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The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030 – case of Chimanimani District

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MAY 2026

DECLARATION

To be complied with by student

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I, Chingema Eunice affirm that this submission is my original work, unused in any prior academic submission and also, all referenced materials are duly acknowledged.

Student's signature  Date 29 May 2026

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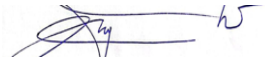
This dissertation meets the requirements for submission to the faculty and has been reviewed for compliance with all faculty guidelines.

Supervisor's signature Date 30 May 2026

Chairman's signature  Date 30 May 2026

DEDICATION

I dedicate this research to my beloved parents, Mr. and Mrs. Chingema, and to my supportive sisters Synodia, Pauline and Shauline Chingema for their unwavering love, support, sacrifices and above all, their prayers. Your support has been a source of strength throughout my academic journey and your guidance made it possible for me to reach this far. I could not claim this achievement without you.

ABSTRACT

Background: Access to safely managed sanitation remains a major challenge in rural Zimbabwe despite national and global efforts to achieve Sustainable Development Goal (SDG)6.2 by 2030. Rural communities continue to experience inadequate sanitation facilities, open defecation and poor hygiene practices due to socio-economic and environmental challenges.

Objectives: The study assessed the odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030 using Chimanimani district as a case study. The research examined the current sanitation situation, identified barriers affecting sanitation access and evaluated factors influencing progress toward universal sanitation coverage.

Methods: A mixed methods approach was employed involving household questionnaires, focus group discussions, key informant interviews and observation checklists. Data were collected from 56 households selected from wards 8, 15, 17 and 20 in Chimanimani district using multistage sampling techniques. Quantitative data were analyzed using SPSS version 26 through descriptive statistics and logistic regression, while qualitative data were analyzed using thematic analysis. The WHO/UNICEF Joint Monitoring Programme (JMP) sanitation ladder was used as the evaluation framework.

Results: The findings showed that 79% of households had some form of toilet facility, while 21% had no toilet facilities. Only 8.9% of households had safely managed sanitation services whereas 17.9% practices open defecation. BVIP latrines were the most common sanitation technology used. Major barriers affecting sanitation access included lack of money (42.9%), poor terrain, flooding, weak institutional support and socio-cultural practices. Logistic regression results revealed that stable household income, higher socio-economic status and participation in sanitation awareness programs significantly increased the likelihood of improved sanitation access. Most respondents (67.9%) believed that universal access to safely managed sanitation by 2030 was unlikely to be achieved under current conditions.

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LIST OF ACRONYMS AND ABBREVIATIONS

BVIP	Blair Ventilated Improved Pit latrine
CLTS	Community- Led Total Sanitation
DHS	Demographic and Healthy Survey
JMP	Joint Monitoring Programme
NASH	National Action Committee on Sanitation and Hygiene
NGO	Non-Governmental Organization
ODF	Open Defecation Free
SDG 6	Sustainable Development Goal 6(clean water and sanitation)
SHEQ	Safety Healthy and Environmental Management
SPSS	Statistical Package for Social Science
UNICEF	United Nations International Children's Fund
WHO	World Health Organization
ZimCATS	Zimbabwe Community Approaches to Total Sanitation

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CHAPTER 1: INTRODUCTION

1. Introduction

1.1 Background to the study

Safe access to sanitation is a crucial aspect of Sustainable Development Goal (SDG)6 ,which aims to achieve universal and equitable sanitation access by 2030(United Nations ,2015).Nevertheless numerous developing countries, including Zimbabwe encounter substantial challenges in attaining this goal especially in rural regions where financial resources and sanitation infrastructure are scarce (Birhanu et al.,2025).

Rural areas, which are a home to around 62% of Zimbabwe's population face sanitation inadequacy(Zimstat, 2022). Recent estimates shows that only 24-26% of the population uses safely managed sanitation services with even lower access levels in rural areas (WHO/UNICEF JMP ,2024) .The United Nations SDG reports indicate that approximately 32% of rural population have access to at least basic sanitation, however open defecation and the use of inadequate facilities are still prevalent in many regions , presenting significant health and environmental hazards (UNICEF,2023).

Poverty , economic constraints in rural water and sanitation infrastructure, population growth and climate related challenges continue to slow achievement towards universal sanitation coverage (UNICEF,2024). Given these persistent gaps , assessing the odds or rural Zimbabwe in achieving universal access to safely managed sanitation by 2030 is of paramount importance for informing policy interventions and sustainable development planning (United Nations ,2015).

1.2 Problem statement

Although Zimbabwe has made a significant progress in reducing open defecation in rural areas compared to past levels , the practice remains widespread (UNICEF,2020). According to the World Bank ,(2022) , over 60% of rural water supply and sanitation systems are either inadequate or non-functional. Existing studies have documented the overall state of sanitation and its related health impacts but there is still limited evidence assessing the probability of rural Zimbabwe achieving universal access to safely managed sanitation by 2030.This study therefore seeks to fill that gap by examining the obstacles influencing the progress toward sanitation in rural Zimbabwe.

1.3 Aim and objectives

1.3.1 Aim

To evaluate the likelihood of rural Zimbabwe achieving universal access to safe sanitation looking at the current situation, identifying key obstacles and assessing the feasibility of existing plans and strategies, with a focus on Chimanimani District as area of study.

1.3.2 Objectives

(i) To assess the current state of sanitation in rural Zimbabwe

(ii) To identify main barriers preventing achieving universal access to safe sanitation.

(iii) To evaluate Zimbabwe's roadmap to universality

1.4 Research questions

(i) What is the current state of sanitation access in rural Zimbabwe and how does it compare to national and international targets?

(ii) What are the main barriers (technical, financial, institutional, social and environmental) preventing rural communities from getting safe sanitation?

(iii) What is the gap between policy goals and actual implementation in rural sanitation services?

1.5 Significance of study

This research provides essential data for informed policy decisions, directly influencing Zimbabwe's National Sanitation and Hygiene Policy and the SDG 6.2 roadmap. It helps the government prioritize limited resources and investments in rural WASH programs. Ultimately, the study connects evidence with action, aiming to improve health, dignity and equality for rural Zimbabweans while strengthening national and institutional capabilities to meet sanitation goals.

1.6 Assumptions

- Participants will provide honest and accurate responses regarding sanitation and hygiene
- Chimanimani district is a good representative of Zimbabwe's rural communities.

1.7 Limitations

- Resources and time restricted sample size
- Findings from the area of study may not apply to all rural areas in Zimbabwe
- Political sensitivities concerning government performance might impact how openly some stakeholders share their insights.

1.8 Delimitations

- The study focuses specifically on rural sanitation in Zimbabwe, using Chimanimani district as a case study.
- It examines the period from 2015 (the start of the SDGs) to 2026, while also looking ahead to 2030
- Although the study recognizes the link between water, sanitation and hygiene (WASH), it primarily concentrates on sanitation access and management.

CHAPTER 2: LITERATURE REVIEW

2. Literature Review

2.1 Introduction

This chapter reviews literature on rural sanitation, focusing specifically on Zimbabwe. It covers the current state of sanitation access, the obstacles to achieving universal access, the effectiveness of Zimbabwe's road map for sanitation for all. The review response directly to the study objectives by bringing together recent empirical studies, policy reports and global frameworks.

2.2 Sanitation access levels in Zimbabwe

2.2.1 Statistical overview

The rural sanitation situation in Zimbabwe is alarming. Only 32% of the population uses a safely managed sanitation service nationwide, with rural areas performing much worse than urban centers (SDG 6 Data, 2022). Access to basic drinking water has stagnated at 64% since 2020, showing limited recent progress (UNICEF Zimbabwe, 2024).Only 36.8% of rural households have any toilets (ZIMSTAT, 2017), cited in The Borgen Project, (2024). This means 63.2% of rural households lack toilets and many rely on open defecation.

2.2.2 Infrastructure condition

The World Bank, (2022), reports that more than 60% of the rural water supply and sanitation infrastructure in Zimbabwe is in poor condition or non-functional. This decay results from inadequate maintenance, limited investment for replacements and in some cases, community abandonment of facilities due to design flaws or lack of spare parts.

2.2.3 Health impacts

Inadequate sanitation situations are leading to serious health effects (Betera et al., 2025).Zimbabwe regularly experiences cholera outbreaks, especially in rural communities (UNICEF Zimbabwe, 2024).

2.3 Comparison with national and international targets

Globally , Sustainable Development Goal 6 aims for universal access to safely managed sanitation by 2030 (United Nations, 2015).However , Zimbabwe is not on track to meet this target, especially in rural areas. While national policies call for 100% sanitation coverage, progress has been slow due to systemic issues (UNCIEF,2021).ln comparison rural Zimbabwe falls short of global averages for developing regions. Only 67% of the world will have safe sanitation by 2030 at current rates but in Zimbabwe , rural access lags far behind with greater than or equal to 30%(JMP,2021).The WHO/UNICEF Joint Monitoring Programme (JMP) reports that Sub-Saharan Africa has one of the lowest rates of improved sanitation coverage, with rural areas being the most affected (JMP,2022).

2.4 Inequalities in sanitation access

Sanitation access in Zimbabwe shows Inequalities based on income, geography and education (Watambwa et al., 2025). Households with low income are less likely to afford improved sanitation facilities (Hutton & Chase, 2020) .Remote areas, such as some of the wards in Chimanimani district, face more service delivery challenges due to poor infrastructure and accessibility (Chanza et al., 2020).

2.5 Barriers to achieving universal sanitation in rural Zimbabwe

2.5.1Technical barriers

Technical challenges include lack of appropriate sanitation technologies for rural environments. The BVIP latrine has been the main sanitation technology for rural areas in Zimbabwe, but it has several drawbacks , including high construction costs , incomplete or poor-quality design and compromised odor and fly control (Kanda et al., 2022). Climate change issues, such as flooding affect how well latrines work and also mountainous terrain in areas like Chimanimani limit the construction of durable sanitation facilities (Mugambiwa & Tirivangasi, 2022) . During heavy rains, latrines may become unusable, forcing households to return to open defecation or cat sanitation (Kanda et al., 2022).

2.5.2 Financial barriers

Zimbabwe faces a dire economic situation, with 68% of the population living below the poverty line (Peal et al., 2012). This poverty affects the ability of rural people to invest in sanitation infrastructure. Research in informal settlements shows that lack of funds is a significant perceived obstacle for residents (Waterkeyn et al., 2019). The cost of building a conventional BVIP latrine, which requires about five bags of cement and 500 bricks, is too high for many rural households (Morgan, 2011).Government funding for rural sanitation is also limited , resulting in slow infrastructure development (Mudonde & Makoni, 2022).

