

The Amandelbult Mine Beneficiation towards the Socio-Economic
Development of Schilpadnest Informal Settlement in the Thabazimbi Area

By

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TO WHOM IT MAY CONCERN

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DECLARATION

“I declare that the dissertation hereby submitted to the University of Limpopo, for the Degree of Master of Business Administration (MBA) has not been previously submitted by me for a degree at this or any other university, that it is my work in design and in execution, and that all material contained herein has been duly acknowledged.”

Student : _____ Date : _____

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ABSTRACT

Socio-economic development of the communities around the mines is enhanced through effective mining beneficiation. The aim of this study was to provide an analysis of the perceptions of the Amandelbult mine and the community of Schilpadnest informal settlement, in relation to the mining beneficiation provided to this community by the mine. The study analysed the perceptions related to employment creation, corporate social investment, as well as the communication and collaboration of the mine with the local community and other sectors.

This study used the census as a sampling method. A questionnaire, with a combination of closed and open ended questions, was used to collect data. The members of community structures within the Schilpadnest as well as the mine management were the target population for the study. The results indicated that the beneficiation role of the mine in terms of the socio-economic development of the community is perceived to be inadequate in terms of employing local people and supporting the local SMMEs. Lack of required skills and communication are perceived to be the possible hindrances to beneficiation opportunities.

The study recommends that:

- The mine should consider setting a particular target for employing people.
- A communication strategy for interacting with the local community be developed by the mine.
- A comprehensive needs analysis for the local community be developed by the mine.
- The mine should consider developing a database for the local SMMEs for the purposes of procurement and skills development.

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CHAPTER ONE

OVERVIEW AND INTRODUCTION

1.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the process that was followed for investigating the socio-economic beneficiation that the Amandelbult mine provides to the surrounding community. It will further give an outline of the background to the problem that will be researched, the hypotheses, the research questions as well as the rationale for the study.

The mining industry has a unique economic impact that extends from national economic development and environment, down to socio-cultural profiles of the surrounding communities (Weber-Fahr, 2002 :440). The huge economic development that follows the establishment of mining operations has the ability to change the lives of thousands of surrounding communities for the better. However, these development operations can also have negative effects on the socio-economic development of communities if not properly planned, coordinated and managed. This means that the mines can, for instance, use significant amounts of land and water, which can affect the poor who depend on these resources for their livelihood.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

In developing countries, urban areas have always been a means of improving the quality of life and environment for poor people (Abonyo, 2000:18). Urban areas attract poor people striving for access to better jobs and improved income. The deteriorating conditions in rural areas, according to Abonyo (2000:21), contributed towards a considerable flow of migrants to cities, resulting in many of them residing in the urban informal settlements.

The population growth, which drives the increase of informal settlements, imposes pressure on the inhabitants (Srinivas, 2008:1). This means that while people continue to increase, many are usually poorly skilled or educated, and therefore find it very hard to find jobs. They resort to concentrating themselves around the possible sources of job opportunities like the mining industries. Many of them, according to Srinivas (2008:2), fail to access employment as expected and end up not being able to obtain adequate food, proper education, and their health and standard of living often suffer, hence a persistent state of poverty and frustrations.

According to Hamann (2003: 15) informal settlements do not receive basic development services from both the mines and municipal authorities due to the fact that they are not legally developed and structured. This means that they commonly do not have formal recognition and their future remain uncertain in terms of their location. These settlements therefore become a key source of social challenges.

Hamann (2003: 17) further indicates that most stakeholders like tribal authorities, government and population in informal settlements have a general view that it is the primary responsibility of government to facilitate the development services for informal settlements, and that the main pressure that emerges from the community in informal settlements towards the mines, is the employment of local labour.

The mining industry has always been characterized by elements of negligence and under-performance in terms of its socio-economic role. This means that their practices regarding provision of services to their employees and surrounding communities perpetuated the flow of black workers from hostels to the mainstream informal settlements, adding to the social pressures already in existence (SA Government Information, 1998: 38). These challenges, therefore, contributed towards both social problems around the mines and safety problems within the mines.

According to Hamann (2003: 17), some socio-economic responsibilities of the mines became significant at an operational level through legislative requirements after 1994. In phasing out the hostels, some mines have provided a housing allowance to their employees. However, this was criticised for being a further contributor to the growth of informal settlements as these employees were tempted to save the housing allowance by living in informal, temporary dwellings (Hamann 2003: 19).

The mining industry's dominant interpretation of socio-economic responsibility has always been in terms of charitable donations and support to good causes towards local communities (Hamann, 2008: 1). These efforts have not impacted on the actual socio-economic challenges facing informal settlements around the mines and have also not contributed well towards cross- sectoral collaboration.

There has always been a general resistance of big companies like the mines to provide beneficiation support to the local Small, Medium and Micro Enterprises (SMMEs), especially those that are within the informal settlements. According to Zhou and Uhlener (2009:3), the resistance is due to the presumption that these SMMEs' potential knowledge capacities are limited by their poor level of formal education. This is despite the resource constraints faced by these SMMEs.

Hamann (2003: 19) further highlights the increasing realisation of mines that the social problems in their surrounding informal settlements have a critical impact on their productivity. This means that aspects like crime, alcohol abuse and sicknesses like TB and HIV/AIDS diminish the productivity of mine workers residing in these settlements. This therefore, has led to a growing need for the mines to take responsibility for the socio-economic beneficiation of the local communities.

The *Anglo Platinum Sustainable Development report* (2009:1) indicates that communities in informal settlements around mining operations are increasingly demanding more direct benefits from mining operations, including employment, supply and business development opportunities, infrastructural provision, and in some instances, equity or

annuity stakes. This means that some community members within informal settlements are becoming aware of their social and political rights, and these help them to be more adamant in their interactions with their nearby mines. This further means that with local understanding and activism, community unrest can affect or even obstruct mining production.

With the regulatory frameworks and approaches towards the operation of the mining sector, the government seeks to create a more stable macro- environment that supports the growth of socio-economic beneficiation subject to appropriate regulations, profitable operations and satisfying all stakeholders including the surrounding Informal Settlements (SA Government Information, 1998: 38).

It is therefore critical that communities residing in informal settlements around the mines be able to access the holistic mining beneficiation that will ensure their development in terms of their physical, social, economic and legal needs. This means that these communities have to be provided with proper social and economic support.

1.3 PROBLEM STATEMENT

Around the mining industries there are developments of informal settlements which pose a challenge for the mining industry and government to ensure that proper development services are provided as well as other approaches that will improve their standard of living.

According to Hamann (2003:12), different attempts have been made by both mines and government to contribute towards the socio-economic development of communities around the mines. Some of the challenges involve strategies that are not well aligned or integrated, or even communicated to the beneficiaries. If they are not well integrated, these initiatives end up not rendering a positive impact.

The existing SMMEs within the informal settlements, according to Partanen and Westerlund (2008: 4), suffer continuous difficulties in accessing relevant resources for their businesses, venturing into the new adventures related to the beneficiated materials from the nearby mines, as well as accessing training and procurement support from these mines. This therefore becomes difficult for these SMMEs to improve their innovation and market growth. Partanen and Westerlund (2008: 4) further indicate that the SMMEs are the most important local economic engines since their visions and efforts are beneficial to the economic development and growth of the settlements in which they are residing or servicing.

Communities residing around the mining industries are in a lower income group, either working as wage labour or in various informal sector enterprises (Hamann 2003: 9). This means that most of these informal settlement dwellers earn salaries at or below the minimum wage level, on average, which result in an environment with severe poverty. The major problem is that inhabitants of such informal settlements, as they are poor, have certain perceptions and expectations from the mining authorities. Whether these perceptions and expectations are known by the mining management or not, is not clear. In addition, the beneficiation role that the mines are expected to play, is also not clear. This study's intention was therefore to investigate whether such perceptions and expectations are understood or not.

1.4 RESEARCH QUESTIONS

The current study sought to address the above problem by answering the following questions :

1.4.1 What are the community's perceptions of the beneficiation role of the mine in socio-economic community development?

1.4.2 What is the mine's perception of their beneficiation role in the socio-economic development of the local community?

1.4.3 What is the perception of the local SMMEs regarding the support they get from the mine?

1.4.4 What is the mine's perception of their support to the local SMMEs?

1.4.5 Are the local SMMEs skilled enough to provide services as expected by the mines?

1.4.6 What are the factors that impede local beneficiation in the mining value chain?

1.5 THE AIM OF THE STUDY

The aim of the study was to investigate the perception of the Amandelbult mining beneficiation in the socio-economic development of the community in the Schilpadnest informal settlement. This was based on the perceived contribution of socio-economic support programmes and services rendered by the Amandelbult Mining towards the area.

1.6 OBJECTIVES OF THE STUDY

The objectives of the study were:

1.6.1 To investigate the community's perceptions of the beneficiation role of the mine in the socio-economic development of the local community.

1.6.2 To investigate the mine's perception of their beneficiation role in the local community's socio-economic development.

1.6.3 To investigate the extent to which the local SMMEs think they have support from the mine.

1.6.4 To investigate the mine's perception of their support to the local SMMEs.

1.6.5 To find out whether the SMMEs are capable of rendering services as expected of them, by the mine.

1.6.6 To investigate factors that impede local beneficiation in the mining value chain.

1.7 SIGNIFICANCE OF THE STUDY

This study was geared towards investigating the existing perceptions of the beneficiation role in the socio-economic development of the local community. The study further investigated the support that the mine provides to the SMMEs, as well as investigating whether these SMMEs are capable of rendering services as expected of them by the mine. The factors that impede local beneficiation in the mining development were also investigated.

The study made recommendations on the basis of the perception outcomes from both the mine and surrounding communities. These recommendations will assist in informing different stakeholders about the relevant approaches to be employed in order to ensure that the local communities have proper access to the opportunities related to mining beneficiation.

1.8 DEFINITION OF TERMS/CONCEPTS

1.8.1 Informal Settlements

Informal Settlements are residential areas that have developed without legal claims to the land and/or permission from the concerned authorities to build. Due to their illegal or semi legal status, infrastructure and services are usually inadequate (Srinivas,2008:1). This means that the residential settlements of this nature do not comply with local authority requirements for conventional or formal townships. This further means that they are unauthorized and are invariably located upon land that has not been proclaimed for residential use. They exist because urbanization has grown faster than the ability of government to provide land, infrastructure and homes. This also means that if the government's current land administration and planning fails or takes time to address the needs of residents, the consequence is the development of these rapid, unstructured and unplanned settlements.

In the light of the above definition, there is a need to define the difference between the terms ‘Informal Settlement’, ‘Squatter Settlement’ and ‘Slum’. Habitat (2003:17) makes a clear indication that the term “Slum” is a general context to describe a wide range of low-income settlements and/or poor human living conditions.

Habitat (2003:19) further denotes that ‘Squatter Settlements’ comprise of simple shacks and permanent structures, with a population having a wide range of social, tribal and economical backgrounds. Squatters are people who occupy land or buildings without the explicit permission of the owner. On the other hand, as indicated before, ‘Informal Settlements’ are settlements whereby persons or squatters assert land rights or occupy land for exploitation, which is not registered in their names. On the basis of the above definitions, the three terms which have almost the same definition and similar characteristics in origin and nature, will be understood as the same by the term ‘informal settlements’.

1.8.2 Mining Beneficiation

Mining beneficiation is defined by Smith (2010:1) as the business practices which benefit the communities where products are mined, harvested and otherwise taken. This means that the notion of mining beneficiation goes beyond transforming minerals to a higher value product in order to increase potential profits for the company. It is value-added processing and practices that are able to advance the empowerment of historically disadvantaged communities by presenting opportunities for development of new entrepreneurs around large and small mining industries. Such beneficiation focuses on the practical contribution towards environmental, social and economic benefit of the local community.

1.8.3 Small, Medium and Micro Enterprises (SMMEs)

According to Small Business Development (2010: 1), an SMME is a business that is privately owned and operated, with a small number of employees and a relatively low volume of sales. The Department of Trade and Industry (2001: 1) indicates that SMMEs employ between one to five employees, usually the owner and family. It is possible that this kind of a business can be informal, with no licence, and no formal business premises.

The SMMEs use several sources available to them for start-up capital. Small Business Development (2010: 4) denotes that these SMMEs usually use sources of financing like loans from friends and relatives, self financing through cash or assets, grants from private foundations, personal savings, and formation of finance partnerships.

The SMME can start at a very low cost and on part time basis until it is developed into a big company. This means that the owner has to work very long hours, and understand the freedom and reward of working independently. Small Business Development (2010 : 4) states that SMMEs often join or come together to form organisations to advocate for their causes in order to achieve economies of scale that larger businesses benefit from.

The SMMEs within this study are those that operate formally and informally in order to provide services to the community of Schilpadnest. These SMMEs include small shops/spazas, bakeries, caterers, hairdressers, photographers, small scale manufacturing and emerging small farmers.

1.8.4 Socio-economic Development

According to Mashele (2005:1), socio-economic development means the development of people or society as a whole and the quality of human life. This development takes cognisance of the mainstream factors concerned with provision of social services such as education, clean water, sanitation, food security, housing, employment opportunities and a range of other human security factors. The development further considers economic

advancement related to business development as well as local economic growth and development.

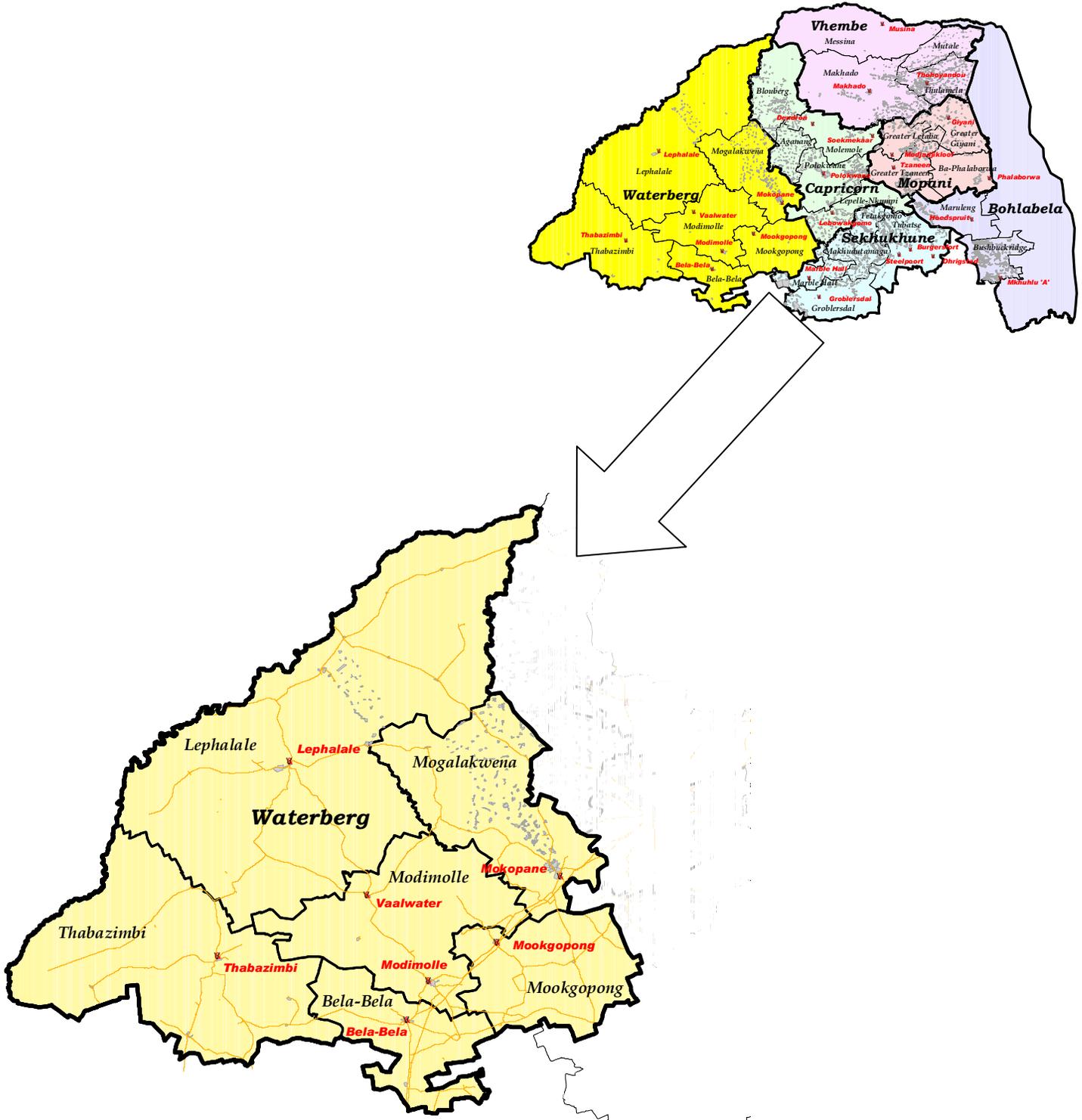
1.8.5 Amandelbult Mine

This is the mining development that produces Platinum in the Thabazimbi Municipal area. According to Thabazimbi Municipality Spatial Development Framework (2008: 15), the mining development is located approximately 48km from Thabazimbi town and is surrounded by Zwartkop, Schilpadnest, Elandsfontein and Middellaagte farms.

1.8.6 Thabazimbi Municipality

Thabazimbi Municipality is one of the six local municipalities falling within the Waterberg District Municipal area. According to the Thabazimbi Municipality's Business and Investment Guide (2008:10) the Municipality constitutes 985 460,76 ha which is 19,9% of the total district area.

The municipality is located in the south-western part of Limpopo Province and has Botswana as its international neighbour (Thabazimbi Municipality IDP, 2008: 18). Its boundaries include Thabazimbi , Northam, Leeupoort, Rooiberg and Dwaalboom. It is surrounded by Platinum producing mines such as Northam Platinum mine and Anglo Platinum mine which is divided into Amandelbult and Swartklip mines (Thabazimbi Municipality IDP 2008: 18). Other mining companies surrounding the municipality include Rhino and Pretoria Portland Cement (PPC) mines.



Thabazimbi Municipality within a broader locality of Waterberg District

1.9 SCOPE OF THE STUDY

This study investigated the contribution of Amandelbult mining beneficiation towards the socio-economic development of Schilpadnest community. This means that the socio-economic services rendered by the mine were investigated, in order to evaluate whether they are perceived to be making a meaningful contribution towards addressing the existing socio-economic needs of the local community.

1.10 RESEARCH DESIGN AND METHODOLOGY

The survey study was undertaken where an analysis was made on the perceptions of the community about the beneficiation services rendered by the mine. The survey also included the perceptions of the mine management about services that they are providing to the surrounding community.

1.10.1 Target Population

The population of this study comprised the members of different structures within the Schilpadnest informal settlement, that is Non Governmental Organisations (NGOs), Community Based Organisations (CBOs), SMMEs and Cooperatives within the community. These were interviewed. Regarding the mine management, the study only concentrated on those sections that have interactions with the community, namely, the Community Engagement Development, Transformation, Recruitment, Sustainable Development, and Housing Development.

1.10.2 Sampling

All members of the study population formed part of the subjects of the study. This is due to the small number of the target population of this study. Thus, the census method was applied for both community organisations and the mine management.

1.10.3 Data Collection Method

A structured questionnaire was used as data collection instrument for this research (see Annexure A). The questionnaire used a combination of closed and open ended questions in order to allow for further clarity of responses. The sections in the questionnaire included both biographical and content information. For the community structures, the questionnaire was administered by the researcher, with all respondents under one roof. For the mine management, the questionnaires were self-administered by respondents.

1.11 ETHICAL CONSIDERATIONS

The following ethical considerations were adhered to:

- a) The researcher sought permission from the Amandelbult mine management to conduct the study.
- b) The researcher provided adequate explanation to each of the participants about the study and its purpose in order to obtain their informed consent.
- c) The names and identification details of respondents were not requested, and all information was kept confidential.
- d) An undertaking was made not to expose participants to any danger, and to respect any request for anonymity.
- e) It was made clear to respondents that they could withdraw from the study at any time, should they so wish.
- f) A report will be made available to the involved stakeholders who may be interested in reading it.

1.12 CHAPTER OUTLINE

Chapter 1

This, introductory chapter, presents the problem statement, objectives of the study, as well as definitions of concepts used in the study.

Chapter 2

This chapter concentrates on a review of the literature about the mining industry, as well as about experiences of the socio-economic development of the surrounding areas, both internationally and locally.

Chapter 3

The third chapter outlines the research methodology used in the study. It also include the discussion of the sample, the instrument used to gather data, as well as the data gathering method.

Chapter 4

The focus in this chapter is on the analysis and interpretation of the data that has been collected, that is, the presentation of research results.

