**BINDURA UNIVERSIRTY OF SCIENCE EDUCATION**

**FACULTY OF SCIENCE EDUCATION**


# INVERSTIGATING WASTE AS A SOURCE OF LIVELIHOOD: GLENVIEW 3

**A RESEARCH PROJECT SUBMITTED**

**BY**

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**TO**

**A DISSERTATION SUBMITTED TO DEPARTMENT OF GEOGRAPHY. BINDURA UNIVERSITY OF SCIENCE EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE BACHELOR HONOURS DEGREE IN DEVELOPMENT STUDIES AND GEOSCIENCES.**

**SUPERVISOR**

DR MAPONGA

**Declaration**

I Phaera Winnet, hereby declare that this project i**s** my own original work and that it has not been copied or taken from any other sources without acknowledgement

Signature…….

Date ……

**DEDICATION**

This is a special dedication to Phaera family and Kudzaiishe Chigumbura.

You’re greatly loved

**Abstract**

*Waste management has become a crucial aspect of sustainable development in communities across the world. Solid waste, in particular, has potential as a source of livelihood for communities through various revenue generation activities. The first objective of this study is to determine the contribution of waste management to livelihoods in communities. Solid waste can be a resource for deriving various sustainable revenue streams such as resource recovery, composting, and recycling. The second objective of the study is to assess the contribution of solid waste to livelihoods in a community. Solid waste can be utilized to generate value-adding products such as compost, biogas, and fuel, providing a source of income to the community. The third objective is to determine the conditions critical for benefits from waste revenue in a community. Economic, social and environmental factors influence the success of waste management in a community. The researcher used survey guides, pilot guides, interviews, secondary data analysis and focus group discussion to collect data from 50 informants from Glenview 3 community, waste collectors, recyclers, and government officials. Glenview 3 communities has benefited a lot from waste, by engaging in waste management activities, communities created employment opportunities and generated income, thus contributing to their livelihoods. The researcher also found that many people that are in waste have low education level, male are more than women in this sector. Through these recommendations Glenview 3 reaches a higher level in waste development: the government has to engage in public awareness and education for people to know the importance of waste to enhance their livelihoods. The government has to develop policies and regulations that support the development of waste-based livelihoods, such as laws that promote waste segregation and recycling for securing the people in waste sector. The council and other environmental organization has to create opportunities for waste pickers, creating opportunities for waste pickers to participate in waste management systems, such as by providing them with access to waste collection and disposal facilities. Support waste-based enterprises, financing, technical assistance, and market linkages. Improve waste collection and disposal. Promote waste segregation at source for the waste collectors to work in good conditions.*

**ACKNOWLEDGEMENTS**

My acknowledgement goes to my project supervisor Dr Maponga (RBM) for his supervision during the course of developing this project. I would also like to thank my lovely family for their support and encouragement. Most sincere thanks go to Kudzaiishe Chigumbura for the moral support and not forgetting Nicholas T Zimunya. I would also want to extent my deepest gratitude to the people of Glenview 3 who participated in this research. Thank you so much for being there for me when I needed you the most. I would like to thank the Almighty God who has taken me this far.

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# CHAPTER 1

# INTRODUCTION

## 1.0 Introduction

This research focuses on the exploitation of waste to sustain livelihoods, how the communities in waste sector operate and the challenges they face in order to improve in their livelihoods. This chapter explores on the background of the study, statement of the problem and the aims and objectives of the study how to help in finding ways to reduce these problems that they are facing in the industries. This is a way to promote self-employment and improving the living standards of communities around Glenview 3

## 1.1 Background to the study

The study focuses on waste as a source of livelihood. Zimbabwean economy has experienced important operational uprising in the last decade that has inevitably forced many people to engage in waste sector as waste is easily accessible. Waste is generated everywhere in communities, where people meet and in households .waste becomes a new sense as it does not help the community but it affects the land, water resources and the environment.

Exploitation of waste has improved livelihoods of people in different places and communities. These livelihoods includes agriculture, trade, recycling, collecting, value addition in order to secure water, food, fodder and medicines which are needed in order to sustain lives. Factors that influence the effective use of waste includes socio-economic, cultural, institutional, physical and environmental. The researcher noticed that people are now relying more in the waste collecting and recycling as people are doing it as a source of living every day and this has prompted many companies to opened for this waste collecting and recycling such as WASTINNOVA located at Westgate area D Bluffhill, Monte Rosa Recycling in Coventry road Workington and the Clean City Africa at Princess drive Newlands. People in Zimbabwe are now viewing waste as a major potential source of entrepreneurship and way to earn a living, hence waste has become a source of revenue for both the uneducated and the educated. This research explores the waste as source of livelihood in the Zimbabweans lives especially in Glenview 3 community. The researcher attempts

to propose ways of making this waste a better source of livelihood, through the study, an attempt will be made to promotion of waste collection and recycling activities that opens up a waste as source of livelihood to people as a solution to poverty, unemployment and poor way of living chances to the skilled and unskilled and educated and uneducated people and communities.

## 1.2 Statement of the problem

Waste is a disposal problem management which has potential to enhance livelihood in areas it is generated. There are opportunities for waste recovery and earning incomes for waste collection and eventually sale it to sustain livelihoods. However the benefits realized from the waste needs to be assessed to determine how the sector could be supported as many people are unemployed. Hence this prompted the researcher to carry out a study to determine the contribution of waste management to livelihoods, to analyze how Glenview 3 community is operating in this waste sector and to determine the conditions critical for benefits from the waste revenue in Glenview3. There is need to do research on challenges being faced in waste collection and recycling as they do not have assistance from the government, Non- Governmental Organizations (NGOs) and the private sector.

## 1.3. Aim and objectives of the study

### *1.3.1. Aim of the study*

The main aim of this study is to evaluates the contribution of waste in promoting the sustainable livelihoods in Glenview3 where waste generated areas.

### *1.3.2. Specific objectives*

- To determine the contribution of the waste management to livelihood in Glenview 3 community.
- Assess the contribution of SW to livelihoods in GV 3
- To determine the conditions critical for benefits from the waste revenue in Glenview 3.

### *1.3.3. Research questions*

- What are the benefits and gaps being closed by waste collecting and recycling sector in Glenview 3?
- How effective is this waste sector in the Glenview 3, community's ways of living.
- What are the factors, regulations and actions that could be imposed as to improve this waste collecting and recycling in Glenview 3.

## 1.4. Scope of the study

In Glenview 3 there is a problem in waste management from 2017 up to today 2023. The Harare city council is failing to manage waste in Glenview 3 from households and this has prompted people to dispose their domestic waste everywhere around Glenview 3 especially in residential areas and shopping center. Failing to manage this waste has caused many problems to the people for example land degradation, land pollution, water pollution and creation of diseases such as cholera and Ebola. The Glenview 3 community started to engage in waste recycling and collecting as a way to collect this domestic solid recyclable waste as to sustain their livelihoods. Therefore the study shall shed light in the challenges, the benefits of this domestic solid waste sector, and causes of the growth of this waste collecting and recycling sector and identify the different activities being encountered in this sector. The study will also help in bringing consciousness to the people in Glenview 3 to the way forward in domestic waste collecting and recycling sector and the ways to improve the waste collecting and recycling sector and its activities. This will help to work in the direction of relieving difficulties being faced by these people in Glenview 3. The study will bring lasting solutions towards the poor living standards.

