**BINDURA UNIVERSITY OF SCIENCE EDUCATION**

**FACULTY OF SOCIAL SCIENCES AND HUMANITIES**

**TOPIC:**

# EXPLORING THE NEXUS BETWEEN UNDERDEVELOPMENT, CLIMATE CHANGE AND POVERTY IN RURAL ZIMBABWE, CASE OF UZUMBA MARAMBA PFUNGWE (UMP)

**By**

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**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF PEACE AND GOVERNANCE IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE DEGREE IN PEACE AND GOVERNANCE**

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## ABSTRACT

This dissertation examines the interconnected challenges of underdevelopment, climate change, and poverty in UMP District, Mashonaland East, Zimbabwe, through the lens of Maslow's Hierarchy of Needs Theory. Using a qualitative research approach, the study draws on semi-structured interviews with councilors and farmers, in-depth interviews with Agritex Officers and explorative interviews with traditional leaders, community leader's representatives to explore how unmet basic needs such as food, water, security, and participation exacerbate vulnerability to climate shocks and perpetuate cycles of poverty. The findings reveal that underdevelopment, characterized by poor infrastructure, severely limits the community's capacity to adapt to climate variability. Prolonged droughts, erratic rainfall, and crop failures deepen poverty, forcing households to sell assets or rely on food aid, with women and youth disproportionately affected. However, the study also identifies grassroots resilience strategies, including climate-resilient agriculture, renewable energy adoption, and community cooperatives, which align with Maslow's Hierarchy of Needs Theory by prioritizing participatory, sustainable solutions. Recommendations include targeted investments in infrastructure, gender-responsive policies, and support for community-led initiatives. This study contributes to broader debates on climate adaptation and sustainable development, offering insights into the role of local agency and participatory governance in marginalized contexts.

# DECLARATION FORM

I, B210751B, hereby declare that the work submitted here is the result of my own independent investigation and that all sources I have quoted have been indicated and acknowledged by mean of complete references.

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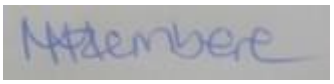
panashe
student's signature



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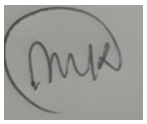

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Chairperson

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I am grateful to the traditional leaders, Agritex Officers, commercial farmers and councillors in UMP district for their willingness to participate in this study. Their openness, cooperation and valuable insights have been instrumental in providing a comprehensive understanding of the nexus between underdevelopment, climate change and poverty in the community.

# LIST OF ABBREVIATIONS AND ACRONYMS

AGRITEX - Agricultural Technical and Extension Services (Zimbabwe)

IPCC - Intergovernmental Panel on Climate Change

MSDZ - Ministry of Sustainable Development Zimbabwe

NGOs - Non-Governmental Organizations

SADC - Southern African Development Community

SDG - Sustainable Development Goals

UMP – Uzumba Maramba Pfungwe

UN - United Nations

UNDP - United Nations Development Programme

UNICEF - United Nations International Children's Emergency Fund

ZimStats - Zimbabwe National Statistics Agency

ZDHR - Zimbabwe Demographic and Health Survey

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# CHAPTER ONE

# INTRODUCTION

## 1.0 BACKGROUND

Rural Zimbabwean societies are facing a combination of three interlinking problems of underdevelopment, climate change and poverty. This work seeks to investigate the nexus between these three issues and their impact on Zimbabwean rural areas, shedding light on the lived experiences of rural communities. The relationship between these factors is critical for understanding the multifaceted nature of poverty and developing effective strategies for its alleviation.

Globally, most 'rural areas continue to lag behind urban areas in terms of economic development, infrastructure, access to services and participation'. According to UNDP (2020:12) 'poverty is a complex and multifaceted phenomenon characterized by a lack of access to sufficient resources, capabilities and opportunities to achieve a minimum standard of living. According to World Bank (2019:12) 'approximately 70 % of the poor population resides in rural areas'. 'Rural poverty rates are 2-3 times higher than urban poverty rates' (UNDP, 2020:15). This shows that many people in the rural areas are poor to the extent that some could not afford other services as they are prone to unemployment.

Climate change had been defined by IPCC (2020) as the, 'long-term warming of the planet', which is primarily caused by the increasing levels of greenhouse gases in the Earth's atmosphere mainly carbon dioxide, methane and water vapor. Climate change has been affecting all states in different parts of the world as it affects the agricultural sector and health

sector. Hayhoe (2020) is of the view that, ‘climate change is a global problem that requires a global response’. The African continent cannot be spared from ‘the effects of climate change as it is facing a lot of droughts’, floods as well as the rise of sea level. This had been supported by Denton (2020) who purports that Africa is experiencing ‘the impacts of climate change from droughts to floods, and this will only worsen unless drastic action is taken’. This proves that climate change has been a problem to both the global world and the African continent.

Zimbabwe as a nation has also been a victim of ‘the effects of climate change’. The Zimbabwean society has been facing climate change related problems like droughts, cyclones as well as heat-waves. This had greatly affected the Zimbabwean economy. Munyanyi (2020) support the view that, ‘climate change is leading to increased frequency and severity of droughts and floods in Zimbabwe, impacting agricultural productivity and food security’. Rural communities in Zimbabwe including Uzumba, Maramba Pfungwe (UMP) district located in Mashonaland East province are also facing the rampant effects of climate change. These communities mostly depend on agricultural production which had been affected by droughts and cyclones hence driving the rural people into poverty.

Rural underdevelopment is also amongst the drivers of poverty in Zimbabwe’s rural communities including UMP. UNDP (2020) defines underdevelopment as a state on inadequate economic, social and political progress, characterized by low levels of productivity, income and living standards, limited access to basic services and infrastructure and a lack of opportunities for social mobility and human development. Mukwata (2020) is of the view that, ‘rural Zimbabweans are trapped in a cycle of poverty due to underdevelopment, characterized by limited access to markets, credit and technology’. This proves the impact of underdevelopment in rural Zimbabwe communities.

I chose to carry out this research topic on the nexus between underdevelopment, climate change and poverty because it had been a trending issue globally but had not been fully understood in the context of rural Zimbabwe including the UMP district. As a peace student, this topic is very interesting to me as a measure of promoting positive peace in the society.

## 1.1 PURPOSE OF THE STUDY

The study seeks to explore the linkages between underdevelopment, climate change and poverty in rural Zimbabwe's societies mainly focusing on UMP district, Mashonaland East province.

## 1.2 STATEMENT OF THE PROBLEM

There is a more vicious cycle of poverty among Zimbabwe's rural areas including in the UMP district being driven by underdevelopment and climatic changes. ZimStats (2020:23) reports that 70% of the Zimbabwe's rural households live below the poverty datum line. This had been a problem as it had been contributing to the country's instability as well as its underdevelopment. Poverty had been a problem to both rural citizens and also the government. There are several effects of poverty which include, 'its negative impact on the economic growth of the society, health of rural people', education sector and also peace and wellbeing of the state. Climate change has been an exacerbating factor to poverty in rural areas including UMP. This had been supported by Moyo (2017) who reported that, 'rural communities in Zimbabwe are more vulnerable to climate change due to their dependency on rain-fed agriculture and limited access to climate related information'. Climate change had a significant impact on economic sector as well as the health sector on rural communities.

## 1.3 RESEARCH OBJECTIVES

- To identify sustainable development strategies that can address underdevelopment, climate change and poverty.

- To assess the impact of underdevelopment on the capacity of rural areas to adapt to climate change.
- To evaluate the effects of climate change on poverty levels on UMP community of Zimbabwe.

## 1.4 RESEARCH QUESTIONS

- What is the impact of underdevelopment on the capacity of rural areas to adapt to climate change?
- What are the effects of climate change on poverty levels on UMP community of Zimbabwean?
- What sustainable development strategies can effectively address underdevelopment, climate change and poverty in rural Zimbabwe?

## 1.5 ASSUMPTIONS

- Climate change has an impact on poverty levels in rural Zimbabwe.
- Underdevelopment had been a driving factor to poverty in UMP community of Zimbabwe.

## 1.6 SIGNIFICANCE OF THE STUDY

The study can be very crucial to researchers and academics through its contribution to the existing body of knowledge on the relationship between underdevelopment, climate change and poverty in rural areas. It can also contribute to, ‘a better understanding of the effects of climate change to rural people’. The study can also contribute to a better understanding on possible sustainable development strategies to counter against underdevelopment, climate change and poverty in rural communities.

Rural communities in Zimbabwe are also amongst the beneficiaries of this study. The study will provide them with some insights into the impacts of climate change and

underdevelopment on poverty. It can also provide some strategies to counter against the negative effects of climate change and underdevelopment hence improving their livelihoods and well-being.