Chapter 5

The last chapter presents a summary of findings, a discussion thereof, as well as the recommendations.

1.13 SUMMARY

This chapter outlined the route that was followed by the current study. It therefore served as a framework for all activities that the researcher engaged with. The next chapter will present the literature review relevant to the mining beneficiation and surrounding communities.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter outlines the main literature reviewed on the beneficiation contribution by the mining industry towards the socio-economic development of their surrounding communities. The literature reviewed will cover the beneficiation contribution based on both international and South African experiences, and will encompass environmental, social and economic factors. This chapter will further provide an analysis of the concept mining beneficiation as well as the beneficiation contribution of the Amandelbult mine towards the socio-economic development of Schilpadnest Informal Settlement. In closing the chapter, the legislative framework governing South African mining operations will be provided.

2.2 THE NATURE OF INFORMAL SETTLEMENTS

Informal settlements are typically unauthorised and invariably located upon land that has not been proclaimed for residential use (Srinivas,1991:1). They exist because urbanisation has grown faster than the ability of government to provide land, infrastructure and homes. This means that if the government's current land administration and planning fails or takes time to address the needs of residents, the development of these rapid, unstructured and unplanned developments becomes more likely.

Informal settlements occur anywhere, even in hazardous areas such as along the railroads, on river banks or on the slopes of hills. Overall, these settlements, according to Abonyo (2000: 36), lead to a score of negative socio-economic practices, acute health related problems and economic hardships that render a part of the community generally unproductive or not as productive as it potentially could be.

According to Srinivas (1991: 3), informal settlements are characterized by the following broad interrelated factors:

(a) Physical Factors

Due to their inherent non-legal status, the informal settlements have services and infrastructure that are below adequate or minimal standards. Such inadequate services include both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage, schools, health centres and market places. The communities in these settlements use very little of the public authorities or formal channels in terms of accessing these services. This means, for example, that if water supply to individual households is absent or very few community stand pipes have been provided, informal connections for the supply of water become more prevalent. The same unauthorized processes prevail also with regard to electricity, drainage and toilet facilities. Their housing, in some instances is in poor condition, characterized by unacceptably inferior materials, inadequate light and air. This type of housing does not afford opportunity for family privacy, and is also subject to health hazards and overcrowding.

(b) Socio-economic Factors

It is evident that most individuals residing in informal settlements are of a lower income group, either working as wage labour or in various informal sector enterprises. This means that most of these settlement dwellers earn salaries at or near the minimum wage level.

In cases where the household income levels are found to be high, it usually means more than one family member is employed, or one member has a number of part-time jobs. People who dwell in informal settlements are referred to as 'squatters', that is, they are predominantly migrants, either rural-urban or urban-rural. However, many are also second or third generation squatters.

The level of unemployment is considerably high within the informal settlements, along with lack of proper social amenities like recreational and educational facilities. The high prevalence of HIV/AIDS together with poor or no provision of basic services, the mortality rate in these settlements is usually very high.

(c) Legal Factors

The key aspect that delineates people living in informal settlements is their lack of ownership of the land on which they are residing. This land can be vacant government or public land, or marginal land parcels like railway setbacks or undesirable marshy land. Thus when the land is not under productive use by the owner it is appropriated by the squatters for building their houses. In short, these people do not have the title deeds for the land they are dwelling on because it is not theirs.

There are different reasons that make or force people to live in informal settlements. Lack of collateral assets, lack of savings and other financial assets, and low income jobs are some of the internal reasons for people living in informal settlements. On the other hand, external reasons include high cost of land and other housing services, apathy and unwillingness on the part of the government to assist them, high 'acceptable' building standards, rules and regulations, lopsided planning and zoning legislations. Given these reasons, some low income people are left with no option but to squat on a vacant piece of land.

2.3 THE EFFECTS OF THE MINING ACTIVITIES ON COMMUNITIES

This section will provide the negative effects that mining developments and activities had on surrounding communities. The effects will be provided from both the international and South African perspectives, and will be based on environmental, social and economic aspects.

Mining, according to Bond (2002a:1) is an industry that encompasses metals and minerals, with operations that include open-pit and underground operations. The industry's operations include both large scale and small scale as well as artisanal mines. Underground mining requires boring of adits (horizontal entrances and tunnels for accessing minerals) and vertical shafts into the earth in order to obtain and recover mined minerals. These activities that the mines engage in, are capable of having severely negative effects on the communities around such mining developments. This means that the negative effects can be greater than the actual local beneficiation value chain.

2.3.1 The International Perspective of the Effects of Mining on surrounding Communities

2.3.1.1 Environmental Effects

Mining operations across the world are easily recognisable. Mining by its very nature means digging, removing soil and separating ores from non-metal minerals (Bond, 2002b:1). These operations leave behind environmental footprints that can have different effects, some of which have the potential to limit the ability of the surrounding communities to earn and sustain their livelihoods, particularly in areas where communities rely on their natural environment to provide food, shelter, transport and other opportunities for livelihood.

The following effects relate to the different activities that the opencast mining activities had on their surrounding communities, according to Saxena (2008: 110):

- The vegetation was removed from the area required for mining and other purposes.
- Pollution of water in the surrounding water bodies due to leaching from overburden dumps and due to pollutants from the mining activities.

- Dust in the atmosphere, contributed by mining activities, when deposited on the leaves of the plants in the surrounding areas retarded the growth of affected plants.
- Water scarcity caused by the impact of opencast mining affected the growth of vegetation and agriculture in and around the surrounding areas.

The following effects relate to the different activities that the underground mining activities had, on their surrounding communities, according to Saxena (2008: 110):

- Clearing of the area for developing shaft/incline complexes and related infrastructure required removal of some vegetation and thereby driving away the fauna.
- Water scarcity, caused by the impact of mining water regime, along with the pumping and release of polluted water on the surface affected the vegetation in the surrounding areas.
- Top soil in tensile zones of environmentally sensitive areas lost its vegetation supporting capability.
- Release of polluted water from the underground mines into the surface water bodies affected the local aquatic ecology.

These effects of mining operations have wreaked significant damage on the environment, leaving unfortunate legacies that needed extensive programmes to remedy them, for damages that were reversible.

2.3.1.2 Social Effects

Numerous criticisms have been levelled at mining community involvement efforts in terms of social advancement of those local communities. While there is potential for social responsibility of the mining industry to make a positive contribution to addressing the needs of disadvantaged communities, there are ways in which the industry makes mistakes or by design damages such communities. Saxena (2008: 1) cites the following negative effects:

(a) Displacement of surrounding communities

Historically the mining industry had taken a “devil may care” attitude to the impact of its operations i.e. operating in areas without social legitimacy, causing major devastations, and then leaving when an area has been exhausted of all economically valuable resources. The industry focused exclusively on the need to succeed in the permitting process (MacFarlane and Joyce, 2001: 40), which means that public participation processes were considered and conducted for the permitting purpose. This was the most popular way of having the industry communicating with local communities.

In the case of informal settlements, MacFarlane and Joyce (2001: 40) further postulates that the public consultations were not considered on the basis of these types of settlements originate without any formal procedure, mostly with no traditional leadership. The Tribal authority approach in most African countries was emphasized with regard to the permitting process.

Mining companies use different tactics for accessing land for mining development, as well as displacement of widespread local communities from their own lands. In the Philippines, the OceanaGold mining company effected displacement of communities in Kasibu, Nueva and Viscaya from their own lands by clearing the communities’ ancestral and agricultural lands as well as their residential properties located within the company’s proposed 425 hectare area (Philippine Group Report, 2008:2). The destruction of their homes was done without the consent of some community members, even when they refused to accept the money offered by the mine.

In Cumberland Plateau, foreign mining corporations accessed land ownership by buying the rights of a single heir to a piece of property left or belonging to several family members. When the other heirs refused to sell, the company would go to court, which would rule that the land be put to auction for the highest bidder (James and Jones, 2009:7).

All these different tactics applied by the mines in terms of accessing land and addressing issues related to land resulted in the displacement of the native populations around the mining developments or the critical loss of land for development purposes like agricultural development and community future expansions.

Overall, the land disturbance caused by the mining operations is evident. The involvement of host communities in dealing with such effects before, during and after the mining operations' processes continues to be a grey area in most mining developments. This suggests to a greater extent, that the mining companies have a tendency of engaging communities mostly on issues that benefit them (mines), for example, land permitting processes. By implication, the health profiles of the host communities are always affected by the operations of these mines, without these communities having been well informed about the consequences of the operations.

(b) Effect on Health

The mining activities have had negative effects at various levels, on the health of communities surrounding mine operations. According to Stephens and Ahern (2001:29), there are adverse health effects that result from environmental exposure to air, water, soil and noise pollution. Equally important for community health, are the non-environmental exposures such as mining disasters and pit closures, which have always affected the communities indirectly and directly.

Mining, according to Stephens and Ahern (2001:7), remains one of the most hazardous industries in the world, both in terms of short term injuries and fatalities, and also due to long term impacts such as cancers and respiratory conditions such as silicosis, asbestosis and pneumoconiosis. The impact of the mining of asbestos, coal, uranium and gold are the most studied. Asbestos mining is subject to a call for an international ban on the basis of its health impact at all stages of the mining and mineral use of this substance. Along with coal and other silicate dusts, the dangers of asbestos relate largely to damage to respiratory function and lungs, and impacts include asbestosis and lung cancers.

Stephens and Ahern (2001:8) further assert that deep mines produce severe problems for workers in terms of their risks of high blood pressure, heat exhaustion, myocardial infarction and nervous system disorders. Furthermore, surface mining's focus on coal, granite and rock mining pose health risks related to dust inhalation. This means that at all levels of mining health risks occur.

The impact of the mining and mineral industry on both worker and community health is polarised in a sense that on the one hand the industry tends to indicate the economic benefits of the sector, whilst on the other, community groups suggest that the sector is detrimental to health and sustainable development (Stephens and Ahern, 2001:9).

Given these life threatening consequences of mining operations, it is important to compare the socio-economic benefits of mining to the socio-economic conditions/disasters that communities are subjected to. Are the sacrifices made by the communities worth the socio-economic contributions and the level of health safety improvements made by the mines? Do the local communities view these mining operations to be beneficial to them?

(c) Effect on Water Supply

Mine developments, either by open cast or underground methods, damage the water regime and thus cause a reduction in the overall availability of water in and around the mining areas. In the sedimentary deposit mining areas the water table and aquifers are damaged and thus the availability of water from these sources reduces. While these mines continue to utilise plenty of water for their operations, the surrounding communities always suffer lack of adequate potable water (Paley, 2008: 5).

Paley (2008:3) states that the community of Calpulalpan in Canada and former miners have demanded that the nearby mining development be closed as the quantity and quality of their (community) water supplies have been negatively affected by the mining operations. This is due to the fact that underneath the entrance to the mine, an area

where waste rock, chemicals and tailings have been thrown directly into the river below for centuries, looks like a sagging black stain on the hillside. Out of service electrical transformers, once used to power the mining operation, are now generating toxic polychlorinated biphenyls, which the community feels are entering the water system.

Over the last few years, in areas around Canada, 13 streams have disappeared completely because of similar activities of the mines (Paley, 2008:3). Canada's National Water Commission confirmed that during the course of these mining operations underground water was captured, which resulted in the disappearance of springs. In addition to dried up springs and contaminated water, people could not use the sand from the rivers anymore as it was also contaminated. On the basis of complaints lodged by the communities across Canada, the Federal Environmental Protection Agency in Canada ordered mining companies to halt all exploitation activities related to water supply.

The water challenges provided by this section, as well as the community's reaction towards the challenges, indicate that the communities in some areas are becoming aware of the health hazards they are subjected to, and most importantly, that they (communities) have certain rights towards developments taking place within their areas.

2.3.1.3 Economic Effects

The mining developments are opportunities for economic expansion for at least over 20 to 30 years (Bond, 2002a:2). For developing countries, there will be an expansion on the demand side as population and economies grow, as well as on the supply side given shifts in exploration and mining development investments. These development resources should benefit their countries rather than posing poverty and health risks.

While small scale mining may increase the rural incomes in the short term, McMahon, Aden, Bouzaher, Subdibjo, Dore and Kunanayagam (2000:16) emphasise that the increased reliance on small scale mining relative to agriculture combined with significant environmental damage during the mining phase, may have lasting negative effects on the

potential for a more balanced rural development in mined-over areas. Whether local potential for balanced development is compromised or not, often depends on the saving habits of recipients, that is, how they use the windfall income generated by these small mining activities.

Large mining companies usually collect the geosciences and mapping data for mining purposes, which in turn, according to Weber-Fahr (2002:443), should benefit the local communities in terms of the improved land-use planning of the local area. However, the local communities are not involved in such land-use planning activities, and the collected information is not made accessible to these local communities.

The above economic effects of the mining industry indicate that the existence of the mining development in a particular locality does not always contribute positively towards the local beneficiation. It is not clear as to whether these communities find the mining's economic beneficiation being accessible to them or not. Whether these communities actually understand the role of the mining companies in addressing their socio-economic needs and how the mining's economic contribution can develop them, is still not clear.

(a) Effect on Poverty Reduction

The fact that mining can positively contribute to economic development and poverty reduction is realistic, because, according to Pegg (2003:376), the lucrative natural resources like copper, diamonds, gold and tin can provide poor countries with large revenue streams that can be used to alleviate poverty. However, records demonstrate that mining is more likely to lead to poverty exacerbation than to poverty reduction.

Pegg (2003:377) identifies material deprivation, low level of education, vulnerability and exposure to risk, and voicelessness and powerlessness as broad categories that encompass poverty of communities around the mine developments. In terms of material deprivation he argues, that while economic growth is necessary, it is found not to be sufficient for

poverty reduction. He further indicates that the mines are not doing well in terms of either equity of income distribution or creation of job opportunities for the poor.

Pegg (2003:377) further argues that mineral-dependent states have significantly higher levels of inequality than other states with similar incomes. This means that the more the state relies on mineral exports, the smaller the share of income that accrues to the poorest of the population. The technological-intensive nature of many mining projects also means that they fail to provide jobs that are accessible to the poor, who are unskilled or semi-skilled.

Poverty reduction, according to Pegg (2003:378), also entails helping the poor to manage risks and vulnerabilities. With this aspect, countries that are heavily dependent on resource export are found to be unusually vulnerable to economic shock due to their lack of diversification and the cyclical nature of commodity prices. The poorest segments of the community are the ones most vulnerable to the effects of these economic shocks.

Mining has always increased the exposure of the poor to a variety of social risks. Pegg (2003:378) indicates that the rapid influx of people to a particular locality has led to local price inflations. This explains that higher incomes of mine workers can lead to drastic rises in local prices for key goods like fuel, food, land and housing. These price inflations do not only leave the local poor behind, but also shrink their incomes significantly, therefore contributing towards social tensions and different forms of poverty.

It is critical that poor people be given a stronger voice in their respective countries' governance in order to make state institutions more responsive to the needs of the poor. The fact that mineral rich countries do so poorly in terms of poverty reduction, also exacerbates the poor's voicelessness and powerlessness.

(b) Effect on Job creation

In terms of job creation, while it is certainly true that the mining sector employs workers in poor countries, Pegg (2003:380) maintains that the sector is capital intensive rather than labour intensive. Thus the actual number of jobs created is quite small compared to the revenues generated. The Sadiola mine in Mali, for example, is estimated to have created one mining job for every S700 000 invested. On the other hand, the Randgold mine directly created 1 job for every S1.23 million invested.

In many countries, while the community development programmes were undertaken, they are largely done as *ad hoc* measures by the mining companies, with the view to establishing a positive relationship with local communities. This too is the case with many parts of Indonesia. According to McMahon *et al* (2000:11), the socio-economic expenditure by the mining companies towards community development is minimal.

Overall, while the mining developments across the globe, are making sound economic contributions towards their countries' economies, they have an almost similar understanding in dealing with the socio-economic challenges related to land, health, water and socio-cultural dynamics. What also becomes critical is to also establish whether these mines have the socio-economic development of communities at the centre of their objectives or whether it is merely compliance with legislative requirements of the day. If this challenge is worldwide, what better mechanisms can be employed locally, to ensure the safety of Schilpadnest community around the mining development?

2.3.2 The South African Perspective on the Effects of the Mining Industry on the surrounding communities

2.3.2.1 Environmental Effects

The amount of contemporary sources of environmental exposure to different mining developments, like asbestos mining, in South Africa is unimaginable. According to Braun (2006:8), these sources include unrehabilitated or partially rehabilitated dumps, dried riverbeds, roads as well as deteriorated housing materials. Although the asbestos mines have closed in South Africa, many mining sites near villages have not been rehabilitated, which still poses a challenge of exposure to hazardous asbestos fibres for the foreseeable future.

Braun (2006:9) further argues that investing in environmentally positive initiatives has always been an *'on-the-side'* activity by the mining companies. However, with the political changes from 1994, there has been a growing political imperative for the mines to be seen to be contributing to social development around their operations as well as the incentives to mitigate increasing local resentment regarding pollution and the growth of informal settlements.

2.3.2.2 Social Effects

The negative effects of the mining activities on the social development of the surrounding communities have always been a challenge to the development of these local communities. According to Killian (2008:23), the social challenges that are prominent in South Africa's mining activities are mostly related to land, water and health. From the day the mining operation starts, the clock counts down until that inevitable day when doors will close. While the mine is still in operation, communities often suffer loss of land, contaminated water as well as hazardous health conditions posed by the mines. These challenges, according to Braun (2006:12), are always accompanied by high

mortality rates and community divisions. Furthermore, these social challenges impact on the economic regions in the long term.

The following social effects are faced by communities around most mining companies in South Africa:

(a) Displacement of surrounding communities

Communities around mining developments experience continuous forced removals from their land. According to Erasmus (2003:166), the practice of demolishing homes and forcibly moving people from the land on which they had been living was for a long time one of the most reviled practices of the South African Mining Industry. Besides the economic aspect, land is viewed as its real value, representing a sense of security and is therefore a key asset in its own right.

Abahlali Press (2008:2) made public that Potgietersrus Platinum Ltd (PPL) Mine has placed the community of Mohlohlo village of Mokopane area in Limpopo under huge pressure to relocate. The community's agricultural and grazing land was destroyed or fenced off, the piped water supply also destroyed and intolerable conditions were created in the community as a result of opencast mining in close proximity to the nearby residential areas even to the extent that homes had to be evacuated during regular blasting to protect against injury from collapsing structures and flying debris.

A press release was further made by Abahlali Press (2008:3) as follows :*“Anglo Platinum, it is alleged, has sought unfairly to use its monopoly over skills, knowledge and resources, as well as its disproportionate influence over government to gain an advantage over disadvantaged rural communities in order to oppress and exploit them. Inter alia, Anglo Platinum has consistently misrepresented to the community and to the government that it has the right to carry out mining operations on the communities land and that therefore the community has no option but to give up its land, at no cost, and to be relocated in order to make way for mining.”*

Abahlali Press (2008:3) further gave out a press release stating that in 2003 Anglo Platinum relocated 7000 residents of Ga Chaba to an unsustainable resettlement village at Sterkwater within Limpopo Province. The residents of the affected village ended up having fights amongst themselves. Those who did not agree to the relocation processes were threatened in different ways.

The manner in which the mines handled the land issues was found to have consequences of deepening entrenched poverty and hardship for the community. Families who refused to co-operate with the mines' propositions always had essential services discontinued to them and their infrastructure was demolished around them to punish them for their intransigence and as a lesson to those who might think of doing the same.

(b) Effect on Health

In a recent study done by Benchmarks Southern Africa (2007:1) health and safety threats that are closely related to the emergence of informal settlements around the mines and the workplace conditions within the mines are revealed. It was found that the inhalation of dust has long term effects on the workers and surrounding communities due to the substances it contains, causing people to suffer from silicosis, a respiratory disease caused by inhaling silica and results in inflammation and scarring of the lung tissue or tuberculosis.

Over 80% of patients around Rustenburg suffer from respiratory infections, and the extent of air pollution caused by the mines still has to be sufficiently examined as there is a lack of independent air quality monitoring capacities in the region (Benchmarks Southern Africa, 2007:1). Due to migrant labour, a living-out allowance by the mine corporations and a lack of housing opportunities in the mine surroundings, workers have settled in shacks that have no access to sewage, refuse removal, electricity or piped water. This according to Benchmarks Southern Africa (2007:2) has caused higher incidences of respiratory infections than before.

Benchmarks Southern Africa (2007:3) further cites the prevalence of a high rate of HIV/AIDS infection in the informal settlements of the North West province, estimated at 60%. This is above the average 20% of the province. Although the mining corporations seem to be aware of the impact of HIV/AIDS on their workers and their dependants, they ignore the impact that the policies of migrant labour, sub-contracting, the living out allowance and the lack of job opportunities for women has on the health of the community.

