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THE IMPACTS OF ENVIRONMENTAL DEGRADATION ON PEACE AND SECURITY IN CHIMANIMANI FROM 2019 -2023

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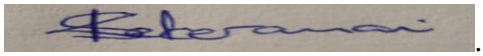
ABSTRACT

This dissertation examines the relationship between environmental degradation and peace and security in Chimanimani, Zimbabwe, from 2019 to 2023. Using qualitative data, this study investigates how environmental degradation affects social, economic, and political stability in the region. The research also assesses the role played by the Environmental Management Agency (EMA) in mitigating the effects of environmental degradation on peace and security. The research reveals that environmental degradation has significantly contributed to resource competition, displacement, and social unrest, ultimately threatening peace and security in Chimanimani. The study also shows that EMA's efforts, including environmental monitoring, policy development, and community engagement, have helped to reduce the impacts of environmental degradation on peace and security. The study recommends enhanced collaboration between EMA, local communities, and other stakeholders to address environmental degradation and promote sustainable development, peace, and security in Chimanimani. The research contributes to the understanding of the complex relationships between environmental degradation, peace, and security, providing valuable insights for policymakers, practitioners, and scholars working towards sustainable development and peacebuilding in fragile environments. The study highlights the need for sustainable environmental management practices, effective governance, and community engagement to mitigate the impacts of environmental degradation on peace and security. This research contributes to the understanding of the complex relationships between environmental degradation, peace, and security, providing valuable insights for policymakers, practitioners, and scholars working towards sustainable development and peace building in fragile environments.

DECLARATION FORM

I (200717B) hereby declare that this dissertation is a result of my work and has not been plagiarized, except to the extent indicated in the Acknowledgements and references included in the body of the paper and that it has not been submitted in part and full for any other degree.

 .....

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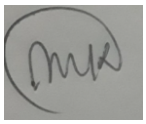

CHAIRPERSON’s SIGNATURE

DEDICATION

This dissertation is dedicated to my mother and father for their support and inspiration during my research journey. Your love, encouragement and belief in abilities has been the driving force behind my success and made this journey meaningful and enjoyable.

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This work has been a culmination and encouragement from others and will be a disservice if l don't mention and acknowledge them. Firstly, l want to thank God almighty for his love mercy and blessings. His hand was upon me and he has taken me this far. I would also want to acknowledge my supervisor, family and friends even when things were tight they would come to my rescue.

LIST OF ABBREVIATIONS ANACHRONISM

ADB	African Development Bank
CA	Conservation Agriculture
CBNRM	Community-Based Natural Resource Management
EEAPs	Environmental Education and Awareness Programs
EKC	Environmental Kuznets Curve
EMA	Environmental Management Agency
FAO	Food and Agriculture Organization (of the United Nations)
IPCC	Intergovernmental Panel on Climate Change
IRI	International Research Institute

SADC	Southern African Development Community
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
ZELA	Zimbabwe Environmental Law Association

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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Background of the study

Climate change is now widely recognized as the major environmental problem facing the world today. Globally climate exerts significant control on the day-today social and economic development, particularly in the agricultural and water-resources sectors. There is limited empirical evidence on the impact of climate change and environmental degradation on food, water and energy, analysed from a peace centred perspective. A study conducted by the international research institute for climate and society (IRI) revealed that lack of climate change information affects the integration of climate into policy, practice, climate services and climate data (IRI, 2016). This hampers effective environmental management and consequently impacts the economy and the livelihood choices people make (FAO, 2018b).

The African continent is particularly vulnerable to the impacts of environmental degradation on peace and security. The continent is home to some of the world's most fragile ecosystems, which are under threat from climate change, deforestation, and overgrazing. African Development Bank (2018) report found that environmental degradation is costing Africa $66 billion per year. The report also found that environmental degradation is a major threat to human security in Africa, with over 600 million people at risk from water scarcity and 400 million people at risk from food insecurity (ADB, 2018).

Regionally, the Southern African region is also facing significant challenges from environmental degradation. The region is experiencing a high rate of population growth, putting pressure on natural resources. Climate change is also having a significant impact, leading to more frequent and severe droughts and floods. According to the report by the Southern African Development Community (SADC) found that environmental degradation is a major threat to peace and security in the region (SADC Report, 2019). The report found that environmental degradation is contributing to poverty, inequality, and conflict.

Zimbabwe is also experiencing the impacts of environmental degradation on peace and security. The country is facing a severe drought, which has led to food insecurity and water scarcity (UNEP, 2019). The drought has also contributed to an increase in conflict over land and water resources. In addition, Zimbabwe is experiencing deforestation and land degradation. These factors are contributing to soil erosion, which is reducing agricultural productivity. This is exacerbating food insecurity and contributing to poverty. The Zimbabwean government has taken some steps to address environmental degradation. However, more needs to be done to protect the country's natural resources and build resilience to the impacts of climate change.

Although there is general consensus that changes in climate and environment are happening, consequences of such changes tend to be localized and may vary between individuals, households, and communities due to a multiplicity of factors. Ways in which different categories of people (such as children, youth, women and men) perceive and experience consequences of climate change and environmental degradation may vary from one category to another. Despite the fact that climate change impacts are likely to affect people differently, children are disproportionately vulnerable to the impacts of climate change (ADB, 2018). Children's nature of vulnerability is multi-dimension, shaped largely by the physical, social and emotional changes that take place during the early stages of development. Therefore, it is imperative to achieve a proper understanding of the impact of climate change especially in the child centered community development and gender perspective.

Chimanimani district in Zimbabwe is not an exception to this challenge. The effects of environmental degradation and climate change are being felt and have been linked to increased conflict and violence (UNEP, 2019). Therefore, the experiences of Chimanimani can provide valuable insights and lessons for addressing similar challenges elsewhere. In addition, it is important to consider the role of environmental justice in addressing these challenges, as the poor and marginalized are often disproportionately affected by environmental degradation. Addressing these issues will require a coordinated and global effort.

1.2 Aim

This study seeks to explore impact of environmental degradation on peace and security in Zimbabwe, focusing on the case of Chimanimani District.

1.3 Statement of the problem

Chimanimani is a mountainous district in eastern Zimbabwe that is highly vulnerable to environmental degradation. The district is home to a number of unique ecosystems but is facing a number of environmental challenges, including deforestation, soil erosion, and climate change. According to the United Nations Security Council (UNSC) (2020) investigations have stated that, Environmental degradation in Chimanimani is having a significant impact on peace and security in the district. As the environment degrades, it becomes more difficult for people to access the resources they need to survive, such as water, food, and land thereby leading to conflict. Displacement of people is also another challenge arising from this phenomenon as some areas become uninhabitable. This can force people to move to other areas, which can lead to conflict with the people who already live there. Environmental degradation is also exacerbating the effects of climate change in Chimanimani leading to more extreme weather events, such as droughts, floods, and cyclones. These events can cause widespread damage to infrastructure and livelihoods, which can lead to conflict and violence.

1.4 Objectives

1. To identify the main environmental factors affecting the peace and security of local communities in Chimanimani.
2. To assess the impact of environmental degradation on the livelihoods of local communities in the region.
3. To examine the effectiveness of existing policies and interventions aimed at addressing environmental degradation and insecurity in Zimbabwe.

1.5 Research questions

1) What are the main environmental factors affecting the peace and security of local communities in Chimanimani?
2) How do environmental degradation impacts affect peace and security in Chimanimani?
3) How effective are the existing policies and interventions aimed at addressing environmental degradation and insecurity in Zimbabwe?

1.6 Assumptions

In carrying out this study, the researcher makes the following assumptions:

- Environmental degradation increases poverty and displacement of people which in turn can lead to conflict and violence.
- Environmental degradation contributes to human insecurity, which can lead to instability.
- Environmental degradation can exacerbate existing political and economic grievances, undermining social cohesion which then leads to increased tension and conflict.

1.7 Significance of the study

There is limited literature on environmental degradation and its impact on peace and security in Zimbabwe in general. This study is important because it highlights the need for sustainable environmental management practices in order to promote peace and security in the region. Although some researches were conducted in this area, many studies have not been specifically and rigorously evaluated in settings with limited resources, especially low-income countries such as Zimbabwe. There is therefore a critical need for evaluations from these areas, including adaptation and evaluation of promising conservation measures based in higher-resourced communities, as well as evaluation of alternative interventions. Therefore, it is hoped that the findings of this study will enable the government of Zimbabwe and other relevant stakeholders to craft specific policies and strategies to come up with strong conservation policies for the vulnerable areas across the country.

1.8 Key definitions

Climate change is defined as the significant variation of the mean state of climate relevant variables such as temperature, precipitation and wind in a certain period of time, commonly over 20 years (Branch, 2018).

Drought refers to a meteorological drought (precipitation well below average), hydrological drought (low river flows and low water levels in rivers and lakes, and of groundwater), agricultural drought (low soil moisture), and environmental drought (a combination of the above) (Walwa, 2020).

Environmental degradation refers to the process of damaging or depleting the environment, particularly in relation to the natural resources on which people and ecosystem rely (Schilling, Opiyo & Scheffran, 2022).

Weak governance zones are areas where governments are unwilling or unable to carry out their responsibilities (Sanchez De la Sierra, 2014).

1.9 Chapter outline

Chapter one – Introduction and background: A general overview including the significance, problem, aim and objectives of the study.

Chapter two – Literature review: Focuses on the relevant literature to the study.

Chapter three – Research methodology: Outlines and explains the methodology which is relevant and the best instruments to the research.

Chapter four – Data presentation, analysis and discussion: Data collection, presentation and analysis linking new knowledge to fill the gaps identified in literature review.

Chapter five – Conclusions and recommendations: The answers found in relation to the research topic and what suggestions concerning the answers found that will help future research.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The aim of this chapter is to provide a review of some related literature. In this case, this chapter will start by providing the theoretical framework that is guiding this study, taking the Attachment theory as the guiding concept. It will then go on to provide some literature related to foster care, looking at their types, attachment and positive foster experience, foster and child development and also provide an empirical literature review.

2.2 Theoretical framework

2.2.1 Environmental Kuznets Curve (EKC)

EKC theory exhibits the association between environment and income level. At the start of economic development, the environment is severely affected; resultantly, the environmental quality declines (Nhede, 2013). However, after attaining a certain level of income, the situation is changed. With an increased level of income, economic development leads to improved environmental quality. The Environmental Kuznets Curve (EKC) conjecture seeks to establish an inverted U-shaped nexus between income per capita and environmental degradation. It posits that at early stages of economic growth and development, environmental degradation rises or increases at an increasing rate. Nonetheless, after some threshold of economic development, the co-movement tends to reverse at higher levels of economic progress.

