

**SOCIO ECONOMIC IMPACT OF MINE CLOSURE ON THE LIVELIHOOD OF THE
LOCAL COMMUNITY: CASE STUDY OF LUANSHYA**

By

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Requirements for the Award of the Master of Science in Sustainable Mineral Resource
Development.**

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DECLARATION

I, **Tombozi Mwamba** , do hereby declare that this work was solely done by me and that it has never been submitted for examination in any other college or university and that all the sources I have used have been acknowledged. I further declare that the views and opinions contained in this report do not in any way represent those of University of Zambia, but my own.

Signature:

Date:

ABSTRACT

The mining sector is one of the major employers of the Zambian labour force. When the mine closes, communities may experience harshness of life. Therefore, this study endeavoured to unearth the impact of mine closure on the communities of Luanshya district of Zambia. The study was qualitative in nature with the application of case study design. Semi-structured interview guide was used to collect data from 51 research participants. The respondents were distributed as 46 former mine employees and 5 key informants from Zambia Chamber of Mines. Data collected were analyzed using thematic approach. The study found that mine closure has negative implication to the livelihood of the people in the study area. It was revealed that mine closure causes the loss of employment, decline in the living standard of the people and increases in criminal activities. The study also revealed that there were no initiatives that were being undertaken by the mining companies in the targeted study area to prevent the above mentioned shocks that comes with mine closures. Further, the study revealed that transformation of a mining-led economy requires capacity building programmes meant to equip the local people with various skills needed for survival during the period mines are not in operation. Therefore, the study concludes that mining closure impacts negatively the wellbeing of the people in the community as mines provides source of income for the majority households of Luanshya district. Thus, among others, the study recommends that the Chamber of Mines should run some projects after closure of mines as one way of empowering the local people. This is within its mandate as one of its goals and mission is to promote sustainable and responsible mining.

Key words: *Mine closure, socio-impact, livelihood, local community, well-being*

DEDICATION

This study is wholeheartedly dedicated to my late parents Patrick Mwamba and Regina Mwendapole Mwamba, who made it possible that I got the support and sponsorship I needed. They always encouraged me to pursue my studies and instilled in me the first lessons of knowledge. I also dedicate this study to my sister Mpeza Mwamba and my brother Patrick Lumbenilesa Mwamba who were so supportive and understanding during this academic journey.

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TABLE OF CONTENTS

DECLARATION.....	i
APPROVAL OF THE STUDY	ii
ABSTRACT.....	iii
DEDICATION	iv
ACKNOWLEDGEMENT	v
LIST OF FIGURES	ix
LIST OF TABLES	x
ABBREVIATIONS	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Introduction and Background.....	1
1.2 Problem Statement.....	3
1.3 Objectives.....	4
1.3.1 General objective	4
1.3.2 Specific objectives.....	4
1.3.3 Research Questions	4
1.4 Significance of the Study	4
1.5 Scope of the Study.....	5
1.6 Limitations of the study	5
1.7 Operational definition of key terms	5
1.8 Structure of the dissertation.....	6
CHAPTER TWO	7
LITERATURE REVIEW	7
2.1 Introduction	7

2.2 Empirical Review	7
2.3 Theoretical Framework.....	9
2.4 Conceptual framework.....	10
2.5 Knowledge gap.....	11
2.6 Chapter summary.....	12
CHAPTER THREE	13
RESEARCH METHODOLOGY.....	13
3.1 Introduction	13
3.2 Research Design	13
3.3 Target Population and sample size	13
3.4 Sampling design	14
3.5 Tools for data collection	14
3.6 Data Analysis	15
3.7 Ethical Consideration in data collection	15
3.7.1 Institution approval and permission.....	15
3.7.2 Confidentiality	16
3.7.3 Informed consent and Voluntary participation.....	16
3.7.4 Safety and health of the respondents.	16
3.8 Summary	16
CHAPTER FOUR.....	17
RESULTS AND DISCUSSION	17
4.1 Introduction	17
4.2 Demographic characteristics of participants	17
4.3 The livelihood experience of the host community on mine closure.....	19
4.3.1 Views of the local community.....	19

4.3.2 Views of key informants	23
4.4 Initiatives undertaken by mining companies during mine closure	25
4.5 Activities that can be undertaken to ensure sustainability of host communities after mine closure.....	27
4.6 Chapter summary.....	29
CHAPTER FIVE.....	30
CONCLUSIONS AND RECOMMENDATIONS.....	30
5.1 Introduction	30
5.2 Conclusions	30
5.3 Recommendations.....	31
5.4 Suggestions for future research	31
REFERENCES.....	32
APPENDICES	35
Appendix I: Interview Guide For Former Mine Employees.....	35
Appendix II: Interview Guide for Key Informants	37
Appendix III: Detailed Demographic Profile of the participants	38

LIST OF FIGURES

Figure 2.1: Sustainable Livelihood (Source: DFID, 1999)	10
Figure 2.2: Conceptual framework of mine closure in Luanshya, Zambia	11
Figure 4.1: Level of Education	18
Figure 4.2: The livelihood experience of the host community on mine closure	19
Figure 4.3: Initiatives undertaken during mine closure.....	25

LIST OF TABLES

Table 1.1: Operational definition of key terms.....	5
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ABBREVIATIONS

SLF	Sustainable Livelihood Framework
LSF	Livelihood Security Framework
DFID	Sustainable Livelihood Framework which was developed by the Department for International Development
CDS	Centre for Development Support
GDP	Gross Domestic Products
VAT	Value Added Tax
ZCM	Zambia Chambers of Mines

CHAPTER ONE

INTRODUCTION

1.1 Introduction and Background

Mining has been a driver of various economies globally. Mining activities have helped in reducing unemployment and improving the living standards of the people. Mining activities are also known for improving infrastructure in the communities of their operations through corporate social responsibility. It is due to the significance that mining carries which has seen a drastic rise in global mining activities with more minerals being discovered in various countries both in developed and the developing countries (Dubey, 2017). For example, in Zambia, gold deposits were recently discovered in Mwinilunga and Mumbwa district.

According to Heikkinen, Noras and Salminen (2008) mining refers to the extraction and enrichment or refinement of metallic ores, coal, and industrial mineral deposits. Dubey (2017) provided a simple definition of mining by defining it as simply the extraction of any non-renewable resource.

Sustainable mining is the minimization of negative environmental, social and economic impacts associated with mining and processing activities while limiting extraction to rates that do not exceed capabilities to establish new sources, substitutes or recycle any particular materials so as not to compromise potential needs of future generations (Allan, 1997).

According to Beck (2018), mining is mostly associated with significant and irreversible socio-economic and environmental impacts for the majority local communities. The benefits of mining to national economies are obscured by the socio-economic and environmental costs which are done on mine-take communities.

Despite mining having numerous economic benefits it has a limited lifespan. Marais (2014) argued that the lifespan of mine operations is to a large extent dependent on the size and grade of the deposits and mining methods applied, as well as the prevailing good market prices. Mining operations tend to occur over a long period of time, lasting decades, but products prices are not constant and are likely to cause temporary suspension of operations or even extended periods of closure.

However, when mining operations become unsustainable due to resource depletion, plans for decommissioning and mine downscaling and closure begin. Mine closure, whereby mining activities stop permanently, and its associated post-closure social and economic characteristics form part of the lifecycle of mining operations.

Stacey et al (2010) described mine closure as a situation when the responsible government body issues a certificate to absolve the owner of a mine from mining activities and from all liabilities and responsibilities associated with social and economic consequences, among others. Rixen & Blangy (2016) argued that before a mine faces closure, it usually undergoes several mine cycles. The first cycle is known as the economic “boom”. This cycle is characterized by an increase in employment and investments resulting into improvements in the living standards of the people.

