CDS RESEARCH REPORT

LED & SMME DEVELOPMENT

Application for a new mining right for De Beers Consolidated Mines Limited (Koffiefontein Mine):

Social impact assessment report

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CDS
Centre for Development Support
Sentrum vir Ontwikkelingsteun

Application for a new mining right for De Beers Consolidated Mines Limited (Koffiefontein Mine):

Social impact assessment report

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CDS
Bloemfontein
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EXECUTIVE SUMMARY

As part of their application for a new mining right, De Beers Koffiefontein Mine is required by law to prepare and submit an environmental management programme (EMP) that includes *inter alia* an assessment and evaluation of the impact of the proposed mining operations on the socio-economic conditions of any person who might be directly affected by the mining operation. This document thus reports on the outcome of a social impact assessment (SIA) that was conducted to inform the said EMP, and more specifically the compilation of a Social and Labour Plan as stipulated by the Mineral & Petroleum Resources Development Act of 2002.

With due allowance for the fact that several options with regard to the future of Koffiefontein Mine are currently being explored that may prolong the life of the mine, it has been assumed for purposes of the SIA that eventually De Beers will terminate their mining operations at Koffiefontein. This assumption – further underpinned by the stipulation in the Schedule to the Mineral & Petroleum Resources Development Act that planning for mine closure must continue throughout the life of the operation - has formed the basic point of departure and framework for the subsequent SIA. As such, the purpose of this report is to inform Koffiefontein Mine of the anticipated socio-economic impacts that might result from the termination of mining operations at Koffiefontein in the future, and thus the impacts of the subsequent non-involvement of De Beers in the affected environment. The report further recommends appropriate mitigation strategies for the anticipated impacts, and also provides a monitoring and evaluation plan that will allow the client to monitor whether selected mitigation strategies are followed.

The methodological approach for the SIA involved a wide range of stakeholders and information gathering techniques during various stages of scoping, impact identification and assessment. The stakeholder participation process included

public meetings, key-informant interviews, focus group sessions, an extensive social survey and a one-day participatory workshop with strategic informants. Community observation, site visits and scenario simulation were further employed to inform and validate the projection and assessment of impacts. In order to systematise and focus the data gathering and assessment process, interested and affected parties were grouped in the following categories: community members, current Koffiefontein Mine employees, ex-employees, business sector, local government, and the public sector. Emanating from this process, this document reflects the aggregated and cumulative opinions, concerns and expectations of more than 700 participants.

Five broad sectors of impacts were identified to consolidate the crosscutting nature of expected impacts, and also to capture the common denominators of concerns and issues raised by interested and affected parties. The sectoral impacts are grouped and assessed in term of the following categories:

- Impacts on the demographic profile of Koffiefontein
- Impacts on the public sector at Koffiefontein
- Impacts on land use and infrastructure at Koffiefontein
- Impacts on the economic sector at Koffiefontein
- Impacts on the socio-psychological well-being of the community in the affected environment.

The status and significance of identified impacts per sector are summarised below:

Summary of impacts on the demographic profile of Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Decline in the population size	Mainly negative	Moderate to high	Low
Change in labour migrant patterns	Negative	Moderate	Low to moderate

Summary of impacts on the public sector at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
A decrease in revenue of the district and local municipality	Negative	High	Moderate to high
The termination of service agreements (formal and informal) with Koffiefontein Mine	Negative	Moderate	Low
An increase in the number of indigent households	Negative	High	Low to moderate
Decreased contributions (of De Beers) to educational institutions and social programmes	Negative	Moderate	Low
Close down of the mine clinic	Negative	Moderate	Moderate

Summary of impacts on land use and infrastructure at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Deterioration of recreational facilities	Negative	Low to Moderate	Low
Decrease in property values	Negative	High	High
Vacancy of a large number of properties	Negative	Moderate	Low

Summary of impacts on the economic sector at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Loss of job opportunities of employees of Koffiefontein Mine	Negative	High	Moderate to High
The downscaling of mine-related and mine-dependent businesses	Negative	High	High
The loss of service benefits and allowances of mine employees	Negative	High	Moderate to High

Summary of impacts on the socio-psychological well-being of the community at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Loss of community identity and increase in community isolation	Negative	Moderate	Low
Increased deprivation, fatalism and negativity	Negative	High	Low
A decline in the general quality of life	Negative	High	Moderate to High

Upon mine closure, the Koffiefontein community will face a choice between adjusting to economic decline, or considering economic diversification. Economic diversification requires alternative local economic activities. However, meaningful economic diversification is difficult to achieve, and this will be even more difficult in a small and remote town such as Koffiefontein. It should further be borne in mind that Koffiefontein has limited potential to absorb the anticipated impacts and to diversify its economy. It is therefore important that the suggested mitigation strategies be evaluated in terms of the social, economic and physical constraints (Chapter 6) of the affected environment.

The implementation of mitigating measures for the anticipated socio-economic impacts on the Koffiefontein environment is reflected in a social management and monitoring plan (Chapter 7). The process of monitoring and evaluation aims at determining whether predetermined activities are being implemented as planned, and includes the collection, organisation and analysis of data to determine the progress towards a specific goal.

An institutional framework is suggested for the monitoring and evaluation plan. In essence, it entails the establishment of a Development Agency consisting of a wide range of stakeholders. In addition to the implementation of the suggested plan, four auxiliary institutional bodies should be established to be part of the Development Agency. These are the LED sub-committee, the Poverty alleviation sub-committee, the Education sub-committee and the Communication forum.

The objectives set in the monitoring and evaluation plan operate at three different levels. The first level involves the development goal. The development goal describes the developmental benefits the respective target groups can reap from the programme. The second level pertains to the project goal/purpose. The project purpose describes the changes of the target groups with regard to behaviour, structures or capacity that may result from the utilisation of the deliverable outputs produced by the programme/project. The third level of objectives revolves around outputs. Outputs describe the goods and services (direct deliverables) that are contributed by the project or programme. For each output, various activities are developed. For this exercise, groups of activities have been clustered as strategies under each output, with main activities.

The mitigating plan suggests four different types of mitigating strategies (called outputs), namely: diversifying the economy of the affected environment; managing future developments at Koffiefontein Mine; managing municipal finance and continuing to provide social services. For each of these broad areas,

relevant indicators have been set, while the means of verification and the possible assumptions have been identified. Furthermore, regarding outputs and strategies (main activities), activities have been developed and linked to timeframes and responsibilities. In addition, a detailed action plan has been developed to assist with monitoring and evaluation (Chapter 7). This action plan contains the information required to conduct proper monitoring and evaluation.

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TABLE OF CONTENTS

//000//

LIST OF TABLES

//000//

LIST OF DIAGRAMS

//000//

LIST OF FIGURES

//000//

LIST OF ABBREVIATIONS AND ACRONYMS

ABET	Adult Basic Education and Training
AIDS	Acquired Immune Deficiency Syndrome
CBO(s)	Community-based Organisation(s)
CDS	Centre for Development Support (University of the Free State)
DART	De Beers Anti-Retroviral Treatment Programme
DBCM	De Beers Consolidated Mines
DME	Department of Minerals and Energy
DoE	Department of Education
DoH	Department of Health
DSD	Department of Social Development
ECA	Environmental Conservation Act
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
HIV	Human Immunodeficiency Virus
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
KLAC	Koffiefontein Mine Local Area Committee
LED	Local Economic Development
LLM	Letsemeng Local Municipality
M&E	Monitoring and Evaluation
MPRDA	Mineral & Petroleum Resources Development Act
NEMA	National Environmental Management Act
NGO(s)	Non-Governmental Organisation(s)
pc	personal communication
PDI	Previously Disadvantaged Individual
POW(s)	Prisoner(s)-of-war
SAPS	South African Police Service
SIA	Social Impact Assessment
SMMEs	Small, Micro and Medium Enterprises
STD(s)	Sexually Transmitted Disease(s)
STI(s)	Sexually Transmitted Infection(s)
TB	Tuberculosis
XDM	Xhariep District Municipality

GLOSSARY OF TERMS

In this document, unless the context indicates otherwise, the below terms mean the following-

Affected environment	The physical, social and cultural surroundings and conditions within which humans exist and that may be influenced as a result of existing or proposed developments or operations. The affected environment of Koffiefontein comprises the areas of Koffiefontein, Dithlake, Diamanthoogte and surrounding farms.
Environmental Management Programme	A plan to manage and rehabilitate the environmental impacts that stem from prospecting, exploration, or mining operations conducted under a mining right licence.
Impact	The significant change that occurs because of the action(s) of an agency and that would not have occurred otherwise.
Indirect (Cumulative) Impact	An effect that flows from an initial action of an agency, but which is not caused directly by the initial action.
Interested and Affected Parties	A person or an association of persons with a direct interest in a proposed development or existing operation, or who may be affected by such a proposed development or existing operation.