Policy makers and development organizations can also benefit from this study. Policy makers include local authorities, government ministries, and regional organizations like SADC as well as international organisation like United Nation (UN). They can benefit through its contribution, 'on the real impacts of underdevelopment and climate change on the rural communities'. The study's findings can also inform policy and program developments aimed at addressing the nexus between underdevelopment, climate change and poverty.

## 1.7 DELIMITATIONS OF THE STUDY

The study will be focusing on UMP district from Mashonaland East province, Zimbabwe. It seeks to study a period of five years from 2019 to 2024. It shall provide the interlinkages between underdevelopment, climate change and poverty in rural communities of Zimbabwe.

## 1.8 LIMITATIONS

There is limited time to conduct the whole project as it is supposed to be carried out within a period of 5 months, this might affect the outcome of the project as there will be no enough time to study the concepts of the study. The UMP district is very large in terms of geographical area as it consists of three constituencies which are Uzumba, Maramba and Pfungwe, a sample of 15 participants might fail to provide the situation in the whole district.

## 1.9 DEFINITION OF KEY TERMS

- **Peace**

UN (2020) defines peace as a dynamic and multifaceted concept that encompasses not only the absence of violence and conflict but also the presence of social justice, human rights and sustainable development.

- **Resilience**

  'Resilience is the capacity to absorb, adapt and transform in response to climate- related stresses and shocks' (Buhadur, 2019 p.12).

- **Sustainable development**

  Le Blanc (2015) defined sustainable development as a development model that integrates economic, social and environmental dimensions to ensure human wellbeing.

- **Adaptation**

  According to IPCC (2018: 12) 'adaptation involves adjustments to reduce vulnerability and enhance resilience to climate change impacts'.

- **Livelihoods**

  Scoones (2015) notes that livelihoods encompass the capabilities, assets and activities required to secure well-being.

- **Climate change**

  IPCC (2020) defined climate change as, 'the long-term warming of the planet, which is primarily caused by the increasing levels of greenhouse gases in the Earth's atmosphere mainly carbon dioxide, methane and water vapor'.

- **Poverty**

  According to UNDP (2020:12) 'poverty is a complex and multifaceted phenomenon characterized by a lack of access to sufficient resources, capabilities and opportunities to achieve a minimum standard of living'.

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## 1.10 ETHICAL CONSIDERATIONS

Before conducting the interviews, informed consent will be obtained from all participants, also confidentiality and anonymity will be ensured for all participants meaning the study will be conducted in accordance with the principle of ethical research as defined by the APA Code of Ethics.

## 1.11 DISSERTATION OUTLINE

The present investigation was structured into five distinct sections. The research commenced with an introductory first chapter, followed by a comprehensive review of relevant literature in the second chapter, which was subsequently utilized in the critical analysis ‘of the study's findings’. The third chapter expounded on the employed research methodology, while the fourth chapter presented the research findings and provided a ‘detailed discussion of the results’. Lastly, the fifth chapter outlined the conclusions and recommendations derived directly from the research findings, as well as suggesting potential avenues for further research.

# CHAPTER TWO

# LITERATURE REVIEW AND THEORETICAL FRAMEWORK

## 2.0 INTRODUCTION

This chapter seeks to provide a more comprehensive understanding of the linkages between underdevelopment, climate change and poverty in rural communities of Zimbabwe by reviewing existing literature on the topic. It will examine the theoretical framework, empirical evidence and case studies that demonstrate the relationship between the three. Understanding these linkages is very crucial in order to develop the most effective strategies to stop the effects climate change as well as promoting sustainable development.

## 2.1 THEORETICAL FRAMEWORK

This research is guided by Maslow's Hierarchy of Needs Theory. The framework had been evolving over time but it was initially introduced by Maslow (1943) as he developed the hierarchical needs theory highlighting the importance of self- actualization. Maslow (1943) had designed a human needs pyramid which had 'philosophical needs, security needs, social needs, esteem needs and self-actualization needs'. Maslow is of the belief that human behavior is related to his needs. Trivedi (2019) notes that, 'according to Maslow human needs pyramid, physiological needs (breathing, food, water, sex, homeostasis and excretion) are the most important needs for a human being'.

According to Maslow (1943), human beings have universal and fundamental needs that must be met for individuals and communities to thrive. According to this theory, unmet needs are a root cause of vulnerability, conflict and underdevelopment. When basic needs are not met, individuals and communities become more susceptible to external shocks such as

climate change and are less able to adapt to changing circumstances. Maslow's theory on human needs provides useful lens for understanding the interplay between underdevelopment, climate change and poverty as it highlights 'the structural and systemic barriers that prevent communities from meeting' their needs.

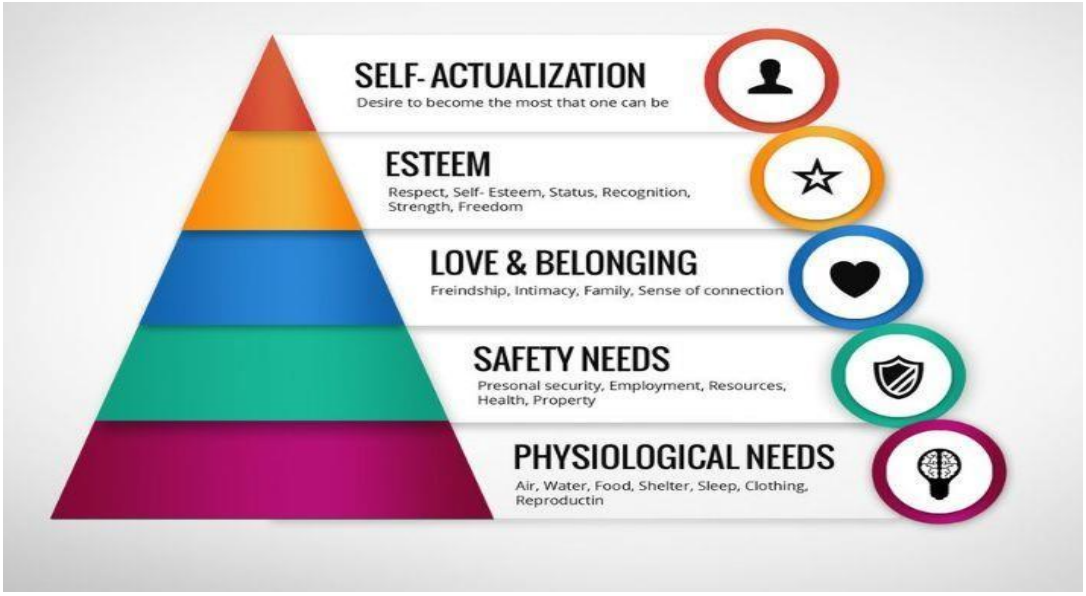



FIG 2.1.0 Theoretical Framework (Maslow 1943)

The Maslow's Hierarchy of Needs Theory is the best for this study due as it highlights the importance of addressing fundamental human needs in rural Zimbabwe. Climate change and underdevelopment has the ability to affect physiological needs (according to Maslow). This research seeks to provide sustainable strategies to address underdevelopment, climate change and poverty, this enhances the satisfaction of human needs.

## 2.2 THE CONCEPT OF RURAL UNDERDEVELOPMENT

UNDP (2020) defines underdevelopment as a state on inadequate economic, social and political progress, characterized by low levels of productivity, income and living standards, limited access to basic services and infrastructure and a lack of opportunities for

social mobility and human development. In the whole global system, ‘there is a notable difference between rural communities and urban communities’ ,whereby rural communities are lagging behind urban communities in terms of social and economic structures. This had been negatively impacting the lives of rural populations.

This difference on social and economic structures between rural communities and urban communities had been noted by several scholars who argue that rural communities are lagging behind urban communities in terms of development. Murisa (2017) argues that rural Zimbabwe lacks basic infrastructure, services and economic opportunities perpetuating underdevelopment. UMP district cannot be spared from this overview as there are several newspaper articles and journalists’ reports on the nature of the area.

Underdevelopment in rural areas can be witnessed in different forms which include, limited access to markets and the lack of infrastructure’. Most of Zimbabwe’s rural communities depend on agricultural production were they grow different crops for subsistence as well as commercial purposes. This means that agricultural products are one of their main sources of income. This had been supported by Mutondi (2014) who argue that agricultural production is rural communities’ primary source of income. Due to lack of markets, rural residents will face a challenge in selling their agricultural as they must carry their products to urban markets.

It can also be noted that there is lack of infrastructure in Zimbabwe’s rural communities. They lack infrastructure like healthcare facilities, schools, clean water sources as well as transportation services. Mutondi (2014) reported that rural communities in Zimbabwe are facing challenge in accessing safe and clean water. Mawawa (2019) argue that in rural communities of Zimbabwe roads are poorly maintained and this is impacting economic development. Ngwira (2018) argue that rural schools are under-resourced. These

publications explore more general information on rural community underdevelopment but there is no specific publication on the nature of underdevelopment in UMP district. This research 'seeks to explore this research gap by investigating on the nature' of underdevelopment in UMP district.