2.3 Key environmental problems: Causes and opportunities

Zimbabwe, a landlocked, tropical country in southern Africa, has abundant natural resources including land, biodiversity, and minerals. After South Africa, Zimbabwe is the most industrialised country in the SADC region, with a majority of the industries

situated around the major cities. Mining and agriculture are the most significant economic sectors. The country produces over 35 different minerals in over 1,000 mines (Scheffran, Link & Schilling, 2019). Zimbabwe is a semi-arid country with limited water resources. Although it shares one of the world's greatest water bodies, the Zambezi River, it does not currently supply water to the rest of the country, which is water-scarce in most parts.

Poverty is widespread and income inequality is high although stable since the mid-1990s (Zimbabwe ranks as number 22 of 144 countries in the world in terms of inequality). Zimbabwe experienced a deteriorating economic, political and social environment since 2000, with negative impacts on poverty, food security, service delivery, etc (Sida, 2016). Zimbabwe's economy showed real growth again in 2010. The key environmental challenges facing Zimbabwe are: land degradation, deforestation, inadequate quantity and quality of water resources, air pollution, habitat destruction and loss of biodiversity, waste (including toxic waste), natural hazards (mainly recurring droughts), and climate change (including rainfall variability and seasonality).

Many of the environmental challenges are interdependent and mutually reinforcing. For instance, land degradation is partly caused by deforestation, which also affects biodiversity, ecosystem services including water regulation and purification, resulting in reduced capacity to buffer against drought or floods, and so on (Sida, 2016). Climate change is expected to enhance the environmental stresses already experienced. Commonly, the underlying causes to the environmental challenges in Zimbabwe include weak legislation, but even more importantly, weak implementation and enforcement of the existing legislation, poor institutional capacity, weak governance structures including inadequate coordination, which is underpinned by corruption.

Furthermore, many of the environmental problems are poverty induced, worsened by the political and economic difficulties during the last decade. However, there are also opportunities in tackling the environmental challenges. Poverty reduction, combined with strengthened institutional capacity, including a strong and well enforced environmental legislation, enhanced public awareness and political willingness to tackle these problems, there is a great potential in moving in the right direction (SADC, 2019).

2.4 Environmental degradation in Africa

Environmental degradation is one of Africa's greatest environmental challenges today, hindering the ability of humans to meet their basic needs. Ecosystems are of critical importance in Africa contributing to biodiversity and human wellbeing (Biggs et al., 2004). There is increased recognition of the changes in Africa's ecosystems particularly in southern African, occurring at a faster rate than anticipated. Human activities such as deforestation, forest fires, invasive species and land use change are increasing threating Africa's Forest ecosystem and species which thrive in the ecosystems (Muriuki et al., 2005).

Literature also reports that changes in grasslands and marine ecosystem are increasingly noticeable. It is projected that by 2080, the proportion of arid and semi-arid lands in Africa will increase by 5-8% (Stige et al., 2006). About half of the semi-humid and semi-arid parts of the southern Africa region are at moderate to high risk of desertification (Biggs et al., 2004). The major causes of severe land degradation are poverty (e.g., cutting trees for farm land and energy), population pressure and lack of structural transformation of the economies in rural areas (FAO, 2008b).

On average, 13 million hectares of tropical forests are disappearing annually (FAO, 2010), which is equivalent to about six billion tons of carbon dioxide being released into the atmosphere. Deforestation also damages crucial ecosystem services such as soil stability, affects watershed production and destroys habitats and livelihoods (UNEP, 2011:2). Loss of arable land (due to deforestation, overgrazing and fuelwood collection) coupled with severe and prolonged droughts, and flooding have led to soil degradation, which has in turn contributed to reduction in agricultural yields, crop failure and loss of livestock which endangers rural pastoralists (UNESCO, 2003).

Effects of intensified land use, demographic shifts and climate pressures are increasing the occurrence of events of climate related disasters (Chen et al., 2010). Several studies have highlighted the importance of terrestrial vegetation cover and the associated dynamic feedbacks on the physical climate (Christensen et al., 2007). An increase in vegetation density, for example, has been suggested to result in a year-round cooling of 0.8oc in the tropic, including tropical areas of Africa (Bounoua et al., 2000).

Complex feedback mechanisms, mainly due to deforestation/land-cover change and changes in atmospheric dust loadings, also play a role in climate variability (Prospero

& Lamb, 2003). Protections and enhancement of forests is essential to stabilize the global climate. Previous research suggests that a 50% reduction in deforestation is needed by 2020 if the forestry sector is to support, rather than undermine, global efforts aimed at holding global temperature rise below 2 degrees Celsius (UNEP, 2011:2).

2.5 Effects of the environmental problems

Environmental degradation and a decline in ecosystem goods and services have drastic consequences for human societies especially the poor, as they depend directly on ecosystems and their benefits. The environment is a relevant issue, inseparable from the economy, poverty, health, livelihoods, food security and climate change.

2.5.1 Poverty

For all environmental challenges there is a strong case that *vulnerable groups*, such as children, will suffer the most. People in rural areas under high poverty levels and dependent on natural resources are very exposed to environmental degradation and climate variability and change (Scheffran, Link & Schilling, 2019). Therefore, protecting the environment is important for human development, poverty reduction and long-term economic growth. The Millennium Ecosystem Assessment concluded that efforts to reduce rural poverty and eradicate hunger are critically dependent on ecosystem services, particularly in Sub-Saharan Africa. Ecosystem services are of critical importance for adaptation to climate change as healthy, well-functioning ecosystems enhance natural resilience to the adverse impacts of climate change and reduce the vulnerability of people.

2.5.2 Public Health

One specific manifestation of poverty is related to health. It is estimated that 12.6 million deaths globally, representing 23% of all deaths in 2012, were attributed to environmental risk factors. For Zimbabwe, the *environmental burden of disease* was estimated to 16% of the total disease burden in 2004, i.e., below the global average. However, environmental aspects are interlinked with health issues in Zimbabwe: According to the health organization Riders for Health (2012), diarrhoeal diseases are the third most significant cause of death among children under five years in Zimbabwe. Malaria ranked in fifth place. Nyemba et al (2010) confirms that there is a direct

relationship between the intensity of water scarcity and the prevalence of water-related diseases.

2.5.3 Economic development

Zimbabwe's economy is natural resource-based and depends heavily on *agriculture* and *mining*. The potential for economic growth in Zimbabwe is closely linked with development of its natural resources. With population growth, the aspiration for higher standards of living and increasing demands both at national and global level, the pressure on Zimbabwe's natural resources will inevitably increase (SADC, 2019). Zimbabwe must balance the need of making productive use of its natural resources with maintaining its asset base through development investments.

2.6 Policy framework and institutional capacity for managing environmental challenges

2.6.1 Integration of environment in the policy framework

The newly revised *Constitution of Zimbabwe* from 2013, gives every person environmental rights that include the right: a) to an environment that is not harmful to their health or wellbeing; and b) to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that: i) prevent pollution and ecological degradation; ii) promote conservation; and iii) secure ecologically sustainable development and use of natural resources while promoting economic and social development (Sida, 2016). Thus, the Constitution caters for the right to a clean environment, access to safe water and states that pollution must be prevented. The Constitution further stipulates that the 'State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of the rights set out in this section'.

The Constitution states that an Environmental and Social Impact Assessment shall be performed by project developers, where impacts on livelihoods, ecology and cultural rights shall be described and assessed. A lack of strict regulated *mining* sector results in environmental degradation and pollution of toxic and/or hazardous substances with severe consequences on human and environmental health. However, the legal and fiscal systems in place to regulate the mining sector and mineral resources are inadequate. The Mining Act from 1961, focuses on extraction "with no regard for sustainable

development" and fails to acknowledge the role of other than state actors and private mining companies in the mining sectors, ignoring community organisations and ASM actors.

An assessment of the draft Minerals Policy in 2014 concludes that the policy improves the mining Act's weaknesses. It includes provisions for transparency and accountability through adoption of the Extractive Industries Transparency Initiative, and that it recognises the role of other than traditional mining actors. The Zimbabwe Environmental Law Association (ZELA) recommends that impact on human rights (including gender) should be included in the environmental and social impact assessment to be performed prior to development. The Environmental Management Act of 2002 also recognises environmental rights as human rights.

Also, Zimbabwe's overarching development plan, "Zimbabwe Agenda for Sustainable Socio-Economic Transformation", was crafted to a*chieve sustainable development and social equity* which will be largely propelled by the exploitation of the country's human and natural resources. In addition to that, there are several relevant acts like the Parks and Wildlife Management Act, The Forestry Act, The Communal Lands Forestry Produce Act, Environmental Management Act, the Environmental Impact Assessment legislation and the Water Act, which should assist Zimbabwe in its environmental governance. The current government initiatives towards mainstreaming environment at the *local levels* through the Environmental Management Agency seem commendable.

The development of the Local Environmental Action Plans when implemented, enhance the conservation and sustainable use of the natural resources as required by the Biodiversity Convention. In addition, the Draft Model By-laws on "Environment and Natural Resources Conservation" for adoption by Rural District and Urban Councils contain measures aimed at regulating and controlling the indiscriminate cutting of trees, burning of vegetation, invasive alien species, protection of wetlands and watercourses, air pollution, solid and effluent waste management, genetic resources, hazardous substances and toxic chemicals among others.

When it comes to *climate change*, Zimbabwe signed and ratified the UNFCCC in 1992. It has since submitted two national communications, in 1998 and 2013. The government has renamed the previous Ministry of Environment and Natural Resource Management to the Ministry of Environment, Water and Climate and is developing a National

Climate Change Response Strategy. The draft strategy of 2013 includes a national action plan for adaptation and mitigation, analysis of strategy enablers, climate change governance and implementation framework. Climate change considerations have also been incorporated into some aspects of development and growth planning, like the Medium-Term Plan (MTP) of 2011 -2015.

2.6.2 Governance, implementation and enforcement

The policy frameworks and the institutional set-up for managing environmental challenges in Zimbabwe, with a few exceptions, seem quite robust. The main problem relates to implementation and enforcement of existing legislation and policies, further hampered by a lack of good governance, including lack of transparency and accountability, and weak coordination and cross-sectoral cooperation (Scheffran, Link & Schilling, 2019). The problem of enforcement is a key question in tackling the environmental challenges in Zimbabwe, due to the lack of human and financial resources and the difference in interpretation of the statues across government institutions. Low levels of awareness amongst the judiciary and the police are other factors leading to challenges of implementation and enforcement.

It has been noted that women are under-represented in policy and decision-making bodies. Critical bodies on climate change have an under-representation of women (MacGregor, 2010). In addition, despite women's central but disproportionate role in sustaining livelihoods and the environment, there is little evidence that specific adaption efforts, policies, funding and institutions target them (Mitchell et al., 2007). UN reports that women are not usually involved in discussion about energy plans and policies. Energy is primarily thought of in terms of electricity, gasoline and diesel and dealing with these resources is often considered as men's work.

In developing nations, most energy comes from traditional biomass fuels (e.g., wood, charcoal and agricultural wastes) and collection and management of these fuels is mainly the responsibility of women. Lack of recognition of women's role in the energy sector leads to gender-blind energy policies that limit the capacity of developing countries to adapt and mitigate climate change. Therefore, Governments need to be encouraged to incorporate gender perspectives into their national policies, action plans and other measures on sustainable development and climate change. Women need to be actively involved in energy decision making so that energy supplies can be managed

more effectively and productively in the face of climate change (UN women Watch, 2009).