## 1.5. Significance of the study

The study could assist people in Glenview 3, the government and the stakeholders as the study shows that people could benefit from the domestic solid waste by creation of employment, conserving the natural resources and reduction of water, air and land pollution through solid waste recycling, waste collection, proper disposal, good waste management and imposing hence attaining Sustainable Development Goal (SDG) goal number 13 Climate change. The study would help to identify ways to improve the way the domestic solid waste operators to earn a living

through proper waste management and to establish laws to govern the proper disposal of solid waste and to protect the waste collectors and recyclers.

### 1.6. Delimitations of the study

Waste management has emerged as a potential source of livelihoods for many people. Waste was once considered as a liability, is now turned into an opportunity for generating income and creation of jobs. Solid waste such as organic waste like agricultural waste and food waste can be used in agriculture as soil conditioner from the compost whilst inorganic waste such as paper, plastics, and metal can be used for recycling and sold to the manufacturers to produce new products.

Waste management provides employment opportunities for the people who are engaged in waste collection, sorting, recycling and processing. In developing countries waste management is often carried out by informal workers who earn their livelihoods by collecting and selling recyclable materials. Waste can also create opportunities to the small and medium sized enterprises that are involved in waste collecting and recycling.

Waste management provides a source of income for people who would be unemployed and underemployed. It also helps to improve the living conditions of people by reducing the amount of waste that is dumped in their communities. Waste management promotes social inclusion by providing opportunities for marginalized groups like women and youths.

Waste management can help to reduce the amount of waste that is dumped in landfills, which reduces greenhouse gas emission and helps to mitigate climate change. Recycling also helps to conserve the natural resources such as timber, water and minerals.

### 1.7. Limitations of the study

The researcher faced the challenge of unwillingness of the people in this sectors to review the truth on how they operate in the waste sector. The responders provided false information as they were feeling ashamed of how they operate in their business, for instance waste picking in the dumpsite. The researcher faced violence from these people as they thought people want to take over their business. Also they refused to review their true identity due to the upcoming elections for the political reasons. Therefore this has led to false results as all these have led to the false information.

However the researcher assured these people that domestic solid waste collecting and recycling is very important and beneficial this was for them to disclose more about themselves and their work. Also the researcher produced her national identity card and school identification card along with the data collection letter as proof that this had nothing to do with the upcoming election or with no connections with politics rather it was for her academic reasons.

## 1.8. Definition of terms

***Waste***

Waste is defined as material, substance or by products that are no longer useful or desired according to environmental protection agency.

Waste can also be defined the unwanted domestic solid or unusual domestic solid material that can be recyclable.

**Domestic waste and house hold waste**

Domestic waste and household waste refers to the waste generated from the residential properties or households (NEM-WA, 2008).

Domestic and household waste originates mainly from residential areas and households.

***Livelihood***

Livelihood refers to the means, activities and entitlements by which people make an adequate living for themselves (Seshamani, 1997).

Livelihood can also be defined as the jobs or works created from waste that are done by communities to earn a living.

## 1.9. Chapter Conclusion

In conclusion the chapter reviews that there is need for research help to improve the benefits that could be generated from materials that could otherwise be for no use and to find the solutions to difficulties faced in this domestic solid waste. Hence there is need for this research to close the loopholes that are still in this waste management sector

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

This chapter provides a detailed description of the theoretical framework used in this research, its principles, gaps closed by the theory and its weaknesses in this study research and the countries that recognize waste as a source of livelihood.

## 2.2 Sustainable Livelihoods framework

The sustainable livelihood frame work was adopted to ensure that waste management is not only environmentally sustainable but also socially and economically sustainable. Sustainable livelihoods framework (SLF) is widely used for analyzing and designing sustainable livelihoods interventions. The framework considers five keys assets that people use to make a living that are human, social, natural, physical and financial (DFID, 1999). These assets are interdependent and can be used to create different types of livelihoods strategy. The Sustainable Livelihoods framework is highly relevant to solid waste management because it provides a holistic approach to understanding the complex interaction between different factors that affect the livelihood of Glen View 3 community. The Sustainable Livelihoods framework helps to identify the vulnerabilities of Glen View 3 such as poverty, social exclusion and environmental degradation which inform the development of targeted intervention to address these vulnerabilities.

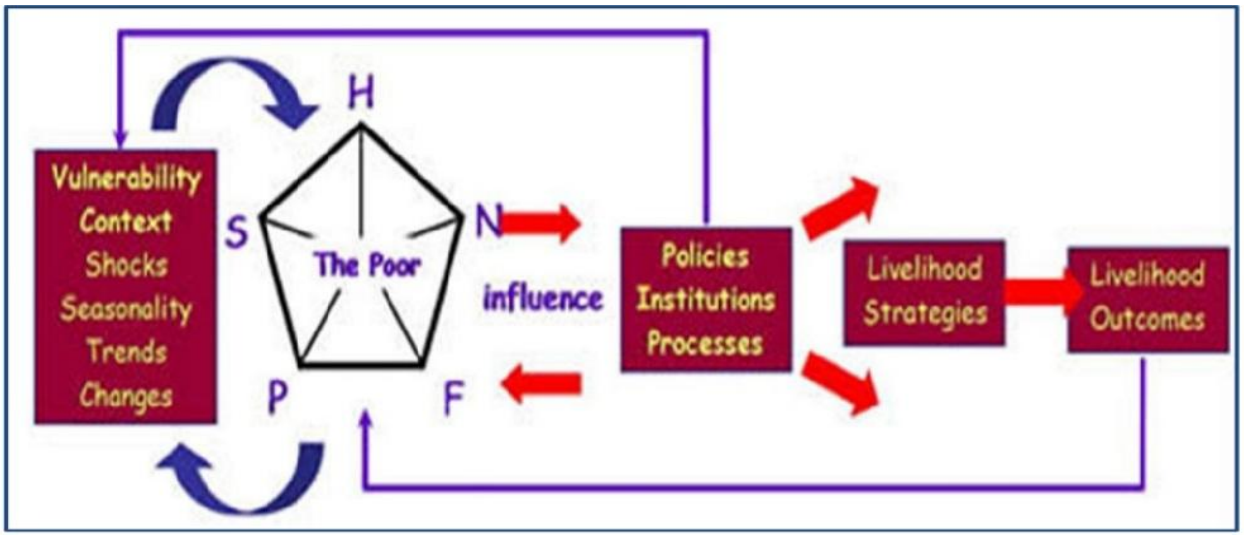



***Figure 2.1: The Sustainable Livelihood Framework Process (Source: IFAD, 2016)***

***Human Assets:*** Human assets refer to the skills, knowledge, and health of individuals and communities. In the context of solid waste management, human assets are essential for creating sustainable livelihoods. Waste management activities require a range of skills, including waste segregation, recycling, and composting. Waste collectors need to have skills knowledge and physical to collect to transport waste safely and efficiently (Medina & Silvia 2017). Therefore, training and capacity building programs are essential for empowering communities to manage waste effectively. Additionally, waste management activities have significant health risks, and communities must be educated on the proper use of personal protective equipment (PPE) and safety protocols.