## 2.3 THE CONCEPT OF CLIMATE CHANGE

'Climate change can be defined as the long-term warming of the planet, which is primarily caused by the increasing levels of greenhouse gases in the Earth's atmosphere mainly carbon dioxide, methane and water vapor' (IPCC 2020). Patil & Kumar (2017) are of the view that climate change is a situation when the amount of carbon stored in ecosystems exceeds the amount in the forests. There are different factors which are driving out climate change including deforestation. Nunes (2020) is of the view that, 'deforestation has the capacity of driving climate change as it reduces the net flow of carbon from the atmosphere. It can also be driven through the emission of greenhouse gases from industries'.

Climate change is one of the global problems trending in the 21st Century as it is affecting the whole world. Abass etal (2022) reported that, 'the effects of climate change include irregular weather patterns, retreating of global ice as well as the rise of sea level'. This point had also been supported by Bongo etal (2015) who notes that climate change produces mixed paradoxes which include extremes of droughts and dryness, extreme cold and heat. To strengthen the point of climate change as a global problem, Felicano etal (2022) argue that climate change influences components of ecological, environmental, socio- political and socio-economical disciplines. These effects are being witnessed in different parts of the world.

Developing countries are mostly being affected by the effects of climate change. They are facing a lot of droughts, floods, rise of sea level and heat waves. According to

Tanyanyiwa & Muhwati (2021, p.2) ‘climate change disturbs developing countries economies and societies especially in rural areas where climate dependent livelihoods such as rain-fed agriculture and fishing are provided community sustenance’. They further noted that, ‘the instabilities in the earth’s climate had been causing diseases like diarrhea, malnutrition, water-borne diseases and insect transmitted diseases’. Developing countries are also suffering from these negativeimpacts of climate change due to their dependency on natural sources of production.

Climate change is affecting Zimbabweans in different ways. MSDZ (2018) reports that, ‘Zimbabwe had been experiencing a warming system towards the end of the 20$^{th}$ Century compared to the beginning’. This had been supported by ZDHR (2017) which reports that, ‘the 1980s has been the warmest from when Zimbabwe began documenting temperature recordings since 1901’. Climate change has resulted in the rising of temperatures, changing rainfall patterns, water scarcity, loss of biodiversity, negative impact on human health and increased ‘frequency and severity of extreme weather events like droughts, floods and heat waves’.

Zimbabwe’s rural areas mostly depend on rain-fed agricultural production. They grow crops like maize, beans, tobacco, cotton and other vegetables for commercial and subsistence purposes. Climate change is affecting the agricultural sector through various characteristics which includes drought, cyclones and heat-waves. Macheka (2024) purports that Zimbabwe had been hit by a number of cyclones in the past two decades. Mwadzingeni etal (2022) reported that, ‘climate change had been resulting in the outbreak of pests and diseases’. This had been affecting agricultural production. Rural people also practices animal farming, where they keep cattle, goats, sheep as well as poultry production. Both animal and poultry production are being affected by climate change through the rises of temperatures as well as droughts like 2023-24 Elnino induced drought.

Zimbabwe's rural people depend on water sources like rivers and dams. They use water for irrigation purpose as well as for domestic use. Climate change is affecting these water sources through droughts and heat-waves as the sources may run dry just after the rain season hence affecting food production. Dzirekwa (2023) is of the view that the changes in air temperatures, and rainfall variability had been affecting surface water resources. This will drive rural people into poverty as they will not be able to produce their own food.

Climate change is also affecting human health. Zimbabwe's rural people mostly depend on boreholes as their clean water source. Due to the droughts being experienced in the area, these old aged boreholes are drying up hence forcing rural people to opt for other water sources with a very high risk of contamination. This had also impacted human health through the rapid spread of diseases through this contaminated water. This point had been supported by Kim etal (2014) who purports that, 'the deterioration of environmental conditions can facilitate the transmission of diarrhea, vector-borne and infectious diseases, respiratory illness as well as malnutrition'. He further argued that climate change had also been affecting human mental health indirectly through stress, habitat destruction as well as forced migrations.

Zimbabwe's rural areas 'are vulnerable to climate change due to' various factors which include their dependence on natural resources, limited access to climate information, geographic isolation, limited economic diversification, limited institutional capacity, and health vulnerabilities. Moyo (2017) argues that, 'rural communities in Zimbabwe are more vulnerable due to their dependence on rain-fed agriculture and limited access to climate information'. Mazhindu (2018) argues that rural communities in Zimbabwe are disproportionately affected by climate-related shocks due to limited economic diversification and infrastructure. This shows that rural areas are being affected more by climate change due to their underdevelopment state.

Climate change is a global problem which has to be dealt with in order to promote a peaceful existence. This has been supported by Pacoma (2019) who argue that climate change is a reality which is driving many challenges to human life and therefore requires urgent solutions. There are many strategies being employed by different actors from local level to international level. One of the measures is through reducing emissions from deforestation through the creation of Degradation International Initiative. Robeiro etal (2020) outlines that the initiative seeks to maintain forests in the world through sustainable management through afforestation, reforestation and restoration of degraded forest land. There are also other international initiatives like the 'United Nations Framework Convention on Climate Change as well as the adoption of' SDG 13 on climate change. All of these initiatives seek to prevent the increases in global mean temperature.

## 2.4 CONCEPT OF POVERTY

According to UNDP (2020: 12) 'poverty is a complex and multifaceted phenomenon characterized by a lack of access to sufficient resources, capabilities and opportunities to achieve a minimum standard of living. According to World Bank (2019:12) 'approximately 70 % of the poor population resides in rural areas'. 'Rural poverty rates are 2-3 times higher than urban poverty rates' (UNDP, 2020:15). This shows that many people in the rural areas are poor to the extent that some could not afford other services as they are prone to unemployment.

Rural poverty is a problem affecting different countries in different continents and it manifests in different forms. Duric etal (2023) notes that, African continent, Latin America and South Asia are among the continents suffering from rural poverty. These scholars further posit that rural poverty can manifests itself in food shortages. It can also manifest itself in lack of physical necessities, assets and income. Mhlanga (2021) purports that, many of the

poor people in Zimbabwe are in rural areas and their main is farming as they produce food security.

There are different factors which can be blamed for driving rural poverty in Zimbabwe. Fredrick (2022) believe that in Zimbabwe, rural poverty can be traced back to the colonial era. During the colonial era, most of the fertile lands were allocated to white farmers and blacks were forced to work for whites hence the whites were benefiting in favour of the rural black majority as they were a source of cheap labour ( Uledi & Hove, 2021). After 1980 when Zimbabwe got its independence, the government can be blamed for exacerbating the rural poverty situation. Nyathi etal (2020) argues that Zimbabwe rural areas are poor and the poverty is a result of the failure of the government's poverty alleviation programs which include cooperatives, campfire programs, growth points and community share ownership trust.

The government can also blamed for exacerbating poverty in Zimbabwe's rural areas through weak, inefficient and incomplete development projects. The government of Zimbabwe has a tendency of implementing projects which had been successful in other areas without examining the conditions in an area that can hinder its success (Nyikadzino, 2021). Nyathi etal (2020) support this view arguing that government's one size fits all approach had been contributing to the failure of development. It had also been argued that sometimes the government can implement agricultural projects but failed to provide the market of the products disadvantages the farmers as they have to resort to urban markets. Some other scholars had also 'blamed urban bias of development strategies which siphon out rural resources into the urban sector'. Raw materials for development are produced from rural areas and used to develop urban centres.

Corruption had also been blamed for exacerbating rural poverty in Zimbabwe. Nyathi etal (2020) argued that corruption through diversion of funds had been driving rural poverty. There are many cases where funds for development and agricultural inputs had been used for personal benefits by government's officials in rural areas. Phiri etal (2023) also support the view that rural poverty in Zimbabwe had been driven by corruption, high unemployment rates, underperforming banking system and poor infrastructure. Corruption had been hindering the development of rural infrastructure hence exacerbating rural poverty.

There were many strategies which were implemented trying to resolve rural poverty in Zimbabwe. The government had been implementing development projects like education projects as well as empowerment projects in different parts of the country. Nyathi etal (2020) purports that there is no meaningful development which have been achieved through these initiatives. NGOs have also been fighting rural poverty in Zimbabwe as they are providing humanitarian aid to rural people. Some organisation like UNICEF had been providing stationery to schools in rural areas. Kabonga (2023) asserts that NGOs are fighting rural poverty through income generating projects. They can sponsor income generating projects like irrigation schemes in rural areas.

## 2.5 SUSTAINABLE DEVELOPMENT STRATEGIES THAT CAN ADDRESS UNDERDEVELOPMENT, CLIMATE CHANGE AND POVERTY

This project will explore six potential strategies that can address underdevelopment, climate change and poverty in Zimbabwe rural communities. The strategies are through economic empowerment, climate change adaptation, social development, environmental conservation, infrastructure development as well as institutional strengthening.

