climate change but the poor are the most vulnerable to climate change. This is because they are already exposed to other vulnerabilities. Climate change adds on to their already existing vulnerabilities. With the severe impacts being added on to the poor by climate change, the poor will increasingly be affected. The UN Women Watch (2009) reports that in the rural areas of Africa and Asia, women and men are highly dependent on biomass such as wood, agricultural crops, masles and forest resources for their energy and livelihoods. These resources are highly sensitive to climate change making them vulnerable. The poor community’s vulnerability varies but the bottom line is that climate change is adding on to their already existing vulnerabilities.

The IPCC third assessment report states that developing countries are expected to suffer the most from the negative impacts of climate change. Dazie etal (2011), asserts that the most vulnerable people to climate change are most often the poorest, who lack effective coping strategies to deal

with these shocks and stresses and who have had to resort to ineffective responses. The impact of climate and the vulnerability of poor communities vary greatly but generally climate change is superimposed on existing vulnerabilities. Ummubig and Crammer cited in Chagutah (2010), are in coherent with this because according to them, a recent study shows that household level vulnerability in Zimbabwe is influenced by conflict, insecurity, inequitable land distribution, low education, poor infrastructure, gender inequality, dependence on climate sensitive resources, poor health status and HIV/AIDS. Chagutah (2010) further states that vulnerability is shown to vary from village to village with climate related water shocks such as droughts and floods creating both opportunities and challenges depending on the ability of the households to diversify its source of livelihood.

Therefore, adaptation is necessary and there is a need to integrate responses to climate change and adaptation measures to ensure sustainable development hence the need to involve women in the responses to climate change. Africa being one of the poorest continent in the world is vulnerable to climate change because as Chigwanda (2016) put it across that Africa is particularly vulnerable to climate change because most livelihoods are there are agro-based as they depend heavily on rainfall and it is estimated that 70% of women in Sub-Saharan Africa are small holder farmers who rely on rainfall. According to Abeygunawardena et al , it says that climate change will further reduce access to drinking water negatively affect the health of the poor people and will pose a real threat to food security in many countries in Africa, Asia and Latin America.

2.3 Vulnerability of women

Women tend to be at the receiving end on the issue of climate change. The eco-feminism theory put it across that women and nature are interrelated. Women and nature share a special relationship because women rely on climate sensitive resources like water and firewood. Climate change and

is already putting a strain on livelihoods especially those in the developing world. According to Demetriades and Esplen (2008) unequal relationships between women and men give rise to higher rates of poverty and a more severe experience of poverty by women than men. Women are at a disadvantage because they depend economically on men as it is put across by the Marxist feminism theory. The JIMAT Development Consultants (2008) cited in Chagutah (2010) stated that '... In the predominantly rural district of Chiredzi south east of Zimbabwe found that the most vulnerable households included female headed households...', thus women become more vulnerable to climate change as compared to men. As a result of their gender assigned roles women tend to have little time to earn a living, acquire any skills or even to engage in public activities which influences decision making. To synthesize the above arguments UNDP (2009) stated that seventy percent of the 1.3 billion people living in the conditions of poverty are women.

Women are regarded as a weaker sex which is perceived to be the reason for their vulnerabilities to climate change. The UNDP (2009) argue that women are vulnerable not because they are 'naturally weaker' but because they face different conditions of vulnerability than men. UNDP further states that women dominate the world food production (50-80%) but they own less than 10% of the land. This is one of the reasons they are more vulnerable than men. They are the main producers but when it comes to owning means of productions they are sidelined. In most of the developing world rural women are the main providers of basic food yet they do not own means of production.

Women are also vulnerable to climate change when it comes to health. Climate change poses as a health threat to women especially those in rural communities. According to Bonnetti et al (2004), in Nepal women suffer from bladder problems associated with carrying large amounts of firewood after they become pregnant. The biological makeup of women makes them more vulnerable to

climate change compared to men. In India Bronder and Thaxton (2004) stated that miscarriages in Uttarachal India is 30% higher than the national average and is associated with the heavy weights women in that rural zone have to carry to collect water and firewood. This proves that climate change is a threat to women's health. Women's health is not the only health threatened by climate change but also health in general. The World Health Organization (WHO) (2000) had declared that most health consequences will be adverse due to climate change.

2.4 Vulnerability of women and girls

Women and girl's vulnerability is made even worse by their socially constructed roles. The publication made by KARAT Coalition 'Connect' (2011) is in agreement that, women and girls' acute vulnerability in disasters is due to a host of gendered factors including cultural or religious restrictions on female mobility as well as differences in socialization of girls, which means they may not be equipped with the same survival skills as their brothers. In line with gendered factors Brazier (2015) further agrees that 'cultural norms burden women and girls with the responsibility to provide food, fuel and water, a responsibility that will be made increasingly difficult by climate change' hence their vulnerability. The UNDP (2009) further agrees with the above arguments, it states that as climate change and water sources dry up women and girls have to walk longer distances to collect water.

In most developing countries even in Zimbabwe women and girls bear the burden of fetching water for their families and the water is drawn from long distant sources. In agreement to this The UN women watch (2009) reports that in poor communities in most developing countries, women and girls are responsible for collecting traditional fuels, a physically draining task that can take 2 to 20 hours or more hours per week. Women and girls suffer most because of climate change hence the

need for this study to show the impact of climate change to women and girls as well as the extent of their vulnerability.

According to WEDO (2008) women and children are 14 times more likely to die than men during natural disasters. According to the report by Manjengwa et al (2014) poverty and social vulnerability add another layer and magnify the vulnerability of children already exposed to the impacts of climate hazards. This means children who live in geographical areas with adverse climate conditions are more likely to be more exposed to the climate change vulnerability unless they are provided with necessary social protection by their families and communities. Droughts which are induced by climate change impact negatively on children and denies them the right to food because of the irregular rainfall trends which results in low or no yields which is associated with the hunger of children. Climate change poses as a threat to the health of children. David and Hirji (2014) cited in Brazier (2015) intensifies the argument when they stated that, a survey in 2010 found that 39% of children in the country (Zimbabwe) were suffering from chronic under nutrition in the form of stunting. Droughts affect adversely education for children

There is evidence in line with this study which shows that women and girls are at a greater risk when it comes to climate change and vulnerability. Bern et al (1991) states that the 1991 cyclone in Bangladesh killed 140 000 people, the mortality rate of women was over 40 was 31 percent. According to the Soroptimist International of the Americas (SIA), (2008), more than 70% of the dead from the 2004 Asian tsunami were women. Karat Coalition in their publication 'Connect' (2011) stated that the hurricane Katrina which struck New Orleans, USA in 2005 predominantly affected African American women already the region's poorest, most marginalized community. This evidence shows that women and children are the most affected therefore there is need to

examine the impacts of climate change that women and girls are exposed to, the extent of their vulnerabilities and the adaptation strategies they have adopted to try and survive.