***Social Assets:*** Social assets refer to the relationships, networks, and institutions that people use to access resources. In solid waste management, social assets are essential for creating sustainable livelihoods. Waste management activities require strong community participation and collaboration. Therefore, involving communities in waste management activities can create social capital and build trust. Additionally, partnerships with local authorities, NGOs, and private sector organizations can provide access to resources and technical support.

***Natural Assets***: Natural assets refer to the natural resources that people use to make a living. In the context of solid waste management, natural assets are essential for creating sustainable

livelihoods. Waste management activities rely on the availability of natural resources such as land, water, and energy. Therefore, sustainable waste management practices must be designed to minimize the use of natural resources and reduce environmental impacts.

***Physical Assets:*** Physical assets refer to the infrastructure, equipment, and tools that people use to make a living. In the context of solid waste management, physical assets are essential for creating sustainable livelihoods. Waste management activities require appropriate infrastructure and equipment, such as waste collection vehicles, recycling facilities, and composting units. Therefore, investments in physical assets are necessary for creating sustainable waste management systems.

***Financial Assets:*** Financial assets refer to the financial resources that people use to make a living. In the context of solid waste management, financial assets are essential for creating sustainable livelihoods. Waste management activities require a range of financial resources, including capital investments, operational costs, and revenue generation. Therefore, sustainable waste management systems must be designed to generate revenue streams that can support their operation and maintenance.

This theoretical framework is directly applicable to this study because it demonstrates the context in which many of the formally unemployed Glen view 3 waste collectors, transporters, and recyclers are quickly transitioning to waste management as a source of income. As a result, policymakers should instead create the necessary supportive and integrative environments to aid the poor in escaping poverty traps and ending poverty cycles rather than victimising and criminalising their survival strategies. SLF emphasises on the importance institution and policies in sharping livelihood outcomes. In the context waste management, policies and regulation affect the ability of waste picker to collect and transport as well as their health and safety conditions under which they work. For instance policies that promotes formalization and recognitions of waste picker's organization help to improve their working condition and increase their bargaining power (Medina & Silvia 2017).

### 2.3 Guiding principles of sustainable livelihood framework

The Sustainable Livelihoods Framework (SLF) is a useful tool for understanding and addressing poverty and sustainability issues. When it comes to waste as a source of livelihood, the SLF

suggests that waste can be transformed into a resource for income generation and job creation, provided that certain conditions are met. According to a study by (Ghosh, et al. 2017), the following principles are important for applying the SLF to waste as a source of livelihoods:

1. ***Diversification:*** Waste-based livelihoods should be combined with other income-generating activities to reduce risks and increase resilience.

2**.** ***Equity:*** Waste-based livelihoods should benefit the poor and marginalized communities, who often bear the burden of waste management.

3. ***Sustainability:*** Waste-based livelihoods should be environmentally sustainable, using appropriate technologies and practices to minimize negative impacts.

4. ***Empowerment***: Waste-based livelihoods should empower communities and individuals, providing opportunities for skill development and decision-making.

5. ***Participation:*** Waste-based livelihoods should involve the participation of all stakeholders, including waste generators, waste pickers, and policy makers**.**

**2.4 Strength of the Sustainable Life Framework**

The Sustainable Livelihoods Framework (SLF) provides a comprehensive approach to analyzing and addressing poverty and sustainability issues. When it comes to waste as a source of livelihood, the SLF offers several strengths in its application. According to a study by ( Narayan, et al. 2000), the following strengths of the SLF are particularly relevant to waste-based livelihoods:

1**.** ***Holistic and multidimensional***: The SLF considers the multiple dimensions of poverty and livelihoods, including economic, social, environmental, and institutional factors.

2. ***Participatory:*** The SLF emphasizes the importance of involving all stakeholders in the analysis and decision-making process, including waste generators, waste pickers, and policy makers.

3**.** ***Empowering:*** The SLF seeks to empower communities and individuals by providing opportunities for skill development and decision-making.

4. ***Context-specific:*** The SLF recognizes that livelihood strategies and opportunities vary depending on the context, and encourages tailored interventions that take into account local conditions and resources.

5. ***Sustainable:*** The SLF promotes environmentally sustainable livelihoods by emphasizing the importance of appropriate technologies and practices to minimize negative impacts**.**

## 2.5 Gaps in the Sustainable Livelihood Framework

While the Sustainable Livelihoods Framework (SLF) provides a useful tool for analyzing and addressing poverty and sustainability issues, there are also some gaps in its application to waste as a source of livelihoods. According to a study by (Wilson and Velis, 2015) some of the gaps in the SLF when applied to waste-based livelihoods include, lack of attention to gender, limited consideration of informal sector dynamics, insufficient focus on health and safety, inadequate recognition of policy and regulatory frameworks, minimal attention to waste reduction. The Sustainable Livelihoods Framework provides a useful tool for designing sustainable waste management systems that ensure environmental, social, and economic sustainability. By considering the interdependence of human, social, natural, physical, and financial assets, waste management activities can be designed to create sustainable livelihoods for communities. However, the implementation of sustainable waste management systems requires political will, institutional support, and community participation. Therefore, it is essential to involve all stakeholders in the design and application of sustainable waste management systems.

## 2.6 Classification of waste collectors/ pickers around the world

- ***Landfill waste collectors /pickers***

Landfill waste pickers these are the waste pickers who picks re-usable waste in dumpsite (Webster 2012).

- ***Street waste collectors***

Street waste collectors recover re-usable from assorted waste in bins there are on streets; some they make appointments with residential people before they throw away their bins and may have the full right to use waste (Women in Informal Employment: Globalizing and Organizing, 2016).

- ***Doorstep waste collectors***

Doorstep waste collectors, collects re-usable waste in households door-to-door selective the waste they need they work in partnership with municipalities and membership-based organizations of waste collectors. For instance, Indian municipality started this creativity, associations had an agreement with office buildings for them to collect large amounts of re-usable materials using trucks (Women in Informal Employment: Globalizing and Organizing, 2016).

❖ ***On route/truck waste collectors***

On route/truck waste collectors are a documented collection organizations and teams who separate the re-usable from household waste as to enrich wages. They be categorized as informal waste collectors who have been approved to gather materials along with the collection crews (Women in Informal Employment: Globalizing and Organizing, 2016).