Local government	The Letsemeng (local) Municipality and Xhariep (district) Municipality.
Mitigate	Practical measures that are implemented to reduce or avoid negative effects or enhance positive effects of a development action.
Public sector	All government related departments and institutions at national, provincial and local levels.
Significance	A subjective judgement of the importance of an impact to an interested or affected party.
Social and Labour Plan	A plan that must accompany an application for a mining right and that must include background information of the mine in question, a human resourced development programme, a local economic development programme, and processes pertaining to management of downscaling and retrenchment. The contents of the Plan must comply with the stipulations of the MPRDA.

Social Impact Assessment	A prospective[1] identification, prediction and evaluation of the impacts of a particular physical development on the health and well-being of persons whose environment is affected by such development, along with mitigation measures for the anticipated impacts.
The company	De Beers Consolidated Mines Limited
The Consultant	Centre for Development Support
The mine	De Beers Koffiefontein Mine.

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[1] Some social impact assessments may also be of a retrospective nature.

CHAPTER 1

Introduction

1.1 Background to the project

De Beers Koffiefontein Mine (Koffiefontein Mine) is in the process of preparing an application to the Department of Minerals and Energy in terms of the Mineral and Petroleum Resources Development Act [Act 28 of 2002][1] to have their current mining licence – which expires in February 2006 – converted to a new mining right. The Act clearly states that every person (or company, in this case) who applies for a mining right must submit an environmental management programme (EMP), which entails that an environmental impact assessment (EIA) has to be conducted. Preparing an environmental management programme entails *inter alia* the investigation, assessment and evaluation of the impact of the proposed mining operations on the socio-economic conditions of any person who might be directly affected by the mining operation (see also par. 1.5).

Emanating from the above, it can therefore be concluded that a socio-economic impact study is required as part of Koffiefontein Mine's application for a new mining right. At the same time, it should be noted that because of all current underground resources being depleted[2] and the impact of the Dollar/ Rand[3] exchange rate, the life of Koffiefontein Mine has been seriously affected. Consequently, management is currently exploring several options with regard to the future of the mine (see par. 1.7). The reality, however, is that mineral resources are finite, and even though the life of Koffiefontein Mine – as that of

[1] Referred to in this paragraph as the Act.

[2] Under current mine production, the diamond resources at Koffiefontein Mine will in all likelihood be depleted by 2007. DBCM's vision, however, states that the aim is to extend the mine's life beyond 2007.

[3] Over the past two years, the South African monetary unit has progressively and persistently strengthened against the US Dollar. This has had a detrimental impact on the profit margins of not only the South African mines of DBCM, but in fact also on almost the entire South African mining industry. The exchange rate has been a major reason for losses sustained by four of the six South African mines of DBCM in the first six months of 2004 (De Lange 2004). At the time of compiling this report (September 2004), the Rand was trading in a band of R6,40-R6,60 against the US Dollar. In order for Koffiefontein Mine to "break even", an estimated exchange rate of R8 to the Dollar is required.

any other mine – can be prolonged through reducing costs, mining lower grades, benefiting from higher commodity prices, and additional resource definition, eventually the mine will have to cease its operation. As a result of the social impacts that may emanate from the closure of a mining operation, a social impact assessment (SIA) is undertaken to predict how future decisions or developments may affect the physical and socio-economic well-being of people subjected to these proposed actions. The challenge for all stakeholders impacted by mining in Koffiefontein is to ensure that, upon closure, costs to the community will be minimised and benefits optimised. Mining is such a pervasive part of life in the town of Koffiefontein that any proposed termination of mining activities is likely to produce extensive social and economic impacts in the community. The gathering of relevant social and economic information on a continuous basis is thus pivotal to ensuring that socio-economic impacts are managed proactively, as required by the MPRDA (see par. 1.5).

1.2 Why an SIA?

Over the last 20-30 years, all around the world the pool of people who insist on having a say in development decisions which they feel may affect them, has grown consistently. Unless the interested public is informed and consulted before a major development decision is made, it is now quite likely that the public will block or delay the development through protests, demonstrations and even legal actions. Although planners and decision makers have always given some consideration to the social effects of new developments, international trends and local legislation are forcing a more systematic approach. In fact, government agencies are increasingly requiring developers and project initiators to demonstrate that they are aware of social issues and then to reflect them in their actual proposals and practices. One way to predict and evaluate the social effects of a policy or project while it is still in the planning stage, is by conducting an SIA. Examples of developments that usually require an SIA, include mining operations, large dam constructions, highway constructions, pipelines, nuclear power plants, etc.

Various definitions and descriptions exist for an SIA, depending on the specific focus of the activity. In general terms, however – and in the context of this assignment – an SIA can be described as "the systematic advance appraisal of the impacts on the day-to-day quality of life of persons and communities when the environment is affected by development or a policy change" (Burdge in Barrow 1997:227). Seen from this angle, "social impacts" include all of the significant changes in the social environment that take place because of what an agency does and that would not otherwise have occurred. As such, impacts are the difference between the "future with" a project or decision and the "future without" that same influence (Finsterbusch & Fruedenburg 2002). The crucial thing is that any SIA should identify *undesirable* and *irreversible* consequences. As in the case of an EIA, an SIA too may include an assessment of impacts on vulnerable groups in the affected population(s), such as the poor, the elderly, women, and the unemployed (Barrow 1997; also see Chapter 5 of this report).

In most – though not all – cases, the assessment of social impacts is carried out *before* the impacts actually occur. This means that an SIA is often anticipatory rather than empirical. It attempts to assist the planning process of a proposed development or decision by identifying the likely impacts before they take place. Being anticipatory, however, also entails estimating the likely future impacts based on the existing empirical knowledge of the impacts of similar actions *in the past* (Finsterbusch & Fruedenburg 2002). Methodologically, this implies, amongst others, the technique of analogy or scenario simulation (see Chapter 2, paragraph 2.2.1 of this report).

Lastly, it should be emphasised that *no* impact assessment – whether environmental or social – can supply wholly accurate results. This is due to the fact that the causes and effects of environmental and socio-economic changes are complex, and also because such an assessment deals with future uncertainties. An SIA is neither a technical nor an economical exercise (see par.

1.6); the focus rather falls on impacts on the social environment. In addition, regardless of how good the data and the understanding of the affected environment are, an SIA (and an EIA, for that matter) always involves an element of subjective judgment. At the same time, however, it can be said that the purpose of an impact assessment is to assist decision makers in the face of uncertainty, and "precise answers are not possible or needed" (Barrow 1997:104). As a planning tool, the SIA can assist project management in understanding, implementing and managing a project in such a way that negative impacts are avoided or mitigated, and positive impacts are optimised, thus making it an indispensable part of the EMP.

1.3 Terms of reference

De Beers Koffiefontein Mine appointed the Consultant to undertake a study on the impact of Koffiefontein Mine on the affected environment, and to submit a social impact assessment report that will reflect the outcome of the study. The terms of reference of the study included the following:

- A desk study of available literature and existing information relevant to the study
- The introduction of the study to the relevant stakeholders at the local, the district and the provincial level
- The compilation of a socio-economic profile of the main stakeholder groups
- A description of the cultural, socio-economic and political dynamics of the affected environment
- A sectoral analysis of project-induced socio-economic impacts for organised stakeholder groups, as well as the directly/indirectly affected populations and host populations
- The assessment of impacts as per social impact assessment methodology
- The development of appropriate mitigation measures
- The preparation and submission of a social impact assessment report and a social management plan.