Economic empowerment measures have the capacity of addressing rural poverty. It can be in many forms which include sustainable agriculture, irrigation development,

entrepreneurship as well as industrialization. Economic empowerment is whereby institutions and organizations empower the community so that they can participate in poverty alleviation programs or strategies. There are several scholars who advocates for economic empowerment measures as a way of addressing rural poverty. Mhlanga (2021) is of the view that if rural people had access to financial access they can be able to alleviate poverty. Kabonga (2023) and Mago etal (2015) believed that NGOs has the capacity of empowering rural people through income generating projects and capacity building as a strategy of alleviating poverty in Zimbabwe rural communities. Nyikadzino (2020) advocated for devolution as a way of reducing rural poverty in Zimbabwe. Hlungwani etal (2021) believed that socio- economic youth empowerment can help in addressing rural poverty. One can notes that economic empowerment strategies can play a crucial role in addressing poverty in Zimbabwe rural communities as supported by the above scholars.

Climate ‘change adaptation strategies can be’ used to reduce and prevent the risks of climate change. Climate change comes with many risks especially on agricultural production. Rural communities mostly depend ‘on rain-fed agricultural production’ which is currently at high risk of failure due to ‘the effects of climate change’. There climate change adaptation strategies that can be used by rural people for the agricultural system to be a success. These strategies include climate resilient infrastructure, reliable climate information services as well as sustainable land management. This is very important as it can assist in addressing poverty as well. Nyahunda & Tirivangasi (2021) believed that climate change adaptation is very crucial in protecting agricultural production through the prevention of crop failure. Mashizha (2019) advocated for, ‘adaptation strategies like harnessing social capital, crop and livelihood diversification, engaging in small businesses and water harvesting for livestock keeping’. Mushure etal (2021) advocated for adaptation through the use of traditional grains, drought resistant crops, early planting, multiple planting and barter trade. These adaptation strategies

are very crucial as they can promote agricultural production thus reducing hunger and poverty in Zimbabwe rural communities.

Rural underdevelopment can be addressed through social development strategies. Social development can take many forms trying to improve structures in the society. It can be through educational and skills development through modernizing schools and colleges in rural areas and provision of local markets for locally produced goods. Social development can be through improvements in health services, water and sanitation. Nzvimbo etal (2020) is of the view that social development has the capacity of addressing rural underdevelopment. Uledi & Hove (2021) support the view of Nzvimbo (2020) advocating for social development through the development of road networks. Social development can be very crucial due to its ability to provide enough skills to rural people important for the development of the community.

Climate change can be addressed through environment conservation. Ecosystem has the capacity of reducing gases driving climate change. Musakwa etal (2020) is of the view that, 'there is a link between ecosystem and climate change'. 'Conservation of the ecosystem can help in reducing the amount of gases in the air hence reducing excessive effects of climate change which has got a negative impact on the lives of rural communities in Zimbabwe'. Environmental conservation can be through forest conservation, wildlife conservation, soil conservation, water conservation as well as waste management. Chanza & Jakarasi (2020) argue that environmental conservation can help in preventing excessive effects of climate change which includes droughts, floods and increases in global temperatures. Macheka (2021) is also of the view environmental protection is one of the means of reducing the effects of climate change. Environmental conservation can act as a measure of preventing future suffering from climate change hence protecting the next coming generations.

Rural poverty and rural underdevelopment can be addressed through infrastructure development. It had already noted that there is poor infrastructure in rural areas which include poor road networks, poor communication networks, lack of access to clean reliable water as well as poor energy infrastructure. This had been driven by many factors which include colonial system. Lofgren & Cicowiez (2022) believed that rural poverty can be addressed through infrastructure development. Phiri etal (2020) support the view that infrastructure is important in eradicating poverty. Bonga & Sithole (2020) outlined the significance of good infrastructure arguing that it is linked to growth and development. It can be concluded that infrastructure development is a very crucial step in addressing poverty in Zimbabwe rural communities.

Poverty, climate change and underdevelopment can be addressed through institutional strengthening. There several government and non-governmental institutions in rural communities which can effectively eradicate poverty, underdevelopment and climate change when they are strengthened. Institutional strengthening can be through local governance, community organizations, private sector engagement and Civil Society Organizations (CSO) engagement. Kabonga (2024) studied three NGOs in Chegutu district and proved that they are participating in poverty reduction through assert accumulation. Hlungwani etal (2021) believed that local institutions must be strengthened to mainstream youth participation. Institutional strengthening is very crucial as local institutions will be very effective in undertaking their agendas.

## 2.6 THE IMPACT OF UNDERDEVELOPMENT ON THE CAPACITY OF ZIMBABWE'S RURAL COMMUNITIES TO ADAPT TO CLIMATE CHANGE

Underdevelopment in rural Zimbabwe communities manifests itself in various forms. There is insufficient climate resilient infrastructure in Zimbabwe's rural communities. This had been supported by Nyahunda (2019) who argues that most of the rural communities in Zimbabwe lacks climate resilient infrastructure. Climate resilient infrastructure includes irrigation systems and water harvesting. This had impacted their capacity 'to adapt to climate change as most people in rural Zimbabwe' communities depend on rain fed agriculture hence agricultural production have been affected by climate change.

It can also be noted that there is limited access to climate related information in Zimbabwe's rural communities. Chigwanda (2016) is of the view that, 'rural communities of Zimbabwe have got limited information to climate change'. This had impacted their adoption to climate change as they lacks tangible and understandable information regarding climate change. This will eventually affects their decisions pertaining to their agricultural production leading to crop failure.

Additionally, there are limited institutional frameworks in Zimbabwe's rural communities. The local governments in rural Zimbabwe communities have got limited capacity to respond 'to climate change'. The Zimbabwe National Climate Change Response Strategy document supports this point on the inability of local governments 'to effectively respond to climate change'. Local government must provide water harvesting and storage systems that may be used by its residents for agricultural purposes as a backup to these frequent droughts. One can note that the inability of local governments have contributed to the community's inability to adapt to climate change.

Low levels of income have also been a factor impacting 'the capability of rural communities in Zimbabwe to adapt to climate change'. 'Rural residents depend on agriculture as their source of income' (Chipenda, 2024). Due to lack of local markets in rural communities, farmers have low income as they face high transport costs to transfer their products to urban markets. Due to the changes in climate change it is now risky to depend 'on rain fed agriculture so farmers must resort to the construction' of dams and boreholes for irrigation purposes. Most farmers could not afford the high prices of these alternative water sources hence failing to adapt to climate change.

## 2.7 THE EFFECTS OF CLIMATE CHANGE ON POVERTY LEVELS IN ZIMBABWE RURAL COMMUNITIES

Climate change has got its impact on the poverty levels of rural Zimbabwe residents. It had led to the reduction of agricultural production. As already noted, rural communities mostly depend on rain-fed agriculture. Rain fed agriculture had been affected by climate change resulting in the changes rainfall patterns. Jamba (2020) is of the view that climate change had been resulting in crops, fruit trees and livestock losses due to very high temperatures, floods and droughts in the region. This had increased the level of poverty in most rural Zimbabwe communities as their source of income had been affected.

Climate change has increased food insecurities and increased poverty levels in rural communities. Rural Zimbabweans practice both subsistence and commercial farming. They sell agricultural products for money to purchase other human needs. These had been affected by climate change. Dyke etal (2020) argues that climate change affects subsistence farming. When agricultural production had been affected, food insecurity increases as well as the level of poverty as rural people will be failing to produce their own food as well as income to purchase other human needs hence poverty levels increases.

Furthermore, climate change had increased health risks in Zimbabwe's rural communities. The conditions created by climate change are mostly favorable for the breeding and spreading of diseases on humans, crops and livestock. Kadungure (2023) argues that droughts and floods have the capacity of spreading diseases. Floods can facilitate the spread of diseases like cholera and other animal diseases. High temperatures can be associated with spread of crop diseases and pests, high water loss from the human body hence causing headache. Jamba (2023) is of the view that, droughts, rainfall deficit and crop failures are associated with chronic food deficiencies. Climate change have been increasing poverty levels as the rural people have to divert funds from production to purchase medicines for human and livestock as well as chemicals for crops to prevent diseases and prevention of pests.

There is an increase in unemployment of rural youth being driven by climate change. Most rural youth are employed in local farms while some are self-employed under irrigations schemes. Most farms in Zimbabwe are deploying workers due to water shortages hence no production could take place. Nhemachena etal (2014) is of the view that climate change had significantly affected rural livelihoods. This had been exacerbating poverty levels as the source of income had been cut off due to climate change.

