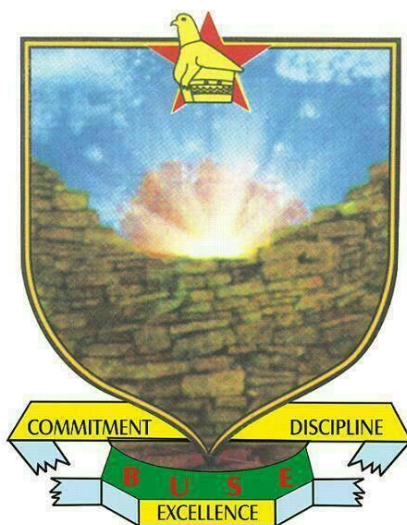


BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

TITTLE: An assessment on the socio-environmental conflicts between mines and local communities. A case study of the BETA bricks Pvt Ltd (Svisva quarry mine)



BASIKITI LIBERTY F

B192341B

**A dissertation submitted in partial fulfilment of the requirements of the Bachelor of
Science Honours Degree in Safety Health and Environmental Management.**

SHEM

Date: .. /..

Dedication

This dissertation is dedicated to my parents, who have always believed in me and supported my academic journey. To my friends and colleagues, whose encouragement and advice have been invaluable.

Acknowledgements

I would like to express my deepest gratitude to Dr. Loveness Mabhungu, my advisor, for her guidance, support, and encouragement throughout this research. Her expertise and insights were invaluable to the completion of this dissertation. I extend my appreciation to the staff and management of BETA Bricks Pvt Ltd (Svisva Quarry Mine) for their cooperation and assistance during my fieldwork. Special thanks to the local community members who participated in this study; your perspectives and experiences were essential to this research. I would like to thank my colleagues and friends at Bindura University for their support, camaraderie, and the many discussions that helped shape my ideas and perspectives. Finally, I am forever indebted to my family for their unwavering support and patience. To my parents, thank you for your constant encouragement and belief in me.

Abstract

This dissertation examines the socio-environmental conflicts between mining operations and local communities, with a focus on the BETA Bricks Pvt Ltd (Svisva Quarry Mine) in Zimbabwe. The study aims to identify the nature and extent of these conflicts, understand their root causes, and evaluate their impacts on both the community and the mining company.

Using a mixed-methods approach, this research combines qualitative and quantitative data collected through interviews, surveys, and environmental assessments. Key stakeholders, including local community members, mine employees, and local government officials, were engaged to provide comprehensive insights into the socio-environmental dynamics at play.

The findings reveal significant areas of conflict, including issues related to land use, environmental degradation, health impacts, and socio-economic disparities. These conflicts are often exacerbated by inadequate communication, lack of transparency, and insufficient community involvement in decision-making processes.

Based on the analysis, this dissertation proposes several strategies for conflict resolution, including improved stakeholder engagement, transparent communication, and sustainable environmental management practices. Recommendations are provided to foster a more harmonious and sustainable relationship between BETA Bricks Pvt Ltd and the local communities, emphasizing the importance of balancing economic development with social and environmental responsibility.

This study contributes to the broader discourse on sustainable mining practices and provides valuable insights for policymakers, mining companies, and communities facing similar challenges globally.

Table of contents

Table of Contents

Dedication	i
Acknowledgements	ii
Abstract	iii
Table of contents	iv
List of figures	vii
List of tables	viii
List of acronyms and abbreviations	ix
CHAPTER 1: INTRODUCTION	1
<i>1.1 BACKGROUND TO THE STUDY</i>	1
<i>1.2 PROBLEM STATEMENT</i>	3
<i>1.3 AIM:</i>	3
<i>1.3.1. OBJECTIVES</i>	3
<i>1.4 JUSTIFICATION</i>	4
CHAPTER TWO: LITERATURE REVIEW.....	5
<i>2.1 NATURE OF SOCIO-ENVIRONMENTAL CONFLICTS</i>	5
<i>2.1 CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS</i>	5
<i>2.3 CASE STUDIES OF SOCIO-ENVIRONMENTAL CONFLICTS</i>	6
<i>2.4 CONFLICT RESOLUTION STRATEGIES</i>	6
<i>2.5 IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS:</i>	7
<i>2.6 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AS A CONFLICT MANAGEMENT TOOL</i>	8
<i>2.7 ENVIRONMENTAL DISPUTE RESOLUTION IN ZIMBABWE</i>	8
CHAPTER THREE: METHODOLOGY	9
<i>3.1 DESCRIPTION OF STUDY AREA</i>	9
<i>3.1.1 LOCATION AND PHYSICAL CHARACTERISTICS OF THE STUDY AREA</i>	9
<i>FIG 3.1. LOCATION OF THE QUARRY MINE</i>	10
<i>3.2. RESEARCH DESIGN</i>	10
<i>3.3 TARGET POPULATION</i>	11
<i>TABLE 3.1. VILLAGE AND HOUSEHOLD DISTRIBUTION</i>	12
<i>3.4 SAMPLING METHODS</i>	12

TABLE 3.2 HOUSEHOLD SAMPLE SIZE BY VILLAGE	12
3.5 DATA COLLECTION METHODS AND INSTRUMENTS	13
3.5.1 QUESTIONNAIRES	13
3.5.2 INTERVIEWS	14
3.5.3 OBSERVATIONS	15
3.6 SECONDARY DATA	15
3.7 DATA ANALYSIS AND PRESENTATION.....	15
3.8 ETHICAL CONSIDERATIONS	16
CHAPTER FOUR: RESULTS.....	17
4.1. PARTICIPATION RESPONSE RATE	17
TABLE 4.1: GENDER RESPONSE PER VILLAGE.....	17
4.1.2 DEMOGRAPHIC INFORMATION	17
TABLE 4.2 DEMOGRAPHIC INFORMATION FOR SVISVA, MASAWI AND MOTSI VILLAGES.	17
4.2. AGE DISTRIBUTION OF RESPONDENTS	19
4.3. EDUCATIONAL ATTAINMENT OF RESPONDENTS	19
4.4. EMPLOYMENT STATUS OF RESPONDENTS.....	19
4.5. TYPES OF SOCIO-ENVIRONMENTAL CONFLICTS.....	19
.....	20
FIG. 4.1 ILLUSTRATES VARIOUS CONFLICTS BETWEEN BETA AGGREGATES AND LOCAL COMMUNITIES.....	20
4.6. CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES.....	21
FIG 4.2 CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES.	21
4.7. IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN MINERS AND LOCAL COMMUNITIES AT BETA AGGREGATE	22
CHAPTER FIVE: DISCUSSION	24
5.1.1. JOB PROMISE CONFLICTS	24
5.1.2. WATER CONFLICTS	24
5.1.3. BOUNDARY DISPUTES.....	24
5.1.4. LAND DISPUTES.....	24
5.1.5. MINING-INDUCED HUMAN-WILDLIFE CONFLICTS.....	25
5.1.6. FARMER-MINER RESOURCE CONFLICTS.....	25
5.1.7. HUMAN RIGHTS VIOLATIONS	26
5.2. CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES.....	26

5.2.1. MINING-INDUCED WATER SCARCITY.....	26
5.2.2. JOB PROMISES AND RISING UNEMPLOYMENT.....	27
5.2.3. INADEQUATE COMMUNICATION AND CONSULTATION.....	27
5.2.4. FORCED RELOCATION OF LOCAL COMMUNITIES.....	27
5.2.5. PROPERTY DAMAGE DUE TO BLASTING.....	28
5.2.6. NOISE POLLUTION.....	28
5.2.7. FLY ROCK AND DEBRIS	28
5.2.8. PERCEIVED VIOLATION OF ENVIRONMENTAL RIGHTS	28
5.2.9. CLIMATE CHANGE	28
5.2.10. SEXUAL HARASSMENT	29
5.3. IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN MINERS AND LOCAL COMMUNITIES AT BETA AGGREGATE	29
5.3.1. POSITIVE IMPACTS OF CONFLICTS	29
5.3.1.1. ENHANCED MINE OPERATIONS WITH REDUCED ENVIRONMENTAL DEGRADATION	29
5.3.1.2. STRENGTHENED SOCIAL COHESION AND COMMUNICATION	29
5.3.1.3. ENHANCED CORPORATE RESPONSIBILITY	30
5.3.2. NEGATIVE IMPACTS OF CONFLICTS	30
5.3.2.1. DAMAGED CORPORATE IMAGE.....	30
5.3.2.2. ECONOMIC LOSSES.....	30
5.3.2.3. SOCIAL AND POLITICAL INSTABILITY	30
5.4. EFFECTIVENESS OF CONFLICT MANAGEMENT MEASURES.....	31
5.4.1. ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC ENGAGEMENT	31
5.4.2. ENHANCED PUBLIC ENGAGEMENT THROUGH REGULAR COMMUNITY MEETINGS.....	31
5.4.3. INVOLVEMENT OF TRADITIONAL LEADERS IN DECISION-MAKING	31
5.4.4. RELOCATION OF AFFECTED COMMUNITIES.....	31
CHAPTER SIX: CONCLUSION AND RECOMENDATIONS.....	33
6.1 CONCLUSION.....	33
6.2 RECOMMENDATIONS.....	33
APPENDICES.....	40

List of figures

Fig 3.1. Location of the quarry mine.....	10
Fig. 4.1 various conflicts between beta aggregates and local communities.....	20
4.6. Causes of socio-environmental conflicts between beta aggregates mine and local communities.....	24
Fig. 4.3: impacts of socio-environmental conflicts at beta aggregates mine.....	28

List of tables

Table 3.1. Village and household distribution.....	12
Table 3.2 household sample size by village.....	12
Table 4.1: gender response per village.....	17
Table 4.2 demographic information for svisva, masawi and motsi villages.	17

List of acronyms and abbreviations

NSSA	National Social Security Authority
SAZ	Standard Association of Zimbabwe
SHEQ	Safety Health Environment and Quality
EMA	Environmental Management Agency
GES	Geography and Environmental Studies
GIS	Geographical Information System.
ZELA	Zimbabwe environmental law association.
RDC	Rural district council.
HWC	Human wildlife conflicts

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The coexistence of mining operations and local communities has historically been fraught with socio-environmental tensions. Mining activities, often essential for economic development, can significantly impact the social, cultural, and environmental fabric of nearby communities (Lahiri-Dutt, 2006). These impacts frequently lead to conflicts between mining companies and local residents, stemming from issues such as land rights, environmental degradation, resource depletion, and socio-economic disparities (Bridge, 2004).