2.5 Vulnerability of girls as compared to boys to climate change

When it comes to climate change and children, girls tend to suffer more as compared to boys making women and girls the most vulnerable to climate change. Women and girls are the most affected because of a number of gendered factors. These factors include cultural and religious restrictions. According Swarup et al (2011), a study by the London school of economics in the UK analyzed disasters in 141 countries and found out that boys are likely to receive preferential treatment in rescue efforts. This is in agreement with WEDO (2008) which asserts that women and children are mostly likely to die in disasters, in this case girls are likely to die more as compared. Furthermore, Mearns et al (2010) substantiate the vulnerability of girls; he states that the huge challenges of preserving livelihoods in the context of increased climate variability and extreme weather patterns are often felt severely by women and girls. Chigwanda 2016 cited Chagutah (2010) stated that, a gender analysis of climate change also highlights the different vulnerabilities of men, women, boys and girls because of the socially constructed roles they play. This is because they are the main actors in homes and when it comes to household chores. They are directly reliant on natural resources and become more vulnerable when resources become scarce.

When it comes to education girls are more disadvantaged as compared to boys. Chigwanda (2016) cited that UNICEF reports that as many as 31 million girls of primary school age mostly from sub Saharan Africa are not in school and Winthrop and Mcgivey (2014) further state that, for those who have been enrolled, the dropout rate is even more troubling with 75% of girls starting school but only 8% finishing. According to the Millennium Development Goals monitor, education is fundamental in empowering women and girls, but worldwide, 75 million children including 41

million girls do not attend school. Lara (2004) stated that a key reason they do not attend school is that they are responsible for collecting water and firewood. This proves that climate change is making it even more difficult for girls to attain education. This shows that girls being compared to their counterparts they are most affected by the climate change phenomenon. The UN Women watch (2009) reports that girls are sometimes kept home from school to help gather fuels, perpetuating the cycle of disempowerment. Swarup et al (2011) states that, ‘interviewed in Lalibela district of Ethiopia reported that the time they spend fetching water increased substantially each day during droughts periods, fetching water could take up to 6 hours a day whereas previously it had taken around 2 hours, this makes it increasingly difficult for girls to attend and remain and succeed in schools’.

In the context of land degradation women and children pay a heavy price. According to the UNDP ‘... women and girls become vulnerable to injuries from carrying heavy loads long distances. It is during walking long distances in search of resources that they become vulnerable to sexual assault. Girls and women are the most affected, they likely face sexual assaults on their way to or from fetching water or firewood.

2.6 Analysis

A variety of literature has been put forward to postulate that women are in the frontline of climate change. Many previous literatures put a lot of emphasis on why women are more vulnerable to climate change. Women and children suffer are presented to be the most vulnerable. This study seeks to emphasize the fact that women are the most vulnerable to climate change. Women and children are the most vulnerable; Aranjo (2007) et al is in agreement with this as he states that women typically outnumber men by 14 to 1 amongst those dying from natural disasters. Women are further made vulnerable because they are economically dependent on men as postulated by the

Marxist feminism. The Publication by KARAT Coalition 'Connect' (2011) put it across that women's vulnerability'... is due to the factors such as women economic disadvantage and dependence on men, the discrimination they face in access to and control over productive resources as arable land and their decision making power. Brazier (2015) says that the disruption of the economy is most likely to be seen in agriculture and women constitute a large percentage of subsistence farmers in Africa, industry and tourism. Human health and livelihoods are under threat.

Previous literature encourages women to be involved in decision making process so that they are involved in trying to curb the problem of climate change however little solution is provided on how best they can tackle the problem. The solutions which are provided are suggestions from the outside world hence the need for the study to try and find the solutions from the women and girls themselves. Ghokale (2008) alludes that women are active resourceful disaster responders but most often are regarded as helpful victims. Therefore, this study seeks to bring about the ideas of women in ward 15 to see if they regard themselves as victims or if they are indeed 'active resourceful disaster responders' as Ghokhale (2008) stated.

Women and girls are at the receiving end they are the least informed about climate change yet they are the ones who suffers a lot because of climate change. Rohr (2006) says that during the 1991 cyclone in Bangladesh official warning never reached the women, since they were given to men in public places and seldom communicated on to the women and the rest of the family. This research is also very important to the women in ward 15 in Mutoko to equip them with information about climate change and not rely on men on the crucial information about climate change as well as to find out the reasons why they are not involved in decision making.

Many writers have put across the effects of climate change on women and girls in rural areas. The study is interested in rural women because Chagutah (2010) asserts that, available gender disaggregated data show how that proportionately more men than women live in urban areas..., this proves that more women live in rural areas hence are the most affected. Frost (2001) agrees with Chagutah (2010) when he says that, conversely, women predominate in the rural areas. This means that the rural community is the most vulnerable to climate change and women are the most affected.

Previous literature has suggested adaptation strategies for women and girls, there is need to get firsthand information from women and girls in rural Zimbabwe on how they are surviving in the context of climate change. The UN women watch (2009) states that women are more vulnerable to climate change than men..., the report further states it is important to remember, however that women are not only vulnerable to climate change but they are also effective actors or agents of change in relation to both mitigation and adaption. Therefore the study seeks to find how women and girls are the effective actors to both mitigation and adaptation in ward 15 of Mutoko.

A report on Poverty and Climate change states that adaptation is necessary and there is need to integrate their responses to climate change and adaptation measures into strategies of poverty reduction to ensure sustainable development. Women and girls being the most vulnerable therefore there is need to integrate their responses in terms of their adaptation strategies are concerned to ensure sustainable development take place hence the need for this study to try and find out that as the women of Mutoko ward 14 can do as effective actors of change is this era of climate change.

In conclusion, the literature review has tried to gather what other scholars before have written on climate change, climate change vulnerability and climate change on women and children (girls).

Many literature has been written concerning climate change the researcher has found some contributions to the study, some information which is in line with the study and also some gaps which need to be addressed and also to highlight the need to carry out this study with regards to the extent of vulnerabilities of women and girls, the impacts of climate change to them as well as the adaptation strategies they have employed to try and deal with climate change hence.