2.7 Adaptation to climate change and environmental degradation

The UNFCCC defies adaptation as the 'process through which societies make themselves better able to cope with an uncertain future. Adapting to climate change entails taking the right measures to reduce the negative effects of climate change (or exploit the positive ones) by making the appropriate adjustments and changes' (UNFCCC, 2007:12). The IPCC defies adaptation as 'adjustment in natural human systems and response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities' (IPCC, 2001).

To strengthen the livelihoods of Africa's population and reduce their vulnerability to climate change and environmental degradation, adaptation is the only feasible strategy (Tadesse, 2010). However, climate change exposure and ability to adapt varies amongst people and depends on their degree of dependence upon weather patterns for livelihoods and food security. Ability to adapt is influenced by gender, social status, economic poverty and power - access, control and ownership over resources in the household, community and society (Nellemann et al., 2011).

Adaptation can be achieved through improving agricultural productivity, diversifying on and off-farm activities, providing better access to markets and market information, and improving infrastructure, linkage to technology, education, access to resources (Benhin, 2006). Improving seasonal weather forecast; early warning system; improvement in existing rain fed agriculture (e.g., water harvesting systems to supplement irrigation systems in semi-arid areas); biotechnology research and appropriate crop selection could yield tremendous benefits (Kurukulasuriya & Mendelsohn, 2006).

Social networks and social capital are also important in shaping adaptive actions taken (Grothmann & Patt, 2005). Migration has also been adopted as an adaptation measure. Women represent a primary resource for adaptation because of their experience, knowledge, agency, multiple and simultaneous responsibilities, as well as their roles in production. Women play an important role in management of ecosystem

services and food security. Therefore, sustainable adaption must focus on gender and the role of women if it is to become successful.

Women's voices, responsibilities and knowledge on environment and the challenges they face will need to be a central part of the adaptive response to a rapidly changing climate. However, women's ability to adapt is challenged by lack of access to formal education, economic poverty, limited access to and control of resources, exclusion from policy and decision-making institutions and processes and other forms of social marginalization (Nellemann et al., 2011). Such inequalities undermine the capacity of women to cope, adapt and increase their vulnerability to negative effects of climate change.

Adaptation measures need to increase women's access to and ownership of land, micro-credit, water, livestock, storage facilities, agricultural inputs, markets, education and green technology. These need to be culturally appropriate, socially acceptable responsive and practical for women's needs (Shackleton et al., 2010). Women's concerns, demands and experiences need to be integrated into action-oriented research (Mitchell et al., 2007). Gender sensitive responses will require more than gender disaggregated data illustrating differential impacts on women and men but will require in-depth understanding and rigorous analysis of existing inequalities and gender power relations and ways in which climate change exacerbates these inequalities (Nellemann et al., 2011:55-56). Adaptation is, however, shown to be successful and sustainable when linked to effective governance systems, civil and political rights and literacy (Brooks et al., 2005).

Institutions and their functioning play a critical role in aiding successful adaptation. Therefore, it is important to understand the role of both informal and informal institutions (Reid and Vogel, 2006). To effectively respond to the effects of climate change and environmental degradation, various organizations and agencies, including NGOs and research organizations have developed approaches to boost the adaptive capacity of communities mainly the community-based adaption approach (CBA) (Brown et al., 2012). Effective response to climate change will require efforts from all stakeholders and good coordination across multiple levels of governance from household and community to national and Series of fit ponds of Plan Zimbabwe which are also used for international levels (UNICEF, 2011).

2.8 Chapter summary

The chapter comprised and dealt with scholarly views in relation to the subject under study. It started to look at a broader perspective so as to deepen an understanding on the subject matter. Then it delves deeper to the study case. An Empirical review was also made in this chapter and literature gaps were provided.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In conducting this research study various methods to be used in the collection of information and numerous sets of stages will be done in a certain procedure to execute the study, hence able to align with the objectives of the research. The chapter outlines the research framework and design that will be used in this study. It also gives data collection methods to be used in the study that include semi-structured interviews, focus group discussions and key informant interviews. The details pertaining to the target population, sample size and techniques, description of study area and ethical considerations will also be presented in this chapter.

3.2 Research Design

This study will employ the case study research design through the form of descriptive research. Yin (2014) defines the case study research design as an empirical study that investigates real-world phenomena when the boundaries between the context and phenomena not clear and when multiple sources of evidence can be used. This research design will be adopted in this study so as to gain an in-depth understanding of the subject matter. The study will collect both primary and secondary qualitative data hence the case study research design was deemed appropriate as it applies most when multiple sources of evidence are used (Yin, 2014).

This research design will be adopted in this study so as to gain an in-depth understanding of the subject under study. The study will collect both primary and secondary qualitative data hence the case study research design was deemed appropriate as it applies most when multiple sources of evidence are used (Yin, 2014). The study will follow the qualitative methodology hence the case study design is appropriate as posited by Kothari (2014) that the case study research design is a common form of qualitative data analysis.

3.3 Methodology

3.3.1 Qualitative research paradigm

According to Jilcha (2019), research methodology is a means for methodically addressing the research topic. The researcher will employ qualitative research methodology in carrying out the study. The goal of qualitative research is to create explanations for social occurrences. In other words, it helps individuals comprehend their surroundings and the reasons behind certain phenomena. The use of qualitative technique is essential because it emphasizes the involvement of interested parties, shared learning, and sharing of practices. The goal of this strategy is to characterize and comprehend human behaviour rather than to explain and forecast it (Jilcha, 2019).

The researcher prefers qualitative methods because they are typically more flexible as they allow greater spontaneity and adaptation of the interaction between the researcher and the study participants. For example, qualitative methods ask mostly open-ended questions that are not necessarily worded in exactly the same way with each participant. With open-ended questions, participants are free to respond in their own words, and these responses tend to be more complex than simply yes or no. Qualitative methodology will therefore be employed by the investigator to design, amass and make an analysis of the data.

Qualitative methodology is important in this study because it allows the researcher to make in-depth understanding of the dynamics of the problem through exploration of the problem itself. This study has a lot of subjective underpinnings and hence the data is unquantifiable. The qualitative methodology is preferred for this study as it allows the researcher to use multi methods to collect data. Both interactive, in-depth interviews and non-interactive, consulting documents and reports strategies were used. The design is also non-experimental and as such does not require quantitative approaches but rather requires approaches that allow for iterative scrutiny of various patterns and categories of data.

3.4 Data collection methods and research instruments

This study will utilise three data collection methods namely, interviews with key informants, focus group discussions and document review. Knox and Burkard (2009) suggest unstructured interviews are used in methodologies such as grounded theory and

ethnography. They describe these interviews as akin to friendly conversations that involve “an evolving set of questions, such that later participants respond to queries quite different from those to which earlier participants responded” (p. 567). For the purpose of this study however, semi-structured interviews were used.

Moreover, key informant interviews will be used to collect data in this study. In order to obtain data from the target population an interview guide will be designed to inquire information about the economic loss, social impacts, psychological impacts and impacts on traditional/religious values. The guide will also probe for lessons learnt from the experiences of participants.

3.4.1 Semi-structured interviews

These will allow the researcher to gather specific information about the subject matter. Using semi-structured interviews will make the task of comparing accounts of learning experiences and developing concepts during data analysis easier. Semi-structured interviews have been used in other grounded theory studies to good effect (Yang, 2011), and thus seemed to better suit the purposes of this research.

3.4.2 Focus group discussions

Focus group can be defined as a one-off meeting of between four and eight individuals who are brought to discuss a particular topic chosen by the researcher(s) who moderate or structure the discussion (Limb & Dwyer, 2001). Generally, it is a group of individuals that are selected and assembled by investigators to discuss and comment on the topic that is the subject of the research from personal experience. Its benefits are that they place the individual in a group setting where conversations can develop and flourish in what could be considered more mutual place social situations than being interviewed for a questionnaire survey.

Moreover, this flow of conversation in focus group discussions ensures that there is dialogue between people and individuals will be free to challenge the assumptions or interpretations of other group members. Hence these focus group discussions will be guided by the objectives above to make them the most appropriate means of collecting data for this study. They will be structured in a way that it can capture all the relevant information.

3.4.3 Key informant interviews

An interview is a way of gathering information in the form of a conversation (Anastasi, 2013). Rowley (2018) defines an interview as an oral or verbal exchange in which the interviewer strives to get information and gain knowledge from the interviewee. The topic of the interview might be related to interviewee's own believes, attitudes, behaviors, experiences, or it is about a phenomenon. Gillham (2019) postulates that the elite interview is a special application of interviewing that focuses on the people considered to be influential, prominent, well informed about the information.

Interviews have the advantage of giving more valid information and it allows flexibility where the interviewer can adjust questions. However, the disadvantage of interviews is that they are expensive to conduct and they are time consuming (Lincon, 2017). Key informant interviews are interviews with people that are knowledgeable in the area under study.

3.4.4 Document review

The researcher will use secondary sources of information which include internet, journals, textbooks, scholarly articles, newspapers. These secondary sources will be important to the researcher it will help the researcher to acquire some information which the researcher fails to get from the participants. Secondary sources also will be of greater advantage to the researcher because they provide a wide database of information which is vital to the research of the study.

The research will collect research data form secondary sources which include published journals, local newspapers (print and online), the Internet, previous researches, the local authority website, publications and reports, government articles and publications. The researcher will consider document review as a vital data collection instrument for this research. Although use of secondary sources provides relevant information, some of the sources such as newspapers may contain unverified and unauthentic information hence the researcher practiced maximum rigor in using information form secondary sources. Documentary search will also be used in order to extract information on the foregoing topical issues.

3.5 Target population

Target populace alludes to a collection of individuals to whom we want our examination results to apply study populace (Vonk, 2017). McLeod (2014) characterizes an objective populace as an absolute collection of people from which an example may be drawn. This study will be targeting community members, traditional leaders and government officials from Environmental Management Agency in Chimanimani.

3.6 Sample and sampling techniques

There are two techniques to draw a research sample from, which is probability sampling and non-probability sampling method. Probability sampling is when every member of the study population has a known probability of being selected for research. Non probability sampling is a sampling technique in which some units of the population have zero chance of selection or where the probability of selection cannot be accurately determined. Typically, units are selected based on certain non-random criteria, such as quota or convenience (Rosey, 2016). According to Ramsey (2019), non-probability sampling is divided into convenience sampling and purposive sampling.

Purposive sampling method will be used to select and interview the key informants with depth knowledge in relation to the study. Sample members will be selected on the basis of their knowledge, relationships and expertise regarding the research subject. A sample of 30 participants will be sufficient for the purposes of this study.