Climate change has been affecting infrastructures in rural Zimbabwe. Zimbabwe had been facing floods as an effect of climate change, the most destructive being cyclone Idai. Mavhura (2020) is of the view that floods had been affecting infrastuctures in Zimbabwe rural areas. Floods had been destructing dams, bridges, roads, railways and this had been affecting rural development (Gumbo etal, 2021). Mucherera & Spiegel (2022) argue that climate change through floods has caused several displacements. The affected people had to face the consequences of migration hence being prone to poverty due to the destructions. Due

to the destruction of roads and bridges production automatically affected hence driving rural people to poverty.

Additionally, climate change had been causing water scarcity in rural communities of Zimbabwe. Water scarcity had been driven by droughts and high temperatures which can result in high evaporation of surface water. Water scarcity is a situation of lack of sufficient accessible and usable water. Rural people require water for irrigation purposes as well as for domestic purposes. Chirisa (2014) argue that climate change exacerbates water scarcity in Zimbabwe. Due to this situation, rural people are facing challenges to access safe clean water for domestic purposes and this had negatively affecting their health. Rural people are also facing challenges in accessing reliable water source for irrigation purposes. This had affected their production and source of income, hence increasing their poverty levels.

## 2.8 RESEARCH GAP

There are other studies carried out on the past by other researchers on some of the concepts of this study. Chitungo (2020) carried out a research on 'climate change, poverty and livelihoods in rural Zimbabwe, Mangwisi' (2019) did a research on 'the impact of climate change on rural livelihoods in Zimbabwe focusing on Masvingo', Mawere (2018) did a research on 'the vulnerability of rural communities to climate change', Murwira (2016) did a research on 'climate change adaptation strategies in Zimbabwe'. This research is on the nexus between underdevelopment, climate change and poverty in UMP district, from Mashonaland East province, Zimbabwe. The study seeks to fill up the gap that other researches did not on rural poverty.

## 2.9 CHAPTER SUMMARY

This literature review and theoretical framework chapter had provided more information already in existence on the concept of underdevelopment, concept of climate

change as well as the concept of poverty. This chapter also provides the nexus between underdevelopment and climate change, ‘the effects of climate change on poverty levels and also sustainable development’ strategies that can address the three challenges.

# CHAPTER THREE

# RESEARCH METHODOLOGY AND DESIGN

## 3.0 INTRODUCTION

This chapter provides the research philosophy, research methodology, 'research design, population sample, sampling methods, data collection methods, data validity and reliability, data presentation and analysis', pilot testing as well as ethical considerations. It will explore how these processes had been carried out, tools required and the techniques to be employed by the researcher.

## 3.1 RESEARCH PHILOSOPHY

The research employed pragmatism research philosophy. Prime (2024) cites pragmatism as one of the four major research philosophies. 'Pragmatism mainly focus on practical outcomes and problem solving rather than adhering strictly to a particular ontological or epistemological stance, (Prime, 2024)'. This research philosophy enabled the researcher to gather enough data on 'the effects of underdevelopment, climate change and poverty on Zimbabwe's rural communities' as well as knowledge on how to tackle these problems. This philosophy is relevant to the research as it allowed the researcher to find solutions to research questions on the relationship between the three, the effects of climate

change on poverty levels as well as the sustainable development strategies to address the three issues.

## 3.2 RESEARCH METHODOLOGY

To accomplish the objectives of the study on underdevelopment, climate change and poverty, the project employed qualitative research methodology. According to Bhandari (2020) ‘qualitative research involves collecting and analysing non-numeric data to understand the concepts, opinions or experiences’. Primary data had been collected through interviews from four councillors, four Agritex agents, four commercial farmers and three traditional leaders. Secondary data had been collected from journal and newspaper articles.

## 3.3 RESEARCH DESIGN

The research made use of a descriptive research design to assess the impact of underdevelopment on UMP’s adaptability to climate change, evaluate the effects of climate change on poverty levels and identify sustainable development strategies. McCombes (2021) defines a research design as ‘a strategy for answering research questions using empirical data’. ‘A research design is a plan used to conduct a research which involves outlining the overall approach and methods that will be used to collect and analyse data (SINGH 2023)’. Descriptive research is more relevant to this research on underdevelopment, climate change and poverty due to its capacity to accurately and systematically describe a population, situation or lived experience meaning it answers what, where, when and how questions.

## 3.4 TARGET POPULATION AND SAMPLE

‘Target population is a group of individuals that the intervention intends to conduct research in and draw conclusions from’, (Barnsbee & Ngheim, 2018). In this study, the target population is the residents of Uzumba Maramba Pfungwe district from Mashonaland East province, Zimbabwe. The district has an estimated population of 40 000 people consisting of

male, females and children which are believed to be affected by underdevelopment, climate change and poverty. The researcher targeted a sample of 15 residents from the district consisting of four councillors, four AGRITEX agents, four commercial farmers as well as three traditional leaders. This enables the researcher to acquire more knowledge from different perspectives and sectors as the Agritex agents and commercial farmers have better knowledge on how underdevelopment, climate change and poverty affecting agricultural production as well as effective sustainable development strategies. Traditional leadership have a better understanding on the lived experience in their area. Ward councillors have acquired more knowledge on how their societies are being affected by underdevelopment, climate change and underdevelopment as well as sustainable development strategies. The samples were selected through different sampling methods to be discussed under sampling method.

## 3.5 SAMPLING METHOD

The study made use of different sampling methods which are purposive sampling, stratified random sampling and convenience sampling. 'Purposive sampling is a sample technique where participants are selected based on their expertise or experience'. Purposive sampling was used to select AGRITEX Officers. Councillors and commercial farmers were selected using stratified random sampling from the district. Traditional leaders were selected using convenience sampling considering their accessibility and willingness to participate.

### 3.5.1 PURPOSIVE SAMPLING

Purposive sampling was used to select four Agritex Officers. This method is very effective to the research as the samples will be 'selected based on their expertise' and experience in the agricultural sector. Using a sample of Agritex Officers is very significant to the study as it allows the researcher to acquire more data from experts in agricultural production. These agents have also better experience on the climatic system in the district.

### 3.5.2 STRATIFIED RANDOM SAMPLING

Stratified random sampling was employed to select four ward councillors from 17 ward councillors in the UMP district. It was used also to select four commercial farmers from many commercial farmers in the whole district. The sample of four councillors will represent all councillors in the district capturing their experiences and opinions. Stratified random sampling is also effective to acquire data from many commercial farmers in the district. The researcher could not collect data from all of them on their experiences and opinions on underdevelopment, climate change and poverty. Instead, the researcher just selected four commercial farmers and collected the data.

### 3.5.3 CONVENIENCE SAMPLING

Convenience sampling technique was used to collect data from three traditional leaders. There are more than 100 traditional leaders in the district, the researcher used stratified random sampling to select three traditional leaders considering their accessibility and willingness to participate. This had enabled the researcher to gain knowledge on the leaders' lived experience regarding the issue of underdevelopment, climate change and poverty as to how these issues are impacting their needs.

## 3.6 DATA COLLECTION METHODS

This research employed three different data collection methods which are in-depth interviews, semi structured interviews and exploratory interviews. According to Bhandari (2020) 'data collection is a systematic process of gathering observations or measurements which allows you to gain first-hand knowledge and original insights'. During data collection process the researcher used recording devices to capture the data considering data quality and reliability.

### 3.6.1 IN-DEPTH INTERVIEWS

In-depth interviews are extended, open-ended conversations aimed at uncovering participants' detailed perspectives, experiences and emotions. They were used to collect data from Agritex agents. They were important for the study as they generated rich, nuanced data essential to understand the complex relationship.

### 3.6.2 SEMI STRUCTURED INTERVIEWS

Semi structured interviews are conversations which use a pre-defined set of guiding questions but allows flexibility to explore unanticipated topics. They were used to collect data from samples of councillors and commercial farmers. Semi-structured interviews were important as they provides structured yet adaptable data collection ideal for cross-case comparisons.

### 3.6.3 EXPLORATORY INTERVIEWS

Exploratory interviews are informal, open- ended discussions used in early research stages to identify key themes. They were used to collect data from a sample of three traditional leaders. Explorative interviews were key to the study as they contributed in laying the groundwork for theory development.

## 3.7 VALIDITY AND RELIABILITY

To ensure data validity and reliability, the researcher in the pre-interview phase prepared clear research objectives and questions as well as a well-structured interview protocol. During the interviews the researcher recorded the interviews with consent from the interviewee. In the post-interview phase, the researcher verified the data using other similar interview recordings. According to Chen (2023) 'data validity refers to the measure of the accuracy and reliability of information within a dataset or database'. 'Data reliability refers to

the degree to which data and the insights gleaned from it can be trusted and used for effective decision making (Kowieski, 2023). Pilot testing was conducted on 10 householders to test and refine data collection procedures.

