

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF SCIENCE EDUCATION
DEPARTMENT OF CURRICULUM AND EDUCATIONAL MANAGEMENT STUDIES



**THE IMPACT OF CLIMATE CHANGE ON LEARNERS FROM
CHILD-HEADED FAMILIES' LIVELIHOODS AT CHIMOWA SECONDARY
SCHOOL, CHIKOMBA DISTRICT**

BY

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REQUIREMENTS OF THE BACHELOR OF SCIENCE NCE EDUCATION HONOURS
DEGREE IN GEOGRAPHY**

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APPROVAL FORM

The undersigned certify that they have read and recommend to Bindura University of Science Education for acceptance, a research project entitled: ***The impact of climate change on learners from child-headed families' livelihoods at Chimowa Secondary School, Chikomba District.*** Submitted by Makamure Annamaria (B227511A) in partial fulfilment of the requirements for the Bachelor of Science Education degree in Geography.

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DECLARATION

I, Makamure Annamaria, hereby declare that, except for references to other people's work which have been duly acknowledged, this dissertation is a result of my study and has neither in part nor in whole been presented in the education programme

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This research work was undertaken under the supervision of Dr P. Chikuvadze.

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Date: 26.05.25

DEDICATION

I dedicate this project to my mother Mrs Makamure, my siblings and best friend T.J.

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I want to express my deepest gratitude to the Almighty God for guiding and supporting me throughout this journey. I am also indebted to Dr Chikuvadze, whose exceptional guidance, expertise, and unwavering support were instrumental in shaping this piece of academic work. His thoughtful recommendations, insights, and encouragement from start to finish have been invaluable.

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ABSTRACT

This study sought to explore the impact of climate change on learners from child-headed families' livelihoods. Data generation, analysis and discussion were guided by the interpretivist paradigm and qualitative approach. Data was generated through document analysis and in-depth interviews. Purposive sampling was used to select 15 learners from child-headed families attending school at Chimowa Secondary School. For data triangulation 5 class teachers were purposively included in the study. Data was analysed according to themes derived from the sub-research questions. The findings reveal that the participants understood climate change as the long-term alteration of global weather patterns due to human activities, such as carbon emissions, and natural factors. It was also noted that Climate change has worsened food insecurity for learners from child-headed families' livelihoods by increasing the frequency of droughts and extreme weather events, which interrupt agricultural production. The participants acknowledged that learners from child-headed families experienced climate change-related stressors, which were affecting them emotionally and psychologically. The participants advanced that learners from child-headed families have adapted to climate change challenges by engaging in sustainable agricultural practices, seeking community support, and participating in educational programmes focused on resilience and climate awareness. From the participant's perspective, it can be concluded that climate change has significantly disrupted the livelihoods of learners from child-headed families in the selected village by intensifying food insecurity, increasing water scarcity, and amplifying economic hardships. This collectively hinders learners from child-headed families' educational opportunities and overall well-being. Based on the findings, the researcher recommended the need to strengthen resilience among learners from child-headed families by promoting food security programmes, and educational opportunities on climate adaptation.

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CHAPTER 1

PROBLEM AND ITS SETTING

1.1 Introduction

This introductory chapter provides a foundational framework for the research study, encompassing the background to the study, statement of the problem, research questions and significance of the study. It also includes the delimitations and limitations of the study, definition of terms, chapters layout and the summary of the chapter.

1.2 Background to the study

Climate change, a global phenomenon characterized by shifting weather patterns and rising temperatures, poses significant challenges to livelihoods by altering ecosystems, disrupting agricultural productivity, and affecting economic stability in communities worldwide (Chikoko & Chihiya, 2023). Hence the impacts of climate change are disproportionately felt by vulnerable populations, including child-headed families in rural communities (Chidhumo, Thondhlana & Mtetwa, 2024). Climate change has had a profound impact on various spheres across the globe, including Zimbabwe particularly affecting its rural communities (Nyahunda, Chibvura & Tirivangasi, 2021). According to Mjimba (2021), agriculture, the main source of livelihood for many Zimbabweans has been severely affected. Rising temperatures, changing rainfall patterns, and increased frequency of droughts and floods have led to reduced crop yields, impacting food security and livelihoods. Water scarcity has severe implications for human health as access to clean water and sanitation is compromised.

Furthermore, climate change has exacerbated social tensions and conflict as there is competition for limited resources such as water (Azzarri & Signorelli, 2020). The world's changing climate affects the fundamental rights of children to survive, thrive and reach their full potential (Clark et al., 2020). Exposure to climate change-related events during childhood can have long-lasting effects throughout the lifetime (Proulx et al., 2024). Malnutrition, particularly among children, is a growing concern as climate change affects agricultural productivity and the availability of nutritious food (Hellden, 2021).

Despite the growing body of literature on climate change, there is a dearth of research specifically focusing on the impacts of climate change on the livelihood of child-headed families in rural communities of Zimbabwe. Existing studies (Dzvimbo et al., 2022; Matsa & Chapungu, 2024; Munodawafa, 2017) have largely explored the broader effects of climate change on agriculture, food security, and human health in Zimbabwe with limited attention to the unique vulnerabilities and experiences of child-headed families in marginalised communities. For example, there are studies on the impacts of child-headed families in urban areas as well as the impacts of climate change on vulnerable populations in general.

Furthermore, the available literature often overlooks the nuanced and context-specific challenges faced by these families. Child-headed families, where children are forced to assume caregiving responsibilities due to the absence or incapacity of adult caregivers, are increasingly common in many parts of the world (Nyahunda et al., 2021). In marginalized communities, child-headed families may have limited resources and capacity to adapt to these changes, making them even more vulnerable to the impacts of climate change (Mutasa, 2010). Furthermore, climate-related stressors can exacerbate existing social and economic inequalities, perpetuating cycles of poverty and disadvantage (Gutsa, 2017). As a result, there is a significant knowledge gap regarding how climate change affects the livelihoods of the targeted marginalised community. It is against this background that this study sought to gain insights into the impact of climate change on the livelihoods of child-headed families.

1.3 Statement of the problem

Climate change is one of the most pressing global challenges of the 21st century, with far-reaching consequences for human well-being, economic development, and environmental sustainability (Kumar, 2019). Despite the growing recognition of climate change as a major development challenge, child-headed families in selected rural communities continue to be victims of its effects (Gomba, 2018; Mburu et al., 2024). It is in this context that this study sought to contribute towards the closure of this gap guided by the following main research question: To what extent has climate change impacted learners from child-headed families' livelihoods?