Socio-environmental conflicts in mining areas are multifaceted and complex, influenced by a myriad of factors including geographical location, cultural dynamics, regulatory frameworks, and corporate practices (Jenkins et al., 2003). These conflicts often manifest in various forms, ranging from protests and legal disputes to social unrest and violence, profoundly affecting both the mining companies and the communities involved (Aragon & Rud, 2013).

In Africa, mining-related conflicts encompass issues such as land development, territorial control, impacts on local livelihoods, and disputes over government regulations (Bob, 2010). These conflicts are exacerbated by factors like climate change and competition for natural resources, resulting in clashes between civil society, mining companies, and various state actors (Engels, 2016). The prevailing perception is that mining interests in African nations prioritize commercial gains, often leading to protests and demands for mine closures from affected communities (Bebbington, 2020).

Over the past two decades, Zimbabwe has witnessed a surge in mining activities, contributing significantly to its economic development (Doroh, 2012). However, conflicts between miners and local communities, particularly farmers, have become increasingly prevalent, driven by competition for land (Chikuni, 2021).

Several studies have examined the socio-environmental conflicts associated with the Svisva quarry mine in Goromonzi, Zimbabwe, shedding light on the complexities and challenges involved. For instance, Kiberu et al. (2016) conducted a comprehensive analysis of the environmental impacts of mining operations on water resources and biodiversity in the region.

Similarly, Adnan et al. (2019) explored the socio-economic consequences of displacement and resettlement on local communities, highlighting issues of social injustice and inequity.

While existing literature provides valuable insights, there remains a need for further research to comprehensively understand the socio-environmental conflicts at the Svisva quarry mine in Goromonzi, Zimbabwe, and identify sustainable solutions. This dissertation aims to address this by Investigating the underlying causes and dynamics of the conflict between BETA Bricks Pvt Ltd and local communities. Assessing the social, environmental, and economic impacts of mining activities on the affected communities in Goromonzi, Zimbabwe. Exploring strategies for mitigating conflicts and promoting sustainable coexistence between mining companies and local residents in Goromonzi, Zimbabwe.

The socio-environmental conflicts between mines and local communities, exemplified by the case study of the Svisva quarry mine operated by BETA Bricks Pvt Ltd in Goromonzi, Zimbabwe, are complex phenomena with far-reaching implications. By undertaking a detailed analysis of this case, this dissertation seeks to contribute to the existing body of knowledge on mining-related conflicts and offer actionable recommendations for fostering more harmonious relationships between mining companies and host communities.

1.2 PROBLEM STATEMENT

Despite the vital role of mining activities in fostering economic growth, the coexistence of mining operations and local communities in Goromonzi, Zimbabwe, has engendered significant socio-environmental conflicts. The Svisva quarry mine, operated by BETA Bricks Pvt Ltd, epitomizes the intricate nexus of challenges faced by mining companies and host communities in navigating issues of land rights, environmental sustainability, social equity, and community engagement. These conflicts not only jeopardize the well-being of local residents but also pose considerable risks to the long-term viability of mining operations and regional development initiatives. Addressing these conflicts requires a nuanced understanding of their underlying causes, impacts, and potential pathways for resolution.

1.3 AIM:

To examine socio-environmental conflicts between mines and local communities surrounding BETA Aggregates mine.

1.3.1. OBJECTIVES

- To identify the types of socio-environmental conflicts between mines and local communities.
- To investigate the main causes of socio-environmental conflicts within the study area.
- To assess the impacts of socio-environmental conflicts between miners and local communities.
- To evaluate the effectiveness of conflict management measures in the study area.

1.4 JUSTIFICATION

The socio-environmental conflicts between mining operations and local communities represent a significant and growing challenge in many parts of the world, including Zimbabwe. This research is crucial for several reasons:

Understanding the nature and causes of these conflicts is essential for developing effective strategies to mitigate them. By focusing on the BETA Bricks Pvt Ltd (Svisva Quarry Mine), this study provides a detailed examination of the specific issues faced by both the mining company and the local community, offering insights that can be generalized to similar contexts.

The findings of this research will benefit multiple stakeholders. Local communities will gain a voice in the discourse, with their concerns and perspectives being systematically documented and addressed. This can lead to improved living conditions, better health outcomes, and enhanced socio-economic opportunities.

For BETA Bricks Pvt Ltd and other mining companies, the research offers valuable recommendations for fostering better relationships with local communities. By adopting the proposed conflict resolution strategies, companies can enhance their social license to operate, reduce operational disruptions, and promote sustainable development practices.

Policymakers and regulatory bodies will also benefit from this research, as it provides evidence-based insights that can inform more effective regulations and policies aimed at balancing economic development with social and environmental sustainability.

This study is important because it addresses a critical issue that affects the well-being of local communities and the sustainable operation of mining companies. The insights gained will help to build a framework for more harmonious and productive interactions between mines and communities, contributing to broader efforts towards sustainable development.

CHAPTER TWO: LITERATURE REVIEW

The interaction between mining operations and local communities often leads to socio-environmental conflicts. These conflicts arise from the competing interests of economic development and environmental conservation, coupled with the social dynamics of communities living in close proximity to mining activities.

2.1 NATURE OF SOCIO-ENVIRONMENTAL CONFLICTS

Mining activities can significantly alter the socio-economic landscape of local communities. Studies have shown that while mining can create jobs and spur economic growth, it can also lead to displacement, loss of livelihoods, and increased socio-economic disparities. For instance, a study by Hilson (2002) highlights the dual-edged nature of mining in rural economies, where short-term economic gains are often overshadowed by long-term socio-economic challenges.

The environmental impacts of mining are well-documented and include deforestation, soil erosion, water contamination, and biodiversity loss (Bridge, 2004). These environmental changes directly affect local communities, leading to conflicts over resource use and environmental degradation. Research by Kitula (2006) in Tanzania found that mining-induced environmental changes significantly affected agricultural productivity and access to clean water, exacerbating conflicts between mining companies and local residents.

2.1 CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS

A significant cause of socio-environmental conflicts is the lack of meaningful involvement of local communities in decision-making processes (Kemp et al., 2011). When communities are excluded from discussions about land use, environmental management, and benefit-sharing, conflicts are likely to arise. The absence of transparent and inclusive consultation processes often leads to mistrust and opposition to mining activities.

Regulatory frameworks and policies often lag behind the rapid pace of mining developments, leading to gaps in enforcement and compliance (Buxton, 2012). Weak regulatory oversight can result in environmental degradation and social injustices, further fueling conflicts. A study by

Moyo and Zuwarimwe (2021) in Zimbabwe highlighted how insufficient regulation and oversight contributed to ongoing conflicts between mining companies and local communities.

Power imbalances between mining companies and local communities also play a crucial role in the emergence of conflicts (Owen and Kemp, 2013). Mining companies often wield significant economic and political power, which can be used to marginalize local voices and prioritize corporate interests over community welfare. This imbalance exacerbates feelings of disenfranchisement and resistance among community members.

2.3 CASE STUDIES OF SOCIO-ENVIRONMENTAL CONFLICTS

Numerous case studies globally illustrate the dynamics of socio-environmental conflicts in mining contexts. For example, in Peru, Bebbington et al. (2008) documented conflicts arising from mining operations in the Andean region, where local communities faced significant environmental degradation and social disruptions. Similarly, research in Papua New Guinea by Banks (2002) highlighted how mining-induced displacement and environmental harm led to prolonged community opposition and conflict.

In Africa, several studies have explored socio-environmental conflicts in mining areas. For instance, research by Nyame and Blocher (2010) in Ghana demonstrated how illegal mining activities, or "galamsey," led to severe environmental damage and social unrest. In South Africa, the work of Marais (2013) illustrated how historical injustices and contemporary mining practices intersect to create complex socio-environmental conflicts in mining regions.

In Zimbabwe, mining has been a critical economic activity, but it has also been associated with significant socio-environmental conflicts. The work of Mabhena and Moyo (2014) highlighted how mining operations in the Midlands Province led to disputes over land rights, environmental degradation, and inadequate compensation for displaced communities. These conflicts are often intensified by the economic challenges and political instability facing the country.

2.4 CONFLICT RESOLUTION STRATEGIES

Effective conflict resolution requires meaningful community engagement and participation. Studies have shown that when local communities are actively involved in decision-making processes, conflicts can be mitigated (Franks et al., 2014). Participatory approaches, such as

community consultations, stakeholder forums, and joint decision-making bodies, can help bridge the gap between mining companies and local residents.

Transparent and open communication is essential for building trust and reducing conflicts. Mining companies need to provide clear and accurate information about their operations, environmental impacts, and benefit-sharing mechanisms (Kemp and Owen, 2013). This transparency helps to address misconceptions, reduce rumors, and foster a more cooperative relationship between stakeholders.

Implementing sustainable environmental management practices is crucial for minimizing the negative impacts of mining on local communities (Sairinen et al., 2012). This includes adopting environmentally friendly technologies, rehabilitating mined land, and ensuring proper waste management. Sustainable practices not only reduce environmental harm but also demonstrate the company's commitment to social responsibility.

Strengthening policy and regulatory frameworks is essential for addressing socio-environmental conflicts in the mining sector. Governments need to enforce strict environmental and social regulations, ensure fair compensation for affected communities, and promote equitable benefit-sharing mechanisms (Buxton, 2012). Policy reforms should also focus on enhancing the capacity of regulatory bodies to monitor and enforce compliance.

The literature on socio-environmental conflicts between mining operations and local communities underscores the complex and multifaceted nature of these issues. The case of the BETA Bricks Pvt Ltd (Svisva Quarry Mine) is a pertinent example of how these conflicts manifest and the importance of addressing them through comprehensive and inclusive strategies. By understanding the underlying causes and impacts of these conflicts, stakeholders can develop more effective approaches to foster harmonious and sustainable relationships between mining companies and local communities.

2.5 IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS:

Socio-environmental conflicts can yield both positive and negative social outcomes. Positive outcomes may include increased community participation, environmental rehabilitation, and enhanced planning (Scheide, 2020). Handled appropriately, conflicts can facilitate community issue resolution and foster beneficial development outcomes (Prenzel and Vanclay, 2014). Moreover, conflicts between miners and local communities can spur policy reforms and

strengthen laws, fostering long-term cooperation. Effective conflict management can also cultivate social trust among different parties (Gilligan et al., 2014). However, conflicts may lead to negative consequences, such as social divisions and decreased communication, especially in communities facing significant transformations (Willow and Wylie, 2014).