However, this stage of economic boom does not last forever. Rixen & Blangy (2016) were of the view that the stage of economic boom for the mine is often followed by the stage of partial economic struggle for the mine which often results in a few workers being laid off and a reduction in various corporate social responsibility activities. This eventually causes a gradual reduction in the living standards of the people where the mine operates from. If no action is taken to try and revive the mine through reinvestments or the provision of subsidies by the government to help in reducing the increased cost of production, the mine eventually closes.

According to the Centre for Development Support [CDS] (2006) mine closure is a situation that has adversely affected both the developing as well as the developed countries. Marais (2005) stated that mine closure is often associated with large-scale retrenchments, which may result in the increase of poverty rates among the local people. The closure of the mine does not only affect the community in which the mine operates from but the country at large.

Just like in many other countries, Zambia has experienced a number of mine closures. For instance, in 2008, Luanshya Copper Mine (LCM) halted operations and this was due to a sharp fall in the prices of copper on the international market. The closure of the mine caused over 1,740 employees to be laid off (Lusaka Times Newspaper, December 21, 2008). The other mine which was closed in Luanshya district is the Baluba Mine which commenced operation in 1973. However, following the heavy rains in 2001, the Luanshya dam overflowed, this caused the closure of the Baluba mine. At that stage over 93% of the copper had been extracted (Banda, 2018).

The Baluba mine was reopened in 2004, after it was purchased from the receivers. In 2009, the Baluba and Muliashi deposits were purchased from the interim owners (Roan Antelope Mining Corporation of Zambia) by the China Nonferrous Metals Mining Group Co Ltd (CNMC), and operations continued at Baluba under its subsidiary CNMC Luanshya Copper Mines Plc (CLM). During the period of closure of mines in Luanshya, the closure of the mine had several consequences on the community and the country at large (Banda, 2018). However, these are not the only mines that have been closed in Zambia. The other notable mines that have been closed include Bwana Mkumba mine of Ndola which was closed in 2011 by First Quantum Minerals Ltd due to the depletion of copper reserves. The other mine that was closed is the Kabwe mine which was closed in 1994 with the site being placed under care and maintenance. Banda (2018) suggested that the Kabwe mine was closed due to the excessive pollution from the mine. The Kabwe Mine has not been reopened since its closure in 1994. Therefore, this study sought to highlight the impact of mine closure on the community using the mines that were closed in Luanshya as a case study.

1.2 Problem Statement

In Zambia, mining remains the most important driver of the economy as it is estimated to contribute 12% towards the Gross Domestic Products (GDP) and generating most of the foreign earnings, foreign direct investment as well as considerable amount of revenue through mining royalties and VAT (World Bank, 2019). Notably, it is clear that the mining industry remains critical to the Zambian economy. It is also the major employers of the Zambian labour force which is estimated at 73,000 people. Therefore, when a mine closes the consequences of such a situation are not just experienced at the community level but also at national (World Bank, 2019).

Luanshya is a district found on the Copperbelt province of Zambia. It is a district whose economic activities are mining and agriculture. The district is endowed with copper ore deposits hence making mining a major economic activity. Luanshya has always enjoyed the economic benefits that comes with mining. When the mines are at operational level Luanshya is usually in the state of economic stability.

However, the town may face harsh economic situation when the mines ceased operations as most of the households depend on these mines to feed their families. This study, therefore, endeavoured to unearth the impact of mine closure on the community in which the mine operates from as

Luanshya district is well known in Zambia to have experienced mine closure more than once in its history.

1.3 Objectives

1.3.1 General objective

To assess the effects of mine closure on living standards of the local community of Luanshya district.

1.3.2 Specific objectives

- i. To assess the livelihood experience of the host community on mine closure in Luanshya district.
- ii. To determine initiatives that were undertaken by the mining companies in Luanshya district to mitigate the social economic impacts of mine closure

1.3.3 Research Questions

- i. What is the livelihood experience of the host community on mine closure in Luanshya district?
- ii. What initiatives were undertaken by the mining companies in Luanshya district to mitigate the social economic impacts of mine closure?
- iii. What activities can be undertaken by the mine companies to ensure sustainability of host communities after mine closure?

1.4 Significance of the Study

The findings of this study may serve as useful information to several stakeholders. The findings of this study might be of great importance to the people working in the mining sector as it may reveal the dangers associated with over dependence on the jobs in the sector. Findings of this study may also provide solutions to the challenges associated with mining closures. The dissertation may also highlight the importance of skills development for the workers in the mining sector as a surviving tool in case the mine ceases its operations. The findings of this study may also be useful to the government with regards to the policy making process regarding how the citizens can be protected from the downside effects of mine closure. The study is also significant to scholars as it

provides a comparative analysis on how the living standards of the local people is affected between the period of mine operations and the period after the closure. The study might also be useful to researchers as it can provide basis upon which further studies maybe carried out.

1.5 Scope of the Study

This study was conducted in Luanshya district on the Copperbelt Province in Zambia. The study focused on the social economic impact of mine closure on the residents. The randomly selected residents of Luanshya were asked to provide information in line with the adopted study methodology.

1.6 Limitations of the study

There were two major flaws of this study. The first one was accessing the respondents. Since this study was conducted during the period of COVID-19, it was very difficult to reach out to respondents. However, the researcher overcame this impediment by assuring the respondents that the health guidelines were to be followed when administering the questionnaires. The second flaw was the use of one tool (questionnaire) for data collection. This prevented the respondents to express themselves freely on what they felt were the impediments associated with mining closure. However, the researcher overcame this challenge by relying on candid responses provided by various respondents which helped to make inferences about study themes.

1.7 Operational definition of key terms

Concept	Meaning
Livelihood	Refers to the source of income in order for people to secure basic necessities of life.
Local community	The group of people living in a common location whose occupation is similar
Mine closure	The period of time when extracting activities of mine have ceased due to various reasons.
Socio economic impact	The diverse effects associated with the closure of mines which may impact negatively or positively the livelihood of the local community.

Table 1.1: operational definition of key terms

1.8 Structure of the dissertation.

This dissertation is presented in five chapters. Chapter 1 provides the introduction to the study, research objectives and questions, significance of the study, scope of the study and limitations. Chapter 2 provides a summary and synthesis of the reviewed literature in line with the topic under assessment. Chapter 3 presents the methodology which was followed when conducting the study. Chapter 4 presents the findings and discussion. Chapter 5 draws conclusions and makes recommendations based on the generated findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains both theoretical and empirical studies related to impact of mine closure on the livelihood of the local community. It is structured around empirical review, theoretical review, and the conceptual framework. The chapters start by providing the empirical review which will bring out the findings of the studies conducted on the impact of mine closure on the living standards of the people in which a mine operates. This section will then be followed by the theoretical review. Under this section, various theories that can help in understanding the topic of interest will be provided. Equally, the conceptual framework will be provided which is a diagrammatical representation of the relationship between the independent and dependent variables of the study. The chapter ends with knowledge gap in the literature reviewed.

2.2 Empirical Review

Ayanda (2018) conducted a study on the socio-economic impacts of mine closure on local communities from Mpumalanga Province in South Africa as a case study. The study by Ayanda (2018) used questionnaires as the means of data collection. Ayanda (2018) concluded that the negative socio-economic impacts of mine closure include: rise in poverty, deterioration of living standards, increase in outward migration, emergence of crime and diseases, decline in the provision of social services, reduction in employment opportunities in the mine and second-order employment, loss of foreign exchange, limited money circulation, reduction of dispensable income and in the payment of rates by the community to the local authority.

The study by Ayanda (2018) revealed the positive impacts of mine closure which included the following: an increase in government initiatives aimed at helping the community, strong social cohesion of the local people and a focus on agriculture in the area. The coping strategies of the community following the mine closure comprise of dependence on severance packages, support from relatives, finding jobs elsewhere, practicing agriculture, and engagement in the informal sector.