2.5.3 Institutional barriers

Multiple government agencies handle sanitation. Coordination mechanisms exist through the Zimbabwe National Action Committee (NAC) and its subcommittees for Rural Water Supply and Sanitation (Maramura et al., 2021). Yet, effective coordination remains problematic. While the involvement of many NGOs and international agencies is helpful, it can also lead to coordination

issues. Sometimes, efforts overlap or compete and projects may be rushed or poorly planned (Maramura et al., 2021).Though Zimbabwe has progressive policies, such as the gender-sensitive sanitation and hygiene policy approved in 2024 (UNCIEF Zimbabwe, 2024), implementation is slow. Latrine construction does not meet national targets. During droughts, communities tend to prioritize food security over infrastructure development (UNCIEF Zimbabwe Annual Report, 2024).

2.5.4 Social and cultural barriers

Cultural practices and behavioral factors contribute to low sanitation uptake (Muringani et al., 2024).Open defecation persists in some communities due to traditional beliefs and lack of awareness (Oswald et al., 2020). Resistance to behavior change also impacts the adoption of improved sanitation (Osiemo et al., 2023). Vulnerable groups face unique barriers. Research highlights how women with disabilities encounter multiple obstacles in accessing WASH facilities, facing discrimination and harassment (Muridzo et al., 2024). The elderly, individuals with mobility challenges and marginalized communities need specific interventions that standard programs often overlook (Chirisa et al., 2021).

2.5.5 Environmental and climate related barriers

Environmental factors such as climate change and natural disasters greatly affect sanitation infrastructure. Flooding and cyclones damage latrines and contaminate water sources, reversing progress (Mavhura, 2021).

2.6 Strategies to achieve universal sanitation coverage

2.6.1 National policy framework

The National Water Policy ,2013 offers guidance on managing water resources and WASH, focusing on community involvement, cost recovery and integrated management (Government of

Zimbabwe,2013). Critics argue that the policy emphasizes water supply more than sanitation, reflecting a historical bias (Maramura et al., 2021).

The National Sanitation and Hygiene Strategy (2016-2020) sought to boost basic sanitation coverage and reduce open defecation by promoting CLTS, hygiene education, and strengthening institutional capacity (Kugedera, 2020).The strategy set ambitious goals, such as achieving 100% ODF status in rural areas by 2020, but this was not accomplished (Maramura et al., 2021).

Zimbabwe's SDG roadmap commits the country to meet SDG targets, including SDG 6.2 on sanitation. However, the Voluntary National Review (VNR) reports recognize significant challenges in reaching these targets due to resource constraints and competing priorities (Betera et al., 2025).

2.6.2 Local level

Rural District Councils are primarily responsible for sanitation service provision in their areas (Government of Zimbabwe, 2013).They struggle with severe capacity and resource limitations (Chigwata, 2011). Ward and village development committees offer community-level structures for mobilization and monitoring, but their effectiveness varies widely (Kugedera, 2020).

2.6.3 Development partners

UN agencies (UNICEF, WHO, UN Habitat), international NGOs (World Vision, OXFAM, Plan International) and bilateral donors play key roles in funding and implementing sanitation programs (UNICEF, 2024).While their involvement is valuable, reliance on external support raises sustainability issues and the potential for fragmentation (Dhoba, 2022).

2.7 Interventions and approaches to rural sanitation

In Zimbabwe, rural sanitation is affected by a mix of government leadership, community-led projects, NGO support, private sector involvement and traditional authority. The government is in charge of making policies, getting resources, enforcing rules and keeping an eye on things. But because it has limited resources, partnerships are necessary to make sanitation programs bigger (UNICEF, 2025).

Community-Led Total Sanitation (CLTS), adapted locally as ZimCATS, is an important approach that encourages communities to work together to eliminate open defecation without relying on subsidies (Musembi, 2010). Communities are expected to advocate for sanitation, build and maintain facilities, enforce shared norms and hold stakeholders responsible. Ownership is crucial for sustainability (GOAL Global, 2015).

NGOs and development partners like World Vision and UNICEF offer technical support, funding for pilot projects and advocacy (UNICEF, 2024). They also help strengthen local skills and repair water sources(World Vision International, 2025). However, their influence is limited and long-term sustainability requires leadership from the community and the government (Madziyauswa, 2018).

Private sanitation service providers, including artisans, manufacturers and desludging services, play a key role in developing sustainable supply chains. Still, rural markets are underdeveloped and need focused efforts to improve them (Igwe, 2023).

Lastly, traditional leaders such as chiefs and headmen have significant influence in rural communities. Their involvement in promoting sanitation norms has been vital to the success of

CLTS programs, as they mobilize communities and reinforce cultural authority (Kurebwa 2018;Chigwata, 2016).

2.8 Roles of various stakeholders in sanitation development

Sanitation development in rural Zimbabwe relies on the combined efforts of government institutions, international organizations, NGOs, local communities and the private sector. Each of these groups plays a unique but connected role in helping rural populations access safe and sustainable sanitation services. This access is crucial for achieving Sustainable Development Goal 6, which focuses on clean water and sanitation.

The government, especially through the Ministry of Lands, Agriculture, Climate, Water and Rural Resettlement, provides guidance by creating policies, setting standards and coordinating national strategies. It also gathers resources and ensures that sanitation initiatives work with broader development and climate resilience goals (UNDP, 2020). International organizations like UNICEF and the Sanitation and Water for All partnership support these efforts by providing technical assistance, funding and advocacy. For instance, UNICEF has implemented mobile technology to track sanitation services in real time, which helps improve accountability and responsiveness in rural communities (UNICEF, 2021).

Non-governmental organizations play an important role at the grassroots level, bridging the gap between international donors and local communities. They focus on community engagement, hygiene education and building infrastructure, making sure that their actions are culturally suitable and sustainable (Madziyauswa, 2018). Local committees are key to the success of sanitation projects, as they take charge of adopting hygiene practices, maintaining infrastructure and ensuring accountability. Traditional leaders often support these efforts by engaging households and promoting hygiene norms (UNICEF, 2021).

The private sector helps by providing materials, technologies and services that support sanitation infrastructure. Partnerships with local businesses drive innovation, create job opportunities and guarantee that communities can access affordable sanitation products (Mundonde & Makoni, 2023).Public private partnerships have been piloted to finance and rehabilitate water and sanitation infrastructure, though results show mixed community impacts (Matsa et al., 2021).

Despite these collaborative efforts, challenges persist. Coordination among stakeholders can sometimes be uneven, leading to overlapping efforts (Maramura et al., 2021). Funding shortages also threaten the sustainability of projects, while cultural obstacles might slow the adoption of improved sanitation practices. Additionally, climate change affects water availability, highlighting the need for adaptable strategies (UNDP, 2020).

2.9 Success stories and lessons learned

Despite slow progress overally, Zimbabwe has seen some successes that offer lessons for expanding rural sanitation. Several villages and wards have achieved ODF status through well-executed CLTS programs (Kar & Chambers , 2020).Kugedera and Machikicho, (2019) identified key factors for success, including strong support from traditional leaders, continuous follow-up beyond initial triggering, connections to improvement programs that help households upgrade to better facilities and integration with wider development efforts. Communities with lncome Savings and Lending groups (ISALs) had 2.6 times higher odds of achieving ODF and those with constitutions were 5 times more likely to succeed (Kugedera , 2020).

Certain NGO programs have successfully leveraged savings groups and revolving loan funds to assist households in financing latrine construction. This shows that innovative financing can help ease affordability issues. World Bank has reported positive results from this method in multiple districts.

Communities in Chimanimani and other regions have adjusted latrine designs to suit local conditions. For instance, they have developed above-ground latrines in flood-prone areas, used local materials to cut costs and created child-friendly facilities in schools (UNICEF, 2021).These changes shows the importance of localized, community-led technology choices. In places where government, NGOs, traditional leaders and communities work together effectively, outcomes have been better than fragmented efforts. Establishing district WASH committees with clear coordination roles has shown value in certain situations (Dhoba, 2022).

Table 2.1 Existing conceptual framework

Conceptual Framework	Description	Limitations	Reference
CLTS	Focuses on behavior change and banishing open defecation	Sustainability is limited if follow up is not consistent	Kar & Chambers, (2020)
WASH framework	Integrates water , sanitation and hygiene practices	Requires high funding and coordination	UNICEF (2021)
Sanitation value chain	Focuses on entire sanitation system	Not easy for rural application	World Bank(2021)
SDG Sanitation Service Ladder (JMP Framework)	JMP) classifies sanitation services on a ladder ranging from open defecation to safely managed sanitation, the highest rung under SDG 6.2.lt serves as a monitoring tool for global progress.	Outcome oriented and not explanatory; it does not identify causal determinants. Does not address the odds or probability of progressing from one rung to another. Insufficient focus on socio-economic, political, or institutional drivers.	WHO& UNICEF(2017)

Sanitation Service Chain Framework	The chain emphasizes the entire lifecycle of human waste from household to safe end-use or disposal conceptualizes sanitation as a sequence of linked functions from containment to reuse	Does not integrate governance, policy, or financing determinants affecting barriers	WHO (2015)

The review shows that these frameworks address sanitation challenges, they often overlook local contextual factors such as geography and socio- economic conditions. The frameworks reviewed are useful pieces of a larger puzzle for understanding the dynamics of achieving safely managed sanitation by 2030. However, none directly model the odds (probability or likelihood) of achieving this goal. Most focus on either measurement (JMP), technical systems (service chain), behavior change (CLTS), but fail to integrate these dimensions into a predictive model. To build a robust conceptual framework, integration of theoretical basis like systems theory, capability approach, and institutional theory is necessary. Moreover, inclusion of measurement and Indicators is important. Use of standardized indicators (JMP, national DHS/WASH surveys), but also incorporate additional institutional performance scores and financing adequacy indices.

2.10 Theoretical framework

2.10.1 Behavior change theory

Behavior change theory explains how individual and social drivers shape sanitation practices beyond facility access (Dreibelbis et al., 2013).lt is used to analyze why infrastructure alone does not ensure latrine use by mapping contextual ,psychosocial and technological factors that influence behavior from structural to habitual levels (Dreibelbis et al., 2013).ln literature, the lntegrated

Behavioral Model for WASH has been applied in low-income rural settings including Sub-Saharan Africa to evaluate CLTS, hygiene adoption and sustainability of sanitation interventions (Hulland et al., 2013).It is important for rural Zimbabwe because persistent open defecation despite latrine presence shows norms , skills and motivations must align with infrastructure (Musembi, 2010).It directs the current study by focusing analysis on behavioral determinants not just facility coverage to identify feasible , culturally aligned pathways for sustained latrine use.

2.10.2 Systems theory

Systems theory views sanitation as an interconnected system of infrastructure, institutions and communities whose interactions determine sustainable access (Valcourt et al, 2020).lt is used to understand interdependences in service delivery and diagnose why financing and plans fail when coordination, workforce or data are weak (Valcourt et al., 2020).ln literature , it has been applied in WASH systems strengthening to assess fragmented delivery, government capacity gaps and accountability across building blocks (UNICEF, 2023).lt is important for rural Zimbabwe because key barriers are fragmented delivery, workforce shortages and financing that does not translate into results even when policies exist (Maramura et al., 2021).lt directs the current study by shifting focus from single interventions to government capacity, coordination, accountability and also identifying where system breakdowns block progress.