## 3.8 DATA PRESENTATION AND ANALYSIS

Data from the interviews was presented using thematic displays to illustrate the themes and refer back to the sources in chapter two to help draw conclusions. The captured data was analysed using phenomenological analysis to identify patterns, themes and insights into the participants' lived experience. Data presentation refers to the organisation, summarisation and communication of data using visual and textual representation (Knight & Valle 2015). Creswell (2014) defined data analysis, 'as a process of systematically examining and interpreting data to extract meaning'. According to Hugh (2023) 'phenomenological analysis refers to an approach that builds on the assumption that the universal essence of anything ultimately depends on how its audience experiences it'.

## 3.9 PILOT TESTING

Pilot testing was conducted on 10 householders. Simkus (2023) defines pilot testing as 'a small scale preliminary study conducted the main research to check the feasibility or improve research design'. 'This was very significant as it enabled the researcher to evaluate the adequacy of the planed data collection methods' (Polit & Beck, 2017).

## 3.10 ETHICAL CONSIDERATIONS

This study obtained authorization and consent from the respondents, with the latter provided with a consent form to sign from the university. Participants received information about their voluntary right to take part in or leave the activity, and they were treated with dignity, fairness, and respect. Before conducting the interviews, 'informed consent was obtained from all participants, also confidentiality' and anonymity was ensured for all

participants meaning the study was conducted in accordance with the principle of ethical research as defined by the APA Code of Ethics.

## 3.11 CHAPTER SUMMARY

This chapter had provided how the research has been carried out outlining the stages, tools used as well as the techniques employed in data collection, data presentation, data analysis. Additionally this chapter provided the research philosophy, research methodology, research design as well as the demographic sample of the research. The results of the study will be provided in the next coming chapter.

# CHAPTER FOUR

# DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

## 4.0 INTRODUCTION

This chapter presents the findings and analysis of the data collected to explore the nexus between underdevelopment, climate change and poverty in rural Zimbabwe, with a specific focus on UMP district in Mashonaland East province. 'The data was collected through semi structured interviews' with commercial farmers and councilors, exploratory interviews with traditional leadership and in-depth interviews with Agritex Officers. This chapter is guided by 'Maslow's hierarchy of needs theory which emphasizes the importance of meeting basic human needs which include food, water and security'. The chapter is structured around three key themes which are the impact of underdevelopment on the capacity of rural areas to 'adapt to climate change, the effects of climate change on poverty levels in the UMP community and sustainable development strategies that can address underdevelopment, climate change and poverty'.

## 4.1 ASSUMPTIONS OF THE STUDY

### 4.1.0 CLIMATE CHANGE HAS AN IMPACT ON POVERTY LEVELS IN ZIMBABWE.

Before undertaking the research, the researcher assumed that climate change had an impact on poverty levels in UMP district, Mashonaland East province. During the field work, the researcher realized that climate change had a negative impact on poverty levels in the district. The collected data reveals that climate change had been exacerbating poverty levels

in Zimbabwe. This will be reviewed under the presentation of the results in this chapter under section 4.

### 4.1.1 UNDERDEVELOPMENT HAD BEEN A DRIVING FACTOR TO POVERTY IN UMP COMMUNITY OF ZIMBABWE.

Before undertaking the research, the researcher assumed that underdevelopment had been a driving factor to poverty in UMP district, Mashonaland East province. During the field work, the researcher realized that the nature of roads, schools, dams, markets and health facilities had been contributing to the high levels of poverty in the community.

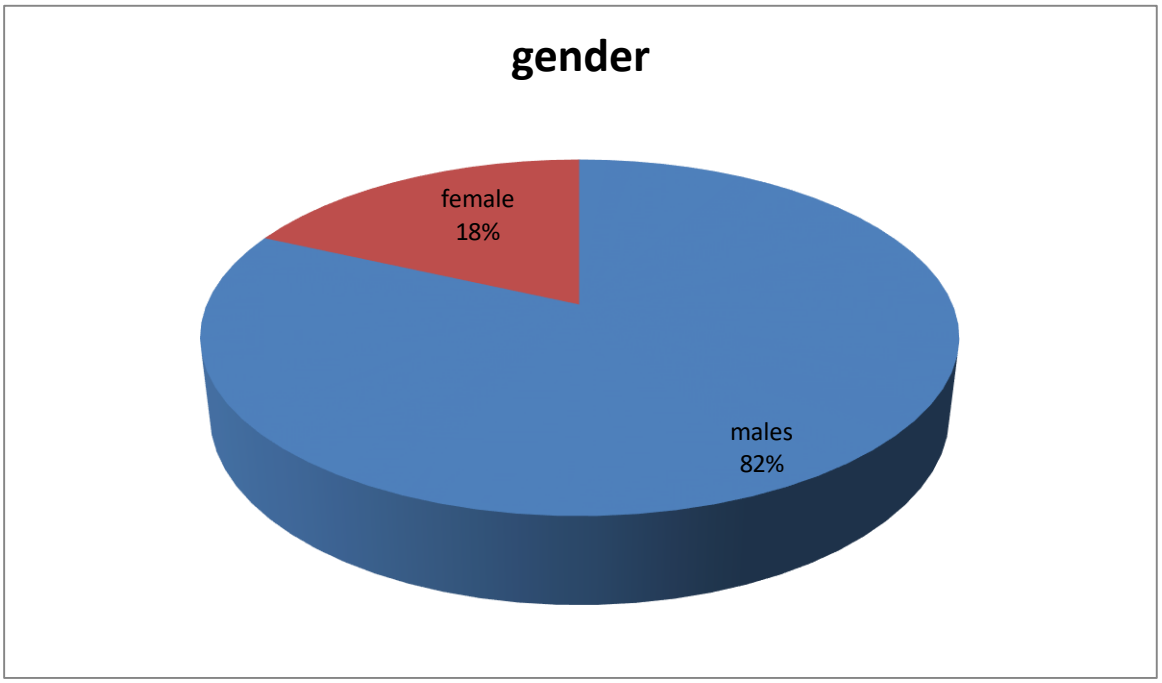
## 4.2.0 DATA COLLECTION OVERVIEW

Data was collected over a period of one month in UMP District, a region characterized by subsistence and commercial farming, limited infrastructure and a high vulnerability to climate variability. A total of 11 interviews were conducted, involving farmers, councilors, traditional leaders and agricultural specialists. Additionally participative observations were carried out to gain insights into daily livelihood activities and environmental conditions. The data collection process faced challenges such as poor communication networks, as well as the unavailability of some potential participants who cited work related ‘commitments as the reason for their inability to participate’ in the interviews.

## 4.2.1 Respondents rate of the interviews in table form

| Targeted responds | Response number (targeted) | Actual | Response rate |
|---|---|---|---|
| Councilors | 4 | 3 | 20% |
| Commercial farmers | 4 | 3 | 20% |
| Traditional leadership | 3 | 2 | 13% |
| Agritex officers | 4 | 3 | 20% |
| **TOTAL** | **15** | **11** | **73%** |

### 4.2.2 RESPONDENTS CLASSIFIED ACCORDING TO GENDER




As shown above on the pie chart, most of the interviewees were male with 82% (9) and female interviewees contributed 18% (2).

## 4.3 DATA ANALYSIS PROCESS

Data from the interviews was captured using thematic displays to illustrate the themes and refer back to the sources in chapter two to help draw conclusions. The captured data was analysed using phenomenological analysis 'to identify patterns, themes and insights into the participants' lived experience'. The analysis was conducted manually with interview recordings and transcripts reviewed multiple times to ensure accuracy. To ensure rigor, triangulation was employed by cross-verifying data from interviews. Member checking was also used to validate the findings with participants. Maslow's hierarchy of needs theory provided a framework for interpreting the data focusing on how unmet basic needs contribute to vulnerability and how sustainable strategies can address these needs.

## 4.4 PRESENTATION OF FINDINGS

The results from the research are organized into three categories, each addressing a critical aspect of the research questions.

### 4.4.0 OBJECTIVE 1: SUSTAINABLE DEVELOPMENT STRATEGIES THAT CAN ADDRESS UNDERDEVELOPMENT, CLIMATE CHANGE AND POVERTY.

Despite the challenges, interview participants identified development strategies that can address unmet needs and break the cycle of underdevelopment, climate change and poverty in UMP District. Promoting climate-resilient agriculture was noted as one 'strategy that can be used to address the challenge of underdevelopment, climate change and poverty'. Participants emphasized the need for training and resources to adopt conservation agricultural technics such as drought resistant crops, mulching and agroforestry. One farmer noted *"if we are taught how to farm in a way that conserves water and soil, we can still grow food even the rains are poor"*. This was supported by one of the Agritex Officers who noted *"there is need for more trainings and awareness campaign on climate-resilient agriculture"*. It was believed that climate resilient-agriculture can be a solution to the challenges being faced in UMP district. This is in line with the arguments made by Mashizha (2019) who advocated for, 'adaptation strategies like harnessing social capital, crop and livestock diversification and water harvesting'. Mushure etal (2021) also advocated for, 'adoption through the use of traditional grains, drought resistant crops, early planting and barter trade as a way of addressing poverty'.