Another study on the consequences of mine closure was carried out in South Africa by Waldt & Botha (2018). This study focused on ways of mitigating the socio-economic consequences of mine closure. To arrive at the findings, Waldt & Botha (2018) used the trends of socio-economic effects mining industry in South Africa. The findings of the study suggested a general lack of understanding among mining companies of the significant socio-economic consequences that mine closure may have on affected communities.

Mpanza, Elhadi and Raeesa (2019) carried out a study on the relationship between mine closure and the living standards of the community in which the mine operates. This study was conducted in the Democratic Republic of Congo. The results suggested that there was a negative relationship between mine closure and the living standards of the people. The findings by Mpanza, Elhadi and Raeesa (2019) were in line with the findings made by Ayanda (2018).

Studies conducted by Van Eeden *et al.* (2009), Stacey *et al.* (2010), and Du Plessis (2011) identified general socio-economic consequences of mine closure on communities. The first socio-economic consequence of mine closure identified was;

Confusion about managing social risks: In most cases communities were not prepared beforehand for the loss of employment and the ensuing poverty. Most affected mining communities suffered from shock. Both the emotional and economic spheres of the inhabitants' existence were affected. This process also impacts social structures and the economic wellbeing of a mining community. Studies indicated a strong relationship between unemployment, emotional issues, and health problems such as hypertension, insomnia and psychological maladies like depression and feelings of uncertainty. Participants also reported feelings of helplessness and anger.

The second socio-economic consequence of mine closure is inappropriate training for self-employment: The mining communities also experienced social changes related to job loss, for example unemployment and poverty. Even though plans for skills development and job creating schemes were proposed in the MPDRA, 28 of 2002, these interventions were not realized in time for the miners who faced such closures in the past. These individuals had acquired skills only for employment in the mining industry, and job creation schemes failed as well (Du Plessis 2011).

The third socio-economic consequence of mine closure is Illegal occupation of empty mine houses and ensuing vandalism: Mineworkers lose their right to housing when the mine closes. However, their dwellings are left abandoned and are then inhabited by illegal occupants. This clearly impacts negatively on the existing social structures, and on the safety of the mineworkers' neighborhoods. Mining sites are stripped of usable metal, which are then sold to metal recyclers to obtain cash. The infrastructure and facilities of the closed mine is often vandalized. Mining operations cannot re-open unless the mining structures are replaced, which would be at an extremely high cost to the new mine owner (Du Plessis 2011).

2.3 Theoretical Framework

Generally, the literature has a number of theories that are related to the topic under study. Thus this study was guided by the Sustainable Livelihood theory by (DFID, 1999). The Sustainable Livelihood was developed by the Department for International Development (DFID) in 1999, is a theory which seeks to guide on poverty alleviation. It can be used as a tool or checklist to understand poverty in responding to poor people's views and their own understanding of poverty (GLOPP 2008). The environment in which a community functions plays a pivotal role, as this is where the community negotiates its existence. Such an environment should provide sustainable livelihoods to the community for them to make a living. Chambers and Conway (1991) define a livelihood as follows: A livelihood comprises of the capabilities, assets, and activities for a means of living. A livelihood is sustainable when it can cope and recover from stress and shocks, maintain or enhance its capabilities and assets, provide sustainable livelihoods for the next generation and which contributes net benefits to other livelihoods at local or global level.

The SL enables agencies to identify stresses and shocks that increase the vulnerability of a community or entry points towards strengthening a community's capacity and resilience (Twigg & Bottomley 2011). The SL includes the following components: the vulnerability context, livelihood assets, transforming structures and processes and livelihood strategies and outcomes (DFID 1999; GLOPP 2008:3). The vulnerability context refers to the external environment of a community where stresses, shocks, trends, and seasonality have a direct effect on the livelihood assets of a community. This causes a chain reaction, affecting people's livelihood strategies and outcomes. A negative input has an adverse effect on the assets, outcomes, and strategies of the affected community.

Each community has different quantities and forms of livelihood assets available to them. To achieve positive livelihood outcomes, people require a range of assets. ‘No single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek’ (DFID 1999). Livelihood assets are present in the internal environment of a community as well as in the external environment. These assets are listed as different forms of capital (DFID 1999). Figure 2.1 shows the livelihood theory as discussed above.

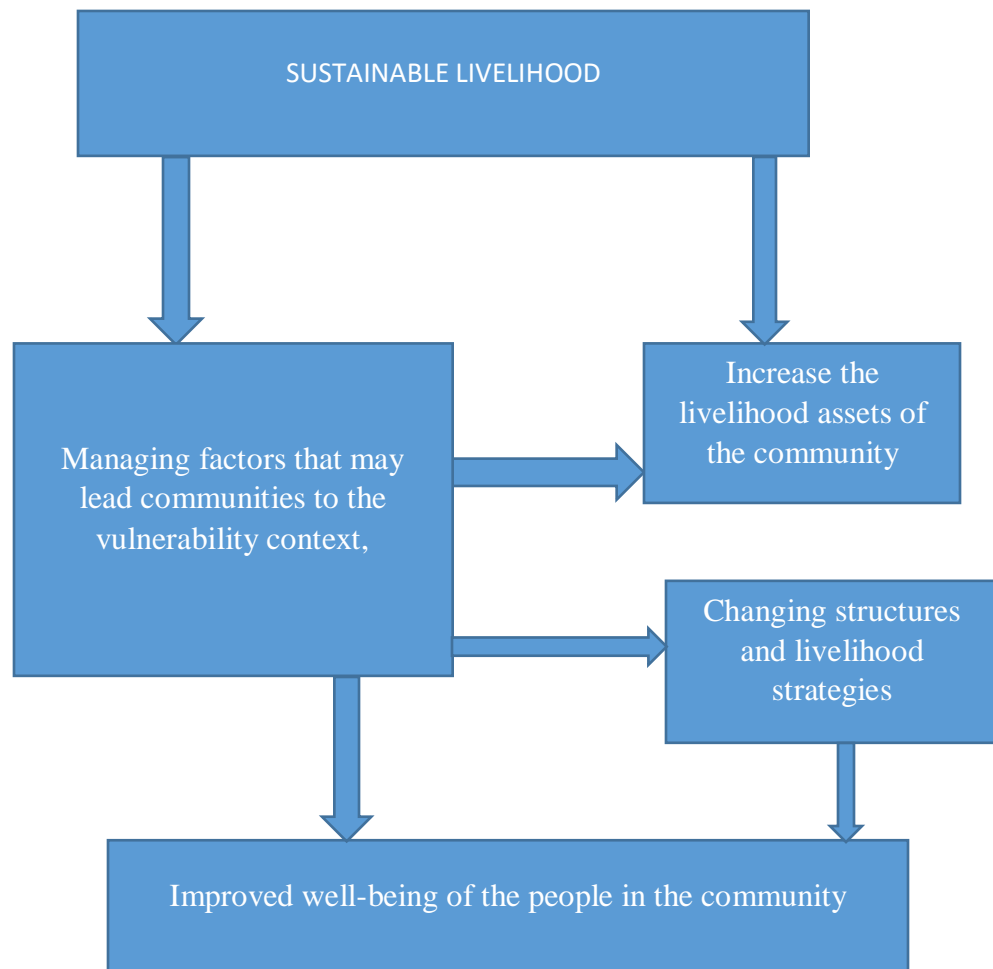


Figure 2.1: Sustainable Livelihood (Source: DFID, 1999)

2.4 Conceptual framework.

The conceptual framework outlines the presumed relationship between the independent variables and the dependent variable. In this study there are three independent variables which are unemployment, actions from the mining companies operating in Luanshya and the government

actions. On the other hand, there is one independent variable (mine closure). As the literature suggest, the closure of the mine comes with both positive and negative consequences. The negative consequence is the unemployment while the positive consequences presents themselves in form of positive actions from the government and the mining companies operating in the area. Mining companies often come up with various initiatives to promote community development and mitigate the social economic impacts of mine closure.