Chapter 3- Research Methodology

3.0 Introduction

This chapter presents the methodological approaches which were employed by the researcher in carrying out the study. It presents the research design, the methods and data collection tools associated with the selected research design, target population, sampling techniques, sample size and research ethics applied in carrying out this study.

3.1 Research Design

The research is guided by the qualitative research design. According to Quinn and Cochran (2002), qualitative research is characterized by its aims, which relate to understanding some prospects of social life and its methods which (in general) generate words, rather than numbers, as for data analysis. Since the definition of qualitative research stated that it aims to understand some prospects of social life, it is in line with the research which has the motive to uncover how women and girls are surviving in the context of climate change, based on their own explanations. Khotary (2004), states that qualitative research is concerned with subjective assessment of attitudes, opinions and behavior.

The aim of a research methodology is to try and systematically solve research problems. The advantage of qualitative research is that it examines complex questions and interpretations of socio-economic realities in a way that quantitative research design fails to do. According to Occupy Theory (2014), the data in qualitative research depends on human experience and is more compelling and powerful than data gathered through quantitative research. Mcqeen etal (2002) puts it that qualitative research demands the greater involvement of the researcher.

3.2. Data collection techniques and instruments

Research techniques are steps taken in the collection of data from the subjects of the study. Data collection can be referred to as the process of gathering and measuring information on a targeted population in a systematic fashion which enables one to answer relevant questions and evaluate the answers. Since this study is based on a qualitative research design, the researcher used data collection techniques and instruments informed by the qualitative methodology. In carrying out this research, the researcher thus made use of interviews, interviewing key informants like headmen and Agritex officers. She also utilized focus group discussions, observations and questionnaires.

3.2.1 Questionnaires

Data lies in the heads; attitudes and feelings of people under observation hence the need to gather data through written questions. Harper (2001), point out that a questionnaire is an important instrument of observing and recording data beyond the physical reaction of the observer which can be either structured or unstructured with the aim of recording information that is being researched upon. The researcher drafted questions related to the study to obtain data based on the experiences and understandings of the selected respondents. The respondents had to answer the given questions which directly related to the objectives of the study.

The advantages of using questionnaires are that, respondents were not under pressure to respond to the questions but took their time. This meant that they did not have to compromise their work schedules but answered the questions during times comfortable to them but within the timeframe necessary for the researcher to meet her own deadlines. In addition, the respondents did not answer under the influence of the researcher gaze, thus enhancing their freedom. Where informants needed

assistance to understand the questionnaires or any issue at all, the researcher was available for this purpose. In this context, the researcher administered 15 questionnaires and received almost all of them back in a commendable space of time. The researcher administered questionnaires to the key informants such headmasters of the primary and secondary schools respectively. The researcher gave them the questionnaires on the basis of their interaction with girls at school and with women as guardians. Agritex officers in the ward were also given questionnaires to fill because they have vast knowledge about climate change and how it affects women and girls in the ward and are in constant contact with women. The remaining questionnaires were distributed conveniently by the researcher to all the respondents who were able to read and write as well versed with climate change issues. For all the returned questionnaires, all questions were answered. The open questions were useful in getting clear explanations and information which helped the researcher to have a clear understanding of the extent of vulnerabilities of women and girls. Since this is a qualitative research design, closed questions were only useful insofar as they helped collect personal details needed to ground the study. The questions were also simple and easy to understand such that very few respondents needed assistance to answer them.

3.2.2. Interviews

The researcher also utilized interviews to conduct the study. Interviews resemble everyday conversations, although they are focused to a greater or lesser extent on the researcher's needs for data (Patton and Cochran, 2002). Kuman and Aaker (1999) defines an interview as direct contact between the interviewer and the respondent in a suitable environment and Kahn and Cannel (1957) cited in Tran Thi ut (2013) describe interviews as a 'conversation' with a purpose.

This is very true because the reason for conducting the interviews was to find out the extent of the vulnerability of women and girls to climate change and how they are adapting. Interviews are a flexible tool in carrying out a research. They should be credible. According to Patton and Cochran (2002), the questions we ask and the way in which we ask should be enable us to generate valid ('truthful') accounts of phenomena. Through interviews, respondents are given a platform to fully explain their experiences regarding the study. Tran Thi ut (2013) suggests that when combined with observations interviews allow the researcher to understand the meanings that everyday activities hold for people. In this study, women and girls were required to fully explain the extent of their vulnerability and also how they are coping in the context of climate change. Interviews gave the researcher a clearer understanding of women and girls plight due to climate change and also the ways and strategies they have developed to cope and creatively adapt to the impacts of climate change.

A total of 23 interviews were conducted during the research. The key informants of the research were Agritex Officers, headmen and headmasters of the local schools. Although the research was centered on women and girls, women and girls were the general informants of the study alongside a few males. When conducting the interviews the researcher mostly used open questions and first asked the respondents what they understood by the terms climate change and climate variability followed by the indicators of climate change in their community. This was done to try and establish if respondents understood what is meant by climate change as it was the basis of the research. After establishing if the respondents are aware about climate change, those who had no idea were given an insight of what is climate change so that they can be able to answer the questions that followed. The remaining questions were only answerable if respondents understood about climate change. Explaining to respondents made the interviews flow as the questions required identifying

impacts of climate change, how they are affecting them, identifying the adaptation strategies they are employing and the extent to which these adaptation strategies have been effective.

The interviews were of much help to the researcher as they managed to establish and measure attitudes of the respondents. They paved way for the respondents' perception as well as providing in depth information. Another advantage was that during the research interviews managed to capture information which was not easily attained from questionnaires. However given the fact that the research was done in a short period of time, interviews were time consuming and they were difficult to conduct since the researcher had to first explain what climate change was to most of the respondents, failure of the respondents to understand the concept of climate change rendered the interview useless.

3.2.3. Focus group discussions

The researcher adopted the Focus Group Discussion (FGDs) technique to gather data for this study. FGDs constitute a qualitative research technique where a group of individuals are asked their opinions, perception, belief, attitudes or practices regarding a given phenomenon (Kumar and Herger 2013). In this case, women and girls formed focus groups to share the extent of their vulnerabilities and also share their adaptation strategies in the face of climate change impacts. Kumar and Herger (2013) further stated that in focus groups it is important to pay attention to group dynamics when conducting a focus group since the loudest voice may dominate the conversation and drown out other options. This will be a draw back to the research since all women in each focus group are expected to provide data towards meeting the objectives of the study and failure to obtain their full testimonies on the impacts of climate change, their perceived and experienced vulnerabilities and strategies of coping and adapting to them are necessary to fulfill the study's objectives.