❖ ***Itinerant buyers***

Itinerant buyers these are type of waste collectors who takes re-usable waste from households and pay them money. They work on scheduled time and days and with fixed routine they usually use motor vehicles to transport their waste (employment: Globalizing and Organizing, 2016).

## 2.7 Material collected by the waste collectors

The material being collected by waste collectors depending on what they can sell or use at home (Schenck and Blaauw, 2011). The writers identified metal, glass, plastics, paper and cardboard boxes as some of the materials that can be sold by waste collectors. These resources can also be used in households to add goods such as foods, pots, clothes, pans, and furniture. Some of materials are being used for household purposes such as, buckets and bottles they can be used for water storage. Cupboard boxes and metals can be used as construction tools. Most of obtained materials is being be sold to the itinerant buyers or recycling companies as they buy cardboard boxes, scarp metals and plastic bottles. Therefore, itinerant buyers and the recycling companies considers what the waste collectors collect (Schenck & Blaauw, 2011; Viljoen, Blaauw & Schenck, 2019).

## 2.8 Countries recognizing waste collectors

Many countries across the world have recognized waste as a source of livelihoods and have developed support systems accordingly. For instance, in Brazil, waste pickers (Catadores) have been recognized for their work in waste management and have been joined in waste management system. This does not only creates employment opportunities but also reduces waste generated, leading to a more sustainable living. (Ferrer et al., 2017)

Another example is India's informal sector of waste pickers who collect and sort recyclables, improving the waste management system and contributing to the economy. The country also has established policies to promote and support waste-to-energy technologies and composting facilities. (Nema & Sharma, 2019)

In addition to this, Germany is known for its pioneer measures in waste management and resource recovery initiatives. The country has set high recycling targets (up to 63% of municipal waste) and has implemented a comprehensive 'extended producer responsibility' approach, where producers are responsible for the proper disposal of their products, encouraging the use of environmentally sustainable materials. (Henze et al., 2020).

Other countries, such as Japan, South Korea, and the Netherlands, have also implemented various successful waste management policies and practices. These nations recognize waste as a valuable resource that can be recovered and reused, thus creating economic opportunities while promoting sustainability. (Chen et al., 2019)

In conclusion, countries around the world have recognized the potential of waste management as a source of livelihood and have put measures in place to support and promote the waste sector. These policies not only benefit the economy but also encourage a more sustainable way of living and reducing waste.

**2.10 Summary of the chapter**

This chapter gives a comprehensive explanation of the (SLF) as the theoretical framework analysis in this research. The SLF was established by Robert Chambers in the mid-1980s at the Institute of Development Studies with the determination of fueling the efficiency of development. It was recognized to form and improve organization’s hard work to eradicate deficiency. The framework has five main mechanisms which are the livelihood asserts weakness context, processes, transforming structures livelihood tactics and livelihood outcomes. Strengths and gaps of the framework was evaluated. The SLF was used to demonstration the findings of the research and the data was be obtainable according to its five components.

# CHAPTER 3: METHODS AND MATERIALS

## 3.1 Introduction

This chapter delivers a comprehensive account of research approaches used to collect, analyze, interpret and report the findings on the analysis of waste as a source of livelihoods in Glenview 3. The researcher used thematic data analyses.

## 3.2 Description of the study area

Glenview is one of the suburbs in Harare, is densely populated with a mix of formal and informal settlement. The physical structure of Glenview is characterized by narrow roads with heavy traffic congestion and inadequate waste handling facilities. Socioeconomically, most inhabitants in Glenview lack access to desirable income generating opportunities. As a result, they resort to informal waste collecting and processing, contributing to a thriving informal waste economy. Social-economic challenges in Glenview has contributed to a social structure where people rely on each other for goods and services, with some individuals specializing in waste collection and others in in waste processing. This informal system has become a critical source of livelihoods in Glenview.

According to a study by Mudimu et al. (2018), the informal waste economy is a significant contribution to waste management in Glenview, with over 60% of households waste collected and managed informally. These findings echo the sentiments of other studies conducted in development in developing countries that link informal waste management to poverty reduction and livelihoods.

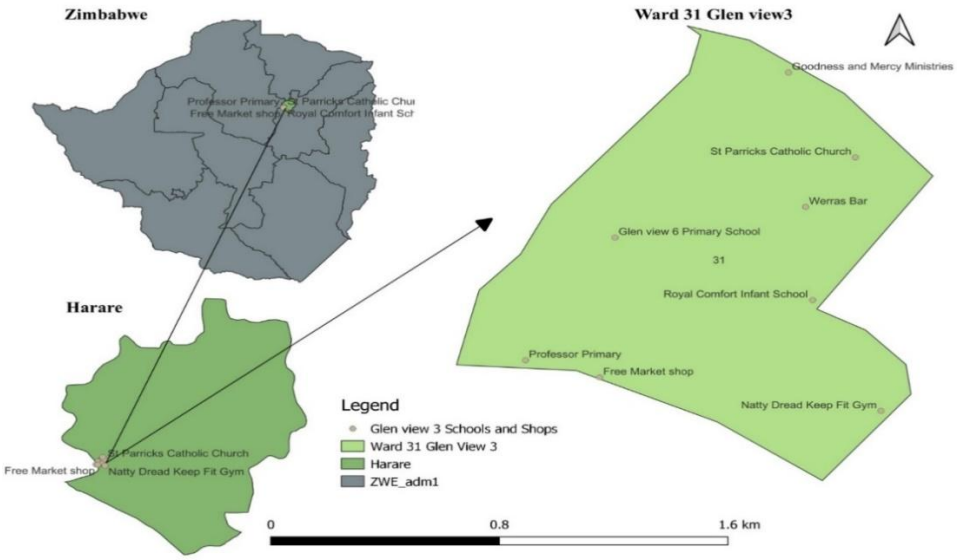



***Figure 3.1: Location of Glenview***

### 3.3 Research design

The research used a hybrid design for waste as a source of livelihood would involve both quantitative and qualitative methods to gather comprehensive data the research is predominantly qualitative with some statistical graphs. Descriptive survey was also used to explore waste as a livelihood strategy Glenview 3. Hybrid research enables to gather both quantitative and qualitative data which provides a comprehensive understanding of potential of waste as source of livelihood. It is also used triangulate data from different sources which enhances the validity and reliability of findings. (Creswell & Plano, 2018) Hybrid design also increase validity and reliability of research findings by compensation the limitation of each method

### 3.4 Procedures

The section will explore on the different data collection procedures, sampling, data analysis and how the data were validated. The researcher used interviews, pilot guide, focus group surveys and secondary data analyses for collecting data in the field research. The researcher employed convenient sampling technique that is non-probability sample methods were the sample is taken from a group of people easy to conduct or to reach. The researcher did the pilot test for data collection tools to insure that the survey questions and interviews are clear and easy to understand. The researcher interpreted the data findings, and trends and make imperial conclusions based on

the findings and made possible feasible recommendation for improving waste management as a source of livelihoods.

