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FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF LOCAL GOVERNANCE STUDIES

**THE IMPACT OF CLIMATE CHANGE ON FOOD SECURITY AND RURAL
WOMEN. CASE STUDY OF TSHOLOTSHO WARD 6,12 AND 13.**

BY

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**DISSERTATION SUBMITTED TO THE MIDLANDS STATE UNIVERSITY
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SCIENCES HONOURS DEGREE IN LOCAL GOVERNANCE STUDIES.**

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DECLARATION

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Date signed.....

DEDICATION

I dedicate this dissertation to my two sisters Merlyn and Givens Manomano. More so to my uncles from whom I draw my motivation and inspiration from

ABSTRACT

Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time for example decades to millions of years. It is caused by factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics and volcanic eruptions. Tsholotsho district is one of the most affected districts in the country by climate change. It has been rated number 7 out of 10 districts in terms of drought. The study seeks to assess the Impact of Climate Change on Food Security and Rural Women in Tsholotsho focusing on ward 6, 12 and 13. The research objectives of the study include, to determine the nature of climate change common in Tsholotsho, to examine the extent women are affected by climate change in the district. To add more it seeks to examine the extent climate change impacts on food security, to explore the Indigenous knowledge systems used to mitigate against climate change and to examine policies and legislation on climate change in Zimbabwe. Literature related pointed out that there are certain challenges of climate change faced mainly by women since they are the most vulnerable group, policies on climate change and food security as well as the impact of climate change on food security were also pointed out only to mention a few. Different theories such as sustainable livelihood theory, Local governance theory which were implemented in Viacha and Charagua were discussed as well as the Indigenous Knowledge System. The researcher used purposive sampling and simple random sampling as sampling techniques to gather data. Primary and secondary data collection methods were used as collection methods through the use of questionnaires, interviews and focus groups discussions to gather data. Data gathered was presented and analyzed using tables, pie charts, graphs and also in an analytical manner. The findings of the study revealed that men are more informed on climate change issues yet women are the victims as well as the most vulnerable group pertaining to climate changes, women are also less represented in policy making and decision making on to mention a mention a few. The findings revealed that women should be represented especially on issues affects them and policies on climate change should also be devolved to the local community for them to participate. The researcher recommended that there should be policies that are more effective from the central to the local level, some government departments such as District Development Fund should partner with NGOs for funding, borehole drilling and dam construction in order to save for dry seasons.

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ABBREVIATIONS

D.A	DISTRICT ADMINISTRATOR
E.O	EXECURTIVE OFFICER
I.K.S	INDIGENOUS KNOWLEDGE SYSTEM
M.D.C	MOVEMENT FOR DEMOCRATIC CHANGE
SDG	SUSTAINABLE DEVELOPMENT GOALS

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CHAPTER I

INTRODUCTION

1.0 Introduction

Tsholotsho District situated in Matabeleland North Province under ecological region five. The district is located 120km from the second capital city Bulawayo. It covers about 200 square kilometers and has a population of approximately 115 889 people, 60 262 are females, 55 627 males, consisting of 9039 girls and 8344 boys. According to Population Projection Thematic Report, 2015. The district is vulnerable to shocks and hazards such as droughts and flooding. High temperatures and low erratic rainfall patterns characterize this region. These conditions have resulted in very low food production hence this study on the impact of climate change on food security and rural women in Tsholotsho. Climate change is making it increasingly urgent for more widespread and significant changes in farming practices to increase productivity and at the same time, use natural resources more efficiently and sustainably. The research will mainly focused on the impact of climate change on food security and rural women mainly focusing on ward six, twelve and thirteen in Tsholotsho. Women face numerous obstacles to access production inputs, assets and services; these challenges not only heighten their vulnerability to food insecurity but also considerably reduce their contribution to overall production. Women face a greater challenge in responding and adapting to climate stresses due to their lack of access to social capital, land, financial services and technology.

1.1 Background

Climate change is defined by the UN framework convention (2009) as a change of climate, which is attributed to human activity that alters the composition of the global atmosphere. The effects of climate change are a reality the world over. It has become a major global environmental challenge and one of the most acute issues of the twenty-first century (USAID, 2011). Scientific evidence, from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2007), unequivocally indicates that climate change poses a threat to economic growth, long-term prosperity and the survival of those populations that are most vulnerable. Thus, climate change is a reality, with its effects already visible, and they may intensify over time if left unattended.

Climate change is emerging as one of the greatest threats to humanity. It threatens humanity's basic elements of life such as access to water, food production, health and the use of land and the environment as well as their livelihoods (UNFCCC, 2009). Molua (2011) noted that it becomes a global issue, because the location of greenhouse gas emissions is relatively unimportant for climate change effects. The entire world population is therefore under the threat of climate change and not just those nations primarily responsible for the change in the earth's climate. Climate change is not just taking place in one specific country or one specific region, but in every country and region across the globe. Besada and Sewankambo (2009) say, the effects of climate change are not evenly distributed since the poorest states and their citizens are most vulnerable to the effects of climate change. The consequences of climate change are irreversible. Adaptation policies are of great importance. However, this approach is still lacking in most parts of the world. The most vulnerable countries do not possess the required capacity needed for adaptation. Climate change is a complex issue with various dimensions and the most fundamental threat to humankind and requiring a universal response (Hulme et al, 2005). The following issues require attention: effects and consequences of climate change, in particular in the African region; the link between climate change and human security; food security, the international climate change regime and climate change and disaster risk management.

Although the effects and consequences of climate change are global in nature, they are not evenly distributed. The poorest countries and people have suffered the consequences of climate change earliest and to the greatest extent. For instance, Africa has been severely affected in various ways. The African continent is particularly vulnerable to the consequences of climate change. It is especially water resources that have become depleted. Gleick (1993) estimated that up to 250 million people in Africa are at an increased risk of water stress by 2020. There is a severe reduction in the area suitable for agriculture. Climate change also leads to a sea-level rise and consequent threat to cities in Africa. The African continent has become warmer during the past century. During the twentieth century alone, Africa had an average warming of 0.5 degrees (USAID, 2007). Rainfall in large portions of the Sahel (the semi-arid region south of the Sahara) decreased, whilst, rainfall in east and central Africa increased. This warming trend, accompanied by changes in precipitation patterns, is expected to continue over the next century. A rise in sea level and an increase in the frequency of extreme weather events are also expected to accompany this warming trend. Climate variability and change has had a significant effect on the following; access to and demand for

water, the agricultural sector, the use of energy, the health sector, coastal zones, tourism, settlements, and infrastructure as well as aquatic and terrestrial ecosystems. The IPCC (2007) makes it clear that the African continent is the most vulnerable to the consequences of climate change.

The effects of climate change have not spared Zimbabwe as well. Its governance and economic crises have magnified its vulnerability to the effects of climate change. Agriculture is the mainstay of Zimbabwe's economy, with 70% of women directly surviving from the land (Gandure, 2011). The socio-economic situation in Zimbabwe continues to evolve along with a complex, overlapping and often worsening set of economic, political and social factors that result in poor health and social outcomes for women and their children. Among the multiplicity of causes, Zimbabwe's current situation is directly related to two key events in the recent history of the country, specifically the Fast Track Land reform exercise in 2000 and the protracted and disputed elections of 2008. The rain season is much unpredictable especially currently but usually ranges from late October to end of March. On average, one to three droughts occur every ten years due to El Nino-Southern Oscillation (ENSO) phenomenon. (Zimbabwe Country Report on Climate change, 2010).

1.1.1 Global perspective

Women constitute the largest percentage of the World's poorest people hence they are the most affected by the changes. Recurring droughts, unpredictable rainfall and cyclones have a negative impact on food security, potable water supplies and firewood. This affects women since they are the food bearers, the tillers of the land and are the ones who cook, store and prepare the food. According to FAO, 2011b, if women were given the same access to resources such as finance, women's agricultural yields could increase by 20 percent to 30 percent and the number of the malnourished people could be reduced by 12 to 17 percent. In most parts of the world, women play a major role in agricultural production, a critical component of food security. Women predominate in World food production to about 50 to 80 percent; they own less than 20 percent, which affects negatively in food security. In some Pacific Island countries, food insecurity, inadequate nutrition and climate changes are key issues FAO (2009 b). It is said that in some PIC such as Papua New Guinea, changes in rainfall patterns, droughts, floods, rising sea levels will make it difficult for communities to make a living out of agriculture.

In Africa, agriculture supports 70 percent of the population and accounts for 30 percent of the Continent's Gross Domestic Product (GDP). Women receive only 5 percent of agricultural extension services worldwide (Global Gender (2012)). This affects women negatively since they are the sole providers of food in families. Studies in Burkina Faso, Kenya, Nigeria and Zambia, show that women are much less likely to use purchased inputs such as fertilizers, improved seeds or to make use of mechanical tools and equipment. This brings a threat to food security since women are the tillers of the land, and the most affected in issues to deal with climate change. In countries such as Lesotho, Mozambique and Sierra Leone, women constitute over sixty percent of the agricultural labor force. Women play a pivotal role in the three components of food security; food availability, food access and food utilization. In cases of crop failure, due to harsh climatic conditions, culture makes it easier for men to leave their farms in search of employment elsewhere, leaving women behind to struggle to feed their families and make ends meet.

1.1.2 African perspective

In Africa, close to 50 percent of households are headed by women, and according to Schatz et al. (2011), this pattern is connected to apartheid, historic patriarchy and the HIV/AIDS epidemic. Furthermore, well-documented gender inequalities in South Africa make rural women particularly vulnerable to livelihood shocks, including extreme weather events (Dea, 2011). Furthermore, in the UMzinyathi and uMhlathuze municipalities of KwaZulu/ Natal, women were found more negatively impacted than men by climate change. The same finding was observed in Uganda (Ibnouf (2011) found that women were the main contributors of household food security; in particular, while men are more likely to migrate; women are mainly responsible for producing and providing food in Sudan. In Tanzania, women report that they are now planting certain crops that they are responsible for such as groundnuts because of the changes in weather patterns that are destroying seeds. In Malawi, only 25 percent of farmers, credit club members were women (Due and Gladwin 1991). This implies that their adaptive and mitigate options are lower than those of men. Climate change impacts affect people differently depending on the livelihoods and socio economic status. People depending on climate sensitive livelihoods are poor or marginalized groups with limited access to resources and information sharing and are the most affected by climate change. Women in rural sub Saharan Africa are one of the groups most vulnerable to climate change. They depend on rain fed agriculture which is highly climate sensitive.' Rural women have primary responsibility for maintaining the household. They raise children, grow and prepare

food, manage family poultry, and collect fuel wood and water. Women and girls play an important role, largely in generating family income, by providing labor for planting, weeding, harvesting and threshing crops and processing produce for sale' (FAO, 2011b). The impact of climate change on food security has a negative effect on women since they earn a small income from selling vegetables from home gardens and forest products. They spend the income on meeting the family food needs and child education.

1.1.3 National perspective

In Zimbabwe, climate change does not affect everyone in the same way. Men and women are affected differently. Women are affected negatively by the impact of climate change and on food security issues. Gender, environment and climate change is one of the eight priority areas in the Zimbabwe National Gender Policy (2013/2017]), according to SADC Gender Protocol 2013 Barometer Zimbabwe. It has serious repercussions on women since eighty-six percent of women are involved in Agriculture. ZIMASSET also highlights on the impact of long droughts and flooding on the agriculture sector. For example, in Zimbabwe we have been affected by different cyclones such as cyclone Eline and cyclone Dineo thus having a negative impact on women since they are the food producers. The agency of rural female farmers is essential for enhancing agricultural productivity and realizing the SDGs, including ensuring food security SDG2 and addressing the perils of climate change (SDG13). Despite significant strides in addressing gender inequalities over the years, rural women in Zimbabwe are still among the most marginalized groups in society and are particularly vulnerable to current and future climate change and food security. Rural women in Zimbabwe, Tsholotsho dry food for future use and use the Indigenous Knowledge to determine the weather such as predicting very heavy rains from the height of birds' nests near rivers. The moth numbers are also used to predict droughts (Madzwamuse, 2010). This helps a lot since women are the victims of climate change, food security for example knowing that prolonged drought is followed by storm, thunder, and lightning during the first few rains enables people to prepare for and expect a drought. The Indigenous Knowledge is used and mainly helpful to women in the rural areas since they are the victims of climate change and food security.

1.2 Statement of the problem

Tsholotsho district is one of districts affected by climate change in Zimbabwe. It has been rated number 7 out of the 10 worst districts in terms of food insecurity (Zimvac, 2017). The district been affected by floods for more than three times in the past five years. Drought and

flash floods have become common hazards in Tsholotsho. These have threatened the livelihoods of people from this district since they rely on rain fed livelihood strategies such as livestock production and small-scale agriculture. According to the same report, Tsholotsho district is only food secure for 3-6 months only each year. This is mainly because of the unreliable sporadic rains, which have become a permanent feature in recent years. This has led to the failure of people's livelihood strategies. To that effect, climate change exposes communities to increasing hazards. This makes them to be more vulnerable since rain fed agriculture remains the dominant source of livelihood for the rural poor in Sub Saharan Africa (Chambers, 2009).

Climate change has a negative impact on food security and on rural women. The Indigenous Knowledge system that the women in the community have been using to cope with the ever-changing climate conditions have not been adequately complemented to comprehensively deal with climate change. This study sought to assess the impact of climate change on rural women and food security in Tsholotsho focusing mainly on ward six, twelve and thirteen. It has been noted that climate change is really a reality and affecting people but mainly women since they are the food producers, utilizers and distributors. Hence the need to carry out this research study.

1.3 Research objectives

The overall objective of this study is to examine the impact of climate change on women and food security in Tsholotsho

Specific Objectives

The specific objectives of this study are;

- To determine the nature of climate change common in Tsholotsho
- To examine the extent women are affected by climate change in Tsholotsho
- To examine the extent climate change impacts food security in Tsholotsho
- To explore the indigenous knowledge systems used to mitigate against climate change in Tsholotsho
- To examine policies and legislation on climate change in Zimbabwe

1.4 Research questions

- How is climate change manifesting itself in Tsholotsho?

- How does climate change impact on women's well-being in Tsholotsho?
- How does climate change impact food security in Tsholotsho?
- Which Indigenous Knowledge Systems are used to militate against climate change in Tsholotsho?
- Which policies and legislation are in place on climate change in Zimbabwe?

1.5 Purpose of the study

This study intended to assess the impact of climate change on food security and rural women in Tsholotsho focusing on ward six, twelve and thirteen. It intended to bring out the challenges being faced mainly by women since they are the food bearers and to give recommendations on how best to help them. The study also aimed on informing stakeholders, government, community and other players on the negative impact of climate change especially on women since they are the ones who cook, store and prepare the food. It seeks to lay out the ground for further research by scholars. New information such as the drop in rainfall patterns, number of affected people compared to the past to mention but a few was outlined in the study.

1.6 Delimitations

This study focused on the Geographic areas of ward six with a population of 6825, ward twelve with 4259 and ward thirteen with a population of 4416, which all lie within a radius of 40 kilometers from Tsholotsho center. Physical boundaries of Tsholotsho are Gwayi and Manzamnyama rivers. The population size of Tsholotsho according to the Population Projection Thematic Report 2015 is at 115 889 people. 60 262 are women, 55 627 males, 9039 girls and 8344 are boys. The study focused on women and food security since they are the most affected by climate change. Men are not really affected by climate change since most of them are outside the country in search of income generating projects. The researcher targeted a population for the three wards which was 15 500, ward 6 had 6 825, ward 12 had 4 259 and ward 13 had a population of 4 416 people which added up to a total of 15 500 people.

1.7 Limitations

The researcher envisaged challenges in the form of financial means to access the communities in their villages. However, the researcher capitalized on the vehicles of the various stakeholders that frequent these areas such as Plan International, Amalima and the Civil Protection Unit. The other challenge that the researcher encountered is that of network

or communication with the selected communities. The student made use of letters. Furthermore, government departments and other key informants were sensitive in releasing information. However, the student once worked with some of them hence it was not a big challenge sourcing out the information.

1.8 Summary

The first chapter of this study was setting the tone for the whole study by including sections on background information to the study, climate change has become a major global environmental challenge and one of the most acute issues of the twenty first century. It is emerging as one of the greatest threats to humanity. Globally, women constitute the largest percentage of the World's poorest people hence they are the most affected by climate change. In Africa, literature revealed that agriculture supports 70 per cent of the population and accounts for 30 per cent of the Continents Gross Domestic Product. Nationally, climate change does not affect everyone the same way since men and women are affected differently. Statement of the problem has been revealed too and it brings out the impact of climate change on food security and rural women. Research objectives were highlighted and the overall objectives of this study was to examine the impact of climate change on women and food security in Tsholotsho, to determine the nature of climate change common in Tsholotsho as well as the extent of the climate change impacts on food security issues and how this has affected women at large. Research questions were highlighted in line with the objectives of the study. The study was delimited to three wards which are ward 6,12 and 13 with a total population of 15 500. The researcher encountered many challenges in conducting the research such as financial means and communication challenges. Thus the researcher had to make use of letters in terms of communication. Literature related to the topic under study will be revealed in the next chapter.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literature from recognized scholars who have written extensively on the topics of climate change, food security and rural women. It presents the theoretical and conceptual frameworks of the impact of climate change on food security and rural women. The potential effects of climate change on food security and rural women will be highlighted. The chapter goes on to show how women are the most affected by the changing climate patterns since they are the food producers, distributors, preparers, and utilizers. There is also a review of experiences from other countries such as Kenya, Uganda and Tanzania. Policies and legal frameworks are also discussed. These experiences from the other countries form the last part of this chapter.

2.1 Impact of climate change on food security

Climate change has greatly affected the agriculture sector and thus put a threat on food security issues. Agriculture has proved to be extremely vulnerable to climate change as seen by the drastic decline in food production over the past two decades. High temperatures are now the order of the day and are being experienced in most countries including Zimbabwe. These will reduce yields of desirable crops while encouraging weed and pests proliferation (Nelson et al, 2009;vii). In 2005, 2,5 billion people , contributing nearly half of the economically active population in developing countries relied on agriculture for their livelihood (Feyissa , 2007).Research shows that 75 percent of the World's poor live in rural areas where agriculture is their main source of income and it is in these areas that climate change mostly hit. This is so because of lack of infrastructure such as irrigation systems. Zimbabwe has not been spared of the drastic changes in climate change. Zimbabwe's agro ecological zones (AEZ) have shifted drastically due to the devastating effects of climate change and global warming. According to a research by Mugandani (2012), major shifts have occurred in the drought prone regions IV and V which have become drier than previously experienced. This has greatly affected women since they are the tillers of the land.