(c) Effect on Water

Human Rights Tribune (2008:1) indicates that by law, waste water from mines in South Africa, is supposed to be treated to a standard established by the Department of Water Affairs and Forestry (DWAF) before being discharged into waterways. But the evidence of contamination in the sediment indicates that there has not been compliance. As more mines close and more tests reveal hazardous contamination levels in sediment and local food samples, there is a growing concern about acidic water emanating from disused mines. This is evident in the southwest of Johannesburg, in a valley ringed by mines, both active and closed, where the Wonderfontein River runs southwest from the mining town of Randfontein to Carletonville and Khutsong, into the Mooi River, which provides water for Potchefstroom. Scientific studies, according to Human Rights Tribune (2008:1) established that the sediment in the Wonderfontein River is contaminated with radioactive uranium and high levels of other heavy metals in wastewater discharged from local mines.

Benchmarks Southern Africa (2007:6) highlights the effect of tailings dams and construction activities on the Platinum region in North West Province. It indicates that silt flows from tailings dams have an impact on the surface water systems in the area. Land degradation that occurs through soil erosion, construction activities and destruction of vegetation causes highly suspended solid loads to find its way to water and may cause sedimentation.

Benchmarks Southern Africa (2007:1) emphasises that the lack of community awareness regarding their basic rights and limited access to information results in most communities being unaware of the long term impact on the environment, geology and hydrology of the areas in which they live, and nor is this ever explained to them.

2.3.2.3 Economic Effects

South Africa's mining industry is supported by an extensive and diversified resource base, and has since its inception been the cornerstone of South Africa's economy. The changes that have come about in the country make it necessary to prepare the industry for the challenges which are facing the informal settlements that are found around such mining developments within the country.

The industry has created towns and nodes of economic development throughout the country. Due to the nature of work, especially in the very deep mines, the industry has provided large numbers of employment opportunities. The special control of mine labour and application of racial domination in the industry pre-dates the apartheid era by three quarters of the century (SA Government Information, 1998: 35). This led to the industry being heavily dominated by a small number of mining houses, all of which were white owned.

Most ghost towns within the country have developed in areas that were once heavily reliant on mining for economic sustainability. The majority of people who were dependent on the mining operations for income are usually left stranded in areas that they cannot escape from. Killian (2008:7) emphasises lack of proper planning in the placement and rehabilitation of mine infrastructure, land and waste dumps that lead to negative future social and economic impact on communities and regional development. What usually happens is that after mine closure, mine waste deposits and unproductive disturbed land are often left behind, which precludes the productive use of economically viable land for the socio-economic development of communities over the long term. The

following are some of the negative economic effects of the mining developments in South Africa:

(a) Effect on job creation and poverty reduction

Minerals development is regarded as a catalyst for economic development at a national level, while, locally, communities look to the sector to provide employment, infrastructure and skills development to compensate them for the risks and impacts associated with mining (Limpitlaw, 2005: 12). This means that mining employees demand a safer and healthier work environment with post employment benefits, and consumers expect safe products with managed environmental and social impacts. The local communities, also expect to be included in the mine's beneficiation value chain. However, the mines' trends towards highly skilled workforces and out-sourcing of services continuously reduce the extent to which local communities participate in the mines' job creation and poverty reduction initiatives.

The mining industry, according to Limpitlaw (2005: 2), makes a substantial direct contribution to development through wages. However, he (Limpitlaw, 2005 :2) argues that the number of employees in the mining industry has declined over the past decade, with very few local communities that are dependent on mining, having benefitted from the mines' direct value chain activities.

In rural labour sending areas, mines often offer the only alternative to low productivity employment such as subsistence agriculture (Limpitlaw, 2005 :3). This means that to a very small degree, new skills and wealth have filtered back to these local communities. The recruitment and financial systems set up by the industry have become the important components of development infrastructure, and in the medium to long term, the contribution of mining to sustainability through labour will become less important as mines become increasingly mechanised. Limpitlaw (2005 :3) further indicates that mines have diminishing capacity to absorb large numbers of job seekers as international competition forces reductions in labour forces and increases in levels of capital-intensive

technology. In some traditional mining areas such as Ekurhuleni, mining is in serious decline and will only be able to access unmined resources at depths which require a significant investment in technology.

The development projects initiated by the mines experience a high rate of failure, often, because large sums of money are spent without providing ongoing advice and without sufficient attention to the sustainability of projects (Limpitlaw, 2005: 4). On the other hand, communities have few or none of the skills required to take ownership of development projects and very little monitoring and evaluation of development of projects undertaken.

In conclusion, the negative effects of mining on job creation and poverty reduction for the surrounding communities can be pointed out. In a sense, the beneficiation role that the mines are supposed to play in creating jobs and reducing poverty is close to being not beneficial to the mainstream local communities. There is therefore a need for both the mines and the local communities to understand the mining beneficiation role that the mines have to play in the socio-economic development of the host communities. The following section will provide an outline of the effects of mining beneficiation on surrounding communities.

2.4 THE EFFECT OF MINING BENEFICIATION ON SURROUNDING COMMUNITIES

This section will provide the definition of mining beneficiation in the context of this study. It will also provide the economic impact of mining beneficiation, as well as an indication of how the mining beneficiation can be promoted in South Africa.

2.4.1 The concept of ‘Mining Beneficiation’

The term ‘mining beneficiation’ in the mining industry refers to a process which is designed to improve the yield from a deposit ore. According to Smith (2010: 1), the process increases the potential profits available from the ore, and allows a company to increase the overall profitability of a mine and its business in a particular area. For this reason, a number of objectives are used to accomplish beneficiation objectives, and several companies which make mining equipment have lines of products which are designed to help companies get more ore.

Kruger (2007: 5) also provides an almost similar notion, defining ‘mining beneficiation’ as the successive processes of adding value to raw materials from their extraction through to the sale of finished products to consumers. These include large-scale and capital-intensive operations like smelting and technological sophisticated refining as well as labour-intensive activities such as craft jewellery. The goal of beneficiation, according to Smith (2010: 1), is to eliminate inefficiency and waste by ensuring that as much recoverable material as possible is extracted from ore. For rare resources, beneficiation is critical because it takes advantage of every scrap of material available.

Smith (2010: 1) provides a further definition of ‘mining beneficiation’ referring to it as the business practices which benefit the communities where products are mined, harvested and otherwise taken. The Department of Minerals and Energy (2010: 1) supports this notion by stating that mining beneficiation goes beyond increasing the ore deposits to increasing potential profits for the company. It is the value-added processing and practices that are also able to advance the empowerment of historically disadvantaged communities by presenting opportunities for development of new entrepreneurs around large and small mining industries.

All the above definitions consider the value of the ore’s end product, involving particular mechanisms to attach some value chain towards and across identified products. ‘Beneficiation’ in this study will refer to the one that considers empowerment and

development of communities around the mines as defined by the Department of Minerals and Energy (DME) and Smith (2010: 1). This beneficiation encompasses the mines' contribution towards environmental, social and economic benefit of the local community.

Historically, major companies tend to enter small communities, take resources, and then leave with no benefit to the populace. This process of exploiting a community and then leaving, has according to Smith (2010: 1), become frowned upon as a form of exploitation of people. This has resulted in national governments making beneficiation increasingly popular.

With beneficiation that considers development of local communities, Smith (2010: 1) denotes that a mining company does things like moving some of its operations to the country where a product is harvested or mined, giving back to the community and doing more work to keep some of the profits and benefits in a country. If a company is mining, for instance, opals, it might open a facility for cutting and polishing opals near the mine rather than shipping them to overseas for processing, to create more job opportunities for the local community. Similarly, a company taking timber might operate a mill near the forest rather than shipping raw timber to overseas. Furthermore, all other secondary materials that remain when the ore is harvested can be useful and have some economic value. These materials can therefore be made accessible to the local SMMEs for further processing or utilisation.

2.4.2 The economic impact of Mining Beneficiation

South Africa is the home of vital and most diversified mineral reserves in the world. According to the ANCYL Discussion Document (2010: 4), these minerals include platinum group metals (70% of the world's produce), gold (40%), manganese (70%), chromium (70%), and 54 other minerals. In 2005, about 55 different minerals were produced from 1 113 mines and quarries, of which 45 produced gold, 26 produced platinum group minerals, 64 produced coal and 202 produced diamonds. For the same

year 2005, SAMI (2010: 1) highlights that the South African mineral commodities were exported to 101 countries.

According to Twerefou (2010: 2), Africa as a whole, in 2005, boasted over 55% and 60% of the world's gold and diamond reserves and holds 82% and 88% of global manganese and platinum reserves. Furthermore, Africa accounts for 44% of the world's chromite, 82% of the manganese and 62% of the Aluminium.

In the same breath of the mining's economic contribution to the economy, Pedro (2008:5) asserts that mainstreaming mineral wealth in growth and poverty reduction is apparent. This means that the different roles that large and artisanal/small scale mining can play in the comprehensive economies need to be recognised, with the real beneficiation for local communities being the central focus. Large scale mining has the potential to generate foreign exchange and other mineral rents that can be allocated for poverty reduction as well as contributing towards local economic development. According to Pedro (2008:5), provision of basic infrastructure, facilitation of skills and knowledge development, creation of local human and social capital have a significant effect on the downstream beneficiation of wealth to local communities.

Pedro (2008:6) further denotes that support to artisanal/small scale mining has the potential to create employment in rural areas, to stem rural-urban migration, to generate additional income to supplement local economies, to enable the exploitation of what would otherwise be uneconomic reserves, as well as to provide a route to the creation of micro mineral clusters in rural areas. He (Pedro, 2008:6) further indicates that in attempting to provide support mechanisms that will enhance local beneficiation, it is critical to recognise that mineral resources are finite and unevenly distributed. This means that minerals are location specific and should therefore be exploited where they occur, with beneficiation to such local communities being maximised.

According to Pedro (2008:6), it is important to invest transitory mineral revenues to ensure lasting wealth that will benefit local communities as well. This involves

distributing benefits from mining equitably, balancing and managing conflicting local concerns and interests as well as deciding what form of allocation and social practices should be made to promote pro-poor growth.

2.4.3 Promoting Mining Beneficiation

In South Africa, the promotion of local beneficiation is done through legislation. The section on legislative framework will be dealt with later in this chapter. South Africa is attempting to promote the export of value added products by gradually reducing the export of raw and intermediate mineral products. According to the Department of Minerals and Energy (2010: 2), more focus should be given to the Small, Medium and Micro Enterprises (SMMEs) during beneficiation processes. These include beneficiation through business development services, business linkages, feasibility and market development studies.

The Department of Minerals and Energy (2010: 3) considers the following critical activities that are able to ensure success and sustainability of beneficiation for local communities, including SMMEs:

- Facilitation of international manufacturing training programmes for the local community.
- Providing opportunities for SMME business development through business skills training.
- Partnerships with other sectors on indigenous manufacturing techniques.
- Conducting community awareness programmes through information sessions.
- Providing assistance to SMMEs on development of business plans.

South Africa, like most countries, is still experiencing a challenge in relation to linkages between the mineral resources sector and beneficiation of such resources to the local SMMEs and communities. Most beneficiation attempts made, had very little participation of local entrepreneurs and communities affected by the value chains of such minerals

resources (Pedro, 2008:5). Where mining has made prosperous attempts to contribute to better beneficiation developments, success could be linked to sound management of such a mining company, good governance and respect for law.

2.5 THE SOCIO-ECONOMIC CONTRIBUTION OF MINING BENEFICIATION

This section of the study will provide the positive practices and activities that the mining companies are applying in order to ensure that the negative effects of the past are corrected for the benefit of the surrounding communities. The beneficinations contributions will be drawn from the international and South African perspectives.

2.5.1 The International Perspective of the Socio-economic contribution of Mining Beneficiation

2.5.1 Environmental Contribution

There is a general increase of mining operations in the developing countries, where institutions and systems vary greatly in their ability to regulate, manage and monitor the environmental impact of mining operations. According to Bond (2002b:1), large mining companies realise that the social and political consequences of environmental damage caused by the mining operations can be extremely expensive for their business. This therefore has required that the mining companies attempt different mechanisms to deal with such challenges, and also attempt to strive towards sound beneficiation through environmental enhancement.

There is currently very little literature on how the mines are addressing the environmental challenges. However, Bond (2002b: 1) cites that in Chile, while government was developing its environmental institutional frameworks during the early 1990s, large mining companies committed to substantive voluntary agreements regarding their good environmental performance. These therefore assisted in setting standards for the development of the national system of environmental management in the country.

The quality of a country's environmental system is an important asset in the competition for foreign direct investment. Bond (2002b:1) emphasises this aspect by indicating that a lot of mining companies seek for competent regulators and efficient institutions that understand clear, stable and transparent environmental frameworks. However, the extent to which these mines are regulating such environmental frameworks is still not very clear, and how they effectively benefit the local communities is also not very clear.

2.5.2 Social Contribution

2.5.2.1 Contribution on Land

Different countries have developed guidelines and policies that seek to address the challenges related to accessing land for mining developments. This means that different ways were developed whereby local communities could draw beneficiation from the land they provide for the mining development.

In Mexico, the International policy on Indigenous and Tribal People provided that procedures be established, through which mining companies shall consult local communities before undertaking any programmes for the exploration or exploitation of land (Paley, 2008:4). Similarly, the state of Panama in South America also introduced and enforced legislation that guarantees participation of indigenous communities in policy decisions relating to land acquisition processes as well as reinforcement of indigenous rights (*MMSD Report*, 2001:14). For Panama, the enforcement of legislation is implemented successfully.

The level of compliance of the mines with land legislative and regulatory mandates, as part of the measures, is still minimal. This is an indication that the mindset of the mines is still more concerned about making profit rather than reaching out to host communities. However, with intensive government monitoring compliance should improve.

2.5.2.2 Contribution to Health

The aspect of benefiting through the health and safety improvements in mines, have been developed over a long period of negotiation and struggle in most countries. Stephens and Ahern (2001:9) emphasise that as a way to effectively address this beneficiation aspect, companies have provided a range of community initiatives including vaccination programmes and health services, which had mixed results.

In Asia, communities have worked with scientists to understand some of the impacts associated with living near the mines, which revealed that the mining activities undermine the human objectives of sustainable development, which are to protect the health of current and future generations. However, more attempts are being made by these mines to benefit through sustainable health developments.

Though the mines have attempted to find ways of addressing the health related aspects, it is still a minimum response in terms of ensuring the sustainable beneficiation of health safety mechanisms for the local communities.

2.5.3 Economic Contribution

According to Weber-Fahr (2002:440), there are approximately 60 developing and transition countries where mining is or could become an important economic activity. This includes countries that are important mineral producers in the international market place, countries that are modest producers by international standards but where mining makes an important contribution to the regional economy, and countries where small-scale or artisanal mining provide significant employment in rural or remote communities. These countries which, according to Bond (2002a:1), are regarded as 'mining countries' include, among others, Australia, Botswana, Chile, Canada, Guinea, Peru and South Africa.

(a) Contribution to job creation and poverty reduction

Large-scale mining can generate about 85% of the world's nonfuel minerals and more than 95% of the world's total mineral production. The industry employs an estimated 2.5 million people worldwide and is dominated by some 50 mining and metal companies (Weber-Fahr, 2002:441). About 3.9 billion people, according to Bond (2002a:2), live in these mining and metal countries, of which 1.5 billion, which is approximately two thirds of the world's poorest population, live in severe poverty. The challenge for these poor communities is how they can turn this endowment into an economic asset that will help them to find ways out of persistent poverty.

The small-scale mining, which generates about 15% of the world's nonfuel minerals, is also a major source of income with about 30 countries around the world (Weber-Fahr, 2002:441). These countries with small scale mining consist of at least an estimated 13 million people, a significant proportion of whom are women and children.

According to Matthews (2005: 5), any strategy that is aimed at reducing and eventually eliminating poverty should be multi-dimensional. The multi-sector partnerships are a particular type of partnership increasingly used by mines to pursue business and social objectives. Matthews (2005: 5) further indicates that the society is understood to be comprised of different sectors like the state (government and public institutions), market (companies and business associations) and civil society (non-governmental organisations, community groups and organised labour). Each of these societal sectors possesses some core competencies which are integral towards solving the poverty challenges more effectively than any sector could on its own.

The Konkola Copper mine in Zambia has applied the multi-sector partnership model through a detailed stakeholder mapping exercise to identify the potential partners, which, according to Matthews (2005: 5), identified the possible contributions that each sector will make towards the local community development including the contribution of the

mine. However, the mine experienced uncertainties regarding its future, and the efforts towards local business and community development were minimal.

Countries like Chile, Brazil, Mexico and Peru have good data of how they contribute towards the poverty reduction of their communities surrounding the mines (Weber-Fahr, 2002:451). In these countries, the mining operations have invested substantially in the local communities through training, social services, and public goods such as clean water, roads and transport. These constitute an effective mine beneficiation for the local communities.

In conclusion, it becomes clear that while some mine companies are making valuable attempts to reduce poverty within surrounding communities, the majority of them engage in different programmes (e.g. infrastructure provision) for their own benefit, rather than to the benefit of the community.

2.5.2 The South African Perspective of the Socio-economic contribution of the Mining Beneficiation

2.5.2.1 Environmental and Social Contribution

The literature on the positive contribution of the South African mines on environmental issues is minimal. However there is a general indication that through the enforcement of a number of legislative requirements, for instance the National Environment Management Act (NEMA) of 1998, environmental issues that impacted on the socio-economic wellbeing of communities have become significant at the operational level of mining companies (Hamann, 2003:17) in South Africa. The environmental management programmes for the mines contain issues of socio-economic improvement, but the actual implementation of these requirements is still not quantifiable. These legislative requirements were, however, the initial opportunities for communication between companies and surrounding communities.

Regarding the social aspects, some of the mines are making efforts to ensure that communities around such mines benefit from different social initiatives. Mines like Kumba Iron Ore in Thabazimbi contribute towards the social stability of the surrounding communities through provision of some infrastructure. According to the *Kumba SEAT Report* (2009: 22), Kumba Iron Ore partnered with Thabazimbi Municipality in tarring some roads as well as paving some streets for the community of Regorogile Township.

Overall, the contribution of mines towards the environmental and social development of the local communities still needs proper monitoring and documentation. While it is acknowledged that most mining companies have plans on how to beneficiate social development, it is not so clear whether such contributions are still in the form of plans on paper, or, are programmes that are not implementable.

2.5.2.2 Economic Contribution

The mining industry is one of South Africa's few world class industries, and has the capacity to generate wealth and employment opportunities on a large scale. Many mining projects in South Africa are unusually large and long term, requiring massive capital and entailing a high degree of risk.

In 2007, mining in South Africa, contributed R135.6 billion or 7.7% to the Gross Domestic Product (GDP), an increase of R16.2 billion over the previous year (SAMI, 2010b: 1) . Furthermore, mining and quarrying contributed 8.9% to total fixed capital formation. South Africa's total primary mineral sales revenue increased by 15.2% to R223.9 billion in 2007, with the major foreign revenue earners being platinum-group metals with 40,8%, followed by gold with 22.2% and then coal with 15.1%.

The mining industry, excluding exploration, research and development structures and head offices staff, employed 2.9 % of South Africa's economically active population (ANCYL Discussion Document, 2010: 5). This means that the average number of workers employed in the mining industry increased by 8.6% in 2007 as a result of

expansion projects. The wage income amounted to R50.09 billion in 2007, or 22.4% of total mining revenue, an increase in nominal terms of 28.5% compared with that of 2006.

Warden-Fernandez (2001:24) denotes that all countries endowed with mineral resources are competing to attract private investment, and they see the development of their natural resources as the key to the growth of their economies. However, those countries with indigenous communities, like South Africa, are in the international limelight because of the global awareness of the need to protect the indigenous rights. Therefore in the delineation of their policies these countries should take into account the need to address the protection of those indigenous rights that have already received recognition in the international arena.

(a) Contribution to job creation and poverty reduction

The mining industry in South Africa provides jobs for over half a million people directly, and for many more when both up-and-down stream multiplier effects are taken into account (SA Government Information, 1998: 34). Consideration of beneficiating through job creation and poverty reduction in South Africa was prompted when South African mining companies started experiencing international pressure with regard to socio-economic beneficiation towards surrounding communities, particularly those with a listing in London. *“Once we were listed in London, the whole world was watching, and the rules changed. It is mainly because of London City analysts because they have enormous amount of power. You need to be perceived to be the more secure investment, and good socio-economic programmes give the impression that you are a balanced investment in a risky environment and your price will go up”* (Hamann 2003:11).