### *3.4.2. Ethical considerations*

In order to safeguard the human rights and self-worth of the research contributors, the researcher followed these ethical considerations:

***Informed consent***: The basics of agreement specified that, participating in the study will be unpaid; they have the freedom and right to decline or withdraw at any point of the study and agreement will be in writing. The participants was being told this before the questioning started and they were even translated into simple language that they would understand (shona) as some were uneducated. For this research to also yield vigorous findings the researcher had to follow certain procedures guided by ethics in the development practitioner profession. "Social sciences ethical issues are general and complex since as data has to be obtained not at the expense of human being" (Williams et al.1995, p.30). Hence, go-ahead should always be allowed to the researcher before any research or interviews begin. Authorization to conduct the research was obtained from the Glenview 3 councilor and the head of geography department at Bindura University of science. Respect, they were guaranteed that the information would be used by the researcher and the supervisor

***Confidentiality:*** Data that was collected was kept safe by the researcher. The researcher and the supervisor were the only people who have access to the information and the information was only used for the academic reasons only. The data was kept in the researcher's computer and phone which had passwords. Participation was unpaid and study participants were well-versed that they could pull out their information from the research at any time without penalty.

***Harm reduction***: discussions about one's life or personalities, connections have got some risk. Hence the researcher had find ways to safeguard participants from those risks by informing them if they feel uncomfortable or experience psychosomatic during the questioning they can ask for help. The times for group interviews were negotiated first with the waste collectors and recyclers to avoid them from losing work.

## 3.5. Population and Sampling

Population and sampling are important aspects of waste management as a source of livelihood, through studying the population of waste collectors and their activities can be developed. Sampling can assist in identifying the types and quality of waste, enabling innovative approaches to recycling and repurposing, leading to opportunities for generating income improving the standards of living among waste collectors.

### *3.5.1. Study Population*

The researcher employed convenient sampling technique that is non-probability sample methods were the sample is taken from a group of people easy to conduct or to reach. A population is made up of the greater group of all people. The researcher visited the dumpsites continuously until data saturation. Data saturation is a point where the researcher collects the data until no new insights emerges. The researcher puts into consideration the gender aspect of the waste collectors age, interests and other sources of income and challenges faced (Graziano & Raulin, 2010; Wyon & Gordon, 2013).

### *3.5.2. Sampling*

The researcher used convenience sampling, also known as Accidental Sampling or Haphazard Sampling (McGrath, Polit & Beck, 2010). This is a type of non-probability or non-random sampling where associates of the target population who meet specific standards, for example easy accessibility, availability of given time, geographical closeness, and willingness to participate are included for the determination of the study. The researcher visited the dumpsites continuously until data saturation. The researcher collected data from sufficient number of participants and analyze and new participants that were found were no longer adding any new information or insights to the findings. The researcher used convenience sampling to collect data from contributors who are easily available to the researcher supported by (Sim & Wright, 2000; Dörnyei, 2007). The researcher engaged the participants that are waste collectors, at the Willowvale road dumpsite on the days of the interview. The sample criteria for waste collectors were people over the age of 8 years and who were willing to participate voluntarily.

### 3.6. Data collection

The researcher used various data collecting tools that were available for monitoring waste as a source of livelihoods. These data collecting tools includes survey guide, pilot guide, interviews, focus group discussions and secondary data analysis.

#### *3.6.1. Survey guide*

A survey was used by the researcher for the types of waste generated in a particular area, how waste is managed and the extent to which waste management contribute to livelihoods. The survey involved the admin of a questionnaire, which required information on the waste collectors and recyclers' socio-economic profile in terms of gender, age and working hours even level of education as well as exploring their livelihood.

#### *3.6.2. Pilot guide*

A pilot study is described as a small study to test study procedures, data collection instruments, sample recruitment approaches, and other research methods in preparation for a bigger study

The questionnaire was piloted on waste in Glenview 3 there were 5 waste collectors and recyclers. The pilot study helped the researcher to better prepare for the follow-up studies as regards organization, connection with municipalities, and preparation of fieldworkers. The pilot study helped the researcher to familiarize with the area and the hotspots for illegal dumpsites and entities which evolved from waste management. Since there were no variations made to the questionnaire following the pilot study. The data composed from the pilot study was also used in the final instruments to collect data.

#### *3.6.3. Interviews*

The researcher used interviews to gather qualitative data on the experiences of individuals and communities who are involved in the waste management as a source of livelihood. The researcher conducted 20 interviews

### *3.6.4. Focus Group Discussion*

The researcher used focus group discussion to gather data on the challenges being faced by waste collectors and recyclers and the impacts of waste management on livelihoods. The researcher conducted 8 focus group discussion

### *3.6.5. Secondary Data Analysis/Document review*

The researcher used secondary data such as reports, studies, and publications on waste management and livelihoods which were analyzed to gain insights into the contribution of waste management on livelihoods. The researcher appreciated the waste generation, collection, transportation, disposal, and characterization data archives from Harare City Council.

## 3.7. Data analysis

Thematic content analysis is a method used to identify and analyze patterns or themes in qualitative data such interviews, focus group, and open ended survey responses. The process involves identifying recurring patterns, grouping them into themes and interpret their meanings. It is commonly used in social sciences and provides valuable insights into people's attitudes and behaviors.

## 3.8. Validity and Reliability of the results

To avoid biasness the researcher employed mixed methodology data triangulation for data validation and reliability. The researcher focused on common thematic issues and used collaborative and empirical evidence to strengthen the key study arguments. Data triangulation was used with help from a variety of data sources which includes interviews, questioners and surveys, written documents and focus groups. Findings were incorporated and any limitations in the data was compensated for by the strength of other data sources thereby increasing validity and reliability of the study. The researchers used the pilot study to assess the validity of the questionnaire; an analysis of the information provided which was undertaken to make clear directions, response categories or question wording when needed.

## 3.9. Composition of the sample frame

The table 3.1 shows the summary of the composition of a sample frame

**Table 3.1 Composition of a sample frame**

| Informant category | Number of elements in sample | Percentage of sample |
|---|---|---|
| **Waste Collectors** | **35** | **70%** |
| **Government officials (EMA)** | **3** | **6%** |
| **Entrepreneurs (waste recyclers)** | **5** | **10%** |
| **Community members** | **5** | **10%** |
| **Local authorities** | **2** | **4%** |
| **Grand Total** | **50 informants** | **100%** |

With the exception of government employees, who had an 80% response rate, all informant groups had response rates of 95% or higher for the study. This was explained by their hectic schedules, which made it challenging to interview them because they had to report for national responsibilities. (ZEC projects)

### 3.9. Conclusion

This chapter aimed on methods for data collection and themes and validation sample size the determination of the chapter was to illustrate the procedure and approaches that was used for the study and to validate why the researcher selected methods and model was used. The complexity of using both qualitative and quantitative methods in this study served a great importance in producing effective and reliable information that can possibly be used in persuading the waste management sector in improving the livelihoods in glenview3 waste collectors and giving self-esteem to their source of livelihoods. Rich data made from the SLF analysis produced new insight and understanding on the current situation that affects the livelihoods of Glenview 3 waste collectors and recyclers. This chapter has helped to find out that the people inn Glenview3 are still backwards towards waste collecting as they do not have full equipment that can help them to

produce at large scale and they have not yet develop the waste sector to bring them more income for their livelihoods.