Climate change has affected agriculture negatively in Zimbabwe and this has led or resulted in food insecurity, increase in unemployment and has weakened the country's economy. In 2011 to 2012 season, Zimbabwe was forced to import over 50 percent of its maize

requirements (The Zimbabwean, 2012). This has also affected farmers. Agriculture contributes to 15 to 20 percent to the GDP, 40 percent to export and sixty percent of the raw materials used by the domestic manufacturing industry (ZUNDAF, 2011). Recent studies, which use global circulation models, show that from the current period up to the year 2080, Zimbabwe will face a general decrease in reliability and predictability of rainfall patterns and temperature will rise by 2 degrees (Bohle et al, 1994). Such a change if it occurs has a negative impact on the countries food security. This will end up causing prices of goods especially food to go up. Furthermore, there will be an increase in import than export disadvantaging the countries' economy. To add more, an increase of 4 degrees in Zimbabwe will result in maize yield decline by 20 percent in the northeast and 27 percent in the southeast region bordering Mozambique (Magadza, 1994). The scholar is supported by Muguti et al (2012). This will result in food aid from other countries as is happening in Zimbabwe, Tsholotsho. Therefore, climate change has a negative impact on food security issues especially on women since they are the most affected. More so, cyclones also continue to harass Zimbabwe as well. For example, in 2000, the country was hit by cyclone Eline, followed by cyclone Japhet in 2003 and cyclone Dineo also left most families especially in Tsholotsho homeless and in hunger. This therefore contributes to poor performance in agriculture, which then results in food insecurity.

In mid-February Southern parts of the country were hit by the effects of tropical depression of Dineo which precipitated flooding that destroyed crops , livestock , property and infrastructure worsening the preceding damage from the rains that had been received in the country FEWSNET (2017). Due to the extent of the problem, the president in accordance to subsection one of section 27 of the Civil Protection act of 1989 declared a state of flood disaster on March 2. The declaration covered severely flood-affected areas in communal resettlement lands and urban areas with Tsholotsho being the most affected since 859 homes were destroyed. To add more in issues to deal with food security, 2015 to 2016 production was affected by adverse weather conditions (El Nino) which resulted in the nation declaring a state of emergency as well as launching the domestic and International Appeal for food supply assistance in February 2016 . In twenty sixteen, Rural Livelihoods assessment estimated that 4.1 million rural people would be food insecure in the peak hunger period (Jan to March 2017). From October 2015 TO May 2017, government had distributed more than 555 000 MT of maize grain to food insecure households through ministry of Public Service, Labor and Social Welfare. The NGOs and UN partners also imported and distributed 39

423.20 MT of maize grain between February twenty sixteen and May 2017 (WFP). UN support doubled from 17.4 percent between 2015 to twenty sixteen to 34percent in twenty sixteen to 2017. Matabeleland North has the highest proportion of household receiving food aid (sixty-nine, four percent) followed by Matabeleland South (sixty six percent). Food insecurity is all because of climate change, which is getting more and more difficult to predict and control.

2.2 Impact of climate change on women

Climate change does not affect everyone the same. Women and girls are the most affected by the change compared to men. (Nellemann et al 2011) observed that in many developing countries economic constraints and cultural norms that restrict women's access to paid employment mean that their livelihoods are particularly dependent on climate sensitive sectors such as small-scale agriculture or water collection. Yet gender inequalities in the distribution of assets and opportunities mean their choices are severely constrained in the face of climate change (Mitchell et al, 2007). Because of women and girls being responsible for most of unpaid care tasks, around the household, it means their lives are directly affected by the changes brought about by climate change. Women are negatively affected by climate change since they have to travel long distance in search of food for the family, fuel and water as well as caring for the family. This increases school dropouts especially on girls. For example in 2008, Tsholotsho recorded a school drop out of one thousand girls since they had to go search for food to feed the family.

Women and girls have no or less time for education, income generating projects and participation in economic or community decision making process. FAO (2003) confirms that women are the mainstay of the agriculture sector, the farm labor force and day-to-day family subsistence. Therefore, climate change affects mostly women compared to men. Batan and Khan (2010) are of the view that climate change may increase the invisibility of women by adding roles on the already overburdened women. To add more to that according to AFDB, in almost half of the African countries women constitute the majority of agricultural workforce, climate change affects that production and it goes unreported. According to United Nations Women's Watch, women face severe effects of climate change especially women farmers. They face social, economic as well as political barriers that limit their coping capacity. As Tarja Halonen, former president of Finland stated, 'women are powerful agents whose knowledge, skills and innovative ideas support the effort to combat climate change'. This

shows that women are affected by climate change the most compared to men but they also try to fight against it.

Climate change worsens the cycle of poverty and vulnerability for women and girls. Women are more likely than men to die during and in the aftermath of disasters. More so women lack legal assets and rights to property, which leaves them with few resources with which to build their lives Gender Equality and UNDP, (2009). To add more women in countries such as Japan and India are susceptible to sexual and other harassment such as mental torture, verbal abuse, and domestic violence in the wake of a flood WEA (2011). Globally it is assumed that women and girls spend 140 million hours per day collecting water for their families resulting in lost productive potential. Furthermore, they have to travel long distance in search of water especially in remote areas, which also increases the risk of sexual violence on women and girls. The exclusion of the voices of women and girls in WASH programs developments means their needs are often overlooked.

Climate change has the potential to create massive displacement. Women and girls comprise the overwhelming majority of the world's current displaced population, which is very dangerous for women and girls. For example, in order to reach a country where they can seek asylum, many must rely on smugglers, resort to desperate measures and endure a perilous route. They may be forced to trade with border guards and others in return for permission to pass through and they face a great risk of being trafficked for sex work and other types of bonded labor Mahon (2012). In countries like India, at Sundarbans, Save The Children reported that climate change is causing human trafficking rates to rise dramatically. The combined effect of poverty and climate change impacts increase traffickers' ability to lure women and children into forced prostitution, marriage and labor. Cyclone Aila which displaced more than a million people in May (2009) catalyzed trafficking Eaton (2015). This shows that climate change has a negative impact on women and girls and therefore mitigation measures have to be taken to address the challenge.

2.3 Decision making and power dynamics at household and community level

Empowering women is not just necessary for their wellbeing but it also means to increase agriculture development and food. Women play a pivotal role in food production, food distribution and food utilization, which are the three components of food security. They also support a range of community level activities that support agriculture development such as soil and water conservation, afforestation and crop domestication (FAO) 2015. This may be

the case but women are not given enough power in decision-making. At times, they are even excluded in programs of value to them such as WASH programs meaning their needs are sometimes overlooked. According to the Food and Agriculture Organization, if women farmers were given the same access to resources such as land, credit as men, national agricultural production could rise by 2, 5 percent to 4 percent and the number of malnourished people could decrease by 12 percent to 17 percent (FAO 2011). Despite their substantial contribution to agriculture, food and nutritional security, women are often systematically marginalised and their contributions undervalued.

In many cases, women have diminished assets and resources to help them plan for and potentially avert the next crisis FAO (2011). Furthermore, women receive only 5 percent of agricultural extension services worldwide. Women are not given the same opportunity to be part of the decision-making team Huyer et al (2015). Studies in Burkina Faso, Kenya, Nigeria and Zambia showed that due to differential control over resources, women are at a disadvantage because when men and women grow the same crop on individual plots as most inputs such as labor and fertilizer went to the men's plots. To add more women are made vulnerable they bear severe gendered impacts of climate change without equal representation in decision-making or policy and programmatic design. Because of the change in climate patterns individuals are likely to face threats to their lives and security as they are impacted by natural disasters, resource scarcity and displacement. In these situations, women are often among the most vulnerable as they are typically excluded from decision making bodies and may not be considered when determinations are made UNHCR (2015). When there is water scarcity in rural settings, men tend to leave their communities to search for employment outside of cultivating crops. This is the only time when women become the heads of the households and assume responsibilities traditionally assigned to men but they do not have the same authority, decision-making power or access to community services, education or financial services. For example, in Kenya during the 2011 drought men left the women in search of food and employment and women were left with few or less resources. This led to high rate of prostitution, which increased the risk of contracting HIV AIDS. The women were not allowed to make the decision to sell or slaughter livestock without the permission and supervision of men. This left them in food shortages and economic security conditions Abuya (2012).

2.4 Indigenous knowledge systems

Indigenous knowledge systems have been looked down upon in favor of the Western culture. It is used as a mechanism for surviving natural calamities. With the changing patterns in climate, women are now using the Indigenous knowledge in trying to fight against the forever-changing climate resulting in food insecurity. The concept Indigenous knowledge is used interchangeably by various scholars (WIPO 2002, Harris 2000), to either refer to one of the following, traditional knowledge, indigenous knowledge, community knowledge, traditional ecological knowledge, aboriginal knowledge and cultural heritage. According to Rajasekaran (1993), it is the systematic body of knowledge acquired by local people through the accumulation of experiences, informal experiments and intimate understanding of the environment in a given culture. In Zimbabwe, the Shona and Ndebele tribes regard certain plants species for example burkea Africana also called celtis and sclerorya as sacred Nyong et al (2007). The belief was that the ancestral spirit would use it to reach the people and tell or determine the climate.

Indigenous knowledge can be used for survival in different areas of life such as health, food preparation, agriculture, education and disaster risk reduction (Guchteneire et al 2004). Indigenous knowledge has been used in many countries for example in Swaziland, where drought and occasional floods are common disasters Emery (1995), communities use various methods to predict disasters. For example, they use the height of the nests of the emahlokholoko bird (ploceus spp) on trees growing by riverbanks to predict floods. Others also use the cry of certain birds to predict rain and yields of certain wild fruit plants to predict famine. Climate change has also affected Zimbabwe, the people in Zimbabwe especially women also use indigenous knowledge to determine the climate patterns. They use the wind direction, the shape of the crescent moon and the behavior of certain animals to predict natural hazards Chiwome (2002).

Climate change has affected many countries in AFRICA; Tanzania is one of the countries, which has also adopted the use of Indigenous knowledge system. They use the animals in predicting drought and famine. For example by reading signs on goat intestines, specialized Maasi elders can tell drought and predict incoming famine or diseases, and this is according to Emery (1995). Indigenous knowledge can also be used in food preservation and food storage leading to food security. The knowledge has been used by many people especially women in weather forecasting by various cultural groups of Southern Zimbabwe. They have based on observation of trees, animals, objects insects and bird behavior to determine the

weather and hence be able to tell the climate pattern. To add more Shona people use fruit trees like muchakata, gankacha and mushuku to predict the eminence of the rain season and quantities of rainfall in any given agricultural season asserts Muguti and Maposa (2012).

The Ndebele tribe also uses that Indigenous knowledge in dealing with climate change. They also rely on wild fruit trees like black berries (umtshwankela, umkhuna, umthunduluka). The fruits are used to determine if there is plenty of rain or not. It is said that the more the fruits are, means there is no drought but if the fruits are few it means it's a year of drought. Birds are also used in weather forecasting. Mapara (2009) is of the view that the sound of insingizi (bucorus lead beater) and inkanku (clamator jacobinus) would mean the rains will fall in few hours' time. This helps women to prepare for the rains, fetch firewood, put water reservoirs and prepare for the farming season. Therefore, one may conclude and be of the view that Indigenous Knowledge is very vital and of importance in determining the climate change. This helps in knowing which crops to grow during the season and further determine if there will be floods or famine.

2.5 Policies on climate change, food security and women

Most nations have noted that disasters and hazards have become the greatest threats to human lives including in Zimbabwe. Ironically, Zimbabwe for one does not have a clear mitigation and response strategy to climate change. Zimbabwe signed the United Nations Framework on climate change in June 1992 but despite all that, there is no specific national response, which is comprehensive to climate change adaptation. Many of the policies are unknown in most remote and rural areas (Change 2010). According to Boko et al (2007), there is limited understanding of climate risks and vulnerabilities. This is a great challenge since most farmers are in the remote areas and were the changes in climate hit the most. Furthermore, according to IPCC (1992), efforts to combat climate change cannot be as effective as intended if half of the world's population has no voice or presence in the legal frameworks guiding mitigation and adaptation processes. Some of the policies include the Sendai Framework, Sustainable Development Goals, Gender Policies, ZIM ASSET, Zimbabwe's Constitution and Civil Protection Unit.

2.5.1 Sustainable developments goals

The year 2000 witnessed 189 countries coming together and working on the challenges affecting all countries. The Sustainable Development Goals run from 201 to 2030. Relevant goals to note and adopted by Zimbabwe are goal number 2. It highlights on ending hunger

achieve food security, improve nutrition and promote sustainable agriculture. With the aid of NGOs in the country, the target is being worked on and less vulnerable people are being recorded. Most vulnerable beneficiaries are getting food aid from the government and the donors such as Plan International, UN, WFP, World Vision and Amalima to mention but a few.

Gender equality is also another goal in the SDGs. It is goal number five. Its aim is to empower all women and girls since it has been discovered that worldwide women lag behind, are looked down upon and are discriminated though they are the food producers, food distributors and food utilizers when looking at food security. Campaigns and awareness's against gender discriminations are now done in the country to have equal opportunities such as boys and men.

Goal number thirteen on taking action to combat climate change and its impact is another aspect being worked on by the government of Zimbabwe among other countries. Every country seeing the drastic change effects of climate change want to combat against it some by global warming getting worse, more storms and droughts than ever action is being put in place to fight and mitigate against it.

2.5.2 Sendai framework

Sendai Framework (2015 to 2030) was also adopted by Zimbabwe because of trying to reduce risks and disasters. A number of disasters have been noted in the country over the past years including floods, drought and cyclones, which end up destroying homes, infrastructure development and cause hunger in the country. Therefore, the framework helps in getting ready to act once a disaster has occurred. It was drafted in twenty fifteen and will expire in 2030. The Sendai framework priorities for action that includes understanding the risk, investing in disaster risk reduction for resilience and enhancing disaster preparedness for effective response. Furthermore, the framework seeks to reduce disaster risks and loses of in lives, livelihood, health, and in the social, economic, physical, cultural and environmental assets of persons, businesses, communities and countries over the fifteen-year period. The main goal is to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive measures.

2.5.3 Zimasset

Government created a national development guide, which is the ZIM ASSET. It is a cluster-based plan, reflecting the strong need to fully exploit the internal relationships and linkages

that exist between the various facets of the economy. The clusters include food security and nutrition, social services and poverty eradication, infrastructure and utilities and value addition and beneficiation. Agricultural production was severely affected, resulting in the country depending on imports to meet the demands for domestic consumption and industrial needs. These challenges led to significant skills flight and erosion of private service delivery and achievement of the United Nations Millennium Development Goal (MDGs). It notes that the agricultural sector is the backbone of the economy, underpinning economic growth, food security and poverty eradication continues to experience severe systematic challenges within its entire value chain ranging from lack of agricultural financing to lack of affordable inputs. This has been exacerbated by prolonged periods of drought caused by climate change. In order to ensure food security in the country, government is to reestablish financial support for agriculture so that farmers will increase production, productivity and product quality.

Furthermore, government to recapitalize and capacitate Agribank, GMB, the Agricultural Marketing Authority (AMA) and ARDA in order to stimulate agricultural productivity and safe guard food security. To add more, farmers to access inputs at affordable prices. The cluster programs are aligned to and informed by the Comprehensive African Agricultural Development Program (CAADP), Draft Comprehensive Agriculture Policy Framework (2012 to 2032),the Food and Nutrition Security Policy , The Zimbabwe Agriculture Investment Plan (2013 to 2017), SADC and COMESA Food and Nutrition Framework.

2.5.4 Civil Protection Unit

The civil protection unit was formed in order to plan, respond and mobilize resources when disasters hit. This done both at National, Provincial and at District level. It has various ministries working with the government for example, agriculture extension workers. However, agriculture extension officers are not motorized. Smallholder farmers require help from the officers especially now with the introduction of command agriculture. The farmers require knowledge from the extension workers, which is not forth coming since they are not motorized. This is a hindrance to the achievement of the CPU targets.

2.5.5 National Gender Policies

Section 4.20 of the Constitution guarantees the right for all to an environment that is not harmful to their health. It guarantees an environment that is protected through prevention of pollution and ecological degradation with secure ecologically sustainable development and natural resource use for social and economic development. The reliance of women on natural

resources for food, income and energy, their limited access to productive resources, combined with their disadvantaged position in society increases their vulnerability to climate change induced distress including air pollution this is according to the New Gender Policy (2017). Therefore, the government in partnership with NGOs is working tirelessly to give equal platforms for decision making in environment management, which would significantly contribute to reducing climate and environmental risks in particular the way, they affect women.

2.5.6 Zimbabwe's constitution

The constitution of Zimbabwe adopted in 2013 is widely acknowledged for its firm commitment to gender equality. It reaffirms earlier commitments enshrined in the 200 constitutional amendment no.7, which prohibited discrimination on the grounds of sex. Women are the most affected by climate change and food insecurity issues since they are the ones responsible for food production, food utilization and food distribution that are the main components of food security. The declaration of rights in chapter 4 of the constitution recognizes that men and women have a right to equal treatment, including right to equal opportunities in political, economic, cultural and social spheres. It accords to women the right to custody and guardianship, and makes void all laws, customs, traditions, cultural practices that infringe on the rights of women and girls. Ironically, women still face challenges in terms of owning assets and in decision making which is one of the reasons why they are greatly affected by climate change and become the victims of food insecurity. This is because of the cultural beliefs and norms in the society that a woman cannot make a decision and cannot own assets.