2.10.3 Sustainable livelihoods framework

The Sustainable livelihoods framework uses an asset-based lens to understand how people's capabilities, resources and vulnerability contexts shape sanitation access and practices (Dave, 2023).lt is used to analyze how poverty , culture and socio-economic factors affect service uptake and why practitioners often miss local priorities (Dave , 2023).ln literature SLF has been applied in rural WASH contexts in Sub-Saharan Africa to assess how human, social , financial, physical

and natural assets influence latrine adoption and maintenance (Valcourt et al.,2020).lt is important for rural Zimbabwe because poverty and livelihood constraints directly limit households' ability to build and sustain sanitation facilities (Madziyauswa, 2018).lt directs the current study by focusing on how asset portfolios , livelihood strategies and local priorities enable or block sanitation investments , identifying community aligned financing and technology options that match what households can actually maintain.

2.11 Summary

The literature shows that rural sanitation access is influenced by socio-economic environmental, institutional and behavioral factors. While several frameworks exist, they often fail to address rural specific challenges. There is therefore a need for context specific approaches, particularly in districts like Chimanimani.

CHAPTER 3: MATERIAL AND METHODS

3. Material and methods

3.1 Description of the study area

The study took place in Chimanimani District in the Eastern highlands of Zimbabwe located between latitudes 15°S and 22°S and longitudes 25°E and 33°E within Manicaland Province (World Atlas, 2024). The district borders Mozambique and covers approximately 6 432 square kilometers with a population of 135 000 .It features mountainous terrain, high rainfall during November -March rainy season and scattered rural settlements (ZIMSTAT, 2022). The selected wards (8, 15, 17 and 20) are rural homes to communities that depend largely on subsistence farming and small-scale economic activities for their livelihoods. The selected wards contains both highland (challenging terrain ,lower population density,severely affected by cyclone Idai and is in recovery) and lowland areas (flatter terrain , higher population density) .These wards have different environmental conditions ,settlement patterns and livelihood systems ,providing variations useful for understanding how context shapes sanitation outcomes.

Infrastructure development in these wards is limited especially regarding water supply and sanitation services. Many households lack access to improved sanitation facilities and some communities still practice open defecation (Chimanimani Rural District Council ,2025). The area's geographical setup and remoteness make it difficult to provide and maintain sanitation infrastructure. These factors make Chimanimani district a suitable place to study rural sanitation challenges and assess the potential for achieving universal sanitation by 2030.

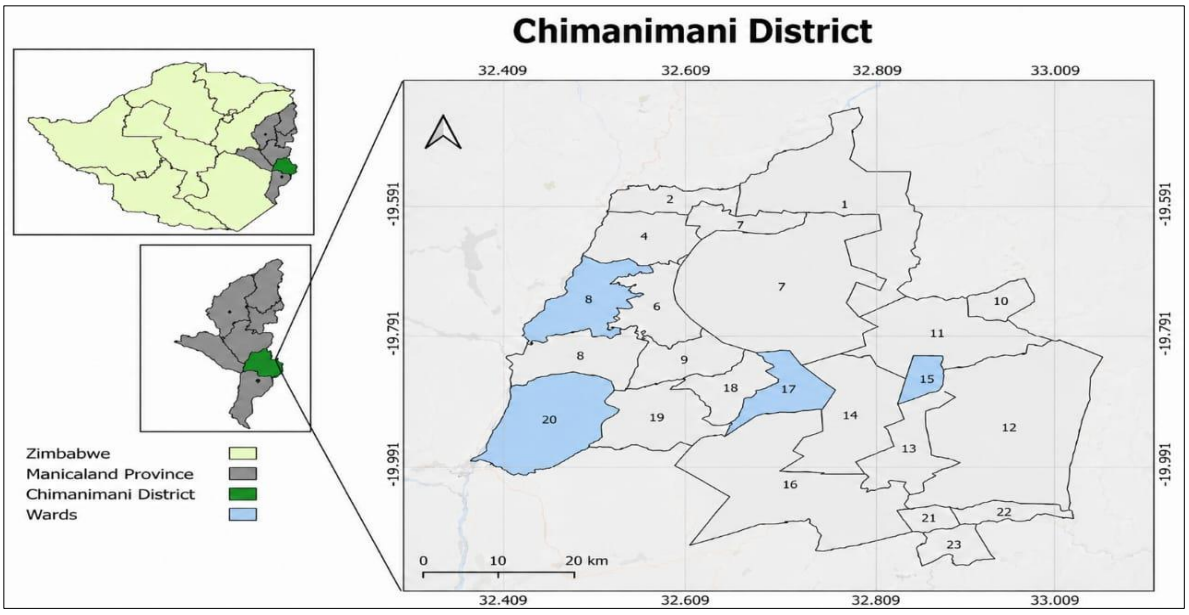

Fig 3.1 Zimbabwean map showing Chimanimani district and wards under study

3.2 Research design

The study used a mixed- methods research design that combined qualitative and quantitative approaches (Watson, 2020) . This design was chosen because it enables the collection of comprehensive data by pairing numerical measures with detailed context (Alam et al, 2020). Quantitative method focused on measuring access to sanitation facilities and identifying patterns among households (khan et al., 2025).The qualitative part looked into social , cultural and institutional factors that influence sanitation practices(Alam et al., 2020). A case study approach facilitated a deep analysis of sanitation conditions in the selected wards. This approach allowed for a focused examination of a specific geographical area while capturing the complexity of sanitation issues within rural communities. Combining both methods enhanced the validity and reliability of the findings (Creswell & Clark, 2022).

3.3 Research instruments

3.3.1 Semi-structured closed-ended questionnaire

A semi-structured closed- ended questionnaire (Appendix A) was developed based on recent WASH literature (Osumanu et al, 2022).lt was used to collect quantitative data from households in the study area .lt captured information on access to sanitation facilities, types of sanitation technologies used , hygiene practices and household socio-economic characteristics. The questionnaire mainly consisted of closed- ended questions for standardization and ease of analysis with a few open- ended questions added for further insights.

Before using it in the main study, the questionnaire was pre-tested in a similar rural setting to evaluate its clarity, relevance and reliability. The tool is appropriate due to its ability to collect standardized data efficiently, although it may be limited by self- report bias this will be minimized through clear wording and pilot testing.

3.3.2 Focus group discussions (FGD)

Focus group discussions (Appendix B) gathered qualitative data from community members. The guide was developed from recent studies (Tidwell et al., 2020).These discussions allowed participants to share their experience, perceptions and attitude towards sanitation practices. The interactive format encouraged exploration of social norms, cultural beliefs and collective challenges affecting sanitation behavior but may be affected by group dynamics. This will be minimized through triangulation with other data sources.

A total of four focus group discussions were held one in each ward. Each group had six to eight participants chosen to ensure diversity in gender and age. The discussions followed a semi-structured interview guide and were conducted in the local language to facilitate effective communication.

3.3.3 Key informant interviews (KIIs)

Key informant interviews (Appendix C) were conducted with individuals who have specialized knowledge or experience related to sanitation issues in the study area. These participants included local government officials from the Rural District Councils, health department, environmental health officers, traditional leaders(chiefs ,headman ,village head), NGO representatives involved in WASH programs in the district , community health workers and members of the village development committees.

The interviews were semi-structured, allowing the researcher to explore specific themes while giving participants the freedom to offer detailed responses. This method proved useful for obtaining information on policy implementation, institutional challenges and ongoing sanitation programs in the district.

3.3.4 Observation checklist

Non-participant observation (Appendix D) was used to assess the actual condition and use of sanitation facilities in the study area. An observation checklist guided this process focusing on aspects such as toilet type and condition, evidence of use, cleanliness and surrounding environmental conditions.

This method helped verify information gathered from questionnaires and interviews enhancing data reliability. It also highlighted discrepancies between reported and observed sanitation practices.

3.4 Evaluation framework for sanitation access

To evaluate the odds of achieving universal access to sanitation by 2030, the study used the WHO/UNICEF Joint Monitoring Programme sanitation ladder as an analysis framework (WHO

& UNICEF, 2021). This framework classifies sanitation services into five levels which are safely managed, basic sanitation, limited sanitation, unimproved and open defecation (WHO & UNICEF, 2021).

Data collected from households were classified into these categories and measured against targets set under SDG 6.2 which aims for universal access to adequate and equitable sanitation by 2030 (United Nations, 2020). This comparison helped evaluate the current status of sanitation in the study area and determine the progress needed to reach the global target (WHO & UNICEF, 2023).

3.5 Target population and selection of participants

The target population for the study consisted of households in wards 8, 15, 17 and 20 of Chimanimani District targeting household heads or adult members responsible for sanitation decisions.

A multistage sampling technique was used to select participants. Initially, the wards were purposefully chosen based on their relevance to the study. Two villages within each ward were then selected randomly using a lottery method from a complete list of villages resulting in 8 study villages. ln each village, about 7 households were selected using systematic random sampling resulting in 56 households in total. A random starting point was chosen, with every nth household included based on the total number of households in the village divided by the nth term to get 7 households. This method ensured randomness while being practical in villages without formal household registers.

For the qualitative data collection, purposive sampling was used to select participants for focus group discussions and key informant interviews. This approach ensured that participants had relevant knowledge and experience with sanitation issues. For FGDs, participants were

intentionally selected to include a range of community members with relevant knowledge and experience. Criteria for selection included residence in the study area for at least five years, being 18 years or older, and representation across different household economic categories (poor, middle-income, better-off according to community criteria). For KIIs, participants were chosen based on their roles and expertise. Those included had direct involvement in sanitation planning, implementation, or governance in Chimanimani District.

3.6 Ethical considerations

The study adhered to ethical standards including informed consent, confidentiality and anonymity (Nicol, 2000).Institutional approval was obtained from Bindura University of Science Education through the department of Environmental Science. Permission was also obtained from Chimanimani Rural District Council and Chimanimani District Development Coordination Office (Appendix A). Confidentiality was protected by ensuring that no personal identifiers were included in the data. Participants were assured that their information would be used solely for academic purposes. Participation was voluntary and respondents could withdraw at any time without negative consequences.

3.7 Data collection

3.7.1 Questionnaire

Data collection took place over a specified period. Village meetings informed the communities about the study, its purpose, voluntary nature and data use. This raised awareness and helped with household visits. The researcher then visited the selected households, explained the study in the local language (Shona or Ndau) and invited household heads or adult members knowledgeable about sanitation to participate. Questionnaires were administered through face-to-face interviews

to accommodate respondents with different literacy levels. This method allowed the researcher to clarify questions when needed and ensure accurate responses.

3.7.2 Focus group discussions

For FGDs, participants were recruited through a defined process. Village heads and development committee members helped identify potential participants, ensuring diversity in age, household economic status, and experience with sanitation issues. The researcher personally invited selected individuals, explaining the FGD's purpose, expected duration (60 minutes), and voluntary participation. FGDs were conducted separately for men and women, as previous researches suggested that gender-separate discussions encourage more open sharing about sanitation topics in Zimbabwean rural areas (Mhembwe, 2024). FGDs were scheduled at convenient times for participants, typically early morning or late afternoon to fit with agricultural activities. At the start of each FGD, the purpose was reiterated, consent forms were signed, and participants were assured of confidentiality and their right to withdraw at any time.