3.7 Data presentation and analysis procedures

Data analysis in research often involves data reduction, data display, and data conclusion. Data reduction involves selecting, focusing, simplifying, abstracting, and transforming the data to make it more understandable (Strauss & Corbin, 2018). Data display involves organizing, assembling, and displaying the data in ways that make it more understandable and meaningful. Data conclusion refers to generating insights, patterns, and conclusions from the data. When presenting and analysing data, the first step is to identify the specific research question that you're trying to answer. In the example of environmental degradation, the research question might be: How is environmental degradation affecting the quality of life for people living in a particular area? Once the research question is identified, the next step is to decide how to present and analyse the data. This might involve using tables, graphs, and charts to display the

data in a meaningful way. The final step is to draw conclusions from the data and interpret the results. This might involve discussing the implications of the findings for policy.

For the purpose of this study therefore, data collected from the field will be analysed and presented using both thematic analysis of data and transcription of data. The information that will be obtained from interview surveys will be in both Shona and English and will then be transcribed into English to enhance effective data presentation and analysis. Participation will be a key analytical concept to be used in this study. Issues that will be emerging from the interviews will be analysed and presented for the sake of establishing some recommendations that are required to address these issues.

Since qualitative and quantitative field research may produce large volumes of information in a non-standard organisation, this study will analyse data by identifying categories, themes and connections of insights that come from the research. This involves a process called coding and categorisation of information. Coding information, in this sense, will involve breaking the data down into units for analysis and then categorising the units.

In this study, information will be categorised according to selected key thematic areas derived from the objectives of the study. In undertaking the analysis process as suggested, the study will utilise the model of qualitative data analysis suggested by Steinberg (2004). The model tracks three steps which are intra-transcript analysis; that is, trying to make meaning out of each script by referring to the verbatim comments and notes captured and transcribed during data collection. This involves reading the transcripts in their entireness several times and trying to get a sense of the interviews before breaking them into parts.

3.8 Ethical issues

The rights of the subjects will be highly considered during the study. It will make sure that the proper measures are taken to protect each participant's rights. These include among others: voluntary participation of the participants, establishing a good rapport with the participants, confidentiality and anonymity and the right for participants to opt out of the study at any stage should they develop a dislike over the study or to decline to respond to certain questions they feel uncomfortable to respond to. In order to ensure

voluntary participation of the respondents', informed consent will be sought before data is collected from participants. To guard against wrong assumptions about willingness to participate, willing participants will be asked to either insert a tick in a box provided on the interview guides or put a signature as a sign of informed consent.

The researcher will establish interpersonal relations with the participants in order to defuse initial mistrust. In this regard, the researcher will produce evidence in the form of a reference letter from the university that shows that she is a student and assures the respondents that the study is exclusively carried out for academic purposes as shown on the reference letter. This will help a lot to counteract the initial mistrust. Some interviewees however will be initially hesitant to take part in the study as they may regard the study as an invasion of their confidentiality. The production of written evidence from the university will assist the researcher to gain trust from the participants.

Confidentiality and anonymity will be maintained and guaranteed. Real names of participants and the institutions to which they are attached will not be used or mentioned in the interviews.

3.9 Feasibility

Having considered that the targeted population is not manageable to cover all of them, a representative population will be used so as to generalize the results and hence the study will be very feasible in that way.

3.10 Chapter summary

The chapter provided the research methodology of this research. It started by highlighting the research framework whereby it reflected that qualitative approach will be employed in the study. Case study research design was chosen for the purpose of this study and a description of the study area was provided in the chapter. Research instruments that will be used for this study were also presented. The chapter also looked at the data analysis procedures that will be employed in the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

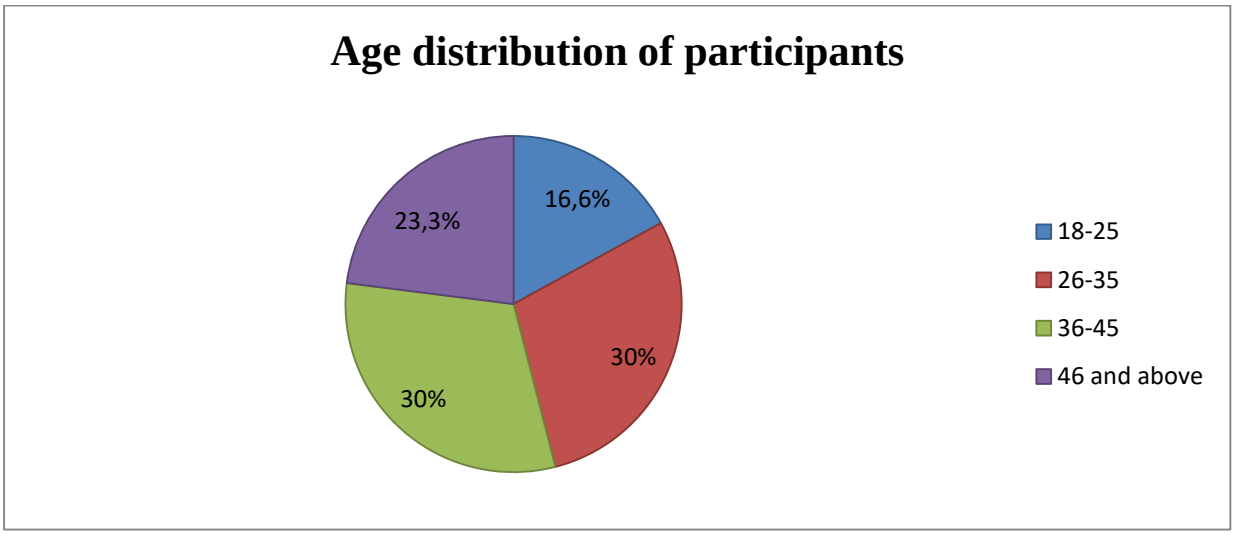
- **Introduction**

This chapter presents the key findings of the research conducted in relation to the research goals and the primary data obtained. It draws implications from the data collected and also relates these results to wider environmental concerns highlighted in chapters two and three. The researcher carried out field research to come up with the reality and diversity pertaining to the impact of environmental degradation on peace and security in Chimanimani. In relation to the objectives, the chapter seeks to provide the answers pertaining to the subject under study.

- **Demographic distribution of respondents**

4.2.2 Age

Figure.1

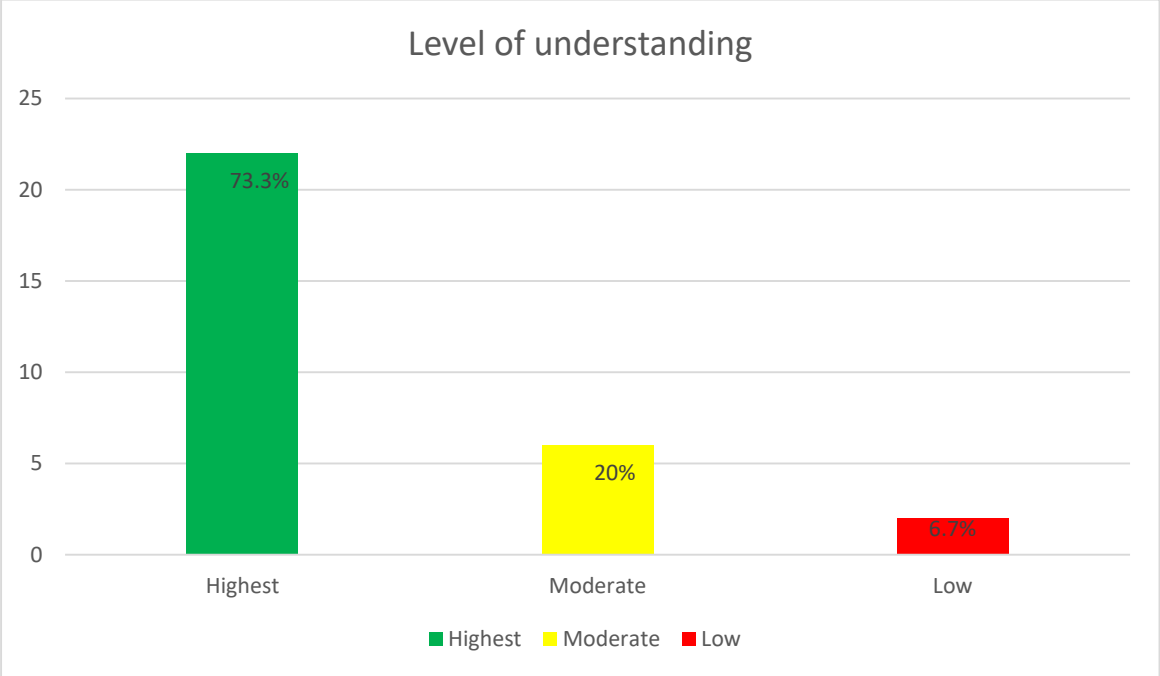


Their ages ranged between 18 and sixty years. The population that is ranging from ages 26-25 years and 36-45 years dominates the research with 30% each, 23.3% being participants aged 46 years and above, and only 16.6% of the

population had ages ranging from 18-25 years.

4.2.3 Understanding the impact of environmental degradation on peace and security

Figure 2.: Level of understanding



73.3% of participants showed much understanding of the impacts of environmental degradation on peace and security, 20% of the participants showed a moderate understanding of the impacts of environmental degradation on peace and security and 6.7% of the participants showed a low understanding of the impacts of environmental degradation on peace and security.

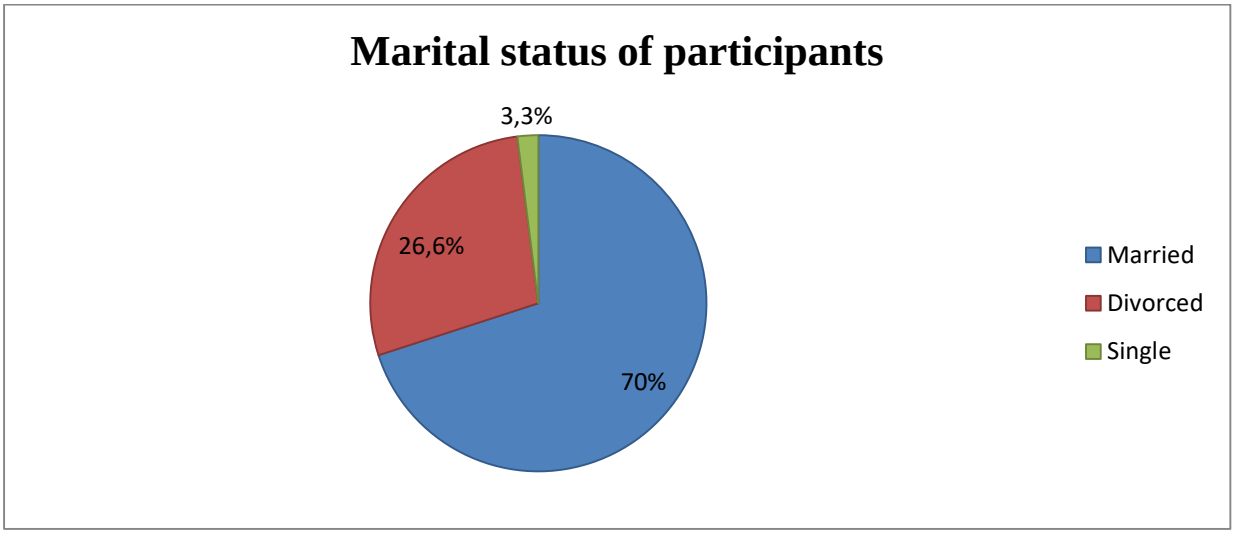
One EMA staff indicated that,

It is difficult to talk about issues such as this one since it is more of political but at the end the truth need to be said. The Government of Zimbabwe has excessive

supervision on local authorities though they claim that much power was given to people at grass-root level through devolution strategy. The excessive supervision jeopardizes the local authorities' functions and gives room for corruption and nepotism. The corruption and nepotism can be seen through unjustifiable dismissal, suspensions, promotions, and appointments of incompetence staff. At the end, staff members sabotage each other reducing the efficiency of the local authority. However, there is need for transparency from the Environmental Management Agency they interfere on the performance of local authorities who focus on issues to do with the government.