2.6 Theoretical framework of climate change

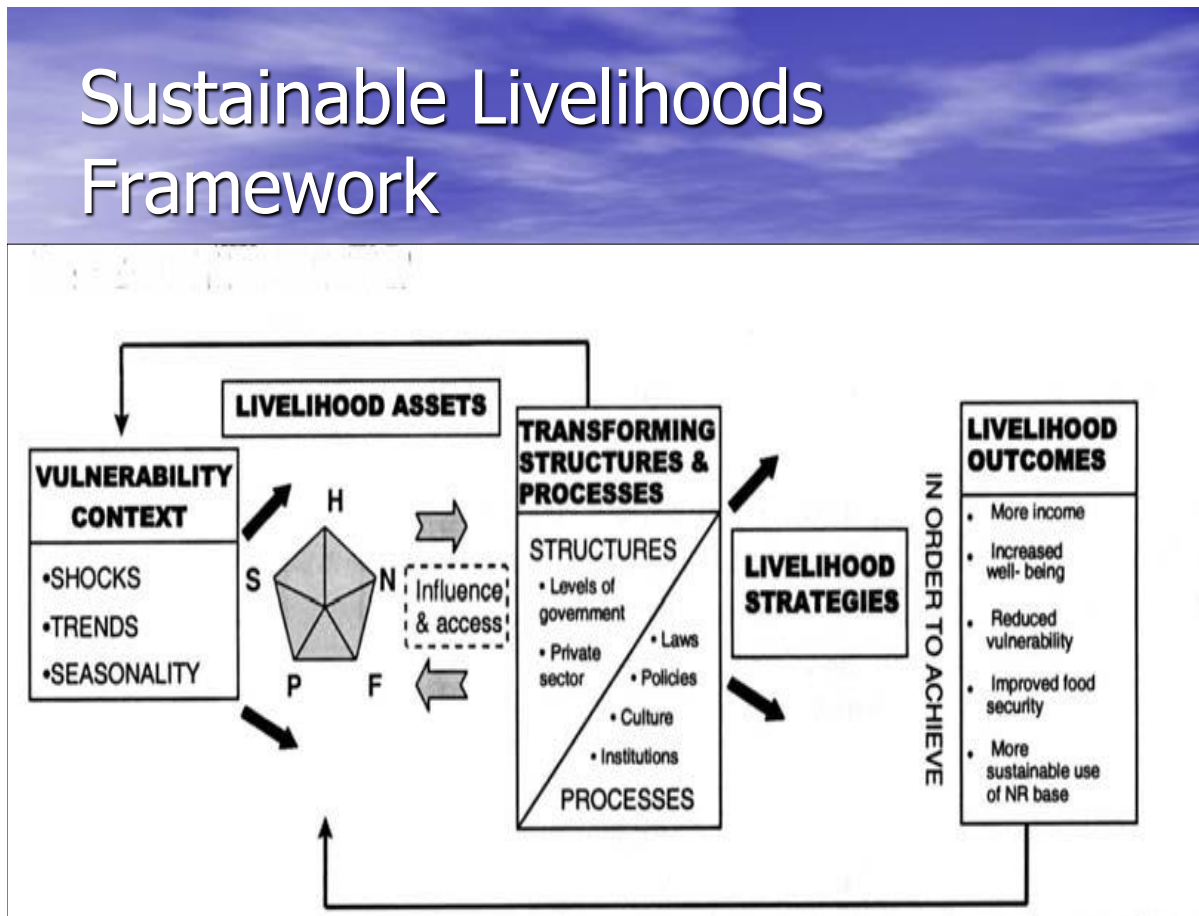
Reddy (2008) conceptualized climate change to a broader set of alterations in climate patterns, which include warming as well as cooling trends and other meteorological changes. Reddy further argues that to some extent climate change may be as a result of natural causes but notes that increasingly human activities are now playing a huge role in causing climate change. Harmful human activities include deforestation, burning of fossil fuels and environmental pollution. These and other activities result in emissions of the greenhouse gases including carbon dioxide, chlorofluorocarbons, methane and water vapor. The change in climate patterns has greatly affected people especially women in issues to do with food security since they are the food producers, distributors and utilizers. According to CARE

(2009), they define climate change as an observed and projected increase in average global temperature and the associated impact including an increase in extreme weather reports and changes in the timing and amount of rainfall. The IPCC (2007) asserted that climate change is any change over times of the earth's climate weather due to natural variability or because of human activity.

Chambers and Conway (1992) define livelihood as comprising the capabilities, assets and activities required for a means of living. An element of sustainability is brought out where scholars noted that a livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets while not undermining the resource base. Therefore, it becomes of importance to investigate the impact of climate change on livelihoods security in Tsholotsho since it compromises food security and has negative impact on women. Once again, Chambers (2004) noted that climate change is a threat and shock to the sustainability of livelihoods. Thus in livelihood terms, protection entails mitigating the impact of shocks and protecting livelihood assets such as livestock. Climate change is becoming a reality even in Zimbabwe as confirmed by IPCC (2007) which observed that climate change has altered the predictability, intensity and geographical distribution of hydro meteorological hazards the world over.

Drimie and Mini (2010) assert that climate change seriously affecting the livelihoods of developing countries. This being the case, Zimbabwe a developing country means it is not immune to the shock and impact of climate change. The livelihood strategies of Zimbabwe are equally at risk. Exposures to hazards such as climate change undermine livelihoods, simultaneously causing rural poverty, which has a negative impact on women especially in the rural areas. Poor people suffer the most since they have limited income-generating opportunities compared to those in urban areas. The use of the sustainable livelihood framework is therefore an attempt that could be employed to cope with shocks such as climate change. The concept has been adapted by agencies such as the British Department for International Development (DFID). It is aimed in the elimination of poverty in poorer countries. The approach is also used in project and program planning and in monitoring and review of existing activities. The DFID framework can be understood as a tool or checklist to understand poverty in responding to poor people's views and their own understanding of poverty.

Fig 1: Sustainable livelihoods theory



Source: field data 2018

According to Scoones (2009), sustainability involves two main issues, which include coping with immediate and short term shocks where local capacities and knowledge if supported will be sufficient. DFID has popularized the sustainable livelihood theory. CARE (2009) asserts that one of the most important factors shaping the sustainability of livelihoods of individuals is their access to control over natural, human, social, physical and financial resources. These factors become pivotal in adaption in the face of the possible effects of climate change. Supportive laws and policies should be in place to strengthen the capacities of the communities in improving the coping capacities.

Table 1: The five livelihood

Resource	Examples
Human	Knowledge of climate risks, conservation agriculture skills, good health to enable labour
Social	Women's savings and loans groups, farmer-based organizations
Physical	Irrigation infrastructure, seed and grain storage facilities
Natural	Reliable water source, productive land
Financial	Micro-insurance, diversified income sources

Source: Field data 2018

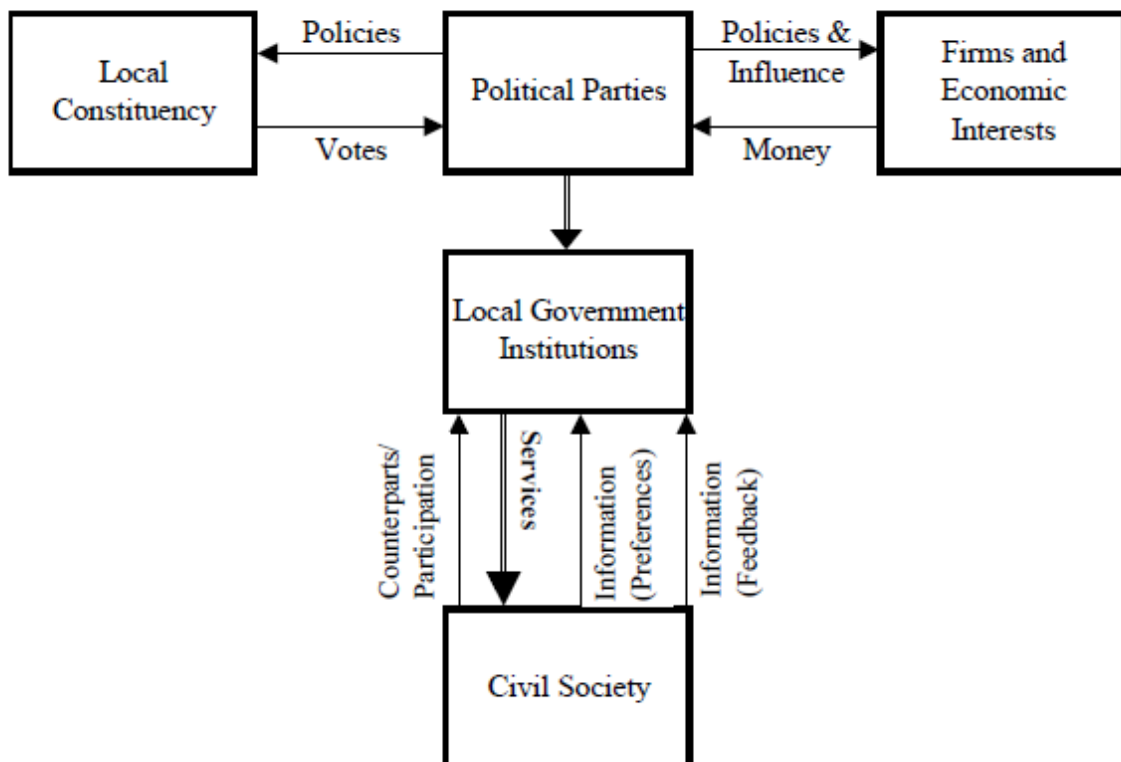
Access to and control over the resources is necessary for the adaption, which varies within countries, communities and even households. It is said to be influenced by factors such as policies, institutions and power structures. CARE (2009) further asserts the world's poorest people are the most vulnerable to climate change because of lack of the five resources namely human, social, physical, natural and financial which are crucial for adaption. A fine balance in terms of access to these resources is critical in improving the coping capacities of the communities especially women whereas lack of any of the five critical resources increases their vulnerability.

2.7 A Theory of Local Government

This is a three-legged theory, which includes the economy, politics and society. Local governments depend on the relationship that collectively comprise civil society to elicit information necessary to the policy making process, judge the efficiency of previous interventions and plan for the future Bardhan (1994). The theory advances that various players in the economy, politics and society are intertwined and necessary to counter challenges facing the community. The local economic development in rural settings at both micro and macro-economic level usually depend on the local endowments whose exploitation maybe along political alignment. It is also common that economic development is spearheaded and agitated for by the presence of civil society groups through their lobbying and advocacy work. The theory highlights on the importance of communication across large areas and ethnically diverse groups. It is also true that the lacks of means of being in the Village Savings and Lending's (VSL) groups excludes one from being part of the income generating activity and consequently increase one's vulnerability to shocks such as climate

change. Over the past two decades, the Zimbabwean political landscape has become so polarized that people either belong to ZANU PF or MDC such that have given rise to anecdotal evidence that projects are on partisan lines meaning that some people are excluded from the mainstream local economic development. The absence of a strong civil society, which is responsible for making government accountable significantly, increases communities vulnerability as people are neglected and ignored. The local governance theory also emphasizes on trust and responsibilities where community leaders have to comply with their duties of leadership and advocacy. In order for local government to be effective, market relationships and logic of social representation must counterbalance each other and none dominates the other. It is said that where market for political influence is weak, underfunded parties may be unable to canvas voter opinion effectively and government may be insensitive to economic conditions, and where society's civic organizations are weak, government will be lacking in information, oversight and accountability (Faguet,2004).

fig 2: Theory of local government



A case study of Bolivia's two cities will be revealed to support the theory. These are Charagua and Viacha.

2.7.1 Charagua

It is located in low twisted bushes of Bolivia's and Chaco. The economy is based mainly on agriculture, cattle ranching and a teacher training college. They use the old traditional stick method to cultivate their farms. The town has no industry and less commerce. The town has acquired a reputation of being well run and uses decentralization system. Decentralization increased municipal resources by some 7400 percent year on year but funds were well spent. The mayor had implemented an investment planning system, which authorities and villagers agreed it was transparent, equitable and highly participative Albo (1990). Key to this success was the upholding of vital political and economic tenets of decentralization bringing power to the people, engagements and consultations of all stakeholders. Through being consulted and engaged, the people prepared for climate patterns and together with the central government, they came up with plans on how to respond to any disasters that may befall them such as floods, drought. Hence the importance of consultations, inclusion and decentralization. .

2.8 Experiences from other countries

There are a number of case studies that show the impacts of climate change on food security and rural women. This section of literature review presents a few. They are from Tanzania, Kenya and Uganda.

2.8.1 Kenya

Kenya is another country in Africa affected by climate change, food security issues and they have a negative impact on rural women. As a result, they formed an organization known as the Green Belt Movement, which is an environmental, and women's rights organization led by Nobel Laureate Wangari Maathai since 1977. It was a response to the needs of rural Kenyan women who endured limited access to water, food and long tracks to gather fuel and firewood Kakota (2011). The movement brings women together to grow seedlings and plant trees to bind soil, store rainwater and provide food and firewood this is according to the Green Belt Movement (2014). They have planted over 41 million trees, helping to restore and protect Kenya forests. This programme not only addresses climate change, but also creates jobs, increases income for women and improves water and food security.

2.8.2 Uganda; Kamuli District

In 2004, Uganda established the Sustainable Rural Livelihoods program to improve food security, nutrition and health at the household and community level. The program employs farmer to farmer training extension services to demonstrate and disseminate information on key management practices such as planting bananas or cassava in a way that ensure productivity and control disease , enhancing soil fertility through composting with manure and growing nutrient dense crops such as amaranth grain and vitamin A rich sweet potatoes . Women make up the majority of farm group members, leaders and trainers. They comprise 72 percent of community based rural development extension workers. 77 percent of community nutrition and health workers, 74 percent of committee members and 71percent of the executive committee members. The program has resulted in the enhancement of women’s human capital through the training and experiences gained in developing leadership skills, improved nutrition and community health, which has gained them respect for their role as sources of valuable knowledge. Furthermore, the women are involved in farm groups and emerging marketing associations. This has increased in household food security and acted as a mitigation way in combating climate change since they now know which crops to grow (FAO (2011B)).

2.8.3 Tanzania

Tanzania is a country inhabited by more than 40 million people. It also suffers from climate change impacts specifically because of the changing weather patterns affecting animal migration and deterioration of soil quality. These in turn affect crop production. The Tanzanian Constitution, Bill of Rights and Tanzania Vision of 2027 seek to end gender imbalances by 2027. The government now engages with women and recognizes their effort in combating and adapting to the effects of climate change. The government collaborated with IUCN and established a ccGAP officially titled the National Strategy for Mainstreaming Gender in Climate Change. It recognized the need to integrate gender into policies and programs surrounding climate change. The program seeks to ensure that women have both the access and ability to contribute to initiatives focused on climate change issues (Pearl Martinez et al .41;42).

Key priority issues are improving women’s access to land tenure, increasing participation of women and girls in agriculture education, creating gender-based programs and to improve the management of water sources. It also focuses on building institutional understanding on gender climate change, forestry and gender responsive program to address adaption in the

coastal regions. This being successful will go a long way in combating climate change issues, food insecurity and gender imbalances between men and women (climate change impacts enjoyment of human rights 2014).

2.9 Gaps in literature review

The researcher noticed that there wasn't much on literature review since a lot of ground had been covered by other scholars. However, the situations on the ground in rural areas are being overlooked since women are suffering and there is no one to stand for them. They are the victims of climate change impact but still there is poor representation of them in policy formulation and in issues to deal with climate change.

2.10 Summary

This chapter started with an introduction to the impact of climate change, food security and on rural women. It revealed that rural women are the worst affected group compared to men because of cultural believes, lack of education and lack of representation in issues affecting them. Theoretical, legal and policy framework have also been highlighted in the above literature review. The researcher used the Sustainable Livelihood approach and the Local Governance theory. These bring out the coping strategies and short term shocks on climate change. The theory on local governance brings out the importance of intertwining three factors such as economy, society and politics in order to counter challenges facing communities such as climate change. Various impacts of climate change on women, food security have also been articulated. Climate change affects almost all the countries, therefore case studies of three countries namely Uganda, Kenya and Tanzania have been used in the above chapter. Research methodology is the next chapter to be presented by the researcher.

CHAPTER III

RESEARCH METHODOLOGY

3.0 Introduction

This section entails the research design, techniques, data collection tools, data analysis and ethical issues that will be considered during the conduct of this research. It highlights the intentions and procedures of the study and how it will move from one stage to another in order to acquire the information that answers the research questions. Methods of data collection, sampling techniques proposed and data analysis procedures will be detailed and explained.

3.1 Research Methodology

Rajasekah et al (2005), defines research methodology as a systematic approach to solve a problem. There for it is a discipline of studying how research is to be carried out. Furthermore, Rose (2005) is of the view that research methodology encompasses concepts such as theoretic models, phases, hypothesis and quantitative or qualitative methods, which will help to describe broad theoretical supporting the selected research techniques for say, qualitative and quantitative means.

3.2 Research Design

The research design is the blueprint, which enables the researcher to come up with solutions to which the research strategy will be used. It provides a guide to various stages of the research. Creswell (2002) explains that the research design is a process that links research questions with the data. A case study research design will be adopted to generate an in-depth understanding of the status and trends of the impact of climate change on food security and rural women in Tsholotsho. Mitchell and Jolly (2010) state that a research should enable researchers to get evidence that answers all the research questions and leave no room for doubt or lack of clarity. In this study, the dimension of research that is being pursued is explanatory. The study seeks to ascertain the possible effects of climate change on food security and rural women.

In this study, the researcher will predominately use qualitative design over quantitative. Saunders et al (2007; 470) indicates that qualitative examination alludes to all non-numeric information or data which has not been evaluated, and can be a result of all research strategies. A qualitative research permits the assessor to study specific issues or occasions completely in subtle element. Most case study researches involve more than one method of

data collection but this derives from the tendency for qualitative research, which typically employs two or more sources of data, to be intensively used (Ibid). The combination of qualitative and quantitative research offers further possibilities. By employing different methods of data collection in a single project, one is to some extent able to compensate for the limitations of each (Ibid).

3.3 Target Population

Leedy and Ormrod (2005) refer to population as all events, things or individuals to be represented. A study population is the collective number of class of individuals, object ,places or occasions since they are relevant to the research questions For this study, it is not possible to collect all data from the entire target population which constitutes 1 chief of Tsholotsho district, 9 Headman of Ward six, twelve and thirteen, 22 councilors from all the wards, 5 officials from the D.A Office, 8 from Agritex department , 4 from Social Welfare Department, 18 from Plan International and 35 members from the residents association.

3.3.1 Sampling size

Dilon (1999) stipulates that sampling size is the subsection of the population derived from the targeted population from which the researcher will get information from. Powell (1997) furthers argued that it is a representative fraction of the targeted population from which the researcher gather related information under study. The sample size of the research constitutes 66 targeted respondents from the total targeted population of 102.