2.6 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AS A CONFLICT MANAGEMENT TOOL

EIA serves as a global policy tool to incorporate environmental and social considerations into decision-making for large-scale projects. Authors have highlighted EIA's role in conflict management related to project implementation (Prenzel and Vanclay, 2014). Effective EIA implementation promotes minority participation and facilitates conflict resolution within communities (Oliveira and Partidário, 2020). While EIA can mitigate community resistance and build trust, conflicts may persist due to insufficient project improvement or failure to address stakeholder concerns (Cuppen et al., 2012). Many EIAs focus on direct environmental impacts, neglecting social implications, contributing to conflicts (Larsen et al., 2015).

2.7 ENVIRONMENTAL DISPUTE RESOLUTION IN ZIMBABWE

The Environmental Management Act (EMA) and traditional leader statutes empower Chiefs, Headmen, and Village Heads to utilize alternative dispute resolution mechanisms for resolving disputes over natural resources in common areas (Murombo, 2012). Although traditional leaders play crucial roles in environmental matters, they lack explicit environmental powers under the 2013 Constitution, particularly in rural areas where the majority reside (Chigwata, 2016). Environmental litigation through EMA can serve as a useful tool for resolving disputes, particularly when alternative dispute resolution processes fail (Murombo, 2021).

CHAPTER THREE: METHODOLOGY

3.1 DESCRIPTION OF STUDY AREA

3.1.1 LOCATION AND PHYSICAL CHARACTERISTICS OF THE STUDY AREA

The study focuses on the BETA Bricks Pvt Ltd (Svisva quarry mine), located in the Mashonaland East province of Zimbabwe, a region rich in mineral resources and significant to the country's mining sector. The Svisva quarry mine, specifically involved in granite extraction, is situated at approximately 17.9000° S latitude and 31.1000° E longitude. This area experiences a tropical savannah climate, with a wet season from November to March and a dry season from April to October. The topography is predominantly hilly, with elevations ranging from 1,200 to 1,500 meters above sea level, and the quarry is set in rugged terrain interspersed with natural vegetation and small water bodies essential for local biodiversity.

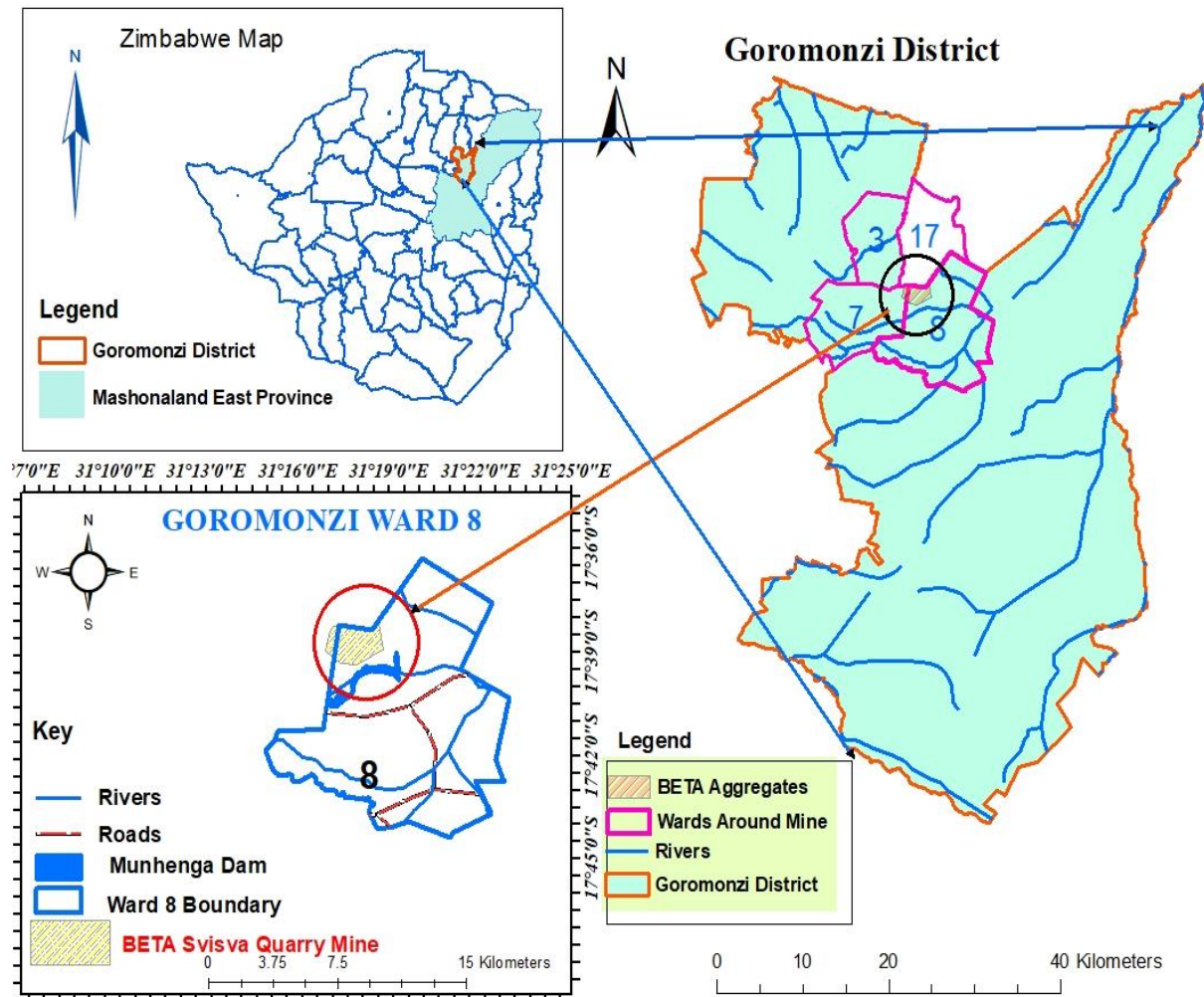
Surrounding the quarry are agricultural lands, forests, and small settlements that contribute to a diverse ecological environment. Local communities around the Svisva quarry mine are primarily engaged in subsistence farming and small-scale commercial agriculture, relying heavily on natural resources such as water from nearby rivers and land for farming and grazing. The mine presents both opportunities, such as employment, and challenges, including displacement, loss of agricultural land, and health risks due to dust and water pollution. Environmental concerns are significant, with quarrying activities leading to deforestation, soil erosion, and water contamination, impacting the natural landscape and local flora and fauna.

The local communities have a complex relationship with the mining activities. While the mine offers economic benefits through job creation and infrastructure development, it also raises concerns about environmental degradation, health impacts, and social disruptions. The local population comprises diverse ethnic groups with rich cultural traditions closely tied to their natural environment. The Svisva quarry mine is accessible via a network of roads connecting it to major towns and cities, including Marondera, the provincial capital. These roads facilitate the transport of granite and other materials but also raise concerns about road safety and infrastructure maintenance due to increased traffic from mining operations.

In summary, the study area presents a unique combination of rich natural resources, diverse ecological landscapes, and complex socio-economic dynamics. Understanding the interplay between the mining operations of BETA Bricks Pvt Ltd and the local communities is crucial

for developing strategies that promote sustainable development while minimizing socio-environmental conflicts. Figure 3.1 shows location of the quarry mine.

FIG 3.1. LOCATION OF THE QUARRY MINE



3.2. RESEARCH DESIGN

A research design serves as a navigational tool, outlining the strategy and blueprint for conducting a study to gather relevant information (Korathi, 2004). It delineates the approach, timing, and locations for information gathering and analysis. Kumar (2011) defines it as a procedural roadmap enabling researchers to provide answers in a credible, objective, precise, and cost-effective manner. For this study, a descriptive research design was adopted, aiming to systematically categorize a phenomenon using both qualitative and quantitative methods. This

approach, also known as mixed methodology, facilitates the collection, analysis, and presentation of both types of data.

Mixed methodology research, as described by George (2022), combines elements of qualitative and quantitative research to offer a comprehensive understanding. The qualitative component of the study investigates subjective aspects such as values, perceptions, and attributes to gain a deeper understanding of socio-environmental conflicts in the study area, focusing on their origins and effects on both the mining operation and the local communities. It explores the underlying motivations and reasons behind individuals' actions. Several qualitative techniques were employed: self-administered questionnaires were used to gather personal insights and opinions from participants; interviews were conducted to obtain in-depth and detailed responses; document reviews provided historical and contextual information; and observations allowed for the direct assessment of behaviors and interactions in the natural setting.

Conversely, the quantitative research focuses on numerical data and statistical analysis to examine the relationships between variables (Creswell, 2009). In this study, quantitative methods complemented the qualitative findings by transforming them into numerical data, which were then represented graphically. This approach was used to analyze questionnaire responses from residents of Masawi, Marden Svisva, and Motsi villages, investigating variables such as gender, experience, and education level. The data analysis was carried out using Microsoft Excel for data organization, Microsoft Word for documentation, and the Statistical Package for the Social Sciences (SPSS) for advanced statistical analysis.

3.3 TARGET POPULATION

The target population refers to the entire group under scrutiny in a scientific research question, representing the focal point for data collection and analysis (Castillo et al., 2009). For this study, the target population comprised all villages surrounding the BETA aggregates mine, namely Masawi, Marden Svisva, and Motsi villages. These communities, directly affected by mine operations, were selected due to their proximity and involvement in conflicts with the mine.

According to preliminary survey findings, the three villages had a total of 181 households. The research included 181 households from the targeted villages (see Table 3.1)

TABLE 3.1. VILLAGE AND HOUSEHOLD DISTRIBUTION

Village name	Households
Masawi village	74
Marden Svisva	58
Motsi village	49
Total	181

3.4 SAMPLING METHODS

For this study, the researcher employed purposive sampling to select the villages surrounding the mine as sample units. This method was chosen because these villages, due to their proximity to the mining area, held crucial information pertinent to the research. The selection process focused on 181 households within these villages. Given the impracticality, time constraints, and high costs of studying the entire population, a representative sample was selected . Specifically, a sample of 59 households was chosen to represent the entire population. The researcher then used simple random sampling to select the required households from each village, ensuring that every household had an equal chance of being included in the study.

Additionally, purposive sampling was used to select key informants, who are individuals with extensive knowledge and experience in specific areas and can provide valuable assistance in the research. In this context, key informants were chosen for their ability to offer deep insights into the community and to help the researcher establish new contacts and gather nuanced information. These key informants were integral to community-based research, providing essential perspectives and aiding in the understanding of socio-environmental conflicts (McKenna and Main, 2013). Table 3.2 represents household sample size by village.