1.4 Purpose of the Koffiefontein SIA Report

This main purpose of this report can be outlined as follows:

- Firstly, the report aims to comply with the legal requirements that regulate the application for a mining right, and specifically with the socio-economic requirements in terms of the EMP and the Social and Labour Plan.

- Secondly, the report aims to inform the client - Koffiefontein Mine – of the anticipated socio-economic impacts that might result from the termination of mining operations at Koffiefontein in the future, and thus the impacts of the subsequent non-involvement of DBCM in the affected environment. Having said that, it should also be stressed that the purpose of this report - in fact, the purpose of *any* SIA - is not to try and consider *all* possible impacts, but rather to focus on identifying and assessing *the most significant* impacts for the affected environment.

- Thirdly, the report aims to recommend appropriate mitigation or avoidance strategies for each of the anticipated impacts. These strategies are supplemented with a measuring framework to allow the client to monitor whether selected mitigation or avoidance strategies are followed.

- Fourthly, the report outlines a suggested monitoring and evaluation plan for the management of the anticipated impacts and mitigation measures in the affected environment.

- Lastly, the report aims to inform interested and potentially affected parties on the outcome of the study, and to reflect on their concerns and participation in the SIA.

1.5 Legal and policy considerations

The approach, focus and parameters of this study have been informed and directed by three Acts in particular, i.e. the Mineral and Petroleum Resources Development Act ([MPRDA], 28 of 2002, the National Environmental Management Act ([NEMA], 107 of 1998) and the Environmental Conservation Act [(ECA), 73 of 1989]. Stipulations and regulations in these Acts that bear specific relevance to the SIA, are pointed out below.

1.5.1 MPRDA (28 of 2002)

This Act, amongst others, regulates the process by which a mining right is granted to an applicant. Section 46(c) of the Regulations in the Act (23 April 2004) stipulates that an application for a mining right must also contain a Social and Labour Plan that should include, amongst others, the following:

i) the social and economic background of the area in which the mine operates
ii) the key economic activities of the area in which the mine operates
iii) the impact that the mine would have in the local and sending communities.

In section 56(a) of the Regulations in the Act, it is stated that the closure of a mining operation *"incorporates a process which must start at the commencement of the operation and continue throughout the life of the operation"* (DME 2004:30). The Act thus explicitly recognises that minerals are non-renewable natural resources, and that preparing for mine closure is an inevitable and continuous responsibility of the holder of a mining right.

1.5.2 NEMA (107 of 1998)

NEMA outlines several key environmental principles and, amongst others, stipulates that *"the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and*

evaluated…" before it (the proposed development) is allowed to go ahead [Section 2 par. 4(i)]. This includes the effects of any development on human communities. NEMA further states that negative impacts on the environment must be anticipated and prevented, and where they cannot be altogether prevented, they should be minimised and remedied. Environmental management must be integrated, *"and it must take into account the effects of decisions on all aspects of the environment and all people in the environment…"* [section 2, par. 4(b)]. In addition, vulnerable and disadvantaged groups must be helped to become involved in decisions about their environment. Other important aspects contained in NEMA, and that are of relevance to the SIA, relate to the participation and needs of all interested and affected parties (I&APs), as well as to the fact that development decisions must be taken in an open and transparent manner.

1.5.3 ECA (73 of 1989)

The EIA Regulations (April 1998) in terms of the ECA that stipulates the assessment of impacts, have served to inform the use of rating criteria in this SIA. More specifically, each potential direct impact has been assessed in terms of its nature, extent, duration, intensity, probability, status and significance. For further clarification on the rating criteria, see Chapter 2.

1.6 Assumptions and limitations of the study

As stated earlier, the combined impetus of several factors has seriously affected the remaining life of Koffiefontein Mine. Thus, with due allowance for the fact that several options with regard to the future of the mine are currently being explored that may prolong the life of the mine, it is assumed that eventually De Beers will terminate their mining operations at Koffiefontein. This assumption – further underpinned by the stipulation in the Schedule that planning for mine closure must continue throughout the life of the operation - has formed the basic point of departure and framework for the subsequent SIA (see also par.1.5). Although no date is attached to the termination of mining activities in Koffefontein, an

indefinite or long-term continuation of the current operation was nevertheless not viewed as a viable option for purposes of the SIA. Likewise, various alternatives to closure have not been considered for identification and assessment of impacts, although the investigation did probe into several options to mitigate the impacts of (further downscaling and) closure. Any viable option that will prolong the life of the mine, however, may in itself be a mitigatory measure for the anticipated impacts upon eventual closure of the operation.

Although the study spanned a wide range of stakeholders, sectors and methodological procedures (see Chapter 2) - and in some ways has indeed even gone well beyond the "conventional" boundaries of an SIA – the following limitations should nevertheless be pointed out:

- A total of 132 employees of Koffiefontein Mine were granted voluntary severance packages in December 2002 and December 2003. A group of 20 of these ex-employees was randomly selected for interviews as part of the scenario-simulation and the verification of concerns expressed by some stakeholders (see Chapter 2 and Chapter 5). Although this "control group" did indeed inform several aspects of the study, one pertinent limitation of reading too much into the experiences of this group should be pointed out. This relates to the fact that the "control group" applied for *voluntary* severance packages. In other words, the behavioural patterns and experiences of a *voluntary* group vis-à-vis a *non-voluntary* (compulsory) group of ex-employees will, in all likelihood, produce significant differences. For this and other reasons, the voluntary group could not be treated as an unqualified scenario for future impacts upon current employees in the event of compulsory downscaling and job losses. Yet, the lessons learnt that emerged from the individual interviews with the ex-employee group did prove valuable, particularly for the developing of mitigation measures.

- Approximately 56[4] of Koffiefontein Mine's total staff contingent originate from areas other than Koffiefontein, with Jagersfontein (14 employees) sending the largest number of these labourers (see Chapter 3). This means that in terms of the DBCM definition of a labour sending area as an area that contributes to fifty (50) or more of a mine's employees, no single area meets the criterion of being a labour sending area for Koffiefontein Mine. Consequently, given the relatively small proportion that migrant labourers constitute of the total workforce of the mine (7.2% of the total labour force and 8.5% of permanent staff), the SIA did not look into possible impacts for individual labour sending areas.

- Although an assessment of economic concerns and impacts formed part of the SIA, these were dealt with in general terms only and within the parameters of the SIA methodology in order to identify and assess likely future trends in this regard. However, a comprehensive economic cost-benefit analysis for any of the I&APs did not fall within the ambit of the SIA. This is in accordance with standard SIA procedure and practice.

- It is neither the function nor the purpose of the SIA report to suggest a choice or present a course of action in a way that effectively forces a decision about DBCM's future involvement in Koffiefontein. Management and decision-makers must be responsible for development choices, and the SIA should help reinforce their choices. In this regard, the SIA report merely intends to communicate appropriate information as objectively and as clearly as possible.

1.7 Alternatives to the proposed development

As mentioned earlier, factors such as the depletion of all current underground resources and an unfavourable Rand/Dollar exchange rate have collaborated to

[4] Of these 56 employees Koffiefontein Mine permanently employs 14, while 12 are employed as part of existing supplier contracts with the mine.

erode the remaining life of the Koffiefontein Mine. Although De Beers will thus eventually have to terminate their operations at Koffiefontein, management is currently exploring several alternatives to mine closure that are aimed at prolonging the life of the mine. These include the following (no specific order of preference):

- **Option 1:** ***Reworking of the mine dumps with a finer crusher***
  DBCM is looking at ways to re-mine the dumps economically as the dumps contain minimal amounts of residual diamonds. The length of this activity depends on the profitability of the exercise, but it could prolong the life of the mine by between one and ten years. A feasibility study will have to be conducted first to determine the profitability. Three new crushers were set to arrive at the mine before the end of August 2004. The tailing dumps were then to be crushed with the finer crushers in order to find smaller diamonds. The disadvantage was that the tailing dump material all had to be passed through the mine-plant which was expensive.

- **Option 2:** ***Mining of the Ebenhaezer pipe***
  The Ebenhaezer pipe was not mined in the past as it was uneconomical. In 2003, mining commenced on the pipe and the blastings on the open mine have now started and sunk it to approximately 50m below surface. This alternative is the most viable in terms of profit, and the mine will be able to drop to approximately 280m below surface. An open cast method is cheaper as the tailings will be processed straight through the plant. This method could expand the life of the mine up until 2012/2014.