3.7.4 Key informant interviews

For KIIs, relevant officials and organizational representatives were identified through district records and discussions with the Rural District Council. Official letters were sent to organizations and departments asking for permission to interview specific individuals. Interviews were arranged at times and locations convenient for the participants, often at their offices. Before each interview, the researcher explained the study, how the data would be used and obtained written consent, including permission for audio recording.

3.7.5 Observation checklist

Observations were made alongside other data collection methods. The researcher systematically recorded observations using the checklist and supplemented them with field notes.

3.8 Data Management

3.8.1 Preliminary data cleaning, capture and organization

Thematic analysis guided the examination of qualitative data gathered from key informant interviews and focus group discussions, using the framework outlined by Braun and Clarke (Braun & Clarke, 2021).The analysis was carried out using Braun and Clarke's six-phase framework from 2019, beginning with data familiarization , coding the data, identifying potential themes, reviewing and refining them and then clearly defining and labeling the final themes before producing the report. The method was selected because it provides flexibility for identifying patterns across diverse stakeholder perspectives, accommodates both sematic and latent meanings in data and is suitable for policy- oriented research where explanatory depth is needed (Chidya et al., 2020).However thematic analysis has been criticized for potential researcher subjectivity and inconsistent theme development (Nowell et al., 2017).ln this study subjectivity was addressed by using team based coding approach, maintaining an audit trail and triangulating themes with field notes to enhance credibility (Nowell et al., 2017).

Trained transcribers who had signed confidentiality agreements produced verbatim transcripts of the audio recordings in Shona and Ndau. To ensure accuracy and build familiarity with the data, the transcripts were checked against the original audio recordings and reviewed multiple times. Field notes written during data collection were digitized and appended to each transcript then manually coded in Word and Excel to maintain transparency and allow iterative engagement with the data. A preliminary code book was developed deductively from WASH frameworks like WHO/ UNICEF JMP service ladder and also from the study objectives. It was also inductively produced from recurring ideas in the transcripts. Codes were clustered into candidate themes based on shared meaning and their relation to the research question on" odds to achieve universal access".

A code log was kept in Excel to track frequency, co-occurrence and source (kll, FDG, ward). Two levels of theme review were conducted. To ensure thematic coherence, the extracts under each code were examined to confirm they fit logically with their assigned theme. On level 2, the entire dataset was re-read to assess whether themes captured the most salient patterns relevant to achieving universal access by 2030.Final themes were defined with clear scope and analytical narrative. Four main themes were generated, economic precarity and investment trade-offs, technological and environmental mismatch, governance fragmentation and socio-cultural norms and demand triggers. A final code book with 4 themes was achieved with definitions.

3.8.2 Statistical analysis

Quantitative analysis aimed to quantify the likelihood of rural households attaining universal sanitation access and identify key predictors. Household sanitation access status defined by WHO/UNICEF JMP service ladder (WHO/UNICEF, 2021), was the primary dependent variable and coded as binary (improved/basic sanitation facility versus unimproved/open defecation). independent variables included household demographics such as age, gender, educational level of household head; socio-economic factors like income and asset index and KAP Scores like sanitation knowledge, attitude and practice scores.

To determine the relationship between household sanitation access and demographic and socio-economic factors , binary logistic regression was used when the outcome had 2 categories and multinomial logistic regression was applied for three-category outcome because the JMP service levels could not be assumed to have proportional odds (Agresti, 2018).Logistic regression was chosen because it models categorical outcomes without requiring normal predictors (Hosmer et al., 2013).Model fit was assessed using the Hosmer -Lemeshow test and Nagelkerke R squared, while multicollinearity was checked using Variance inflation Factors. Odds ratios with 95%

confidence intervals were reported to quantify effect sizes. To examine the association between sanitation KAP scores and demographic data , Spearman's rank correlation coefficient was employed since it suits ordinal and non-normal data(Field, 2018).Significance was set at <0.05 and all analysis were run in IBM SPSS Statistics Version 26 (IBM Corp, 2019).

Data were cleaned in Excel, double entered and imported to SPSS. An asset index was created using PCA and KAP scores were summed after reverse coding with scale reliability checked via Cronbach's alpha. For logistic regression, linearity of the logit was tested, influential cases were identified and model building used invariable screening at p<0,25 followed by backward stepwise elimination in multivariable models.

The chosen methods are well established in WASH research for modeling binary outcomes such as access to improved sanitation and have been applied in Zimbabwean studies. Spearman's correlation complements regression by capturing associations with KAP data that are ordinal and rarely normal. Together regression for prediction and correlation for association provide the explanatory and inferential depth required to estimate the odds of meeting SDG6.2 by 2030.

CHAPTER 4: PRESENTATION OF RESULTS

4.0 Results

4.1 Demographic characteristics of respondents

Table 4.1 Demographic characteristics of the respondents(n=56)

Variable	Category	Frequency	Percentage (%)
Gender	Male	31	55.4
	Female	25	44.6
Age group	18-30	11	19.6
	31-45	24	42.9
	46-60	15	26.8
	60+	6	10.7
Main source of income	Farming	36	64.3
	Informal business	11	19.6
	Employed	5	8.9
	Other	4	7.2
Household size	1-4 members	17	30.4
	5-8 members	30	53.6
	More than 8 members	9	16.0
Education level	Primary	19	33.9
	Secondary	30	53.6
	Tertiary	7	12.5
Ward distribution	Ward 8	14	25.0
	Ward 15	14	25.0
	Ward 17	14	25.0

	Ward 20	14	25.0

Male respondents made up 55.5% of the sample, compared to 44.6% female. The largest age group was 31-45 years, accounting for 42.9% of respondents. Farming was the dominant source of income, representing 64.3% of the sample. More than half of the households, 53.6% had 5 to 8 members. Most respondents accounting up to 53.6 % left school at secondary level.

4.2 Current state of sanitation in Chimanimani District

4.2.1 Household access to toilet facilities

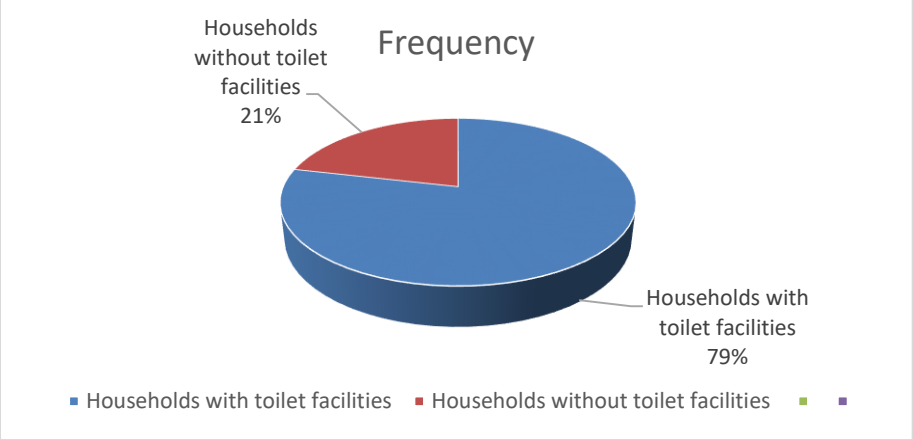

Fig 4.1 Household access to sanitation facilities (n=56)

The results indicate that 79% of households had some form of facility while 21% had no toilet facilities.

4.2.2 Type of sanitation facilitation used

Table 4.2 Types of sanitation facility used by households(n=56)

Toilet type	Frequency	Percentage(%)
Ventilated improved pit (BVIP) latrine	21	37.5
Pit latrine with slab	13	23.2
Pit latrine without slab	8	14.3

Flush toilet	2	3.6
Open defecation /no toilet	12	21.4

The findings show that BVIP latrines were the most common sanitation technology used by households accounting for 37.5% of respondents. Open defecation or lack of toilet facilities accounted for 21.4%.

4.2.3 Sharing of sanitation facilities

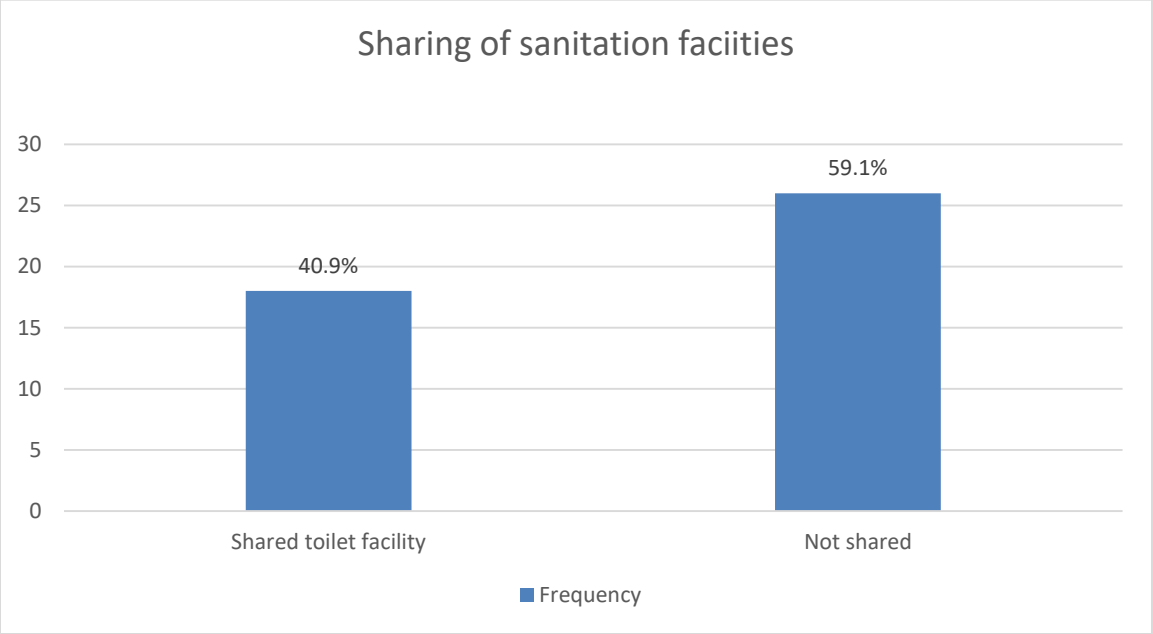

Fig 4.2 Sharing of sanitation facilities among households(n=44)

Among households with toilets 40.9% reported sharing sanitation facilities with other households.