TABLE 3.2 HOUSEHOLD SAMPLE SIZE BY VILLAGE

Village	Number of households	Sample households
Masawi village	74	24
Mardern Svisva	58	19

Motsi Village	49	16
Total	181	59

3.5 DATA COLLECTION METHODS AND INSTRUMENTS

Primary data was collected through questionnaire surveys, interviews with key informants, and direct field observations. Questionnaires were administered to households in the study area to collect demographic and conflict-related data. Interviews were conducted with key informants to gain insights into conflict causes, impacts, and mitigation measures. Field observations allowed the researcher to visually assess environmental damage and community-mine proximity issues.

3.5.1 QUESTIONNAIRES

A total of 59 questionnaires were administered to households in Masawi, Marden Svisva, and Motsi villages. The questionnaire (Appendix 1) was structured into five sections, labeled A, B, C, D, and E, each designed to gather specific information:

- Section A: Demographic information.
- Section B: Identifying the types of conflicts between the mine and the local communities.
- Section C: Determining the causes of conflicts between the miners and the local communities.
- Section D: Assessing the impacts of socio-environmental conflicts.
- Section E: Evaluating the effectiveness of measures implemented to resolve socio-environmental conflicts between the miners and the local communities in the study area.

Both open-ended and closed-ended questions were used to gather qualitative and quantitative data, respectively. The questionnaire was designed in English and administered personally to ensure clarity.

3.5.2 INTERVIEWS

Interviews involve open-ended discussions with interviewees to gather information on specific topics (O’Leary, 2010). For this study, semi-structured interviews were conducted with key informants, including the district chief, Svisva resident association chairman, and the SHEQ officer of BETA aggregates. These interviews aimed to obtain detailed insights into conflict dynamics, mitigation measures, and community perspectives. Interviews were conducted face-to-face to ensure a high response rate and allow for probing questions. Interview guides were used to maintain consistency and focus during the interviews.

For this study, the researcher developed two distinct interview guides, detailed in Appendix 2 and Appendix 3, each containing semi-structured questions aimed at collecting relevant information on conflicts between the mine and the local communities.

Appendix 2 was designed with two main sections. The first section focused on background and role-specific questions, aimed at understanding the responsibilities and perspectives of the district chief and the chairman of the Svisva Resident Association regarding conflict management between the community and the mine. The second section included conflict-specific questions to gather detailed insights into the nature, causes, and impacts of the conflicts, as well as the strategies employed to address them. These individuals were chosen due to their significant roles in managing such conflicts within the community.

Appendix 3 was structured with sections tailored to the BETA Aggregates SHEQ officer. The first section contained questions related to the officer's professional background and role in ensuring safety, health, environment, and quality standards within the mining operation. The second section focused on conflict management and resolution, seeking to understand the officer's approach to handling disputes with the local community and the measures implemented to mitigate such conflicts.

These interview guides were essential in collecting comprehensive and nuanced information from key stakeholders involved in the socio-environmental conflicts between the mine and the local communities.

3.5.3 OBSERVATIONS

Observations involve gathering data through careful visual analysis of a situation (Merriam et al., 2015). In this study, direct field observations were conducted in the mining area and surrounding villages to assess environmental damage and community-mine proximity issues. A checklist of observations, detailed in Appendix 4, was used to gather relevant information, and photographs were taken to document the findings. Direct observation provided contextual information on the ground reality, complementing data collected through questionnaires and interviews. The researcher created an observation checklist to collect data on the environmental damage caused by mine operations and to examine the proximity of the villages to the mine in relation to conflicts between BETA and the local communities.

3.6 SECONDARY DATA

Secondary data refers to information that has already been collected from primary sources and made available for researchers to use in their studies (Hox and Boeijs, 2005). According to Johnston (2017), secondary data is information obtained from other sources to shed light on the research subject. To identify the causes of socio-environmental conflicts and assess the measures implemented by the mining company to prevent conflicts, documents such as minutes from meetings between the mine and the local community, as well as the environmental impact assessment for the mining project, are utilized. These documents provide insights into the agreements made between the local community and the mine before and after the mine's operation began, and they also highlight the issues that have led to conflicts at Svisva mine.

3.7 DATA ANALYSIS AND PRESENTATION

This study generated both qualitative and quantitative data, analyzed through multiple methods. The data gathered from questionnaires and interviews, both quantitative and qualitative, was coded and organized by extracting relevant information from the research instruments. The researcher utilized the Statistical Package for the Social Sciences (SPSS) to organize and analyze the questionnaires, particularly useful for quantitative demographic data in Section A of the questionnaire. The qualitative data was first analyzed using SPSS, then organized according to the sections outlined in the researcher's appendices. Microsoft Excel was used to create graphs and tables that visually represented both qualitative and quantitative data, while Microsoft Word was employed to compile and format the final presentation of these findings.

3.8 ETHICAL CONSIDERATIONS

Ethical considerations are essential in research to ensure the safety, confidentiality, and integrity of participants (Becker & Becker, 2013). Codes of conduct such as honesty, objectivity, confidentiality, and responsible publication were adhered to throughout the study. Permissions were obtained from relevant authorities, and participants were informed about the research purpose and their rights. Anonymity and confidentiality were maintained, and data were analyzed and reported objectively, avoiding bias or manipulation.

CHAPTER FOUR: RESULTS

4.1. PARTICIPATION RESPONSE RATE

Out of the 59 distributed questionnaires across Motsi, Madern Svisva, and Masawi villages, 43 were completed, resulting in a response rate of approximately 72.8% from the sampled population. Among the respondents, 44.2% were male and 55.8% were female. The higher representation of females was attributed to more males being away for work during the research period, leaving more females available for participation. Some individuals declined to answer questions due to perceived political motivations behind the research, fearing potential repercussions for opposing the mine. In contrast, all key informants participated in the interviews, resulting in a 100% response rate. Table 4.1 presents the response rate breakdown per village.

TABLE 4.1: GENDER RESPONSE PER VILLAGE

Village name	Sample population	Male respondents	Female respondents	TOTAL respondents	Cumulative percentage
Masawi village	24	8	10	18	75%
Motsi village	16	6	9	15	95%
Marden Svisva village	19	5	5	10	100%
Total	59	19	24	43	-

4.1.2 DEMOGRAPHIC INFORMATION

Demographic information of this study respondents was analysed; Table 4.2 below represented study respondents.

TABLE 4.2 DEMOGRAPHIC INFORMATION FOR SVISVA, MASAWI AND MOTSI VILLAGES.

Socio-economic characteristics	Frequency	Percentage (%)
Gender		

Male	19	44.2
Female	24	55.8
Age distribution (years)		
Below 30	12	28
31 -45	21	49
46-65	9	21
65+	1	2.3
Marital status		
Single	8	19
Married	28	65.1
Divorced	3	7
Widow	4	9.3
Educational Qualification		
Never been to school	6	14
Primary school	21	49
Secondary school	14	33
Tertiary	2	5
Occupation		
Formally employed	9	21
Self employed	12	28
Unemployed	22	51.2

4.2. AGE DISTRIBUTION OF RESPONDENTS

Among the respondents, 28% were below 30 years old, 49% were aged between 31 and 45, 21% were between 46 and 65, and 2.3% were over 65 years old. These demographics align with the younger population predominant in Marden Svisva, Masawi, and Motsi villages, indicating a high level of economic activity with a relatively low life expectancy and a high dependency ratio. The prevalence of younger individuals in conflicts suggests age-related influences on conflict resolution approaches, with older individuals typically employing more conciliatory tactics.

4.3. EDUCATIONAL ATTAINMENT OF RESPONDENTS

Most residents in Marden Svisva, Motsi, and Masawi Villages terminated their education at the primary level, followed by secondary school, with only a minority pursuing tertiary education. Limited access to funds and religious beliefs, particularly among the dominant Mapostori community, hindered educational advancement. However, literate respondents exhibited better comprehension of research topics, access to information, and social networks, contributing to richer data collection.

4.4. EMPLOYMENT STATUS OF RESPONDENTS

Over half (51.2%) of respondents were unemployed, while 21% were formally employed, and 28% were self-employed, primarily as farmers. A small proportion (9.3%) worked directly for the BETA Aggregates mine, with others employed in nearby farms. The high unemployment rate underscores limited opportunities in rural areas, forcing many to rely on agriculture for sustenance.

4.5. TYPES OF SOCIO-ENVIRONMENTAL CONFLICTS

In the context of socio-environmental conflicts, various types arise from the interaction between social and environmental factors. Figure 4.1 presents the distribution of different types of socio-environmental conflicts identified in the study area.

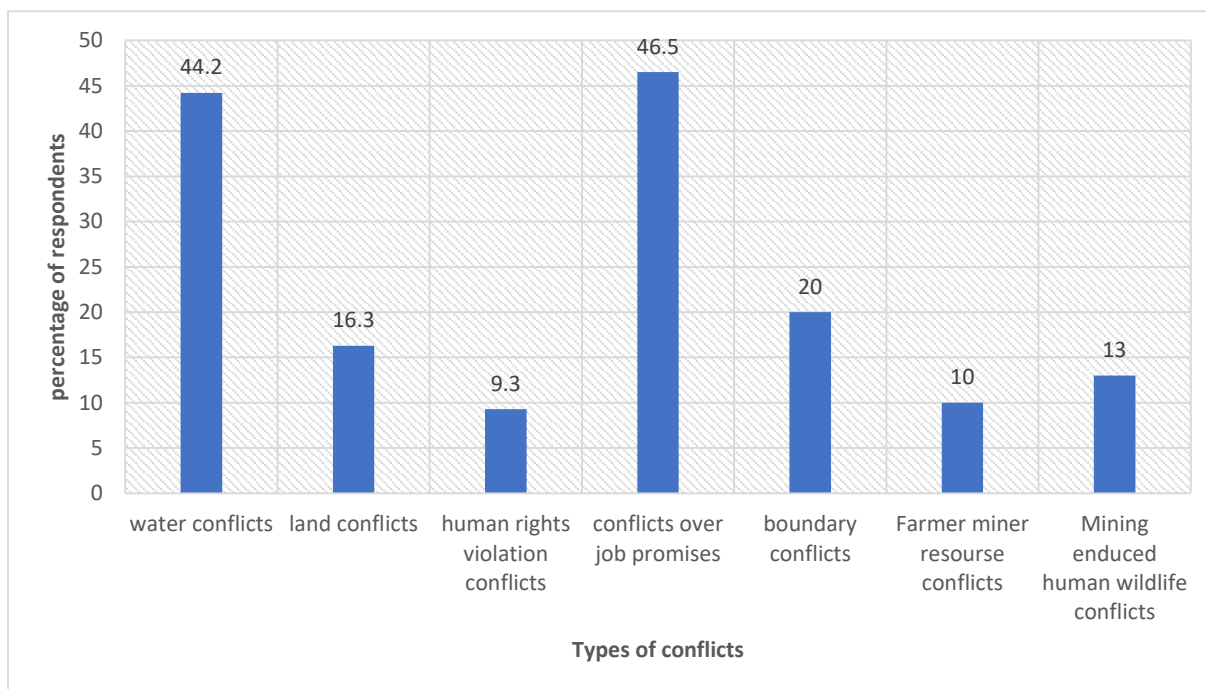


FIG. 4.1 ILLUSTRATES VARIOUS CONFLICTS BETWEEN BETA AGGREGATES AND LOCAL COMMUNITIES.