Each focus group consisted of 6 members and 4 focus group discussions were carried out during the study. The researcher conducted women and girls focus group differently. This was after realizing that girls were not comfortable answering questions in the presents of their mothers. The aim of the focus group was to collect data from respondents with different opinions beliefs, perceptions and attitudes at the same time. The researcher did not have problems as she conducted the focus group discussion with girls at Makosa High School, those who did not attend the school but were willing to join were also invited. It was convenient to all as it was done at lunch time. The focus group discussions were guided by the questions which were posed by the research. Since the focus group consisted of a considerable size everyone was given a chance to speak their mind regarding each question asked hence Kitzenger (1997), put it across that focus group discussions are predominantly beneficial when the researcher intends to find out the peoples understanding and experiences about the issues and reasons behind their particular pattern of thinking. Regarding women the researcher used the headmen as a means to communicate with participants as well as assemble them for the focus group discussions. Through the messengers of the sabhuku women were informed beforehand the reason for the meeting. Quite a number of women showed up but due to time constraint the researcher selected a few to participate.

It was very advantageous to make use of the focus group during the research since it generated the opportunity to collect data from group interactions. It was more time saving as compared to interviews. Focus group discussions ensured a speedy collection of data as compared to questionnaires; the information was available there and then. During the research assembling of a focus group discussion was a challenge especially of women. It was further constrained by the failure to acquire a conducive environment or atmosphere to facilitate the dialogue. Women wanted privacy; they did not want men to hear their outcry. They wanted an environment where

they felt free. This was a challenge and is the reason why they could not provide data hindering the prime focus of the Focus group which according to Patton (2002), is collecting high quality data in a social context. To solve the problem of privacy the researcher asked participants who wanted to volunteer to use their homes as venues to conduct the FDGs. Dealing with girls was much easier as the researcher made use of classrooms at Makosa High School, this move proved to be very efficient as the FDGs were conducted smoothly.

3.2.4 Observations

The researcher also applied observations as a data collection technique by which an individual or individuals gets first hand data on the subject under study. According to Khotary (2004), this method of observation ‘implies the collection of information by way of investigator’s own observation without interviewing the respondents’. This is useful in that the researcher will get firsthand information which is reliable and is free from bias. Such information is used to double check, confirm or refute data collected using other instruments. According to Tran Thi ut (2013), observation is a fundamental and highly important method in all qualitative inquiry. The researcher made observations of the extent to which women and girls are vulnerable to climate change, how they are adapting to the climate change phenomena.

Although the researcher failed to provide any pictures due to lack of resources she however managed to observe the decline of the vegetation coverage while moving around conducting interviews in the ward. Since the researcher spent most of her weekends in ward 15 conducting the research, while living among the people in the ward she managed to observe the distances women and girls walk to access water and firewood as well as experiences of women on how they are exposed to the impacts of climate change and variability.

3.2.5 Secondary sources

Secondary data is data that have already been collected and recorded by someone else and is already available from other sources (Tran Thi ut (2013). The researcher made use of a wide range of data sources which included internet, electronic journals, textbooks and research papers. These aided the researcher by aiding her to contextualize her work in existing discourse on women and climate change and contribute further insights on the subject.

3.3 Target population

The research will be conducted in Ward 15 of Mutoko District, located in Mashonaland East Province. As of the 2012 census Mutoko had a total population of 148 127. Of the total population 75 149 are females. While the population size of Ward 15 is not clear, it is not necessary in a qualitative research design to obtain the specific population as opposed to quantitative research.

3.4 Sampling technique

A sample is defined as a small part or quantity intended to show what the whole is like. When carrying out quantitative research, the sample size would depend on the total population since the sample is drawn in a mathematically precise manner. Punch (1998) argues that one cannot ‘study everyone doing everything’, hence the importance of sampling when doing a research.

Non probability sampling design

Non probability sampling represents a group of sampling techniques that helps one to select units from a population they are interested in studying. In this case the researcher was interested in women and girls who were the prime focus of her study. A chore characteristic of non-probability sampling technique is that samples are based on the subjective judgment of the researcher rather than random selection. Researchers prefer non probability sampling technique because the

procedures used to select units for inclusion in an area is often easier, quicker and cheaper when compared to probability sampling.

The researcher made use of purposive sampling and convenience sampling. Purposive sampling relies on the researcher's judgment when choosing respondents to participate. The researcher made use of purposive sampling when distributing questionnaires and when conducting interviews. Convenience sampling is another non probability sampling method which relies on data from the respondents who were conveniently available to participate in the study. The majority of the interviews which were conducted during the study were done using convenience sampling. When conducting Focus group discussions the researcher made use of convenient sampling.

3.5 Research Ethics

Research ethics provides guideline for the responsible conduct of a research. Ethics in research refers to doing what is morally and legally right when conducting a research. Bockman and Rog (2009) notes that the reality is there can be ethical concerns at every step of the research process. The researcher managed to take note on ethical concerns such as seeking permission, confidentiality and language when carrying out her research.

Seeking permission

As part of tradition in Mutoko, anyone who wishes to interact with the people in a community has to seek permission from the local leadership. The researcher sought for the permission of village heads in ward 15 of Mutoko before interacting with their subjects about climate change and variability adaptation of women and girls in the ward. Since the research involved girls' participation, the researcher also sought permission from parents and guardians before interacting with the girls. Those who were interviewed at school the researcher also asked permission from

the school authorities before carrying out the research. This is because every society have got its own rules and regulations that govern them society and should be adhered to.

Language

Language was also another consideration of the research. The researcher made use of local language so as to make participants comfortable. It was easier to use local language as the information was acquired easily. The researcher translated English questions to shona to suit the needs of the respondents when asking questions in line with the research objectives.

Confidentiality

The researcher ensured confidentiality and kept participant's anonymity (those who wanted to be anonymous). Pseudo names were used during the research to protect the identity of the participants of the research. This is because it is the duty of the researcher to protect the privacy of the research's participants who offered their contribution to the research. The information of the research was collected in confidence.

Voluntary participation

Everyone who took part in the research did it at his/her own freewill. The researcher did not force anyone to participate during the research. The researcher respected the decisions of those who did not wish to participate during the research.

3.6 Conclusion

This chapter gives a clear overview of the methodology that was used by the researcher in undertaking the research. The researcher took a qualitative research methodology approach to gather information. The data collection tools used by the researcher included interviews,

questionnaires, focus group discussions and secondary sources such as the internet and journals. In carrying out her research the researcher was guided by ethical considerations which were clearly stated in this chapter.