4.2.4 JMP sanitation service ladder classification

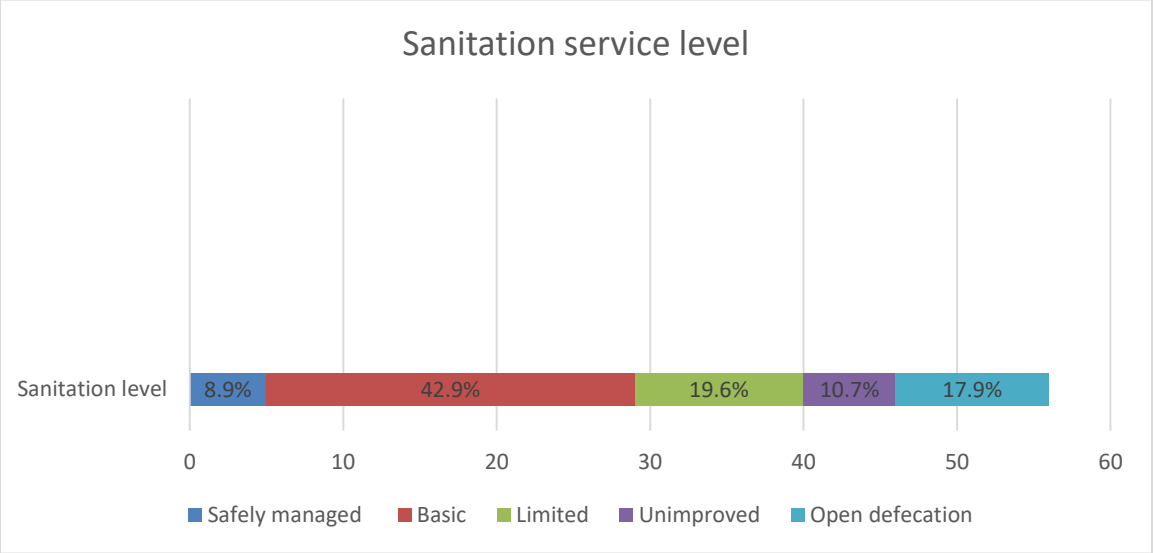

Fig 4.3 Classification of sanitation service level according to JMP sanitation ladder (n=56)

The findings show that only 8.9% of households had safely managed sanitation services while 42.9% had basic sanitation. Open defecation accounted for 17.9% of households.

4.2.5 Handwashing facilities and hygiene practices

Table 4.3 Availability of handwashing facilities and hygiene practices(n=56)

Variable	Category	Frequency	Percentage(%)
Presence of handwashing facility	Yes	33	58.9
	No	23	41.1
Handwashing materials used	Water only	15	26.8
	Water and soap	14	25.0
	Ash	4	7.1
Handwashing after toilet use	Always	20	35.7
	Sometimes	26	46.4
	Rarely	10	17.9

The results show that 58.9% of households had handwashing facilities while 41.1% did not. Only 25% of households used water and soap for handwashing.

4.3 Barriers affecting universal access to safely managed sanitation

4.3.1 Financial barriers

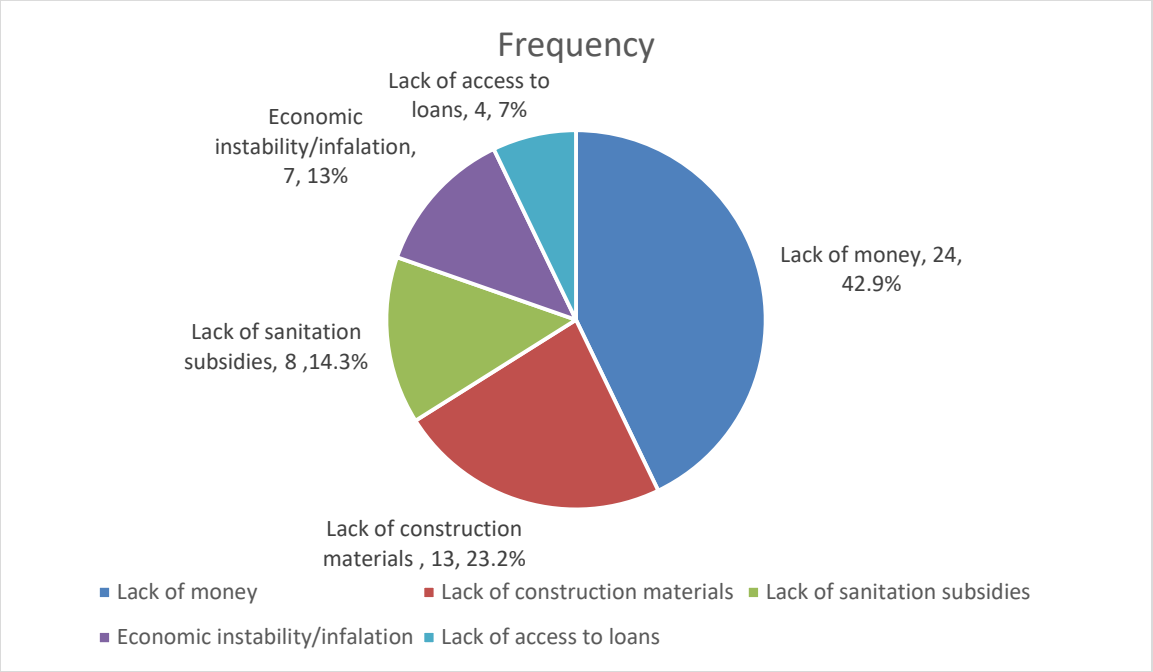

Fig 4.3 Financial and material challenges affecting sanitation services (n=56)

The findings show that lack of money was the most reported challenge affecting sanitation access adding up to 42.9% of households. Lack of construction materials and lack of sanitation subsidies were also major barriers.

4.3.2 Environmental and geographical barriers

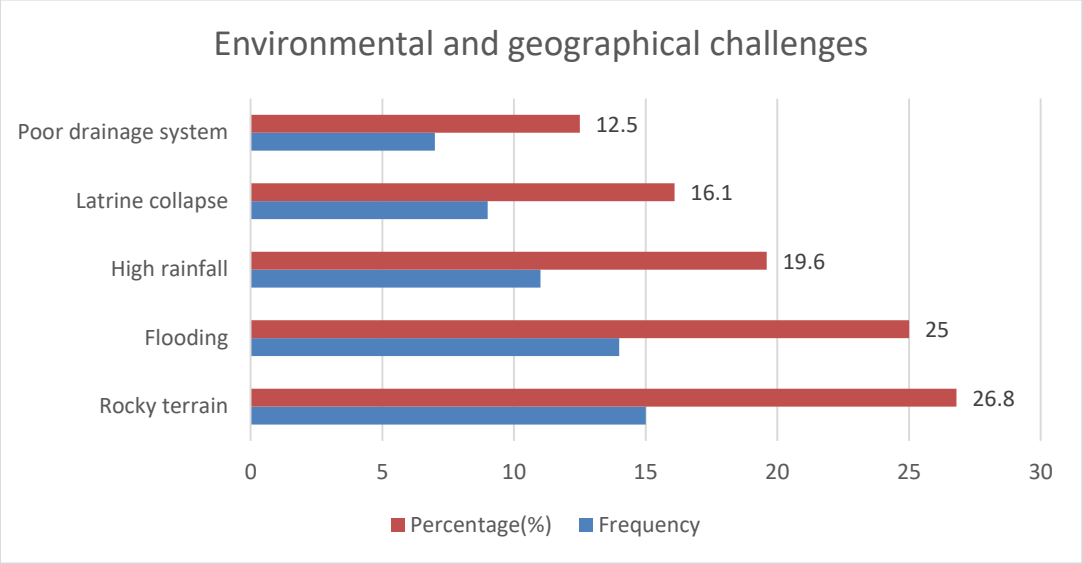

Fig 4.4 Environmental and geographical challenges affecting sanitation access

The figure above shows that rocky terrain about 26.8% and flooding (25.0%) were major environmental challenges affecting sanitation infrastructure

4.3.3 Institutional barriers

Key informant interviews revealed that sanitation programs in Chimanimani District faced funding shortages, inadequate staffing and limited monitoring capacity. Another issue reported was coordination challenges between institutions involved in WASH service delivery.

4.3.4 Social and cultural barriers

FGD participants reported that some households still practice open defecation due to long –held cultural practices and resistance to behavior change. Traditional leaders noted that although CLTS programs had improved awareness, some community members remained reluctant to adopt improved sanitation facilities.

4.4 Evaluation of Zimbabwe's roadmap toward universal sanitation

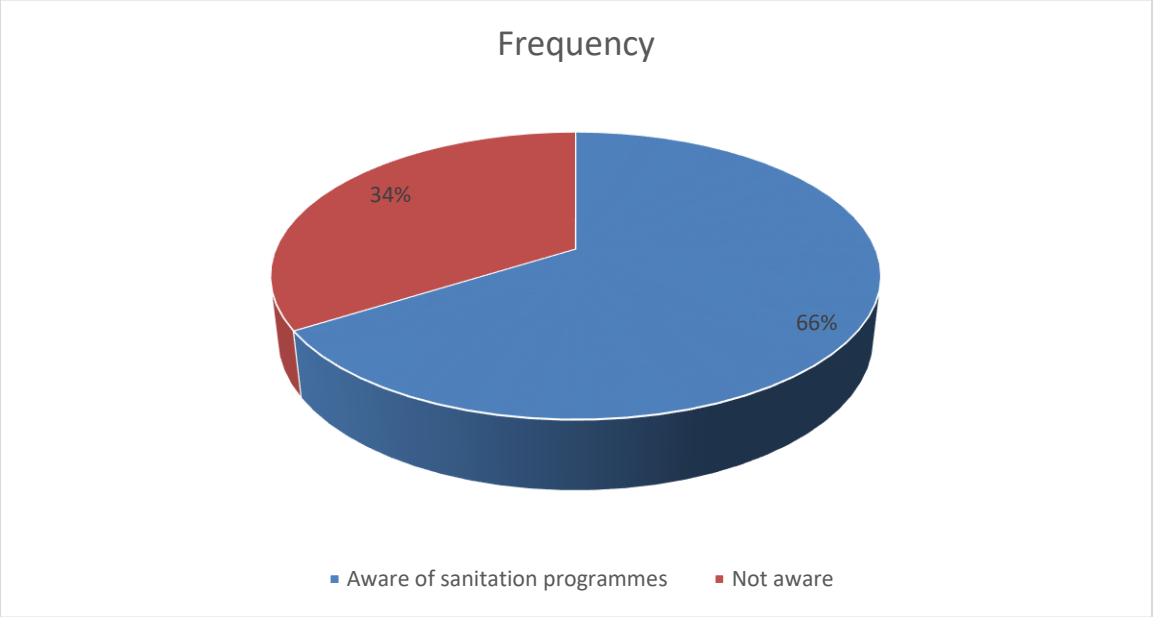

Fig 4.5 Awareness of sanitation programs and interventions (n=56)

The findings indicate that 66% of respondents were aware of sanitation programs implemented in their communities.