Table 2 targeted population and sample size

Category	Targeted population	Sample size	Percentage of sample size	Sampling technique
Chief	1	1	100%	Purposive sampling
Headman	9	5	56%	Simple random sampling
Councilor	22	3	14%	Purposive sampling
Social Service officials	4	2	50%	Simple random technique
Plan International (NGO)	18	11	61%	Purposive sampling
Residence Association members	35	35	100%	Purposive sampling
Total	89	57	64%	

Source: Field data 2018

3.3.2 Sampling techniques

3.3.2.1 Purposive sampling

Another term given to purposive sampling is judgmental sampling. An individual may be chosen because he or she possess vast knowledge about the subject being researched on, (Tongco, 2012). The researcher is guaranteed of getting responses when using this technique and one of the advantages is that the researcher excludes those without the knowledge there fore time is saved since those with knowledge are selected. The researcher's judgment is used for selecting items which he considers as representative of the population. Kumar (2000), is of the view that judgmental sampling is a process by which the researcher leaves some

respondents and choose participants well equipped in the area under study. It is frequently used in qualitative research where the desire happens to be to develop hypothesis rather than to generalize to larger populations.

The researcher used purposive sampling as a result of certain skills and knowledge that individuals are likely to possess. In this research the researcher used the sampling technique when targeting the chief of the area since he has vast knowledge in his jurisdiction. Therefore, the collection of data was 100 per cent effective since he had a better understanding on the issue of climate change.

3.3.2.2 Random sampling

Random sampling is also known as chance sampling or probability sampling. This is whereby each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same probability of being selected. Simple random has been defined by business dictionary (2015) as a method in which all the elements in a group has the same ability of being chosen. Murombo (2014), stipulates that simple random sampling is where respondents can be randomly picked despite issues to do with gender, age, sex of the targeted population. The researcher used the hat system when targeting the residents' association of Tsholotsho. Then for all participants to have equal opportunities, the researcher wrote numbers on pieces of paper and those who picked even numbers were given the questionnaires. The same process was conducted to all the interviewees and the questionnaires were distributed to be filled out. Social service department, headman and Agritex staff were given the random sampling technique.

3. Sources of Data 4

3.4.1 Primary

During data collection the researcher used primary data. Both quantitative and qualitative data collection methods were used by the researcher through the use of interviews, focus groups discussions and questionnaires. Greener (2008) defines primary data as data gathered by the researcher in the field for the purpose of the research project. It is primarily used to explore the objectives of the project. It relates to the particular research different methods of inquiry were used triangulate the information and this was done in a way of improving validity and reliability of the information provided by the researcher. Primary data sources were used by the researcher to gather information from the residence associations members who represented the community at large, government staff, NGO staff, the Chief of the

district among other key players. Wegner (2008) supported this by stating that primary data information is captured of the spot of generation by the researcher.

3.4.2 Secondary data

Jalil (2013) defines secondary data as data that has been already collected before the current needs of the researcher. Greener (2008) further defines secondary data as data which the researcher did not collect for themselves. Secondary source depict, interpret, evaluate, comment, explain, analyze on and create theories identified with a topic. They are regularly written after the fact, with perception. They may simply indicate to primary materials. It may have been collected by other researchers in the process of normal operations by institutions. In this research secondary data was used by the researcher to gather information from journals, textbooks, legal frameworks and internet sources. The main advantage of using documents is that they are usually written by professionals in that area of study with an in depth analysis of the research under study although some documents may be biased.

3.4. Research Instruments

In this study the questionnaires, focus group discussions and interviews will be used to collect data. The advantages and disadvantages of these methods will be considered.

3.4.1 Questionnaires

Polit and Hungler(1997) defined questionnaires such as a method used by the researcher to get related data from the key informants who have relevant information about the study and information can be from the respondents knowledge about the research. The researcher used questionnaires and were administered to Plan International officials, Social Service department, Traditional leaders as well as the Household heads in an attempt to get related information from these key informants as well as grasping the concept of the socio economic situation in local communities in ward six, twelve and thirteen. Milne (1999) states that questionnaires gives a lot of benefits.

Advantages of Questionnaires

- They are a quick way of gathering information.
- They are easy to use since the researcher just distribute them and come back later to collect them hence saving time.
- Easy to distribute where a large sample is to be collected
- Less expensive
- Respondents also respond freely at their own time and without fear

Disadvantages of Questionnaires

- Low return of questionnaires since some participants may not return the papers.
- Individuals may interpret the questions differently and respond basing on their different interpretation of the question and the opinions of the respondents may vary hence making it difficult to come up to a logical conclusion.
- Respondents are likely to ignore some questions.
- Questionnaires are not suitable to investigate long and complex issues
- Questionnaires may look impersonal.

3.4.5 Focus Group Discussions (FGDs)

Some important data will be collected using focus group discussions. In addition, the use of FGDs is preferred because everything is verbal in local language. Interactions among participants will be informative. FGDs will be done to understand how people feel about climate change and its impact on food security, women and the implication on the community and programs addressing the effect of climate change and livelihoods. In each ward, three FGDs will be conducted with men, women and youths. In trying to minimize the domineering effect of some people, the facilitator will ask questions even to those who will be silent throughout the deliberations. Other Participatory Rural Appraisal (PRA) tools will be used to complement FGDs such as historical trend line, seasonal calendar, resource mapping and institutional Venn diagrams.

Advantages of using focus group discussions

- It is less time consuming
- It enables clarity of facts

Disadvantages of focus group discussions

- It is expensive to use

3.4.6 Oral Histories

Oral histories will be conducted on climate change related issues with community members who had in the past, lived in the community their entire life. Oral history will offer insights into past changes in the climate and environment. Oral histories will be documented from seven individuals, 2 per ward. The interviews will be recorded and transcribed.

3.5. Document Review

Relevant documents such as journal articles, global and regional instruments on climate change, food security, rural women, policy documents, annual reports, working papers among others will be reviewed to provide supplementary information such as current trends of climate change, global and regional responses to the impact of climate change on food security and rural women.

3.6 Pretest

Pretesting of the research instruments was done by the researcher. This was done so as to determine whether the instruments used were reliable and appropriate for the study undertaken. According to Clough (2008), pretesting is a survey in which few instruments are used for a convenient test of reliability and viability of research instruments used. The researcher distributed the research instruments to lecturers, fellow colleagues and friends for pretesting and to help identify gaps that may be in the instruments unnoticed by the researcher. The pretest was a success since it was completed and corrected. Highlighted corrections were on the terms and language used by the researcher, some even pointed out that some of the questions were too long and the researcher had left no room for answers on the traditional leaders questionnaire. The corrections were done and data was then collected by the researcher.

3.7 Data analysis

Data analysis is a systematic and technical aspect of the research study. It requires meticulous working through the procedures and tools for analysis. Quantitative data will be analyzed using SPSS version 19 to generate descriptive statistics such as frequencies and cross tabulation. Line by line coding will be used to analyze qualitative data to identify the key themes, which emerged.

3.8 Ethical Considerations

According to CSSR (2007), 'no researchers can demand access to an institution or organization'. In view of this, the researcher considers it a matter of privilege to be accorded the facilities needed to carry out this research to enhance professionalism in the study. Thus before collecting the information, the researcher will ask for permission from the authorities. The researcher will go to Tsholotsho Rural District Council to ask for permission to conduct the research. The District Administrator will also be consulted. Further, the researcher will seek for the respondents' consent as an ethical principle in research. In light of the above, the

study will refrain from coercing anyone to give information and will not promise respondents incentives but everything will be done in mutual understanding. The informants will be clearly told that the information will be kept confidential. The encouragement by Leedy and Ormrod (2005) that under the professional standards researchers are urged to report findings in a complete and honest way without misrepresentation will be considered. The findings will be shared with the district authorities.

3.9 Validity and Reliability

Reliability of the design mainly deals with reliability that is; the findings can be used elsewhere by other studies. It proposes that the outcomes which will be provided by the instrument will be reliable and consistent. Reliability is seen as the essence of being steady and repeatable after some time (Greener; 2008). While validity is concerned with whether the findings are really about what they appear to be about. Validity of research instrument selected in this study will be determined by the advantages and disadvantages of using each in carrying out studies of this type. Hence, the above methods will be considered exceptionally appropriate to be able to get valid and reliable information to test the study's hypothesis and answering of research questions to this study.

3.10 Summary

The chapter outlines the research design and research techniques to be employed in this study. The study used both the qualitative and quantitative research design to triangulate data obtained. The targeted population was 89 and the sample size was 57. Among the targeted population, the researcher targeted the D.A, residence association and plan staff to mention but a few. This was an attempt to deliberately produce a systematic research design to elicit as much evidence as possible based on which the research questions were answered. Ethical considerations are also discussed in the chapter, which formalized the research with authorities. The researcher used random and purposive sampling in the research and the population was divided into three relevant and significant strata based on geographical location and sex that is male or female. In the next chapter, the researcher will concentrate on data presentation, analysis, discussion and interpretation with the utilization of the previously mentioned and discussed methodologies.

CHAPTER IV

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter is concerned with the presentation of the research findings, their analysis and interpretation. This will be done per thematic area as it appears on the household questionnaire. The data was captured from respondents through the use of questionnaires, interviews and focus groups discussions. The researcher was lucky to find the respondents at a food aid meeting therefore the number were favorable. The research was carried out to find the Impact of Climate Change on Food Security and Rural Women.

4.1 Response Profile

Table 3 Questionnaire

Category	Sample size	Actual response	Response rate
Traditional leaders	6	4	67%
Plan officials	11	9	82%
Social Services officials	2	2	100%
Councilors	3	2	67%
total	22	17	77%

Source: Field data 2018

The researcher managed to distribute questionnaires to various groups such as the chief, village headman, E.O.Social Services, local authority officer and the community at large .Not all the distributed questionnaires were returned, the researcher could not attain a 100 per cent on councilors since the other one was busy with election preparations.

4.1.1 Questionnaire Response Analysis

The researcher used open ended questions to allow the respondents to explain the Impact of Climate Change on Food Security and Rural Women in their own understanding and closed

end questions to allow the researcher to analyze the data and come up with variables from the data gathered. Not all the questionnaires were returned since the councilor was busy with preparations for elections and the researcher was lucky to get all questionnaires completed by Social services staff. Plan staff managed to complete the forms though the researcher failed to collect the other two questionnaires since the staff members were facilitating workshops on behavioral change.

Table 4: Focus group discussion rate

categories	Focus Group targeted respondents	Actual response	Response rate
Tsholotsho Residence Association	35	12	34%
total	35	12	34%

Source: field data 2018

A focus group discussion was conducted by the researcher and it targeted the residence of Tsholotsho association. The targeted respondents were 35 but the actual response was from 12 respondents.

Analysis

The interviews were held and it was quiet poor since 12 people attended the focus group. This was as a result of the primary elections going on in the areas and there was a food aid program hence the poor attendance by the respondents. None the less, the information was gathered by the researcher and the community members were free to express their thoughts since it was through verbal communication hence no difficulties in writing or reading.

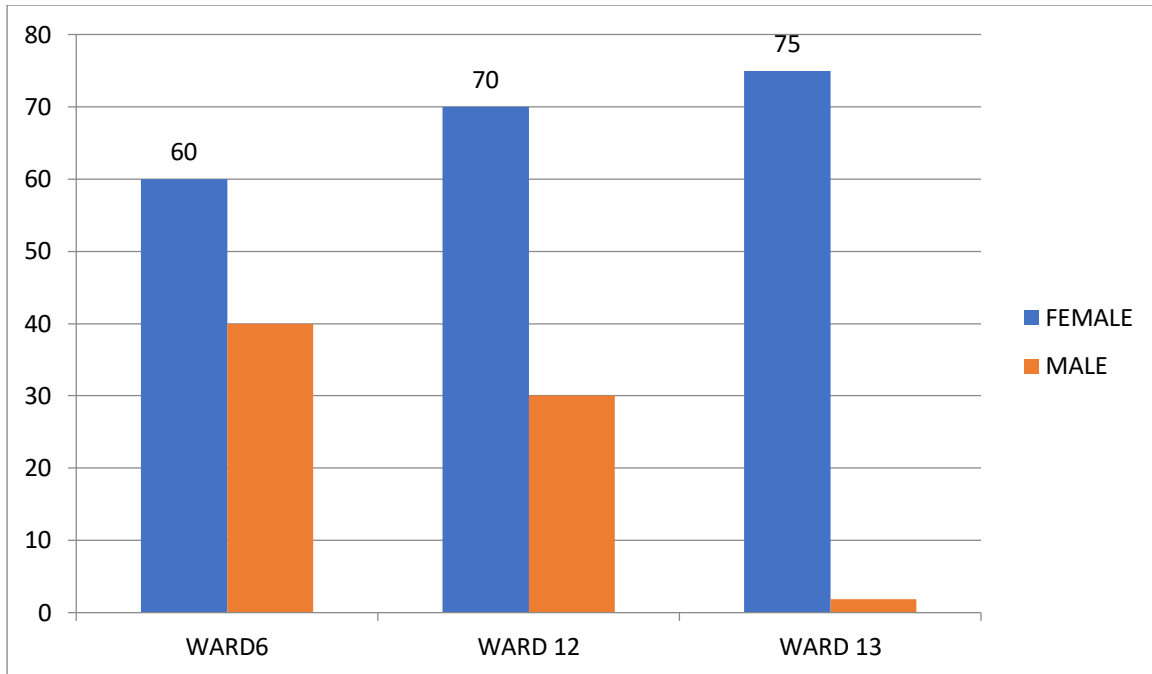
4.2 Demographic analysis

4.2.1 Distribution of respondents by sex

The majority of the participants in the household survey were female 60 per cent and 40 per cent were male. This can be explained by the fact that it is more likely to find females at home than males. The majority of men are outside the country in search of employment.

Therefore, the findings indicate that women are likely to suffer more than men in climate change situations since they are the majority in the districts.

Fig 4 distribution of respondents by sex

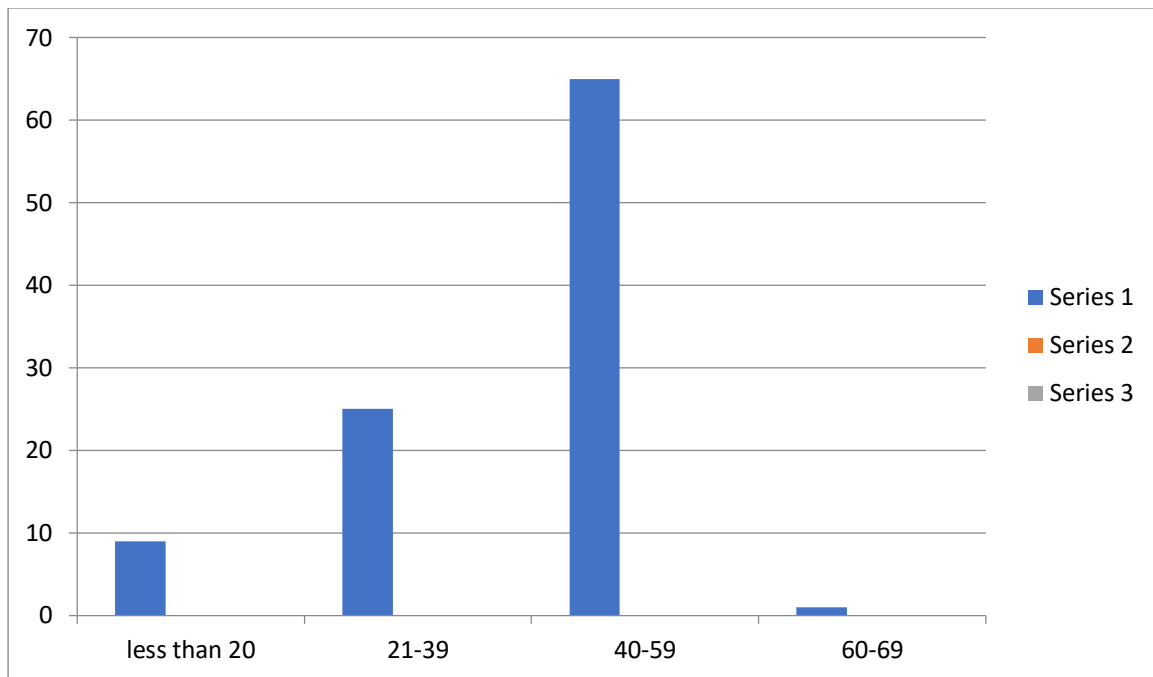


Source: Field data 2018

4.2.2 Distribution of respondents by age

The average respondents are 45. The average household size is 5 members. This is clearly shown in fig 4.2 below.

Fig 5 distribution of respondents by age

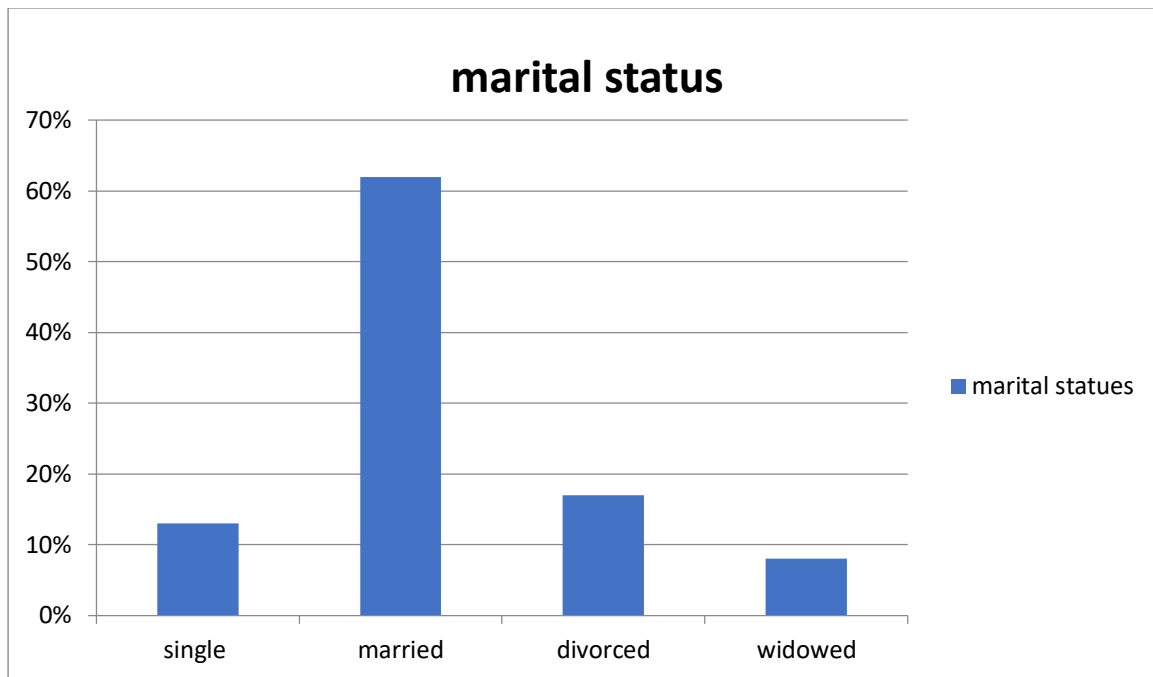


Source: Field data 2018

4.2.3 Distribution of respondents by marital status

Generally, most of the respondents are married, 62 per cent. The next majority is widowed 17 per cent followed by people who are single 13 per cent. Ward 12 has the highest number of people who are single and ward 13 has the highest number of divorcees. This is captured by fig 4.3 below. The marital status may be linked to the vulnerability of the respondents.