- **Option 3:** ***Re-mining of collapsed tunnels due to rock mass failure***
  The re-opening of tunnels that collapsed in underground landslides is scheduled for 2005/2006. Although the process is already underway, it will not make a major contribution to prolonging the life of the mine.

- **Option 4: *Horizontal and vertical expansion of current mine***

  Another option being explored is that of increasing the depth of the mine in order to mine additional resources, i.e. vertical expansion. Horizontal expansion is also an option as is more efficient mining.

- **Option 5: *Relocation and re-mining of Jagersfontein dumps***

  The mine dumps at Jagersfontein could be moved to Koffiefontein with the aim of retrieving any remaining diamonds in these dumps. Yet, this may be a sensitive option, as there is a possibility that the Jagersfontein community could oppose such an option.

- **Option 6: *Selling Koffiefontein Mine to a smaller mining company***

  A smaller company or consortium could probably operate the mine more profitably, especially since it is likely to have much lower overheads than De Beers.

Despite the above options, the maximum lifespan of Koffiefontein Mine would only be extended to 2010-2012, or perhaps 2022[5]. This is on condition that Ebenhaezer is viable, the tailing dumps are mined and the exchange rate is favourable. The major issue affecting and determining the mine's life is the Rand/Dollar exchange rate. In any event, there will be a definite down-scaling of mining activities, with consequences for all stakeholders involved.

1.8 Focus and structure of the report

The following breakdown represents an overview of the focus and structure of the SIA report:

[5] Recent estimates by DBCM have concluded that, taking all alternatives to prolong the life of the mine into consideration, the mine could probably be maintained until 2022.

1.8.1 Focus of the report

This report communicates the following:

- an introductory overview of various technical, legal and operational aspects that informed and directed the SIA
- a description of the methodology applied to conduct the identification and assessment of socio-economic impacts on the Koffiefontein environment
- a description of the existing status of the socio-economic environment in Koffiefontein
- an overview of the socio-economic issues, impacts and mitigation measures associated with the termination of mining operations in South Africa and elsewhere in the world
- a description and assessment of anticipated socio-economic impacts on the affected environment
- suggested mitigation measures for each of the anticipated direct impacts on the affected environment
- a schematic outlay of a socio-economic monitoring plan for Koffiefontein Mine.

1.8.2 Structure of the report

The report is structured as follows:

Chapter 1: Introduction

Chapter 2: Methodological Approach

Chapter 3: Socio-economic profile of the affected environment

Chapter 4: Mine downscaling: an overview of resultant socio-economic impacts and mitigation strategies

Chapter 5: Assessment of expected socio-economic impacts on the Koffiefontein environment

Chapter 6: Recommendations to mitigate the anticipated socio-economic impacts on the Koffiefontein environment

Chapter 7: Social management and monitoring plan

CHAPTER 2

Methodological Approach

2.1 Introduction

This chapter outlines and clarifies the methodologies adopted for this study. Broadly speaking, the SIA approach revolved around two phases, i.e. the scoping phase[6] and the assessment phase. Because scoping usually continues *throughout the assessment phase* (see CDS 2004), there is always some overlap between steps and approaches, and others may be repeated at various stages of the assessment. The broad methodological approach aimed to obtain both qualitative and quantitative data of the affected social environment (Koffiefontein, Letsemeng Local Municipality and the Xhariep District Municipality)[7] and anticipated impacts on the social environment.

At the outset of the study, a comprehensive stakeholder and public involvement plan was developed, based on the identification of I&APs.

2.2 Stakeholder participation process

The identification of potentially interested and affected groups and individuals had as its main objective the listing of concerns of I&APs. Part of this process involved the identification of particularly vulnerable groups in Koffiefontein, in order ultimately to assess their capacity to cope with the potential impacts. More specifically, it encompassed the following methods: public meetings, personal interviews with stakeholders as well as I&APs, focus group sessions with stakeholders, and lastly, a comprehensive stakeholder survey.

[6] The scoping phase is reported in the document *Social impact assessment for De Beers Consolidated Mines (Koffiefontein Mine): Scoping report* (CDS 2004).

[7].The Letsemeng Local Municipality comprises the urban areas of Koffiefontein, Jacobsdal, Luckhoff and Petrusburg as well as Oppermansgronde and the commercial farming areas in between. The Xhariep District Municipality consists of Letsemeng Municipality, Kopanong Municipality and Mohokare Municipality.

2.2.1 Public meetings

Locking into the parallel EIA part of the study, six public meetings – three scheduled in Koffiefontein town hall and three in Dithlake community hall – were arranged to communicate the purpose and process of the study to the public, and to provide them with a platform to clarify uncertainties and to voice their concerns. The first of these meetings was held at the outset of the scoping phase, and the last two after the submission of the scoping report, i.e. at the start of the assessment phase.

2.2.2 Key-informant interviews

A series of key-informant interviews was conducted with a range of stakeholders and I&APs to record their concerns and to determine the nature of likely impacts. To avoid "gaps" in the affected environment, the Koffiefontein environment were demarcated into three broad sectors, *i.e.* local economy sector, public sector and community sector. Within each of these broad sectors several sub-sectors with identified I&APs were targeted. I&APs were initially identified from the name lists compiled during the stakeholder and public meetings, whereafter the list was supplemented by using the principle of *snowball pointers*. Eventually a total of 64 in-depth interviews with six categories of stakeholders[8] – located within the three broad sectors - were conducted (see Annexure B). Apart from the identification of concerns, the data gathered during the key-informant interviews also served to inform the construction of questionnaire items for the survey (see paragraph 2.2.4).

[8] These six categories were the following: **Public sector** (government departments, schools, political party representatives, South African Police Service); **Local government** (local and district municipality); **Community sector** (NGOs, community police forum, etc.); **Business sector**; Koffiefontein Mine (**management**); Koffiefontein Mine (**employees**). The particular concerns of I&APs within these sectors are attached as Annexure C.

The data gathering instrument for key-informant interviews

Matrixes were used during interviews with I&APs in the scoping phase to assist interviewers in structuring interviews with stakeholders (refer Annexure D). It was crucial that all I&APs were given the opportunity to identify concerns relevant to their particular party, and matrixes provided the framework for obtaining this information. The impacts identified through the matrix provide a basis for further assessment.

The preliminary concerns identified during the initial social scan (Mathye, Botha & Brand 2003), together with the literature review, formed the basis for the development of these matrixes. These documents were scrutinised and a list of possible concerns/ impacts was compiled. Possible impacts were categorised into six broad categories, namely: demographic impacts, community impacts, economic impacts, impacts on the public sector, impacts on land use & infrastructure and impacts on human well-being. This specific categorisation was decided upon after the list of impacts had been discussed and was deemed the most appropriate way of categorising the wide array of possible impacts. Within this broad categorisation, impacts were clustered again so that all impacts related to a specific area of focus were placed together on the matrix.

The Checklist Matrix

This type of matrix was developed primarily to determine which of the impacts identified from the literature and the social scan are relevant to the social environment in Koffiefontein. A matrix was compiled that combined all listed I&APs in rows and all possible impacts in columns (see Annexure E). Each category of the impacts was placed in a separate table with a list of I&APs. During interviews, representatives of each I&AP were taken through the lists of impacts and if a particular impact was considered important by the I&AP, this impact was marked. After all the interviews were conducted, these checklist

matrixes provided a clear indication of which impacts were regarded as relevant by the majority of I&APs.

The aim of the checklist matrix was not necessarily to gather more detailed information on the extent, duration, probability, status and significance of the impacts. These matrixes acted as a screening measure to sort the impacts into those that may have an effect on the community and those that are irrelevant to the current social environment in the area. With this type of matrix it is possible only to refine the list of possible impacts to those that have a specific bearing on the social environment specifically in Koffiefontein. After all I&APs were consulted and all impacts identified and marked, the matrixes provided a representation of impacts that were to be studied further during the assessment phase of the SIA.