1.4 Research questions

This study was guided by the following sub-questions:

1. What are the participants' understanding of climate change?
2. How has climate change affected learners from child-headed families in the context of food security?
3. What psycho-social effects has climate change had on learners from child-headed families?
4. How have learners from child-headed families adapted to challenges posed by the effects of climate change on their livelihoods?

1.5 Significance of the study

The research findings are expected to be of great importance to the following:

1.5.1 Policymakers

The study aims to fill the knowledge gap on the specific impacts of climate change on child-headed families in marginalized communities, a vulnerable population that has received limited attention in climate change research. The findings of this study will inform policymakers, practitioners, and stakeholders of the need for targeted interventions to support child-headed families in marginalized communities affected by climate change. This can also help policymakers prepare informed budgeting decisions to support climate change-related programs and initiatives for child-headed families. The findings can also inform vulnerability assessments and adaptation planning to help policymakers identify areas of high vulnerability. The findings can help policymakers evaluate the effectiveness of existing programs and make informed decisions about program expansion or modification.

1.5.2 Child-headed families

The study provides a platform for child-headed families to share their experiences and perspectives, amplifying their voices and promoting their rights. By understanding the impacts of climate change on the livelihoods of child-headed families in marginalised communities, this

study will contribute to the development of effective strategies to improve their livelihoods, enhance their resilience, and promote their overall well-being.

1.5.3 Bindura University of Science Education

The study contributes to the university's research excellence in the field of climate change and its impacts on vulnerable populations. It helps to identify gaps in geography modules and review some modules. The research findings can inform curriculum development and teaching in fields related to climate change, sustainability, and social justice.

1.5.4 Researcher

Completing this project by the researcher was a big achievement in the academic arena since this was a requirement for the completion of the degree programme. It also provides the researcher with an opportunity to put research methods knowledge into practice.

1.6 Delimitation of the study

This study was conducted at Chimowa Secondary School, Chikomba District, Mashonaland East, Zimbabwe with an enrolment of 120 learners and a staff complement of 10 teachers. The school offers basic education (forms 1 - 4) guided by the Heritage-Based Curriculum pedagogical approach. The school is located in the eastern part of Zimbabwe with warm and wet summers and cool and dry winters conditions. During the rainy season, the area usually receives average to above-average rainfall and commonly grown crops include maize, tobacco, vegetables and groundnuts.

1.7 Limitations of the study

The study might fully rely on self-reported data from child-headed families, which may be subject to biases and inaccuracies. Furthermore, the researcher may not find enough time to reschedule for extra time out of the budgeted time since the research participants may be occupied. Some policy requirements can be too demanding and restrictive.

1.8 Definition of key terms

In this section, the selected terms are defined contextually as follows:

1.8.1 Climate change

In the opinion of Chikoko and Chipiya (2023), climate change refers to the changes in the normal weather patterns for some time, characterised by excessive weather events such as intensity of heatwaves, heavy rainfall, floods and drought. It is the long-term warming of the planet, which is primarily caused by the increasing levels of greenhouse gases in the Earth's atmosphere. It encompasses not only rising temperatures but also changes in precipitation patterns, and increased frequency and severity of extreme weather events.

1.8.2 Child-headed families' livelihoods

Child-headed families refer to families where the primary caregiver and head of the household is a child, often due to the death, absence, or incapacitation of adult caregivers (George & Kangalawe, 2015). According to Ndlovu and Mjimba (2021), livelihoods refers to how individuals or households sustain their living and ensure their well-being. This encompasses a range of activities, resources and strategies that individuals and households use to secure the necessities of life, such as water, food, shelter, and health.

1.8.3 Impact

According to Nutley, Walter and Davies (2007), impact refers to the effect or consequence of a particular event or situation on someone. Impacts can be environmental, social or economic and they can vary in scale, scope and duration.

1.9 Chapters layout

The first chapter contextualises the problem and its context. The following chapter is chapter 2, which outlines the theoretical framework adopted for the study as well as the identification of the gaps to be filled by the study. Chapter 3 follows with the research methodology whilst chapter 4 provides a platform for data analysis and discussion. The final chapter is chapter 5, which is an overview of the study, conclusion and recommendations.

1.10 Chapter summary

This chapter introduced the research study on the impacts of climate change on the livelihoods of child-headed families in marginalized communities. The background of the study highlighted the vulnerability of child-headed families to climate-related stressors. The research questions, significance, delimitations, and limitations of the study were outlined. In addition, a definition of key terms was made in the context of the study. The chapter provided a foundation for the subsequent chapters, and the following chapter will present the literature review.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter builds upon the contextualisation of the research problem presented in the preceding chapter, by conducting a comprehensive review of relevant literature sources. The literature review is guided by the themes that emerged from the research questions posed in Chapter 1, ensuring a systematic and focused exploration of the existing body of knowledge. This chapter reviews the existing literature on the impacts of climate change on the livelihoods of child-headed families in marginalised communities.

2.2 Theoretical framework

Vulnerability theory in the context of climate change examines how various factors contribute to the unequal distribution of climate risks and impacts (Adger, Pulhin & Rojas-Casado, 2019). This theory also emphasizes the role of social, economic, and political inequalities in amplifying vulnerability. In addition, Bronfenbrenner (1979), emphasises the interconnectedness of individuals with their environments, suggesting that external factors such as climate change can significantly influence family dynamics and livelihood strategies. Thus, it identifies that certain communities or systems are more susceptible due to their heightened exposure to hazards like floods or droughts, greater sensitivity to such events, and lower adaptive capacity (Daddi et al., 2018). For instance, child-headed families often embody this vulnerability as they navigate the complexities of survival without adult guardianship (Park et al., 2012). Thus, the child-headed families in rural communities relying on subsistence farming are often disproportionately affected by changing weather patterns. They may lack the resources or infrastructure to mitigate damage or recover quickly, making them significantly more vulnerable than wealthier, urban populations (Evans, Dyll & Teer-Tomaselli, 2018).