As illustrated in Figure 4.1, conflicts over job promises are the most prevalent type, accounting for 46.5% of the total conflicts. The high incidence of conflicts over job promises indicates significant competition and contention for employment in the study area.

water conflicts, representing 44.2% of the total, arise from competing demands for water, such as agricultural expansion versus conservation efforts. These conflicts often lead to tensions between farmers, conservationists, and policymakers as they navigate the trade-offs between economic development and environmental protection.

boundary conflicts make up 20% of the conflicts, involving disagreements over the responsibility and impact of pollution on communities. These conflicts are usually driven by industrial activities that lead to environmental degradation, affecting the health and livelihoods of nearby populations.

land conflicts, which constitute 16.3% of the total, occur when conservation initiatives, such as the establishment of protected areas, clash with the needs and rights of local populations who rely on those areas for their livelihoods.

Finally, human rights violation conflicts account for 9.3% of the total conflicts. These conflicts stem from the impacts of house damages, noise pollution and sexual harassment, as well as the measures taken to mitigate these impacts, which can disproportionately affect vulnerable communities.

4.6. CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES

Conflicts between Beta Aggregates Mine and local communities arise from various socio-environmental factors. Figure 2 provides a detailed breakdown of the primary causes of these conflicts.

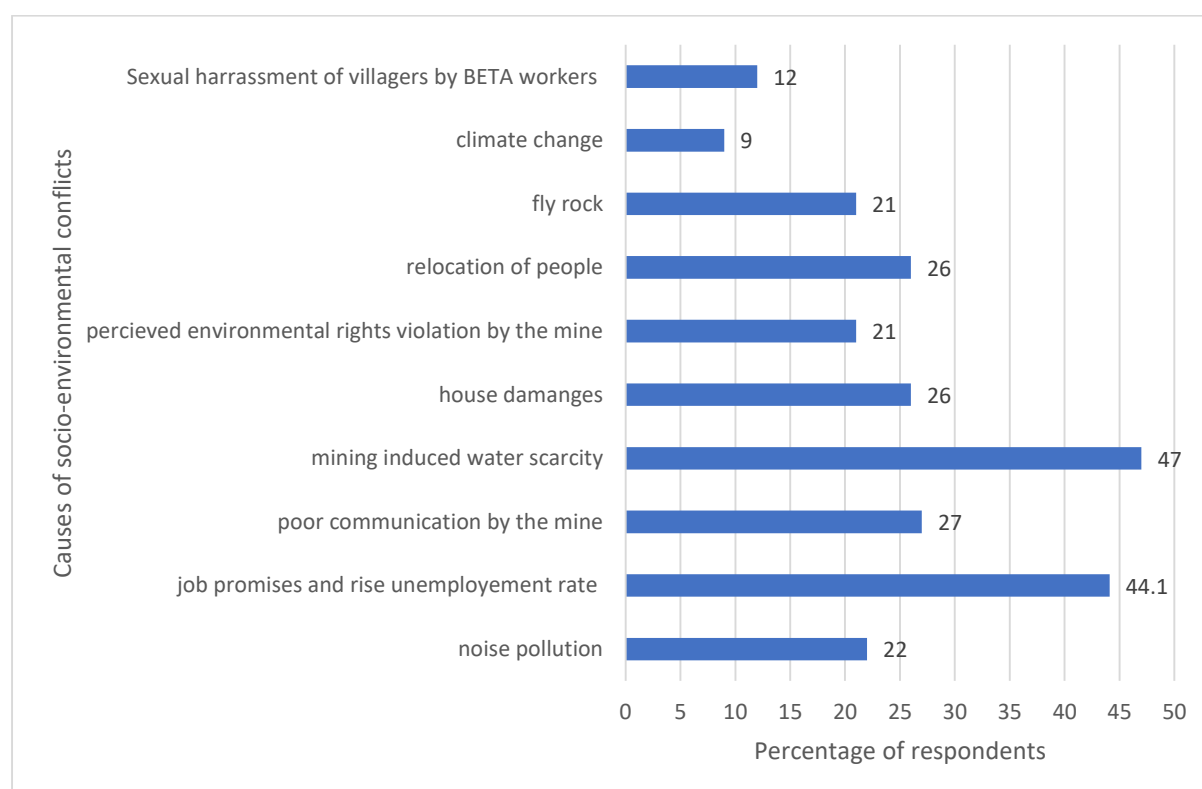


FIG 4.2 CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES.

Figure 4.2 highlights that mining induced water scarcity is the leading cause of conflict, accounting for 47% of the cases. The excessive use of water and other resources by the mine leads to a scarcity of water as a resource for local communities, affecting their traditional ways of life and economic activities.

Relocation of people, responsible for 26% of the conflicts, flyrock 21%, house damages 26%, are other significant causes. The expansion of Beta Aggregates Mine often requires the relocation of local communities, leading to loss of homes and livelihoods. This forced displacement creates significant resentment and opposition among the affected populations.

Environmental degradation that results from mining activities that pollute noise contributing to 20% of the conflicts, along with the destruction of local ecosystems. These environmental impacts often lead to disputes over the responsibility for and remediation of the damage caused.

4.7. IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN MINERS AND LOCAL COMMUNITIES AT BETA AGGREGATE

The socio-environmental conflicts between miners and local communities at Beta Aggregate have numerous impacts, affecting both the communities and the mining operations. Figure 4.3 illustrates the various impacts of these conflicts.

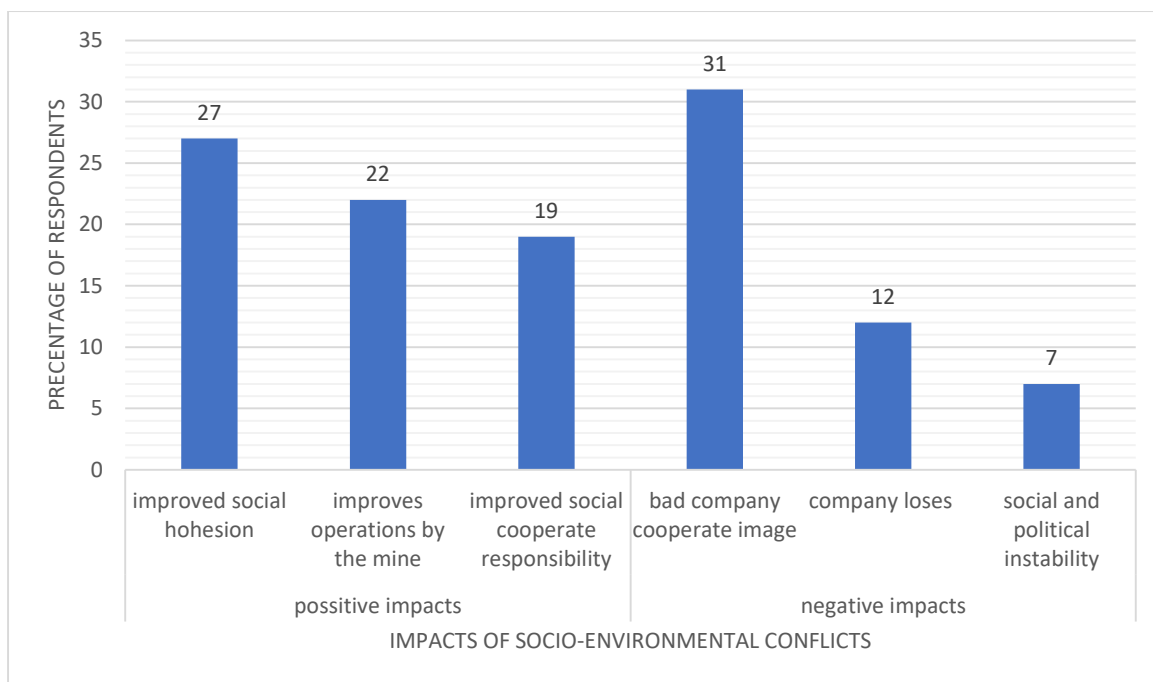


FIG 4.3: IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS AT BETA AGGREGATES MINE

As shown in Figure 4.3, bad company cooperate image is a significant impact, accounting for 31% of the total impacts. More complaints about the company can lead to a bad reputation in the company's name

Company loses, representing 12% of the impacts, affects both the mining company and local communities. Conflicts can lead to disruptions in mining operations, resulting in financial losses for the company. Additionally, local communities may suffer economic setbacks due to the loss of livelihoods and decreased economic opportunities.

CHAPTER FIVE: DISCUSSION

5.1. TYPES OF SOCIO-ENVIRONMENTAL CONFLICTS

5.1.1. JOB PROMISE CONFLICTS

A substantial portion (46.5%) of respondents cited conflicts arising from unfulfilled job promises by the mine. Despite employing some locals, dissatisfaction persists, fueling protests and demands for increased employment opportunities. Unmet expectations regarding job creation exacerbate tensions, reflecting findings by Wilson et al. (2013) on employment-related conflicts in project settings.

5.1.2. WATER CONFLICTS

Water disputes, reported by 44.2% of respondents, stem from Beta's utilization of both surface and groundwater sources, impacting community water access. Mining operations disrupt underground aquifers, exacerbating existing water scarcity worsened by climate change. Priscoli and Wolf (2009) noted that growing users and climate change heighten water conflict risks, as seen in the study area.

5.1.3. BOUNDARY DISPUTES

Twenty percent of respondents highlighted boundary conflicts, arising from unclear demarcations between mining and communal areas. Rumors of households falling within mining premises sow confusion and concern among locals, reflecting findings by Hilson (2002) on territory-related conflicts. Uncertainty surrounding mine boundaries and potential displacement contribute to community tensions, echoing observations by the United Nations Commission for Africa (2011).