Within many mining companies, there is a new emphasis on employing local labour, and this is due to pressure from local communities, tribal authorities and government. A classic example to that effect, according to Hamann (2003:18) is Bafokeng Platinum mine in the North West, that at the time of this study, employed approximately 99% of its labour force from the local community. In many cases, a key incentive for local labour

sourcing denotes the agreement between the company and local communities. However, with more established mines, a large proportion of the workers are still migrant labour.

It is worth noting that the mining industry is generally attempting to make a valuable economic contribution towards the South African economy. With its capacity to generate considerable wealth and job opportunities on a large scale, the industry is therefore regarded as one of South Africa's few world class industries. However, the documentation of the actual poverty reduction initiatives is still a challenge for the mines, or the plans are still not properly executed.

In conclusion, this study has shown how the mining industry at international level is assisting the local communities in terms of social and economic aspects affecting such communities. For South Africa, although a large number of surrounding communities benefit with regard to employment opportunities, there is little evidence that these communities' social development is taken into consideration. In actual fact, it is not clear whether the mines in South Africa are committed to their local communities' socio-economic development. It is also not clear whether the mines in South Africa have particular challenges in addressing these socio-economic challenges of their surrounding communities. What becomes critical for this study is to establish whether communities find the benefits from the mine developments to be more worthwhile to them as compared to the variety of life-threatening challenges posed by the development of these mines.

2.6 MINES' CONTRIBUTION TOWARDS SMME DEVELOPMENT AND SUPPORT

Some mining companies have realised that spreading economic opportunities within and between local communities through support to SMMEs, is urgent and possible, for the achievement of a sound local economic development (Henry and Paulson, 2007:5).

Mining companies for different countries have therefore attempted to address the aspect of support to SMMEs through beneficiation processes and practices.

2.6.1 The International Perspective on the Mining Contribution to the SMMEs

The mines with the understanding of mining beneficiation are able to provide lasting support to entrepreneurial investment projects that contribute to long term sustainable economic development. According to Small Business Development (2010:2), different mining companies contribute towards development of SMMEs in different ways, while other mining companies only put the support programmes on paper without implementing such programmes.

According to Red Back Mining Community (2010 :1), the economic contributions made by the Red Back Mine in Britain include SMMEs skills development as well as procurement of goods and services from these SMME businesses. The mines are expected to provide the local SMMEs with business investment programmes in partnership with different skills development agencies.

The initiative taken by the Lumwana Mine in Solwezi (Zambia) to empower local people through lending support to SMMEs is also a demonstration of what partnership and beneficiation between the mining industry and its local communities is all about (*Zambia Lumwana Mining Report*, 2010:2). Lumwana mine supports SMMEs that need improvement in their operations, as well as by assisting the establishment of new small scale businesses. The mine has also contributed by awarding a contract ‘greening’ the mine area, through planting of vegetation and landscaping. The contracted business has employed a number of people, particularly youth on a permanent basis to ensure that the mine area is always green.

Zambia Lumwana Mining Report (2010:2) further indicates that the mine has contracted other local SMMEs for the supply of agricultural produce to the mine canteens under catering contract. The mine has also implemented its policy that allows any employee

who buys a house to be offered a small holding plot for agriculture usage. This means that in the long term such employees could become local farmers. These different initiatives by the Lumwana mine have resulted in many local communities being employed by these local contracted or sub-contracted businesses/SMMEs.

In Britain, the coal mining company responded to its mine closure by focusing on the delivery of practical initiatives intended to stimulate the regeneration of the coal fields areas by the mine (Key Elements of a Labor Program, 2010 : 2). Small business funding, formed part of the support mechanisms that were given to employees and local SMMEs. These support initiatives were intended to expand the prospects for the labour market by lowering the threshold for business entry and growth as well as to promote the development and expansion of skills for local SMMEs.

Key Elements of a Labor Program (2010: 3) further indicates that the mine made loans available to new business start-ups within the coal mining communities. Larger start-ups for local SMMEs were then able to apply for larger venture capital investments of up to 250 000 dollars. In all cases only business plans with considerable growth were considered for such funding. A partnership with support agencies was also made to assist the SMMEs with the development of viable business plans.

The approach of the coal mining industry towards SMME support was to unite outplacement and funding of different emerging entrepreneurs by introducing managed workshops or SMMEs incubators (Key Elements of Labor Program, 2010: 3). This was fulfilled through the mine's offer of workshops and offices of various sizes and types, as well as such shared services of secretarial support, photocopying, and facsimile facilities. These support mechanisms, according to Key Elements of Labor Program (2010: 3) were coupled with easy-in and easy-out lease terms which were designed to remove barriers to growth and diversification for these emerging businesses and expansions. The former British coal premises were also offered for workspaces, redeveloping the existing infrastructure as well as keeping the costs of conversion low. Key Elements of Labor

Program (2010: 3) further asserts that about 56% of the jobs created in the local businesses were from the business start-ups, and 44% were from business expansions.

The Anglo American mines, in various countries, established an SMME development and empowerment initiative called Anglo Zimele Loan Fund, with the objective to empower black emerging entrepreneurs through creation and transformation of sustainable and profitable businesses (Anglo American Report, 2009: 2). Anglo Zimele Fund was divided into supply chain fund and small business start-up fund. The funds operate on a commercial basis which means that economically viable small enterprises were able to access loans, mentoring and value-enhancing opportunities.

In Chile, the Anglo American mine initiated an 'Emerge Programme' that helped the SMMEs to grow their businesses by offering training, technical support, financial assistance and mentoring (*Anglo American Report*, 2009: 3). They entered into a partnership with Fondo Esperanza, an institution that grants micro-credit and business education to small businesses and SMMEs.

For Brazil, Anglo American established a three year social improvement plan with the NGO Care Brazil in order to support the local communities to take part in free entrepreneurial management courses (*Anglo American Report*, 2009: 3). The course was provided in an effort to develop business ideas and opportunities in the region. The initiative has already supported many SMMEs ranging from agri-business and production of milk and honey, to the sale of bread and providing access to internet radio in remote areas.

The aspect of creating partnerships in involving SMMEs in the small-scale mining was another support dimension that was largely planned by the De Beers Diamond Company in Tanzania (Maplecroft, 2007: 5). The company had a joint venture with the government of Tanzania where the necessary resources and skills required to generate practical mechanisms to penetrate the informal small scale diamond industry, were applied. The aim of the initiative was to improve the SMMEs within the rural communities. This

beneficiation initiative has a strong focus on partnerships, financial inclusion through introduction of innovative technology and local capacity.

According to Maplecroft (2007: 5), approximately 20 000 local SMMEs were previously involved in the artisanal and small scale diamond mining in the Shinyanga region of Tanzania. Almost all these SMMEs worked under a financier who expanded on average 25 dollars per digger per month, enough to support their basic needs only. If a diamond was found, the digger was obliged to sell to the financier and receives approximately 8% to 16% of the stone's true value in return. The new initiative was therefore geared towards creating a conducive environment for capacity building for the local SMMEs involved in small scale mining. This meant a business approach that is guaranteed to be more transparent and fair with regard to payments, valuations and transactions. Since this is still an initiative to be implemented, it is not yet established whether the approach will practically work for the local SMMEs or not.

The perspective on the international mining contribution of the highlighted countries indicates a comprehensive support towards the local SMMEs. The challenge that arises is lack of numerical indications of how far the programmes or initiatives have been of assistance. Whether some of the initiatives are only paper programmes that could not move off the ground is still not clear.

2.6.2 The South African Mining Contribution to the SMMEs

Like some of the developing countries, South Africa possesses an exceptional mineral endowment. According to SA Government Information (1998: 33), the role that the mining industry plays in the economy and the share that minerals contribute to exports, define South Africa as a minerals-based economy. The government is therefore committed to promoting mineral beneficiation activities through different legislative frameworks that are in existence, as well as through public services and goods.

Anglo Zimele in South Africa has injected up to R28bn since 2005, into small business development and direct procurement transactions with black-owned and managed SMMEs (Mondi Business Paper, 2006: 3). It was through the Ferrous Metals and Industries division of Anglo Zimele that R2.6 bn was spent on black economic empowerment (BEE) in 2005. Mondi Business Paper (2006: 3) further highlights that the Moreland division paid a SMME's construction company R18m for work in Umhlanga Ridge New Town Centre project, while a further R20m was spent with a similar empowerment partnership for the realignment of the M4 road at Moreland's Zimbali project.

It is through Tongaat-Hullet, a division of Anglo Zimele that procurement of sugar cane was made to the value of R211m from businesses of historically disadvantaged people, representing 225 of the company 's total expenditure on cane (Mondi Business Paper, 2006: 4). Kumba Resources, on the other hand, managed to increase its 2004 spending of R616 to R863m by ensuring that those who do business with Kumba mine support the transformation process of local SMMEs support.

In Motlhotlho village near Mokopane in Limpopo Province, Anglo Platinum tendered Ntopeng small construction and civil company for the construction of an ablution block at the mine (Mondi Business Paper, 2006: 4). The paper further indicates that the small business called Thuthuka Jewellers, based at the Bus Factory arts and craft centre in Gauteng has been empowered by AngloGold to be awarded a contract with a jeweller in Eastgate shopping centre in 2006. In other provinces like Gauteng, the mine has introduced SMMEs to e-commerce by working closely with globally recognised e-business company Quadrem to provide them with Quest, a sourcing tool used to purchase day-to-day non-contract items.

In 2005 only, Anglo Zimele invested in ten new empowerment ventures. These include among others Scanmin Africa supplying real time analysers for mining and mineral beneficiation processes, and Langa Lethu which is a security and risk management company and tyre manufacturer (Mondi Business Paper, 2006: 4).

Highveld Steel, which is another division of Anglo Zimele, purchased goods and services from 146 BEE and SMME companies, and reported a R478m spending for 2005. According to Mondi Business Paper (2006: 6), the company also contracted out its entire fleet management function to Ikhwezi fleet services, which is a local small business. The paper further indicates that in the Western Cape, Namakwa Sands Anglo Base Metals has been working with West Coast Business Development Centre to help identify and develop local SMMEs suppliers, whereby up to R126m has been spent on such procurements.

Anglogold Ashanti, Anglo American's independently managed subsidiary, attained a BEE and SMME spending of R888m, and managed to bring smaller companies into its supply chain by providing guidance to the SMMEs. New businesses, according to Mondi Business Paper (2006: 4), were initiated, one of which is a pallet manufacturing company which was technically able but lacked managerial and business skills. The pallet manufacturing was then linked to an established pallet manufacturer who invested 40/40 partnership. Masakhisane Investments, another SMME company held the remaining 20% by providing other business skills.

Anglo Coal conducted business with 30 black SMMEs that offered goods and services ranging from computer equipment and petroleum products to security, transport and maintenance (Mondi Business Paper, 2006: 5). The mine managed to boost its SMMEs spending by 7.5%, a considerable improvement on its previous spending on the local businesses.

Implats mine has taken an initiative to establish a Business Linkage Centre (BLC) which is aimed at stimulating economic growth in the local area by supporting the development of the SMMEs by logging their details which are then forwarded to the sponsoring companies of the BLC. The sponsoring companies will try to allocate work for the SMMEs as well as endeavour to mentor and develop them into viable businesses. According to Impala Mine Report (2006: 121), the BLC in Springs in Gauteng province,

has managed to link the SMMEs that joined the BLC with 14 sponsors. The SMMEs were therefore registered with Ekurhuleni East College to capacitate these SMMEs with the business development courses. More than 300 SMMEs have attended the training, and some have been utilised by different companies after completion.

Impala Mine Report (2006: 122) indicates that the Impala mine managed to provide 90 market stalls for the hawkers in Rustenburg in North West Province. The initiative was aimed at commercialising the SMME activities to a full scale. In addition, hydroponic and bee farming initiatives have also been started in Rustenburg where the supported SMMEs supply vegetables and honey to the local market. The market has not yet grown large but promises to create more than 20 jobs.

Some 15 SMMEs from Marang in Rustenburg have also received huge support from Impala mine with an entrepreneurial initiative of a poultry project (*Impala Mine Report*, 2006: 123). The canteen at the Rustenburg operations has placed a perpetual contract for the supply of chickens through the project.

In closing the section of beneficiation support towards the local SMMEs, South Africa seems to be making remarkable attempts to support the SMMEs. While internationally the support is more advanced, South Africa is also following suit in such advancements. Once more, the literature is merely showing the attempts by these mines. Whether these beneficiation attempts are actually effective, or really benefit the local SMMEs, or whether such supported SMMEs are historically disadvantaged groups, is still not certain.

2.7 THE SOUTH AFRICAN BENEFICIATION STRATEGY

In its efforts to promote the export of value added products, South Africa focused on reducing the export of raw and intermediate mineral products (Department of Minerals and Energy, 2010: 2). The raising of the country's level of processing status was therefore found to be a critical focus for ensuring that the local entrepreneurs and communities benefit from the beneficiation processes. For that purpose, the Department

of Minerals and Energy (2010: 3) indicates that South Africa established the Beneficiation Business Development Unit with the aim of providing assistance to the SMMEs in terms of accessing the benefits related to the mining beneficiation. The same unit was responsible for developing the Beneficiation Strategy for the minerals produced within the country.

2.7.1 Purpose of the Strategy

The strategy seeks to provide a framework within which South Africa can implement an orderly development of the country's mineral value chains in order to leverage benefit from inherent comparative and competitive advantages (Department of Minerals and Energy, 2008: 6). The strategy is aligned to the national legislative framework, and is also premised to unlock downstream and side-stream values of the minerals. The strategy further provides the initial analysis of opportunities and challenges in downstream beneficiation as well as suggesting instruments that must be investigated and implemented to enhance value addition.

According to the Department of Minerals and Energy (2008: 6), the down-stream value addition involves a range of activities including large-scale capital-intensive activities such as smelting and refining as well as labour –intensive activities such as craft jewellery and metal fabrication. Side-stream value addition refers to inputs, namely capital goods, consumables, and services, into the value chain. The total net beneficiation of minerals, according to the Department of Minerals and Energy (2008: 6), is maximised by a combination of downstream and side-stream value addition.

2.7.2 Comparative and Competitive Advantages of South Africa

Comparatively, South Africa's endowment of mineral resources presents the country with an advantage for developing downstream beneficiation. However, the Department of Minerals and Energy (2008: 9) cites that the country's historical mineral industry strength

positions South Africa properly to attract and develop technological excellence in mineral related industries to support downstream value addition.

Competitively, there is an increasing regional and continent-wide geo-political stability that presents prospects for additional market access for South Africa's beneficiated products (Department of Minerals and Energy, 2008: 9). This will in turn support the planned infrastructure programmes consistent with the country's economic policy. The country has further initiated good trade relations with a number of established and developed countries.

The Department of Minerals and Energy (2008: 10) further highlights that South Africa is also focusing on upgrading and creating essential infrastructure, including an extensive transport network like roads, rail, ports and pipelines. Vigorous advancements in relation to information and communications infrastructure as well as a highly advanced financial and banking system have also been made. South Africa is therefore able to resource well established reputable technology and training institutions to advance skill and technology development that is required for industrialisation. These aspects therefore position South Africa to take full advantage of value addition programmes.

2.7.3 Challenges relating to Mining Beneficiation

The strategy identifies the following challenges as being critical towards the effective beneficiation development of the mines:

(a) Limited access to raw material for local beneficiation.

The current structural arrangement of the mining industry is geared towards export orientation of raw materials, with the bulk of current producers tight up in long term contracts with their international clients. The secondary materials that remain when the ore is harvested, serve as raw materials for the production of secondary products. This beneficiation production can enhance local SMMEs development. Attempts to exploit such opportunities for the benefit of the local communities are still minimal.

(b) Security of energy supply

The recent levels of energy demand, compounded by lack of investment in energy generation as well as South Africa's historical culture of inefficient energy utilisation, resulted in deficit of energy supply in 2008. The bulk of beneficiation programmes require large and uninterrupted supply of energy.

(c) Limited exposure to research and development programmes

South Africa's limited exposure to break-through research and development programmes impedes the prospects of innovation in creating new products for beneficiation.

(d) Skills sought for expediting local beneficiation

For beneficiation programmes to be properly implemented there is a need for intensive knowledge and understanding of the dynamics of such programmes. While the challenge of skills is not limited to South Africa, the skills- supply pipeline for scientists and engineers requires specific attention.

(e) Access to international markets for beneficiated products

The current trade barriers in some prospective recipients of South Africa's beneficiated products, limits access to these markets.

(f) Accessibility of manufacturing hubs

The distal locality of mining operations to established manufacturing hubs, coupled with lack of infrastructure capacity linking the two, remains a challenge for effective beneficiation processes.

2.7.4 Beneficiation Strategy Framework

The beneficiation Strategy is based on the following four-pillar framework :

(a) The enabling regulatory framework

The beneficiation strategy is rooted in various policy provisions and seeks to support the broader government programmes. A regulatory incentive that is intended to stimulate beneficiation proposes an off-set against the Black Economic Empowerment (BEE) percentage of the Mining Charter, calculated per commodity stream which is based on an agreed formula per commodity stream. The formula also considers allocation of production towards local beneficiation.

(b) Existing multi stakeholder structures

These structures have been created to identify and execute specific value chains. The existing structures which include the Beneficiation Task Team and different mineral Task Teams as well as Advanced Metals Initiative (AMI) will compliment the strategy and therefore play an important role in informing the action plan of the strategy. The effective co-ordination of these structures will attain an integrated and incremental growth in beneficiation.

(c) Existing international agreements

The majority of the current agreements provide opportunities for South Africa to leverage optimal benefit aimed at the success of the strategy. These agreements should be aimed at assisting in addressing some of the impeding constraints, such as the economic diplomacy sought to access international markets for South Africa's beneficiated goods.

(d) Beneficiation strategic Key Action Plan (KAP)

The KAP is intended to provide remedial action to lessen the impact of identified challenges. The strategic actions are geared towards infrastructure development, investment promotion and facilitation, skills development, enabling regulatory environment, as well as research and development technology.

This beneficiation strategy displays a more comprehensive approach towards addressing the challenges faced in assisting the local communities to access the mining beneficiation opportunities. It is one of South Africa's opportunities to create and maintain sustainable growth that encompasses both local communities and business at large, beyond mining developments. It is through this strategy that direct and indirect benefits in terms of employment and diversification will be achieved.

It is however critical to realise that the success of the strategy will depend more on the intensive co-ordination across a range of government departments, inclusive of the departments of Minerals and Energy, Trade and Industry, Science and Technology, Public Enterprises and Finance. Other stakeholders like business and labour are also core to the success of the strategy.

2.8 THE LEGISLATIVE FRAMEWORK

A considerable number of legislative regulations are in place to attempt a gradual change and corrective measures towards improving the mining beneficiation processes and labour practices. This includes amongst others, the following legislations:

2.8.1 The Mining Charter

The history of South Africa, has always inherited the exclusion of Blacks in the mining communities from the mainstream of the mining economy. The government intends, therefore, to adopt a proactive strategy of change in the mining industry that will foster and encourage Black Economic Empowerment (BEE) and transformation at the tiers of ownership, management, skills development, employment equity, procurement and rural development(Government Gazette 2004:3).

The above indicates that the government has attempted to redress the historical and social inequalities in the mining industry. These attempts have been done through the

development of the Mining Charter, which is aimed at expanding the opportunities for historically disadvantaged people to enter the mining and minerals industry or benefit from the exploitation of the nation's mineral resources. In the meantime, consideration has also been given to the aspect of addressing barriers like relevant skills, to entry into the mining sector by these previously disadvantaged groups.

The objectives of the Mining Charter are to:

- Promote equitable access to the nation's mineral resources to all South African people.
- Substantially and meaningfully expand opportunities for historically disadvantaged people, including women, to enter the mining industry and to benefit from exploitation of the nation's mineral resources.
- Utilise the existing skills base for empowerment of the historically disadvantaged people.
- Expand the skills base of historically disadvantaged in order to serve the community.
- Promote employment and advance the social and economic welfare of mining communities and the major labour sending areas.
- Promote beneficiation of South Africa's mineral commodities.

The Mining Charter recognises that the South African labour market does not produce enough of the skills required by the mining industry, and the government has therefore, undertaken to secure capacity building opportunities through the Charter for historically disadvantaged people as well as exchange opportunities with the mining companies operating outside South Africa.

The mining companies are expected by the Mining Charter to co-operate in the formulation of the strategic plans for communities where mining takes place, and for the major labour sending areas, with special emphasis on infrastructure development. This means that there should be visible efforts for making a positive contribution towards the alleviation of poverty in communities directly in contact with the mines. There is

therefore a need for a clear integration in terms of the overall distribution and execution of all programs that are geared towards social and economic development of communities within the informal settlements.