4.4.2 Perceptions on the possibility of achieving universal sanitation by 2030

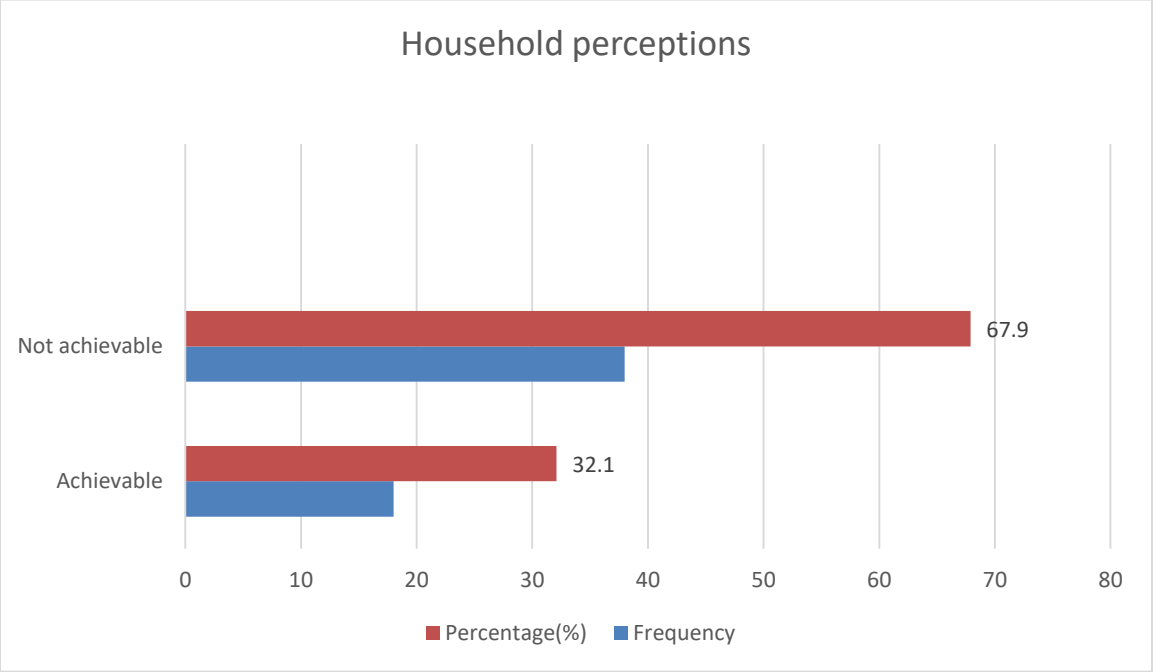

Fig 4.6 Household perceptions on achieving universal access to sanitation by 2030 (n=56)

The results show that the majority of respondents (67.9%) believed that universal access to safely managed sanitation by 2030 was unlikely to be achieved.

4.4.3 Support required to improve sanitation access

Table 4.4 Support required to improve sanitation access (n=56)

Type of support	Frequency	Percentage(%)
Financial assistance	41	73.2
Government programs	35	62.5
NGO support	28	50.0
Education and training	24	42.9

The findings show that financial assistance was most preferred intervention followed by governmental support programs

4.5 Observation findings

Observation results showed varying sanitation conditions across the study wards. Some households had clean and functional BVIP latrines while others used poorly maintained pit latrines without slabs. Evidence of open defecation was observed in some areas particularly near bush paths and behind big rocks.

Hand washing facilities were absent in several households and some available facilities lacked soap or water. Shared sanitation facilities were more common in densely settled villages. Several sanitation facilities showed signs of poor maintenance including cracked slabs, collapsed pit walls and leaking roofs. Observation findings also revealed that households with higher socio-economic status generally possessed more durable sanitation facilities than poorer households.

4.6 Statistical relationships between socio-economic factors and sanitation access

Logistic regression analysis showed that household income level, educational status of household head and access to sanitation awareness programs were positively associated with improved sanitation access. Households with stable income sources were more likely to own improved sanitation facilities compared to low- income households. Educational attainment was also associated with better hygiene practices and increased likelihood of toilet ownership.

4.7 Community experiences with sanitation access

4.7.1 Focus group discussions

FGD participants indicated that lack of financial resources was the major factor limiting access to improved sanitation facilities in Chimanimani district. Participants explained that many

households struggle to afford construction materials required for recommended sanitation technologies such as BVIP latrines. A male participant from Makotamo village, ward 8 aged between 18-30 years explained

"*People in this area know the importance of having proper toilets, but many families cannot afford the materials needed. Buying cement, pipes and roofing sheets is very expensive for us."*

Participants also noted that low household income forces families to prioritize immediate household needs such as food and school fees ahead of sanitation improvements. A female participant from Saurombe village ward 17 aged between 31-45 years remarked:

"*Most families survive through farming and small informal jobs. When money is available, it is mostly used for food, farming inputs and children's education before thinking about building toilets"*

Some participants explained that households often resort to constructing temporary pit latrines using weak local materials because durable sanitation facilities are unaffordable. A male participant from ward 20, Gudyanga village aged between 46-60 years stated:

'*People try to use available poles, mud and grass to make toilets because they cannot afford proper construction materials. During the rainy season some of these toilets collapse."*

Participants further highlighted that transport costs for construction materials worsen sanitation challenges in remote villages. A participant from ward 8, Zimundamasasi village aged 31-45 years explained:

“Even we manage to buy cement or vent pipes somehow, transporting them to our village which is remote and far away from the highway costs a lot of money. This discourages many households from improving their toilets.

FGD discussions also revealed that households affected by cyclone Idai continue to face sanitation difficulties because available resources are directed towards building better homes. A male participant from ward 15, Matsetso village aged between 46-60 years old noted:

“After cyclone Idai many families lost property and income sources. Rebuilding houses became more important than constructing improved toilets.”

4.7.2 Key informant interviews

Key informant interviews also confirmed that economic challenges reduced the ability of communities to invest in durable sanitation infrastructure. A healthy technician noted:

“*The biggest challenge is affordability. Many households rely on subsistence farming and incomes are too low to support improved sanitation construction.”*

It was also revealed that several institutional challenges affect sanitation service delivery. Respondents highlighted limited funding, inadequate staffing and weak monitoring systems. A rural district council official stated:

“*There are sanitation programs and policies in place but implementation remains slow because of financial constraints and limited resources.”*

NGO representatives also reported coordination gaps among institutions involved in WASH service delivery. One NGO officer from TSURO (Towards Sustainable Use of Resources Organization) remarked:

"Different organizations implement sanitation programs independently and this sometimes results in duplication or uneven coverage in wards of operation."

Another issue raised was on social and cultural barriers. A village head from ward 20 stated:

"*Some elderly people still believe that using bushes is normal especially in remote areas where this practice existed for generations."*

Regarding perceptions on achieving sanitation by 2030, a female village health worker form ward 17 added:

"Progress is being made slowly, but the rate of improvement is too low compared to the SDG targets.'

4.8 Statistical analysis of factors associated with sanitation access

4.8.1 Predictors of household toilet ownership

Table 4.5 Binary logistic regression results for household toilet ownership

Predictor variable	Odds Ratio(OR)	95% CI	p-value	Interpretation
Stable household income	2.41	1.18-4.92	0.016	Positive significant association
Participation in sanitation programs	1.96	1.04-3.72	0.038	Positive significant association
Higher socio-economic status	2.88	1.31-6.35	0.009	Increased likelihood of toilet ownership
Poor terrain	0.54	0.29-0.97	0.041	Reduced likelihood of improved sanitation

The Hosmer-Lemeshow goodness- of- fit test showed adequate model fit (p>0.05) while Nagelkerke values indicated moderate explanatory power.

4.8.2 Predictors of JMP sanitation service levels

Table 4.6 Multinomial logistic regression results for JMP sanitation service level

Predictor variable	Outcome variable	Odds Ratio(OR)	p-value	Interpretation
Higher educational level	Safely managed sanitation	2.17	0.021	Increased likelihood of improved sanitation
Higher asset index	Basic sanitation	1.88	0.033	Positive association
Participation in sanitation awareness programs	Safely managed sanitation	2.05	0.027	Increased sanitation access
Poor terrain	Open defecation/unimproved sanitation	0.48	0.044	Negative association

Higher education and participation in sanitation awareness program significantly increase the odds of using safely managed sanitation, with ORs of 2.17(p=0.021) and 2.05 (P=0,027) respectively. A higher asset index also raises the likelihood of having basic sanitation, OR =1.88, p=0. 033.In contrast poor terrain significantly reduces access to improved sanitation OR of 0,48 and p-value of 0.044.

4.8.3 Correlation between KAP scores and demographic variables

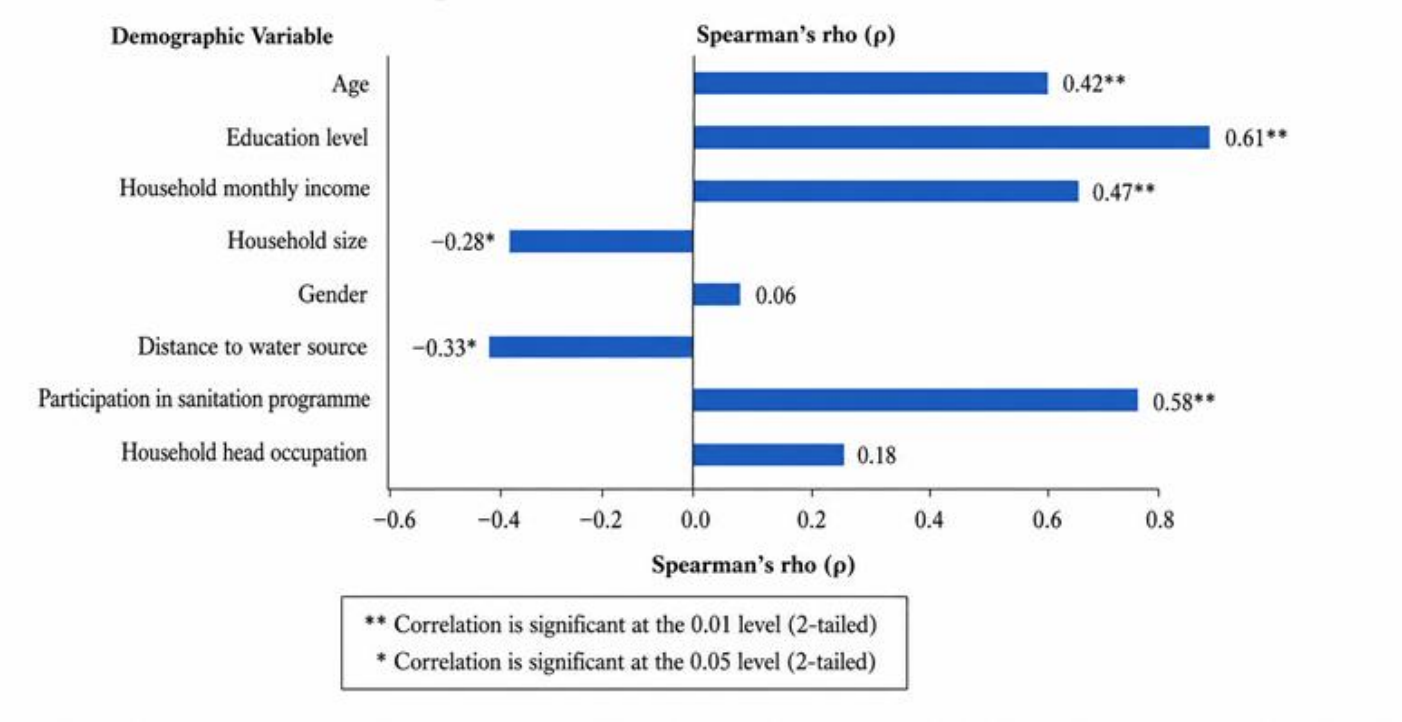

Fig 4.7 Spearman correlation coefficients between KAP scores and demographic variables

Education level has the strongest rho value at 0.61. Gender and household head occupation show weak, non- significant relationships.