5.1.4. LAND DISPUTES

The respondents identified land as the primary source of conflict between BETA Aggregates and the surrounding communities giving 16.3%. They reported losing agricultural and grazing land to the mine without receiving any compensation. This situation escalated into a land dispute since Zimbabwean communities are unable to seek compensation for lost land under the Communal Lands Act (Chapter 20:04), which places land ownership under state control (Mtisi et al., 2011). The existing land tenure systems require improvement to address issues arising from the increasing value of land and communal land ownership in Zimbabwe. This resonates with Deininger and Castagnini (2006), who assert that land tenure systems in developing countries are major sources of conflict. Similarly, McLeod (2000) notes that land

disputes arise when land tenure systems lack clarity regarding ownership. Moreover, conflicts arise due to double land allocation, where land allocated to the mine overlaps with allocations made by traditional leaders. Traditional leaders, empowered by Zimbabwe's 2013 constitution, are responsible for distributing communal land, leading to conflicts with local governments and the mine over land allocation. This highlights the ambiguity in the legal framework governing communal land governance, resulting in conflicts.

Residents also expressed reliance on mountains for essential services such as firewood, medicine, and dietary supplements. The establishment of the mine deprived them of access to these resources, aligning with Humphreys (2005), who views access to natural resources as a security risk and a root cause of land-related conflicts. These findings underscore the association between mining activities and land disputes, exacerbated by the lack of transparency laws protecting rural communities during mining projects.

5.1.5. MINING-INDUCED HUMAN-WILDLIFE CONFLICTS

Thirteen percent of respondents attributed conflicts between the mine and local communities to mining-induced human-wildlife conflicts. These conflicts arise as wild animals, displaced by mining activities, encroach on local communities' territories. The destruction of animal habitats and food sources by the mine leads to the intrusion of wildlife, such as snakes, baboons, and monkeys, into local communities, damaging crops and sparking tensions. This aligns with Garca-Frapolli et al. (2018), who discuss conflicts arising when local groups and conservationists clash over resource management. Mining-induced land degradation disrupts ecosystems, causing human-wildlife conflicts that escalate tensions between mining companies and local communities.

5.1.6. FARMER-MINER RESOURCE CONFLICTS

Ten percent of respondents from Marden Svisva village cited farmer-miner conflicts as a source of tension between the mine and local communities. Farmers, resettled during the 2000 land reform program, fear displacement as mining takes precedence under Zimbabwe's Mines and Minerals Act. Competition for water intensifies between the mine and local farmers, with the mine's water-intensive operations leaving farmers with inadequate water for irrigation and

domestic use. The drying up of nearby dams and streams since the mine's establishment exacerbates tensions, as farmers perceive the mine as a threat to their livelihoods. While quarry mining presents economic opportunities, its proximity to agricultural land disrupts livelihoods, prompting farmers to resist and protect their land. These findings indicate that conflicts emerge when mining operations affect water resources and tenure security in farming areas, echoing Meisanti et al. (2012), who discuss similar conflicts in Indonesia.

5.1.7. HUMAN RIGHTS VIOLATIONS

Nine point three percent of respondents identified human rights violations by the mine as a source of conflict with local communities. Residents reported violations of their environmental and human rights, including the right to a clean and safe environment and access to clean water. Dust emissions from mining operations pose health risks, particularly respiratory diseases, to nearby residents, exacerbating tensions. Moreover, the mine's impact on water sources, previously vital for irrigation and domestic use, now leads to pollution and shortages. Villagers perceive the mine's failure to provide alternative water sources as a violation of their rights, emphasizing profit motives over community welfare. These findings reflect Munyoka's (2020) observations on environmental rights violations in Zimbabwe's mining industry, highlighting conflicts arising from human rights abuses.

While environmental rights are enshrined in Zimbabwe's laws, conflicts persist due to miners' disregard for regulations (Makaza, 2015). Rodriguez (2011) notes that conflicts often center on health risks and indigenous rights violations, challenging miners' compliance with environmental laws. Mining corporations must recognize the potential for conflicts arising from their activities' environmental and social impacts, emphasizing the need for sustainable practices and community engagement to mitigate tensions.

5.2. CAUSES OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN BETA AGGREGATES MINE AND LOCAL COMMUNITIES

5.2.1. MINING-INDUCED WATER SCARCITY

Nearly half of the respondents cited water scarcity as the primary cause of conflicts between BETA Aggregates Mine and the local communities. The mine's substantial water usage for dust

suppression, about 80,000 liters daily, draws from dams also vital for local irrigation and domestic needs. This competition for water sources exacerbates tensions, echoing findings by Jackson (2018) that in arid regions, mining's freshwater demands often clash with other users' needs.

5.2.2. JOB PROMISES AND RISING UNEMPLOYMENT

Over forty percent of respondents expressed discontent over job promises made by BETA, which pledged 400 jobs but only provided six to locals since 2019. This discrepancy fuels conflict as villagers expected improved livelihoods through employment opportunities. The disparity in promised versus actual employment aligns with Bebbington et al. (2008), highlighting how mining's socio-economic impacts often fall short of expectations, leading to community dissent.

5.2.3. INADEQUATE COMMUNICATION AND CONSULTATION

Approximately a quarter of respondents pointed to poor communication and lack of public consultation by the mining company as a significant source of conflict. Residents reported insufficient information about mining operations, including unawareness of potential negative impacts. The absence of meaningful engagement during the environmental impact assessment further eroded trust. This aligns with Geenen (2014), underscoring how inadequate consultation exacerbates socio-environmental conflicts in mining contexts.

5.2.4. FORCED RELOCATION OF LOCAL COMMUNITIES

A quarter of respondents from Marden Svisva village identified forced relocation as a key conflict driver. BETA relocated nine farmers to a safer area without considering community input, leading to tensions exacerbated by residents' cultural ties to the land. These findings resonate with Hilson and Yakovleva (2007), emphasizing how mining assessments often neglect indigenous community impacts, fostering conflicts.

5.2.5. PROPERTY DAMAGE DUE TO BLASTING

Around a quarter of respondents living within 500 meters of the mine reported property damage from blasting-induced vibrations. Houses developed cracks, yet the company offered no compensation. The disregard for residents' safety and lack of redress align with Jenkins (2004), illustrating how mining companies often prioritize profits over community welfare, fueling conflicts.

5.2.6. NOISE POLLUTION

Twenty-two percent of respondents expressed concerns about noise pollution from mining operations, particularly disruptive to nearby residents at night. The adverse impact on residents' sleep underscores the need for greater consideration of community well-being in mining practices, consistent with findings by Wilson (2013) et al. on tensions arising from mining-related disturbances.

5.2.7. FLY ROCK AND DEBRIS

Resettled farmers reported concerns about fly rocks and debris from blasting, which damaged property and posed safety risks to residents and livestock. Limited research on this issue underscores the need for robust safety measures and community safeguards, as highlighted by Adonteng-Kissi and Ohene-kohudu (2015), to prevent conflicts arising from mining-related hazards.

5.2.8. PERCEIVED VIOLATION OF ENVIRONMENTAL RIGHTS

Residents accused BETA of violating their environmental rights, including access to clean air and water. Dust and pollution from mining operations threaten residents' health and well-being, underscoring the need for stronger environmental safeguards and regulatory enforcement, as emphasized by Marwe (2004), to prevent conflicts over environmental degradation.

5.2.9. CLIMATE CHANGE

Nine percent of respondents, including local officials, attributed conflicts to climate change-induced water scarcity exacerbated by mining operations. While mining contributes to water conflicts, climate change compounds these issues, highlighting the interconnected nature of socio-environmental conflicts, consistent with Theisen (2017).

5.2.10. SEXUAL HARASSMENT

Twelve percent of respondents reported instances of sexual harassment by mine security guards, leading to tensions and loss of freedom of movement for local women. Weak sexual harassment policies underscore the need for stronger safeguards and accountability mechanisms, aligned with Fayed (2002), to address gender-based conflicts in mining communities.

5.3. IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN MINERS AND LOCAL COMMUNITIES AT BETA AGGREGATE

5.3.1. POSITIVE IMPACTS OF CONFLICTS

5.3.1.1. ENHANCED MINE OPERATIONS WITH REDUCED ENVIRONMENTAL DEGRADATION

Around 22% of respondents, including key informants, observed improved mine operations at BETA Aggregates due to conflicts with local communities. These conflicts raised awareness about environmental issues caused by mining activities, prompting the mine to prioritize environmental protection over profit. Measures such as dust suppression techniques, relocating blasting sites away from residential areas, and sourcing water for dust suppression from mining pits were implemented, reducing negative environmental impacts. Consequently, conflicts led to positive outcomes for local communities, highlighting the mining industry's reactive stance toward environmental protection.

5.3.1.2. STRENGTHENED SOCIAL COHESION AND COMMUNICATION

About 22% of respondents noted improved social cohesion and communication between the mine and local communities as a result of conflicts. Previously lacking communication from the mine about development projects, conflicts compelled the mine to engage with the community more transparently. This improved trust and cooperation during mining activities, fostering social unity. The study suggests that conflicts, when managed effectively, can enhance social trust and diminish discrimination against local communities by mining projects.

5.3.1.3. ENHANCED CORPORATE RESPONSIBILITY

Conflicts prompted the mine to enhance corporate responsibility toward local communities, addressing issues like waste management and water shortages. This shift signifies a departure from previous profit-centric approaches, reflecting growing recognition of the need for community benefits. Initiatives like borehole drilling and community development programs aim to improve the standard of living for local residents. Failure to directly benefit communities may escalate conflicts, underscoring the importance of corporate social responsibility.

5.3.2. NEGATIVE IMPACTS OF CONFLICTS

5.3.2.1. DAMAGED CORPORATE IMAGE

Around 21% of respondents now perceive BETA Aggregates as a conflict-generating entity with adverse environmental impacts, tarnishing its reputation. Local leaders and villagers view the mine negatively, perceiving it as a politically motivated project with minimal benefits. Despite some development efforts, conflicts overshadow positive actions, affecting the company's image.

5.3.2.2. ECONOMIC LOSSES

Conflicts resulted in property damage, reduced production, and operational disruptions for the mine. Incidents like fence cutting and tree uprooting by locals, along with forced relocations, impacted productivity. Operational halts due to complaints lodged with environmental authorities further compounded economic losses. Refusal of villagers to evacuate during blasting exacerbated delays and production losses, in line with existing research on conflicts' adverse economic effects.

5.3.2.3. SOCIAL AND POLITICAL INSTABILITY

Conflicts fostered social and political tensions within the community, leading to division and distrust among residents and local leaders. Support and opposition to mine operations created rifts, while accusations of corruption against leaders intensified social unrest. Involvement of political figures further escalated tensions, endangering local populations and eroding trust in governance structures. These findings align with existing literature on conflicts' role in exacerbating social and political instability in resource-rich regions.