With regard to the aspect of the mining beneficiation, the Mining Charter requires that the mining companies be involved in beneficiation activities beyond mining and processing inclusive of the production of final consumer products. To that effect, the mining companies should identify their current levels of beneficiation as well as giving an indication of the extent that they can grow the baseline level of beneficiation. Such beneficiation should take cognisance of the host communities of the mining developments.

The achievement of the mining charter objectives lies in the fact that these mining companies have to report on an annual basis, their progress towards achieving their commitments, verified by their external auditors. A review mechanism will then provide flexibility to the company commitments.

2.8.2 The National Environment Management Act of 1998

Waste and pollution generated from mining processes is known to have a long term impact on the environment and on the health of people living close to the mines (Mara and Pressen 2001: 2). This means that the mining operations affect the health and well being of surrounding people through their exposure to hazardous substances and other health risks, which result in illnesses. Pollution related to mining activities include, according to Mara and Pressen (2001: 2), noise pollution from blasting and risks associated with unrehabilitated and abandoned mines.

This Act was therefore developed specifically for environmental protection. It states that all have a right to sustainable development, and therefore all important environmental factors should be considered before development decisions are taken. The mines have a

responsibility, according to this Act, to ensure beneficiation of the local communities through proper environmental management.

2.8.3 The White Paper on Minerals and Energy of 1998

This Act was developed specifically for the mining sector in terms of its environmental and human impact. Communities are given the right to involvement in mineral development activities and participation in the decision making process. Such participation will ensure a balanced social beneficiation for the host communities.

2.8.4 The Minerals Act of 1991

The Minerals Act of 1991 addresses the aspects related to the investigations on any land in order to establish the presence, nature and extent of minerals in or on that land. The involvement of the local communities in issues related to their land, will enhance the socio-economic benefits from the mining development to these communities.

2.8.5 The Minerals Development Bill of 2000

The Bill focuses mainly on access to mineral rights but has an element of environmental regulation and remediation that stipulates environmental management plans to be undertaken. The benefit of this Bill is more related to the National Environmental Management Act.

2.8.6 The Water Act of 1998

In the Water Act, management should accept total responsibility for waste water and pollution arising from their industry. This means that mines will be held responsible for environmental damage caused by water pollution, caused by their mining activities. The Act further sets standards for the purification of water including wastewater. The

beneficiation implications of this Act are more associated with the National Environmental Management Act.

2.8.7 The Mine Health & Safety Act of 1996

This Act has a variety of provisions relating to tripartite consultations and co-operation in respect of different health, safety, education and training issues that the mining sector has to consider in relation to the operation of employees. The effective application of this Act will enhance an integrated socio-economic beneficiation for the local communities.

In conclusion, the outlined legislative framework provides a platform for effective pursuit of a shared vision of a globally competitive mining industry that draws on the socio-economic human and financial resources of all South Africa's people. It offers real security and socio-economic benefits to all communities surrounding the mining developments.

2.9 THE BACKGROUND INFORMATION TO THE AREA OF STUDY

This section will provide the background information related to the Amandelbult mine and the Schilpadnest informal settlement.

2.9.1 Amandelbult Mine

2.9.1.1 Background of Amandelbult Mine

Amandelbult Mine is an established and fully developed mine situated on the north-western limb of the Bushveld complex. The mine is located in the Limpopo Province within the Thabazimbi Local Municipality, approximately 40km south of Thabazimbi town, 15km north of Northam and 100km north of Rustenburg (*Social and Labour Plan Report, 2008 : 3*). Amandelbult mine, with platinum as a core mineral, is a business unit

of Rustenburg Platinum Mines Limited, which in turn is a wholly-owned subsidiary of Anglo Platinum Corporation Limited. This mine has been in operation for more than twenty years.

According to *Anglo Platinum SEAT Report* (2009: 3), Amandelbult mine is the second largest Anglo Platinum operation and the second largest producer of platinum in the world. The mine exports 90% of the platinum it produces.

2.9.2 The Schilpadnest informal Settlement

This Informal Settlement, often called Smash Block, is an area enclosed by Amandelbult mining development and game reserves within Thabazimbi Municipal area (SA Non-Profit Organisation, 2009: 1). It is situated 3km from Amandelbult mine. The area used to be a dwelling place for chrome mine workers with hostels, schools, family housing and some entertainment facilities.

After 1994 the local mine withdrew their commitment and the area became a magnet for Blacks, who were then free to search for work (SA Non-Profit Organisation, 2009:3). It then became an informal settlement with all the symptoms of social decay, no sewerage, electricity and no regular water supply.

It is an area with a population of approximately 20 000 residents, majority of which are Xhosa, Tswana, Sotho and Tsonga. Immigrants found in the area mainly come from Zimbabwe, Mozambique and Lesotho (SA Non-Profit Organisation, 2009: 3). The following figure 2.1 indicates an aerial view of Schilpadnest Informal Settlement.



Map 2 : SA Non-Profit Org (2009)

In terms of registered addresses on the mine records, some 302 residents of Schilpadnest are employed at the mine (*Social and Labour Plan Report*, 2008: 80). The social infrastructure available in the area is the mobile clinic which is approximately 80km from the hospital in Thabazimbi town. However, the community is able to access the hospital through taxi transport.

The primary school which has just changed into a combined school (the high school classes have been introduced) is also in existence. However, there is an urgent need for renovations to the school. The school has three building blocks with four classes each. The 2010 enrolment for the combined school is 347 learners. The current overpopulation leads to the learners being taught under trees and in shacks class rooms. The area has no waterborne sewage, no household electricity and no waste disposal service. Only pit

latrines created by individual households are used. The entire community depends on only three boreholes for potable water.



Figure 2.1 : SA Non-Profit Org (2009)

The figure above indicates the daily queue at one of the three boreholes available within the Schilpadnest Informal Settlement. Sometimes people have to walk for 30 minutes to access the boreholes, and others resort to buying water from the donkey carts. Many households have no regular income, and are in desperate need of physical, medical and social care (SA Non-Profit Organisation, 2009: 4). Poverty and the HIV/AIDS epidemic cause a high risk for children to being abandoned or orphaned, with nobody left to take care of them. The total unemployed population (only the economically active people) in the Schilpadnest informal settlement are counted at 6 825 (34.1% of the entire population).

2.9.3 The Socio-economic Contribution of the Amandelbult Mining Beneficiation

2.9.3.1 Environmental and Social Contribution

According to *Anglo Platinum SEAT Report* (2009: 8), Amandelbult mine is geared towards enhancing the socio-economic value in communities interested or affected by the mine's activities, as well as building a mutually beneficial and sustainable environment for both communities and the mine.

The *Anglo Platinum SEAT Report* (2009: 8) further asserts that the mine ensures availability of appropriate measures in order to comply with all relevant policies and regulations as well as meeting the requirements of the mine's principles. The Green Mining Award offered to the mine by Nedbank in 2007 bears evidence to the environmental commitment of the mine in relation to the environmental management.

With regard to social issues, the *Anglo Platinum SEAT Report* (2009: 12) indicates that Amandelbult mine has partnered with government and community leaderships to respond to the different social issues in the community. The main aspects that are being addressed by the mine are:

- Education, information and communication
- Treatment of opportunistic infections
- Voluntary HIV/AIDS testing and counselling
- Wellness management
- Peer education
- Home and community based care

It is evident from the *Anglo Platinum SEAT Report* for 2009 that the Amandelbult mine is attempting to address the environmental and social issues that affect the local communities. The extent and practical relevance of the contribution, as well as whether the contribution is found to be adequate and beneficial to the Schilpadnest community is still to be investigated and established.

2.9.3.2 Economic Contribution

According to *Anglo Platinum SEAT Report* (2009: 20), Amandelbult mine contributes significantly to the local economy, which also extends to the provincial and national economies. The mine's capital expenditure in 2007 was about R 1.2 billion and it doubled to R 2.4 billion in 2008. The project capital expenditure increased to 1.5 billion in 2008 compared to R572 million in 2007.

(a) Job Creation

The *Social and Labour Plan Report* (2008 : 5) indicates that 11 071 employees employed by the mine are sourced from 140 municipalities across the country's nine provinces. The recent figure on employment is provided by *Anglo Platinum SEAT Report* (2009: 3) indicating almost a similar figure of 11 800 permanent staff employed by the mine. Furthermore, 22.1% of the mine's workforce come from the Limpopo Province, and 19.5% of the workforce is sourced from Thabazimbi Municipal area. Of the 11 071 employees employed by Amandelbult mine, 302 were reported to be from Schilpadnest informal settlement.

(b) Procurement

The economic dependence of the surrounding community on the mine operations is often attributed to the purchasing capacity of the mine. While Amandelbult mine community is primarily dependent on the wage flows of its employees, procurement primarily benefits industrialised, metropolitan areas remote from the mine (*Social and Labour Plan Report*, 2008: 88). When comparing provinces, the spread of purchases by Amandelbult mine attracts only 3.3% within Limpopo Province, of which 2.2% is from the Thabazimbi community. About 80% of purchases are reported to be from Gauteng Province. Overall, the mine community wage bill constitutes 9.8% of the total mine expenditure, while local purchases constitute 4.2% of the total mine expenditure.

The *Anglo Platinum SEAT Report* (2009: 21) indicates that the 2008 target for procurement from historically disadvantaged suppliers/businesses was 35%, but there is no written feedback on the performance of the mine in relation to the set target.

(c) Support to SMMEs

Amandelbult mine has a partnership agreement with Limpopo Business Support Agency (LIBSA) whereby, according to the *Anglo Platinum SEAT Report* (2009: 21), the mine provides financial support to the agency for ensuring that the local SMMEs access adequate support. According to the agreement the following support programmes should be provided by LIBSA to the local SMMEs:

- Development of SMMEs and cooperatives
- Business Plans and profiles
- Business mentoring and counselling
- Capacity building
- Business training and development

The reports provided by the mine do not indicate clearly how far the support has assisted the local SMMEs. The *Anglo Platinum SEAT Report* (2009: 22) only indicates the number of assisted SMMEs for the entire Thabazimbi Municipal area as well as for the Moses Kotana Municipality in the North West Province to be 284. It is therefore very difficult to identify which SMMEs reside in Schilpadnest. It is possible that of the 284 SMMEs assisted none might be from Schilpadnest.

Another interesting aspect about the Amandelbult mine support given to the local SMMEs is the community consultation report included in the *Anglo Platinum SEAT Report*. This is the consultation report whereby the mine consulted with the community with the objective of assessing the socio-economic performance of the mine towards those communities. According to the *Anglo Platinum SEAT Report* (2009: 27), the community raised the issues that the mine does not offer local SMMEs any business

opportunities, and that the mine does not employ local people. The outcome of this issue, from that meeting, was that the mine will ensure that 20 procurement opportunities are awarded to the local SMMEs. This target is ambiguous, because it is not stated how much (in %) of the expenditure budget will be allocated to such local SMMEs. These 20 opportunities might simply mean awarding catering opportunities to 20 caterers, which in financial terms will mean R 10 000 from the mine expenditure amount in total, for those 20 opportunities.

On the basis of the above information, it is still not clear whether the Amandelbult mine provides sound SMME support for local communities or not. This study will however be able to investigate the effectiveness of this support during the analysis of responses to questionnaires.

(d) Contribution to Local Economic Development (LED)

According to the Social and Labour Plan Report (2006: 61), the Budget summary for the mine's LED programmes is as follows:

Table 2.1 : The 5- Year Budget summary for the mine's LED programmes

FOCUS AREA	2007	2008	2009	2010	2011	5-YEARS TOTAL BUDGET
Basic Infrastructure	R194 000	R0	R0	R0	R0	R194 000
Entrepreneurship or job creation	R1 746 000	R2 328 000	R6 838 500	R0	R1 552 000	R12 464 500
Informal Settlements	R10 670 000	R2 619 000	R2 910 000	R10 185 000	R6 790 000	R33 174 000
Health & Social Development	R2 910 000	R3 880 000	R3 395 000	R3 395 000	R3 395 000	R16 975 000
Education	R1 856 000	R7 222 735	R2 255 722	R2 344 259	R2 829 259	R16 508 410
TOTAL BUDGET	R17 376 435	R16 049 735	R15 399 222	R15 924 259	R14 566 259	R79 315 910

Social and Labour Plan Report (2006 : 61)

The above budget summary was developed in 2006, in response to the Mining Charter (of 2004), which outlines the obligations related to the mining and rural community development processes. Amandelbult mine therefore chartered a process that would enable the mine to make a valuable contribution towards the socio-economic development of the surrounding areas. The 5-year total budget, in the table, indicates the total budget committed to each focus area for a period of five years. Each financial year's total budget indicates the financial commitment made towards all the LED Programmes.

The *Social and Labour Plan Report* (2006 : 60) indicates that the mine identified the key stakeholders for the process to be government, labour, community-based organisations, non-profit organisations as well as communities within the 50km radius of the mine.

The *Social and Labour Plan Report* (2006 : 61) further indicates that Amandelbult mine's flagship projects will focus on the informal settlement of Schilpadnest. This means that the mine plans to create a significant development in Schilpadnest through provision and construction of the following infrastructure programmes, estimated to cost **R33 174 000** in total, for a period of 5 years. These will include:

- (a) Provision of additional classrooms in Schilpadnest Primary School
- (b) Construction of a high school
- (c) Provision of sanitation facilities
- (d) Construction of an overload station
- (e) Provision of water infrastructure
- (f) Construction of a clinic
- (g) Provision of a community and computer centre

The following is a financial implementation plan of the above infrastructure programmes:

Table 2.2: Financial Implementation Plan

NAME OF PROJECT	2007	2008	2009	2010	2011	TOTAL
Additional classrooms in Schilpadnest Prim. School	R2 910 000	R0	R0	R0	R0	R2 910 000
Construction of a high school	R0	R0	R0	R4 850 000	R2 910 000	R7 760 000
Construction of a clinic	R0	R194 000	R2 910 000	R0	R0	R3 104 000
Provision of community & computer centre	R0	R0	R0	R4 850 000	R2 910 000	R7 760 000
Provision of water infrastructure	R3 880 000	R2 425 000	R0	R0	R0	R6 305 000
Provision of sanitation facilities	R2 910 000	R0	R0	R485 000	R970 000	R4 365 000
TOTAL	R10 670 000	R2 619 000	R2 910 000	R10 185 000	R6 790 000	R33 174 000

Social and Labour Plan Report (2006: 66)

The above plan has a total of R33 174 000, which constitute 42% of Amandelbult mine's total budget of R79 315 910 for the mine's Local Economic Development programmes. Whether these programmes and other related mining endeavours have been implemented to the satisfaction of both the mine and the community, is still to be established.

Amandelbult mine has done a remarkable work of putting development plans on paper for the benefit of Schilpadnest. However, there is currently no report that provides evidence of detailed progress of all these plans which were developed in 2006 (four years ago). The *Anglo Platinum SEAT Report (2009: 23)* merely report on the mine support

made to the primary school in Schilpadnest with regard to the two blocks of four classrooms each, provided to the school. This lack of concrete reports on the plans/programmes developed four years ago might indicate that the mine has not been able to implement those plans. The perceptions on the contribution of these plans towards the socio-economic development of the Schilpadnest community will be established within this study.

2.10 SUMMARY

The mining industry has made a meaningful socio-economic contribution towards the national economies, and to a very lesser extent towards surrounding communities, as illustrated in the reviewed literature. The negative effects posed by the mining developments on the surrounding communities have also been indicated.

The systems and policies that have been put in place by both the government and the mining industry for protecting and contributing towards the settlements around the mines are also evident, especially in South Africa. However, the implementation of these policies by the mines may be attributed to passive compliance in order to avoid penalties by government.

Another issue that arises from the literature is the lack of a holistic and integrated approach in terms of providing socio-economic services to surrounding communities, as well as the lack of mechanisms to involve these communities. This challenge might either be due to lack of understanding of the actual responsibilities that the mines should take for surrounding communities, or lack of knowledge of what the communities expect, or it maybe a deliberate reluctance to contribute meaningfully towards communities. The next chapter will outline the research methodology used to acquire an understanding of both the mining and community perspectives regarding the socio-economic beneficiation provided by the mines.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this chapter is to provide an explanation of the steps that were followed during the collection and analysis of data. The collected data was used to address the research questions posed in chapter one. Thus, the chapter will give a description of the research design, research population, the sampling procedure, as well as the measuring instrument used to collect data and the procedure of administering the instrument.

3.2 THE RESEARCH DESIGN

The notion of research design is defined differently by different authors. Terre Blanche and Durrheim (2002:29) define it as a strategic framework for action that links research questions to the execution or implementation of the research. This definition portrays research design as a tool that guides arrangements for collection and analysis of data. This means that research design provides a plan that specifies how the research is going to be carried out in such a manner that it answers the research questions.

De Vos, Strydom, Fouche, Poggenpoel, and Schurink (2001:77) provide a closely related definition, which describes research design as a blueprint or a detailed plan of how a research study is to be conducted. This includes a description of the procedure for selecting a sample, collecting and analysing data. Expressing a similar view, Rubin and Babbie (1997:93) also regard the aspect of research design as being inclusive of those compact formulas given names such as experimental research designs, correlation research designs, surveys and case study.

Terre Blanche and Durrheim (2002:29-30), assert that the aim of research design is to provide a framework for action that will enable the researcher to draw coherent and

acceptable conclusions or inferences from her or his observations. McMillan and Schumacher (1993:31), on the other hand, indicate that the research design ensures that the study fulfils a particular purpose, that is, to provide answers to research questions that will stand against criticism. It follows that a research design impacts on the validity and correctness of research findings.

In the light of the definitions provided above, the term research design in this study has been used to refer to the detailed plan and the visualisation of data to be collected. Research design in this case included the description of the population of the research, sample procedure, research instrument to be used, procedure for administering the instrument and finally methods of analysing data.

This study employed the descriptive design due to fact that the design is able to explain phenomena such as human behaviour in business and administration (Welman, Kruger and Mitchel, 2008: 23). This design is further able to predict and relate behavioural aspects. This means that by explaining such behavioural aspects in the case of the Amandebelt mine and its local community Schilpadnest, it enabled the researcher to recommend certain changes and control mechanisms that will assist in combating challenges relating to the mine's socio- economic contribution to the surrounding local community.

This study further used a combination of qualitative and quantitative approaches. The qualitative approach, according to Leedy and Ormrod (2005: 96), assisted the researcher to describe and explain different aspects within the study, as well as exploring and interpreting these aspects therefore building a particular theory in relation to the research results. The quantitative approach, on the other hand, assisted the researcher to confirm, validate and predict research aspects/ data, therefore making it easier for the researcher to answer research questions. It was therefore beneficial for this study to ensure proper complementary usage of both approaches in order to achieve well informed research results.

3.3 THE POPULATION AND SAMPLE

3.3. Target Population

According to Leedy (1993:208)(b), a population is generally a homogenous mass of individual units. He further explains that sometimes the population consists of distinctly different strata, but the units within the stratum are as homogeneous as possible. This description portrays a population as a group of individuals or objects showing common characteristics, and it is these characteristics that are of interest to the researcher.

The population of this study comprised the managers of the Amandelbult mine. It also consisted of the members of different community structures, namely, Non Governmental Organisations (NGOs), Community Based Organisations (CBOs), SMMEs and Co-operatives found within the Schilpadnest informal Settlement. These community structures were hoped to be representative of the entire Schilpadnest Community, and the mine managers also hoped to be representing the views of the entire mine management.

Table 3.1: The target population size

Mine Management	Community Structures
<p>Managers = 5</p> <p>Community Engagement Development Transformation Recruitment Sustainable Development Housing Development</p>	<p><u>Community Based Organisations (CBOs) - 25</u></p> <p>Ward Committees , Youth against Crime Committee , Disability Forum, Sports Forum</p> <p><u>Non-Governmental Organisations (NGOs) - 20</u></p> <p>Santha Peer Educators, Sevukile, Thabang Place of Safety, Siyaphambili</p> <p><u>SMMEs – 15</u> (Registered and unregistered)</p> <p><u>Co-Operatives – 12</u> (Registered and unregistered)</p>
Total – 05	Total - 72

The above table detailed the population of the study. The table indicates that the mine management had a total of five (5) representatives, and the community structures had a total of 72 representatives. The researcher ensured that all different segments of the population are represented in order to attain reliable findings.

3.3.2 Sampling

This study used the census method. Welman *et al* (2008 :101) indicate that in a census, each member of the population is supposed to form part of the study subject. The main objective of using the census method is to ensure that all the people in the various categories of the study population are regarded as respondents. According to Welman *et al* (2008: 101), this approach is done mostly in cases where the study population is relatively small. Due to the small number of the target population of this study, all members of the population formed part of the subject of the study.