4.2.4 Marital status

All the respondents were proportionally divided into married, divorced and single categories with percentages of 70% (21) indicating married participants, 26.6% (8) indicating divorced participants and 3.3% (1) indicating single participants respectively.



4.3 Environmental factors affecting peace and security in Chimanimani

2 Land degradation

It was revealed from the study that land degradation in Zimbabwe has severe consequences for peace and security, as it exacerbates existing social, economic, and political tensions. One of the primary effects of land degradation is the loss of agricultural productivity, leading to food insecurity and scarcity. This, in turn, has led to social unrest, as communities compete for limited resources, and frustration mounts over the inability to provide for families and livelihoods.

It was also noted that land degradation also leads to displacement and migration, as people are forced to leave their homes in search of more fertile land or alternative livelihoods. This displacement has led to social tensions and conflicts between communities, as well as strain on urban resources and infrastructure (Kaseke 2020). In Chimanimani, the fast-track land reform program has led to widespread displacement of farmers and farm workers, contributing to social and economic instability.

The degradation of land also has significant economic impacts, including the loss of livelihoods and income, particularly in rural areas where agriculture is the primary source of income. This economic instability has led to increased poverty and inequality, further exacerbating social tensions and conflicts. In Zimbabwe, the economic impacts of land degradation have been severe, with many farmers and rural communities struggling to survive.

Below is an excerpt from one of the participants:

> *Land degradation also has significant political implications, as it has led to increased competition for resources and power. In Zimbabwe, the land reform program has been highly politicized, with many seeing it as a means of consolidating power and control over resources.*

This has led to significant political tensions and conflicts, particularly between the ruling party and opposition groups.

3 Deforestation

It was found from the study that deforestation in Zimbabwe has far-reaching consequences for peace and security, as it exacerbates existing social, economic, and political tensions. One of the primary effects of deforestation is the loss of livelihoods

for rural communities, who rely on forests for fuelwood, timber, and non-timber forest products. This has led to social unrest, as communities compete for limited resources and frustration mounts over the inability to provide for families and livelihoods.

Another participant also indicates that

Deforestation also leads to environmental degradation, including soil erosion, landslides, and decreased water quality. This has led to displacement and migration, as people are forced to leave their homes duet environmental hazards. In Zimbabwe, deforestation has led to significant displacement and migration, particularly in areas where forests have been cleared for agricultural land or urban development.

The degradation of forests also has significant economic impacts, including the loss of income and livelihoods for communities that rely on forest resources. This has led to increased poverty and inequality, further exacerbating social tensions and conflicts. In Zimbabwe, the economic impacts of deforestation have been severe, with many communities struggling to survive.

4 Water scarcity

The study established that water scarcity in Zimbabwe has significant implications for peace and security, as it exacerbates existing social, economic, and political tensions. One of the primary effects of water scarcity is the competition for this limited resource, leading to social unrest and conflict between communities, farmers, and industries. Water scarcity also has significant economic impacts, including reduced agricultural productivity, decreased industrial output, and increased food prices. This leads to increased poverty and inequality, further exacerbating social tensions and conflicts According to Moyo (2018) in Zimbabwe, water scarcity has led to significant economic impacts, particularly in the agricultural sector, which is a major contributor to the country's economy.

Water scarcity also has significant implications for human security, including increased vulnerability to waterborne diseases, reduced access to sanitation and hygiene, and increased risk of malnutrition and starvation. This has led to increased mortality and morbidity rates, particularly among vulnerable populations such as children, women, and the elderly.

One EMA official stated that:

> *In Chimanimani, water scarcity has led to significant health impacts, particularly in rural areas where access to clean water and sanitation is limited. In addition, water scarcity has led to increased tensions and conflicts between countries, particularly in regions where water resources are shared.*

In Zimbabwe, water scarcity has led to tensions with neighboring countries, particularly Mozambique, over the allocation of water resources from shared rivers and dams.

5 Water pollution

Water pollution in Zimbabwe has significant implications for peace and security and one of the primary effects of water pollution is the contamination of water sources, leading to increased risk of waterborne diseases and health problems. This led to social unrest and conflict, as communities demand access to clean water and hold governments accountable for their right to health as pointed out by one participant:

> *Water pollution also has significant economic impacts, including reduced agricultural productivity, decreased industrial output, and increased healthcare costs.*

This has led to increased poverty and inequality, further exacerbating social tensions and conflicts. In Zimbabwe, water pollution has led to significant economic impacts, particularly in the agricultural sector, which is a major contributor to the country's economy.

6 Climate change

One of the primary effects of climate change is changes in rainfall patterns, leading to droughts and floods. One participant highlighted the following:

> *Climate change leads to social unrest and conflict, as communities compete for limited resources. For example, in 2019, Zimbabwe experienced a severe drought that led to food shortages and price increases, resulting in protests and clashes between citizens and government forces.*

The impacts of climate change also have significant political implications, as governments struggle to respond to the crisis. In Zimbabwe, the government's response to climate-related disasters has been criticized for being inadequate and corrupt, leading

to increased political tensions and conflicts. For example, in 2019, the government was accused of embezzling funds intended for drought relief, leading to widespread outrage and protests.

7 Natural resource depletion

It was revealed that natural resource depletion has significant implications for peace and security in Zimbabwe, exacerbating existing social, economic, and political tensions. One of the primary effects of natural resource depletion is the scarcity of essential resources, leading to competition and conflict over access. According to Dube (2019) natural resource depletion also has significant economic impacts, including reduced government revenue, decreased industrial output, and increased costs for imports. This has led to increased poverty and inequality, further exacerbating social tensions and conflicts. For example, Zimbabwe's economy has suffered significantly from the depletion of its gold and diamond reserves, leading to a decline in exports and revenue.

The depletion of natural resources also has significant political implications, as governments struggle to manage the crisis. In Zimbabwe, the government's response to natural resource depletion has been criticized for being inadequate and corrupt, leading to increased political tensions and conflicts. For example, the government has been accused of embezzling funds intended for the development of alternative energy sources, leading to widespread outrage and protests.

8 Droughts and floods

Droughts and floods have significant implications for peace and security in Zimbabwe, exacerbating existing social, economic, and political tensions. One of the primary effects of droughts and floods is the impact on agriculture, leading to food insecurity and competition for limited resources. This has led to social unrest and conflict, as communities struggle to access basic necessities. For example, the 2019 drought in Zimbabwe led to food shortages and price increases, resulting in protests and clashes between citizens and government forces.

Droughts and floods also have significant economic impacts, including reduced agricultural productivity, decreased industrial output, and increased costs for healthcare and emergency response. This has led to increased poverty and inequality, further exacerbating social tensions and conflicts. For example, the 2019 drought resulted in a

decline in Zimbabwe's agricultural sector, leading to a decrease in exports and revenue, and exacerbating the country's economic crisis.

9 Pollution from mining and industrial activities

Pollution from mining and industrial activities has significant implications for peace and security in Zimbabwe, exacerbating existing social, economic, and political tensions. One of the primary effects of pollution is the impact on health, leading to increased morbidity and mortality rates. This has led to social unrest and conflict, as communities demand justice and compensation for the harm caused by pollution. For example, the pollution from the Zimbabwean mining industry in Risitu, Chimanimani has led to high levels of mercury and lead in water sources, resulting in serious health problems for local communities.

10 Human-wildlife conflict

Human-wildlife conflict has significant implications for peace and security in Zimbabwe, exacerbating existing social, economic, and political tensions. One of the primary effects of human-wildlife conflict is the impact on agriculture, leading to crop damage and livestock losses. This has led to social unrest and conflict, as farmers and herders struggle to protect their livelihoods. For example, the increasing elephant population in Zimbabwe has led to significant crop damage, resulting in clashes between farmers and wildlife authorities.

Human-wildlife conflict also has significant implications for human security, including increased vulnerability to physical harm, reduced access to healthcare and sanitation, and increased risk of malnutrition and starvation. This has led to increased mortality and morbidity rates, particularly among vulnerable populations such as children, women, and the elderly. For example, the increasing elephant population in Zimbabwe has led to a decline in access to clean water and sanitation, resulting in a cholera outbreak that killed over 50 people.

4.4 The impact of environmental degradation on the livelihoods of local communities in Zimbabwe

11 Land degradation

The study established that land degradation has had a profound impact on the livelihoods of local communities in Zimbabwe, affecting their ability to sustain

themselves through agriculture, livestock production, and other land-based activities. One of the primary effects of land degradation is reduced agricultural productivity, leading to decreased crop yields and lower incomes for farmers. According to Chikwaza (2020) this has led to food insecurity, as farmers struggle to produce enough food for their families and communities. Land degradation also leads to reduced access to clean water, as water sources become contaminated with sediment and pollutants. This has led to waterborne diseases, which can have devastating impacts on human health and livelihoods. In addition, reduced access to clean water has led to increased competition for this limited resource, exacerbating social tensions and conflicts.

The loss of fertile land and reduced agricultural productivity has led to increased poverty and inequality, as farmers and rural communities struggle to make ends meet. This has led to increased migration to urban areas, as people seek alternative livelihoods and opportunities. However, this has led to increased competition for jobs and resources in urban areas, exacerbating social and economic tensions.

Another participant stipulated that:

> *Land degradation has led to the loss of traditional livelihoods, such as hunting and gathering, and can force local communities to rely on unsustainable practices, such as charcoal production and illegal wildlife trade.*

This has led to increased vulnerability to natural disasters and climate change, as well as increased conflict with wildlife and other land users.

The impacts of land degradation on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Land is often tied to identity, culture, and tradition, and the loss of land has led to the erosion of cultural heritage and traditional ways of life. This has led to increased social tensions and conflicts, as communities struggle to maintain their cultural identities and traditional practices.