5.4. EFFECTIVENESS OF CONFLICT MANAGEMENT MEASURES

5.4.1. ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC ENGAGEMENT

While environmental impact assessments (EIAs) are considered effective conflict management tools, shortcomings in BETA Aggregates' EIA hindered conflict resolution. Inadequate consideration of environmental and social impacts, coupled with limited public involvement, rendered the EIA ineffective. Lack of minority group representation and failure to address community concerns undermined trust in the mining company, highlighting the need for comprehensive EIAs that address social implications.

5.4.2. ENHANCED PUBLIC ENGAGEMENT THROUGH REGULAR COMMUNITY MEETINGS

Regular community meetings facilitated by the mine have proven effective in preventing conflict escalation. These meetings foster transparency and allow community members to voice concerns, addressing grievances and promoting conflict resolution. Improved participation and planning, as evidenced by the meetings, contribute to conflict resolution during project implementation, aligning with existing research on community engagement.

5.4.3. INVOLVEMENT OF TRADITIONAL LEADERS IN DECISION-MAKING

While traditional leaders are engaged in decision-making to mitigate conflicts, their effectiveness is limited by lack of community consultation and uncertainty regarding their role in environmental regulations. Despite serving as intermediaries between the mine and local communities, traditional leaders' exclusion from major decisions undermines their role in conflict management. These findings underscore the complexities of traditional leadership in conflict resolution, highlighting challenges in navigating environmental policy and power dynamics.

5.4.4. RELOCATION OF AFFECTED COMMUNITIES

BETA Aggregates' relocation efforts aimed at resolving conflicts have yielded mixed results, with affected communities expressing dissatisfaction and resistance. Lack of community consultation and attachment to their environment have fuelled tensions, exacerbating conflicts

rather than mitigating them. The findings emphasize the limitations of relocation as a conflict management strategy, underscoring the need for community-centric approaches that prioritize local needs and preferences.

CHAPTER SIX: CONCLUSION AND RECOMENDATIONS.

6.1 CONCLUSION

The study reveals that mining projects, particularly in rural areas where natural resources are vital for local livelihoods, often spark conflicts. These conflicts, categorized by their causes, such as water scarcity, land disputes, unmet job promises, boundary issues, mining-related human-wildlife conflicts, and human rights violations, were prevalent at the BETA aggregates mine. Environmental degradation, unfulfilled job commitments, water scarcity due to mining operations, and community relocations emerged as major conflict triggers. The research underscores the adverse effects of quarry mining on local residents, the environment, livelihoods, and social ties in the BETA aggregates mine area.

Moreover, climate change exacerbates conflicts between mining companies and local communities, particularly in regions where agriculture is central. Water shortages emerged as a primary conflict driver between BETA and local communities, exacerbated by a prolonged drought from 2019 to 2021. Despite other factors contributing to water scarcity, locals primarily attributed it to the mine's establishment.

The study demonstrates that effective conflict management can yield both positive and negative outcomes for both parties, fostering better relations. However, existing measures, including community relocations, often prove ineffective and may exacerbate conflicts. The lack of sustainable models in Zimbabwe's mining industry, evidenced by conflict causes and management measures, suggests future confrontations between mining firms and local communities, especially when mines are near residential areas.

6.2 RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

- The Zimbabwean government should review the Mines and Minerals Amendment Bill to address issues between local communities and mining companies.
- In addition to Environmental Impact Assessments (EIAs), mining firms should develop Community Sustainable Development Plans to prioritize community sustainability.
- Mining companies should ensure robust community engagement, establishing multiple channels for stakeholder participation throughout the project lifecycle.

- Mines should relocate legally settled villagers within blasting zones, ensuring residents within 500 meters from blast points are relocated.
- Reintroduce community share ownership schemes to ensure local communities benefit from mining activities.
- The Zimbabwe Environmental Law Association (ZELA) should develop strategies, frameworks, and laws to govern environmental conflicts related to mining.
- Local communities should voice concerns through community leaders to avoid direct conflicts with mining companies, promoting better understanding and dialogue.
- Villagers should prioritize collaboration with mining companies for mutually beneficial outcomes.

REFERENCES

- Bebbington, A., Hinojosa, L., Bebbington, D. H., Burneo, M. L., & Warnaars, X. (2008). Contention and ambiguity: Mining and the possibilities of development. *Development and Change*, 39(6), 965-992.
- Hilson, G., & Murck, B. (2000). Sustainable development in the mining industry: Clarifying the corporate perspective. *Resources Policy*, 26(4), 227-238.
- Lahiri-Dutt, K. (2006). *Staying alive: Women, ecology, and survival in India*. Kali for Women.
- Owen, J. R., & Kemp, D. (2013). Corporate social responsibility reporting in the mining sector: Stakeholders' expectations and companies' disclosure practices. *Journal of Cleaner Production*, 50, 55-63.
- Adonteng-Kissi, O. and Ohene-Konadu, K., 2015. Assessing community relocation and Resettlement programs for managing conflicts in the Prestea mining community. *The International Journal of Sustainability Policy and Practice*, 11(3), pp.13-28.
- Bebbington, A. ed., (2012) *Social Conflict, Economic Development and Extractive Industry: Evidence from South America*, Routledge, New York.
- Barnett, J. and Adger, W.N., 2007. Climate change, human security and violent conflict. *Political geography*, 26(6), pp.639-655.
- Bob, U. 2008. Introduction: Nature and people. *Alternation*, 15 (1), pp. 1–16.
- Codes, R.U.C., 2019. Economic Research Service US Department of Agriculture. URL: <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx> [accessed 2022-04-05].
- Chigwata, T., 2016. The role of traditional leaders in Zimbabwe: are they still relevant?. *Law, democracy & development*, 20(1), pp.69-90.
- Deininger, K. and Castagnini, R., 2006. Incidence and impact of land conflict in Uganda. *Journal of Economic Behavior & Organization*, 60(3), pp.321-345.

Doroh, B. (2012). Indigenization and benefits in the Mining sector in Zimbabwe: Participation of Locals and Protection of Investor Rights. Policy Monographs 5, Towards a New Zimbabwe: Sharing skills for Dialogue on Pro-poor Policies. Harare: Institute of Development Studies, University of Zimbabwe and National Association of Non-Governmental Organizations (NANGO).

Engels B (2016), Mining conflicts in sub-Saharan Africa: Actors and repertoires of contention. Federal ministry of education and research.

Hox, Joop J., and Hennie R. Boeijs. "Data collection, primary versus secondary." (2005): 593-599.

Humphreys, M., 2005. Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. *Journal of conflict resolution*, 49(4), pp.508-537.

Hilson, G., 2002. An overview of land use conflicts in mining communities. *Land use policy*, 19(1), pp.65-73.

Martinez-Alier, J., 2021. Mapping ecological distribution conflicts: The EJAtlas. *The Extractive Industries and Society*, 8(4), p.100883.

Munyoka, E., 2020. Mining and Environmental Rights in Zimbabwe. A Case of Zvishavane District.

McKenna, S.A. and Main, D.S., 2013. The role and influence of key informants in community-engaged research: A critical perspective. *Action Research*, 11(2), pp.113-124.

Meisanti, M., Jusoff, K., Salman, D. and Rukmana, D., 2012. The impacts of gold mining on the farmer's community. *American-Eurasian Journal of Sustainable Agriculture*, 6(4), pp.209-214.

Murombo, T., 2012. Balancing interests through framework environmental legislation in Zimbabwe. *The Balancing of Environmental Interests in Africa*, p.557.

Prenzel, P.V. and Vanclay, F., 2014. How social impact assessment can contribute to conflict management. *Environmental Impact Assessment Review*, 45, pp.30-37.

Priscoli, J.D. and Wolf, A.T., 2009. *Managing and transforming water conflicts*. Cambridge University Press.

Rodríguez-Garavito, C., 2011. Ethnicity. gov: Global governance, indigenous peoples, and the right to prior consultation in social minefields. *Indiana Journal of global Legal studies*, 18(1), pp.263-305.

Scheidel, A., Del Bene, D., Liu, J., Navas, G., Mingorría, S., Demaria, F., Avila, S., Roy, B., Ertör, I., Temper, L. and Martínez-Alier, J., 2020. Environmental conflicts and defenders: A global overview. *Global Environmental Change*, 63, p.102104.

Theisen, O.M., 2017. Climate change and violence: Insights from political science. *Current Climate Change Reports*, 3(4), pp.210-221.

Van, S. Bronkhorst, J. and Bob, U. (2010) Environmental conflicts key issues and management implications. Available at: <https://www.accord.org.za/ajcr-issues/environmental-conflicts>.

Van Assche, K., Gruezmacher, M. and Beunen, R., 2022. Shock and Conflict in Social-Ecological Systems: Implications for Environmental Governance. *Sustainability*, 14(2), p.610.

Van Assche, K., Gruezmacher, M. and Beunen, R., 2022. Shock and Conflict in Social-Ecological Systems: Implications for Environmental Governance. *Sustainability*, 14(2), p.610.

Vanclay, F., 2002. Conceptualising social impacts. *Environmental impact assessment review*, 22(3), pp.183-211.

Wilson, S.A., Wilson, C.O. and Moise, I.K., 2022. Livelihood impacts of iron ore mining-induced land change in Sierra Leone: A time series analysis. *Applied Geography*, 144, p.102713.

Banks, G. (2002). Mining and the environment in Papua New Guinea. In *Mining, Minerals and Sustainable Development* (No. 180). International Institute for Environment and Development.

Bebbington, A., Hinojosa, L., Bebbington, D. H., Burneo, M. L., & Warnars, X. (2008). Contention and Ambiguity: Mining and the Possibilities of Development. *Development and Change*, 39(6), 887-914.

Bridge, G. (2004). Contested terrain: mining and the environment. *Annual Review of Environment and Resources*, 29(1), 205-259.

Buxton, A. (2012). MMSD+10: Reflecting on a Decade. International Institute for Environment and Development.

Franks, D. M., Davis, R., Bebbington, A. J., Ali, S. H., Kemp, D., & Scurrah, M. (2014). Conflict translates environmental and social risk into business costs. *Proceedings of the National Academy of Sciences*, 111(21), 7576-7581.

Hilson, G. (2002). Small-scale mining and its socio-economic impact in developing countries. *Natural Resources Forum*, 26(1), 3-13.

Kemp, D., & Owen, J. R. (2013). Community relations and mining: Core to business but not "core business". *Resources Policy*, 38(4), 523-531.

Kemp, D., Bond, C. J., Franks, D. M., & Cote, C. (2011). Mining, water and human rights: making the connection. *Journal of Cleaner Production*, 19(8), 87-97.

Kitula, A. G. N. (2006). The environmental and socio-economic impacts of mining on local livelihoods in Tanzania: A case study of Geita District. *Journal of Cleaner Production*, 14(3-4), 405-414.