According to Baird, McIntosh and Ozler (2017), these include increased poverty and food insecurity, loss of education and opportunities, health risks and psychological trauma, as child-headed families face increased stress, anxiety, and uncertainty about their future. By understanding these dynamics, vulnerability theory provides a foundation for crafting inclusive climate policies and interventions that prioritize the needs of the most at-risk populations, ensuring no one is left behind in the quest for climate resilience. The framework provides a lens through which the argument being advanced in this study can be understood.

2.3 Climate change as a concept

Climate change is a complex and multifaceted concept that has garnered significant attention in recent decades and requires a comprehensive understanding of its causes, impacts, and implications (Bahadur, Ibrahim & Tanner, 2013). As a global phenomenon, climate change has far-reaching implications for ecosystems, human health, and the economy (Roy, 2024). Climate change refers to the long-term shifts in temperature, precipitation, and other atmospheric conditions on Earth, caused by both natural factors and human activities (Chikoko & Chihya, 2023). However, the current trends in climate change are largely driven by anthropogenic influences (Mesarović, 2019). The accumulation of greenhouse gases such as carbon dioxide (CO₂) and methane from burning fossil fuels, deforestation, and industrial processes has intensified the greenhouse effect, trapping heat in the atmosphere and leading to global warming (Quante, 2010). This process disrupts ecosystems, alters weather patterns, and increases the frequency of extreme events like hurricanes and droughts (Khine & Langkulsen, 2023).

The concept of climate change also encompasses its broader impacts on ecological, social, and economic systems (Baird et al., 2017). Rising temperatures cause ice caps to melt and sea levels to rise, threatening coastal communities and biodiversity (Romm, 2018). Shifts in weather patterns affect agricultural productivity, water availability, and energy demand, posing challenges to human well-being (Oxfam, 2022). Moreover, climate change exacerbates inequalities, as vulnerable populations those with limited resources, poor infrastructure, or marginalized social status bear a disproportionate burden of its consequences (Roy, 2024). As such, addressing climate change requires an interdisciplinary approach, encompassing science, policy, technology, and social justice, to mitigate risks and build resilience for a sustainable future (Maslin, 2019).

2.4 Effects of climate change on child-headed families' food security

For child-headed families who often depend on subsistence farming for survival, changes in rainfall patterns can lead to crop failures and food insecurity (Mastrorillo, Carraro & Giupponi 2020). Climate change has severe implications for agricultural productivity and food security, particularly for child-headed families in vulnerable communities (Cohan & Liu, 2019). As climate change poses significant threats to agricultural productivity and food security, particularly for child-headed families in vulnerable communities (Sundström, et al., 2014).

Research indicates that erratic weather patterns can disrupt planting seasons and reduce yields, making it difficult for these families to meet basic nutritional needs (Knox, Espinosa & Duyck, 2019). Climate change adversely affects agricultural productivity through altered growing seasons, reduced crop yields, and increased pest infestations. For instance, Stott and Stone (2020) highlighted that rising temperatures can lead to decreased yields for staple crops such as maize and wheat. In regions where child-headed families rely heavily on subsistence farming for survival, these declines can severely threaten their food security. Moreover, erratic rainfall patterns can disrupt planting schedules and exacerbate water scarcity issues. According to a report by the Food and Agriculture Organization (2020), many smallholder farmers, often including child-headed households, are unable to adapt quickly enough due to limited access to irrigation technologies or alternative farming practices. As a result, they may experience crop failures or diminished harvests that directly impact their livelihoods.

Rising temperatures and altered rainfall patterns can lead to reduced crop yields, affecting the livelihoods of child-headed families who rely heavily on agriculture for food and income (Gwenzi, Mafongoya & Mashonjowa, 2022). In support, Solomon (2019) acknowledged that droughts, floods, and heatwaves can damage crops, destroy infrastructure, and disrupt productivity. This can further exacerbate the vulnerabilities of child-headed families (Knox et al., 2019).

A study by Khine and Langkulsen (2019) found that increasing temperatures lead not only to lower agricultural outputs but also affect nutritional quality by reducing essential micronutrients in crops. Climate-related shocks can lead to reduced crop yields, decreased food availability, and lower dietary diversity, compromising the nutritional well-being of child-headed families

(Mastrorillo et al., 2020). Climate-related disruptions to agricultural productivity can drive up food prices, making it difficult for child-headed families to access affordable and nutritious food (Khine & Langkulsen, 2023). Additionally, climate-related impacts on agriculture can lead to the loss of livelihoods for child-headed families, exacerbating poverty and vulnerability.

Child-headed households often lack sufficient financial resources or social networks necessary for purchasing food during times of scarcity (Buzaare, 2021). As highlighted by Mastrorillo et al (2020), when local food systems are disrupted due to climate-related shocks such as droughts or floods, these families may resort to negative coping strategies like selling off livestock or withdrawing from school for labour purposes. Furthermore, climate-induced migration can further destabilize food security within these households as they may be forced into unfamiliar environments where they have no established support systems or knowledge about local agricultural practices (Black, Marshall & Ostermaier, 2020).

2.5 Psycho-social effects of climate change on child-headed families' livelihoods

Climate change is having a profound impact on the livelihoods of child-headed families, affecting not only their physical well-being but also their social and psychological well-being. Climate change is exacerbating poverty and inequality, as child-headed families are often unable to adapt to climate-related shocks, leading to reduced livelihood options and increased vulnerability (Oladipo, 2022). Climate change is forcing child-headed families to migrate or be displaced, leading to social disruption, cultural loss, and increased vulnerability to exploitation (IOM, 2019). Climate change is altering social roles and relationships within child-headed families, as children may take on more responsibilities, leading to changes in family dynamics and potential conflict (Makadho, 2016). Additionally, climate change is reducing access to education and healthcare for child-headed families, exacerbating existing inequalities and undermining their ability to adapt to climate-related shocks (Chirisa, 2020). Climate change is causing a loss of identity and culture for child-headed families, as they are forced to adapt to new environments and livelihoods, leading to cultural disruption and loss (Adger et al., 2019).

Climate change is exerting a profound psychological toll on child-headed families, who are disproportionately vulnerable to the far-reaching consequences of environmental degradation. The escalating frequency and severity of climate-related shocks, including droughts, floods, and

heat waves, are inducing heightened levels of stress and anxiety among these families (Hayes, Bowen & Briggs, 2018). For instance, in Zimbabwe, child-headed households are struggling to cope with the trauma of losing family members and livelihoods due to climate-related disasters, such as the 2019 cyclone Idai that killed and displaced thousands of people, especially in Manicaland.