2.2.3 Focus group sessions

Five focus group sessions were held with different categories of current employees of Koffiefontein Mine in order to explore their views on

- the future of mining activities at Koffiefontein;
- alternatives to downscaling and closure;
- likely impacts in the case of further downscaling and possible closure; and
- mitigation measures to reduce impact of mine closure.

2.2.4 Social survey among stakeholders

An extensive social survey was decided upon in order to maximise participation and inputs from stakeholders. Past experience with public meetings – both locally and internationally - has demonstrated that although a few individuals may make their positions known, such individuals may not necessarily represent the majority opinion (Disanto *et al,* 1981:32). Therefore, unstated concerns are often not addressed, and it is thus pivotal for key-informant interviews and public meetings to be supplemented with a survey, in order to ensure that widespread opinion be expressed.

Stemming from the above, the purpose of the social survey – targeting, as it did, more than 500 respondents in different stakeholder categories within the affected environment - was to

- supplement the existing statistical data by measuring perceptions pertaining to the quality of life of the residents in Koffiefontein/Dithlake/ Diamanthoogte;
- profile community perceptions about the role that Koffiefontein Mine has played in their lives, and of the contribution the mine has made to an improvement in the quality of life in the community;
- verify the extent of concerns that were expressed during personal interviews and focus group sessions with I&APs;
- identify possible mitigation measures for future mine closure;
- probe into strategies for lengthening the life of Koffiefontein Mine.

Table 2.1 below depicts a breakdown of the extent of the survey and the different stakeholders that were included in the sample:

Table 2.1: Compilation of the stakeholder survey

Target group (stakeholder)	Sample size
1. Households: Dithlake	300
2. Households: Diamanthoogte	26
3. Households: Koffiefontein	50
4. Farming community	10
5. Business sector	20
6. Local Municipality	9
7. Current employees: Koffiefontein Mine	70
8. Ex-employees: (Koffiefontein Mine – a group of persons who received voluntary severance packages during 2002/ 2003).	20
Total	**505**

2.3 Community observation and site visits

The assessors paid several visits to the affected environment, and particularly to the development site as well as business and residential areas of Koffiefontein, Dithlake and Diamanthoogte. These visits, amongst others, served to qualitatively familiarise the assessors with

- the nature of socio-economic activities in Koffiefontein;
- the extent and quality of infrastructure and facilities in Koffiefontein;
- the visible aspects of quality of life in Koffiefontein;
- current development initiatives in Koffiefontein.

Personal observation of the above aspects not only assisted in gaining a first-hand understanding of the "pre-impact" environment, but also qualitatively to gauge the ability of the socio-economic environment to absorb the anticipated impacts.

2.4 Establishing a socio-economic profile of the affected environment

Simultaneously with the data gathering process (paragraph 2.2), a scan of existing literature and documentary data sources was executed to compile a socio-economic profile of the *primary* affected environment, which, for purposes of this study, is Koffiefontein and surrounding areas[9]. The purpose of this step was to examine and establish a profile of the existing or "pre-impact" social conditions in Koffiefontein, in order to provide baseline data against which the subsequent social changes could be assessed. This entailed, *inter alia*, an overview, systematisation and compilation of the main demographic and socio-economic features of the affected environment (see Chapter 3):

[9] Koffiefontein consists of the urban areas of Koffiefontein, Dithlake, and Diamanthoogte. "Surrounding areas" refers to the rural area (farming areas) adjacent to Koffiefontein.

The social scan provides a detailed description of the socio-economic environment of Koffiefontein and surrounding areas. The initial social scan of the same environment (Mathye, Botha & Brand 2003) was used as the basis for the current social scan and was expanded with additional literature and interviews. Several sources were consulted in the compilation of this section. Apart from various documentary studies obtained from information searches on library data bases and the internet, sources such as Census 2001 (Statistics South Africa) and the reviewed Integrated Development Plan for Letsemeng Local Municipality [LLM] (2003), as well as the most recent employee records of Koffiefontein Mine, were accessed in compiling this overview. The historical section is based on newspaper articles, tourist information and the work of McGill (1991) which provides a detailed account of the development of Koffiefontein between 1870 and 1980. Personal interviews with key informants further served to enhance an understanding of the socio-economic dynamics in the affected environment.

2.5 Assessment of impacts

Identified socio-economic impacts were projected and assessed as by scenario simulation, linear extrapolation and social impact assessment methodology. This included an assessment of the *capacity* of the receiving environment to absorb each of the projected impacts, as well as the identification of *the most vulnerable groups* to be affected by each significant impact.

2.5.1 Scenario simulation

An extensive literature review of the issues involved in the downscaling and closure of mines was conducted in order to compile an overview of international and local *lessons learnt* pertaining to impacts and specific mitigation possibilities[10] (see Chapter 4). The purpose of the literature review - sometimes referred to as the "main component of impact assessment"[11] - was *not to*

[10] The inclusion of a group of ex-employees of Koffiefontein Mine – staff members who received voluntary severance packages during 2002 and 2003 – further assisted an understanding of impacts and the identification of mitigation measures (see Table 2.1).
[11] Barrow, CJ 1997. *Environmental and Social Impact Assessment*. New York, Wiley & Sons, p.18.

substitute first-hand familiarity with the Koffiefontein environment, but rather to acquaint the assessors with similar developments or situations under matching socio-economic conditions. This enabled the consultants to project probable impacts for the Koffiefontein environment realistically, based on other similar developments elsewhere in the world and in South Africa. The technique of analogy or ***scenario simulation*** therefore provides some indication of what the Koffiefontein community can expect from a particular future development, such as downscaling of mining activities or even mine closure. Where appropriate and practicable, past scenarios and simulations of possible future downscaling and mine closure, and the consequences of such measures for the community of Koffiefontein and other I&APs, could be constructed.

The review is based largely on international literature of mine closure as limited information is/was available for the South African situation. Yet, several journal articles that make specific reference to experiences in South African mine closure were included. Additionally, numerous newspaper articles focusing on the impact and mitigation strategies of mine closures experienced in other parts of South Africa were obtained through *SA Media*.

2.5.2 Linear extrapolation

The total population for Koffiefontein has been projected to 2007, 2010 and 2015 by extrapolating past trends into the future. This method assumes that total population counts (censuses) of the target population at two different dates are available. The rate of growth between two past dates is calculated and, assuming that this rate will continue into the future, the population size is projected to a future date. Demographers using linear extrapolation often make use of the following formula, and the same equation was applied in the projection of the Koffiefontein population.

$$r_{lin} = \left[\frac{\text{Population at time 2 - Population at time 1}}{\text{Population at time 1}} \right] / n$$

In the above formula, the population at time 1 is the Koffiefontein census count for 1991, while the population at time 2 is the census count in 2001, and *n* is the number of years (in this case, 10 years) between the two censuses. The next step was to plug in the above numbers in order to calculate the average annual linear rate of growth. This rate of growth was then used to extrapolate the population forward, from the *base year* (2001) to a *target year* (2004, 2007, 2010, and 2015), using the following equation:

$$\text{Population in target year} = \text{Population in base year} \times [1 + (r_{lin} \times n)]$$

In this equation, r_{lin} is the average annual linear rate of growth (calculated above) and *n* is the number of years (in this case varying between 3 and 14) between the base year (2001) and the target year (varying from 2004 to 2015).

2.5.3 Rating of impacts

The rating and ranking of impacts are often cloaked in controversy, since inherent difficulties – even an unavoidable element of subjectivity – are involved in attaching values to impacts. Thus, the aim in this study was not so much to deny or overcome these difficulties, but rather to *minimise* the inevitable effect of subjectivity and arbitrary decision making in rating and ranking the impacts. Both the identification and the assessment of impacts in this report are based on information contained in the following sources:

- Past analogies (in the form of scenario simulation)
- Key informant opinions
- Public opinion
- Aggregated professional opinion

All of the five researchers who collected baseline data for this study assessed the anticipated impacts independently to ensure a balanced and comprehensive analysis and assessment of the impacts. Applying the principles of scenario simulation, the estimates of likely future impacts for the affected environment are based on existing empirical knowledge of the impacts of similar actions in the past (see Chapter 3 and Chapter 4). In this way, and acknowledging the opinions of key informants, a level of objectivity and consensus has been obtained in assessing the impacts.