A resident indicated that:

> *…In addition, land degradation has led to increased vulnerability to natural disasters, such as droughts and floods, which can have devastating impacts on human livelihoods and well-being.*

This has led to increased displacement and migration, as people are forced to leave their homes and communities in search of safer and more sustainable livelihoods.

12 Deforestation

Deforestation has had a profound impact on the livelihoods of local communities in Zimbabwe, affecting their ability to sustain themselves through agriculture, livestock production, and other forest-based activities. One of the primary effects of deforestation is the loss of fertile land, leading to reduced agricultural productivity and decreased crop yields. This has led to food insecurity, as farmers struggle to produce enough food for their families and communities.

Another participant also stated that:

> *Deforestation also leads to the loss of traditional medicines, fuelwood, and other essential resources, which are often harvested from forests.*

This has led to increased poverty and inequality, as local communities are forced to rely on expensive and unsustainable alternatives. For example, in rural Zimbabwe, many communities rely on traditional medicines harvested from forests to treat common ailments, but deforestation has led to the loss of these vital resources.

The loss of forests also leads to the loss of water sources, as trees play a crucial role in maintaining water cycles and preventing soil erosion. This has led to reduced access to clean water, exacerbating social tensions and conflicts. Another participant indicated the following:

> *In some parts here in Chimanimani, deforestation has led to the drying up of water sources, forcing local communities to rely on unprotected wells and rivers, which are often contaminated with harmful bacteria and pollutants.*

Deforestation has led to the loss of traditional livelihoods, such as hunting and gathering, and can force local communities to rely on unsustainable practices, such as charcoal production and illegal wildlife trade. This has led to increased vulnerability to natural disasters and climate change, as well as increased conflict with wildlife and other land users. For example, in some parts of Zimbabwe, local communities have been forced to resort to charcoal production to make a living, leading to widespread deforestation and habitat destruction.

In addition, deforestation has led to increased vulnerability to natural disasters, such as droughts and floods, which can have devastating impacts on human livelihoods and well-being. This has led to increased displacement and migration, as people are forced to leave their homes and communities in search of safer and more sustainable livelihoods. For example, in recent years, Zimbabwe has experienced severe droughts and floods, leading to widespread displacement and migration of local communities.

13 Water pollution

Water pollution has had a devastating impact on the livelihoods of local communities in Zimbabwe, affecting their ability to access clean water for drinking, irrigation, and other domestic uses. One of the primary effects of water pollution is the contamination of water sources, leading to the spread of waterborne diseases such as cholera, typhoid, and dysentery. This has led to increased morbidity and mortality rates, particularly among vulnerable populations such as children, women, and the elderly.

Another participant confirmed that:

> *Water pollution also affects the livelihoods of local communities by reducing the availability of water for irrigation, leading to decreased crop yields and reduced agricultural productivity.*

This has led to food insecurity, as farmers struggle to produce enough food for their families and communities. In addition, water pollution has led to the loss of traditional livelihoods, such as fishing and aquaculture, as polluted water sources become unsuitable for aquatic life.

The impacts of water pollution on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Water is often tied to identity, culture, and tradition, and the loss of access to clean water has led to the erosion of cultural heritage and traditional ways of life. For example, in some parts of Zimbabwe, water is used in traditional ceremonies and rituals, and the loss of access to clean water has led to the loss of these cultural practices.

Water pollution has led to increased poverty and inequality, as local communities are forced to rely on expensive and unsustainable alternatives, such as bottled water or water tankers. This has led to increased economic burdens on households, particularly among low-income families, who may struggle to afford these alternatives. In addition,

water pollution has led to increased competition for limited water resources, exacerbating social tensions and conflicts between communities. The impacts of water pollution on human health are also significant, particularly in rural areas where access to healthcare is limited.

Waterborne diseases have led to increased morbidity and mortality rates, particularly among vulnerable populations such as children, women, and the elderly. In addition, water pollution has led to the spread of diseases such as bilharzia, which can have long-term impacts on human health and well-being.

In addition, water pollution has led to increased vulnerability to natural disasters, such as droughts and floods, which can have devastating impacts on human livelihoods and well-being. For example, in recent years, Zimbabwe has experienced severe droughts and floods, leading to widespread displacement and migration of local communities. Water pollution can exacerbate these impacts, as polluted water sources become even more scarce and unreliable during times of drought or flood.

14 Pollution from mining and industrial activities

Pollution from mining and industrial activities has had a devastating impact on the livelihoods of local communities in Zimbabwe, affecting their ability to access clean water, air, and land. One of the primary effects of pollution is the contamination of water sources, leading to the spread of waterborne diseases and reducing the availability of water for irrigation and domestic use. This has led to food insecurity, as farmers struggle to produce enough food for their families and communities.

Pollution from mining and industrial activities also affects the livelihoods of local communities by reducing the quality of air, leading to respiratory problems and other health issues. This has led to increased morbidity and mortality rates, particularly among vulnerable populations such as children, women, and the elderly. In addition, pollution has led to the loss of traditional livelihoods, such as hunting and gathering, as polluted land and water sources become unsuitable for human use.

The impacts of pollution on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Pollution has led to the erosion of cultural heritage and traditional ways of life, as communities are forced to abandon their ancestral lands and practices. For example, in some parts of Zimbabwe, mining

activities have led to the destruction of sacred sites and ancestral graves, leading to the loss of cultural identity and traditional practices.

Another official from EMA indicated that:

> *Pollution from mining and industrial activities has led to increased poverty and inequality, as local communities are forced to rely on expensive and unsustainable alternatives, such as bottled water and imported food.*

This has led to increased economic burdens on households, particularly among low-income families, who may struggle to afford these alternatives. In addition, pollution has led to increased competition for limited resources, exacerbating social tensions and conflicts between communities.

The impacts of pollution on human health are also significant, particularly in rural areas where access to healthcare is limited. Pollution has led to the spread of diseases such as cancer, respiratory problems, and other health issues, which can have long-term impacts on human health and well-being. In addition, pollution has led to increased vulnerability to natural disasters, such as droughts and floods, which can have devastating impacts on human livelihoods and well-being.

In addition, pollution from mining and industrial activities has led to increased displacement and migration, as communities are forced to leave their ancestral lands in search of cleaner and safer environments. This has led to increased social tensions and conflicts, as communities compete for limited resources and space. For example, in recent years, many communities in Zimbabwe have been forced to migrate to urban areas in search of cleaner water and air, leading to increased competition for jobs and resources.

15 Natural resource depletion

Natural resource depletion has had a devastating impact on the livelihoods of local communities in Zimbabwe, affecting their ability to access essential resources such as water, land, and forests. One of the primary effects of natural resource depletion is the reduction of water availability, leading to decreased crop yields and reduced agricultural productivity. This has led to food insecurity, as farmers struggle to produce

enough food for their families and communities. Another participant also stated their opinion regarding natural resource depletion:

> *Natural resource depletion also has affected the livelihoods of local communities by reducing the availability of land for farming and grazing, leading to increased competition for limited resources.*

This has led to increased poverty and inequality, as some individuals and communities are unable to access the resources they need to sustain themselves. In addition, natural resource depletion has led to the loss of traditional livelihoods, such as hunting and gathering, as natural resources become scarce.

The impacts of natural resource depletion on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Natural resource depletion has led to the erosion of cultural heritage and traditional ways of life, as communities are forced to abandon their ancestral lands and practices. For example, in some parts of Zimbabwe, the depletion of forests has led to the loss of traditional medicines and other essential resources, leading to the erosion of cultural identity and traditional practices.

Natural resource depletion has led to increased vulnerability to natural disasters, such as droughts and floods, which can have devastating impacts on human livelihoods and well-being. Nyoni (2021) argues that, in recent years, Zimbabwe has experienced severe droughts and floods, leading to widespread displacement and migration of local communities. Natural resource depletion can exacerbate these impacts, as communities are less able to adapt to changing environmental conditions.

The impacts of natural resource depletion on human health are also significant, particularly in rural areas where access to healthcare is limited. Natural resource depletion has led to increased malnutrition and related health problems, as communities are unable to access the resources they need to sustain themselves. In addition, natural resource depletion has led to increased vulnerability to waterborne diseases, as communities are forced to rely on unsafe water sources.

In addition, natural resource depletion has led to increased displacement and migration, as communities are forced to leave their ancestral lands in search of resources. This has led to increased social tensions and conflicts, as communities compete for limited

resources and space. For example, in recent years, many communities in Zimbabwe have been forced to migrate to urban areas in search of resources, leading to increased competition for jobs and resources.

16 Droughts

Droughts have had a devastating impact on the livelihoods of local communities in Zimbabwe, affecting their ability to access clean water, food, and other essential resources. One of the primary effects of droughts is the reduction of water availability, leading to decreased crop yields and reduced agricultural productivity. This has led to food insecurity, as farmers struggle to produce enough food for their families and communities.

According to Moyo (2021) droughts also affect the livelihoods of local communities by reducing the availability of water for domestic use, leading to increased competition for limited water resources. This has led to increased poverty and inequality, as some individuals and communities are unable to access the water they need to sustain themselves. In addition, droughts have led to the loss of traditional livelihoods, such as livestock production, as water sources become scarce.

The impacts of droughts on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Droughts has led to the erosion of cultural heritage and traditional ways of life, as communities are forced to abandon their ancestral lands and practices. For example, in some parts of Zimbabwe, droughts have led to the loss of traditional crops and livestock, leading to the erosion of cultural identity and traditional practices.

Droughts has led to increased vulnerability to natural disasters, such as floods and landslides, which can have devastating impacts on human livelihoods and well-being.

Another EMA affirms that:

> *…For example, in recent years, Zimbabwe has experienced severe floods and landslides, leading to widespread displacement and migration of local communities. Droughts can exacerbate these impacts, as communities are less able to adapt to changing environmental conditions.*

The impacts of droughts on human health are also significant, particularly in rural areas where access to healthcare is limited. Droughts has led to increased malnutrition and related health problems, as communities are unable to access the food and water they need to sustain themselves. In addition, droughts have led to increased vulnerability to waterborne diseases, as communities are forced to rely on unsafe water sources.

In addition, droughts have led to increased displacement and migration, as communities are forced to leave their ancestral lands in search of resources. This has led to increased social tensions and conflicts, as communities compete for limited resources and space. For example, in recent years, many communities in Zimbabwe have been forced to migrate to urban areas in search of resources, leading to increased competition for jobs and resources.

17 Floods

Floods have had a devastating impact on the livelihoods of local communities in Zimbabwe, affecting their ability to access clean water, food, and other essential resources. One of the primary effects of floods is the destruction of homes and infrastructure, leading to displacement and migration of communities. This has led to increased poverty and inequality, as individuals and communities are forced to start anew and rebuild their lives.

Floods also affect the livelihoods of local communities by destroying crops and agricultural land, leading to reduced agricultural productivity and food insecurity. This can have long-term impacts on communities, as farmers struggle to recover from lost crops and income. In addition, floods have led to the loss of traditional livelihoods, such as fishing and livestock production, as water sources become contaminated and grazing land is destroyed.