# CHAPTER 4: DATA PRESENTATION, ANALYSIS AND DISCUSSION

## 4.1. Introduction

This chapter presents and analyses research data, interprets emerging data patterns and draw conclusions from the data. Data are presented in tables, pie charts, bar graphs and boxes. It behind a thin veil of mist on:

- To determine the contribution of waste management to livelihoods in Glenview 3.
- Asses the contribution of solid waste to livelihoods in Glenview 3.
- To determine the conditions critical for the benefits from waste revenue in Glenview 3.

## 4.2. The contribution of waste management to livelihoods in Glenview 3

Waste collection and recycling sectors aims to reduce the amount of waste sent to landfills and promote sustainable practices by recovering and reusing materials. This have numerous benefits, including reducing greenhouse gas emissions, conserving natural resources, creating jobs, and improving overall environmental health. However, there may be gaps in the system such as inadequate infrastructure, lack of public awareness and education, and inadequate policies and regulations.

Measures to improve waste management and create a source of livelihood is to implement recycling programs and incentivize individuals and businesses to participate, awareness campaigns, training, road shows and conducting clean up campaigns. This creates job opportunities in recycling facilities and reduces the amount of waste that ends up in landfills. Another measure is to promote composting and encourage the use of compost in agriculture, which improve soil health and increase crop yields, creating opportunities for small-scale farmers and gardeners. Additionally, promoting the use of reusable products and reducing single-use plastics can also help reduce waste and create a market for sustainable products

### *4.2.1. Creation Employment*

Creating jobs as waste collecting and recycling creates jobs in the collection, sorting, processing, and transportation of waste. This helps to stimulate economic growth and reduce unemployment rates. Closing the loop as recycling helps to close the loop by creating a circular economy where waste is turned into new products. This reduces the need for virgin materials and creates a more sustainable system.

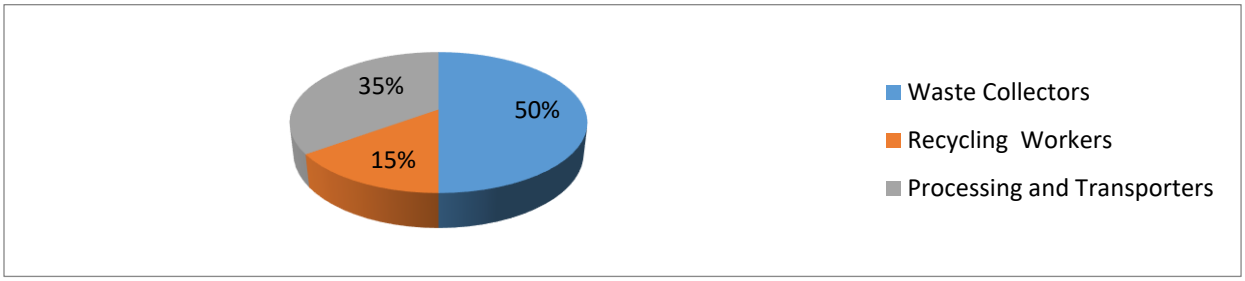



Figure 1: Distribution of Employment in Solid Waste Management in Glen View 3

The data presented in Figure 1 show that there are 50 employees in the solid waste management sector in Glen View 3. The majority of employees are waste collectors (50%), followed by recycling workers (35%) and processing and transportation workers (15%).

Waste collection and transportation of waste is labour- intensive task and requires a large workforce. Waste picker pickers and waste collectors are among the frontline workers in the waste management industry in Glen View 3 and are involved in the collection and segregation of waste. These workers are often from low income background and face significant occupational hazards in their work. It is naïve to ignore the fact that they play an essential role in eliminating waste from the streets and controlling pollution. This was also discovered by (Pankaj et al., 2019).

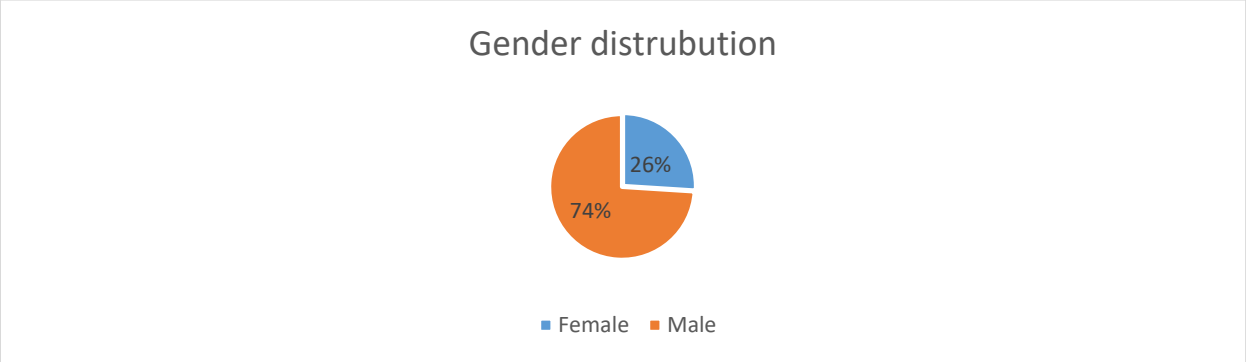
Furthermore recycling activities offer opportunities for skilled and semi-skilled workers. Recycling involves turning waste into valuable resources by recovering and reusing materials such as plastic, papers, glass and metal. Recycling activities requires specialized knowledge and skills in areas such as waste sorting, processing and marketing. This was also discovered by (Chauhan & Pandey, 2015) recycling requires a range of workers, including technicians, engineers, managers and marketers.

*I have been working as waste collector for over a decade now, and it has been my only source of income. Although the work is health hazardous, it has allowed me to provide for my family*

*and send my children to school. Waste collection has given me the opportunity to work for myself, without having to rely on a boss or company to provide for me. I am able to negotiate my own prices for the waste I collect, and I am able to work at my own pace. However, there are also challenges that come with this type of work. The lack of regulation and safety measures often puts collectors at risk of cholera, and the fluctuating prices of waste and refuses can make it difficult to make a consistent income. Despite these challenges, I am grateful for the opportunity to work as waste collector. It has allowed me to support my family and community, and I hope that one day, the government will recognize the importance of this industry and provide more support and regulation to ensure our safety and success."*

### 4.3. Gender distribution

Gender plays role on waste management as a source of livelihood in Glen View 3 as source women often have different roles in waste management, and these roles affect their income and quality of life and their prospects.