The assessment of impacts was done according to a synthesis of the following assessment criteria:

Nature of the impact

This entailed a description of the type of effect the proposed development is expected to have on the affected environment, and *how* the environment will be affected.

Status of the impact

The status of the impact indicated whether the anticipated effect will be of a *positive* or *negative* nature, or whether it may contain elements of both. The impact may also be *neutral*.

Extent of the impact

In this assessment an indication is given of whether the impact is expected to be restricted to the *local* environment and its surroundings, or whether the impact will extend to the *regional* (or even national/ international) level.

Probability of the impact

This entails an appraisal of the likelihood of the impact actually occurring, and is indicated in the following way:

Low – the impact is expected to be very low either because of design or past experience (analogy).

Probable – there is a distinct possibility that the impact will occur.

Highly probable – it is most likely that the impact will occur.

Definite - the impact will occur regardless of any prevention measures.

Intensity of the impact

Here it is established whether the impact is destructive or benign by indicating it as:

Very low/Low – the impact will affect the environment in such a way that demographic and/ or socio-economic functions and processes are either not affected, or affected minimally.

Moderate – although the affected environment is expected to change, demographic, social and/ or economic functions and processes will continue, albeit in a modified way.

High/ Very high - the affected environment is expected to change in such a way that demographic, social and / or economic functions and processes will cease, either temporarily or permanently.

Duration of the impact

This entails an indication of whether the lifetime of the impact will be short, medium or long term, by applying the following criteria:

Short term – (0-5 years)

Medium term – (6-15 years)

Long term – more than 15 years

Most vulnerable group

This is an indication of which sectors or groups in the social environment will be most adversely affected by the impact, usually based on their current socio-

economic status and historical experience. This indication serves to inform a focussed approach in the mitigation measures and monitoring of the impact.

Significance of the impact

The significance of each impact was determined through a synthesis, or joint consideration, of the aspects produced in terms of its nature, extent, probability, intensity and duration. The significance is indicated as *low*, *moderate*, or *high*.

Potential to mitigate the impact

The potential to mitigate the impact is rated as *low*, *medium* or *high,* based, amongst others, on prevailing and expected conditions in the socio-economic environment, the biographic profile of the affected parties, and historical experience.

2.6 The development of mitigation measures

Appropriate mitigation measures for significant impacts were developed, based on the data gathered during the personal interviews, social survey, focus groups and scenario simulation (see Chapter 6). Suggested mitigation measures were further interactively explored, adjusted and refined during a **participatory workshop** with key-informant stakeholders.

2.7 The drafting of a social management and monitoring plan

A framework for the implementation of mitigation measures is reflected in the social monitoring and evaluation plan (see Chapter 7). As in the case of mitigation measures, the Plan too was the outcome of a consultative process that included an interactive workshop (paragraph 2.6) and inputs from key-informant interviews.

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CHAPTER 3

Socio-economic profile of the affected environment

3.1 Introduction

The purpose of this chapter is to provide a detailed description of the socio-economic environment of Koffiefontein and the surrounding areas in order to obtain baseline information against which anticipated impacts can be assessed. The data are based primarily on the IDP Review of 2003 and the 2001 census data. Koffiefontein comprises Wards 1 and 4 of the Letsemeng Local Municipality. The town is the administrative capital of the Letsemeng Municipality and comprises the residential areas Dithlake, Koffiefontein town and Diamanthoogte.

Paragraph 3.2 profiles the history of Koffiefontein, and particularly the history of mining activities in the town, while paragraph 3.3 provides an overview of the cultural and socio-economic context and dynamics of the town and broader region.

3.2 Brief history of mining at Koffiefontein

This section reflects on the history of mining at Koffiefontein, and briefly covers four distinct periods: The early history from 1870 to the late 1930s (World War II); the period from World War II until the mine closure of 1982; from the 1982 mine closure until the re-opening of the mine in 1987, and, the recent period from 1987 until 2004.

3.2.1 Early history

The first diamonds in the area were discovered in 1870 on a farm that would later become the town of Koffiefontein. There are two versions on how the town got its name. The first version is that transport riders used to stop at a fountain where

they made coffee to refresh themselves (Mathye, Botha & Brand 2003: 2). The second version states that the farm was first called “Koffiepit”, as a coffee bean had been found in the fountain (Kontrei, 2004a: 6). The name was later altered to Koffiefontein.

It is close to this fountain that a transport rider picked up the first diamond in 1870. Only in 1871, however, did the owner of the farm on which the diamond was found request that the farm be “declared a public diggings” area as he himself had already found 13 diamonds (McGill, 1991: 87). This did not, however, trigger the anticipated diamond rush. It was only after a certain Mr R Rörich bought the farm in the 1870s and advertised in 1878 the availability of 1700 claims in South African newspapers, that the diamond rush to the area commenced (Mathye, Botha & Brand, 2003: 2; McGill, 1991: 87). In conjunction with this, Rörich established the town, which later became to be known as Koffiefontein, by laying out 168 stands.

In 1880 the Koffiefontein kimberlite pipe was discovered and the farm was bought by the *London and Orange Free State Exploration Company*. This entailed the development of the town around the mining activities. Due to the low grade of the pipe, mining was initially only conducted on a small scale (Mathye, Botha & Brand, 2003: 3). In 1889 the farm was sold per public auction and “the area was proclaimed and new companies started up” (Diamond Fields Advertiser, 1987: 11). De Beers became the main mining company but gave up its mining rights in 1892. The land was then acquired by a Mr A Mosley, and the area became known as the Koffyfontein Mine Limited (Diamond Fields Advertiser, 1987b:11). In the same year (1892), Koffiefontein was officially recognised as a town and is thus the second oldest town in the Free State (Kontrei, 2004a: 6)[12]. The area was declared a town after a school and a shop

[12]. In 1888, an application to recognise the area as a town had been submitted, but this was approved only in 1892.

had already been established, and the area was declared a municipality in 1903 (Mathye, Botha & Brand, 2003: 2; *Die Volksblad*, 1983: 18).

De Beers again regained full control over the mine after 1 243 claims were ceded to the company in 1911, after which mining operations continued until the depression in 1932 (Diamond Fields Advertiser, 1987b: 11).

3.2.2 World War II to 1982

Koffiefontein was hard hit by the depression in the early 1930s and experienced high levels of unemployment due to the closure of the mine in 1932. The construction of the Kalkfontein Dam that commenced in 1935 was thus a welcome labour opportunity.

The dam is located 30km from Koffiefontein and construction lasted until the early 1940s. This development brought along irrigation opportunities, which entailed “great changes in farming” (McGill, 1991: 83). An area of 8000 ha of land was “brought under cultivation under the dam” of which 3000ha was in the Koffiefontein area (McGill, 1992: 84). Wheat, lucern, maize, vegetables, fruit and fodder were grown. The latter enabled farmers to produce milk and, in turn, enabled the opening of a cheese factory in 1950.

Despite the building of the Kalkfontein Dam, employment opportunities were still not sufficient and led to the town depopulating during the late 1930s. At the commencement of World War II, the town realised the opportunity to make the large number of mine-related facilities and infrastructure (at that time unutilised) available for military purposes. During 1940 the Union Defence Force took over the deserted mine hostels and used them as an internment camp and prisoner-of-war (POW) camp. Amongst the prisoners were about 800 “pro-Nazi” South Africans, such as the supporters of the *Ossewa Brandwag*, and 2000 Italians. One of the prisoners, John Vorster, later became a South African Prime Minister

(Southern African Places, 2003: 1; Moodie, 2004:1; Mathye, Botha & Brand, 2003: 2, McGill, 1991: 83). In this way "the town's financial problems were solved" as the military activities attracted both businesses and service providers to the town (McGill, 1991: 84).

Population changes during this period and during the depression in the 1970s demonstrate the influx and outflow of people from the area (Table 3.1). More specifically, these changes point to a large outflow of white people from Koffiefontein since 1936, while an inflow of black people occurred.

Table 3.1: Population changes at Koffiefontein 1936 and 1970

1936	**Whites**	**Coloureds**	**Blacks**
In Town	1261	286	974
In District	597	158	605
Total	1858	444	1579
1970	**Whites**	**Coloureds**	**Blacks**
In Town	701	600	2330
In District	296	1386	2529
Total	997	1986	4859

Source: McGill (1991).