The traumatic experiences of child-headed families are further exacerbated by the loss of familiar environments, social support networks, and cultural heritage, leading to profound grief and a sense of displacement (Singh, Ebi & Smith, 2017). In Somalia, for example, child-headed families are facing unprecedented levels of psychological distress due to the protracted drought, which has ravaged livestock and crops, forcing many to flee their homes in search of food and water. The cumulative impact of these climate-related stressors is taking a devastating toll on the mental health and well-being of child-headed families, exacerbating existing mental health issues, such as depression, anxiety, and post-traumatic stress disorder (Scoones, 2020). Moreover, the chronic uncertainty and unpredictability of climate-related events are eroding the sense of security and stability that is essential for healthy child development. In Zimbabwe, for instance, child-headed households are experiencing increased vulnerability to mental health problems due to the cumulative impact of climate-related stressors, including droughts, heat waves, and floods.

Furthermore, climate change is also affecting the emotional well-being of child-headed families, leading to increased levels of aggression, violence, and substance abuse (Gichuki, Odera & Njiru, 2020). In Zimbabwe, for example, child-headed households are experiencing increased levels of interpersonal violence and conflict due to the stresses of climate change. The psychological impacts of climate change on child-headed families are far-reaching and devastating, underscoring the urgent need for targeted interventions and support services to mitigate these effects and promote resilience and well-being.

2.6 Strategies used by child-headed families to adapt to the effects of climate change

Child-headed families in Zimbabwe's marginalized communities are employing various strategies to adapt to the challenges posed by climate change. These strategies are crucial for their survival and well-being. One key approach is diversifying their livelihoods, which enables

them to reduce dependence on a single income source and enhance their resilience to climate-related shocks (Chabwera, Mupara & Mujere, 2019). For instance, many child-headed families are engaging in off-farm activities, such as petty trading, craftsmanship, and services, to supplement their agricultural income. Additionally, crop diversification is another vital strategy, where families cultivate a variety of climate-resilient crops, such as drought-tolerant millet and sorghum, to minimize losses due to weather extremes (Chirisa, Mthunzi & Makatala, 2017). Water conservation and harvesting techniques, such as rainwater harvesting and greywater reuse, are also being adopted to optimize water use and reduce reliance on rainfall.

To enhance food security, child-headed families are adopting food preservation techniques, such as drying, smoking, and fermentation, to extend the shelf life of their crops (Ncube, Moyo & Simelane, 2020). Climate-resilient agriculture practices, including agroforestry and conservation agriculture, are also being promoted to improve soil health, reduce erosion, and promote biodiversity. Livestock management is another critical strategy, where families are adopting climate-smart practices, such as rotational grazing and feed supplementation, to maintain the health and productivity of their livestock (Ncube et al, 2020). Furthermore, child-headed families are leveraging climate information, such as seasonal forecasts and weather alerts, to inform their agricultural decisions and minimize losses. Solar-powered irrigation systems are also being used to enhance crop yields and reduce dependence on rainfall (Mgana, Ngonyani & Mrema, 2020).

In addition, child-headed families are adopting climate-resilient housing strategies, such as building homes with locally sourced materials and designing them to withstand extreme weather events (Nakiwala, Bagamba & Mugisha, 2019). Eco-tourism is also emerging as a viable livelihood strategy, where families are generating income by hosting tourists and offering environmentally friendly activities, such as birdwatching and hiking. In some cases, migration and relocation are becoming necessary survival strategies, as child-headed families seek better living conditions and economic opportunities in urban areas or other regions (Mgana et al., 2020). To support these vulnerable families, governments and development agencies are implementing social protection programs, including cash transfers, food assistance, and health insurance, to provide a safety net and enhance their resilience to climate-related stressors (Musasa, 2024).

2.7 Chapter summary

This chapter provided a comprehensive overview of the following issues: the theoretical framework that underpins this study, climate change as a concept, effects of climate change on child-headed families' food security psycho-social effects of climate change on child-headed families' livelihoods and strategies used by child-headed families to adapt to the effects of climate change. The following chapter will look at the research methodology which the researcher will use for data generation, analysis and discussion.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter looked at the related literature and highlighted what exists about the topic as well as the gaps. This chapter focuses on the procedures which were used by the researcher in

the data generation, analysis and discussion. The chapter also focuses on the essential components of research notably the research paradigm, research approach, methods, sample and sampling procedure, data generation procedure, data analysis, and research integrity.

3.2 Research paradigm

According to Luo et al (2025), a research paradigm is essentially a framework that guides how research is conducted, structured, and discussed. It represents a set of beliefs, assumptions, and practices about the nature of reality, how one comes to know things, and the methods that the researcher uses to investigate and understand our world (Shukla, Thompson & Shear, 2025). Thus, the selected paradigm helped the researcher to understand how knowledge was constructed, account for the evidence, and shape the direction that guided the study. In addition, it influenced the crafting of all the other components of the study, such as the research approach, methods, data generation, analysis and discussion. It is against this background that the researcher selected an interpretivist paradigm to guide the interrogation of the issue at the centre of this study. This research approach emphasized the understanding of the issue at the centre of the study through the subjective experiences of the participants (Omodan, 2024). This was built on the idea that the participants' reality is socially constructed, and as such, the researcher sought to discuss and understand the issue of concern from the participants' lived experiences. It was in this regard that the researcher sought to gain insight into how the participants created their realities about the impact of climate change on child-headed families' livelihoods.

3.3 Research approach

This is an overall plan and strategy a researcher uses to address their research question or problem (Kerzner, 2025). In this plan the researcher outlines how data will be collected, analyzed, and interpreted, serving as a roadmap for the study (Braun & Clarke, 2025). Since this study involved non-numerical data, the researcher opted for the qualitative approach to guide the data generation, analysis, and discussion. The selection of this approach was due to its effectiveness in bringing about a better understanding of the participants' opinions, and

experiences concerning the issue at the centre of the study. Thus, it allowed the researcher to delve deeply into the issue to gain a comprehensive understanding of the topic under study (Tisdell, Merriam & Stuckey-Peyrot, 2025). In other words, this approach provided contextual insights, which helped the researcher to understand the distinctions between the participants' experiences, views and opinions. In addition, it allowed the researchers to explore the issue and subjectively discuss the views, opinions and experiences in line with the issues at the centre of the study (Szabó, Soós & Schiller, 2025).