The profession is predominantly male profession as shown in the figure 4.1 as male constitute 74% while 26% are female engaging in solid waste management as source of livelihood. This was also discovered by (ILO, 2016), women are underrepresented in waste management jobs worldwide with men occupying the majority of the positions in the sector. This is because of the nature of the profession which pushes away women to engage on such activities. It is naïve to ignore the fact that societal values and norms also scares women away from the occupation.

The nature of waste management work, such as waste collection and transportation, is physically demanding and require heavy lifting, which may be perceived as inappropriate for women. Additionally, waste management work exposes workers to hazardous and unsanitary conditions,

which may discourage women from pursuing careers in the sector. Moreover, societal values and norms also play a role in discouraging women from engaging in waste management activities. Gender stereotypes and discrimination limit women's access to education and training opportunities in waste management, and cultural norms may discourage women from engaging in activities that are seen as traditionally male-dominated.

The underrepresentation of women in waste management jobs is a significant issue that needs to be addressed to promote gender equality and inclusive economic growth. Policymakers and stakeholders take steps to promote the participation of women in waste management activities, such as providing training and education opportunities, promoting safer work environments, and challenging gender stereotypes and discrimination.

### 4.4. The effectiveness of solid waste to Glenview 3, community's ways of living

The waste collecting and recycling sector is highly effective in promoting sustainable living within Glen View 3 communities. Waste management as source of livelihood in Glen View 3 had a ripple effect.

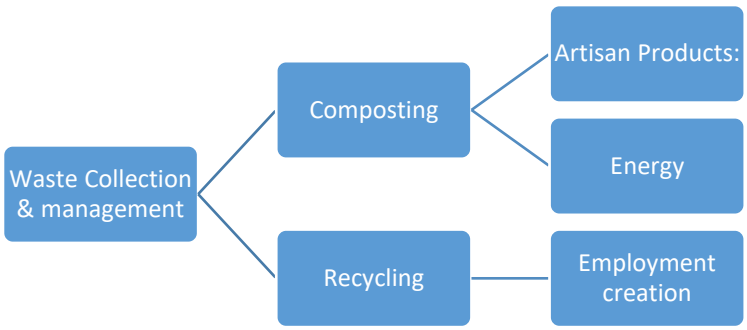



***Figure 4.2: Ripple effect of Waste management and recycling on the economic prospects of Glen View 3.***

Waste management had ripple effect as it led to evolvement of other livelihoods such as the ripple effect of effective waste management can create numerous opportunities for livelihoods in Zimbabwe. Here are some ways in which this can be achieved:

- Recycling as waste management created an opportunity for recycling, which involves turning waste materials into new products. Through recycling, individuals in Glen View 3 earn a living by collecting recyclable waste materials such as plastics, glass, and papers and selling them to recycling companies.
- Composting as effective waste management also provide an opportunity for composting, this involves turning organic waste materials into compost. Composting sold as fertilizer, which is used in farming, gardening, and landscaping.
- Waste Collection as collecting and disposing of waste in Zimbabwe also provide livelihoods to people who operate waste disposal companies. They collect waste from households, business premises, and public places such as markets, schools, and hospitals, which created employment opportunities in Glen View 3.
- Artisan Products: Businesses also turn waste into creative artisan products, such as sculptures, jewelry, and clothes, which can be sold to the public.
- Energy as waste is also turned into energy, which create opportunities for people to work in waste-to-energy companies in Glen View 3 biogas production.

In Glen view 3, waste management has the potential to create numerous livelihood opportunities, particularly for those in the informal sector. This was also discovered by Mbohwa and Mohee (2011), waste management generate income and employment for individuals involved in waste collection, recycling, and composting. One example of this is the Harare-based company, Tsakani Mashaba Waste Collection, which employs over 130 people in waste collection and disposal (Munhundarima, 2019). Additionally, the recycling industry in Zimbabwe has the potential to create even more jobs and generate income. For instance, Greenline Africa, a Zimbabwean recycling company, employs over 500 people in waste recycling which was also discovered by (Munhundarima, 2019).

Waste management as a source of livelihood also contributes to poverty reduction in Glen View. As noted by Mbohwa and Mohee (2011), waste management provides opportunities for income generation and entrepreneurship, which lead to poverty reduction. In turn, this contributes to economic growth and development in the country. According to a report by the Ellen MacArthur

Foundation, "The New Plastics Economy: Rethinking the Future of Plastics," transitioning to a circular economy can create economic benefits of up to $4.5 trillion by 2030. This includes value creation for businesses, jobs in the recycling and waste management sector, and savings from reduced environmental costs.

| |
|---|
| Initially I used to collect waste (marabi) from the neighbourhood and take it to the landfill. It was a low paying job and I struggle to make ends meet. However, after attending a training programme on Solid Waste Management, I learnt about the concept of waste segregation and recycling. So I started collecting recyclable waste such as plastic bottles, metal scrap, paper and cardboard separately.<br>I would then sell to Dieter recycling companies who paid $0.35 per kg plastic bottles, $0.65 per kg metal scrap which is good prices. With this additional income I was able to provide better food and education for my family. Moreover I saved enough to buy a small vehicle to transport waste which further improved my efficiency and earning capacity. |

**4.5. Source of Solid Waste**

Positive transition of economic activities in Glen View 3 is leading to waste generation of plastic waste, card boxes and scrap metal from supermarkets, wholesales and industries. The increase in waste generation indicates that solid waste management is sustainable in a long term because of the availability of waste for recycling. Key informants supported that source of waste is increasing in Glen View 3 especially of plastic due to packaging from supermarkets and wholesales.

HCC health officer (one) revealed that; *'Development of commercial businesses for example supermarkets growth in Glen View 3 indicates that source of plastics will continue to be available in a long term and the challenges we are facing as HCC to manage waste indicates that waste collection for recycling will remain in a long run'*

Pro Plastic manager indicated that; *'Plastics remains available because it is used for packaging of pet drinks, grocery bags and fast food containers to mention a few'*

EMA officer (two) revealed that; *'Stores, restaurants, markets and hospitals produce more plastic waste and card boxes from their packages and this indicates that source of waste for example plastics is available in any form of business'*

From the above findings, source of solid waste especially plastics remains available in the long run and this indicates that solid waste management as a livelihood strategy is sustainable in the long run. (Ngaza et al., 2018), there has been a rise in the demand for plastic as it has significantly replaced wood, metal and paper usage in our day to day lives hence this indicates that source of plastics remains available.

### 4.6. Regulations and actions that could be imposed to improve this waste collecting and recycling in Glenview 3?

Education and awareness as education and awareness campaigns are implemented to educate people on the benefits of waste reduction, recycling, and sustainable practices through social listening tools, lead generation platforms, social media platforms, Semrush – an all-in-one SEO tool, content marketing tools that help to increase participation and promote responsible behaviour among individuals and communities. It is important to educate and train waste collectors and recyclers on the best practices, safety measures and latest technologies in the field. This can be done through workshops, seminars and training programs.