During the period 1932 to 1950 the mine was not in use. De Beers resumed sampling operations in 1950. However, in 1953, De Beers withdrew again (Diamond Fields Advertiser, 1987b: 11). It was only in 1971 that the mine was fully operational again. The reason for this was to replace production from the exhausted Jagersfontein mine (Diamond Fields Advertiser, 1987a:1; Rapport, 1987: 5).

The hostel system for mine employees was phased out when a housing scheme was introduced in 1979. The reason for this was that in 1974, the De Beers policy determined that the company was to "do away with migrant labour" (McGill, 1991:

93). This improved the standards of living especially of the residents of Dithlake (Mathye, Botha & Brand 2003: 3).

The mining method until then had been an open cast operation, which during 1981 was converted to underground mining (Potgieter 1987: 11). The mine closed again in 1982 due to the depressed diamond market, and the mine was maintained on a "care-and-maintenance" basis (Diamond Fields Advertiser, 1987b: 11). Upon closure of the mine, 1 200 employees were retrenched (200 being white and 1 000 being black employees)[13]. The impact that this had on the town (as derived from newspaper articles of the time) was mixed, as will be pointed out below.

3.2.3 The 1982 mine closure

On the one hand, the impact of the 1982 Koffiefontein Mine closure caused great pessimism (Kotzee, 1982: 41). A week after the sudden mine closure of 2 June 1982, the prediction was that the town would lose half of its white population and also its black purchasing power on which many of the businesses depended. Table 3.2 depicts the "pre-" (1980) and "post-closure" (1985) situation with regard to the population size of Koffiefontein, and clearly illustrates the net impact of the predicted out-migration. Initial predictions and fears of a population outflow – and also an erosion of the purchasing power in town – thus seemed at first glance to be confirmed. Three years after closure, Koffiefontein had lost almost one-third of its pre-closure population of 1980.

[13] It should be borne in mind that the literature sources date from the period in which Apartheid was at its peak. The articles are thus racially segregating.

Table 3.2: Pre- and post closure population change at Koffiefontein: 1980 and 1985

Total population 1980	*1982 Mine Closure*	Total population 1985	Population change 1980-1985
6 046		4 247	-29.75%

Source: Statistics South Africa (Community profiles, 2004)

Fears of a large population loss at the time of closure entailed that at least half of the businesses would have to close, and that those which remained would have to downscale the numbers of their employees. This trend was also expected to affect the municipality. The town clerk predicted that service delivery would have to decrease due to the revenue loss of approximately R200 000 to R300 000 per year. Therefore, the municipality had to delay the implementation of projects that it had planned (Kotzee, 1982: 41). Yet, a month after closure, municipal officials stated that the purchasing power of the town – contrary to earlier predictions - had *not* yet decreased in any marked way. The reason for this was that the white population group did most of their shopping in Bloemfontein. Koffiefontein businesses were consequently more reliant on black purchasing power (Loetter, 1982: 17). At that point there was also no great out-migration of the black population groups, since De Beers allowed them to continue to live in their houses for free (excluding those workers who had migrated to Koffiefontein from the homelands and from neighbouring countries). This led to the men doing job-seeking elsewhere while leaving their families behind. The men, however, returned over weekends and spent their income at Koffiefontein (Loetter, 1982: 17). It was emphasised at the time, however, that it would take another two months before the real impact of the closure of the mine would be felt, as many of the black employees had found jobs elsewhere or had been transferred to Finsch Mine (Loetter, 1982: 11).

De Beers had developed extensive sporting facilities in the town, including a golf-course, a rugby stadium, tennis courts and squash courts. When the mine closed in 1982, these facilities became redundant; for example, of the 60 golf club members, only 6 remained, and of the cricket team only one member remained (Kotzee, 1982: 41).

On the other hand, accounts of the impact of the closure of the mine on Koffiefontein were also optimistic and positive. Due to the fact that the closure of the mine was purely for economic reasons, inhabitants believed that the mine had just been closed temporarily and that it would re-open in the foreseeable future (Potgieter, 1982: 2).

Those who remained at Koffiefontein aimed at promoting their town. Businessmen and the municipality met with regional development advisory boards, hoping to establish new businesses and industries. These included the development of a steel-manufacturing plant and a meat-processing plant (The Friend, 1982: 6). The sunk capital in the town provided the necessary infrastructure for the development of local industries.

One of the positive impacts of the mine's closure was that the De Beers water supply was now available to the municipality. Although the municipality's water and electricity sale had decreased after the closure of the mine, the municipality also had to purchase less. Additionally, the municipality received a large number of enquiries from people who were interested in moving to the town as a result of lower costs of living (The Friend, 1982: 6).

3.2.4 Reopening of the mine: 1987

The mine was reopened in 1987. The reason for this was "the strong recovery in the diamond market during 1986 and in particular the renewed demand for the larger and better qualities of rough diamonds" (Diamond Fields Advertiser,

1987a:1). At this time there were approximately 160 empty houses at Koffiefontein, approximately 700 whites (of whom 150 were attending school) and approximately 6 000 coloureds and blacks - most of whom were unemployed. Before the mine reopened only about 38 employees conducted the necessary mine maintenance. Approximately 1 100 people were re-employed by the mine when it opened, preference being given to the local population and those previously employed by the mine (Diamond Fields Advertiser, 1987a: 1). The re-opening of the mine saw an increase in the total population of Koffiefontein of more than 105% - from the pre-opening total of 4 247 (1985) to 8 722 in 1991 (Statistics South Africa: Community Profiles, 2004).

Currently, the Koffiefontein Mine is the largest operating diamond mine in the Free State. The hostel facilities, which were phased out in the late 1970s, are currently used by contractors and 16 mine employees from the neighbouring towns (Mathye, Botha & Brand, 2003:3). Recent indications are that the Koffiefontein Mine will have to prepare for closure between 2007 and 2012 due to all current underground resources being depleted, as well as a result of the impact of the Rand/ Dollar exchange rate.

3.3 Socio-economic context of the Koffiefontein environment

3.3.1 Population size and distribution

In 1996, the population of Koffiefontein was estimated to be 9 758 people. According to the 2001 Census, the population increased to 11 384 people. Growth occurred mainly at Dithlake (with an additional 1 526 inhabitants) and Diamanthoogte (with an additional 91 inhabitants) (IDP, 2003: 17).

The black population comprises 73% of the urban population, while coloureds (20%) comprise the second largest urban population group, followed by whites (7%). There is a very small Indian population in urban Koffiefontein, comprising

only 0.1%. Within the farming areas (farms and small-holdings) 40% of the rural population are black, while 41% are coloured, 19% are white and 0.2% are Asian or Indian (Statistics South Africa, 2001).

Of the households at Koffiefontein 72% (2851 of 3947) are male-headed, while 28% (1096 of 3947) are female-headed. Of the male-headed households 84% are located in the Koffiefontein urban area, while 16% of the male-headed households are on farms and small-holdings. Of the female-headed households 98% are located in the Koffiefontein urban area while only 2% are located in the farming area. The census data reveal that, of the male-headed households at Koffiefontein, 8% are above 65 years, while 19% of the female-headed households, however, are above 65 years. Of all Koffiefontein households 11% are headed by pensioners. There are no child-headed households at Koffiefontein (Statistics South Africa, 2001).

Profile of De Beers Koffiefontein Mine employees

At the time of compiling this report, Koffiefontein Mine employed a total permanent workforce of 499. Their ranks are supplemented by 38 contract workers and 10 supplier agencies (with a staff contingent of 240 whose employment is linked to the suppliers' mine contract), bringing the total staff contingent to 777.