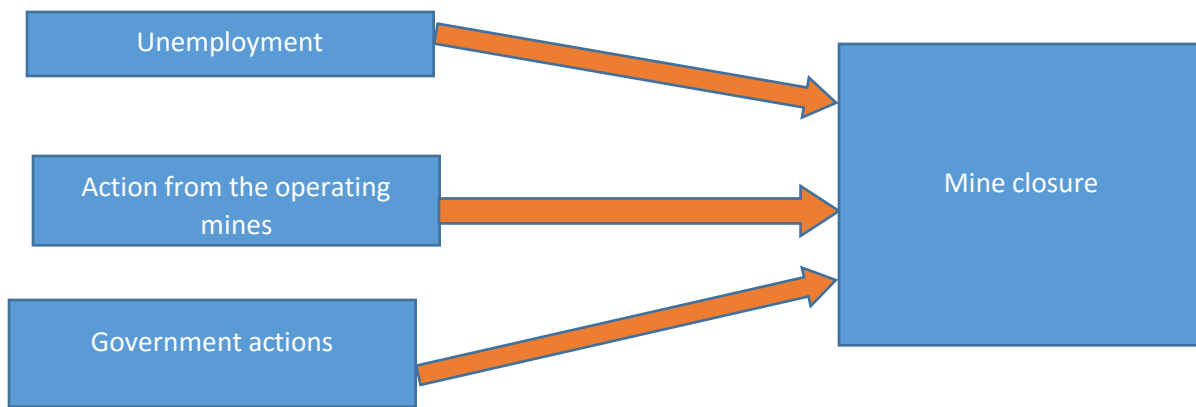


Figure 2.2: Conceptual framework of mine closure in Luanshya, Zambia

2.5 Knowledge gap

Previous studies conducted in Luanshya have not addressed the impact of mine closure as a whole but mainly focused on benefits of mines to the national economy and the local community. To this effect, there is little information known on livelihood experience of the host community on mine closure in Luanshya district, some of the initiatives that were undertaken by the mining companies in Luanshya district to promote community development and mitigate the social economic impacts of mine closure and activities that can be undertaken by the mine companies to ensure sustainability of host communities after mine closure.

Therefore, this study aims at closing the gaps in other studies that have been reviewed by assessing the socio economic impact of mine closure on the livelihood of the local community of Luanshya district of Zambia.

2.6 Chapter summary

This part of the study provided a review of literature on mine closure from the livelihood perspective. Theoretical and conceptual studies reviewed have shown the importance of the mine sector being an important driver of the economy as it contributes to the Gross Domestic Products (GDP) and generating most of the foreign earnings, foreign direct investment as well as considerable amount of revenue through mining royalties and Value Added Tax (VAT). Literature has shown that the mine industry has been important in assisting households acquire basic needs such as food, clothes and other social amenities. It has been demonstrated that Livelihood outcomes are hampered and diminished when a household cannot withstand shocks or meet contingencies that negatively affect assets and access to livelihood strategies. Therefore, to avoid speculations on effects mine closure has on the livelihood of people of Luanshya, it was cardinal to undertake this empirical study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in this study. It contains the research design, the target population, sample size, sampling design, tools for data collection, method of data analysis and ethical considerations.

3.2 Research Design

According to Kothari (2004) a research design informs decisions concerning a research study and arrangement of conditions for collection and analysis of data to combine relevance to the research. This study used qualitative approach with the application of case study design. Greener (2011) Posit that qualitative approach as an inductive approach is eminently effective in determining the deeper meaning of experiences of human beings and in giving a rich description of the specific phenomena being investigated in reality. Thus, this approach allowed the researcher to interact with the participants in soliciting for their perceptions and opinions on implications of mine closure. On case study design perspective, Yin (2018) defines a case study design as an empirical inquiry that (a) investigates a contemporary phenomenon within its real-life context, (b) the boundaries between phenomenon and context are not clearly evident and in which (c) multiple sources of evidence are used. The choice of the case study strategy is informed on the fact that it has an ability to consider the phenomenon under investigation in its context. Thus, using this design helped the researcher to recruit respondents who were falling within the elements associated with mine operations.

3.3 Target Population and sample size

Kombo and Tromp (2006) argue that a study population is an entire group of elements that have at least one thing in common, from which the sample is taken. In this context the study targeted 3000 households of Luanshya district but only went as far as 46 respondents who were former mine employees as these were expected to give candid information concerning shocks that comes with mine closure. The district was selected for consideration on the assumption that it has been experiencing mining closures. The researcher also targeted 5 officials from Zambia chambers of

mines (ZCM) as key informants. In total, 51 respondents were recruited for the study. This sample size was arrived at through data saturation. This implies that there was no more new information coming from participants to answer the research objectives hence, the researcher was satisfied with the information given by 51 respondents.

3.4 Sampling design

The study used purposive sampling to select participants. Purposive sampling is a process of choosing participants intentionally based on their knowledge about a topic under study (Creswell, 2015). Homogenous Purposive sampling, was used to select key informants as they are assigned with the responsibility of advancing the interest of mines, the local people, the country and mine stakeholders while promoting sustainable and responsible mining hence there were expected to provide candid and reliable information of the phenomenon under investigation. The homogenous purposive sampling technique is the deliberate choice of a participant due to the qualities the participant possesses. It is a nonrandom technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience

Snowballing sampling was used to select former mine employees. When conducting snowballing sampling, the researcher located the available participant, in this case former mine employee who helped to connect the researcher to the next available participant, the process continued until the sample was reached. This type of sampling was used because the area has experienced inward and outward migration, which is to mean the area was no longer occupied by locals that were majority mine workers. Therefore, the researcher could not tell by looking who was the former mine employee. Thus, it was going to be a difficult populace to locate using other sampling methods.

3.5 Tools for data collection

Kothari (2004) defined data collection as the process of gathering and measuring information on targeted variables in an established and identified framework. For this study, the researcher used semi-structured interview guide for the respondents and key informants (See appendix I and II).

Creswell (2014) contends that unstructured interviews allows one to probe for greater depth or explanation by making connections in responses and asking follow up questions based on what is said on a particular subject. Thus, interview guide helped the researcher to solicit information from the respondents on their experience concerning mine closure.

3.6 Data Analysis

This study used thematic approach to analysis the data. According to Kabiru & Njenga (2009), Thematic analysis is a method for systematically identifying, organizing and offering insight into patterns of meaning across a data set. It allows the researcher to make sense of collective or shared meanings and experiences. The subjective responses from the semi-structured were collected. Firstly, transcription of data was done. Thereafter, the researcher familiarized herself with the data by reading and re-readings of the transcription which was followed by coding and creating categories to generate themes as well as grouping the responses of participants in group themes. Finally, data presentation followed in line with the three research objectives. Themes generated were assigned verbal responses from the respondents.

3.7 Ethical Consideration in data collection

The study embraced a range of ethical considerations as Ethics have become a key aspect in conducting a meaningful research. Code of ethics of the psychological profession (2017), states that, psychologist cooperating with a client in research, teaching, expertise or helping practice observes ethical principles in all stages of work: from contract negotiation and signing, when the purpose and objectives of the cooperation and the corresponding psychological methods to be used are defined, through results sharing and reporting, to various manners of documentation protection. In trying to uphold utmost privacy of the rights of participants, the following were ethics followed;

3.7.1 Institution approval and permission

Consent was sought from the ethics committee at the University of Zambia. This was granted by the Natural Applied Sciences Research Ethics Committee after the committee revealed the submitted proposal before going in the field to collect data. The reference number NASREC: 2021-MARCH-011

3.7.2 Confidentiality

Confidentiality and anonymity of the participants were ensured by not revealing their names and positions. The information that was provided to the participants, including the information that was obtained was used purely for the research. This was demonstrated by how the interview guide was structured, that is, the interview guide did not demand for participants' personal information like their names and contact details. Data that was collected was stored safely and securely. Generally, Confidentiality was strictly adhered.