It was believed by interviewees that negative impacts of climate change can be reduced through the improvement in the access to renewable energy. Many participants highlighted the potential of solar energy to reduce reliance on firewood and charcoal thereby curbing deforestation. One community leader responded *"if we had solar equipment, we could power our homes and businesses without cutting down trees".* This was supported by

other traditional leader respondent who cites some of the uses of firewood which include burning farm bricks, cooking and baking as well as burning tobacco. This issue of environment protection, 'as a strategy of reducing the effects of climate change' had been advocated by Macheka (2021) which is in line with the point revealed by gathered data. Chanza & Jakarasi (2020) also agree to the view that environmental conservation can help in preventing excessive effects of climate change which includes droughts, floods and increases in global temperatures.

The captured data from the research revealed that underdevelopment and poverty can be addressed through strengthening community based organizations. Participants expressed much interest in forming cooperatives and savings groups to pool resources and support each other during difficult times. One female participant from the district shared *"if we work together, we can save money and invest in small projects that benefit everyone".* Another councilor shared *"some farmers are forming cooperatives and establish an irrigation powered by solar boreholes and they are producing good results".* This point is in line with the submission made by Hlungwani etal (2020) who advocated for socio-economic youth empowerment as a way of addressing rural poverty in Zimbabwe. Kabonga (2024) when studying the impact of community organizations in Chegutu district, submitted that they are playing a part in poverty reduction through assert accumulation.

The data from the interviews revealed that underdevelopment, climate change and poverty in UMP community can be addressed through enhancing government and NGO support. The participants called for increased investment in infrastructure such as dams, boreholes and roads as well as greater involvement of NGOs in providing trainings and resources. An Agritex Oficcer responded *"yes the district is developing but at a very low rate, atleast each village has a borehole but still is enough to provide water to the whole village. Some of the boreholes are now old aged".* Another councilor shared *"the council has*

*been failing to develop its roads due to shortage of resources as well as breakdown of equipment".* Another participant stated *"we need the government and NGOs to work with us not just give us handouts".* It was believed that increased government and NGOs support would help addressing these challenges. This is in line with the contribution of Kabonga (2023) who believed that NGOs has the capacity to empower rural people through income generating projects and capacity building.

The data from the research also revealed that underdevelopment in the UMP community can be addressed by mobilizing the community to construct schools and clinics in their areas. Participants expressed the shortage of clinics and schools in almost every ward in the district. One councilor shared *"we have one clinic in our ward with 17 villages, sick people are traveling long distance to access a local clinic. The same is on the issue of schools, we have only two primary schools and two secondary schools in our ward. Primary school students have to travel long distance to get to school. As a solution to this challenge, we are in a process of mobilizing resources so that we can construct another clinic and another school in our ward".* Nzvimbo (2020) also made similar contribution as he advocates for social development through the development of road networks as a way of addressing challenges pertaining to underdevelopment.

### 4.4.1 OBJECTIVE 2: THE IMPACT OF UNDERDEVELOPMENT ON THE CAPACITY OF RURAL AREAS TO ADAPT TO CLIMATE CHANGE

The interview participants highlighted how underdevelopment in UMP District has severely limited the community's ability to adapt to 'climate change as well as their ability to meet basic needs'. The lack of basic infrastructure such as irrigation schemes, roads and communication networks, boreholes, clinics, weather stations, schools was repeatedly cited as

major barriers. One commercial farmer explained, "*we don't have access to irrigation as there is one irrigation in an area with more than five villages, so when rains fail, we have no way to water our crops"*. It was noted that the lack of access to irrigation schemes has an impact on 'the community's capacity to adapt to climate change' as there wasn't enough rains for the crops in the past few years. This is in line with the arguments submitted by Nyahunda (2019) who submitted that most of the rural communities in Zimbabwe lacks climate resilient infrastructure. This inability to secure food and water undermines the community's to meet its basic needs.

Additionally, the absence of early warning systems and reliable climate information services leaves farmers unprepared for extreme weather events. A local farmer when explaining his experience in the years between 2019 and 2024 said *"we only hear about droughts when they are already upon us. By then it's too late to do anything".* Some other farmers supported this argument as they argue that climatic information from radio stations is not reliable as they may change. One farmer also reported that *"during the 2023\24 farming season we have been affected by the elnino induced drought without knowledge when we had already planted our crops".* This proves the absence of early warning system and reliable climate information systems in UMP District, Mashonaland East. This is in line with the arguments made by Chigwanda (2016) who is of the view that, 'rural communities in Zimbabwe got limited information to climate change'. This had been also supported by the 'Zimbabwe National Climate change Response which puts the blame on the local authorities failing to effectively respond to climate change'.

Furthermore, it was noted that physical isolation of the community has an impact on its capacity to adapt to climate change. UMP district is more than 100 km away from Mbare, the biggest market in Zimbabwe. One of the leadership responded on the issue of isolation saying "*our district is located more than 100 km away from Harare yet there is poor road*

*infrastructure. This is a challenge as the residents are facing a challenge to transport their produces to the market due to the high cost of transport*". Another farmer responded saying *"we are not capable of transporting our produces to the biggest market forcing us to sell our products at Mutoko Centre or Makaha area which about 30 km away from the district. Our products will be underpriced at these nearest markets".* This is in line with Ndebele etal (2015) arguments when they conducted a research on Bikita, they reported that, the area's isolation limits its accesss to extension services and financial resources hence contributing to the community's inability to adapt to climate change. Dube and Nhamo (2019) also support the issue of physical isolation arguing that, government and NGO support often fails to reach isolated rural communities in Zimbabwe.

Additionally, high poverty rates in the UMP community have an impact on the community's capacity to adapt to climate change. Some Agritex Officers noted that "*most of the community members are poor to the extent that they cannot afford to buy certified seeds, enough fertilizers as well as enough herbicides and pesticides for effective agricultural production".* It was noted that these had been affecting the quality and quantity of the agricultural produces in the community. This point is in line with Chipenda (2024) submission which argues that, 'the high levels of poverty in Zimbabwe rural communities is contributing to their inability to adopt to climate change'.

### 4.4.2 OBJECTIVE 3: THE EFFECTS OF CLIMATE CHANGE ON POVERTY LEVELS IN THE UMP DISTRICT

The data findings from the research revealed that climate change has exacerbated poverty levels in UMP District by undermining the community's ability to meet human needs. Community members revealed that they have been witnessing droughts, poor rainfall distribution and increased temperatures which had led to crop failures, livestock losses and food insecurity. One participant stated that, "*during the 2023/24 farming season, my field*

*yielded almost nothing because of the elnino induced drought. I had to sell my goats to buy food and now I have nothing left".* This was supported by some of the Agritex Officers as one of them reported that, *farmers due to the drought were left with no option than to sell their livestock so that they can purchase food for their families*. This point is in line with the argument made by Jamba (2020) who believed that climate change had been contributing to crop, fruit trees and livestock losses due to very high temperatures, floods and droughts.

Furthermore, the captured data from the research revealed that, climate change had been creating a dependency syndrome in UMP community. One of the councilor stated that "*climate change had affected the capability of community members to feed themselves, the government and World Food Organisation provided food aid for disadvantaged families. This had created a dependency syndrome in our community as some are no longer working to sustain themselves".* This shows that climate change had negatively impacted the behavior of the community towards their livelihoods hence exacerbating the poverty levels. Ndlovu etal (2020) when conducting a research on Gwanda, Mangwe and Matobo districts, concluded highlight how climate shocks are leading people to dependency on humanitarian assistance.

Additionally, climate change had impacted animal and poultry production. One of the Agritex Officers stated that *"due to climate change, we have been experiencing very high temperatures as well as very low temperatures than before in the district. This had been affecting livestock and poultry as they will be prone to diseases*". This was supported by other agricultural specialists as well as the farmers arguing that this had contributed to the increase of poverty levels in the UMP community. This point is also in line with the submission made by Dyke etal (2020) who believed that climate change had been affecting subsistence farming in Zimbabwe hence impacting the poverty levels of the rural communities.

Furthermore, climate change had been blamed for exacerbating poverty levels in UMP as women and children are also affected as they often bear the brunt of food insecurity and increased labor burdens. A female participant shared *"when there is no food, women suffer most because they have to find ways to feed their families. In our community we depend on water from wells, due to the prolonged droughts wells go dry and women and children had to travel long distance to get to a nearest borehole. This had impacted livelihoods of the community members as they will take much time finding water".* This is in line with Maslow's hierarchy of needs theory which emphasizes the importance of addressing inequalities to ensure that all individuals can meet their needs. This evidence support the arguments made by Chirisa (2014) who purports that climate change can be blamed for the water shortages in Zimbabwean communities. Jamba (2023) also acknowledged the capacity of climate change on food deficiencies in the Zimbabwean society.