3.4 Methods

In generating data in this study, the researcher used the following methods:

3.4.1 Document analysis

Document analysis in qualitative research involves the systematic examination and interpretation of various types of documents, such as texts, images, videos, and other forms of media (Morgan, 2022). In addition, Solberg et al (2025), noted that document analysis is valuable in the selected approach due to its ability to provide rich data sources and complement other methods. In this context, the researcher analyzed documents (policy documents, attendance registers, guidance and counselling minutes, admission book, etc.) to gain insights into the issue under investigation. This method allowed the researcher to uncover patterns, themes, and meanings embedded within the documents to answer research questions (Karppinen & Moe, 2019) in chapter 1. This method complemented other methods such as interviews by providing additional context and depth to the issue under study.

3.4.2 Interview

The interviews in this study involved the researcher asking questions to the selected participants to gather information, insights, and perspectives on a particular topic (Hansen et al., 2025). This allowed the researcher to delve deeply into the thoughts, experiences, opinions and views of the selected participants (Geampana & Perrotta, 2025). This allowed the researcher to advance open-ended questions and follow-up probes, to uncover rich data that provide a comprehensive understanding of the issue at the core of this study (Wiegmann et al., 2025). With interviews,

researchers managed to establish rapport with participants, creating a conducive environment for open communication and honest sharing of experiences. The researcher crafted two interview guides, one for the learners from child-headed families and the other for the class teachers. These crafted interviews were centred around the following themes derived from research questions in chapter 1: conceptualisation of climate change, how climate change has affected child-headed families' food security, the psycho-social effect of climate change on child-headed families' livelihoods and how child-headed families have adapted to the challenges posed by climate change.

3.5 Sample and sampling procedure

A sample is a subset of the targeted population selected to participate in a study, it is a fraction of the whole, selected to participate in a research project (Ahmed, 2025). In support, Drisko (2025) defines a sample as a selected group of some elements from the totality of the target population. The sample was made up of 15 learners from child-headed families and 5 class teachers purposively selected to be participants in this study. In this study, purposive sampling was considered ideal as the targeted participants were knowledgeable and had experience in the issue under investigation (Marra & Nielsen, 2025). This was aimed at increasing the depth of understanding of the issue under investigation in this study (Silverstein & Santibañez, 2025).

3.6 Data generation

For the data generation procedure, the researcher obtained an introductory letter from the University which was used to seek permission from the responsible authority to carry out the study at Chimowa Secondary School. The researcher armed with the approval letter the researcher proceeded to notify the senior teacher and senior lady about the objectives of the study and the targeted participants. Thereafter, the researcher outlined the data generation schedule, together with both the senior master and senior lady with the aim of not disrupting

teaching and learning activities. A meeting with the potential participants was held, where the objectives of the study and their role in it were outlined. After that, the researcher requested all the relevant documents such as learners' school reports, attendance registers, guidance and counselling minutes, etc., and these were analysed. Before and during interviews issues to do with ethics were at the centre. In addition, the interviews for both the learners from child-headed families and class teachers were done at their most convenient time, so as not to disturb the flow of activities at the selected secondary school.

3.7 Data analysis

Data analysis is the process of modelling raw data to extract meaningful insights that support decision-making (Christou, 2025). Data analysis in this study involved probing non-numerical data (such as document analysis and interviews) to uncover patterns, themes, and insights. This required the researcher to familiarise with the data, breaking it into smaller units, and grouping it into themes that address the research questions. These themes are then discussed within their context to provide a deeper understanding of the phenomenon being studied. Thus, data analysis in this study was grounded in thematic analysis, and the researcher ensured credibility and transparency throughout the process is essential to maintaining rigour in the study (Valle & Ferreira, 2025). This enabled the researcher to identify and describe patterns and trends from the participants' perspective, with the aim of understanding and discussing them (Lingappa, Rodrigus & Shetty, 2025) in line with issues raised in chapter 1.

3.8 Trustworthiness of the study

In qualitative research, trustworthiness refers to the degree of confidence in its findings and the extent to which they accurately represent the participants' experiences, opinions or views (Alder, 2022). Establishing trustworthiness involves four key criteria: credibility, ensuring the findings are believable and align with participants' realities; transferability, demonstrating that the finding can be applied to similar contexts or settings; dependability, confirming the consistency and reliability of the study's methods and findings over time; and confirmability, ensuring the results

are shaped by the participants' voices and data rather than the researcher's biases (Noble & Smith, 2025). The researcher employed member checking, triangulation, detailed descriptions, and maintaining an audit trail are commonly used to enhance trustworthiness and ensure the study's integrity (Lingappa et al., 2025).

3.9 Ethical considerations

This section deals with what constitutes research ethics and their importance in academic research. These ethics apply in both interviews and focus group discussions. Cohen et al (2017) rightly pointed out that as interviews are considered an intrusion into the participants' private lives during the time allotted and the level of sensitivity of questions, a high standard of ethical considerations should be maintained. Rich (2013) defined ethics as a systematic approach to understanding, analyzing and distinguishing matters of right and wrong, good and bad, admirable and deplorable as they relate to the well-being of and the relationship among sentient beings. This definition explains clearly that during the data collection process, there is a need to adequately inform all participants about what the research is about and assure them that they will not be robbed or intimidated in the course and can withdraw anytime that they feel like. The researcher will consider anonymity, consent, confidentiality, respect and privacy.

The principle of anonymity essentially means that the participant will remain anonymous throughout the study. That is, only the participant knows that he or she participated in the survey, and the survey researcher cannot recognize the participants. In protecting the participants' identity, the researcher will utilise pseudonyms, for instance, participant 1 or 2 and hopefully, this makes them eager to participate as their names will be restricted. Confidentiality can be defined as an explicit or implied guarantee by a researcher to a respondent. This is whereby the respondent is made confident that any information provided to the researcher cannot be credited back to that respondent. The information obtained from participants will be kept confidential by the researcher and it will only be utilised for educational or developmental purposes. Hence, participants will be free to give true information as they will be assured that no information will be unnecessarily exposed.