4.8.4 Reliability and validity results for KAP scale

Internal consistency reliability

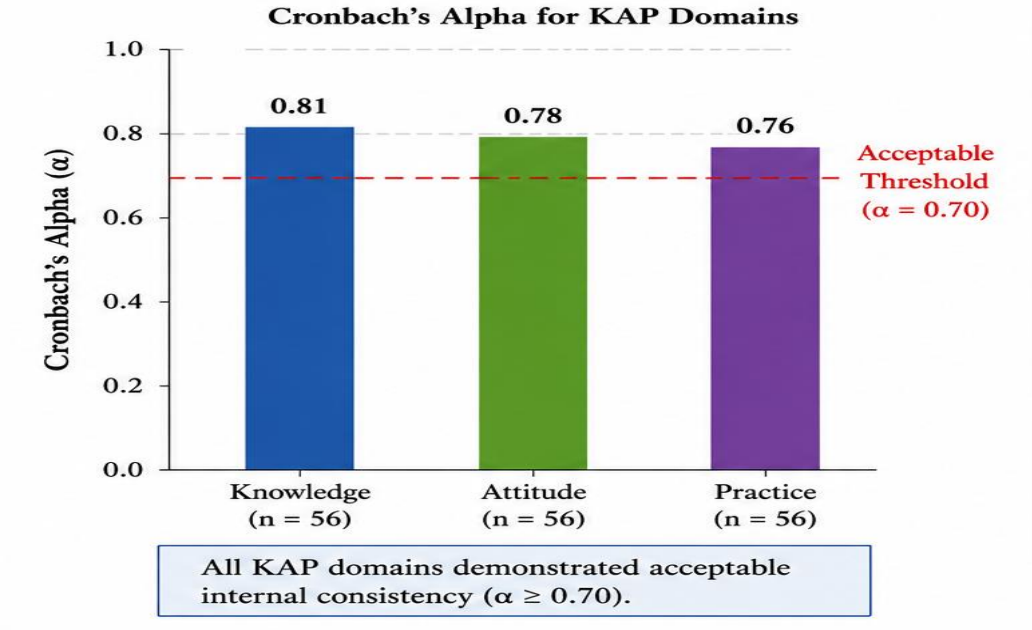

Fig 4.8 Acceptable Cronbach's alpha reliability coefficients and the contribution of PCA-derived asset index components

Construct validity

Kaiser–Meyer–Olkin (KMO) and Bartlett's Test of Sphericity	
KMO Measure of Sampling Adequacy	0.72
Bartlett's Test of Sphericity	
Approx. Chi-Square	412.35
df	78
Sig. (p-value)	< 0.001

KMO value (0.72) indicates adequate sampling adequacy (KMO > 0.60) and Barlett's test is significant ($p<0.001$) confirming suitability of the data for factor analysis (PCA).

CHAPTER 5: DISCUSSION

5. Discussion

5.1 Current state of sanitation access in Chimanimani district

The study showed that most households had some kind of sanitation facility, but very few had access to safely managed sanitation. Based on the JMP sanitation ladder only 8.9% of households were in the safely managed category, while 17.9% still practiced open defecation. This means sanitation access in Chimanimani district is still well below the SDG 6.2 target.

BVIP latrines were the most common type found which matches Zimbabwe's long history of promoting the Blair Ventilated Improved Pit latrine in rural programs. Kanda et al.(2022) reported the same pattern ,noting that BVIP latrines remain the dominant technology in rural areas .Still ,many households relied on unimproved pit latrines or open defecation mainly because they could not afford better options .These results line up with WHO/UNICEF JMP reports showing that rural Zimbabwe lags behind global targets for safely managed sanitation .The fact that open defecation persists suggests that progress toward universal sanitation has been uneven , even with existing policies and campaigns.

Many households (40.9%) also used shared sanitation facilities which the JMP classifies as limited services and not as safely managed. The high rate of sharing, points to ongoing gaps in equitable access. Hygiene practices were another weak point. Over half of households had handwashing facilities, but only a minority (25%) used soap and water consistently. Similar observations were made by UNICEF Zimbabwe (2024), which reported on low availability of hygiene facilities in many rural communities.

5.2 Financial barriers affecting sanitation access

Financial challenges emerged as one of the major barriers to improved sanitation. Most rural households struggle to afford cement, bricks, roofing materials, vent pipes and skilled labor. The high cost of construction standard BVIP latrines limits household investments in improved sanitation. FDG participants emphasized that communities affected by poverty often prioritize immediate livelihood needs such as food, school fees and farming inputs over sanitation infrastructure during periods of economic hardship. The findings support studies by Mundonde and Makoni (2024), who observed that poverty remains a major obstacle to sustainable sanitation investment in Zimbabwe. The findings therefore demonstrate that without substantial financial support mechanisms, many rural households may struggle to transition from unimproved sanitation facilities to safely managed sanitation.

5.3 Environmental and geographical challenges

The research showed that environmental and geographical conditions had a major impact on sanitation development in Chimanimani district. People living in mountainous and flood –prone areas said it was difficult to build and maintain long lasting sanitation facilities. Field observations revealed collapsed latrines, unstable pit structures and toilets damaged by floods especially in wards with steep slopes and loos soil. This matches findings by Mugambiwa and Tirivangasi (2022), who noted that climate change and environmental hazards are increasingly putting rural sanitation systems in Zimbabwe at risk.

Events like cyclone Idai and repeated heavy rains have highlighted how vulnerable sanitation infrastructure is, in disaster prone parts of Chimanimani. Floods frequently destroy pit latrines and contaminate nearby water sources, raising health risks for the community. These findings are supported by Chanza et al. (2020), who highlighted the severe impacts of cyclone Idai on WASH

infrastructure in Chimanimani. These results indicate that standard sanitation technologies may not always be suitable for environmentally fragile areas. Communities in Chimanimani require climate resilient and locally adaptable sanitation technologies capable of withstanding flooding and unstable terrain.

5.4 Institutional and governance challenges

The study identified institutional limitations as another major challenge affecting progress toward universal sanitation access. Key informants reported inadequate funding, weak coordination among stakeholders and limited technical capacity within local authorities. Although Zimbabwe has several sanitation policies and strategies implementation remains slow at district and community levels. Similar findings were reported by Dhoba (2022), who argued that fragmentation among WASH stakeholders often weakens rural sanitation service delivery. Government departments, NGOs and development partners often implement sanitation programs independently with varying approaches and priorities. This sometimes results in duplication of activities and inconsistent monitoring systems.

The findings further revealed that RDCs face severe resource limitations which affect sanitation monitoring, technical support and infrastructure development. This aligns with Chigwata (2011), who highlighted the operational challenges faced by local authorities in Zimbabwe. The study therefore suggests that stronger institutional coordination, improved financing and enhanced local governance systems are necessary for accelerating sanitation progress.

5.5 Social and cultural factors influencing sanitation practices

The findings revealed that social norms and cultural beliefs continue to influence sanitation practices within rural communities. Although awareness of sanitation benefits has improved through CLTS programs and hygiene education campaigns, 66.1% proved to be aware of them, some households still practice open defecation (17.9%).

Traditional beliefs, resistance to behavior change and perceptions regarding toilet use were also identified during FGDs as factors affecting sanitation uptake. Similar observations were reported by Osiemo et al (2023), who found that behavior change remains a major challenge in sanitation improvement programs .The role of traditional leaders , village development committees and community health workers was highlighted as important in mobilizing communities and promoting sanitation awareness .Communities with active leadership structures appeared more responsive to sanitation programs and hygiene campaigns .The findings also revealed that elderly persons and people living with disabilities faced additional sanitation challenges .Some sanitation facilities lacked accessibility features making them difficult to use for vulnerable groups. This supports findings by Muridzo et al. (2024), who reported inequalities in WASH access among vulnerable populations in Zimbabwe.

5.6 Feasibility of achieving universal access to safely managed sanitation by 2030

The majority of respondents (67.9%) believed that universal access to safely managed sanitation by 2030 is unlikely to be achieved under current conditions. This perception reflects the combined impact of poverty, environmental challenges and inadequate infrastructure and institutional weaknesses. The low proportion of households currently accessing safely managed sanitation services suggests that substantial progress would be required within a relatively short period to meet SDG 6.2 targets.

However, the study also identified positive developments that could contribute toward improved sanitation access. NGO interventions, government programs and financial assistance. The findings showed that financial assistance was most preferred and was supported by 73.2% of respondents. The findings suggest that achieving universal sanitation access remains possible only if major investments are made in rural sanitation infrastructure, behavior change programs, climate resilient technologies and institutional coordination. Without accelerated interventions, rural districts such as Chimanimani may continue to lag behind national and international sanitation targets.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The study assessed the odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030 using Chimanimani district as a case study. The findings revealed that while most households had some form of toilet , only a small number had access to safely managed services based on the WHO/UNICEF JMP sanitation ladder .Open defecation and use of unimproved toilets were still prevalent in several areas .Key barriers identified included financial constraints ,difficult geography ,climate related issues ,weak institutions and socio-cultural factors .Poverty and the high cost of building improved toilets discouraged household investments ,while environmental conditions such as mountainous terrain and flooding reduced the durability of sanitation facilities .Although hygiene education and CLTS programs increased community awareness , many households still lack the financial means and support to upgrade to safely managed sanitation .Weak coordination between institutions and limited funding also slow down implementation. In conclusion, under current conditions, rural Zimbabwe's chances of achieving universal safely managed sanitation by 2030 remain low. To speed up progress toward SDG 6.2, there is need for greater investment, stronger governance, climate resilient technologies and better community support systems.

6.2 Recommendations

Based on the study findings, the following recommendations are proposed:

- Government and development partners should expand funding for rural sanitation through subsidies, revolving funds and community based financing models to assist low –income households build better sanitation facilities.
- Climate resilient and locally adaptable sanitation technologies suitable for mountainous and flood- prone areas should be promoted in areas such as Chimanimani.
- Continuous sanitation and hygiene education programs should be strengthened through Community Led Total Sanitation (CLTS) approaches and involvement of traditional leaders to promote behavior change and reduce open defecation.