Chapter 4: Data Presentation, Analysis and Discussion

4.0 Introduction

This chapter presents the key findings of the research. The research has managed to show that climate change and climate variability is not gender neutral, however the poor are the most affected by this phenomenon and women who constitute the majority of the world's poor and are the most vulnerable as they are primarily responsible for food security alongside girls. There are some gender disparities when it comes to climate change, women and girls being the most disadvantaged. The major findings of the study showed that because of women and girls' socially constructed gender roles they are the most affected by the impacts of climate change. This is so because they are constantly in contact with climate sensitive sectors. The research also found out how women and girls are coping to the effects of climate change and the extent to which these coping strategies are effective. The findings are arranged using the research objectives. The study is centered on women and girls adaptation to climate change and climate variability in rural Zimbabwe focusing on ward 15 of Mutoko.

4.1 IMPACTS OF CLIMATE CHANGE AS EXPERIENCED BY WOMEN AND GIRLS IN WARD 15 OF MUTOKO.

Women are at the frontline of the impacts of climate change. It has been noted that climate change affects women and girls more than men because of the differences in their gender assigned roles. Women and girls have a weak economic position thus the IPCC (2007), put it across that 'those in weaker economic position are often the most vulnerable to climate change'. Many factors can be used to explain the reason why the impacts of climate change and climate variability affect women and girls more than men and boys. These impacts are felt through food insecurity, water scarcity, scarcity of energy sources, migration and knock on effects to mention a few.

4.1.1 Water scarcity

Water scarcity is one of the impacts being experienced by women and girls in ward 15. From the information gathered in ward 15, water sources are seasonal and they quickly dry up forcing people especially women and girls to walk long distances to access water. When water is scarce women and girls are primary water carriers for their families. A headman in the ward 15 in line with this stated that *'water sources are drying up very quickly and this adds on to the gender assigned responsibilities imposed on women and girls'*. Women and girls wake up as early as 2 am to fetch water and most of them stated that it takes about 30 minutes to fill one 20 litre bucket. Fetching water has proved to be a difficult task to women and girls in ward 15. Waking up early to fetch water has put a strain on the education of most girls in the ward. One of the women said *'we wake up as early as 2 am but we will manage to get water as late as 9 am, my daughter usually misses school when we fail to get water on time'*. In support with this Lara (2004), point out that, a key reason why girls cannot attend school is that they are responsible for collecting water and firewood.

4.1.2 Scarcity of energy sources

The research found out that the majority of people in ward 15 rely on wood as their source of fuel. From direct observations there is a high decline of forests hence deforestation because of the high demand of firewood. The scarcity of energy sources has exposed women and girls in ward 15 to severe impact of climate change and variability. There is evidence in ward 15 showing that vegetation coverage is decreasing. An Agritex officer who resides in the ward said that, *'there are some indicators of desertification in the ward and it has become difficult for people to access firewood'*. During focus group discussions women revealed that in the early 2000s it was not difficult to access firewood as it would take about 20-30 minutes to access firewood but now they can only access firewood after walking for about 5 -7 km to a mountain known as Nyaunzwa.

The Agritex officer further said that *'the decrease in forestry has increased the gender assigned role of women and girls'*. In line with this UNDP (2009), postulated that it is generally women who must collect firewood and other biomass products and they spent from 2-9 hours per day doing so. Most of their time is dedicated to searching firewood thus Modi et al (2005) postulated that the disproportionate of daily time and efforts women and young girls spend gathering solid fuels...could be used for other income producing activities, family subsistence or education.

4.1.3 School dropouts

Dropping out of school is another impact of climate change being experienced by girls in ward 15. The research found out that droughts are compromising the girls' right to education. They are trading school with household chores; they drop out of school to take care of their siblings while mothers look for means of survival. The girls in ward 15 said they couldn't leave their younger siblings behind while going to school thus they sacrificed their education for their sake. One of the interviewed girls said that *'I was always late for school because I had to make sure my siblings were ready for school before I left because my mother was absent looking for food , as a result I lagged behind at school so I had to drop out school.* Chagutah (2010), in line with this postulates that the workload increase substantially forcing many girls to drop out of school to assist with household chores. During interviews women revealed that they never wanted their children to drop out of school but the circumstances forced them to watch their children drop out of school. The research found out that girls have been forced to drop out of school due to household food insecurity and the decline of agriculture in the ward. Mrs. Agnes Chamvari (48) revealed that *'though it was a difficult decision to make my daughter Mary (16) had to drop out of school in form 2 to stay at home while I ran around to make ends meet because we had nothing to eat. For*

several years I had hoped that things will change but luck was not on my side'. She further stated things have been difficult since her husband died who used to provide for them financially.

4.1.4 Migration

Migration on the part of men has been another impact of climate change on women and girls in ward 15. Due to the continuous occurrence of drought the research found out that men migrate to look for employment popularly known in the area as 'kusunza'. Some migrate to urban areas while others migrate to Mozambique. Men migration exposes women more to the impacts of climate because it is an additional oppression imposed on women on top of their already available gender roles. Migration mostly occurs when times are tough thus Mashangwa (2015), asserts that male migration too increases in times of food security and poverty and thereby increases the burden of work and family on women. Migration burdens women, as the Marxist feminist theory postulate women have limited or no economic strength because of their femininity. According to UNIFAD (2010), women become heads of households and assume responsibilities traditionally assigned to men but often do not have the same authority, decision making power or access to community services, education or financial resources.

4.1.5 Food insecurity

From a gender perspective women tend to suffer more on the agricultural front because according to the UNDP (2011), 'overallly women make up half of the agricultural labour force in the least developing countries'. During the interviews, the majority of women postulated the change in rainfall patterns and this has affected their means of production and their household food security. In concurrence with what the women said the UNDP (2009), stated that in the agricultural sector, rural women in developing countries are the primary producers of staple foods, a sector highly exposed to the risks that comes with drought and uncertain rainfall.

Difficulty in securing food has forced women and girls to eat non nutritious food. One of the respondent revealed that, *'males are given the first preference when eating in times of drought, we eat what is left after the males have eaten, sometimes we survive on guavas and paw-paws if available and chiriri (a very poisonous type of beans and can kill if not properly cooked)*. As much as chiriri is poisonous women are forced to eat it to survive because they do not have a choice. Food insecurity forces women and girls to eat food which is not nutritious. This exposes women and girls to different health threats thus WHO (2010), asserted that for girls and women poor nutrition status is associated with an increase prevalence of anemia, pregnancy and delivery problems and increased rates of intrauterine growth retardation, low birth weight and perinatal mortality.