3.4 THE RESEARCH INSTRUMENT

3.4.1 The Questionnaire

This research study has chosen the questionnaire for data collection because of its advantages compared to other data collecting techniques. Leedy (1997:187) lists some of the advantages of a well constructed questionnaire as follows: It is easy to process; provides greater uniformity of responses; easy to administer and analyse (can be transferred directly into a computer format); can unearth data from long distances and from people that the researcher may never see; is less time consuming; and keeps respondents on the subject.

A questionnaire is defined by De Vos *et al* (2001:152) as a set of questions on a form, which is completed by respondents in respect of a research project. They point out that questionnaires can either have closed or open-ended questions, and that they can be

classified as different types, namely, mailed questionnaires, telephonic questionnaires and group questionnaires.

For this research study, a combination of both closed and open-ended questions was used in order to allow respondents to further clarify and detail responses to the closed ended questions within the questionnaire. This approach assisted the researcher to obtain more information for proper and informed data analysis.

The study population consists of the Xhosa, Tswana, Sotho, Tsonga speaking people as well as immigrants who are mainly from Zimbabwe, Mozambique and Lesotho (SA Non-Profit Org 2009: 3). However, this study has not been able to establish the actual percentages or numbers that constituted these population groups. This therefore required that the questionnaire be compiled in English, which is the language that would be understood by the majority of the study population. Those respondents that could not understand English were assisted by the researcher and other respondents to interpret the questionnaire.

3.4.2 Validity of the Research Instrument

According to De Vos *et al* (2001:83), the validity of the questionnaire is described as the ability of the measuring instrument to measure accurately what it is supposed to measure. For Gay (1996:136), a measuring instrument is one that measures accurately what it is intended to, allows for the appropriate interpretation of results and drawing of acceptable conclusions about the population. This suggests that if the validity of the measuring instrument is questionable then the results of the research will be questionable too because they cannot be used to inform decisions.

This study acknowledged the importance of measuring the content validity of the questionnaire in order to ascertain whether its content covers all the items that form the scope of the study. To establish content validity of the questionnaire in this study, the

literature review was used as a point of reference, and a pilot study was undertaken. The following is a description of the pilot study that was undertaken:

3.4.2.1 Pilot Study

Before the questionnaire could be formally administered, a pilot study was undertaken whereby one nearby mine (Kumba mine) and its local community members completed the draft questionnaires. The purpose of piloting the questionnaire was to check the clarity and the possible ambiguity of the questions. This setup, which is similar to the study population of the actual study, was used as a foretaste of the actual exercise to be engaged in.

Inputs from both the mine management (six responses) and the community (eleven responses) were received, and the questionnaire was amended to a final tool for data collection. The inputs included the fact that some questions were repeated, while some were found to be ambiguous. The repeated questions were deleted whilst the ambiguous ones were better clarified.

3.5 DATA COLLECTION METHOD

This section will provide a detailed process of how the data was collected from both the community structures and the mine management.

3.5.1 Collection of data from Community Representatives

The researcher, with the assistance of the ward councillor for Schilpadnest, organised all community structures with the aim of having them all under one roof. Questionnaires were then handed out to the respondents, and explanations were given for further clarity. This approach of having all community structures under one roof was divided into three sessions (three days). The first group was for the SMMEs and co-operatives, the second group for the CBOs, and the last group was for the NGOs and anyone from the other

groups who did not make it to the previous sessions. The following was the planned representation of each Community Structure:

- CBOs comprised 28% of the respondents
- NGOs comprised 34% of the respondents
- Co-operatives comprised 21% of the respondents
- SMMEs comprised 17% of the respondents

The fact that the researcher planned to personally collect data from the community structures was meant to encourage the respondents to complete and return the questionnaires. The following actual representation was achieved:

- CBOs comprised 26% of the respondents
- NGOs comprised 26% of the respondents
- Co-operatives comprised 34% of the respondents
- SMMEs comprised 14% of the respondents

The above representation indicates that the respondents from the co-operatives came in larger numbers than initially anticipated. The researcher targeted 72 community representatives, and 68 respondents participated. Thus, the study achieved a response rate of 94% of community representatives.

3.5.2 Collection of data from the Mine Management

Before any distribution could commence, a letter requesting for permission to administer the questionnaire was sent to the mine offices. The initial intention of the study was to target all members of the management team. However, the decision of the mine management was that the exercise be focused on those mine divisions that are mostly relevant regarding the issues of community involvement. This therefore required that one questionnaire be administered to each of the following mine divisions:

- Community Engagement Development comprised 20% of the respondents
- Transformation comprised 20% of the respondents
- Recruitment comprised 20% of the respondents
- Sustainable Development comprised 20% of the respondents
- Housing Development comprised 20% of the respondents

A total of five questionnaires were sent to the mine electronically (as requested by the mine management) to all respondents. The researcher allocated a maximum of 15 days of collection (even though an agreement of 7 days had been made with the respondents), to allow those who forgot or had deliberately not completed the questionnaires, an opportunity to complete them. The actual response turnaround was 21 days. All responses were received electronically, and an 80% response rate was achieved. The actual response rate is as follows:

- Community Engagement Development comprised 25% of the respondents
- Transformation comprised 0% of the respondents
- Recruitment comprised 25% of the respondents
- Sustainable Development comprised 25% of the respondents
- Housing Development comprised 25% of the respondents

In conclusion, De Vos *et al* (2002:172) argue that, it does not happen that all respondents complete and return questionnaires, and that being the case, 50% is regarded as adequate, 60% as good and 70% as excellent. For this study, the response rate of 90% was targeted, but the actual response rate was 87% in total (for both community representatives and mine management).

3.6 DATA ANALYSIS

The data that was collected was analysed in relation to the original research problem and specific research questions raised in chapter one. Analysis was also done in relation to the issues raised in the literature review in chapter two, that are relevant to the case study.

The data was analysed in terms of common themes that were grouped together and then their frequencies were analysed. The researcher analysed the responses, including the supporting statements that followed responses.

3.7 ETHICAL CONSIDERATIONS

Graziano and Raulin (2000:64) maintain that ethical concerns are an integral part of the pre-observation decision-making process in research. The ethical concerns emphasize humane and sensitive treatment of participants who are put at varying degrees of threats or risk by the researcher. The following ethical principles were considered:

- The purpose of the study was outlined to the respondents.
- The researcher assured the respondents of the confidentiality and anonymity of the exercise.
- The researcher maintained the integrity of respondents, as well as treating them with fairness.
- The respondents were allowed a free choice of participation.
- The respondents were also assured that they would not to be exposed to any danger or disrespectful behaviours.
- The exercise did not interfere with the working hours for the community structures as all sessions were held afterhours (from 17h00) for all the groups.

3.8 SUMMARY

This chapter presented the methodology as well as the research instrument used to collect data to answer the research questions posed for the current study. The population of this study was small, and therefore required a census approach. The questionnaire was used as a method for collecting data. The questionnaire was piloted on a different mine (Kumba mine) and its local community, before it could be finally utilised for the study. The inputs made about the pilot questionnaire were incorporated to form a final tool for the data collection. The response rate of the data collection was good and thus acceptable. The method used for analysing data was clarified, and the results will be presented in the next chapter.

CHAPTER 4

STUDY RESULTS

4.1 INTRODUCTION

The purpose of this chapter is to present the results of the research data, as well as its analysis and interpretation. The analysis will be based on the research objectives as outlined in chapter one of this study. The analysis will be presented in the form of tables and graphs and an interpretation of such tables/graphs. The presentation of the biographical information will be followed by the perceptions of the community as well as those of the mine.

4.2 RESULTS FROM THE CURRENT STUDY

This section will present the biographical information of the respondents, as provided in the questionnaire. The results will then be presented according to the identified objectives.

4.2.1 Biographical Information

The respondents were divided into two main groups, namely the community and the mine. As indicated in chapter three, the community members were further divided into different community structures (Co-operatives, CBOs, NGOs and SMMEs). Such division was meant to ensure representation of divergent views in the study so as to capture the views of the entire community. Hence, for the purposes of this analysis, responses by the participating structures are captured as representative of community perceptions.

The biographical data included in the questionnaire required the community respondents to indicate which community structures they represent, and their duration (Less than 2 years, 2 years or more) within the community structures. For the mine management, it

required that they indicate their positions, duration within such positions, as well as their overall duration of employment at the mine. The following table shows the biographical analysis of the respondents.

Table 4.1: The Biographical data of the community respondents

NUMBER OF YEARS	CBOs		NGOs		Co-operatives		SMMEs		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No	%
Less than 2 years in the community structure	08	44%	11	61%	18	78%	05	56%	42	60%
2 years or more, in the community structure	10	56%	07	39%	05	22%	04	44%	26	40%
TOTAL	18	100	18	100	23	22%	09	100%	68	100%

Table 4.1 indicates that 60% of the community structures have less than two years in the structures that they are representing, whereas 40% have two years or more in such structures. This may unfortunately mean that as the majority of the respondents have not been long in these community structures very long, they may not be that knowledgeable of the needs of the community. This community biographical analysis is important for understanding the basis of the responses that will follow in this chapter.

Table 4.2: The Biographical data of the mine respondents

NUMBER OF YEARS	Mine Management	
	No.	%
Less than 2 years in the mine	01	25%
2 years or more, in the mine	03	75%
TOTAL	04	100%

The above table shows that 75% of the mine respondents have two years or more, at the mine. The mine management in the above table refers to the four mine sections relating to Community Engagement Development, Recruitment, Sustainable Development and Housing Development. Each mine section was represented by one respondent. This mine biographical analysis is important for understanding the basis of the responses that will follow in this chapter.

4.2 .2 The Community and Mine Perceptions on Mining Beneficiation

This section relates to objectives one and two of the study, which are the community and mine perceptions of the role that the mine should play in developing the community. The results of the perceptions are presented in the form of tables. The interpretation is given underneath each table or figure. The additional comments provided in the interpretation were derived from the responses to the open-ended questions included in the questionnaire.

The perceived role of mining beneficiation, will be discussed in terms of employment of local people, social investment, the mine’s interest towards beneficiating locally, as well as the mine’s communication and collaboration with the community and other sectors. In each case, first, the community perceptions will be presented, followed by those of the mine. The comparison of the perceptions of both the community and the mine will then be made.

4.2.2.1 The Community’s perceptions of the beneficiation role of the Mine

(a) The Community’s perceptions of the mining beneficiation through employment creation

Table 4.3: The Community’s perceptions of the mining beneficiation through employment

Beneficiation through employment creation:	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine employs members of the local community.	20	29	48	71	68	100
An adequate number of local people is employed.	07	10	61	90	68	100
There is a need to employ more local people.	42	62	26	38	68	100

Table 4.3 indicates a feeling amongst the community members (71%), that the mine does not employ enough local people. About 90% of the respondents agree that the number of local people employed is not satisfactory. There is a further perception by the community, as indicated in the open-ended questions that the positions occupied by the employed local people are at the lowest level (ordinary labourers) within the mine.

The overall interpretation of the community's perceptions of mining beneficiation through employment creation is that although the mine has created jobs in the area, there is a need to employ more people from the mine's host area. The beneficiation role of the mine in terms of employment creation may therefore be regarded as not meeting community expectations.

(b) The community's perceptions of mining beneficiation through corporate social investment

Table 4.4: The community's perceptions of mining beneficiation through corporate social investment

Beneficiation through corporate social investment:	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine supports local social programmes	23	34	45	66	68	100
The mine communicates with the local community	9	13	59	87	68	100
The mine provides infrastructure to the local community	12	18	56	82	68	100

In the above table, 66% of the local community is of the opinion that very little support is being provided by the mine through corporate social programmes/projects. The fact that a high number of respondents (87%) feel that the mine does not communicate with the community, may be indicative of the fact that the mine might be implementing some of the social programmes without informing the community properly. This therefore may result in the community not being aware of such support initiatives from the mine or the mine implementing programmes that the community does not see as important to them.

Overall, there is a general perception of community dissatisfaction regarding the support of the mine towards the socio-economic development of the local community.

(c) The community’s perceptions of the mine’s interest towards beneficiating locally

Table 4.5: The community’s perceptions of the interest of the mine towards beneficiating locally

The mine’s interest towards beneficiating locally	Yes		No		Total	
	No.	%	No.	%	No.	%
The community knows the material or by-products beneficiated from the mine	24	35	44	65	68	100
SMMEs have access to materials or by-products from the mine	11	16	57	84	68	100

According to Table 4.5, very few members of the community (35%) are aware of the beneficiation materials from the mine, and as a result only a marginal fraction (16%) of local SMMEs access materials and by-products from the mine. The implication is that the raw materials mined in the area may not necessarily be processed locally into finished goods. If they are, then the local SMMEs are not involved in the value chain.

The respondents further stated that the available materials for beneficiation include stones and timber. It was pointed out that these beneficiation stones can be crushed to make a good concrete mixture, building sand and bricks, as well as creating the flower pots and dinner sets. With timber there is the potential for creating tables and chairs, making strong shacks as well as being used for fire wood since there is no electricity in the settlement. However, there seems to be a perception from these respondents (84%) that the local SMMEs do not have access to these beneficiation materials. Some respondents made indications that the mine is generally not interested in contributing towards the welfare of the local community, but is more interested in making more profits which ultimately exclude local beneficiation.

(d) The community’s perceptions of the mine’s communication and collaboration with the community and other sectors

Table 4.6: The community’s perceptions of the mine’s communication and collaboration with the community and other sectors

The mine’s communication and collaboration with the community and other sectors	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine involves the community in its beneficiating strategies	15	22	53	78	68	100
The community benefits from the mine beneficiation	15	22	53	78	68	100
The mine should work with other local sectors in its beneficiation strategy	55	81	13	19	68	100

The responses shown in Table 4.6 indicate that the community feels that there is no involvement of the local community in the mine’s beneficiating strategies. This high percentage (78%) of respondents reported that the mine does not involve the community. This lack of involvement of the community had different interpretations by respondents. Some respondents feel that the mine does not involve the local community due to issues of poor community skills, poor communication by the mine as well as the theft of the mine equipments and related beneficiation materials by communities.

In addition, a considerable percentage of the respondents (81%) feel that it will be appropriate for the mine to work with other stakeholders like the government, in beneficiation strategies. Some respondents (22%) feel that the community benefits from the mine through the supply of timber. It was pointed out that the mine has contracted a company to supply the local community with timber, for household usage.

4.2.2.2 The Mine's Perceptions of its beneficiation role.

(a) The mine's perceptions of the beneficiation role through creation of employment

Table 4.7: The mine's perceptions of its beneficiation role through employment creation

Beneficiation through employment creation:	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine employs members of local community	4	100	0	0	4	100
An adequate number of local people is employed	1	25	3	75	4	100
There is a need to employ more people	3	75	1	25	4	100

According to Table 4.7, all respondents agree that the mine employs members of the local community. Some further indicate that the mine employed these local community members across the ranks (from labourers to management). However, 75% indicate that the numbers employed are not adequate, and that more people should be employed.

(b) The mine's perceptions of beneficiation through corporate social investment

Table 4.8: The mine's perceptions of beneficiation through corporate social investment

Beneficiation through corporate social investment:	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine supports local social programmes	4	100	0	0	4	100
The mine communicates with the local community	4	100	0	0	4	100
The mine provides infrastructure to the local community	4	100	0	0	4	100

The above table indicates that all respondents confirm that the mine supports local social programmes. They mention examples of such support programmes as being HIV testing and voluntary counselling, provision of condoms, peer education and wellness

campaigns. With regard to infrastructure, all respondents agree that the mine provides infrastructure to the community. There is however no mention of examples of any infrastructure provided. All respondents further agree that the mine communicates with the community especially on issues that relate to job creation, procurement opportunities, community safety and other health issues as well as the poverty alleviation projects. The indication is that if the mine communicates, as the respondents say, the problem may be with the medium of communication used.

(c) The mine’s perceptions of their interest in benefiting locally

Table 4.9: The mine’s perceptions of their interest in benefiting locally

The mine’s interest in benefiting locally	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine management knows the material or by-products benefited from the mine	2	50	2	50	4	100
SMMEs have access to some materials or by-products from the mine	2	50	2	50	4	100

In the above table, 50% of the respondents do not know the materials or by-products benefited by their mine, and understandably would not know whether the SMMEs have access to such beneficiation materials or not. The fact that some members of the mine management are not aware of the materials benefited to local SMMEs may imply that such beneficiation (if it takes place) is not a priority or strategic issue for the mine. Alternatively, there might be no plans discussed in management with regard to community involvement in the mining activities.

(d) The mine’s communication and collaboration with the community and other sectors

Table 4.10: The mine’s communication and collaboration with the community and other sectors

The mine’s communication and collaboration with the community and other sectors	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine involves the community in its beneficiation strategies	2	50	2	50	4	100
The community benefits from the mine beneficiation	2	50	2	50	4	100
The mine should work with other local stakeholders in its beneficiation strategy	4	100	0	0	4	100

Table 4.10 shows that 50% of the respondents agree that the local community is involved in the mine beneficiation strategies, and that the community also benefits from the beneficiation processes. All respondents agree that the mine should work with other local stakeholders in its beneficiation strategy. The fact that some of the respondents are not aware of the beneficiation strategies employed by the mine confirms the finding in Table 4.9 above, that there might be no beneficiation strategies or plans discussed in management meetings. However, all respondents agree that the mine should collaborate with other sectors in relation to the mine beneficiation.

4.2.2.3 Comparison of the mine and community perceptions on mining beneficiation

This section will provide a comparison of perspectives of both the members of the community and the mine. The comparison is presented below in the form of graphs.

(a) Beneficiation through employment creation

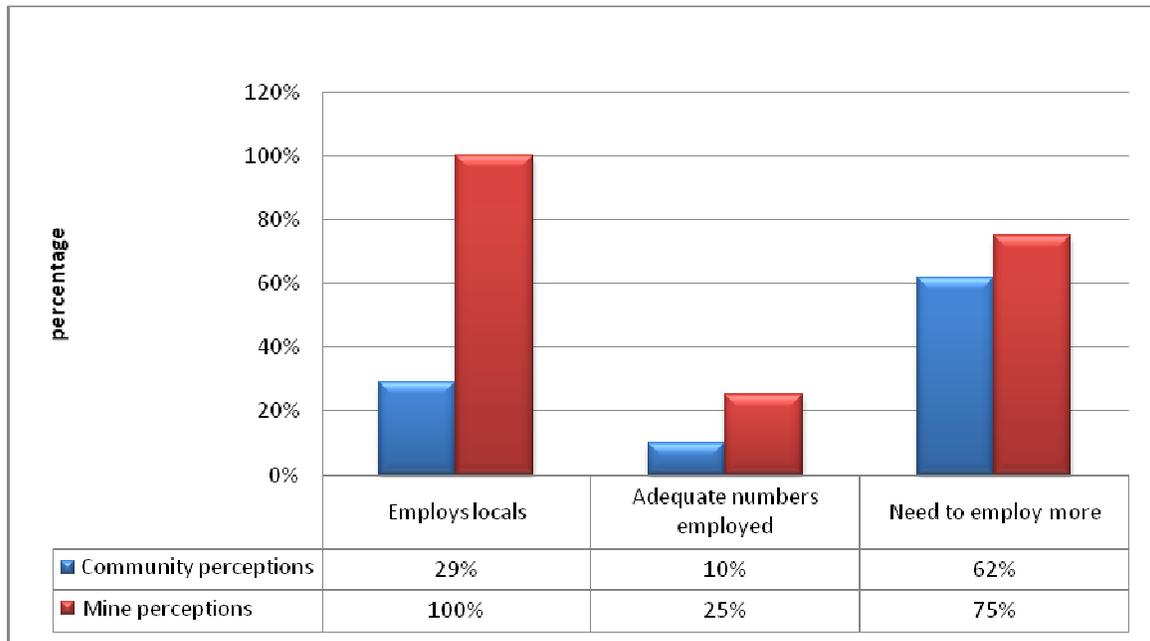


Figure 4.1: The perceptions of the community compared to those of the mine on beneficiation through employment creation

Figure 4.1 indicates that the perceptions of the community are different from those held by the mine with regard to local beneficiation through employment creation for local people. About 100% of the mine representatives report that the mine employs locals, whereas only 29% of the community think that the mine is employing locals. Although there is such a wide gap in perceptions about who is employed by the mine, there is not much difference regarding the adequacy of employment numbers as well as the need to employ more people. Both parties acknowledge that the number of people employed from the local community is inadequate and therefore there is a need to employ more locals.