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APPENDICES

Appendix A: Data collection approval letters

Chimanimani Rural District Council

All correspondences should be addressed to the Chief Executive Officer

Email: chimanimanirdc@gmail.com
Web: www.chimanimanirdc.org.zw
Phone 026 – 2272/3

Stand No: 263
P.O BOX 65
Chimanimani

11 MAY 2026

Chimanimani Rural District Council

PO Box 65

Chimanimani

Dear Sir/ Madam

PERMISSION LETTER TO COLLECT DATA FOR ACADEMIC RESEARCH PROJECT

Project title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030

The Chimanimani Rural District Council has granted permission to **Chingema Eunice (B220081B),** a fourth year student at Bindura University of Science Education, in the Department of Environmental Science to do her research project in her area of specialization.

We trust that the research will be conducted professionally and data collected will be used for academic purposes only and should not be published without consent from Chimanimani Rural District Council.

Thank you

CHIMANIMANI RURAL DISTRICT COUNCIL
FINANCE DEPARTMENT
REVENUE OFFICE
P O BOX65, CHIMANIMANI
TELEPHONE 2272/3
DATE: 11/05/2026

MR. MWAIYANA

DEPARTMENT OF FINANCE

MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS

All correspondences should be directed to the **District Development Coordinator**

Telephone: 205 2251/2252/2569

Email:dachimanimani@gmail.com

ZIMBABWE

MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORK
Office of the District Development Coordinator
P.O.Box 20
CHIMANIMANI

15 May 2026

Chimanimani District Development Coordination Office

District Development Coordinator's Complex Chimanimani Village

Chimanimani

Dear sir/madam

PERMISSION LETTER TO COLLECT DATA FOR ACADEMIC RESEARCH PROJECT

Project title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030 - case study of Chimanimani District

The Chimanimani District Development Coordination Office has granted permission to **Chingema Eunice (B220081B)**, a fourth-year student at Bindura University of Science Education, in the Department of Environmental Science to do her research project in her area of specialization.

We trust that the research will be conducted professionally and data collected will be used for academic purposes only and should not be published without consent from Chimanimani District Development Coordination Office.

Thank you

DISTRICT DEVELOPMENT COORDINATOR
MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS
15 MAY 2026
P.O. BOX 20, CHIMANIMANI
TEL: 027205 2252/2265

B. Samson

For DDC- Chimanimani

Appendix B: Semi-structured open- ended questionnaire

BINDURA UNIVERSITY OF SCIENCE EDUCATION

Researcher: CHINGEMA EUNICE

Physical address: Bindura University of Science Education, P. Bag 1020, Bindura Zimbabwe

Email: echingema@students.buse.ac.zw

Cell: 0778934218

Supervisor: Dr. A. Kanda: Department of Environmental Science, Bindura

Email: akanda@buse.ac.zw

Cell: 0772 773 560

Research title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030- case of Chimanimani district

Objective: To collect household-level information on sanitation access, usage practices, and challenges affecting progress toward universal sanitation coverage by 2030.

Introduction

My name is Eunice Chingema.l am coming from Bindura University of Science Education as a final -year student there , doing a Bachelor's of Science Honors degree in Safety Health and Environmental Management.ln partial fulfilment of my degree requirements l am carrying out a research study titled *"The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030"*.The results of this study could inform policy and practice related to rural sanitation development in rural areas. I kindly request your voluntary participation by sharing information relevant to this study.

Ethical statement

This study has been approved by Bindura University of Science Education through the Department of Environmental Science. All information you share will remain confidential and anonymous. Your voluntary participation indicates that you understand the purpose of the study, your role in it and that you have given informed consent. You are free to withdraw from the survey at any point if you wish to do so. Participation will take approximately 30 minutes of your time.

Section A: Demographic Information

Instruction to Participant

Please put a tick against a response indicating your response for each item.

1. Ward:

☐ 8 ☐ 15 ☐ 17 ☐ 20

2. Gender of respondent

☐ Male ☐ Female

3. Age

☐ 18–30 ☐ 31–45 ☐ 46–60 ☐ 60+

4. Household size: _____

5. Main source of income:

☐ Farming ☐ Informal business ☐ Employment ☐ Other (specify) _____

Section B: Access to Sanitation Facilities

6. Does your household have a toilet facility?

☐ Yes ☐ No

7. If yes, what type of toilet do you use?

☐ Flush toilet

☐ Ventilated Improved Pit (VIP) latrine

☐ Pit latrine with slab

☐ Pit latrine without slab

☐ Other (specify) _____

8. Is the toilet shared with other households?

☐ Yes ☐ No

9. If no toilet, what do you use?

☐ Bush/open defecation

☐ Neighbor's toilet

☐ Other (specify) _____

Section C: Usage and Hygiene Practices

10. Is the toilet regularly used by all household members?

☐ Always ☐ Sometimes ☐ Never

11. Do you have a handwashing facility?

☐ Yes ☐ No

12. If yes, what is used?

☐ Water only

☐ Water and soap

☐ Ash

13. How often do you wash hands after using the toilet?

☐ Always ☐ Sometimes ☐ Rarely

Section D: Challenges in Sanitation Access

14. What challenges do you face in accessing proper sanitation?

☐ Lack of money

☐ Lack of materials

☐ Cultural beliefs

☐ Water shortages

☐ Poor soil/terrain

☐ Other (specify) _____

Section E: Perceptions and Future Outlook

15. Do you think your household can upgrade to a better toilet?

☐ Yes ☐ No

16. What support would help improve your sanitation?

☐ Financial support

☐ Education/training

☐ Government programs

☐ NGO support

Appendix C: Focus group discussion guide

BINDURA UNIVERSITY OF SCIENCE EDUCATION

Researcher: CHINGEMA EUNICE

Physical address: Bindura University of Science Education, P. Bag 1020, Bindura Zimbabwe

Email: echingema@students.buse.ac.zw

Cell: 0778934218

Supervisor: Dr. A. Kanda: Department of Environmental Science, Bindura

Email: akanda@buse.ac.zw

Cell: 0772 773 560

Research title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030- case of Chimanimani district

Objective: To explore community members' shared experiences, perceptions, and challenges regarding access to safely managed sanitation in rural areas.

Name of facilitator: ……

Date: …….

Introduction *(5 minutes)*

Start time: ……

Opening remarks and introductions (Facilitator, All)

Purpose of the study and ethical issues (Facilitator)

Entertain a few questions for clarification (All)

Discussion topics *(45 minutes)* (Audio recording starts here)

1. How do people in your community manage sanitation?

2. What types of toilets are commonly used here?

3. What challenges do households face in building or maintaining toilets?

4. Are there cultural beliefs affecting sanitation practices?

5. How do people view open defecation?

6. What role does the community play in improving sanitation?

7. What changes are needed to achieve proper sanitation for everyone?

8. Do you think universal sanitation by 2030 is achievable? Why or why not?

Facilitator summarizes key points raised

Vote of thanks (5 minutes)

End time ……

Appendix D: Key informant interview guide

BINDURA UNIVERSITY OF SCIENCE EDUCATION

Researcher: CHINGEMA EUNICE

Physical address: Bindura University of Science Education, P. Bag 1020, Bindura Zimbabwe

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Cell: 0778934218

Supervisor: Dr. A. Kanda: Department of Environmental Science, Bindura

Email: akanda@buse.ac.zw

Cell: 0772 773 560

Research title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030- case of Chimanimani district

Objective: To assess institutional perspectives on the policies, strategies, and challenges influencing the achievement of access to safely managed sanitation in Chimanimani District

Introductions *(5 minutes)*

Interviewee details (position, years in the field, area of responsibility)

Purpose of the interview and the study

Consent for audio recording

Main interview questions

For Government officials *(25 minutes)*

1. What is the current sanitation situation in Chimanimani District?

2. What programs exist to improve sanitation?

3. What challenges are faced in implementing sanitation projects?

4. How effective are current policies and interventions?

5. What progress has been made toward achieving SDG 6.2?

6. What barriers prevent universal access to sanitation?

7. What strategies can improve sanitation access by 2030?

8. What is your assessment of the likelihood of achieving universal sanitation?

For NGO representatives *(20 minutes)*

1. What sanitation and hygiene programs does your organization implement in rural Zimbabwe?

2. Which geographic areas and population groups are covered by your sanitation interventions?

3. What approaches or strategies does your organization use to promote safely managed sanitation?

4. How does your organization collaborate with government institutions, communities, and other stakeholders in sanitation programs?

5. What major successes has your organization achieved in improving rural sanitation access?

6. What key challenges hinder the implementation and effectiveness of sanitation interventions in rural areas?

7. What lessons have been learned from your organization's experience in sanitation programming?

8. What measures are in place to ensure the sustainability of sanitation interventions after project completion?

9. In your opinion, what should be done to accelerate progress toward universal access to safely managed sanitation in rural Zimbabwe by 2030?

For traditional leaders *(20 minutes)*

1. What role do traditional leaders play in promoting sanitation and hygiene practices within the community?

2. How would you describe community attitudes and practices regarding sanitation and toilet use?

3. What cultural beliefs or traditions influence sanitation practices in this community?

4. How effective has the Community-Led Total Sanitation (CLTS) approach been in improving sanitation in your area?

5. What major barriers prevent households from accessing or using safely managed sanitation facilities?

6. How do traditional leaders encourage community participation in sanitation programs and projects?

7. What challenges do traditional leaders face when promoting improved sanitation practices?

8. In your opinion, what should be prioritized to improve sanitation access in rural communities?

9. What recommendations would you give to the government and development partners to help rural areas achieve universal access to safely managed sanitation by 2030?

For community health workers *(20 minutes)*

1. Can you describe your experiences in promoting sanitation and hygiene practices within the community?

2. What methods or approaches do you use to encourage behavior change regarding sanitation and hygiene?

3. How do community members generally respond to sanitation and hygiene education messages?

4. What sanitation practices or behaviors have improved in the community over time?

5. What challenges or constraints do you face when carrying out sanitation and hygiene promotion activities?

6. Are there cultural, economic, or social factors that affect the adoption of improved sanitation practices? Please explain.

7. Based on your observations, what sanitation interventions or approaches have been most effective in the community?

8. What approaches or strategies have not worked well in promoting safely managed sanitation?

9. What recommendations would you give to improve sanitation access and help rural Zimbabwe achieve universal access to safely managed sanitation by 2030?

Appendix E: Observation checklist

BINDURA UNIVERSITY OF SCIENCE EDUCATION

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Cell: 0778934218

Supervisor: Dr. A. Kanda: Department of Environmental Science, Bindura

Email: akanda@buse.ac.zw

Cell: 0772 773 560

Research title: The odds for rural Zimbabwe to achieve universal access to safely managed sanitation by 2030- case of Chimanimani district

Observation Area: Household/Community

Instruction to the observer

Tick under the appropriate column to record observations or add comment where appropriate

	Indicator	Observed		Comments
		Yes	No	
1	Presence of toilet facility			
2	Type of toilet facility			
3	Cleanliness of toilet facility			
4	Evidence of use			
5	Presence of handwashing facility			
6	Availability of soap and water			
7	Signs of open defecation nearby			
8	Waste disposal system present			
9	Overall compound hygiene			
10	Evidence of toilet facility sharing			