4.1.6 Health

Shortage of water poses as a threat to the health of the women and girls in ward 15. They said that in their menstrual periods they find it difficult because of the scarcity of water in the ward. In line with this Chiduku (2015), put it across that generally their (women) menstrual hygiene is greatly affected due to the limitations of water sources and lack of proper sanitary facilities. Women and girls in ward 15 said that they lack proper sanitary wear because they do not have access to money and that their menstrual hygiene is not of importance to men.

A visit to the local clinic in the ward the nurse in charge revealed that, *'women and girls constitute the majority of the people who are affected by epidemics like malaria and waterborne diseases'*.

Chiduku (2015), postulated that women are the most affected by ill health in communities and climate change may result in nutrition related diseases and epidemics like malaria, water borne diseases, heat stress and respiratory illness. This is because their daily activities which include water collection and fetching firewood put them in close contact with mosquitoes. From the focus

group discussion women revealed that they have back pains problem caused by carrying heavy loads on their heads for long distances which poses as serious health implication as it may likely damage the spine. This explains why the majority of women aged between 40 and above complaint about back pains and the majority thought the reason for the pain, the majority blamed their age walking long distances carrying water on their heads for long periods of time.

4.1.7 Sexual exploitation

The research found out that women and girls were being sexually exploited in exchange for water. They revealed that workers at the Milling company in the ward where tapped water is readily available demand sex in exchange of water. Men at the Mill take advantage of the fact that females are not allowed in the milling company. One of the interviewed girls openly said that the milling company workers say that, '*tanga wandida kuti ndikucherere mvura*'. From the interviews women and girls stated they give in to the demands because water is very difficult to access in dry seasons and the milling company is the closest source of water. By so doing this women and girls are exposed to HIV/AIDS, STIs and even fall pregnant hence Oglethorpe and Gelman (2004), in line with this stated that, in Sub-Saharan Africa, young women are four times likely than men to become infected with HIV/AIDS.

4.1.8 Knock on effects

Scholars like Chagutah (2010) talk about knock on effects of responses to climate change and he states that women suffer more in a bid to adapt and mitigate against climate change. Brown et al (2012) synthesize this when he stated that women are therefore particularly vulnerable to the knock on effects of climate change thus we see that walking long distances to fetch of water and firewood expose them to vulnerabilities such as being sexually assaulted. Women in ward 15 have also

become victims of domestic abuse, waking up early to fetch water has been interpreted by their husbands as a way of denying them their conjugal rights.

The research objective has managed to discuss the impacts of climate change as experienced by women and girls in ward 15. Women and girls in ward 15 have had firsthand experience with the impacts of climate change. Their gender assigned roles makes them more vulnerable to climate change and climate variability as compared to their counterparts.

4.2 VARIOUS ADAPTATION STRATEGIES ADOPTED BY WOMEN AND GIRLS

According to the IPCC (2007), climate adaptation is an adjustment in natural or human systems in response to actual and expected stimuli and their effects which moderates harm or exploits beneficial opportunities. The impacts of climate change and climate variability makes it necessary for communities to take necessary steps to adjust and be able to cope with the impacts. AFDB et al (2003), stated that adaptation is necessary and there is need to integrate responses to climate change and adaptation into strategies of poverty reduction and ensure sustainable development. This objective seeks to identify the various adaptation strategies being implemented by women and girls in ward 15 of Mutoko to moderate the harm caused by climate change.

4.2.1 Short season varieties\ drought resistant crops

Women in ward 15 have had their fair share experiences of drought. As a result of these drought experiences they have opted to grow shorts season varieties or drought resistant crops like sorghum, millet and rapoko. According to FAO (2008), while maize is the major staple that is grown in the region as a whole, sorghum and millet were found to be the important crops in the driest regions where rural farm households have limited production capacity and lowest income. An Agritex officer in ward 15 said '*sorghum and millet are drought tolerant crops and have a strong adaptive advantage and also a lower risk of failure*'. It is because of this reason that Agritex

officers encouraged women in ward 15 to grow drought tolerant crops as an adaptation strategy considering the fact that the ward has become a drought prone area.

4.2.2 Irrigation

Irrigation is another adaptation strategy which is being implemented by women in ward 15. Women revealed that irrigation combats crop failure and their household food security as it exceeds the growing season which helps in boosting their agricultural activity. Opting for irrigation has managed to solve the problem of crop failure, they now have enough to eat and even surplus to sell and earn income. This income has helped in paying their children's school fees. The availability of an irrigation scheme in the area have reduced the number of children dropping out of school especially girls due to poverty and droughts induced by the lack of rainfall hence Akinmagbe and Irottibe (2014), put it across that the success of climate change adaptation depends on a availability of fresh clean water in drought prone areas.

4.2.3 Energy

From the questionnaires distributed and interviews conducted during the study women have opted to use of biogas with the help of Environment Africa and Worldwide Fund for Nature as an adaptation strategy to the impact of climate change on their source of energy. Biogas is the mixture of methane and carbon dioxide produced by the bacterial decomposition of organic waste and used as fuel. Biogas is environment friendly as it uses waste and do not deplete the vegetation coverage. Opting for biogas has managed to reduce the burden on women of sourcing firewood from long distances. During the research some of the women demonstrated and explained its efficiency compared to wood. Those who can afford have installed electricity in their homes while others where using gas as a source of energy. The girls interviewed said that the move made by their

parents and guardians to use gas, biogas and electricity have relieved them from walking long distances in search of firewood and now they can put more effort to their education.

4.2.4 Off farm activities

Women in ward 15 have adapted to off farm activities. From the interviews conducted women are now engaging themselves with off farm activities like selling airtime and fruits like masawu which is readily available in the ward and vegetables at their township to earn money. Some women said they are surviving by brewing alcohol which is popularly known in the area as *chiseven* days. They use the money they earn to buy maize and even sent their children to school. One of the women who are brewing alcohol in the ward said, *'selling alcohol is very profiting as local men are in need of cheap alcohol as they cannot afford the refined alcohol sold at the bottle store every day'*. They have utilized men's need for alcohol to their advantage.

4.2.5 Migration as an adaptation strategy

Migration is another adaptive strategy to climate change being implemented in ward 15. The research findings found out that usually men migrate and leave women behind. According to Akinmagbe and Irottibe (2014), migration is (and has always been) an important mechanism to deal with climate change stress. Women and girls have welcomed the idea of migration despite having to play dual roles. Women and girls postulated that this have been beneficial to them. Households which are headed by females also have members who migrate in search of employment and as a measure to cope with the impacts of climate change. Both men and women are migrating to different areas in and out of the country. From the focus group discussions respondents stated that those who are migrating they are migrating to the two nearest prominent townships to the ward which are Mutoko center and Kotwa center, while others to Harare. Others go as far as South Africa and Mozambique. The research found out that migration have been

helping in reducing the impacts of climate change in 15 ward hence Maphosa (2004), notes that remittances contribute significantly to the improvement of the livelihoods of the receiving households.