(b) Beneficiation through corporate social investment

Figure 4.2 below presents the different perceptions held by the two parties with regard to beneficiation through corporate social investment:

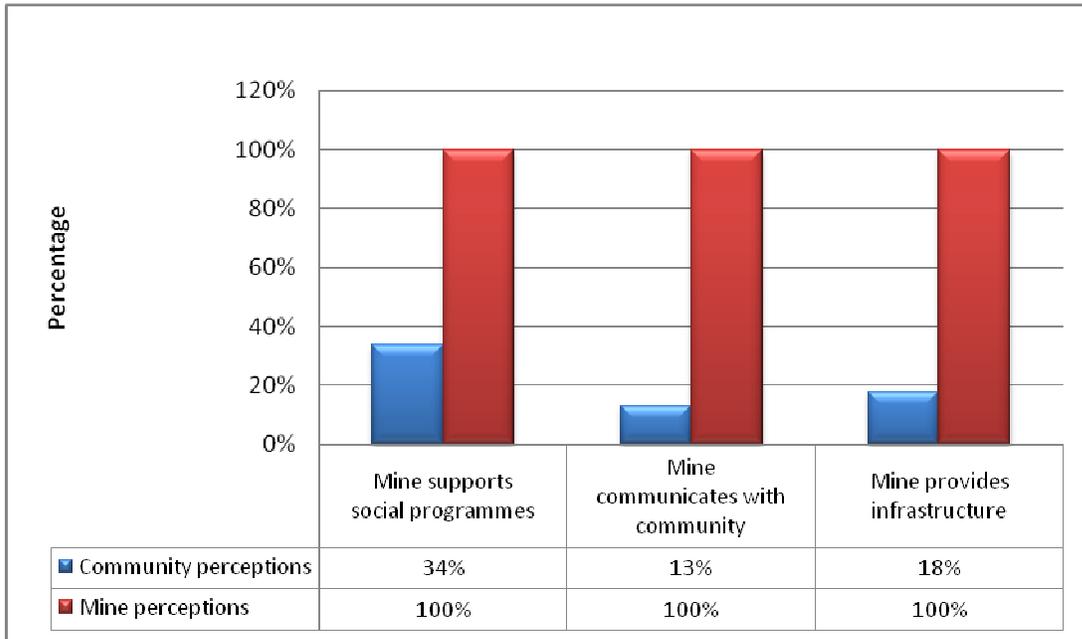


Figure 4.2: Perceptions with regard to beneficiation through corporate social investment

Figure 4.2 shows that the mine believes that it is beneficiating through corporate social investment, whereas the majority of the community members believe that the mine is not doing enough in terms of supporting social programmes and developing infrastructure. This difference in perceptions might be suggestive of the fact that the community members may not be aware of the social investment projects that the mine is providing. This may be due to lack of communication, the use of an inappropriate medium of communication, or that there may be projects that the community may not see as immediately or directly relevant or important to them.

(c) The mine’s interest in beneficiating locally

Figure 4.3 below portrays the views of the two groups on the mine’s interest towards beneficiating locally:

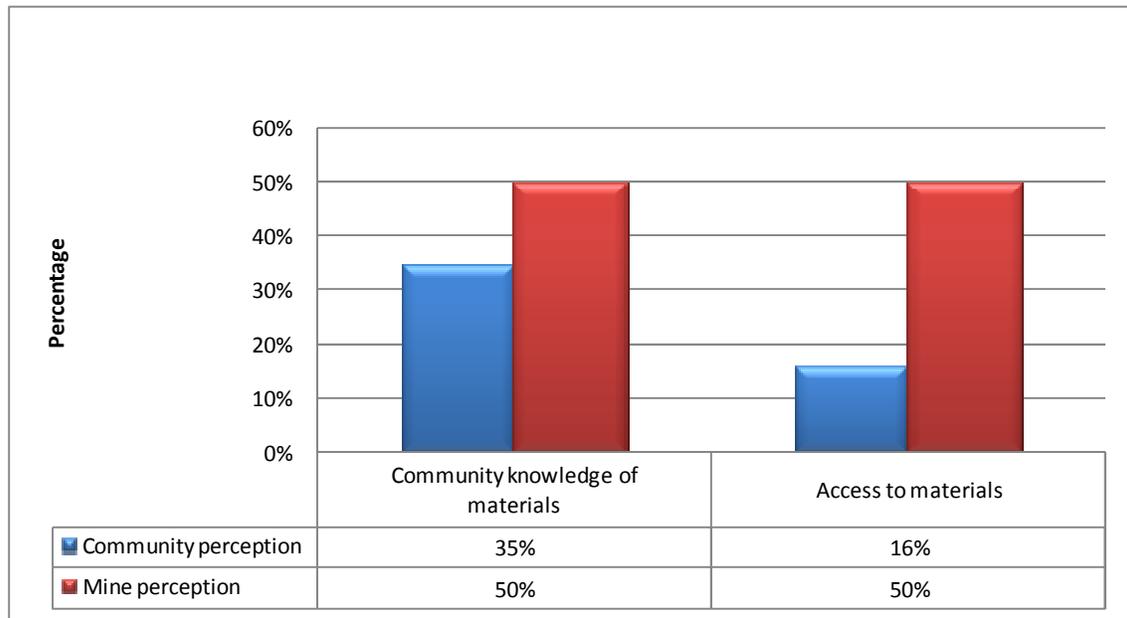


Figure 4.3: The mine’s interest towards beneficiating locally

In Figure 4.3, both groups do not seem to be well conversant with the beneficiation materials that are in existence. What is of more concern is the lack of knowledge of these materials by the mine personnel, and it is therefore not surprising that the community does not have access to the resources being mined. It has to be further established whether the notion of beneficiation is properly communicated internally, at the mine, especially within the divisions that interact with community engagements.

(d) The mine’s communication and collaboration with the community and other sectors

Figure 4.4 depicts the perceptions of the two groups of the mine’s communication and collaboration with the community and other sectors:

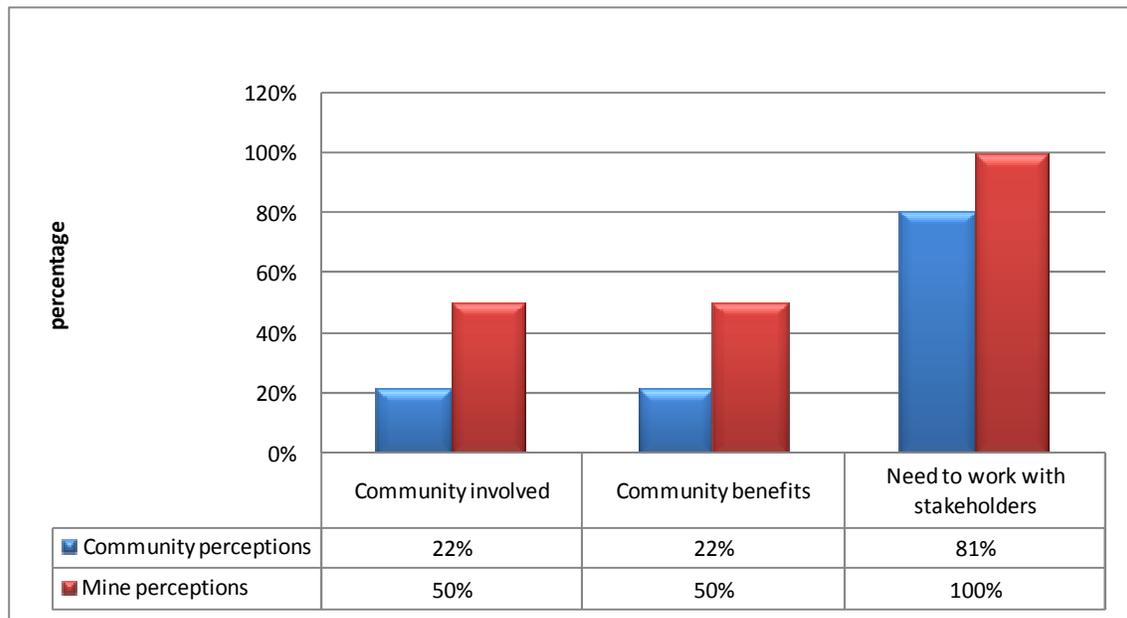


Figure 4.4: Perceptions on the mine’s communication and collaboration with the community and other sectors

There is a difference of opinion between the two groups in relation to the mine’s communication with the local community, as well as the community benefit from the mine beneficiation. While 50% of the mine managers are convinced that the members of the community are involved and also benefit from beneficiation processes, the community (22%) has a totally different view. However, both groups are of the same opinion that the mine should involve other stakeholders in its beneficiation processes.

4.2.3 THE PERCEPTIONS ABOUT THE MINE’S SUPPORT OF THE LOCAL SMMEs

The data presented in this section was collected in an attempt to investigate the perceptions of the extent to which the local SMMEs receive support from the mine (Objective three). The perception of the community is again presented separate from that of the mine, and at a later stage, there is a comparison of the views to enhance analysis and data interpretation.

4.2.3.1 The Community’s Perception of the mine’s support of the local SMMEs

Table 4.11: Perceived mine support of the local SMMEs

Mine support of the local SMMEs Mine support towards the local SMMEs	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine procures services from local SMMEs	7	10	61	90	68	100
SMMEs have access to materials or by-products from the mine	11	16	57	84	68	100
The mine provides business/SMME support in the form of infrastructure development	12	18	56	82	68	100

According to Table 4.11 about 90% of the community respondents feel that the mine does not procure services from the local SMMEs. It is further reported that these SMMEs do not have access to beneficiation materials from the mine, and that there is no mine support (82%) with regard to infrastructure provision for the benefit of SMMEs. On the basis of the dimensions used in this investigation, it can be summarised that the community does not view the mine as being supportive towards the local SMMEs.

4.2.3.2 The mine's Perception of its Support of the local SMMEs

Table 4.12: Perceived support of the local SMMEs

Support of local SMMEs	Yes		No		Total	
	No.	%	No.	%	No.	%
The mine procures services from local SMMEs	4	100	0	0	4	100
SMMEs have access to materials or by-products from the mine	2	50	2	50	4	100
The mine provides business/SMME support in the form of infrastructure development	4	100	0	0	4	100

The table above indicates that 100% of the mine respondents feel that the mine supports local SMMEs in terms of procurement of services as well as infrastructure development. All those respondents who indicated knowing the mine's beneficiation materials, are also holding a further view that the SMMEs have access to beneficiation materials.

4.2.3.3 Comparison of the mine and community perceptions of support of the local SMMEs

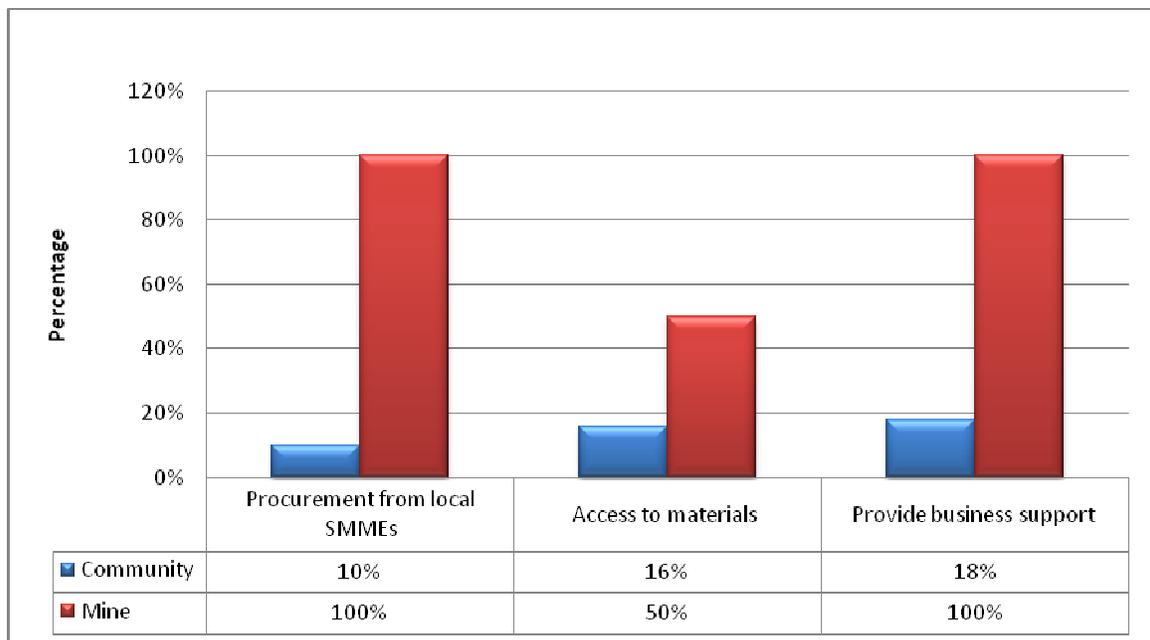


Figure 4.5: Comparison of the views on support given to the local SMMEs

The differences in perceptions with regard to the support given to the SMMEs by the local mine are portrayed in figure 4.5 above. There is a vast difference between the views of the two groups on SMME support by the mine. All the mine respondents are of the view that the mine supports the local SMMEs in the form of procurement and infrastructure development. On the other hand, 90% of the community respondents stated that the mine does not support the local SMMEs. It therefore appears that the views of the mine are contrary to those held by the community on the support given to local SMMEs.

There is therefore a need to establish the underlying causal factors of this huge difference in opinions. For instance, the frequency at which the local SMMEs services are procured, as well as the value of such services as compared to the mainstream services procured outside the mine's defined local radius, may be interpreted differently by each party. If the call for services by the mine is not that frequent, and if the local SMMEs are only offered the very least offers in terms of the financial value, then such support might be viewed by the community as non-existent. This means that it is crucial to establish and understand the type and extent of support that the mine is actually giving to the local small businesses, as well as the type of communication that the mine is using in terms of interacting with the community.

4.2.4 PERCEPTIONS OF THE ABILITIES OF THE SMMEs TO RENDER SERVICES REQUIRED BY THE MINE

This section provides an analysis of objective four, which investigated the extent to which the SMMEs, given the opportunity, are able to render required services. The data is presented in a table form for the community and mine perceptions, and in the form of a graph for comparison of the two groups.

4.2.4.1 Community perception of the abilities of the SMMEs to render services required by the mine

Table 4.13: Community perception of the abilities of the SMME to render services required by the mine

SMMEs' abilities to render services required by the mine:	Yes		No		Total	
	No.	%	No.	%	No.	%
Local people have adequate skills to access the jobs in the mine	32	47	36	53	68	100
Local SMMEs have adequate skills to provide needed services	41	60	27	40	68	100

The above table indicates that 60% of respondents feel that the SMMEs have the required skills to provide services expected by the mine. However, the respondents continued to comment, in the questionnaires, that the SMMEs' skills need to be developed. The same comment also applied to the local communities' skills.

4.2.4.2 The mine's perception of the abilities of the SMMEs to render services required by the mine

Table 4.14: The mine's perception of the abilities of the SMMEs to render services required by the mine

SMMEs' abilities to render services required by the mine:	Yes		No		Total	
	No.	%	No.	%	No.	%
Local people have adequate skills to access jobs in the mine	1	25	3	75	4	100
Local SMMEs have adequate skills to provide needed services	2	50	2	50	4	100

In the table above, 50% of the mine respondents have the view that the local SMMEs are not adequately skilled to provide the services required by the mine. All respondents made a further input that these local SMMEs should be properly trained, and the mine should collaborate with government on this aspect.

4.2.4.3 Comparison of the community's and the mine's perceptions of the SMMEs' abilities to render services required by the mine

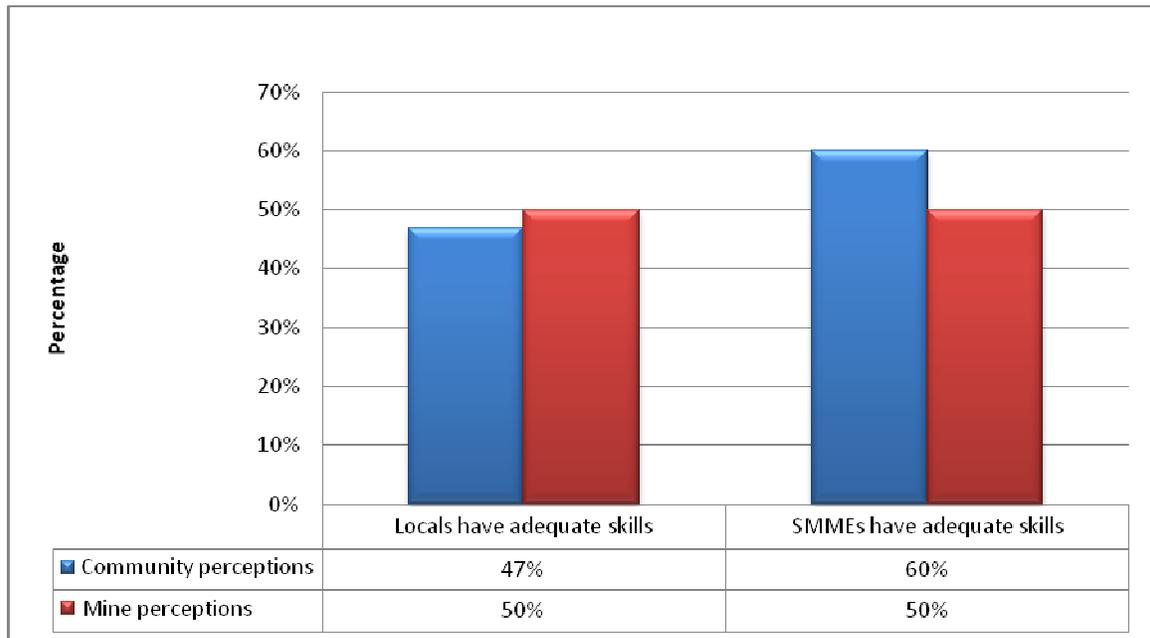


Figure 4.6: Perceptions of the SMMEs' abilities to provide services required by the mine

The above figure shows that 60% of the community feels that the SMMEs have the required skills, while 50% of the mine management feel that the SMMEs have the required skills. There is still a feeling from both respondents that a considerable number of SMMEs do not have the required skills for consideration for mine opportunities. This might mean that when/if the mine makes such opportunities available, the SMMEs may disappoint the processes due to lack of skills, hence a need for training has been highlighted by both groups.

4.2.5 POSSIBLE HINDRANCES TO BENEFICIATION OPPORTUNITIES

The data presented in this section relates to objective five, which investigates the possible hindrances to beneficiation opportunities. Like with the other objectives, the perceptions of both the local community and the mine on issues that might constitute hindrances to

beneficiation opportunities, are presented separately in a table form. Furthermore, a comparison of both perceptions is made in the form of a graph.

4.2.5.1 Community perceptions of the possible hindrances to beneficiation opportunities

Table 4.15: Community perceptions of the possible hindrances to beneficiation opportunities

Possible hindrances to beneficiation opportunities	Yes		No		Total	
	No.	%	No.	%	No.	%
Local people have adequate skills to access the jobs in the mine	32	47	36	53	68	100
Local SMMEs have adequate skills to provide needed services	41	60	27	40	68	100
The mine communicates with the local community	9	13	59	87	68	100

Table 4.15 highlights the community’s perception that the local people are not skilled enough to be employed by the mine. Only 53% of the respondents believe that members of the community have the necessary skills to sell to the mine. With regard to the local SMMEs, 40% of them are regarded as not adequately skilled to provide the required services needed by the mine. All respondents made mention of the community skills that should be improved for consideration of the mine job opportunities, as requested by the study. About 87% of the respondents feel that the mine does not communicate with the local community.

Further analysis of the open-ended responses indicated that the community feels that there are no efforts on the part of the mine to empower the local community in terms of skills development and skills transfer. Some members of the community complain about irregular practices in the mine as one of the factors contributing towards lack of maximum involvement of local people in the mine’s activities.

Lack of communication between the mine and the local community is another factor that might constitute a hindrance in terms of realisation of mining beneficiation to the local community. With poor or lack of communication, what the mine intends to do might not be relevant to the local community or might also not be known to the community.

4.2.5.2 The mine’s perception of the possible hindrances to beneficiation opportunities

Table 4.16: Hindrances to beneficiation opportunities

Possible hindrances to beneficiation opportunities	Yes		No		Total	
	No.	%	No.	%	No.	%
Local people have adequate skills to access jobs in the mine	1	25	3	75	4	100
Local SMMEs have adequate skills to provide needed services	2	50	2	50	4	100
The mine communicates with the local community	4	100	0	0	4	100

The respondents in table 4.16 indicate the perception that there is a general lack of required skills amongst the members of the local community and that makes it difficult for them to access jobs in the mine. Some of these jobs include mine planning, metalliferous mining and mine survey. However, 50% of the respondents believe that the local SMMEs have adequate skills to provide needed services in the mine. Whether the mine has made efforts to inform the community of such skills challenges, is not known. The community might also not be aware of the type of skills that are mostly required by the mine. However, 100% of the mine respondents feel that there is communication between the two groups. The mine also made it clear that there is a need for training to be provided to the local community, including the SMMEs.