Fig 6 distribution of respondents by marital status.

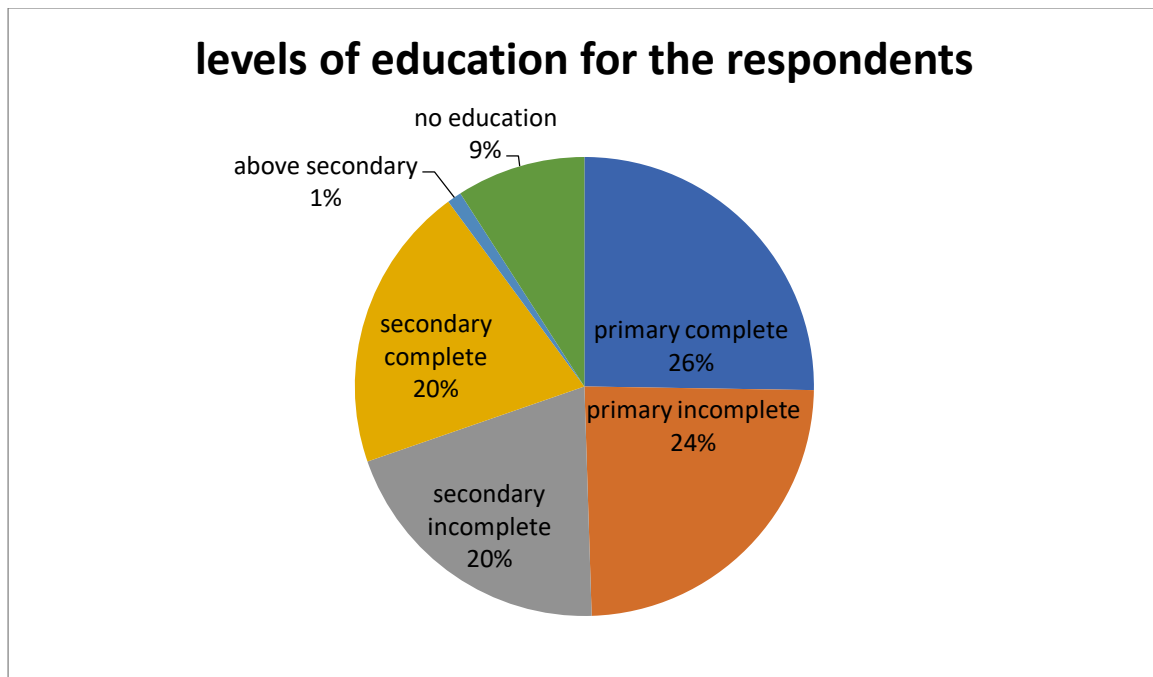


Source: Field data 2018

4.2.4 Distribution of respondents by level of education

There is a significant difference in the level of education for household's heads across the wards. There are 9 per cent of household heads with no education and only 1 per cent household heads who attained above secondary education. This has a bearing on the level of awareness and appreciation of climate change issues. This is likely to increase the vulnerability of these households to the potential effects of climate change on food security and rural women. This has been highlighted below.

Fig 7 distribution of respondents by level of education

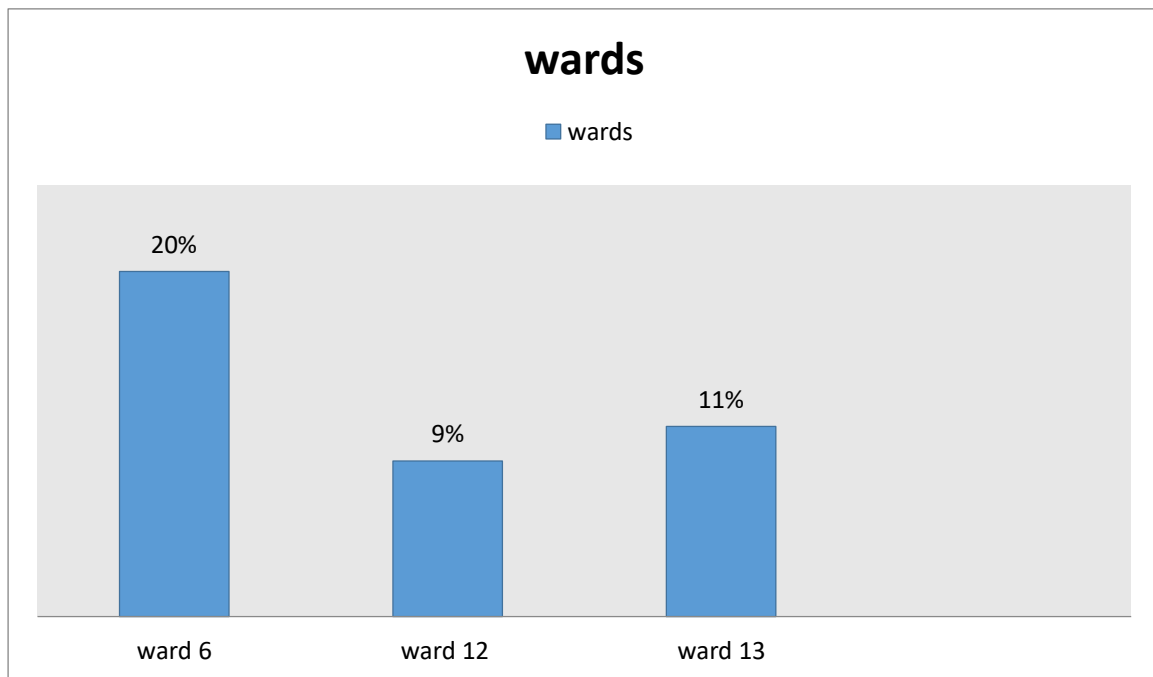


Source: Field data 2018

4.2.5 Distribution of respondents by association

The majority of respondents did not belong to groups or associations 60 per cent. Of these memberships to groups increase social capital which minimizes household's vulnerability to climate change and its impact on food security and rural women?

Fig 8: distribution of respondents by association

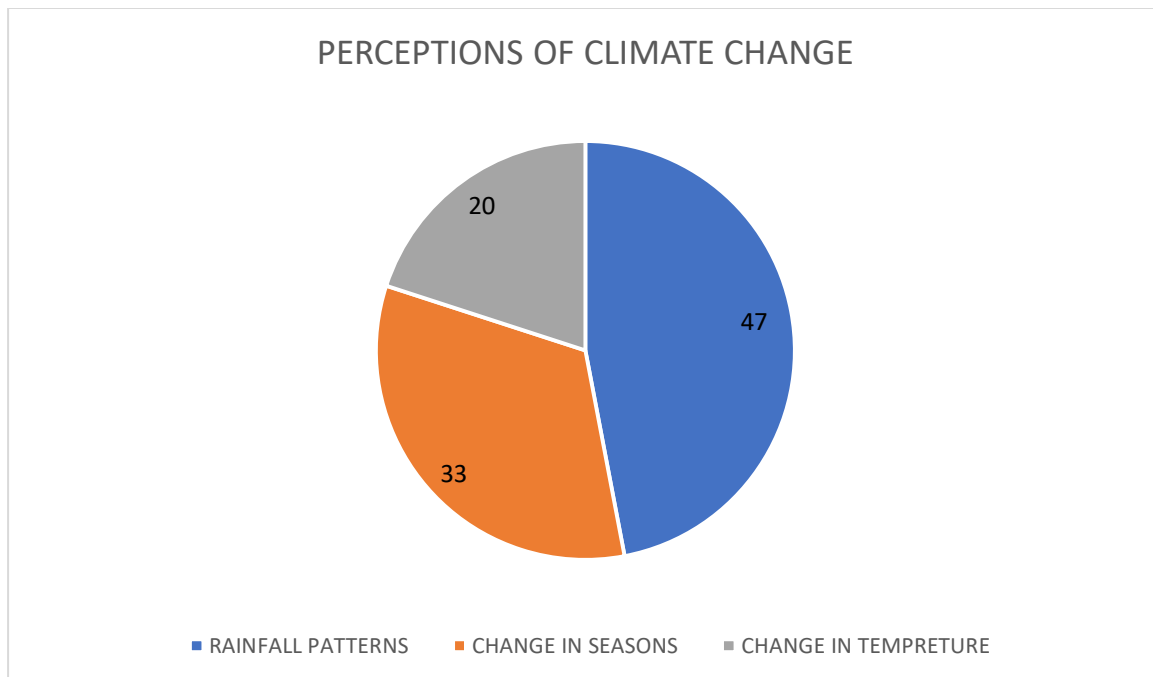


Source: Field data 2018

4.3 Local perceptions and experience of climate change

Results from the survey reveal that the majority of the respondents have a clear understanding of climate change which they described in terms of change in weather parameters such as rainfall patterns 47 per cent, change in seasons 32 per cent and change in temperature 20 per cent. This knowledge is critical in reducing their vulnerability to the potential effects of climate change on food security and rural women. The respondents were the residents association together with the chief. This has a positive impact on the fight against climate change since leadership is well aware of the challenges they are facing. Therefore, 70 per cent of the respondents showed knowledge on the climate issue

Fig 9: Perceptions on climate change

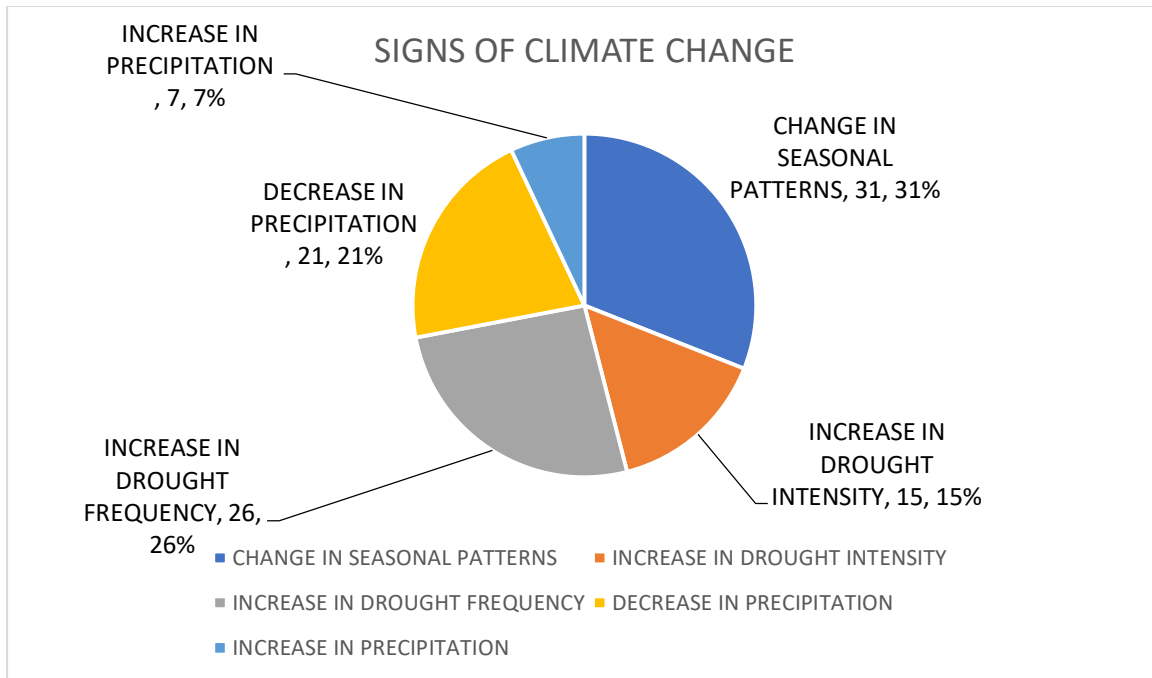


Source: Field data 2018

4.3.1 Signs of climate change

Ninety three per cent of the respondents had noticed change in climate in their communities or in other communities and this was manifested in form of change, 31 per cent seasonal patterns, 15 per cent increase in drought intensity, 26 per cent frequency, decrease in precipitation 21 and increase in precipitation 7 per cent. Disaggregated data by words is presented in fig 4.7 below.

Fig 10: Signs of climate change



Source: Field data 2018

Furthermore, analysis revealed that respondents reported increased change in seasonal patterns and drought intensity.

Similarly, 65 per cent of the majority of the participants in qualitative interviews defines climate change as the change in average weather conditions such as temperature and rainfall over a long period of time.

‘Climate change is the shift in the current state of the climate over at least several decades. These changes can be due to either natural variables or human activities. These changes are observed or projected increase in global temperature, extreme weather events, sea level rises and melting of glaciers.’(Agric extension officer, Agritex Tsholotsho, July 2013).

The majority of respondents (70%) interviewed acknowledged that climate was changing and this is attributed to observable changes in weather variables such as rainfall, temperature and increased occurrence and severity of extreme weather events such as heavy rains in a short time causing intensive flush floods, excessive rainfall during early stages of crop development and prolonged drought periods or dry spells in the mid and later stages of the crop. For example, during tasseling of maize. Flush floods destroy top soil causing severe soil erosion and damage to crops. This calls for adoption of critical technologies at household

and community level such as conservation agric which entails soil cover, crop rotation, minimum tillage and early planting to preserve soil and water. Furthermore, changes in rainfall patterns weaken farmers' capacity to predict weather using Indigenous Knowledge systems which in turn affects their decision making capacity. Akin to this, several authors have argued that climate change and variability pose challenges to Indigenous Knowledge in terms of coping strategies, (ICIMOD, 2009). Indigenous knowledge provides important opportunities for context and culturally specific early warning systems modes of engineering and architecture that are often less expensive and take little time and resources to reconstruct, (Verna, 2007).

The historical trend analysis revealed re occurrence of drought over a decade, with the reoccurrence interval shortening over the years. In the entire three wards communities experienced drought in 1981, 1992, 2002, 2008 and 2012. Although farmers had experienced a ten-year drought cycle in the past, currently they are experiencing 4-6-year drought cycles. Although some groups reported increase in drought severity since 1992, other groups and individuals noted a decline in drought severity over the years. Shortening of drought recurrent interval will have severe effects of food production and household food security especially on women since they are the most affected.

4.3.2 Information sources

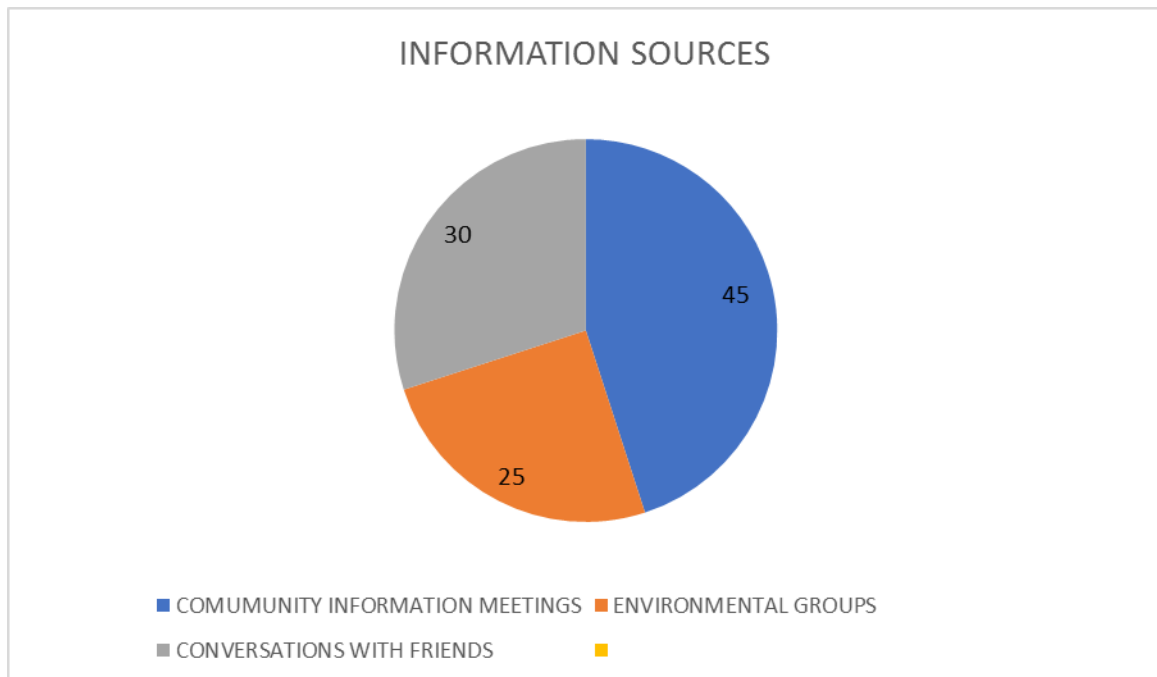
Among the different source of information on the impact of climate change on food security and rural women, the first priority source of information was community information meetings 45 per cent , second was conversations with friends 30 per cent and third was environmental groups 25 per cent . Other important information sources included mass and print media. A majority of respondents who received climate change information through conversations with friends belonged to groups. Otherwise a majority of respondents who receive climate change issues through other sources did not belong to any groups.