Mabhena, C., & Moyo, F. (2014). Community Share Ownership Trust scheme and empowerment: The case of Gwanda Rural District, Matabeleland South Province in Zimbabwe. *IOSR Journal of Humanities and Social Science*, 19(1), 72-85.

Marais, L. (2013). Resources policy and mine closure in South Africa: The case of the Free State Goldfields. *Resources Policy*, 38(3), 363-372.

Moyo, F., & Zuwarimwe, J. (2021). Challenges faced by the mining sector in implementing sustainable mining in Zimbabwe. *Journal of Sustainable Mining*, 20(3), 133-140.

Nyame, F. K., & Blocher, J. (2010). Influence of land tenure practices on artisanal mining activity in Ghana. *Resources Policy*, 35(1), 47-53.

Owen, J. R., & Kemp, D. (2013). Social license and mining: A critical perspective. *Resources Policy*, 38(1), 29-35.

Sairinen, R., Rinne, P., & Jartti, T. (2012). Sustainable mining, local communities and environmental regulation. *Environmental Policy and Governance*, 22(1), 18-31

APPENDICES

Appendix 1: QUESTIONNAIRE FOR SVISVA, MASAWI, AND MOTSI VILLAGES HOUSEHOLDS.

My name is Liberty F Basikiti. I am an undergraduate student doing an honours degree in Safety Health and Environmental Management (SHEM) at Bindura University of Science Education. I am undertaking a research project titled “An assessment on the socio-environmental conflicts between mines and local communities. A case study of the BETA bricks Pvt Ltd (Svisva quarry mine)” Your participation in this questionnaire is required as part of the data collection process for this academic study. Please be aware that your responses will only be used for academic purposes, and your privacy will be maintained.

Place..... Questionnaire number.....

Instructions:

- ☐ Do not write your name on the questionnaire.
- ☐ Please tick where appropriate.
- ☐ Answer all the questions in the spaces provided.

Key

1=yes 2=no

SECTION A: SOCIO-ECONOMIC DATA

Sex: Male [] Female []

Age: [18-30] [31-45] [46-65] [65 and above]

Employment status: Employed [] Unemployed [] Retired []

Marital status: Single [] Married/Living together [] Widowed [] Divorced/Separated []

Highest Level of Education Primary [] Secondary [] Tertiary [] None []

Occupation.....

SECTION B: Types of social environmental conflicts occurring between the mine and the local community of the study area.

1. Do you understand the term socio-environmental conflicts?

Yes (....) No (....)

.....
.....

2. have you ever taken any action against BETA mine operations.?

If yes, what was the action

3. Have you ever involved in a violent protest against the mine operations.?

Yes (....) No (....)

4. have you ever had disputes with the mine over the control of natural resources.?

Yes (....) No (....)

.....

5. have you ever had disputes over air pollution.?

Yes (....) No (....)

.....

.....

6. have you ever had conflicts due to mining induced environmental degradation.?

. Yes (....) No (....)

.....

7. have you ever had conflicts with the mine over water pollution or water scarcity

Yes (....) No (....)

.....

.....

SECTION C: MAIN CAUSES OF CONFLICTS BETWEEN THE MINERS AND THE LOCAL COMMUNITY.

8. have you ever been involved in any conflicts/protest against the mine operations.?

Yes (....) No (....)

9.What are the sources of friction or conflict that you have experienced or foresee between your community and BETA aggregates.?.
.....
.....

10. Do you perceive mining as a conflict generating project.

Yes (....) No (....)

.....

11. have you been informed about the establishment of BETA bricks before it started its operations.?

Yes (....) No (....)

.....

11. Do you have any promises or compensations from the mine which had never been fulfilled.?

Yes (....) No (....)

State the promises
.....
.....

12. have you lost any agricultural or grazing land which you have lost due to the establishment of the mine.?

Yes (....) No (....)

.....
.....
.....
.....

13. Do you have any losses which you have encountered due to the mine operations which you think they might need compensation.?

Yes (....) No (....)

14.If yes did have you been compensated yet or did the mine promised to compensate you?

.....
.....
.....

15.b. Yes (....) No (....)

Explain your answer

.....
.....
.....
.....
.....

16. Are there other issues that had made you go against the mine operations?

SECTION D: IMPACTS OF SOCIO-ENVIRONMENTAL CONFLICTS BETWEEN THE MINE AND THE LOCAL COMMUNITY

17. concerning the situation on the ground do you trust BETA aggregates mine?

Yes (....) No (....)

EXPLAIN YOUR ANSWER

.....
.....

18. Have you witness any form of injuries or loss of life due to the conflicts which are there between you and the mine?

Yes (....) No (....)

.....
.....

19. did your quarrels with the mine go through litigation processes.?

Yes (....) No (....)

.....
.....
.....
.....

20. Do you have any loses or loss of time that have been caused by the conflicts between you and the mine.?

If yes

Yes (....) No (....)

Justify

.....
.....
.....

21. Do you have any positive benefits which arose due to your conflicts with the mine?

Yes (....) No (....)

if yes state them

.....
.....
.....
.....
.....

SECTION.F. EFFECTIVENESS OF THE MEASURES WHICH HAD BEEN PUT IN PLACE FOR CONFLICT MANAGEMENT BETWEEN THE MINE AND THE LOCAL COMMUNITIES:

.....

22. Do you know anything about environmental impact assessment.?

Yes (....) No (....)

If yes have you been involved in the process and how.?

.....
.....
.....
.....

23. Are they any conflicts resolutions which had been done between you and the mine.?

Yes (....) No (....)

If yes what was done.

.....
.....
.....
.....

24. Did the measures which had been put in place resolve the conflicts between you and BETA?

Yes (....) No (....)

Justify your answer.

.....
.....
.....

THANK YOU FOR YOUR COOPERATION: DO YOU HAVE ANY QUESTIONS FOR ME.?

Appendix 2: Semi-structured interview guide for Svisva resident association Chairman, chief and the ward chancellor.

Research topic: Socio-environmental conflicts between the miners and the local communities.
A case study of BETA Aggregates quarry mine.

Objective 1: To Determine the types of social environmental conflicts occurring between the mine and the local community of the study area.

1. How long have you been a leader.?
2. Being a village leader, have you received any case of conflicts between the mine and your people or have you ever received complaints from any party.?
3. Have you received any case where the villagers fought with the mine over the following?
 - a. Boundary issues.?
 - b. Water issues.?
 - c. Issues to do with violation of human rights.?
4. What do you think are the major types of conflicts which are taking place between you and the Mine?

Objective: 2 To Examine the main causes of socio-environmental conflicts within the study area.

5. What do you see as the major reasons for the occurrence conflict between the BETA and the local communities?
6. From the complaints which you have received from your people what are the major issues which have led to the tension between you and the mine
7. Do you think the local communities are happy with the establishment of the mine and why.?
8. Do you have a positive or a negative attitude towards the establishment of a mine in your area and why?
9. Have you been consulted before the establishment of BETA aggregates and how?

Objective 3. To Assess the Effects of social environmental conflicts between the miners and the local communities.

10. Do you have any regrets due to the conflicts between your local people and the mine?
Specify.
 11. Do you still have a good relationship with the mine.?
 12. Do you think that the conflicts between the local communities and the mine brought about positive or negative impacts to any party.? Justify
- Objective 5: To evaluate effectiveness of the measures which had been put in place for conflict management within the study area.
13. What are the measures do you usually take when there are conflicts in your community.?
 14. are these measures applicable in the situation where there are conflicts between the community and mine.?
 15. Have you used any of the measures or strategy to resolve the existing conflicts and were they effective?
 16. Justify your answer for the previous question.
Do you have any questions for me?

Appendix 3: Semi-structured interview guide for BETA A aggregates SHEQ officer.

Objective 1. To Determine the types of social environmental conflicts occurring between the mine and the local community of the study area.

17. Have you ever witnessed any form of conflicts between your company and the local communities.?
18. Can you name the type of conflicts which are happening between your company and the local communities.?
19. Are they any form of violence conflicts or protests which took place between your company and the mine.?.
20. Have you received any conflicts between you and the local people over the following?
 - a. Boundary issues.?
 - b. Water issues.?
 - c. Land issues.?
21. How did the villagers engaged you to express their grievances.?

Objective: 2 Examine the main causes of socio-environmental conflicts within the study area.

22. What are the major causes of conflicts between your company and the local communities.?
23. Do you think your operations are responsible for the occurrence of these conflicts? If yes justify which operations are leading to conflicts and how.?
24. Do you have any promises which you have promised the local people which are yet to be fulfilled.? If yes specify.

Objective 3. To assess the impacts of social environmental conflicts between the miners and the local communities.

25. Are there any positive or negative impacts which you have witnessed due to the occurrence of the conflicts between the mine and the local community.?. Justify your answer.
26. Did your company suffer any losses due to the conflicts.? If yes specify.

Objective 4: To evaluate effectiveness of the measures which had been put in place for conflict management within the study area.

27. Is your company certified with an environmental impact assessment.?.
28. During the implementation of an EIA for the mine did you address the issues to do with conflicts.? If yes specify how you address them.
29. how did you engage the local people during the implementation of an EIA and was the method effective.?
30. Are there any measures which you have put in place to avoid the occurrence of conflicts if yes state the measures.?
31. Did these measures bring about positive or negative results.?
32. Do you think these measures are effective for conflict management and why?

DO YOU HAVE ANY QUESTIONS FOR ME.?

Observation checklist

Research topic: socio-environmental conflicts between the mine and the local communities. A case study of BETA Aggregates svisva Quarry mine in Goromonzi district.

This checklist seeks to observe the environmental and social changes which have been caused by the mining operations which could have led to the occurrence of conflicts between the mine and the local communities.

Objective 1. To determine the types of social environmental conflicts between the mine and the local community of the study area.

Objective 2. To examine the main causes of socio-environmental conflicts within the study area.

Objective 3. To Assess the impacts of social environmental conflicts between the miners and the local communities.

Objective 4. To evaluate effectiveness of the measures which had been put in place for conflict management within the study area.

Observational checklist for communities which surrounds BETA A aggregates mine

Targeted observation	Targeted objective	Results
Distance of the mine from the village.	2	
Any property damages caused by the mine operations	2	
Any developments which are brought by the mine.	4	
Any environmental pollution and land degradation caused by the mining operations.	2 and 1	

The mining environment observation checklist

Targeted observation	Targeted objective	Results
Dust emissions from the quarry plant.	Objective 2	
Any sources of water pollution in the mine environment.	Objective 2	
Any mine property damages due to the conflicts	Objective 3 and 1	
Any boundaries or demarcations formed by the mine as a result of the conflicts.	Objective 4	