3.7.3 Informed consent and Voluntary participation

The researcher ensured that the participant's consent to participate in the research is voluntary by making them sign a consent form, free of any coercion or promise of any benefits as a result of their participation in the research. The researcher ensured that the participants receive adequate information on the study, the expected benefits to the participants, to the society and the nation at large.

3.7.4 Safety and health of the respondents.

It is important to protect the respondents who willingly present themselves for the purpose of advancing our understanding of research. Therefore, since the study was conducted during COVID 19, a strict set of national health guidelines were followed such as wearing of face masks when distributing the questionnaire, social distancing, hand washing and sanitizing.

3.8 Summary

In this chapter, details on the methodology which was employed for the study has been explained, which incorporated research design, target population, sample size, sampling design, data analysis as well as ethical considerations.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study on assessing the effects of mine closure on living standards of the local community of Luanshya district. Findings are presented in line with the research objectives which include: i. To assess the livelihood experience of the host community on mine closure in Luanshya district. ii. To establish initiatives that were undertaken by the mining companies in Luanshya district to promote community development and mitigate the social economic impacts of mine closure and iii. To highlight activities that mine companies can undertake to ensure sustainability of host communities after mine closure to bring out the data presentation and the interpretation of the analysis.

The chapter begins with demographic characteristics of the respondents which include; Age, level of education, occupation and employment status.

4.2 Demographic characteristics of participants

The study revealed that the majority of the participants (32) who lost employment in the mine were between the ages of 24 to 40 while 14 participants were between 41 to 58 years old. The 5 key informants were in the age of 41 to 58.

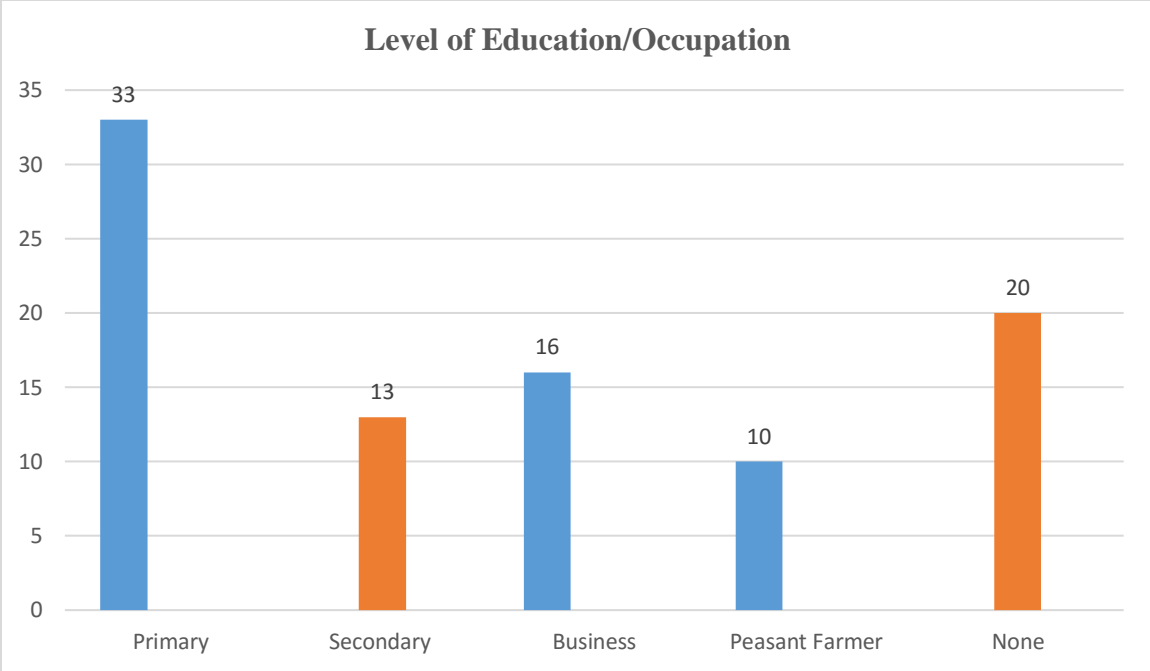


Figure 4.1: Level of Education

Figure 4.1 above shows that the majority of the respondents did not reach secondary level of education. It is clear that only smaller fraction of the respondents managed to complete secondary education. This shows that the lack of secondary education may have a diverse effects on the welfare of the former miners as the majority could not find employment after closure of mines due to lack of some skills that could be attained as a result of education attainment. However, all the five key informants had reached tertiary education.

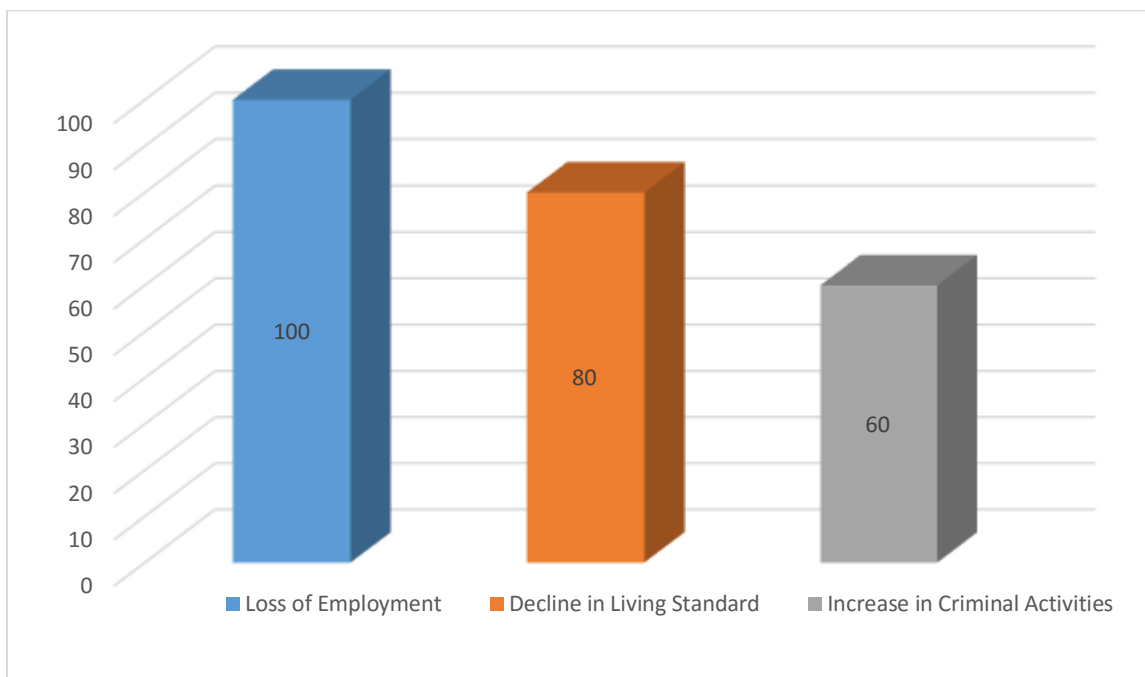
Figure 4.3 Occupation

In terms of occupation, the above figure shows that some miners after loss of employment got engaged in some business, while others were stallholder farmers. However, it was also revealed that despite some engaging in business and as stallholder famers after loss of employment in the mines, other former mines did not undertake any economic activity.

4.3 The livelihood experience of the host community on mine closure

4.3.1 Views of the local community

The study revealed that the community has a negative perception towards mining closure in general because they feel it negatively affect the socio-economic condition of the community. This hostile attitude is understandable, because these local respondents form a group of those whose livelihoods will severely be affected due to their lack of resources to cope with the negative consequences to bounce back once mines are closed. Thus loss of employment, decline in living standards and increase in criminal activities emerged as themes.



[BU1] **Figure 4.2: The livelihood experience of the host community on mine closure**

Figure 4.3 above shows that all the participants had a view that mine closures leads to loss of employment, decline in living standards and increase in criminal activities. This gives an indication that mine closure has negative implication to both the welfare of the former miners as well as of the community.