4.2.5.3 Comparison of the views of the mine and community on the possible hindrances to beneficiation opportunities

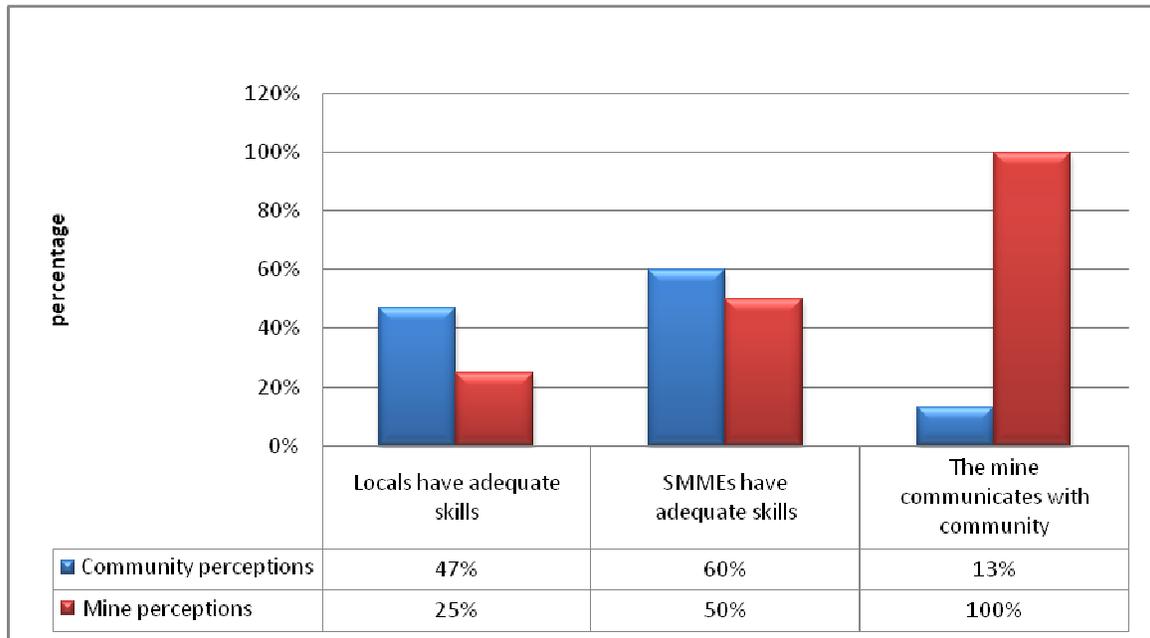


Figure 4.7: Possible hindrances to beneficiation opportunities

The respondents from both the community (47%) and the mine (25%) have a view that lack of required skills in the local community is a hindrance towards accessing the mining opportunities. Only 13% of the community feels that the mine does communicate with them, while 100% of the respondents from the mine feel that they do communicate with the community. Thus, if the mine communicates, there is a need to look at the type of communication media used, that is, whether these media are accessible to the community or not.

4.3 SUMMARY OF RESULTS

This chapter has provided an analysis of the data collected from responses to the questionnaire. A presentation of the research results was given in the form of graphs and

tables, accompanied by a description of the information in those graphs and tables. The following are the results derived from the study:

- The beneficiation role of the mine towards the socio-economic development of the community is perceived to be inadequate in terms of employing local people and investing in improvement and development of services and infrastructure.
- There is a feeling that the mine does not employ enough people from the local community.
- The community feels that the mine does not support the local SMMEs. However, the same local community and SMMEs are seen as lacking appropriate skills for them to render services to the mine or to be employed by the mine.
- Lack of required skills and communication came out as the possible hindrances to beneficiation opportunities.

This chapter has presented the findings that emerged out of the collected data. A further discussion of these results, recommendations for further research, as well as the limitations of the study will be presented in the next chapter.

CHAPTER 5

FINDINGS, RECOMMENDATIONS AND SUMMARY

5.1 INTRODUCTION

The aim of this chapter is to provide a discussion of the findings from the study, as well as making recommendations from such findings. This chapter will also establish whether the objectives of the study have been successfully achieved or not. The limitations of the study will also be presented.

It has been established by means of the literature review that the mines' strategies for socio-economic beneficiation in aid of the host communities are regulated by the Department of Mineral Resources (DMR). The plans for such beneficiation strategies are captured within these mines' five year Social Labour Plans (SLPs), which are approved by the DMR before any implementation can commence. This study has attempted to capture the SLP for the Amandelbult mine, developed in 2006. The plans for the mine's beneficiation role embraced a variety of socio-economic initiatives that are supposed to benefit the local community. This study wanted to investigate whether or not, the local community actually derives the socio-economic benefits from the mine's approved plan. Thus, it is based mostly on their perceptions and feelings.

5.2 DISCUSSION OF RESULTS FROM THE STUDY

The discussion of the findings in this section is guided by the objectives as set out in chapter one.

5.2.1 The mine's contribution towards the socio-economic development of the local community

Two different perspectives emerged with regard to the perceptions of the role of the mine towards the socio-economic development of the host area. The findings of the study on the mine's contribution are therefore presented from these two perspectives.

5.2.1.1 The Community Perspective

This study was aimed at investigating whether the Schilpadnest community is satisfied with the contribution that the mine is making towards the community's socio-economic development. The study has duly established that the local community is not satisfied with the contribution of the mine. It was clear from the findings that the community is not convinced that the mine is fully committed to the social programmes that will improve the social fabric of the local community. According to the community, the mine is also not employing a satisfactory number of people from the local community, and is perceived not to be displaying much interest in involving the local community in its overall beneficiation strategies.

The fact that the mine is not seen to be drawing more of its labour from the local community is linked to the hindrances indicated in the responses, namely, that the local community does not have the adequate skills required by the mine. Further comments provided by the community were that the mine should embark on skills training for the local people. This comment also surfaced on the issue of the involvement of the community in the beneficiation strategies.

The study has also established that the community is aware of the beneficiation role that the mine has to play, and is also aware of the beneficiation materials/activities that the mine has to embark on, in order to reach out to communities, hence the outcry in

responses that the mine is not interested in ensuring that such socio-economic benefits are accessible to them (community).

5.2.1.2 The Mine's Perspective

The current study also wanted to find out whether the Amandelbult mine is satisfied with the beneficiation role it is providing for the socio-economic development of its host community. The findings reveal that while the mine is confident that it contributes meaningfully towards the community's socio-economic development (eg infrastructure development, HIV/AIDS awareness campaigns, trainings), it is difficult for the mine to point out the programmes that were successfully implemented to the benefit of the local community. Such a contribution, without clear and successful footprints, can simply be interpreted as being unsatisfactory or non-existent.

The fact that the community feels differently about the extent of the mine's social support, is suggestive of the fact that the mine might be concentrating its social support on those community members that form part of its payroll, while leaving out the mainstream community. It may also be an indication that the mine does not communicate effectively with the host community.

The mine is aware of its beneficiation role, hence the establishment of the Social Labour Plan and its approval by the DMR. However, the implementation of the plan does not seem to be visible to the local community members. This may be indicative of a lack of implementation, or implementation without adequate communication and/or involvement of the supposed recipients of such services.

There is a further indication by the study regarding failure of the mine to ascertain the involvement of the community on the salient issues like the environmental issues and job opportunities. This could suggest that such issues maybe regarded by the mines to be '*on-the side*' issues, as indicated by the theoretical section of this study. The essence of this objective is that the mine perceives itself as playing a meaningful beneficiation role in the

socio-economic development of the local communities, although employment gaps are still perceived by the local community.

5.2.1.3 The Mine's Business Support to the Local SMMEs

Another objective of the study was to investigate the extent to which the SMMEs feel that they have support from the mine. The findings clearly indicate that the business support offered by the mine to the local SMMEs is perceived as very little. The responses emphasise the prevailing lack of required skills of the local SMMEs.

A further finding is that this study is not certain as to whether the mine has beneficiation plans with its materials. Some of the SMMEs have some idea of what beneficiation materials are in place, but they have no access to such materials. This suggests that the mine may not be beneficiating its raw materials locally and there might be no plans by the mine to beneficiate locally to support the local SMMEs. This may also suggest that the mine may be supporting only a few SMMEs, and the support may therefore not be visible to the majority, including those who were amongst the respondents. Furthermore, there is no mention of the mine's enhancement of the SMMEs' business linkages through infrastructure development.

On issues of support related to capacity building for the SMMEs, the study found no perceived efforts from the mine. This means that while the mine acknowledges the lack of skills within the local SMMEs, so far, there has been no tangible attempt from their side to help with skills development.

5.2.2 The abilities of the local SMMEs to render business services expected by the mine

The study also sought to investigate whether the SMMEs are able to render services as expected of them, by the mine. This study revealed that the local SMMEs are not

adequately skilled to render business services as expected of them by the mine. However, there is acknowledgement that some local SMMEs are able to provide acceptable business services as expected by the mine. This study is not certain how often the mine procures the services of those skilled SMMEs, nor the monetary value of the purchasing support, as compared to the mine's procurement expenditure profile.

Another finding from the analysis of data was a need for capacity building for the local SMMEs by the mine. This aspect was indicated by both groups as an intervention mechanism for ensuring that these local SMMEs perform in line with the customer expectations, and that their business skills may be adequately improved.

5.2.3 The possible factors that impede the mining beneficiation for local communities.

The purpose of this objective was to identify the possible factors that may hinder the mining beneficiation for local communities. This study revealed that the local communities, including the SMMEs, have difficulty in accessing the mining benefits due to the following possible factors:

(a) Perceived lack of skills within the local community

According to the community, the mine does not appear not eager to beneficiate its raw materials locally due to the fact that the local community does not have the required skills to engage in such beneficiation processes. The mine may then resort to considering beneficiation of raw materials outside the mine's locality. Other socio-economic beneficiation opportunities indicated by the study, from which the local community can benefit, are also not fully accessible to the local community due to a lack of skills. It would seem that the mine does not procure services from the local SMMEs and does not optimally employ local communities due to this lack of skills.

(b) Perceived poor communication between the mine and the local community

The study reveals that the community does not know the beneficiation materials that exist in the mine, and also does not know what services the mine has provided to them, the local community. This indicates that the beneficiation services provided by the mine may not have been properly communicated to the local community. Another possibility is that the mine might also be providing services that are not seen as significant to the community due to lack of proper communication during the needs analysis.

(c) Perceived lack of efforts from the mine in beneficiating the local communities.

Some responses within the study have suggested that the mine is not interested in assisting the local communities to be on board with regard to skills development and communication. This means that while the community may be eager to participate in the beneficiation activities, the mine might be deliberately ignoring community involvement.

In short, the mine has their Social Labour Plans (SLPs) in place. This may be indicative of their good intentions. They are also able to name a few projects that they are involved in, that are geared towards community development. However, the community does not seem to be aware of these projects or although they may be aware of them, the projects may not be seen as important to their development. Thus, there seem to be differing perspectives regarding the perceived beneficiation role.

5.3 RECOMMENDATIONS

The following recommendations are based on the findings from data analysis as well as the literature review.

5.3.1 Employment

The mine should consider setting a particular target (for example, 10% of the annual recruitments may be from the local community), for employing the local communities. The advertisements for recruitment should be visible and transparent to all local communities.

5.3.2 Communication and Community Involvement

There is a need for the mine to develop a communication strategy that will be used to interact with the local community on a continual basis. This strategy should respond to the communication issues related to, amongst others, the reports for the implementation of all the programmes that are implemented by the mine, an approach that the mine will be able to use during recruitment, as well as the involvement of the community in all the beneficiation processes. The strategy should also clarify the language and the medium that should be used for communication.

5.3.3 Needs Analysis

The mine should develop a comprehensive needs analysis (ranging from infrastructure development to employment creation strategies) of the local community in consultation with the local authority of that area. The community should then be afforded an opportunity to prioritise such needs. This will promote visibility of mine efforts, the buy-in as well as the commitment of the local community. The mine should also consider enlarging its base for stakeholder engagements and partnerships in terms of the needs analysis in order to provide a comprehensive socio-economic support to the local community.

5.3.4 Training and Development

(a) Skills development for SMMEs

A comprehensive database for the local SMMEs and their level of abilities should be developed. The mine should then start interacting with other role players, like the Limpopo Business Development Agency (LIBSA) and Small Enterprise Development Agency (SEDA), in relation to the intensive capacity development of the SMMEs.

The local SMMEs should be strategically positioned to enhance their access to the beneficiation raw materials. This can be done through intensive on-the-job trainings for the SMMEs, creating opportunities for emerging SMMEs, through partnering them with the well established companies, for further skills development and business linkages. The mine should also consider developing mechanisms and targets for ensuring that local SMMEs are duly considered on issues of procurement by the mine.

(b) Skills development for employment

The mine should develop and implement a skills development plan that is specifically designed to improve the skills base of the host community. This will assist the local community in accessing the mine's employment opportunities. The mine should also make local people aware of the skills that the mine is particularly interested in, so that where possible, the people can find ways of accessing relevant trainings on their own.

5.3.5 Recommendations derived from literature review

Some mines cited within the literature review of this study, have indicated the efforts they made towards the development of their host communities. Such efforts can be regarded as the good practices for consideration, and are indicated as follows:

(a) Bursary Scheme

The mine can create a bursary scheme that will target and encourage the local youth to engage in the mining related studies provided by the institutions of higher learning. The

bursary may target the students from as early as the high school level, so that the students will be encouraged to take the subjects that are related to mining development.

(b) Loan Fund

The mine can attempt to make for providing loans available to new business start-ups within the mining communities. Larger start-ups (for local SMMEs) can then be afforded an opportunity to apply for larger venture capital investments. A partnership with support agencies like Limpopo Development Agency, can be made for assisting the SMMEs to access and manage the loan fund.

(c) Beneficiation Agency

The mine can consider the possibility of establishing a beneficiation agency that will take a strong interest in local mining beneficiation. The agency may comprise of experts in mining beneficiation, and also have the representation of crucial stakeholders like the government. The agency will be instrumental in addressing the needs of the local communities. The mine can also provide the local SMMEs with business investment programmes in partnership with different skills development agencies.

(d) Infrastructure Provision

The mine may enhance the business linkages of the local SMMEs by improving/upgrading infrastructure for critical transportation routes. This initiative will not only benefit the SMMEs, but the mine as well.

5.3.6 Recommendations for future research

The following aspects are recommended for further investigation :

- The hindrances affecting the successful implementation of the mine's social labour plans (SLPs).
- The abilities of the SMMEs to provide business services at the level required by the mine.
- The impact of the mine support towards the local SMMEs.

5.4 LIMITATIONS OF THE RESEARCH STUDY

The following limitations were identified during the research study:

- About 60% of the representatives for the community structures have less than two years experience in the structures that they are serving, which means that they might not be aware of some of the beneficiation contributions made by the mine before their term of office. This might therefore have an effect on the generalization of research results.
- The mine management sample was too small, and as a result, this might have an effect on the generalization of the results.
- The venue used for administering the questionnaire for community structures was small for the first group, which resulted in a congested seating arrangement that could influence the objectivity of some respondents as they were able to view some responses from the neighboring respondents.
- Three of the respondents were not able to read and write and were assisted by the researcher.
- The reluctance of mine management to complete the questionnaires on time prolonged the time allocated for the data collection.

5.5 SUMMARY

This study was aimed at investigating the contribution of the Amandelbult mine beneficiation on the socio-economic development of the Schilpadnest community. The study's intention was to focus on the perceptions of both the local community and the mine, the support that the mine provides to the local SMMEs, the abilities of the local SMMEs to render the business services as expected by the mine, and the factors that impede the local beneficiation in the mining value chain. The study utilized the questionnaire as a data collection tool and maximum participation was achieved from both the community structures and the mine management representatives.

The analysis of data collected, revealed that the local community is generally not satisfied with the beneficiation contribution made to its socio-economic development, through the mine beneficiation. The analysis further revealed that effective communication remains an underlying challenge between the two parties, which means that without proper communication the community will not be aware of the socio-economic programmes implemented by the mine.

It also emerged from the study that the community is ready to work closely with the mine in order to derive more development benefits. The study also confirmed some issues raised by the literature review. The operation patterns adopted by the mines, by sidelining the local SMMEs were perceived to be evident in the literature analysis. While the literature made indications of some mines that are making good attempts to support the local SMMEs, there are those that are still perceived to be in denial of the necessity of or their responsibility for such contribution to local development.

In conclusion, this study has succeeded in achieving the set objectives. The recommendations made on the basis of the findings were aimed at ensuring that the gaps identified by the study be addressed in a manner that will maintain sustainable interactions and socio-economic enhancement of the Schilpadnest informal settlement. It is the intention of the researcher to avail the recommendations made by this study, to both groups (the mine and the local community), for planning purposes.

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QUESTIONNAIRE

The aim of this Questionnaire :

To determine the contribution of Amandebult Mine Beneficiation towards the socio - economic development of the community of Schilpadnest/Smashblock.

Please Note :

For purpose of this exercise, 'the mine' refers to Amandebult Mine, and 'the local community or community' refers to the Schilpadnest/Smashblock residents.

Please consider the following :

- Answer all the questions
- There is no right or wrong answer
- Be as honest as possible
- Mark with a cross (**X**) where applicable

SECTION A : Biographical Information

1. Community Organisation that you are representing :

Community-Based organization (CBO)

Non-Government Organisation (NGO)

Co-operatives

Small Businesses /Small, Medium & Micro Enterprises (SMMEs)

2. How long have you worked for the organization in (1) above

Less than 2 years

2 years and above

SECTION B

1. Does the mine communicate with the local community?

YES	NO
-----	----

1.1 If yes, which issues are communicated by the mine?

1.2 If no, would you like the mine to communicate with the community?

YES	NO
-----	----

1.2.1 If Yes, on what issues?

2. Does the mine employ members of the local community?

YES	NO
-----	----

2.1 If yes, in which sections of the mine (eg management, lowest level/ordinary labourers)

2.2 Are the numbers adequate?

YES	NO
-----	----

2.3 Should the mine employ more people?

YES	NO
-----	----

2.3.1 If yes, what areas of skills should be mostly considered?

2.3.2 If no, why not?

2.3.3 What process/procedure do you think should be followed in ensuring that all members of the community have equal access to job opportunities in the mine?

3. Are the local people adequately skilled for employment in the mine?

YES	NO
-----	----

3.1 If yes, what skills are mostly found within the local community?

3.2 If no, what skills do they lack?

3.3 What should be done to improve their skills?

3.4 How do you think the mine can assist in improving their skills?

4. Does the mine use services (eg catering, carpentry) of the local SMMEs?

YES	NO
-----	----

4.1 If yes, which services are mostly used?

4.2 How often does the mine use such services?

4.3 Do you think the local SMMEs have adequate skills to provide services in 4 above, to the mine?

YES	NO
-----	----

4.3.1 If no, why not?

4.3.2 What should be done to improve their skills?

5. Does the mine support local social programmes/activities like HIV/AIDS Campaigns, Youth activities?

YES	NO
-----	----

5.1 If no, what do you think may be the reason?

5.2 If yes, what kind of support does the mine offer ?

5.3 Give examples of the programmes/activities that the mine has supported the community on.

6. Does the mine provide infrastructure (eg roads, water & sanitation) facilities to the local community ?

YES	NO
-----	----

6.1 If yes, which infrastructure facilities have been provided?

6.2 If no, what do you think is the reason for that?

7. Is the local community satisfied with the support offered by the mine towards its socio-economic development?

YES	NO
-----	----

7.1 If no, what do you think is the reason?

8. Do you know any raw materials/by-products/mineral waste that are beneficiated from the mine?

YES	NO
-----	----

8.1 If yes, what can possibly be created out of these raw materials/by-products/mineral waste?

8.2 If Yes, are these raw materials/by-products/mineral waste beneficiated locally?

8.3 If not locally, why not?

9. Are the local SMMEs given the opportunity to access these beneficiation raw materials/by-products/mineral waste?

YES	NO
-----	----

9.2 If not, why not?

10. Do you think the mine is interested in involving the community in its beneficiation strategies/processes?

YES	NO
-----	----

10.1 If yes, what did the mine do to ensure community involvement?

10.2 If no, what might be the reason?

11. Do you think the local community benefits in some way from the mine beneficiation?

YES	NO
-----	----

11.1 If yes, what are those benefits?

11.2 If no, why not?

12. Should the mine work in partnership with other sectors (eg Government) in relation to mining beneficiation?

YES	NO
-----	----

12.1 If yes, what issues are important for beneficiation partnering?

12.2 If no, why not?

13. What are your additional suggestions on how the mine can be of benefit to the local community?