4.4 Level of awareness on climate change issues and its impact on food security and rural women.

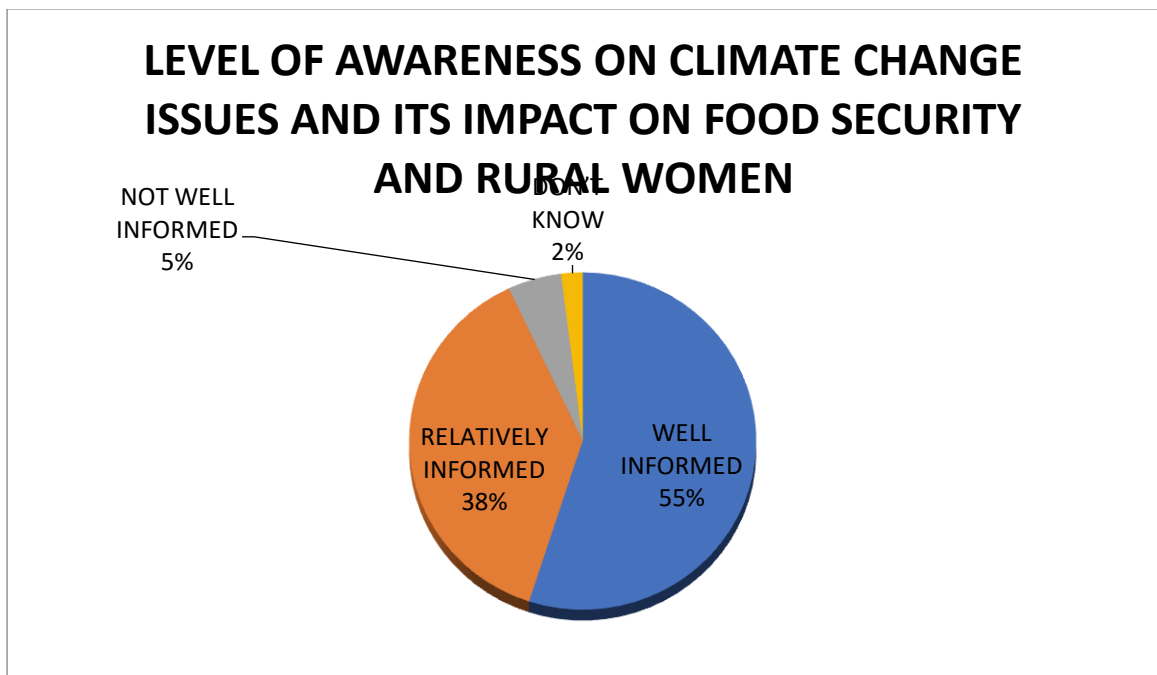
Assessment of the level of awareness about climate change issues shows that the majority that is 55 per cent of respondents were fairly informed about climate change issues and its impact on food security and rural women. They have an idea and are well vexed with the situation and the impacts that it has on women and food security issues.

Fig 11: Information sources

Fig 12 Level of awareness on climate change



Source: Field data 2018

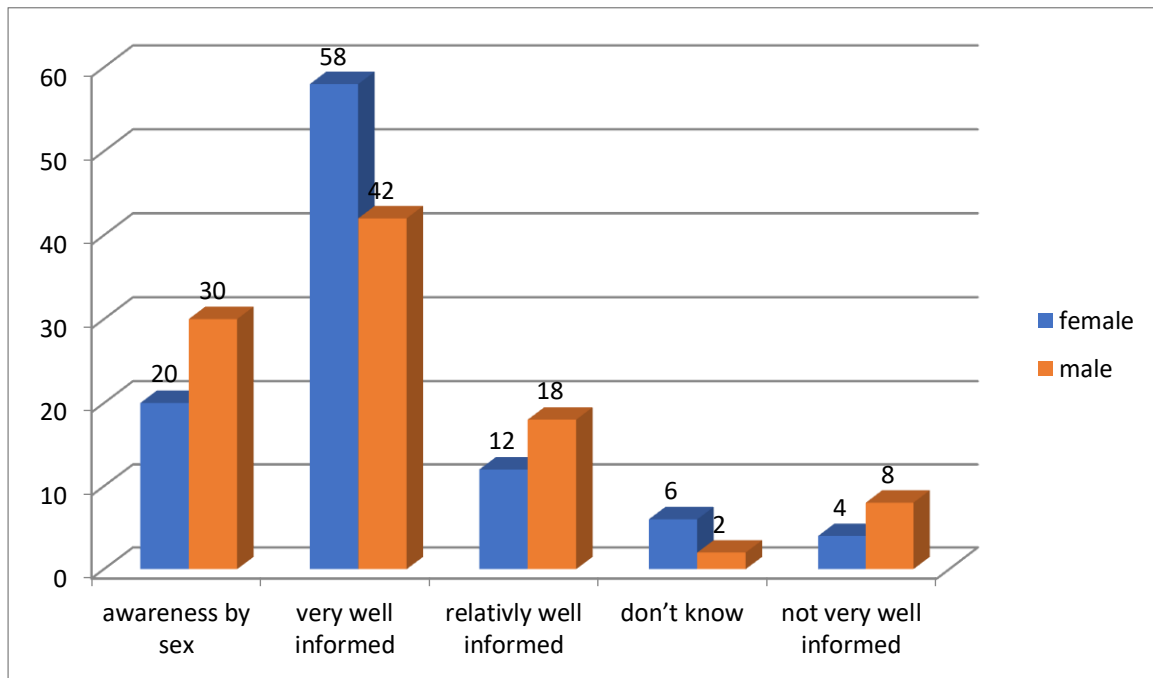


.Source: Field data 2018

4.4.1 Level of awareness by sex

However, there was a significant difference in level of awareness across sex, with men being more informed compared to women. This is surprising because women are the most affected by the impact of climate change. This is so because women are the food producers, distributors and utilizers of the food.

Fig 13 Level of awareness by sex



Source: Field data 2018

Lack of adequate information and knowledge about climate change issues contributes to environmental degradation and increase community's vulnerability to climate change which has a negative impact on the livelihoods of people and in turn it affects their access to water, energy and food. More so women are the most affected since they are the land tillers and are the breadwinners in the absence of the men who most went to outside countries. There for awareness campaigns and other information sources have to be used effectively so as to combat the issues on climate change and its impact.

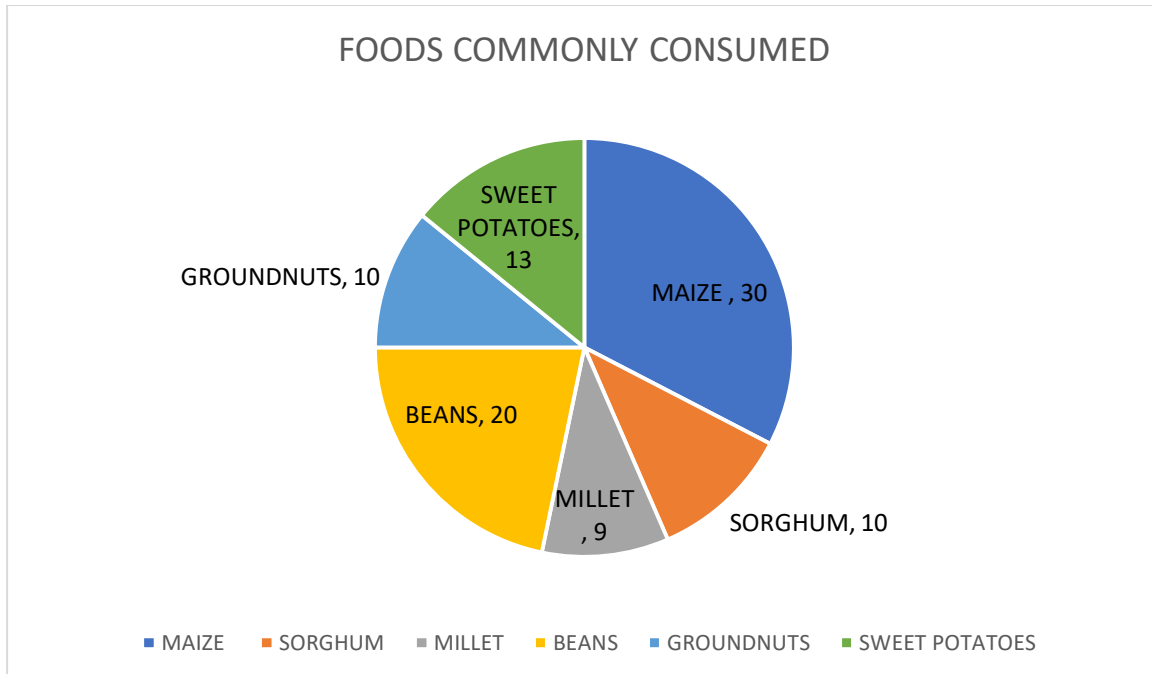
4.5 Climate change, agriculture and food security

4.5.1 Food production, access and availability

The researcher noted that across the three wards food commonly consumed at home is maize 30 per cent, sorghum 10 per cent, millet 9 per cent, beans 20 per cent, groundnuts 10 per cent

and sweet potatoes 13 per cent. The staple food in the three wards is maize and they grow it locally. 78 per cent grown around and 22 per cent purchased.

Fig 14: Foods commonly consumed

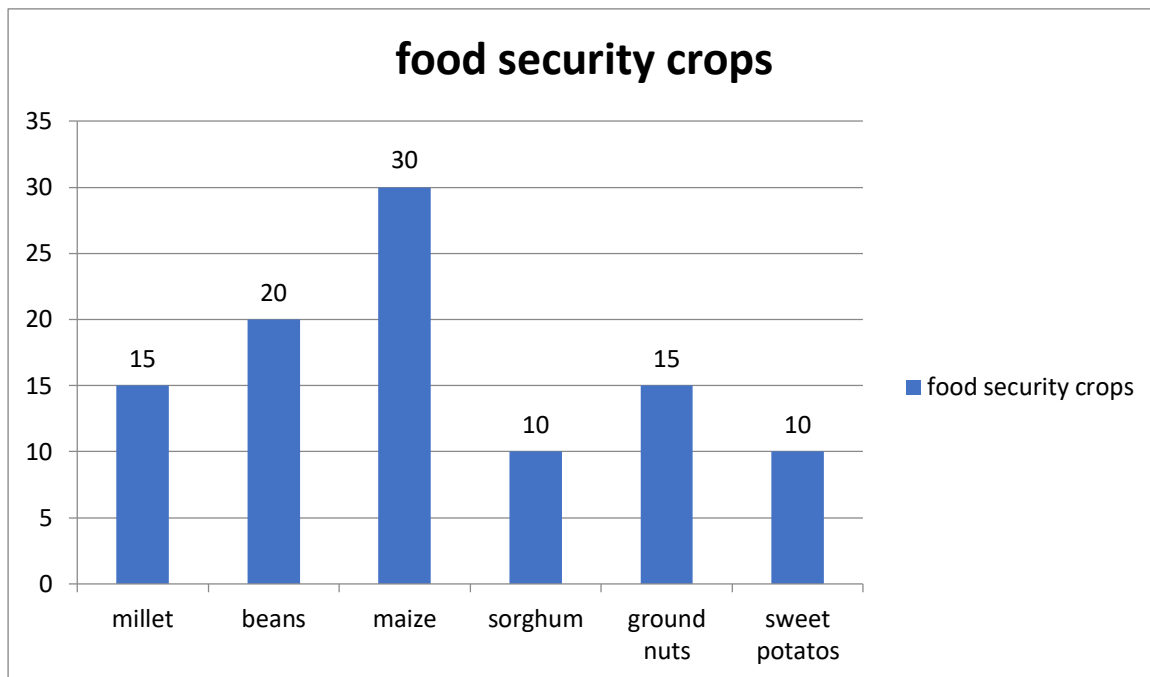


Source: Field data 2018

The majority of households 72 per cent had 3 meals a day, only 24 and four per cent had two and one respectively. During drought times, households mostly consumed 2 meals a day. The main foods consumed during bad seasons were staple foods 90 per cent, wild fruits 88 per cent and wild meat 60 per cent. During such times food was mostly purchased 44, obtained from the bush 33 per cent, given by humanitarian agencies 15 per cent and given by relatives from the neighboring countries such as South Africa and Botswana 8 per cent.

Across the 3 wards, all the respondents considered maize as the main food security crop and staple food followed by beans at 20 per cent and millet at 15 per cent. That was not the case at ward 12 as they recognized sorghum and millet by at least 32 per cent as being critical for food security.

Fig 15: Food security crops



Source: Field data 2018

The researcher interviewed the chief and headman to get an understanding of how the impact or issues of climate change were like in the past years. Results obtained from qualitative interview shows that there is a change in the type of crops grown over the year. Long back people used to grow sorghum, millet, groundnuts and beans. It is said that millet and sorghum are more tolerant to drought but it is now rarely grown. This is due to many factors such as birds' menace, which requires people to spend most of the time in the fields chasing the birds away. People now have strong attachments with maize since it does not use much labour as sorghum and millet when harvesting. Furthermore, government distributes maize to the people in food aid through social service department. Even when giving seeds, its maize seeds hence promoting maize crop. This then makes people more addictive to maize than sorghum and millet.

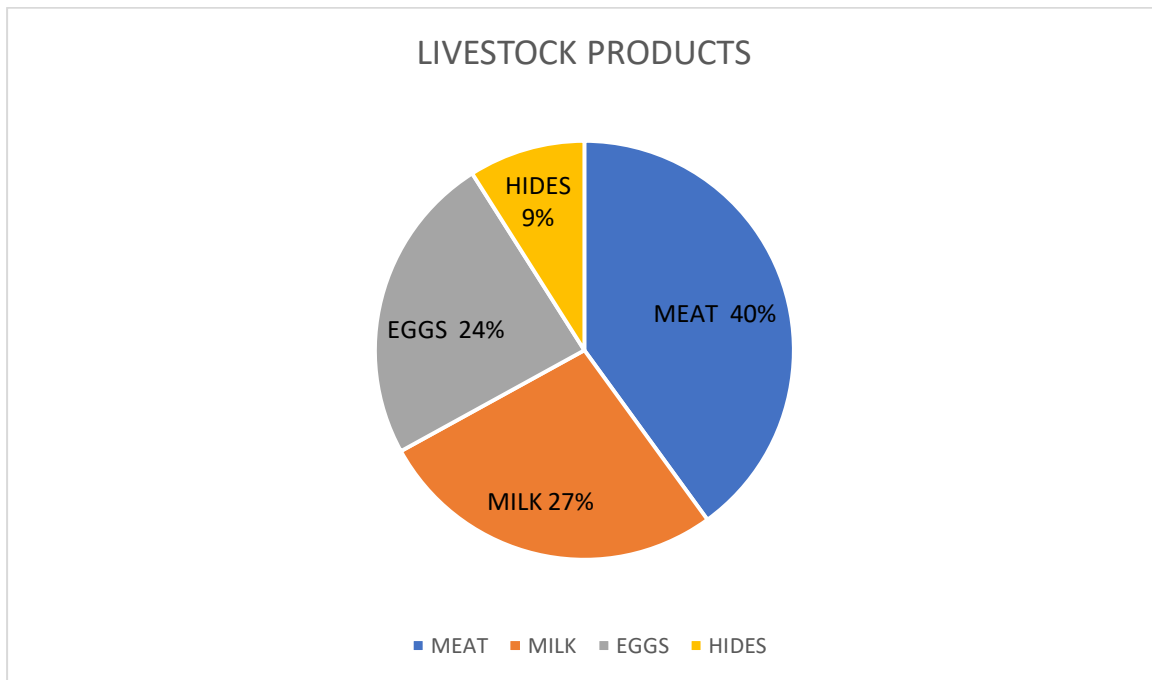
4.5.2 Livestock produced

The main livestock produced included cattle 40 per cent, goats 31 per cent, poultry 20 per cent and donkeys 9 per cent. Sheep and pigs were also kept but to a small scale.

4.5.3 Livestock products

Livestock products include meat 40 per cent, milk 27, eggs 24 and hides at 9 per cent and they are used by households or sold to secure food during drought. Livestock are very important to households for food security because when times are hard they can be resold or used as barer trade in return for grains in order to secure food.

Fig 16: Livestock products produced



Source: Field data 2018

4.6 Effects of climate change on access to food

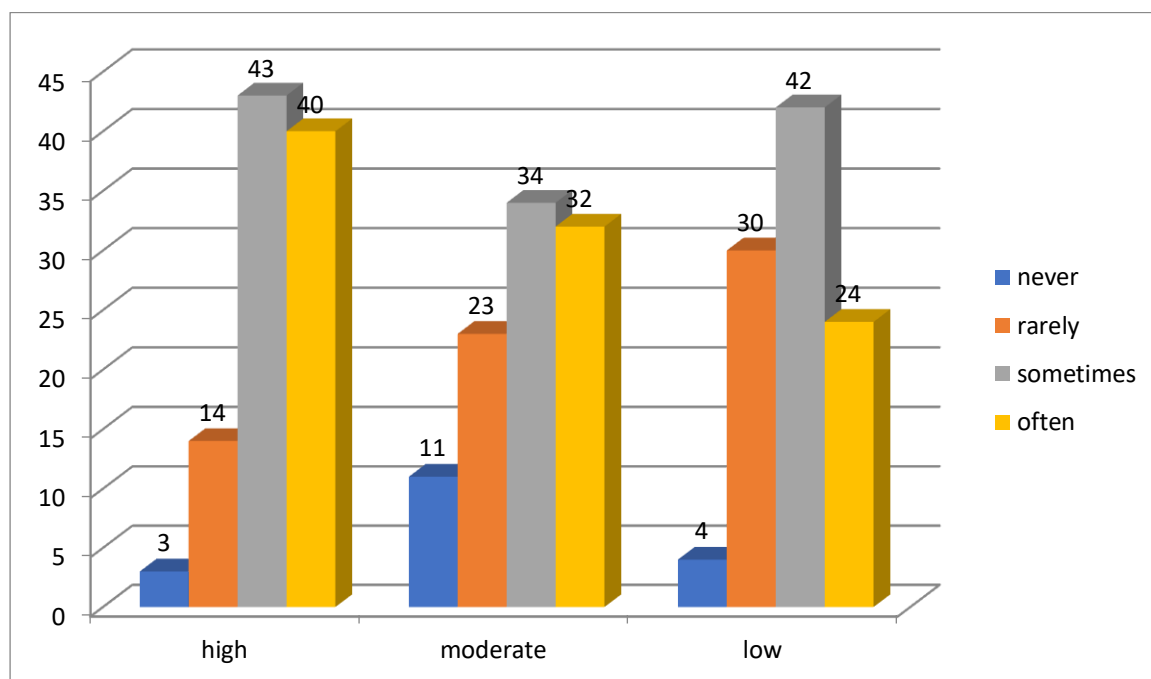
- **Declining yield, crop failures and food security.**

Since the year 1999, 34% of the respondents from the residents association have noted a decline in crop yield and an increase in crop failure. This is due to sporadic droughts and rainfall change in rainfall patterns at the critical stage of crop growth reduced crop yield to a greater extent. More so, frost during winter seasons affected crop yield. Maize is the most affected and it is the staple food crop hence a negative impact by climate change on food security. The results showing decline in maize yields was further highlighted by the FGDs held.