The principle of informed consent entails that potential participants must be given sufficient information to allow them to decide whether or not to take part in the research. The researcher will explain everything that is involved in the research and will consider voluntary participation such that only those willing to participate in the research are considered. This will give the participants confidence hence relevant data will be collected.

3.10 Chapter summary

The chapter focuses on the methodology that was centred on the following: research paradigm, research approach, methods, sampling procedure, data generation procedure, data analysis procedure, research integrity, and chapter summary. In the next chapter generated data will be analysed and discussed according to the identified themes.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

In the previous chapter, the methodology used to generate, analyse and discuss data was articulated. This chapter focuses on data analysis and discussion with the view to provide answers to the research questions raised in chapter 1. Therefore, this chapter is guided by the following themes: characteristics of the participants, participants' understanding of climate change, how climate change has affected child-headed families' food security, the psycho-social effect of climate change on child-headed families' livelihoods and how child-headed families have adapted to the challenges posed by the effects of climate change.

4.2 Characteristics of the selected participants

Analysis of generated data was performed using the thematic approach in which data was categorized according to sub-questions outlined in chapter 1. This section focuses on the demographic characteristics of participants.

Table 4:1 Demographic characteristics of the selected learners (n=15)

Attribute(s)		(n)	(%)
Sex	Females	8	53
	Males	7	47
Age Range (years)	13-15	9	60
	16-18	5	33.3
	Above 18	1	6.7
Form	1	7	46.7
	2	4	26.7
	3	2	13.3
	4	2	13.3

Table 4:1 presents the demographic characteristics of a group of 15 learners from child-headed families. The key attributes shown are sex, age range, and form. The table shows that the group is entirely composed of female learners, with 8 females (53%) and 7 males (47%). The selected learners in terms of their age were distributed as follows: 9 (60%) were age range of 13 - 15

years, 5 (33.3%) were in the range of 16 - 18 years, and 1 (6.7%) was in age range above 18 years. In terms of their level of education the selected learners were split in following: 7 (46.7%) were in Form 1, 4 (26.7%) were in Form 2, 2 (13.3%) were in Form 3 and 2 (13.3%) were in Form 4.

Table 4.2: Demographic characteristics of the selected class teachers (n=5)

Attributes		(n)	(%)
Sex	Females	4	80
	Males	1	20
Professional qualification(s)	Diploma in Education	5	100
Teaching experience (years)	0 - 5	2	40
	6 - 14	3	60
	15 - 20	0	0

From the analysed data it was noted that most of the class teachers (80%) were females and 20% were males. In terms of professional qualifications, it was revealed that the selected class teachers (100%) were holders of a Diploma in Education. Furthermore, it was seen that 40% of the selected class teachers had teaching experience in the range of 0 - 5 years and 60 % were in the range of 6 - 14 years. From the analysed data it can be noted that the participants had the requisite teaching qualifications, and notable experience to enable them to carry out the responsibility of being class teachers, which centres around the welfare of the learners.

4.3 Participants' understanding of climate change

In this section data generated from the selected participants was presented, analyzed and discussed with the view to provide an answer to research question 1. This section was centred on the participants' understanding of climate change. In addition, this section articulates the possible causes of climate from the participants. In this regard, one participant highlighted that:

Climate change is the experiencing of floods (Cyclone Idai) and droughts. I think it's also the earth warming, which can affect the community's livelihoods (Learner 4)

Another participant acknowledged that:

My understanding is that this is a weather phenomenon, which results from human activities, for example, deforestation, burning fossil fuel and pollution. This can lead to the accumulation of greenhouse gases, which cause global warming (Learner 8)

One of the participants highlighted climate change as:

Is a worldwide consequence that includes ecosystem disruptions and biodiversity loss, and it transcends across regions (Class Teacher 2)

In support, one of the participants noted that:

Climate change in our community is associated with more frequent wildfires, and changes in productivity when it comes to farming activities. (Learner 10)

In the same vein, a participant indicated that:

I understand climate change as a weather phenomenon that threatens our local water sources and natural resources with possible effects on our health (Class Teacher 4)

From the contributions, it can be noted that the selected participants had various understandings of climate change as a concept. Thus, they understood climate from different perspectives for example as an environmental change, human impact, global issue, local impact, health and livelihood threats. In this case, the participants highlighted that the possible causes of climate change are human activities such as burning fossil, deforestation, industrialisation, agriculture, and transportation, which release greenhouse gases into the atmosphere. This concurs with Maccracken (2019) who indicated that climate change is a long-term alteration in the average patterns of weather conditions on Earth. Thus, it encompasses changes in temperature, precipitation, wind patterns, and other factors over a long period. In support, Hariram et al (2023); Liu et al (2015) highlighted climate change as a complex phenomenon that intertwines environmental, economic, and social dimensions, requiring global collaboration and sustainable solutions for mitigation and adaptation.

4.4 Climate change and its effect on child-headed families' food security

This section examines the effect of climate change on learners from child-headed families in terms of their food security. In this regard, one of the participants underlined that:

Climate change leads to occurrences such as drought (like the one we experienced last year) and floods that disrupt activities in the fields. This makes it difficult for child-headed families to access enough food (Class Teacher 1)

In support, one of the participants highlighted that:

I think drought causes food shortages leading to higher prices, making it difficult for us [learners from child-headed families] to access food (Learner 14)

One of the participants had the following to express concerning the effects of climate change on child-headed families' food security:

I still remember that after Cyclone Idai, we had poor yields from the fields. This forced my sister to go around the whole village begging for food to enable us to survive (Learner 9)

In the same vein, a participant acknowledged that:

Leaners from child-headed families are more vulnerable to the effects of climate change due to limited adult support to adapt to challenges such as food shortages and economic hardships (Class Teacher 5)

In addition, a participant elaborated that:

The lack of resources and agricultural productivity due to climate change can result in learners from child-headed becoming more dependent on unreliable and insufficient food aid and relief programmes (Class Teacher 3)

The contributions revealed that climate change had a direct impact on food availability, with the participants noting how unpredictable weather patterns like floods and droughts reduce agricultural productivity. This is problematic for learners from child-headed families who rely on farming for food and income. Mabvurira and Mpambela (2019) in agreement indicated that the economic strain caused by climate, particularly how food shortages drive up prices, makes it difficult for child-headed families to afford basic nutrition.