## 4.5 INTERPRETATION OF FINDINGS

The findings from the research illustrated that there is a complex relationship between underdevelopment, climate change and poverty in the UMP community. As revealed by captured data, underdevelopment limits the community's ability to cop up to climate change as well its capacity to meet basic needs while climate change exacerbates poverty, thus creating a vicious cycle. However, the identification of sustainable development strategies highlights the potential for targeted interventions to break this cycle.

## 4.6 CHAPTER SUMMARY

This chapter has presented the findings and analysis of the qualitative data, organized to answer the three research questions. The findings highlight the impact of underdevelopment on the capacity of rural areas to adapt to climate change, the effects of

climate change on poverty levels in the UMP community as well as sustainable development strategies that can address these challenges.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND AREAS FOR FURTHER RESEARCH

## 5.1 INTRODUCTION

This chapter concludes the research by summarizing the key findings, discussing their implications and providing the recommendations for addressing the nexus between underdevelopment, climate change and poverty in UMP District, Mashonaland East, Zimbabwe. It is guided by Maslow's hierarchy of needs theory which 'emphasizes the importance of meeting basic human needs which are physiological needs, safety needs, love and belonging, esteem and self-actualization for sustainable development'. It also seeks to reflect on the limitations of the study and suggests areas for future research.

## 5.2 SUMMARY OF FINDINGS

The study has explored three key research objectives which are the impact of underdevelopment on the capacity of rural areas to adapt to climate change, the effects of climate change on poverty levels in the UMP community as well as the sustainable development strategies that can address underdevelopment, climate change and poverty.

The data from the study reveals that climate change exacerbates vulnerability to climate change as the lack of infrastructure and limited access to resources and services had been noted as limiting the community's ability to meet its human needs.

It was also revealed by the research findings that climate change had been one of the most factors exacerbating poverty levels in this community through prolonged droughts, poor rainfall distribution, very high temperatures as well as very low temperatures in the winter season. All had been contributing to crop and animal production failures leading to food insecurity, asset depletion as well as increased reliance on external aid. This had been undermining the community's ability to meet its needs.

The captured data also reveal sustainable development strategies that have the capacity to break the vicious cycle. The participants identified several strategies such as climate resilient agriculture, renewable energy and community based organizations that could help address the unmet needs and break the cycle of underdevelopment, climate change and poverty.

## 5.3 CONCLUSIONS

The findings are interpreted through the lens of Maslow's hierarchy of needs theory which posits that unmet basic needs are a root cause of vulnerability as well as conflict. This study highlights how underdevelopment and climate change intersect to deprive rural communities in UMP District of their basic needs, perpetuating a cycle of poverty and environmental degradation. At the same time, the resilience and agency of rural communities demonstrate the potential for grassroots solutions to address these challenges.

### SUSTAINABLE DEVELOPMENT STRATEGIES

The identification of sustainable development strategies such as conservation agriculture and renewable energy underscores the potential for integrated approaches to address unmet human needs. These strategies resonate with Maslow's hierarchy of needs theory which advocates for empowering communities to fulfill their needs sustainably. For

instance, community- based organizations and cooperatives foster collective action, enabling communities to pool resources and support one another during crisis.

#### UNDERDEVELOPMENT AND UNMET NEEDS

The data reveals that the absence of critical infrastructure such as irrigation systems, safe and reliable roads, restricts access to essential resources and services like market hence affecting their ability to meet basic human needs. Participants statements like *"we don't have access to irrigation as there is one irrigation in an area with more than five villages, so when rains fail, we have no way to water our crops"* emphasize the pressing need to address these gaps. Additionally, the lack of early warning system and reliable climate information leaves communities ill prepared for extreme weather events further undermining their security.

#### CLIMATE CHANGE AND POVERTY LEVELS

It can be concluded that climate change acts as a multiplier of existing vulnerabilities, deepening poverty and inequalities. Crop failures and livestock losses have forced households to sell assets or reduce food intake thus compromising their ability to meet basic needs. Women and children are disproportionately affected as they often face greater food insecurity and increased labour demands. This aligns with Maslow's hierarchy of needs theory which stresses the importance of addressing inequalities to ensure equitable access to resources.

## 5.4 RECOMMENDATIONS

#### FOR POLICYMAKERS

- Policy makers must enhance basic infrastructure thus investing in irrigation systems, boreholes and road networks to improve access to water, food and markets.
- They must strengthen early warning systems as well as providing accessible and timely climate information to enhance community preparedness and security.

- They must promote gender equity by ensuring that women and youth are actively involved in decision-making processes and have equitable access to resources.

**FOR DEVELOPMENT PARTNERS**

- Development partners must support capacity development through the provision of enough training and resources to help farmers adopt climate-resilient agricultural practices.
- They must encourage community based initiatives through facilitating the formation of cooperatives and savings groups to promote collective action and resources.
- They must also aim to advance renewable energy through the adoption of solar energy to reduce reliance on firewood and mitigate deforestation.

**FOR LOCAL COMMUNITIES**

- Local communities must engage in community development projects such as mobilizing resources and construct schools and clinics so as to address the issue of underdevelopment.
- Local communities must implement climate-resilient practices such as mulching and agroforestry to enhance soil health and water retention.
- They must strengthen social cohesion through collaboration to share resources, knowledge and skills to overcome community challenges.

## 5.5 AREAS FOR FURTHER RESEARCH

- Researchers can research on the role of traditional knowledge in meeting basic needs and adapting to climate change.
- They may research on the effectiveness of community-based organizations in advancing sustainable development and addressing unmet needs.

- They can research on the long-term impacts of climate change on migration and urbanization in rural Zimbabwe.

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## ANNEXURE 1

IN-DEPTH INTERVIEW GUIDE FOR AGRITEX OFFICERS

I am Mafemera Panashe F, a fourth year student undertaking a Bachelor's Degree in Peace and Governance at Bindura University of Science Education. I am caring out a research on the nexus between underdevelopment, climate change and poverty in UMP District. Participants have the right to take part or leave the activity. They are treated with dignity, fairness and respect. Confidentiality and anonymity will be ensured for all participants.

1. Can you tell me about your role as an AGRITEX Officer in UMP district?

2. How long have you been working with farmers in UMP?

3. How would you describe the current state of development in UMP?

4. What are some of the key challenges you face in terms of supporting farmers in this area?

5. Have you noticed any changes in the climate from 2019 to 2024?

6. How have these changes affected your work with farmers in this area?

7. How does poverty affect the livelihoods of farmers in this area?

8. What are some of the key challenges you face in terms of supporting farmers to overcome poverty?

9. How do you think AGRITEX Officers can play a role in addressing underdevelopment, climate change, and poverty in this rural area?

10. What are some of the key initiatives or programs that AGRITEX has implemented to address these issues?

## ANNEXURE 2

Semi structured interview guide for commercial farmers and councilors

I am Mafemera Panashe F, a fourth year student undertaking a Bachelor's Degree in Peace and Governance at Bindura University of Science Education. I am caring out a research on the nexus between underdevelopment, climate change and poverty in UMP District. Participants have the right to take part or leave the activity. They are treated with dignity, fairness and respect. Confidentiality and anonymity will be ensured for all participants.

1. Can you tell me about your experience as a Commercial farmer/ Councilor in UMP District ?

2. How long have you been in farming/ serving as a Councilor in this area?

3. How do you think underdevelopment and climate change are affecting your farming operat ions/community from 2019 to 2024?

4. What are some of the key challenges you face in terms of addressing these issues?

5. How does poverty affect the livelihoods of farmers/community members in this area?

6. What are some of the key challenges you face in terms of supporting farmers/community members to overcome poverty? (For councilors)

7. How do you think commercial farmers / councilors can play a role in addressing underdeve lopment, climate change, and poverty in UMP District?

8. What are some of the key initiatives or programs that you have implemented to address these issues?

## ANNEXURE 3

EXPLORATIVE INTERVIEW GUIDE FOR TRADITIONAL LEADERS

I am Mafemera Panashe F, a fourth year student undertaking a Bachelor's Degree in Peace and Governance at Bindura University of Science Education. I am caring out a research on the nexus between underdevelopment, climate change and poverty in UMP District. Participants have the right to take part or leave the activity. They are treated with dignity, fairness and respect. Confidentiality and anonymity will be ensured for all participants.

1. Can you tell me about your role as a traditional leader in UMP district?
2. How long have you been serving in this capacity?
3. How do you think underdevelopment and climate change are affecting your community?
4. What are some of the key challenges you face in terms of addressing these issues?
5. How do you think traditional leadership can play a role in addressing underdevelopment and climate change?
6. What are some of the key initiatives or programs that you have implemented to address these issues?
7. Are there any community-based solutions or innovations that you think could help address underdevelopment and climate change?
8. How can these solutions be scaled up or replicated in other area

# Panashe Mafemera

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