Decline in crop yield affected food availability with 40 per cent of the households' occasionally experiencing food shortages and women are the most affected. 32 per cent often

experienced food shortages, 22 per cent rarely and 5 per cent never experienced food shortages. Food harvests lasted about 4-7 months only compared to previous years when food stocks could last for a year and some months. Small gardens for vegetable and tomatoes production have been affected too because of climate changes due to water shortages.

Fig 17: Food shortages across vulnerability context



Source: Field data 2018

4.6.1 Increasing food prices

As a result of food scarcity, food prices have been affected. Previously one would buy a bucket of maize at 3-5 dollars but now it costs 8-10 dollars. Lack of sufficient income due to livelihoods failure has further incapacitated households to purchase food. However the effect of high food prices varied across households with the impact being more felt by more vulnerable households due to limited livelihoods options. Women are the most affected since men have migrated to neighboring countries.

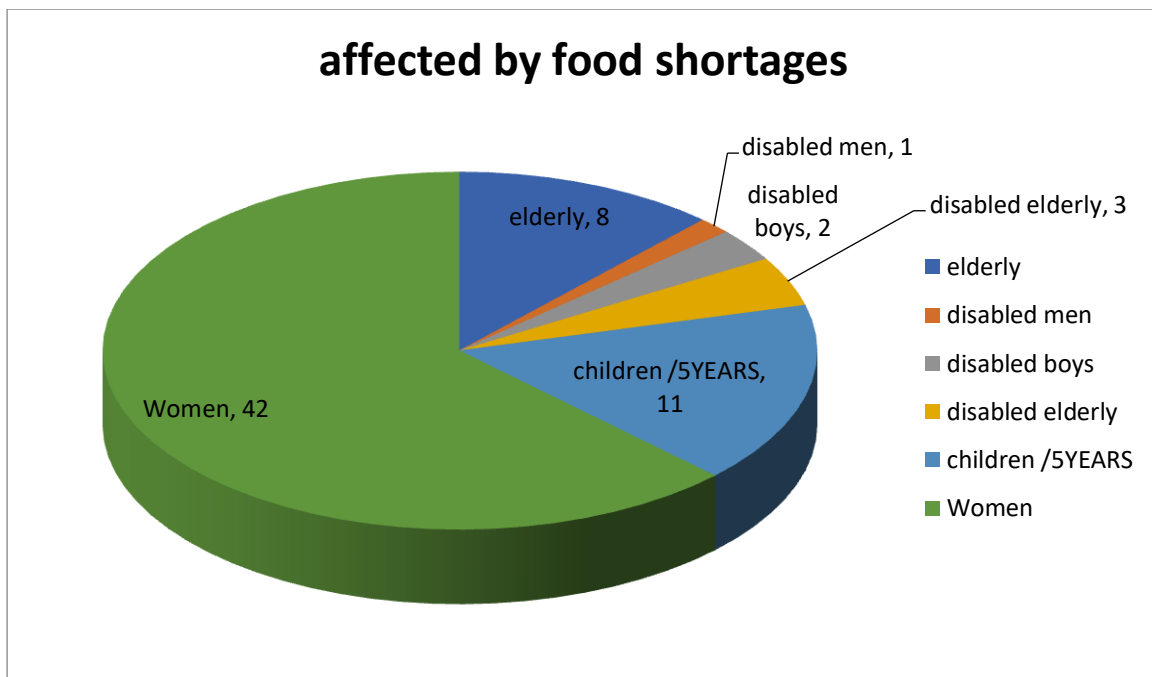
4.6.2 Migration of men

Men's tendency to migrate out in search of income generating activities add women's burden as they struggle to add the work that men used to manage to their own daily workload. Despite the increase in women's workload, when men migrate, women's decision making power remains marginal, (UNDP and Groot, 2011). This is so as a result of the patriarchal beliefs on women being the weaker vessels and not supposed to make family decisions.

4.6.3 Implication of the effects on community

Community members including men and women have been affected differently by climate change. Children and youths are also affected by the impacts of climate change. Mostly children below the age of 5 and pregnant women are affected most. Also to take note of is the elderly group because they have a responsibility of looking after orphans and HIV positive people.

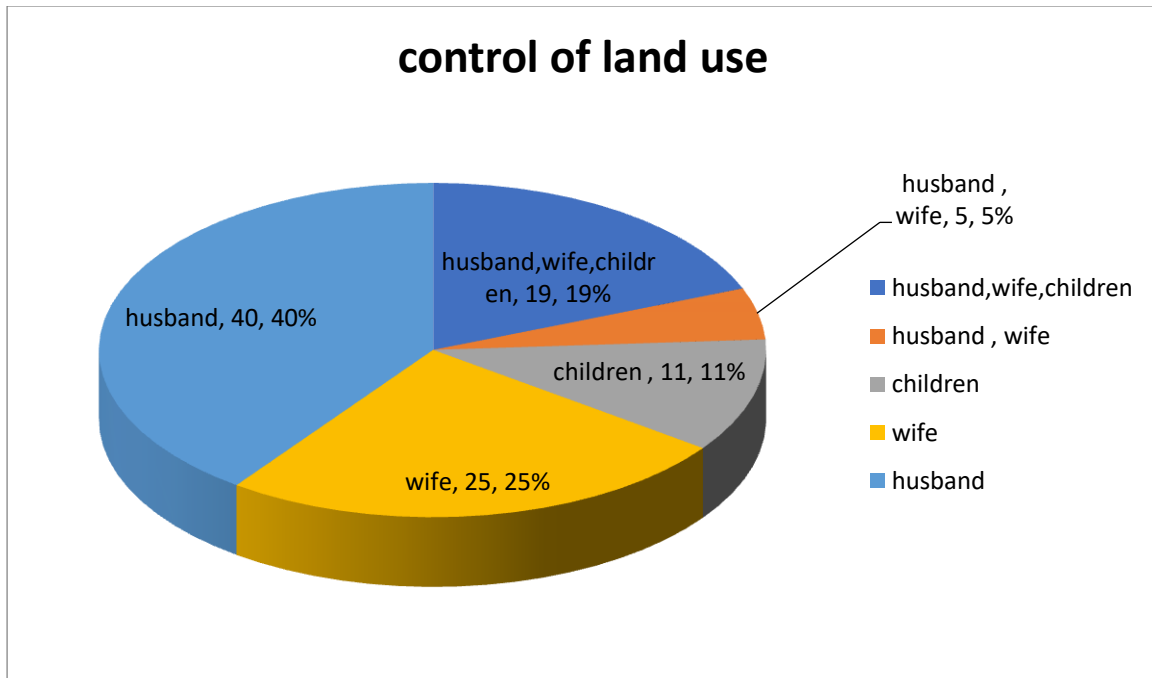
Fig 18: Category of people affected by food shortages



Source: Field data 2018

The researcher noted that children are affected because they are exposed to diseases such as malnutrition hence N.G.Os such as Amalima and Plan International give aid in form of food to the victims. Women are also affected because they are the food producers, utilizers and food distributors. More so, they are the most active group in economic activities and their activities depend on the biophysical environment. Inability to produce food increases stress level for women since they are the ones who lay food on the table for the family. Men control the use of land, cattle and all the big assets whilst women are left in charge of food crops such as groundnuts, sweet potatoes, cowpeas and control livestock such as chicken only.

Fig 19: Control use of land



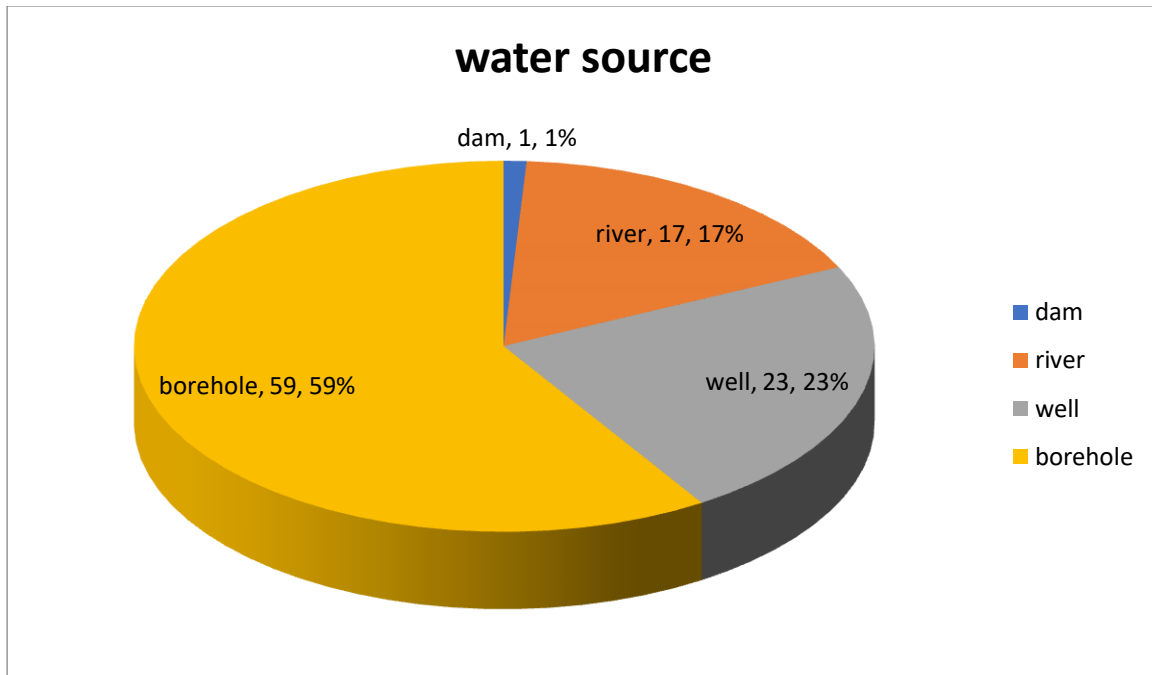
Source: Field data 2018

Women are more vulnerable to the impacts of climate change than men due to skewed power relations and inequitable cultural and social norms (IPCC 2007; Brody et al., 2008). To add more , more scholars are of the view that women have unequal access, control and ownership of resources such as land , property, livestock , labour and developmental resources such as credit , agricultural inputs, technologies, trainings and information (Verna 2007, FAO 2011).

4.7 Climate change and its impact on water

In the three wards, the researcher noted that the main water resource in communities were boreholes 59 per cent, rivers 17 per cent, and wells 23 per cent and dams 1 per cent. Most people use boreholes during bad and good times but the researcher noted that they are in bad shape and conditions there for is in need of rehabilitation. The pipes are old and the ropes have been eaten by ants. During the dry seasons, communities use boreholes for them and the livestock which becomes a challenge since people and livestock have to compete for water. 60 per cent stated that they spent less than 45 minutes to get to the nearest water source. However the distance increase during hot and drought times since the dams and rivers would have dried up. This then forces people to walk more kilometers to get to the nearest water source and this mainly affects women and girls.

Fig 20: Water source



Source: Field data 2018

4.7.1 Declining water levels

Most of the respondents reported extremely low water levels in dams and rivers due to high temperatures in which increases the rate of evaporation, rainfall variability and siltation of dams due to soil erosion. More so, bore holes dried up during the dry seasons. Siltation of dams and rivers was increased by poor agriculture practices and deforestation.

4.7.2 Implications of the effect of climate change on water

Results from the survey revealed that women 62 per cent and children 38 per cent were affected by water shortages. Most of the households 70 per cent walk less than 45 minutes and the rest 30 per cent have to walk for more than an hour to reach the nearest water source. The distance increases during dry seasons.

4.8 Category of people affected most by water shortages.

Data from the qualitative interviews revealed that women and girls are the most affected by the water shortages. This is so because they are the ones responsible for collecting water for domestic chores and for livestock. They have to walk long distance to get to the nearest water source. To add more, girls end up dropping from school in order to meet their roles as expected by the society. Furthermore, some of the sources are polluted there by exposing women and girls to diseases.

4.9 Programs addressing climate change, livelihoods, food and water.

Various programs were in place to address food and water crises. However most of the programs were not specifically designed to adapt to climate change issues. The programs are revealed below and they are based on data collected.

4.9.1 Livelihoods and food security

The department of Agriculture Engineering and Mechanization held training programs and workshops to build farmers capacity to cope with climate change. Some of the trainings included design of farm structures, post-harvest handling technologies such as food processing and storage, soil and water conservation, extraction of groundnuts oil and nutrition. Agritex is another department which helped in promoting drought tolerant crops such as millet and sorghum. The also promoted on seed multiplication and distributed seeds and equipment to farmers. Awareness campaigns and trainings were held in partnership with Plan International, Amalima and Lead Trust.

4.9.2 Water

N.G.Os and DDF were providing borehole installation and rehabilitation. The N.G.Os provided the funding whilst DDF ensured proper management and rehabilitation of boreholes. The researcher however noted that most of the bore holes were dysfunctional and needed urgent rehabilitation. The department of agric engineering and mechanization promoted the adoption of water harvesting technologies.

4.10 Gaps in programs

There are programs which lack involvement of beneficiaries and they are not long term. They leave some of the programs or projects halfway. For example, the reconstruction of Gariya dam and Hambani dam. To add more, some organisations introduced programs in communities without alerting or communicating with them to understand the issues to be addressed and implemented. More so most of the programs target areas near Tsholotsho center. There is also overlapping and duplicity of N.G.Os programs in one and the same areas leaving other communities vulnerable and in need.

To add more most of the N.G.Os gave food aid and further motivated the donor dependency syndrome instead of building the capacity of communities to provide for them. There is also unfair distribution of food aid as there is duplicity and overlapping in the food aid distribution. Also late delivery of input from Agritex and Social Welfare affected crop yield.

4.11 Policies, by laws and regulations to address climate change and livelihoods security issues

4.11.1 Climate change and environmental degradation

The data collection responses at all governance level revealed lack of knowledge regarding policies, legal frameworks and strategies addressing climate change. The government has come up with a national climate change strategy but the information has not filtered to lower community levels. Communities at lower level are not aware of government endeavor to address climate change involvement in international climate change meetings. Some of the issues raised in the policies to note are;

a) Exclusion of women and children

Across the three wards, women and children are excluded and not involved in the decision making. Policy does not directly address women, children and girls. Most of the main actors are DDF, Rural District Council, headmen and other committee members who are men. Where women were involved, they remained silent and listened to men making deliberations which is not fair since climate change issues is mainly affecting women yet they are and remain unheard, silent and voiceless. On the other side however, Plan Zimbabwe has initiated child consultation in policy formulation. More so, policy formulation is top down approach and does not apply to local conditions or adequately address the problems encountered by the community people.

b) Keeping silent on climate change

Despite the impacts of climate change being observed and seen by most people, it is seen as a peripheral issue in Tsholotsho rural especially ward 6, 12 and 13. People are quiet and are acting ignorant to the impacts of climate change. The issue is a reality but a deaf ear is being turned on the issue. The silence has to be broken before a great damage is done.

c) Poor enforcement of environmental policies

The majority of respondents were not aware of the environmental policies and by laws in place. However, some hinted a few on not cutting down trees, National planting day, avoiding planting and farming by the river banks. The responsible authority EMA needs to effectively monitor environmental degradation and implement campaigns and trainings on environmental issues.

d) Food and water

Almost all the respondents reported that there were no by laws governing food production in the 3 wards. Some of the by-laws being enforced are planting at the onset of first rains and practicing controlled grazing. However, there are some who feel that prohibition of cultivating along river banks hindered food production. On the use of water, the by law prohibited washing of clothes near boreholes.

4.12 Summary

The chapter presented findings. They have been discussed and presented. The researcher used pie charts and graphs to present data. The researcher distributed questionnaires to traditional leaders and the response rate was 67%. Plan staff was also given and 82% was the response rate. An impressive 100% was obtained from social services since all the questionnaires were completed and collected. From the councilors, the researcher got a response rate of 67%. Therefore of the total number of respondents which was 22, the researcher managed to obtain 17 of the respondent's .The researcher noticed that 78% of the respondents from all the departments and residents association are well aware of the climate change issues and they have noticed a decline in crop yields. Only a small per cent of 10% from the 3 wards have never experienced hunger and they have their normal three meals everyday unlike the majority, 70% which claim to have two meals a day and 20% only have one meal a day. This shows that climate change is a reality in ward 6, 12 and 13. The next chapter goes on to present summary, conclusions and recommendations o

n the impact of climate change on food security and rural women.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter brings to the end the whole research by the researcher. It concludes on the study findings and the objectives. Recommendations to policy makers, disaster managers and those likely to benefit from this study are stated. This study therefore ties the entire research.

5.1 Summary of the study

The study has been carried out by the researcher and has come up with the summary from all the chapters. It focussed on ward 6, 12 and 13. The study focussed mainly on the impact of climate change and how it affects food security issues as well as rural women. The researcher came up with following summary.

Chapter one of the study set the tone for the whole study. This was done by including sections on background information to the study. It defined on climate change. Furthermore, research objectives were highlighted and these included determining the nature of climate change common in Tsholotsho as well as the extent that it impacts on food security issues and also on how it has affected women. The other objective was to explore the Indigenous Knowledge used to militate against climate change in Tsholotsho and to examine the policies and legislation on climate change in Zimbabwe. Research questions were highlighted in line with the objectives of the study. The study was delimited to three wards and these are ward 6, 12 and 13 with a population of 15 500. Financial challenges and network challenges were incurred but the researcher managed to solve them by the use of letters.

Chapter two on literature review highlighted into detail on what the other scholars say on the impact of climate change on food security and rural women. Theoretical frameworks were used and these are the Sustainable livelihood theory and local governance theory. The theory highlights on the importance of intertwining economy, society and politics so as to counter challenges in communities for example in the fight against climate change. Conceptual framework was also highlighted. Various impact of climate change on women was also revealed and it affects mainly women since they are the food bearers, producers and utilizers. Men are not affected mostly because most of them migrated to neighbouring countries. Case studies from countries such as Tanzania, Uganda and Kenya were highlighted and they reveal

how they have managed to fight against climate change through the use of partnering, introducing favourable policies to climate change and also the use of irrigation schemes.