From the interviews, it was noted vulnerability of learners from child-headed families due to limited adult support to assist in handling the challenges posed by climate change. This concurs with Makuya (2022) who advanced that the absence of parental guidance or protection makes learners from child-headed families susceptible to the negative impacts of food insecurity and they struggle to adapt without adequate resources. The responses from the participants suggest a need for comprehensive interventions that address both immediate and long-term needs, such as

improving food access, providing economic opportunities and building resilience to climate shocks.

4.5 Psycho-social effects of climate change on learners from child-headed families

In this section, presentation, analysis and discussion are centred on exploring the psycho-social effects of climate change on learners from child-headed families. In this context, one of the participants submitted that:

Yes learners [from child-headed families] often experience emotional stress and anxiety due to constant uncertainties in their daily lives due to food insecurity (Class Teacher 1)

In support, a participant acknowledged that:

In case of drought, I feel scared and worried because we don't have adequate food in reserves. This makes it difficult to focus on class work when I'm focusing all my energy on how we are going to get the meal on the table (Learner 13)

Another participant indicated that:

In my class, some of these learners [from child-headed families] experience a deep sense of loss, due to the absence of adult caregivers to assist them in sailing through the effects of the climate change-induced challenges (Class Teacher 5)

One of the selected participants in the interview highlighted that:

Yes, I feel stressed as the eldest sibling because I'm always afraid that we might not have enough to eat. I feel like we don't have control over what happens in our daily lives (Learners 11)

From another angle, a participant contributed that:

These learners [from child-headed families] experience the emotional burden of being responsible for their siblings including managing household activities alone. This can ultimately push them into grief, depression or withdrawal (Class Teacher 4)

This concurs with what the participants advanced:

At times I try not to focus much on what is happening at home and focus on my science project, but it's difficult. I pray for help and at times, I talk to my class teachers when I feel overwhelmed (Learner 7)

The responses highlighted that learners from child-headed families face emotional stress and anxiety due to climate change. It was also revealed that these learners experience a sense of loss and grief from both environmental challenges and the absence of adult caregivers. This concurs

with Kurebwa and Kurebwa (2014) who postulated that learners from child-headed families face role strain, balancing household responsibilities with schoolwork, which can negatively affect their academic performance and motivation. In support, Chidarikire and Saruchera (2024) highlighted that learners from child-headed families develop coping mechanisms like emotional withdrawal, as they struggle to manage the psychological toll of their circumstances. Despite the overwhelming challenges, there was evidence of resilience, participants continued to rely on hope, prayer and support from teachers or siblings to cope. From another angle, Godinić and Obrenovic (2020); Hammoudi-Halat et al (2023) indicated that the ongoing uncertainty about the future coupled with the weight of responsibilities severely impacts their ability to concentrate on education and maintain emotional well-being.

4.6 Child-headed families and their adaption strategies to the challenges posed by climate change

Based on the findings from participants, this segment aims to provide answers to the last research question raised in chapter 1. The participants were asked to make suggestions on adaptation strategies to the effects of climate change on learners from child-headed families' livelihoods. In this regard, one of the participants noted that:

Over the weekends or during the holidays we involve ourselves in selling products like sweets, second-hand clothing, etc., to generate income for our upkeep (Learner 14)

From another angle, a participant highlighted that:

[.....], yes, we rely on our neighbours and local churches for assistance and at times they pay us some visits just to check on us (Learner 7)

In addition, in an interview one of the participants indicated that:

As a class teacher, I always try to find time to chat with learners with the view to offer them emotional support to help them cope with whatever challenges they might be facing be it at school or home. I try to create a supportive environment in my class such those learners with challenges will feel loved and taken care of (Class Teacher 1)

One of the interviewees acknowledged that:

At times during the holidays, we are invited by well-wishers to participate in some part-time jobs in exchange for either food or money. This assists us to meet our daily needs while still trying not to drop out of school (Learner 6)

In support, a participant noted that:

I offer extra lessons in my subject to help learners who may be falling behind due to lack of resources, or non-attendance as a result of their household responsibilities. As a school we connect with community resources like food programmes, the Ministry [of Primary and Secondary Education]’s Psychological Services Department for assistance (Class Teacher 5)

The adaptation strategies of learners from child-headed families reflected their resilience in the face of climate change-induced challenges, with many seeking income-generating activities and relying on community support. This concurs with Tarisayi (2023) who highlighted the need to implement targeted interventions, such as school-based feeding programmes and psychosocial support, to mitigate the adverse impacts of drought on child-headed rural learners. Despite these efforts, the demands of balancing school work with caregiving often hinder their performance in learning activities, illustrating the delicate balance between survival and schooling. In this regard, teachers play a significant role in providing academic and emotional support to help learners from child-headed navigate both their personal and educational challenges. In support, Chidarikire and Saruchera (2024) highlighted the need for comprehensive support programmes to alleviate the burden on child-headed households and ensure that the educational and developmental needs of rural learners are met, even in the face of severe climatic stressors.

4.7 Chapter summary

In this chapter, findings were presented, analyzed, and discussed centred on the characteristics of the participants, understanding of climate change, climate change and child-headed families’ food security, and psycho-social effects of climate change on child-headed families’ livelihoods, and adaption strategies to the challenges posed by the effects of climate change on learners from child-headed families’ livelihoods. The next chapter 5 summarizes the project, provides an answer to the main question and advances recommendations for further research.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, data was presented, analyzed, and discussed. In this chapter the project is summarized, an answer to the main research question is drawn in the form of a conclusion, recommendations are forwarded and areas for further study are outlined.

5.2 Summary of the project

The problem under investigation was put into context through the following: background to the study, statement to the problem, research questions, significance of the study, delimitations of the study, limitations of the study, definition of key terms, and the layout of chapters. Chapter two was dedicated to the theoretical framework and review of the related literature which opened research gaps in the study. The third chapter looked at research methodology which ushered the approach that was to be used in data gathering, presentation, analysis, and discussion. Chapter four then gave an outline of the following major findings:

- The participants understood climate change through its human-driven causes like greenhouse gas emissions and its impact on ecosystems, weather patterns and global temperatures.
- Participants viewed climate change as exacerbating food security as unpredictable weather patterns and poor harvests lead to diminished nutritious food. This vulnerability is compounded by the lack of adult support for resource management, leaving learners from child-headed families more exposed to the impact of food scarcity.
- From the discussion, it was revealed that the psycho-social effects of climate change on learners from child-headed families include heightened stress and anxiety due to the uncertainty of food security and financial instability. These hinder learners from child-headed families' performance in learning activities and emotional well-being as they

struggle to balance school work with the responsibility of caring for siblings and managing household needs.