4.2.6 Water sources

The community has resorted to borehole drilling and installing taps because water sources such as wells and rivers no longer sustain them as they quickly dry up. From the researchers observations various households had tapped water and some had boreholes. During an interview, one respondent reviewed that *'wells and rivers were our sources of water by they are now quickly drying up so as a community we have resorted to borehole as our major source of water and those who can afford have tapped water. A community leader, who is a headman in the ward said that 'we opted for boreholes instead of wells because boreholes last longer and they also sustain us for longer periods of time'*. The boreholes serve as a source of water for both humans and animals.

In trying to cope with the impacts of climate change women and girls in ward 15 have employed the above adaptation strategies to counter the effects of climate change and variability. These adaptation strategies have been beneficial. The adaptation strategies being employed shows that communities are dynamic hence Shuaibu et al (2014), postulated that societies are dynamic and they use all possible strategies to reduce the vulnerability of climatic impacts.

4.3 THE EXTENT TO WHICH WOMEN AND GIRLS ADAPTATION STRATEGIES HAVE WORKED OUT TO REDUCE THEIR VULNERABILITY TO CLIMATE CHANGE.

According to Akinagbe and Irottibe (2014), adaptation has three possible objectives, to reduce exposure to risk of damage, to develop the capacity to cope with unavoidable damages and to take advantage of new opportunities. The aim of this research objective is to weigh and see if the adaptation strategies being employed by the women and girls in ward 15 have reduced their

exposure to the risk of damage, developed their capacity to cope with the unavoidable damages of climate change and the advantages of the new opportunities being presented by their adaptation strategies.

The research found out that one adaptation strategies being employed by women and girls in ward 15 to cope with the impacts of climate change and climate variability have been effective. The growing of drought resistant crops have been helping in trying to curb food insecurity in the ward. It have been effective than growing maize. In agreement with this an Agritex officer in the ward postulated that, *'growing these drought resistant crops have been beneficial than growing maize as they have helped people in the ward to cope with the impacts of climate change'*. However as much as growing drought resistant crops have been effective, women in the ward complained that sorghum and millet are labour intensive crops both when planting and harvesting. This has proved to be a difficult task for women and girls considering the fact that they are responsible for agricultural production.

Women in ward 15 of Mutoko have managed to make use of irrigation to supplement water for their crops by joining the Nyakuchena irrigation scheme. In trying to solve the problem of scarcity of water, they have drilled boreholes and have installed taped water. They have done the same in curbing scarcity of energy sources. They have installed biogas in their homes, electrified their homes while others have opted to the use of gas. These adaptation strategies have proved to be effective as they have managed to reduce the impacts of climate change on women. However, these adaptation have been effective but to a lesser extent. As the Marxist feminist theory postulate men are capitalist and have access to financial resources while women depend on men for financial assistance. The majority of women in ward 15 are not equipped financially. During the research a lot of women expressed their desire to join the Nyakuchena irrigation scheme, to install biogas,

electricity and tapped but finance or money has been their drawback. One of the interviewed women said that, *'we have witnessed the benefits of the irrigation scheme, biogas, and boreholes but we have no resources to join or access them'*. The regarding finances lies in the hands of men. This limit the capacity of women and to cope thus the AFDB (2009) stated that African women are at the frontline of the impact of climate change but they are poorly equipped to slow change and make necessary adaptations.

Engaging in off farm activities have been of great help to the women and girls in ward 15 in trying to cope with the impacts of climate change. Off farm activities have been have successful as it have managed to counter the impacts of climate change in the ward. Haile etal (2008), put it across that off farm labour supply is indeed an income smoothing strategy which households use to adopt to rainfall abnormality. Selling varieties of goods at the local shopping sender and engaging in other off farm activities have been helping in securing households food security hence Babatunde and Qaim (2010), finds that off farm income has a positive net effect on food security and nutrition. However engaging in these off farm activities requires permission from their husbands and the majority of women revealed that they are not granted the permission. One of the respondent said that, *'since most of these off farm activities takes place at the township, my husband refused to give me his consent because he says he will be giving me permission to go and prostitute myself'*. This limits the women's ability to cope with the impacts of climate change making this adaptation strategy less effective.

In terms migration as a coping strategy, it have been very effective as majority of the receiving families had access to boreholes, irrigation and tapped water. Remittances which are received in the ward have been helping in the paying of school fees as well as purchasing of grains. However migration also comes with its disadvantages as the majority of women rely on receiving, if they

fail to receive money they are doomed. Women revealed that receiving remittances is not consistent as they can go for months without receiving anything. Women in the ward have further stated that performing a dual role in a patriarchal society have proved to be a difficult task thus Brown (2010), etal postulates that women who become defacto house heads may face difficulties in retaining control over land and other productive assets due to unequal property and land rights making this adaptation strategy less effective.

From what have been discussed above women and girls in ward 15 are employing various adaption strategies trying to cope with the impacts of climate change. Some of the adaptation strategies have proved to be very successful to a certain extent. This is because they have not been successful in limiting or mitigation the impacts of climate change on women and girls in ward 15. It is in this light that it is safe to say that these hence it is safe to state that these coping strategies are not sufficient to address the challenges being faced by women and girls in ward 15 regarding climate change and variability.

Chapter 5: Recommendations and Conclusion

RECOMMENDATIONS

From the research findings discussed in this study, there is no doubt that women and girls are exposed to the impacts of climate change more than their counterparts. There is a lot to be done in Mutoko, ward 15 to improve women and girls' ability to cope to the impacts of climate change. The following recommendations should be put in place to try and improve the status of women and girls and in rural Zimbabwe.

THE GOVERNMENT

- Lack of information about climate change is one of the factors which determine the ability to act on adaptation, so there is the need for the government to make sure women have access to information about climate change through weather forecasting and the metrological department. It should find means and ways to penetrate rural communities and equip them with such information.
- The government should deploy more Agritex Officers with vast knowledge about climate change in rural areas so that the majority of the rural communities to overcome the challenge they are facing on the agricultural front due to climate change.
- Irrigation is very important in agriculture as it aids the development of crops in the absence of rainfall. Therefore there is need for the government to improve irrigation structure in the ward and other rural communities and ensure that women have access to irrigation. This put them in a better position to cope with the impacts of climate change.
- There can be no effective and efficient battle against climate change if there is no equal representation and the inclusion of women in decision making at all levels hence the

government should facilitate and involve women into planning, implementation of climate change responses. Women are directly affected by climate change hence it is important that they are involved in decision making regarding climate change initiatives.