The impacts of floods on local communities in Zimbabwe are not only economic and environmental but also social and cultural. Floods has led to the erosion of cultural heritage and traditional ways of life, as communities are forced to abandon their ancestral lands and practices. For example, in some parts of Zimbabwe, floods have led to the destruction of traditional homes and buildings, leading to the loss of cultural identity and traditional practices.

Floods has led to increased vulnerability to waterborne diseases, as communities are forced to rely on contaminated water sources. This can have devastating impacts on human health, particularly in rural areas where access to healthcare is limited. In addition, floods have led to increased vulnerability to other natural disasters, such as landslides and droughts, which can have further devastating impacts on human livelihoods and well-being.

The impacts of floods on human health are also significant, particularly in rural areas where access to healthcare is limited. Floods has led to increased malnutrition and related health problems, as communities are unable to access the food and water they need to sustain themselves. In addition, floods have led to increased vulnerability to mental health problems, as communities struggle to cope with the trauma and stress of displacement and loss.

In addition, floods have led to increased displacement and migration, as communities are forced to leave their ancestral lands in search of safety and resources. This has led to increased social tensions and conflicts, as communities compete for limited resources and space. For example, in recent years, many communities in Zimbabwe have been forced to migrate to urban areas in search of safety and resources, leading to increased competition for jobs and resources.

4.5 The effectiveness of existing policies and interventions aimed at addressing environmental degradation in Zimbabwe

Zimbabwe has implemented various policies and interventions to address environmental degradation, but their effectiveness has been limited. Below are the main policies examined for the purposes of this study.

18 The Environment Management Act (2002)

Environmental Management Agency has been instrumental in enforcing environmental regulations, monitoring pollution, and promoting sustainable practices. Additionally, the act has led to the development of various environmental policies and programs aimed at addressing specific environmental challenges such as deforestation, pollution, and climate change.

One EMA official highlighted that:

There are opportunities to enhance the effectiveness of the Environment Management Act. These include strengthening institutional capacity, increasing public awareness and engagement, and promoting community-led environmental initiatives. Additionally, the act could be amended to address emerging environmental challenges such as climate change, biodiversity loss, and pollution.

The act has been criticized for its lack of clarity and consistency, leading to confusion and inconsistencies in its implementation. The act has been criticized for its limited scope and lack of emphasis on community participation and public engagement. The act primarily focuses on regulating industrial activities and does not adequately address environmental issues affecting local communities, such as land degradation, water pollution, and waste management.

The EMA official further indicated that:

Despite these efforts, environmental degradation remains a significant challenge in Zimbabwe. The act's effectiveness has been hindered by inadequate resources, lack of political will, and limited capacity. EMA, for instance, has faced challenges in enforcing regulations due to inadequate funding, staff, and equipment.

19 Conservation Agriculture Program

The Conservation Agriculture(CA) Program has been successful in improving crop yields and enhancing farmers' livelihoods. By adopting CA practices, farmers have reported increased crop yields, improved crop quality, and reduced production costs. This has resulted in improved food security and income for farmers, particularly smallholder farmers who are the majority in Zimbabwe. However, despite its strengths, the CA Program has faced several challenges that have limited its effectiveness.

One participant indicated that:

One of the main challenges is the lack of awareness and knowledge among farmers about CA practices. Many farmers are still using traditional farming practices, which are detrimental to the environment. Additionally, the program has faced funding constraints, which have limited its reach and impact.

The CA Program has shown potential in addressing environmental degradation in Zimbabwe. The program has promoted sustainable agriculture practices, improved crop yields, and enhanced farmers' livelihoods.

Another participant also indicated that

To enhance its effectiveness, there is a need for increased awareness and knowledge among farmers, improved access to infrastructure and support services, and increased funding and support for the program.

20 Command Agriculture program

The Command Agriculture program, launched in 2016, aimed to boost agricultural production and reduce imports in Zimbabwe. While the program has achieved some success in increasing maize production, its effectiveness in addressing environmental degradation is questionable. One of the primary concerns with Command Agriculture is its focus on intensive farming practices, which has led to soil degradation, water pollution, and loss of biodiversity. The program's emphasis on maize production has resulted in widespread deforestation and land clearing, exacerbating soil erosion and reducing ecosystem services. Furthermore, the program's reliance on synthetic fertilizers and pesticides has contributed to water pollution and soil contamination.

Despite these concerns, the program has been successful in increasing maize production, with yields reaching record levels in recent years. However, this success has come at a significant environmental cost, with many farmers adopting unsustainable practices to meet the program's targets. The program's focus on short-term gains has overlooked the long-term consequences of environmental degradation, which will ultimately impact agricultural productivity and sustainability. Another issue with Command Agriculture is its lack of consideration for smallholder farmers, who are the majority in Zimbabwe.

Another participant also highlighted that:

The program's focus on large-scale commercial farming has marginalized smallholder farmers, who are critical to the country's food security. Smallholder farmers have been excluded from access to credit, markets, and extension services, making it difficult for them to adopt sustainable practices.

The program's top-down approach, dictated by the government, has also been criticized for ignoring local knowledge and innovation. Farmers have been forced to adopt specific practices and crops, regardless of their suitability to local conditions. This has resulted in a lack of ownership and commitment among farmers, leading to poor adoption and implementation of sustainable practices.

21 **The National Forest Policy (2019)**

The National Forest Policy (2019) is a significant step forward in Zimbabwe's efforts to address environmental degradation and promote sustainable forest management. The policy recognizes the importance of forests in supporting biodiversity, mitigating climate change, and providing livelihoods for local communities. One of the key strengths of the policy is its emphasis on sustainable forest management practices, such as reforestation, afforestation, and forest restoration. These practices have the potential to restore degraded forests, improve forest cover, and enhance biodiversity. Additionally, the policy promotes the use of renewable energy sources, such as biofuels, to reduce dependence on fossil fuels and mitigate climate change.

The policy also prioritizes community participation and benefit-sharing in forest management decisions. This approach has the potential to empower local communities to take ownership of forest management and ensure that their needs and concerns are addressed. Furthermore, the policy recognizes the importance of traditional knowledge and practices in forest management and promotes their integration into modern forest management practices.

Despite these strengths, the policy faces several challenges in its implementation.

Another EMA official stated that:

One of the main challenges is the lack of adequate resources, including funding, expertise, and infrastructure, to support forest management and conservation efforts. Additionally, the policy faces competition from other land-use options, such as agriculture and urbanization, which has led to forest degradation and loss. Another challenge facing the policy is the need for effective coordination and collaboration among various government ministries and agencies, as well as with civil society organizations and local communities. Forest management is a complex issue that

requires a multi-stakeholder approach, and the policy's effectiveness will depend on the ability of these stakeholders to work together effectively.

The policy's effectiveness will also depend on its ability to address the root causes of forest degradation and loss, such as poverty, inequality, and unsustainable land-use practices. The policy must promote sustainable livelihoods, equitable benefit-sharing, and environmentally sustainable forest management practices if it is to effectively address environmental degradation.

22 Waste Management Regulations (2019)

The Waste Management Regulations (2019) in Zimbabwe aim to promote sustainable waste management practices by addressing environmental degradation. Waste generators must segregate, store, and dispose of waste in an environmentally sound manner. The regulations emphasize waste reduction and recycling, encouraging measures like reducing packaging and using reusable products. They also require waste generators to separate recyclable materials from non-recyclable waste.

Additionally, the regulations establish a waste management hierarchy that prioritizes waste prevention, reduction, reuse, recycling, and disposal to minimize environmental harm. Waste generators need to develop waste management plans approved by the Environmental Management Agency (EMA).

Another EMA official highlighted that:

Challenges include inadequate waste management infrastructure, especially in rural areas, leading to illegal dumping and environmental degradation. Lack of public awareness and education on waste management contributes to poor waste disposal practices. Competition from other environmental priorities like climate change and biodiversity conservation is another challenge.

The effectiveness of the regulations depends on EMA's capacity to enforce them with sufficient resources and regular reviews for effectiveness in addressing environmental degradation.

23 The Community-Based Natural Resource Management (CBNRM) Program

The Community-Based Natural Resource Management (CBNRM) Program in Zimbabwe has played a pivotal role in addressing environmental degradation and promoting sustainable natural resource management at the local level. By empowering local communities to oversee and conserve their natural resources, the program has significantly enhanced environmental outcomes and elevated community livelihoods.

A key strength of the CBNRM Program lies in its emphasis on community participation and ownership. By engaging local communities in decision-making and management processes, the program ensures that their needs and concerns are duly accounted for, fostering a sense of responsibility and accountability among community members. This inclusive approach has led to notable improvements in environmental outcomes.

Another participant stated that

The program has effectively advocated for sustainable land-use practices, such as conservation agriculture and agroforestry. These practices have not only bolstered soil fertility, mitigated erosion, and enriched biodiversity but have also boosted crop yields and fortified food security. Additionally, the program has facilitated the establishment of community-driven conservation initiatives, including wildlife preservation and ecotourism projects, which have not only generated income but also created employment opportunities for local communities.

*D*espite these achievements, the CBNRM Program encounters various challenges that undermine its efficacy. Primarily, a dearth of adequate resources, encompassing funding, expertise, and infrastructure, poses a significant obstacle to supporting community-based natural resource management endeavours. Furthermore, the program contends with competition from alternative land-use options, such as mining and urbanization, which have precipitated environmental degradation and depletion of natural resources.

Another challenge facing the program is the need for effective coordination and collaboration among various government ministries and agencies, as well as with civil

society organizations and local communities. Natural resource management is a complex issue that requires a multi-stakeholder approach, and the program's effectiveness will depend on the ability of these stakeholders to work together effectively.

The program's effectiveness will also depend on its ability to address the root causes of environmental degradation, such as poverty, inequality, and unsustainable land-use practices. The program must promote sustainable livelihoods, equitable benefit-sharing, and environmentally sustainable natural resource management practices if it is to effectively address environmental degradation.

24 Environmental Education and Awareness Programs

Environmental Education and Awareness Programs (EEAPs) have been implemented in Zimbabwe to address environmental degradation by promoting environmental knowledge, attitudes, and behaviors among various stakeholders. The programs aim to educate people on the importance of environmental conservation and the consequences of environmental degradation.

Environmental Education and Awareness Programs (EEAPs) have been implemented in Zimbabwe to combat environmental degradation by fostering environmental knowledge, attitudes, and behaviours among diverse stakeholders. These programs strive to enlighten individuals on the significance of environmental preservation and the repercussions of environmental deterioration.

A notable strength of EEAPs lies in their capacity to cultivate consciousness regarding environmental issues across various sectors of society. These initiatives have effectively engaged with educational institutions, communities, and industries, enlightening them on the importance of environmental preservation and the imperative to embrace sustainable practices. Consequently, there has been a considerable surge in environmental awareness and comprehension among the targeted demographics.