Data collected from interviews shows that Government policies and regulations were implemented policies and regulations that encourage waste reduction, recycling, and sustainable practices. Supported by data collected from document review measures such as waste management plans, landfill taxes, and incentives for businesses that adopt sustainable practices. Zimbabwe has a national waste management policy, which was developed in 2016 to guide the country's waste management efforts. The policy includes a range of measures aimed at reducing waste generation, promoting recycling, and improving waste disposal practices. One of the key principles of the policy is the "polluter pays" principle, which requires those who generate waste to take responsibility for its management and disposal. This means that waste generators are responsible for the costs of waste management, including collection, transportation, and disposal.

The policy also emphasizes the importance of waste reduction and recycling. It encourages waste generators to reduce waste generation by adopting sustainable consumption practices, such as reducing packaging and avoiding single-use items. The policy also promotes the development of recycling industries, particularly for plastics, glass, and paper. In terms of implementation, the policy calls for the establishment of waste management authorities at the local and national levels, which will be responsible for implementing the policy and coordinating waste management efforts. The policy also emphasizes the need for public education and awareness-raising campaigns to promote responsible waste management practices. Despite the existence of the policy, however, waste management in Zimbabwe remains a significant challenge, particularly in rural areas where infrastructure and resources are limited. There is a need for more investment in waste management infrastructure and services, as well as greater public education and awareness-raising, to fully implement the policy and improve waste management practices in the country.

Infrastructure development as the development of waste collection and recycling infrastructure is crucial to improving the effectiveness of the sector. This includes the establishment of recycling facilities, composting plants, and waste-to-energy plants. Improved waste collection systems as the implementation of efficient waste collection systems can help to reduce the amount of waste that ends up in landfills. This can include the use of separate bins for different types of waste, the introduction of recycling programs, and the establishment of collection points for hazardous waste. Collaboration and partnerships collaboration between government, private sector, and civil society helps to improve the effectiveness of waste management systems. This includes partnerships between waste management companies and local communities, as well as collaborations between different sectors to promote sustainable practices. Provision of resources, loans, grants, and partnerships. Facilitation of fair trade policies and regulation to protect the interest of waste collectors and recyclers which include pricing regulation, sanitary, safety regulation to ensure that worker are able to earn a decent income and work in healthy condition hence attaining SDG goal 8.

Innovation and technology as the use of innovative technologies such as smart waste management systems, biodegradable packaging, and advanced recycling technologies can help to improve the efficiency of waste management systems and promote sustainable practices. Economic incentives:

Economic incentives such as tax breaks, subsidies, and grants can encourage businesses to adopt sustainable practices and invest in waste reduction and recycling initiatives. This help to create a more sustainable economy while promoting responsible consumption and production.

### 4.7. Data Summary, Analysis, and Conclusions

The study found that the most common types of waste generated in Glen View 3 were organic waste, plastics, and paper and that there was a need for improved waste reduction and recycling strategies. Data collected shows the blame game between the local authorities and citizens on the issue of proper waste management and recycling which was also discovered by (M. Manyuchi et al. 2015**)** the issue of waste management is often a contentious one, with local authorities and citizens sometimes playing the blame game. Citizens accused local authorities of not providing adequate waste collection services or not enforcing waste management regulations, while local authorities blame citizens for not properly disposing of their waste or not separating recyclable materials. However, it is important to recognize that effective waste management requires a collaborative effort between local authorities and citizens. Local authorities should provide adequate waste collection services, enforce waste management regulations, and invest in recycling infrastructure. Citizens, on the other hand, should take responsibility for properly disposing of their waste, separating recyclable materials, and reducing their overall waste production. Education and awareness campaigns can also play a crucial role in promoting responsible waste management practices among citizens. By working together, local authorities and citizens can create a more sustainable and environmentally friendly community.

Overall, these studies demonstrate the importance of waste management, waste recycling and understanding the challenges and opportunities for waste management and recycling in Zimbabwe, and in developing evidence-based policies and programs to address these issues. This study analyzed data on waste management practices in Glen View 3, using surveys and interviews with waste management stakeholders. The study found that there were significant challenges to waste management in Glen View 3, including a lack of infrastructure, inadequate funding, and limited public awareness, and that there was a need for improved waste management policies and programs.

# CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

## 5.0. Introduction

This chapter brings to a close the research study "waste as a source of livelihoods: A case of the Glenview 3." This will be done by giving a summary of the research and the conclusions drawn out from the research's findings. The recommendations are derived from the conclusions drawn by the researcher from the responses that were given by the respondents in Glenview 3.

## 5.1. Summary of findings

The researcher investigated waste as a livelihood with particular reference to glen view 3 communities. The research depended on first and foremost primary data, which was collected through questionnaires, distributed to the number of waste recyclers and collectors also residents in Glenview 3. Data triangulation of data questions were made to adopt the open ended format. Interviews were also carried out to enhance the reliability and validity of the data that was collected through questionnaires, secondary data analysis and surveys.

The results of research reviews that waste is crucial for many people in Glenview 3 as a source of livelihoods from the respondents who clearly said that waste is helping them to meet their basic needs with funds being earned from waste activities.

The research also reviewed that many literate people are in this sector as there are few barriers to occupation so it is easily accessible to everyone and easily available as waste is being generated every day and everywhere. The researcher also discovered that waste has brought so much difference in Glenview 3 as people are benefiting from waste through job creation, employment, reduces land degradation and air, water pollution and also it brought innovation and improved technology to the Glenview 3 community.

The study also discovered that the male are dominant in this sector and this is because of the conditions of the work and how they operate that women cannot afford to partake in this sector. The researcher also find out that men are the ones who have highest rate of school dropouts as compared to women this is because of financial challenges and drug addictions. Women they have many organizations that are supporting them such as CAMFED so they are a few that are facing financial problems to go to school and due to women empowerment women now have more job opportunities than man.
The researcher also researched on how best can waste sector improved and found out that there is need for education and awareness, policy formulations, infrastructure development and innovation and technology.

## 5.3. RECOMMENDATIONS

By implementing these 10 recommendations, waste can be transformed into a valuable resource that can provide livelihoods for communities and individuals while also contributing to a cleaner and healthier environment

1. Increase public awareness and education: Educate people on the importance of waste management and its potential as a source of livelihoods. This can be done through awareness campaigns, workshops, and other outreach programs which can be done by the government and NGOs

2. Development of policies and regulations: Develop policies and regulations that support the development of waste-based livelihoods, such as laws that promote waste segregation and recycling by the city council and the government.

3. Creation of opportunities for waste pickers: Create opportunities for waste pickers to participate in waste management systems, such as by providing them with access to waste collection and disposal facilities by the Harare City Councils

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