Chapter 3 highlighted on the research methodology. Research design and techniques were employed. The researcher used both qualitative and quantitative research design to triangulate data obtained. The targeted population was 89 and the sample size was 57. Among the targeted group, there was the chief, residents association, plan staff and social service. This was done to deliberately produce a systematic research design to elicit as much evidence as possible. Ethical considerations were also discussed and they formalised the research with the authority.

Data analysis and presentation was carried out in chapter 4. Response rate and findings were presented. Questionnaires given to plan staff scored an 82%, traditional leaders had a response rate of 67% and Social Service officials had a 100% response rate. The targeted number was 22 but the researcher obtained 17 out of the intended targeted population. Furthermore, the researcher noticed that 78% of the respondents are fully aware of the climate change impacts. 10% of the respondents revealed that they are not aware of climate change and they have never suffered from its impact. A majority of 70% only have two meals a day whilst 20% claim to have one meal a day as a result of climate change and mostly its women and girls who are mostly affected. Therefore climate change is a reality in Tsholotsho especially in ward 6, 12 and 13 and it has a negative impact on women.

Chapter five brought to the end of the study by focussing on the summary, recommendations and conclusions of the research on the impact of climate change and food security.

5.2 Conclusions

Climate change is now affecting the whole world, Africa and Zimbabwe. It is seen as to have bigger effects on livelihoods affecting agriculture, health, food and water supply. The challenge is there is lack of understanding of climate change among people. This includes lack of information on the policies, legal framework practice and climate data hampers effective environmental management and it has a negative impact on the economy and livelihood choices people make.

Climate change negatively affected food production access and availability. A decline in crop yield such as maize has been noted and it is the staple food. This has a negative impact on women and children. A high school dropout has been noted as a result of food shortages since

some parents got money to pay for fees from farming. More so, children dropped out due to lack of food and income. Furthermore, food prices are also affected and this also affects the diet of the people hence resulting in malnutrition for children.

5.3 Recommendations

The student came up with the following recommendations after the research had been conducted;

- ❖ Farmers and extension workers need to be trained continuously on climate change issues and this can be done through the use of public awareness campaigns, drama and use of communication technologies. This can be done so as to determine the nature of climate change common in Tsholotsho.
- ❖ Need to strengthen policies and processes which promote rural livelihoods and reduce people's vulnerability to climate change. Furthermore, farmers need to be involved in decision making and in setting prices. This may motivate them to produce more.
- ❖ Local authorities and communities have to work together in policy formulation to increase ownership and compliance.
- ❖ Need to identify community members who are well versed with I.K Systems and encourage sharing their experiences with other community members. There is also need for increased literature on the applicability of I.K.S. While I.K is shared orally through folk tales, documents of these will go a long way in preserving the I.K.S of an area for centuries to come. There is need therefore to introduce it in school curriculum for the younger generation so that they can educate the others and apply it.
- ❖ Address strategic gender needs by ensuring or strengthening gender awareness programs to address issues of equality and equity. Officers need to be sensitized to gender issues when working with communities.
- ❖ The government needs to work and partner with N.G.Os in fighting against food insecurity issues since they help with food aid. They can partner with Plan International, Amalima and World Vision to mention but a few.

5.3 Suggestions for further studies

Further studies can be carried out to uncover the community dynamics of coping with climate change. Issues to do with coping strategies such as drought, floods which are common in Tsholotsho will indeed proffer new insight in the climate change issues.

REFERENCES

BOOKS

Bongo,P.P.(2012) Food and Security in disaster module, unpublished.

Dea(2011) South Africa's second national communication under the United Nations Framework Convention on Climate Change. Department of Environmental Affairs (DEA) Republic of South Africa,Pretoria.

Descombe,M.(1998) The good research guide . Buckingham Open University Press.

Drimie,S.Mini.S(2003) food security and sustainable development in Southern Africa, HRSC publishers, Cape Town.

Gandure.S.(2011) Reducing climate risks by living with drought , governance in the 21st century, HSRC publishers, Cape Town.

Gleick.P.H.91993) Water in crisis; a guide to the World's fresh water source. New York Oxford university press.

Greener,S.(2008) Business Research Methods, sue Greener and Ventus publishing, APS England,FT Prentice Hall,Pearson Education.

Hulume .M.Dohentry.R.Ngara, T.and New, M. (2005) Global warming and African climate change,Cambridge University Press.

Jalil,M.M. (2013) Practical guidelines for conducting research, summarizing good research practice in line with the DCED standard.

Kolbert .E.(2009)Field notes from a catastrophe ;Man, Nature and climate change.

Kusek,J.Z.and Rust .R.C.(2004) Ten steps to a result based monitoring and evaluation system; A handbook for developing practitioners.

Molua.E.L.(2009) Climate change and African Agriculture Review of Impact and Adaption choices in Kandloe .K. and Eljjou ,C. (2011) Eds governance in the 21st century, HSRC publishers, Cape Town.

Muranda,Z. (2004) Dissertation writing ; concerts and practice. Harare, University of Zimbabwe.

Nyong,A. Adesinaa, F.B. and Osman,E. (2007)The value of Indigenous Knowledge in Climate Change Mitigation and Adaption Strategies in the African Sahel.

Null,T.M.(2012) ‘Agriculture in the Sub Saharan Africa’.

Smoke.P(2000)_Disasters, Collective Behaviours and Social Organisation, University of Delaware Press.

JOURNALS/ ARTICLES

Bardhan,P.(1994) Climatic and Environmental Change in Africa during the last two centuries; Climate Research. 17123/144

Bryan .A.(2008) ‘Of methods and methodology, qualitative research management ; An International journal , volume 3 issue 2;pp 159/ 18.

Chambers .R.and Conway .G.R. (1992) Sustainable rural livelihoods, practical concepts for the 21st century, IDS discussion paper, 297.

Chitando,A.(2005) An Investigation into Children’s Literature , Zimbabwe journal of education research voll7 (3).

Due .J.M and Gladwin, C.H. (1991) Impacts of structural adjustments programs on African women’s farmers and female headed households, American journal of agricultural economists, 73(5); 1431/ 1439.

Mapasa.J. (2009) ‘Indigenous Knowledge systems in Zimbabwe; Juxtaposing post-colonial theory, the journal of pan African studies, volume (3) one.

Muguti.T.and Maposa, R.S.(2012) ‘Indigenous Knowledge Weather Forecasting; A phenomenological study engaging the Shona of Zimbabwe, ‘the journal of pan African studies(4) 9.

Schatz, E.Mahadavan, S. and Williams’ (2011) Female headed households contending with AIDS related hardships in rural South Africa. Health and place, 17(2)598/705.

Scoones.I. (1998) Sustainable Rural Livelihoods; A framework for analysis IDS working paper 72.

Wlokas, H, L. (2008)'The Impacts of Climate Change on Food Security and Health in Southern Africa; Journal of Energy in Southern Africa.

REPORTS

CSSR, (2007) Ethical guidelines in Social Science Research, UCT, Centre for Social Science Research.

DFID (1999) The Impact of Climate Change on the Vulnerability of poor, London.

FAO (2011b) FAOSTAT, Food and Agricultural Organisation of the United Nations (FAO) website <http://faostat.Organisation/default.Aaspy>.

FAO (2011b) The State of Food and Agriculture; Closing the gender gap for development. FAO, Rome.

IPCC (2007) Climate Change 2007; Impacts, Adaption and Vulnerability; Summary and Policy Makers, working on group 2. Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment report, Geneva, IPCC.

USAID (2011) Climate change, Impact on Agriculture cost of adaption, Washington, DC.

UNDP (2004) Human Development Report.

Zimbabwe Vulnerability Assessment Committee (ZIM VAC) (2017) Rural Livelihood Assessment Report, Harare; Zim vac.

STATUTES

The government of Zimbabwe Constitution Amendment No 20 of 2013.

Zimbabwe National Gender Policy (2017) Ministry of Women Affairs, Gender and Community Development.

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APPENDICES

APPENDIX 1: RESEARCH QUESTIONNAIRE FOR THE HOUSEHOLD HEADS

My name is Mercy Manomano registration number R147187P. I am studying for an honors Degree in Local Governance at Midlands State University. This research is in part fulfilment of the requirements for the degree above. I am doing a research on the **Impact of Climate Change on Food Security and Rural Women in Tsholotsho**. The information obtained through the administration of this questionnaire will be used for academic purposes only. Your views will be treated in the strictest confidentiality.

Assessing the impact of climate change on food security and rural women.

QUESTIONNAIRE: Household heads

SECTION A- PERSONAL DETAILS

- 1) Instructions: tick (✓) the appropriate
- 2) Write answers on the spaces highlighted below.
- 3) Avoid inclusion of personal details on the questionnaire

1 Gender

Male	
Female	

2. Ages

20 - 29	
30 - 39	
40 - 49	
50 - 59	
60 - 75	

3. Marital status

Married	
Divorced	
Widowed	
Singled	

4. What is your level of education?

Primary	
Secondary	
Tertiary	

Section B; Nature of climate change

1 What is climate change to you?

Flooding	
Cyclone	
Increase in temperatures	
Drought	

2 .Are you aware of climate change in your area?

Yes	
No	

Section C; Climate change and women

4 Does climate change affect women?

Yes	
No	

If yes how?

Reduced crop production	Reduced amount of rainfall	Depletion of water sources.

5 Does flooding affect women?

Yes	
No	

If yes how?

Destruction of crops	Destruction of homes and properties.	Invasion of privacy	Outbreak of diseases	Resettlement

7 Does drought affect women ?

Yes	
-----	--

No	
----	--

If yes how?

Low income levels	Poor nutrition	Increased distance for water collection

Section D: Impact of climate change on food security

8 What is food security?

Access to food	
Adequate food	
Sufficient, safe and nutritious food	

9 Are there any issues of food insecurity in your area?

Yes	
No	

10 Does climate change affect the main crops in your area?

Yes	
No	

11 Which crops are affected by climate change?

Maize	Sorghum	Millet	Rapoko	Ground nuts

Section E: Climate change and Indigenous Knowledge Systems.

12 Do people use Indigenous Knowledge Systems?

Yes	
No	

14 How are Indigenous Knowledge used in fighting against climate change?

Alert on the amount of rainfall to be received.	Types of crops to be planted.	Nature of diseases to be incurred in that particular season.

15 Describe the Indigenous Knowledge systems used for climate change in your area?

Cry of a bird	Wind direction	Flowering of trees

Section F: Climate Change policies.

16 What are the policies and legislation on climate change?

--	--	--

Civil protection act	Drought policy	Presidential support input scheme
----------------------	----------------	-----------------------------------

17 Do the policies adequately address climate change?

Yes	
No	

18 Which solutions do you think can be put in place to address the effects of climate change?

- a)
- b)
- c)
- d)

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Appendix II: Questionnaire for the (NGO) Plan International

My name is Mercy Manomano registration number **R147187P** student at Midlands State University doing a research project on ‘**The impact of climate change on food security and rural women.**’ **A case study of Tsholotsho District Ward 6, 12 and 13.** ‘In partial fulfillment of the BSc Honours degree in Local Government Studies. I kindly request your response to the questions contained in this questionnaire. Your answers will be treated confidentially and only used for the furtherance of this research without any prejudice whatsoever to the respondent. Your contribution as well as your experiences and opinion could be of great value to this research.

Instructions

- i) *Tick where it is necessary*
- ii) *Write answers on the spaces highlighted below*
- iii) *Avoid inclusion of personal details on the questionnaire*
- iv) *Fill details on the spaces related to your department*

Section A

1. EDUCATION LEVEL

Primary Secondary Tertiary

2. PROFESSIONAL QUALIFICATION

Certificate Diploma Degree

Postgraduate Other (specify).....

SECTION B: What do you understand about climate change?

Tick where necessary and explain responses on the spaces provided below

3. What do you understand about climate?

Increase in levels of aridity due to reduced amount of rainfall received	
Human activities that alters the composition of the global atmosphere	
Change in the statistical distribution of weather patterns.	
Not sure	

4. Does climate change affect women?

Yes	No	Not sure

Explain.....

5. How does climate change affect food security?

Reduced income levels	Reduced Crop production	Reduced Food nutrition

6. What are the other causes of climate change?

	Yes	No
Emission of CFCs		
Devegetation		
Environmental pollution		
Global warming		
Not sure		

SECTION E: EFFORTS MADE BY PLAN INTERNATIONAL ON THE IMPACT OF CLIMATE CHANGE ON RURAL WOMEN AND FOOD SECURITY

7. Does the food intervention strategy help to curb the effects of climate change of food security?

Yes	No	Not sure	Strongly agree	Strongly disagree

8. Does your intervention strategies in response to the effects of climate change complement the indigenous knowledge system?

Yes	No	Not sure	Strongly agree	Strongly disagree

9. Has the provision of aid in terms of building materials, sanitary wear, and skilled labour and counseling sessions improved the livelihood of people in Tsholotsho?

Yes	No	Not sure	Strongly agree	Strongly disagree

Section D: EFFECTIVENESS OF CLIMATE CHANGE POLICIES AND LEGISLATION.

10. Are there policies and legislative frameworks for climate change?

Yes

no

Explain.....

11 How can the policies and legislative framework improve issues of climate change?

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Appendix III: Questionnaire for the traditional leaders and councilors

My name is Mercy Manomano registration number **R147187p**. I am a student at Midlands State University doing a research project on ‘**The Impact of Climate Change on Food Security and Rural Women. A case study of Tsholotsho wards 6, 12 and 13**’ in partial fulfillment of the BSc Honors degree in Local Government Studies. I kindly request your response to the questions contained in this questionnaire. Your answers will be treated confidentially and only used for the furtherance of this research without any prejudice whatsoever to the respondent. Your contribution as well as your experiences and opinion could be of great value to this research.

Instructions

- i)** *Tick where it is necessary*
- ii)** *Write answers on the spaces highlighted below*
- iii)** *Avoid inclusion of personal details on the questionnaire*
- iv)** *Fill details on the spaces related to your department*

1. What do you understand by the term climate change?

Changes in temperatures	
Flooding	
Drought	
Environmental pollution	
Not sure	

2. Are there issues of climate change affecting people in your areas?

Yes	Not sure	No

Explain,

.....
.....

3. Are there any efforts done by the traditional leaders to sensitize people on the impacts of climate change on food security and rural women?

Yes	Not sure	No

Explain,

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

4. How do the traditional leaders assist the victims of climate change?

No

Yes

Explain,

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

5. Do the traditional leaders use Indigenous Knowledge Systems?

Yes No not sure

Explain

.....
.....

6. What can the traditional leader suggest as a way of fighting against climate change and its Impact on Food Security and Rural Women?

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



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Appendix IV: The Focus Group Interview on the impact of Climate Change on Women targeting on the residents association

My name is Mercy Manomano registration number R147187PI am a student at Midlands State University doing a research project on the **Impacts of Climate Change on Food Security and Rural Women** a case study of Tsholotsho ward 6, 12 and 13. In partial fulfilment of the BSc Honors Degree in Local Government studies. I kindly request your responses to the questions contained in this questionnaire. Your views and responses will be treated confidentially.

Instructions

- i. Write answers in the spaces highlighted below
- ii. Avoid inclusion of personal details on the questionnaire

The Key Informant and Focus group Interview guide.

1 Do you know what climate change is?

Yes	
No	

2 If yes can you describe the nature of climate change occurring in your area-----

3 Does climate change affect women?

Yes	
No	

If yes above, describe how it affects them-----

Yes	
No	

4 Which crops are affected mostly?-----.

5 Does climate change affect community projects such as vegetable and poultry production?

Yes	
No	

6 Describe the types of community projects that are affected-----

.....
.....

7 Do people have Indigenous Knowledge systems?

Yes	
-----	--

No	
----	--

8 Which steps can be taken to complement the Indigenous Knowledge Systems?

9 If yes, state the nature of these efforts-----.

10 Are you aware of any policies that address climate change?

Yes	
No	

11 If yes above, can you highlight some of these policies-----.

12 Are these policies effective in fighting against climate change?

Yes	
No	

13 If no, what can be done to improve these policies and laws -----

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Appendix V: Questionnaire for the E.O Social Service department

My name is Mercy Manomano registration number **R147187P** student at Midlands State University doing a research project on **‘The impact of climate change on food security and rural women.’ A case study of Tsholotsho District Ward 6, 12 and 13.** ‘In partial fulfillment of the BSc Honours degree in Local Government Studies. I kindly request your response to the questions contained in this questionnaire. Your answers will be treated confidentially and only used for the furtherance of this research without any prejudice whatsoever to the respondent. Your contribution as well as your experiences and opinion could be of great value to this research.

Instructions

- v) *Tick where it is necessary*
- vi) *Write answers on the spaces highlighted below*
- vii) *Avoid inclusion of personal details on the questionnaire*
- viii) *Fill details on the spaces related to your department*

Section A

2. EDUCATION LEVEL

Primary Secondary Tertiary

2. PROFESSIONAL QUALIFICATION

Certificate Diploma Degree

Postgraduate Other (specify).....

SECTION B: What do you understand about climate change?

Tick where necessary and explain responses on the spaces provided below

3. What do you understand about climate?

Increase in levels of aridity due to reduced amount of rainfall received	
Human activities that alters the composition of the global atmosphere	
Change in the statistical distribution of weather patterns.	
Not sure	

4. Does climate change affect women?

Yes	No	Not sure

Explain.....

5. How does climate change affect food security and rural women?

Reduced income levels	Reduced Crop production	Reduced Food nutrition

6. What are the other causes of climate change?

	Yes	No
Emission of CFCs		
Devegetation		
Environmental pollution		
Global warming		
Not sure		

SECTION E: EFFORTS MADE BY THE E.O SOCIAL SERVICE DEPARTMENT ON THE IMACT OF CLIMATE CHANGE ON RURAL WOMEN AND FOOD SECURITY

7. Does the government intervention strategy help to curb the effects of climate change of food security?

Yes	No	Not sure	Strongly agree	Strongly disagree

8. Does your intervention strategies in response to the effects of climate change complement the indigenous knowledge system?

Yes	No	Not sure	Strongly agree	Strongly disagree

9. Has the provision of aid in terms of food, money and skilled labour and counseling sessions improved the livelihood of people in Tsholotsho?

Yes	No	Not sure	Strongly agree	Strongly disagree

Section D: EFFECTIVENESS OF CLIMATE CHANGE POLICIES AND LEGISLATION.

10. Are there policies and legislative frameworks for climate change?

Yes

no

Explain.....

11 If they are there, how do they promote the operation on the social service department on climate change issues?

Explain