- The participants indicated that the child-headed families adapted to the numerous strategies such as relying on community networks, local NGOs or government programmes for food assistance, education support and psycho-social counselling to mitigate the impact of climate change stressors.

5.3 Conclusion

From the findings of this study, it was noted that the selected participants had an understanding of climate change as a concept. They also, acknowledged that climate change was to a larger extent affecting child-headed families' food security. In this study, the participants revealed that climate change had some psycho-social effects on learners from child-headed families. In addition, these can hinder learners from child-headed families to focus on school work leaving them vulnerable to poor performance in learning activities and limited future opportunities. In this regard, numerous strategies were advanced with the view to counter the effects of climate change on learners from child-headed families' livelihoods. It is in this regard that this study concluded that to a larger extent climate change has significantly impacted learners from child-headed families' livelihoods as it exacerbates food insecurity, economic instability and emotional stress.

5.4 Recommendations

From the findings, the researcher recommends that:

- Class teachers may need to receive comprehensive training and professional development on how to effectively handle issues with learners from child-headed families.
- The Ministry of Primary and Secondary Education need to appeal for more funding from the responsible arm of the government to assist learners from child-headed families to be food secure.

5.5 Areas for further research

To develop more conclusive and broad findings in this study area, the researcher recommends that a similar study be conducted in all districts in Mashonaland East Province.

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APPENDICES

Appendix 1: Introductory letter for Bindura University of Science Education

P. Box 10240
BUTCHES
ZIMBABWE
Tel: 021 71 7533 ext 30306
Fax: 021 71 7536

CEMS DEPT

 **BINDURA UNIVERSITY OF SCIENCE EDUCATION**

Date: 10 March 2025

TO WHOM IT MAY CONCERN

NAME: MAKAMURE ANNAMARIA REGISTRATION: B227511A

PROGRAMME: HBSEdCg PART: 2:2

This memo serves to confirm that the above is a bona fide student at Bindura University of Science Education in the Faculty of Science Education.

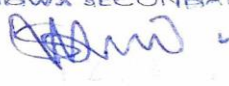
The student has to undertake research and thereafter present a Research Project in partial fulfilment of the programme. The research topic is:
The impact of climate change on learners from child-headed households at Chimowa Secondary School, Chipomba district.

In this regard, the department kindly requests your permission to allow the student to carry out his/her research in your institutions.

Your co-operation and assistance is greatly appreciated.

Thank you

UDAVANHU (PhD)
IRPERSON - CEMS


THE HEAD
CHIMOWA SECONDARY SCHOOL
P.O. BOX 240
S.D.A.

Appendix 2: Approval letter for responsible authority

Chimowa Secondary School

P. O. Box 240

Sadza

12 March 2025

Makamure Annamaria

Bindura University of Science Education

Faculty of Science Education

Department of Science and Mathematics Education

Shashi View

Bindura

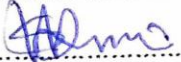
RE: PERMISSION TO CARRY OUT A RESEARCH STUDY AT CHIMOWA SECONDARY SCHOOL

Reference is made to your application to carry out a study at the above-mentioned secondary school on the title:

'The impact of climate change on learners from child-headed families' livelihood Chimowa Secondary School, Chikomba District.'

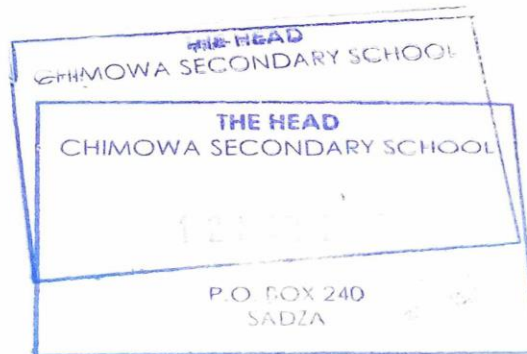
Permission is being granted. However, you must communicate with the head department responsible for the area you want to involve in your study. It is expected that the research does not disrupt the flow of activities in the school. Additionally, when involving learners, obtaining parental consent is mandatory to guarantee the well-being and safety of all participants.

You are also required to provide a copy of your final report to the school administration.



Ms Mutamiri S

School Head



Appendix 3: Interview guide for learners from child-headed families

Thank you for accepting the researcher's request. The study focuses on the learners' perspective towards the impact of climate change on learners from child-headed families' livelihoods. Most importantly feel free to express your thoughts and answer the questions to the best of your ability and no personal information will be included in the final report.

1. In brief, tell me something about yourself.
2. What comes to mind when you hear the term 'climate change'?
3. What do you think are the main causes of climate change?
4. How do you think climate change affects child-headed families' daily lives, with specific reference to food security?
5. How do climate changes affect your emotions and mental well-being as a child-headed family?
6. Have climate challenges affected your ability to go to school or focus on your studies? If so, how?
7. What challenges are faced by child-headed families as they try to fight against the effects of climate change?
8. What strategies do you use to cope with challenges brought on by climate change, such as food shortages?
9. Thank you for your participation in this interview

Appendix 4: Interview guide for class teachers

Thank you for accepting the researcher's request. The study focuses on the learners' perspective towards the impact of climate change on learners from child-headed families' livelihoods. Most importantly feel free to express your thoughts and answer the questions to the best of your ability and no personal information will be included in the final report.

1. In brief, tell me something about your professional qualifications and teaching experience.
2. How long have you been performing the duties of a class teacher?
3. What comes to mind when you hear the term 'climate change'?
4. What do you think are the main causes of climate change?
5. At your school do you have learners from child-headed families? If yes please elaborate on how you think climate change affects child-headed families' daily lives, with specific reference to food security.
6. From your experience as a class teacher can you articulate the psycho-social effect of climate change on child-headed families' livelihoods?
7. What challenges are faced by child-headed families as they try to fight against the effects of climate change?
8. What changes or support do you think would make life easier for families like yours who are affected by climate change?
9. Thank you for your participation in this interview