Another EMA official stipulated that:

EEAPs have proven efficacious in instigating behavioural transformations among individuals and communities. Through the provision of training and education on sustainable methodologies such as waste management, energy conservation, and sustainable agriculture, these programs have empowered individuals to make informed

decisions about their daily actions. This has led to a decrease in waste production, energy consumption, and environmental contamination.

Nevertheless, despite their merits, EEAPs encounter several hurdles that impede their efficacy. A primary challenge is the paucity of adequate resources, encompassing funding, expertise, and infrastructure. This deficiency has curtailed the outreach and influence of the programs, rendering it arduous to effect substantial behavioural shifts on a national scale.

Another obstacle confronting EEAPs is the necessity for efficient coordination and collaboration among various stakeholders. Environmental education and awareness necessitate a multi-stakeholder approach, involving governmental bodies, non-governmental organizations, educational institutions, and communities. The absence of seamless coordination and collaboration among these entities has constrained the impact of EEAPs.

Another EMA official stipulated that:

The effectiveness of EEAPs also depends on their ability to address the root causes of environmental degradation. The programs must promote sustainable livelihoods, equitable benefit-sharing, and environmentally sustainable practices if they are to effectively address environmental degradation.

Additionally, EEAPs must be tailored to the specific needs and contexts of different target groups to ensure their relevance and effectiveness.

4.6 Chapter summary

The chapter has focused on the presentation and analysis of the data that were obtained from the field. It sought to provide the answers to the research questions that were highlighted in chapter one. The key findings of the study are the environmental factors affecting peace and security in Chimanimani, impact of environmental degradation on the livelihoods of local communities in Zimbabwe and the effectiveness of existing policies and interventions to address environmental degradation in Zimbabwe.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter seeks to summarize the key findings presented in the previous chapter based on the research objectives and provide some conclusions and recommendations derived from these conclusions. It is structured in a way that the first paragraph speaks to the first objective, the second paragraph also speaks to the second paragraph, up to the third objective. Recommendations are presented at the end of this chapter.

5.2 Summary

The findings of this study show there are several environmental factors that affect peace and security. It was revealed that land degradation has significant impacts on peace and security in Zimbabwe, exacerbating social, economic, and political tensions. Deforestation also has significant impacts on peace and security in Zimbabwe, exacerbating social, economic, and political tensions. Water scarcity was also noted to have significant impacts on peace and security in Zimbabwe, exacerbating social, economic, and political tensions. Water pollution has also had significant impacts on peace and security in Zimbabwe. Water scarcity and climate change were also some of the factors identified. Some identified factors include natural resource depletion, droughts and floods and pollution.

Regarding livelihoods, land degradation was noted to have significant impacts on the livelihoods of local communities in Zimbabwe, affecting their ability to sustain themselves through agriculture, livestock production, and other land-based activities. Water pollution was also another factor affecting their ability to access clean water for drinking, irrigation, and other domestic uses. Droughts also have significant impacts on the livelihoods of local communities in Zimbabwe, affecting their ability to access clean water, food, and other essential resources. Floods in Chimanimani were also noted to cause some negative outcomes in people's livelihoods.

Among the policies examined was the Conservation Agriculture Program in Zimbabwe which has shown promise in addressing environmental degradation and promoting

sustainable agriculture practices. Command Agriculture has also achieved some success in increasing maize production, its effectiveness in addressing environmental degradation is limited. The program's focus on intensive farming practices, lack of consideration for smallholder farmers, top-down approach, and lack of transparency and accountability have contributed to environmental degradation and undermined sustainable agriculture practices in Zimbabwe. National Forest Policy (2019) has the potential to be a game-changer in Zimbabwe's efforts to address environmental degradation and promote sustainable forest management. However, its effectiveness will depend on the ability of the government and other stakeholders to implement it effectively, address the root causes of forest degradation and loss, and promote sustainable forest management practices that benefit both people and the environment.

The Waste Management Regulations (2019) in Zimbabwe have the potential to address environmental degradation by promoting sustainable waste management practices. However, their effectiveness depends on addressing the challenges of inadequate infrastructure, lack of public awareness, and limited enforcement capacity. Community-Based Natural Resource Management Program has been an effective approach to addressing environmental degradation and promoting sustainable natural resource management in Zimbabwe. By empowering local communities to manage and conserve their natural resources, the program has improved environmental outcomes and enhanced community livelihoods. However, the program faces several challenges that must be addressed to ensure its continued effectiveness. Environmental Education and Awareness Programs have been an effective approach to addressing environmental degradation in Zimbabwe.

5.3 Conclusion

It is clear from this study that environmental degradation has significant impacts on the livelihoods of local communities in Zimbabwe, affecting their ability to sustain themselves through agriculture, livestock production, and other forest-based activities. Addressing land degradation is therefore critical to promoting sustainable development, reducing poverty and inequality, and maintaining peace and security in the country. This requires a comprehensive approach that includes sustainable land management practices, agricultural support, and economic development initiatives. With adequate

resources, public education, and enforcement, the regulations can contribute significantly to reducing environmental degradation in Zimbabwe.

5.4 Recommendations

Based on the findings, it is recommended that:

- There should be educational campaigns on environmental degradation and its effects. By promoting environmental knowledge, attitudes, and behaviors, the programs have raised awareness and promoted behavioral change among various stakeholders.
- The government should provide financial support to organizations that support environmental conservation. With increased awareness, funding, and support, the program can make a significant contribution to sustainable agriculture and environmental protection in Zimbabwe.
- A more inclusive and sustainable approach to agriculture is necessary, one that prioritizes environmental protection, smallholder farmers, and local knowledge and innovation.

References

AfDB, OECD, and UNDP (2015). *African Economic Outlook , Zimbabwe*.

African Development Bank. (2018). *Environmental Degradation in Africa: The Cost of Inaction.* Abidjan: African Development Bank.

Branch. A. (2018) From disaster to devastation: drought as war in northern Uganda. *Disasters in Conflict Areas* ,42(2), pp. 306–327.

Chigumira (2015). *Addressing issues of climate change and scope for green growth in Zimbabwe: A situational analysis,* April 2015

Dhliwayo M. (2014). *A review of Zimbabwe's draft Mineral Policy.* Zimbabwe Environmental Law Association (ZELA).

Government of Zimbabwe (2015). *Zimbabwe's Intended Nationally Determined Contribution (INDC)* Submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

Grantham Research Institute (2015). *Climate Change Legislation in Zimbabwe, an excerpt from the 2015 Global Climate Legislation Study, A Review of Climate Change Legislation in 99 Countries*.

IPCC. (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Geneva, Switzerland: Available at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/

Mharapara, I. and S. Marongwe (2010). *Land degradation in Zimbabwe*. Presentation at workshop in Pretoria 2010. (Associates to University of Zimbabwe and Agricultural Research Council of Zimbabwe).

Nyemba A., E. Manzungu, S. Masango and S. Musasiwa (2010). “The impact of water scarcity on environmental health in selected residential areas in Bulawayo City, Zimbabwe”, in *Physics and Chemistry of the Earth 35 (2010) 823–827*.

OECD (2013). *Putting Green Growth at the Heart of Development. Summary for Policymakers*. Available at http://www.oecd.org/dac/environment.

Scheffran, J., Link, P.M., & Schilling, J. (2019) Climate and conflict in Africa. *Oxford Research Encyclopedia of Climate Science*. Oxford: Oxford University Press.

Schilling, J., Opiyo, F. E. O. & Scheffran, J. (2022) Raiding pastoral livelihoods: motives and effects of violent conflict in North-Western Kenya. *Pastoralism:Research, Policy and Practice*, 2 (1), pp. 1–16.

Sida (2016), *Årsplan för genomförandet av strategin för Zimbabwe* 2016-01-19.

Southern African Development Community (SADC). (2019). *SADC Environmental Outlook 2019:* Environmental Trends and Outlooks for Southern Africa. Gaborone: SADC.

Spong, Booth and Walmsley, *Zimbabwe Country Report* (SAIEA, undated).

Ujeneza Eva L ,· Babatunde J. Abiodun (2015): *Drought regimes in Southern Africa and how well GCMs simulate them.*

UNCT and Government of Zimbabwe (GoZ) (2014). *Zimbabwe Country Analysis.*

United Nations Environment Programme (UNEP). (2019). *Global Environment Outlook 6*: Healthy Planet, Healthy People. Nairobi: UNEP.

Zikhali, Precious (2008). “Fast Track Land Reform and Agricultural Productivity in Zimbabwe”, *Working Paper in Economics No 322*. University of Gothenburg, School of Business, Economics and Law, Department of Economics, October 2008.

Annexure

Annexure 1

RESEARCH QUESTIONNAIRE

Interview Guide for Community members

Introduction:

Hello, my name is Kundai Sekeramai and a student at Bindura University. I am conducting a research on the impact of environmental degradation in Chimanimani. I would like to interview you today to gather your thoughts and experiences on this issue. Please feel free to share your opinions and insights. The interview will take approximately 30 minutes.

1. Can you please introduce yourself and tell me a little bit about your background?

(age, occupation, etc.)

2. How long have you lived in Chimanimani?

3. What are your thoughts on the current state of the environment in Chimanimani?

4.Have you noticed any changes in the environment over the past few years? If so, what changes have you observed?

5. What do you think are the main causes of environmental degradation in Chimanimani?

7. How has environmental degradation affected your livelihood (e.g. farming, fishing, etc.)?

8. Have you experienced any health symptoms or conditions that you think are related to environmental degradation

9. What do you think are the main health risks associated with environmental degradation in Chimanimani?

10. Have you participated in any community-led environmental conservation efforts?

11. Do you feel empowered to take action on environmental issues?

12. What are your thoughts on the current policy and regulatory framework for environmental conservation in Chimanimani?

Interview Guide for Government officials

Introduction:

Hello, my name is Kundai Sekeramai and l a student at Bindura University. I am conducting a research on the impact of environmental degradation in Chimanimani. I would like to interview you today to gather your organization's thoughts and experiences on this issue. Please feel free to share your opinions and insights. The interview will take approximately 30 minutes.

1. Can you please introduce your organization and its mission?

2. What is your organization's focus and area of work (e.g. environmental conservation, human rights, etc.)?

3. How long has your organization been working in Chimanimani?

4. What are your organization's thoughts on the current state of the environment in Chimanimani?

5.What do you think are the main causes of environmental degradation in Chimanimani?

6.Have you seen any changes in the livelihoods or health of community members due to environmental degradation?

7. How has environmental degradation affected the social and economic development of communities in Chimanimani?

8. What initiatives or projects has your organization implemented to mitigate the effects of environmental degradation?

9. What challenges has your organization faced in addressing environmental degradation?

10. What are your organization's thoughts on the current policy and regulatory framework for environmental conservation in Chimanimani?

11. What changes would your organization like to see in the policy and regulatory

12. Has your organization collaborated with other organizations or stakeholders to address environmental degradation in Chimanimani?

13.How do you think collaboration and coordination can be improved?