- The government must create funds and implement national policies that are gender sensitive, gender responsive and create networks that co-ordinate action around involving women in climate change mitigation and adaptation measures.

THE CENTRAL GOVERNMENT- Environment Management Agency

- There is a reduction of vegetation coverage in the ward; it is the duty to initiate reforestation programmes to restore vegetation coverage to prevent desertification.
- EMA must address communities' environmental problems and involve everyone across all age groups and gender in identifying the environment problems and should work together with communities in trying to solve these problems.
- There is need to raise awareness in communities about conservation of the environment. EMA should embark on environmental awareness programs in rural communities this is because the research found out that the majority of rural dwellers are not well versed with climate change and environmental conservation.

NON-GOVERNMENTAL ORGANISATIONS

- When implementing projects NGOs must develop sustainable and resilient development projects for women and girls as well as create opportunities for mitigation and adaptation to climate change to reduce the extent of their vulnerability to climate

change. The projects should increase the capacity of women to try and combat the effects of climate change.

- NGOs should take it upon themselves to encourage, gender equality to guarantee women and girls' access and control over productive resources so as to reduce the impacts of climate change and variability on women and girls.
- NGOs should facilitate proper and accessible credit facilities both formal and informal for rural women to equip them financially.
- NGOs must put women at the center of climate change response and their planning must recognize and draw on local women's knowledge in developing climate change strategies and female participation in all areas in decision making.

Most of the recommendations thrives at empowering women and not girls, this is because according to Muhammad Yunus a Nobel Peace Laureate,... when a destitute mother starts earning an income her dreams of success invariably center around her children...money entering a household through a woman brings more benefit to a family as a whole. When women are empowered girls and everyone around them is empowered as well.

CONCLUSION

Climate change and climate variability is a phenomenon affecting livelihoods around the world, with the poor being the most affected. Women who constitute the majority of the majority world's poor are the most exposed to the impacts of climate change. Girls alongside their mothers are at the frontline because of their socially constructed gender roles. They are in constant contact with climate change sensitive sectors which are water, agriculture and energy sources. In trying to cope with the impacts of climate change women and girls in ward 15 of Mutoko have adopted some

coping strategies to climate change and climate variability which include off farm activities, irrigation to mention just a few. However these adaptation strategies have not been successful because women in the ward have limited financial stability and they also have limited access to assets like land and access to credit. In is in this light that the study have recommendations to the government, central government and to NGOs to try and lessen the impacts of climate change on women and girls.

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APPENDIX

Questionnaire

Dissertation topic: Assessing Women and Girls Adaptation to Climate Change and Variability in Rural Zimbabwe: A Case of Mutoko ward 15

I, Gladys Tariro Mesoenyama a fourth-year student at Midlands State University doing Development Studies Honors Degree do hereby by request your contribution for my research project. As a prerequisite for all final year students to undertake a research project, I asks for your contribution by providing relevant information regarding women and girls adaptation to climate change and variability in your respective area. The aim of the study is to understand the adaptation strategies being employed by women and girls in trying to cope with the impacts of climate change and the extent to which adaptation strategies have been successful. The information that you will contribute will only be used for the purposes of this survey.

Demographic Data

PLACE	NAME
Province	
District	
Ward	
Village	

Age group

Age	
Below 18	
19-29	
30-39	
40-49	
Above 50	

Level of education

Education	
No formal education	
Completed primary education	
Completed secondary school education	
Completed college or university	

1 What do you understand by the term climate change and variability?

.....

.....

2 What are the indicators of climate change and variability in your area?

.....

.....

3 How is climate change affecting your;

Food security

Education

.....

.....

Agriculture

4 How is climate change affecting climate sensitive sectors? eg, water sources and firewood

.....

.....
.....

5 Who is responsible for climate sensitive sectors related chores and why?

.....
.....

6 In what way is climate change affecting your health/the health of women and girls?

.....
.....

7 Are there any situations in your area where girls had to drop out of school/ miss school due to climate change related issues? Yes/no

If yes what was the reason?

.....

8 What do you understand by the term climate change adaptation?

.....
.....

9 What adaptation strategies are being employed by women and girls in your area?

.....

.....
.....
.....

10 What challenges are women and girls facing in trying to cope with the impacts of climate change?

.....
.....
.....

11 To what extent are the adaptation strategies being implemented by women and girls in your area effective?

.....
.....
.....

Thank you

Interview guide

1. What do you understand about climate change?
2. Are there any indicators of climate change in your area? If there are indicators of climate change, what are the indicators?
3. What are the impacts of climate change in your areas and how are they affecting you as a woman/ girl?
4. Since women and girls are primarily responsible for household food security, how is climate change affecting your household food security?
5. In what way are climate sensitive sectors affected by climate change and how are you affected as a woman girl?
6. What adaptation strategies are you employing to try and cope with the impacts of climate change and variability?
7. What challenges are you facing in trying to cope with the impacts of climate change?
8. To what extent are the adaptation strategies you are employing effective?

Interview guide for key informants

1. What do you understand about climate change?
2. What are the indicators of climate change in your area?
3. How are climate sensitive sectors being affected by climate change and who are the most affected?
4. Women and girls are responsible for household food security. How is climate change affecting food security?
5. What are the reasons for the food insecurity?
6. Agriculture being the main source of food in rural communities, how is agriculture affected by climate change and why are women and girls the most affected?
7. What adaptation strategies are being implemented by women and girls in your area to try and cope with the impacts of climate change?
8. To what extent are these adaptation strategies successful?

Focus group discussion guide

1. What do you understand about climate change?
2. What are the indicators of climate change in your area?
3. How is climate change affecting you as women and girls?
4. As a result of your gender assigned roles you are in constant contact with climate sensitive sectors. How is climate change affecting these sensitive sectors and how are you affected as women or as girls?
5. How is climate change affecting your education (girls)?
6. Are there any cases where girls have to drop out of school or miss school because of climate change?
7. Is there any instance where girls have been forced into marriage because of climate change related issues (food insecurity)?
8. What are the adaptation strategies you are employing to cope with the impacts of climate change?
9. What challenges are you facing in implementing these adaptation strategies?
10. To what extent are these adaptation strategies successful?