Theme 1: Loss of employment

All the respondents interviewed were of the view that job opportunities in the study area diminish during mine closure. The study revealed that mine was the major employer in the area and the

most favored employer due to perceived high salaries and wages offered. According to the findings, loss of employment was identified as a challenge faced by the local people during the period which the mines were closed.

One respondent stated that:

I came here in Luanshya 10 years ago to work as a miner but my work experience has been challenging. In most cases, mining companies have been closing without notifying us on time and for us here in Luanshya working in the mine is the only source of our livelihood. So when they close the mines, it means we also lose our source of livelihood (Interview with male respondent).

Another respondent stated that:

We depended on Mining operations for our survival and when the mining companies are closed, we lose employment (Interview with male respondent).

Similar to the above response, another respondent stated that:

Working in the mine is the only thing we do and when they close we suffer a lot because we do not have other jobs (Interview with male respondent).

As if the above responses were not enough, another respondent went on record by stressing that:

Here we depend on mines to survival and when the mines are not operating, it becomes difficult to handle family affairs. Since the time I lost a job in the mine, I have not found anything to do. We appeal to the Government to do something were mine closure is concerned (Interview with male respondent).

The above findings resonate well with Marais, *et al.*, (2018) who argued that due to the fact that mining settlements tend to be isolated and situated in remote locations, this has negative implications on economic diversification of these areas. Marais, *et al.*, (2018) states that having a diverse economy goes a long way in mitigating the effects of decline in mining resources. Mining settlements more than often do not possess skills that are employable outside the mining industry therefore employment after being retrenched is difficult. In support, Marais and Atkinson (2006)

confirmed that majority of mine workers specialize specifically in mine operations therefore making job seeking for them outside the mine sector difficult.

Similarly, the finding on loss of employment is in line with the study by Abrahamson *et al.*, (2014s), who in their study found that mining companies often employ a large number of the local labor force. This goes to show that when mine closes, a lot of people loss employment.

Theme 2: Decline in living standards

The main concerns highlighted by the community was fear that the closure of the mine and subsequent closure will have considerable negative effects on the economy and that these compromises living standards and conditions of the community. This was also linked to loss of income and consequently the inability to pay for accommodation and municipal services as it was revealed. As such, it was found that the living standard of community members was declining in the community and required adjustment.

One participant narrated that:

Working in the mine is the only way we manage to feed our family, pay for rentals and support our children at school. But when the mines are not operating, it becomes difficult to meet these family demands. Sometimes we are forced to change our life style because of not having enough money (Interview with male respondent

Another respondent stated that:

Since the time I lost employment as a miner, it has not been easy to earn a living. There are times when we fail to have good meals due to limited finances (Interview with male respondent).

Similar to the above response, another responded made the following remarks by stating that:

Despite not getting enough money from the mines, at least I was able to handle most of the family problems but since I lost my job things have changed. Those days I could afford to buy enough mealie- meal, enough cooking and enough relish but this time around it is hard to do that (Interview with male respondent).

Another respondent commented that:

Due to closure of mines, I have been failing to provide adequately to my family. Even for my children, I have been failing to take them to schools offering quality education. One of our children was at a private school before I lost employment but after losing employment I was failing to raise the needed school fees. So we ended up taking our child to cheaper school.

Based on the responses given above, results paint a picture that when mining companies closes, it negatively affect the living standards of the people in the community. It can be deduced that the presence and operations of mines saves a great relief to the local people as those that are employed are able to provide for their families. However, once they close, the source of income for the local people is highly affected.

The above findings confirm with Frankenberger, Drinkwater and Maxwell (2000) who observed that Livelihood outcomes are hampered and diminished when a household cannot withstand shocks or meet contingencies that negatively affect assets and access to livelihood strategies. Equally, Krantz (2001) posit that inability to access resources indicates vulnerability.

Theme 3: Increase in criminal activities

The study revealed than mine closure leads to an increase in criminal activities in the community. Respondents mentioned that when mines are not in operation, majority of the local people especially those that do not have any skill find it difficult to earn a learning as a result others resort to stealing. Respondents mentioned that the competition for jobs in the community was making it difficult for job seekers, particularly unskilled job seekers to find employment a situation which made them to ill means of income generation.

One respondent mentioned that:

What I have observed is that when mine closes, we experience a lot of theft in our community. We leave in fear because these thieves sometimes are aggressive ((Interview with male respondent).

Another respondent stated that:

There is too much stealing in our community because most of the people are not doing anything and I feel that what has been causing this is lack of employment because some mines have been closed yet others have been reducing workers (Interview with male respondent).

One respondent stated that:

Due to lose of employment, some people here in Luanshya have been involved in illegal and criminal activities which is not good for the community. We have heard reports of people being attacked in the night and others have even lost their lives (Interview with male respondent)

The findings of the study gives an impression that the closure of mines comes with negative consequences which highly affects the livelihood of the people in the community. The results of this study have demonstrated due to mine closure, the emergent cases of criminal activities increases in the community. It can be deduced that the implication of criminal activities threaten the safety and security of the community thus creating a hostile community. This is in line with Marais (2014) who states that community problems that result from mine closure include escalation in crime levels for mine communities. The emergent cases of criminal activities do not resonate well with livelihood framework which points towards strengthening a community's capacity and resilience (Twigg and Bottomley 2011).

4.3.2 Views of key informants

In order to fully assess the effects of mine closure, some respondents were purposively selected from Zambia Chamber of mines. All the five respondents in this category identified several effects as a result of mine closure which included loss of potential income. The key informants attributed the closure of mines to policy changes. Below are some of the responses:

Whenever there is a new government, many changes in terms of policies are implemented which takes us by surprise and these changes makes it difficult for the mining company to operate which sometimes results into closure. These closures in most cases trickles down to

the community as people loss employment (Interview with Zambia chamber of mine official).

Similarly to the above sentiments, another official mentioned that:

Mine closure has an impact on the livelihood of the people. When you look at Luanshya, the majority depend on the functionality of mines for their survival and the moment mines closes, people loss their job but some of these closures are beyond the control of mining companies. For instance when the mineral royalty tax is high, it becomes difficult for the mining companies to continue operating for fear of making a loss (Interview with Zambia chamber of mine official).

Another respondent when asked on the implications of mine closure narrated that:

Mines are strategically positioned to improve the lives of the people in the community and when they are not functioning, the effects are always negative. People loss employment as a result of mine closure and when people loss employment it becomes difficult for them to look after their families (Interview with Zambia chamber of mine official).

Another official went on record by stating that:

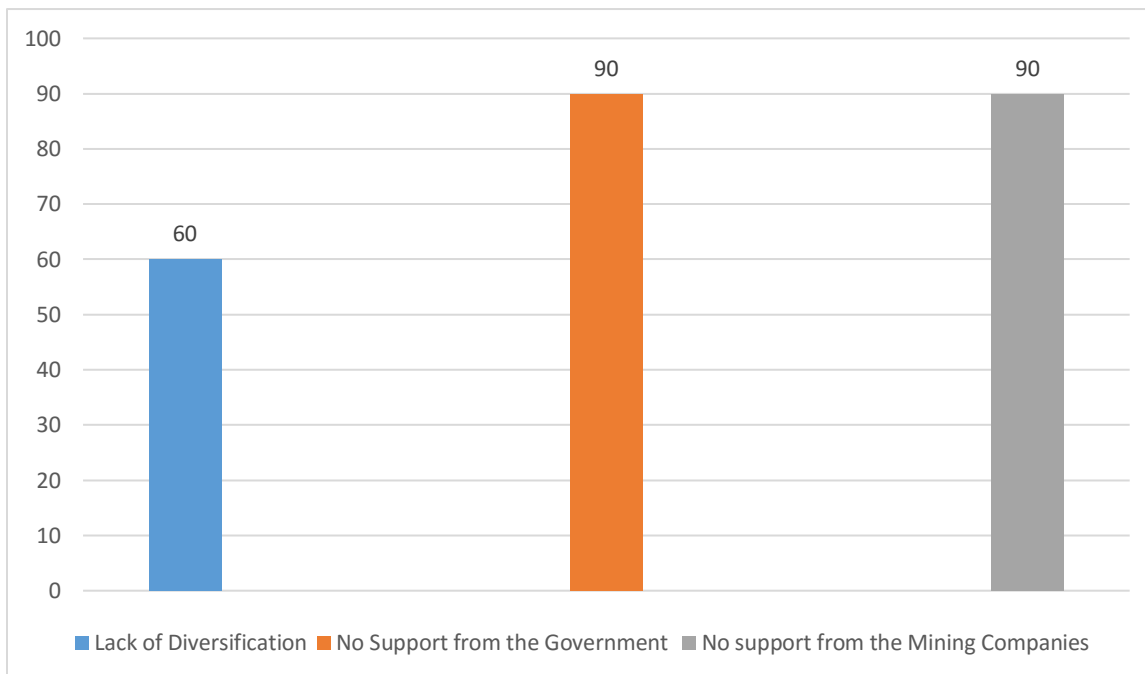
When there is closure of mines, it put the community at risks. Some of the reported criminal activities in the community are driven by lack of employment. That is why we need to move beyond relying on working in the mine so that there we do not create the gap in terms of income generation among the people. Lack of consistency in income generation breeds negative consequences among the people and we must prevent this at all cost (Interview with Zambia chamber of mine official).

From the above responses, it can be deduced that mine closure has serious implication on the lives of the people in the community. In as much as the goal of the mine is to maximum profit, the functionality of the mines as stated above have been source of livelihood for many households.

The above findings are in line with Sheldon (2008) who reported that once mineral resources are depleted, the closure of a mine is likely to cause distress to a community and even the social and economic collapse throughout an area.

4.4 Initiatives undertaken by mining companies during mine closure

In order to understand how the mine protects its employees during the period of mine closure, respondents were asked about the efforts that are usually undertaken by the mining companies to ensure that the living standards of the people remain partially unchanged. The results from the respondents suggested that mines often do very little to protect its employees. The findings suggested that most miners tend to be poor few months after the mine closes. Thus, lack of diversification emerged as a theme.



[BU2] **Figure 4.3: Initiatives undertaken during mine closure.**

Figure 4.4 shows that the majority of the former miners interviewed mentioned that there was lack of diversification programmes to help the former miners after loss of employment. There was also a clear indication that the formers mines did not receive support from the government. Interesting, it was found that the mining companies had not instituted any initiative to help former miners after mine closure. However, former miners acknowledged cooperate social responsibility performed by the mining companies though not to the direct benefits of former miners.

Theme 1: Lack of diversification

Findings of the study gives an impression that one of the greatest concerns of the local people were this study was conducted is the observed lack of investment by the mining company in other sector of the economy as this situation lead to more dependency on mining operations. It was established that the level of economic development in the study area does not guarantee a broad-based socio-economic development. Inadequate diversification of the economy was identified as a major drawback in the way of gainful economic transformation from mine driven to other sectors. This paint a picture that once mines were closed, it highly affected people in the community as the majority of the people in the community did not have alternative source of income.

One respondent stated that:

The only thing mining companies do in our community is to provide jobs to the people. In terms of other initiatives to help people when mines closes, I have not seen any. The only thing we hear is that this mining company has donated this and that but not to the direct benefit of those that have lost employment as a result of mine closure (Interview with male respondent).

Furthermore, another respondent stated that:

From the time I stopped working in the mine, I have never heard of any program to do with skill development that has been initiated by mining companies here. I wonder why they don't that because these people make a lot of money (Interview with male respondent).

Another respondent said that:

Mining closure in most cases comes as shock to us. You find that they will just announce that we are closing the mine and when they close, they do not give us any help especially financial help so that we can do business (Interview with male respondent).

One key informant stated that:

I must confirm that there are limited actions that have been taken by the mining companies targeting individuals in the community of your interest to prevent negative consequences of

mine closure. However, I must confirm that mining companies have been contributing greatly as whole in these communities in terms of social cooperative responsibilities. Further, I must confirm to you that as ZCM we are doing every possible to ensure that mine companies add value to the growth of this nation especially towards investing in more value –addition to industrialize the nation (Interview with Zambia Chamber of Mine official).

Another key informant mentioned that:

I do believe that mining companies have a responsibility to pay back to the host community in terms of social cooperate responsibility. But to be realistic with you, it may not be easy to have programmes that are targeted on building individual skills outside mining operation (Interview with Zambia chamber of mine official).

The given results give an impression that mining companies have not done much to ensure that local people are well equipped with various skills that are not related to mining operations only. This can be likened to the assertion by Muntingh (2011) who observed that unemployment and desperation among other issues brings the belief within communities that mining entities are viewed to have limitless resources and are not doing enough to better the lives of the local communities. However, the results from key informants tend to suggest that mining companies have no capacity to meet individual needs as the mines ideologies only focuses on what can benefit the community as a whole.

4.5 Activities that can be undertaken to ensure sustainability of host communities after mine closure

The findings of the study revealed that the mining companies should embark on helping miners to acquire some entrepreneurship skills so that when the mines are closed, they can be able to find alternative sources of income. Findings also revealed that mining companies should be organizing workshops to educate miners on various issues related to wellbeing of the people in the community. Thus, capacity building programmes emerged as a theme.

The findings from the study suggested that in order for the miners to be secured from the negative consequences of mine closure a number of actions must be taken by various mining companies. Below are the verbal responses from the participants.

One respondent stated that:

The only skill I have is to work in the mine. It was going to be better if the mining companies can be proving us with some skills outside mining operation.

Another respondent highlighted that:

I feel government should push these mining companies to help the local people in one way or the other in terms of skill development or even helping their workers with education assistance but it appears that government officials get bribes because they do not really fight for us (Interview with Mal respondent).

Further, another respondent narrated that:

Yes we do understand that mining companies contribute to the development of the country but they should first empower the local people with some skills because we really suffer when they close the mines (Interview with Mal respondent).

One key informant narrated that:

As you might be aware, the Zambian government has been trying to reduce reliance on the mines and that is the trajectory we need to take. We need to empower the local people with various skills so that they are able to survive even without the presence of the mine.

Another key informant stated that:

With a recognition that sustainable development goes with various skills, there is need to escalate skill development to our people. This requires renewed focus among mining companies as social cooperative programmes have been in existence but not yielded expected results in the community due to the fact that people are still struggling to find employment after mine closure (Interview with key informant).

Findings of the study gives an impression that in as much as the mining sector contribute positively to the growth of the national economy through revenue collection, respondents felt that they need to escalate their performance especially in skill development outside mine operation so that people can have means of surviving once mines closes. Capacity building programmes may help to prevent general socio-economic consequences of mine closure on

communities as in most cases, communities are not prepared beforehand on how to survive mine closure (Van Eeden *et al.* 2009, Stacey *et al.* (2010), and Du Plessis, 2011).

4.6 Chapter summary

The study has presented the results on effects of mine closure on living standards of the local community of Luanshya district. It was revealed that even though considerable contribution has been made by the local mine towards socio-economic development in Luanshya, it does not fully meet the notion that mines are the drivers of local economies in their areas of operations. This is attributed to the fact that the mine has not fostered significant economic drivers in the area to sustain the economy even post mine closure. It has been demonstrated that mine closure has negative impact on the livelihood of the people in the community such as loss of employment, decline in living standards and an increase in criminal activities. The study has also shown that mining company in Luanshya district were not doing enough to ensuring that the call for diversification of the economy becomes a reality due to the fact that the study recorded none existence of initiatives undertaken by mining companies. Thus. It was revealed that the mines have the responsibility to give back to the host community through capacity building programmes. The implication of the study is that that mining contributes both positively and negatively to the livelihoods of communities within which they operate. However, it is greatly appreciated when the positive impacts of mines outweigh the negative impacts.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusion of the study on socio economic impact of mine closure on the livelihood of the local community of Luanshya district of Zambia. The chapter also highlights the possible recommendations generated from the findings in addressing the challenges that may be faced as a result of mine closures.

5.2 Conclusions

This study assessed socio economic impact of mine closure on the livelihood of the local people of Luanshya district of Zambia. On livelihood experience of the host community on mine closure in Luanshya district, the study revealed that with the decline in mining operations, there are risks that threaten the future survival of residents of Luanshya. Findings show that mine closure has negative consequences on Luanshya such as loss of employment, decline in financial gains which makes it difficult for the households to meet the basic needs which eventually leads to decline in living standards of the people. Equally, the study revealed that mine closure causes an increase in the rate of crime in the community. It was established that when mine closes, others would resort to other means of income generation such as stealing.

On the aspect of initiatives that were undertaken by the mining companies in Luanshya district to promote community development and mitigate the social economic impacts of mine closure, the study found that most mining companies did not have any initiatives being undertaken in Luanshya district to promote community development and mitigate the social economic impacts of mine closure.

On activities that mine companies can undertake to ensure sustainability of host communities after mine closure it was highlighted that mining companies should be active in providing various skills through capacity building programmes. Through various workshops and extra education, mining workers can acquire extra vital skills that can be very important for survival of the host communities after mine closure.

The implication of the study is that mine closure is detrimental to the future development and diversification of mining economy dependent settlements. Thus, it is expedient that the local community should join other sectors of the economy other than the mining industry which has a lot of impediments as witnessed in this study.

5.3 Recommendations

Based on the findings of this study, the study made the following recommendations are as follows:

1. The chambers of mines should run some projects during closure of mines as one way of empowering the local people.
2. Mining companies need to strengthen their communication strategies and create awareness on the status quo and progress of mining operations and downscaling.
3. The Ministry of local government and rural development need to form a suitable institutional mechanism to drive a post-mine closure economy while at the same time provision of institutional and technical capacity is strengthened at the local government within the three years' time frame remaining for the mine to close.
4. The Ministry of local government and rural development should prioritize community capacity building programs so that mine closure does not affect the livelihood of the people in the community. Mine closures leave communities at a disadvantage because of their limited capacity and skills and they therefore find it hard to integrate in other sectors of the economy.

5.4 Suggestions for future research

Since this study was limited to effects of mine closure on socio-economic development of a mining town, the researcher was not able to address issues outside the scope of this study. Therefore, the following are the areas for further potential research;

1. There is a need to carry out a study on barrier of mining activities on other trade initiatives within Luanshya district.
2. There is need to carry out a study on how community empowerment programs can influence high productivity and economic growth in mining dependence towns.

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APPENDICES

Appendix I: Interview Guide For Former Mine Employees

TOPIC: SOCIO-ECONOMIC IMPACTS OF MINE CLOSURE ON THE LIVELIHOOD OF THE LOCAL COMMUNITY- CASE STUDY OF LUANSHYA

I am a master's student in THE SCHOOL OF MINES AT THE UNIVERSITY OF ZAMBIA. I am conducting a survey to assess the socio-economic impacts of mine closure on the livelihood of the local community in Luanshya. The aim is to assess how the mining activities has benefited and affected individuals and the community as a whole, in the short and long run. We would like to ask you a few questions about how mining and mine closure has affected your livelihood. Your response and information will be kept confidential and used for coding purposes only; you are free to reject this interview if you are not comfortable.

1 Background Information

- a) Sex of the respondent
 - b) Age
 - c) Level of Education
 - d) Employment status
-
3. When did you stop working in the mine?
 4. What were the reasons for stopping?
 5. Since the time you stopped working in the mine, what have you been doing to earn a living?
 - 2 How do mine closure affects your family and the community?
 - 3 Has mines supported the communities after closure?
 - 4 What sort of help have you received from the Government after mine closure?
 - 5 What is the government or mine doing in your town to promote social development?
 - 6 What do you think government and mines should do to improve social impacts in mining town?

- 7 Is there anything else you would like to share with me concerning mine closure and its implications on the livelihood of the host community?

End of an interview

Thank you for your time

Appendix II: Interview Guide for Key Informants

TOPIC: SOCIO-ECONOMIC IMPACTS OF MINE CLOSURE ON THE LIVELIHOOD OF THE LOCAL COMMUNITY- CASE STUDY OF LUANSHYA.

I am a master's student in THE SCHOOL OF MINES AT THE UNIVERSITY OF ZAMBIA. I am conducting a survey to assess the socio-economic impacts of mine closure on the livelihood of the local community in Luanshya. The aim is to assess how the mining activities has benefited and affected individuals and the community as a whole, in the short and long run. We would like to ask you a few questions about how mining and mine closure has affected your livelihood. Your response and information will be kept confidential and used for coding purposes only; you are free to reject this interview if you are not comfortable.

1 For how long have been a member of Zambia chamber of mines (ZCM)?

2 What sort of contribution do the mine bring to the community?

3 As an association advancing mining industries in Zambia, what are some of the major reasons that have been leading to mine closure?

4 What do you think are the implications of mine closure to the host community?

5 Has mines supported the communities after closure?

6 Through your association, what is the government or mine doing to promote social development?

7 What do you think government and mines should do to improve social impacts in mining town?

8 Is there anything else you would like to share with me concerning mine closure and its implications on the livelihood of the host community?

End of an interview

Thank you for your time and responses

Appendix III: Detailed Demographic Profile of the participants

Respondents	Age	Gender	Level of education	Occupation	Employment status
R1	27	M	Primary	Business	Former miner
R2	35	M	Primary	Peasant farmer	Former miner
R3	36	M	Secondary	business	Former miner
R5	30	M	Primary	None	Former miner
R6	55	M	Primary	Business	Former miner
R7	35	M	Primary	None	Former miner
R8	32	M	Primary	None	Former miner
R9	26	M	Secondary	Business	Former miner
R10	28	M	Primary	None	Former miner
R11	29	M	Primary	None	Former miner
R12	35	M	Primary	None	Former miner
R13	37	M	Secondary	Peasant famer	Former miner
R14	32	M	Primary	Business	Former miner
R15	36	M	Secondary	Business	Former miner
R16	45	M	Secondary	Business	Former miner
R17	43	M	Primary	Peasant farmer	Former miner
R18	28	M	Primary	None	Former miner
R19	40	M	Primary	Peasant farmer	Former miner
R20	24	M	Secondary	Business	Former miner
R21	24	M	Primary	None	Former miner
R22	27	M	Primary	Business	Former miner
R23	30	M	Primary	Business	Former miner
R24	43	M	Primary	Peasant farmer	Former miner
R25	45	M	Primary	Peasant farmer	Former miner
R26	29	M	Secondary	Business	Former miner
R27	35	M	Primary	Business	Former miner
R28	39	M	Primary	None	Former miner

R29	37	M	Primary	None	Former miner
R30	41	M	Primary	Peasant farmer	Former miner
R31	42	M	Secondary	Peasant farmer	Former miner
R32	37	M	Primary	None	Former miner
R33	42	M	Primary	None	Former miner
R34	35	M	Secondary	Business	Former miner
R35	29	M	Primary	None	Former miner
R36	52	M	Secondary	Peasant farmer	Former miner
R37	36	M	Primary	None	Former miner
R38	37	M	Primary	None	Former miner
R39	42	M	Secondary	Business	Former miner
R40	49	M	Primary	Business	Former miner
R40	57	M	Primary	None	Former miner
R41	58	M	Primary	Peasant farmer	Former miner
R42	41	M	Primary	None	Former miner
R43	30	M	Secondary	None	Former miner
R44	32	M	Secondary	Business	Former miner
R45	29	M	Primary	None	Former miner
R46	33	M	Primary	None	Former miner