A breakdown of the permanent workforce in terms of selected biographic indicators is depicted below (Table 3.3):

Table 3.3: Profile of permanent staff members of Koffiefontein Mine (N=499)

Biographic indicators	N	%
Gender		
Male	466	93.4
Female	33	6.6
Population group		
Black	329	66.0
Coloured	68	13.6
White	102	24.4
Age group		
40 years and younger	258	51.7
41-54 years	227	45.5
55 years and older	14	2.8
Marital status		
Married	371	74.3
Single	118	23.7
Divorced	10	2.0
Highest qualification		
Grade 7 or lower	155	31.1
Grade 8 or 9	66	13.2
Grade 10 or 11	106	21.2
Grade 12 or higher	172	34.5
Labour sending area[14]		
Koffiefontein	474	91.5
Jagersfontein	14	2.7
Kimberley	11	2.1
Transkei	4	0.8
Other[15]	15	2.9

[14] N= 518. The labour sending areas breakdown includes some of the fixed term contract employees.
[15] Botshabelo, Fauresmith, Lesotho, Namibia, Philippolis, Port Elizabeth, Postmasburg, Johannesburg, Pretoria, Stellenbosch, Witbank.

3.3.2 Education and Literacy

There are four schools in the Koffiefontein area. One school is located at Koffiefontein, two at Dithlake and one at Diamanthoogte. There are 2 617 learners in all these schools (Table 3.4).

Table 3.4: Profile of schools at Koffiefontein

School Name	Location	Number of learners	Learner/ Educator ratio
Koffiefontein High School	Koffiefontein	389	19.4
Koffiefontein Intermediate School	Diamanthoogte	1127	34.2
Lerethlabetse Primary School	Dithlake	706	28.2
Reikaeletse Ordinary School	Dithlake	395	26.3
Total	**-**	**2 617**	**-**

In comparison with the 2002 IDP, the numbers of learners and teachers have decreased. The 2003 IDP ascribes this to the fact that learners and teachers move to urban centres where there are better opportunities for professional people (IDP, 2003:20).

Of the urban population above 15 years of age 11% have not received any schooling. Similarly, 21% of the rural population of the same age category have not received any schooling.

Of the urban population above 15 years 21% have had some primary education, whereas 22% have had schooling up to Grade 10 and 15% have matriculated. Of the rural population, 31 % of the population above 15 years have some primary education, 13% have had schooling to Grade 10 and 14% have matriculated (Statistics South Africa, 2001).

A small percentage of the urban population (only 2%) have had tertiary education while 5% of the rural population have received tertiary education. The members of this group occupy professional jobs and are employed as police officers, nurses, government administrators and teachers (Mathye, Botha & Brand, 2003: 4).

De Beers plays a supporting role in the promotion of education and literacy in the town. For example, the mine has sponsored the Koffiefontein Community Centre where computer training is provided to mine employees and members of the community (Mathye, Botha & Brand, 2003: 4). The Centre has 20 computers and a training facilitator (remunerated by De Beers) at its disposal. Furthermore, the mine also provides an ABET centre which provides adult literacy to the community and employees.

The former mine hostel buildings currently accommodate mine contractors and 16 mine employees from neighbouring towns. Part of the infrastructure is used by the Department of Health to service Koffiefontein and neighbouring towns. Negotiations are underway with the Department of Education to upgrade the remainder of the facility into an Education Resource Centre (Mathye, Botha & Brand, 2003: 4).

Although English is the “business language” in the Letsemeng Municipality, Afrikaans is spoken by the majority of the population at Koffiefontein, and also at Dithlake Township (Mathye, Botha & Brand, 2003: 4). Xhosa and Southern Sotho are spoken to a lesser degree.

3.3.3 Housing

Of the community (in urban and rural areas) 83% live in houses or brick structures on a separate yard or stand, 2% dwell in traditional huts and 13% live in informal dwellings (Statistics South Africa, 2001).

Despite the incorporation of the Koffiefontein mining village into the municipal area, there is a shortage of housing at Dithlake and Diamanthoogte. The housing shortage at Dithlake has increased from 600 houses to 1050 from 2002 to 2003. In 2002, Diamanthoogte did not experience any housing shortage, whereas in 2003 a housing shortage of 50 houses was recorded (IDP, 2003: 16). These data are reflected in the existence of informal settlements in Chris Hani Park (Mathye, Botha & Brand, 2003: 3). Koffiefontein Mine at present owns and maintains 254 houses at Koffiefontein.

3.3.4 Water supply and sanitation

The Kalkfontein Dam supplies the mine and the Koffiefontein area with water through a canal system. The municipality is working on upgrading the water purification system in order to provide for anticipated and future water demand (Mathye, Botha & Brand, 2003: 4). The 2003 IDP states that the tender for the purification works had already been awarded, despite the fact that the project had not been budgeted for (IDP, 2003: 25).

Of the Koffiefontein households (rural and urban) 42% have piped water inside their dwellings, while 48% have piped water inside their yard. Whereas 5% of the households have access to a community tap within 200m of their dwelling, for 2% of the community taps are located further away than 200m (Statistics South Africa, 2001).

Most of the sewerage at Koffiefontein is of the water-borne kind. According to the 2001 census, 96% of the Koffiefontein urban community has access to water-borne flush toilets, 0.3% use septic tanks, 0.3% use pit- or bucket latrines and 4% have no sanitation facilities (Statistics South Africa, 2001). According to the 2003 IDP, however, 850 cases are reported where the bucket system is used, which accounts to 22% of the total number of (urban and rural) households (IDP, 2003: 26). According to Mathye, Botha & Brand, (2003: 4) “the mine sewers are

linked to the municipal sewerage reticulation system". This, in addition to the high percentage of flush sanitation in the town, has overburdened the sewerage system, therefore the municipality is in the process of upgrading the sewage treatment plant. The informal settlements in Chris Hani Park are worst off, as in most cases they do not have the necessary sanitation, water supply and electricity infrastructure. Inhabitants thus use pit latrines (Mathye, Botha & Brand, 2003: 4).

In the rural areas, 21% of the community have access to water-borne flush toilets, 6% to septic tanks, 35% use pit- or bucket latrines and 37% have no access to sanitation facilities (Statistics South Africa, 2001).

3.3.5 Health and welfare

The Ethembeni Primary Health Care Clinic at Dithlake and a mobile clinic servicing 163 service points once a month, provide the formal health care services in the area. The Ethembeni clinic is a one-stop clinic providing primary health care, rehabilitation, dental, occupational and emergency services. The clinic consists of a medical doctor, five professional nurses, a physiotherapist, a pharmacist and support staff (Mathye, Botha & Brand, 2003: 4). De Beers (*via* De Beers Fund) has entered into a partnership with the Free State Department of Health and donated R1.3 million towards the extension of Ethembeni clinic, which includes a 6-8 bed step-down facility, office space and a guard house.

The Jagersfontein hospital, which is the nearest hospital, is 70 kilometres from Koffiefontein. It is equipped with 42 beds, theatre services and a mortuary. These facilities are operated by government, and services are reportedly of a low standard (Mathye, Botha & Brand, 2003: 4). Apart from formal health structures, traditional healers appear to be commonly consulted in the area.

Limited HIV/Aids data are available for Koffiefontein, as this specific health district (DC16) has not in the past been included in the annual antenatal surveys of the Department of Health, due to a low frequency of antenatal visits. Yet, overall HIV/Aids prevalence in the Free State is high. In 2002 the Department of Health estimated that 28.75% pregnant women attending antenatal clinics of the public health services in the Free State Province were infected with HIV. A 2001 HIV-prevalence survey amongst Koffiefontein Mine contractors and permanent employees revealed a total prevalence rate of 12.5%: 20% among contractors and 9.5% among permanent staff members (pc: Modise, 18/6/04)[16]. De Beers is also responsible for the De Beers Anti-Retroviral Treatment (DART) Programme that provides anti-retroviral treatment to its HIV/Aids-infected employees and their partners. This service is provided from the mine clinic as well as the Ethembeni clinic. At the time of compiling this report, 20 individuals (11 employees and 9 spouses) were enrolled on the programme, at a cost of R3 000 per month per couple to the company. Current company policy is that De Beers will continue assisting these employees in future, even if they are no longer in service (pc: Modise, 18/6/04).

Mathye, Botha & Brand, (2003: 5) state that during their field visits they found that the number of natural deaths had significantly increased in Dithlake and Diamanthoogte areas, in such a dramatic way that people were buried in large numbers every weekend. This probably points to an increase of HIV/Aids in the area. It is believed that prevailing social conditions of high levels of alcoholism, unemployment and poverty are breeding grounds for the spread of the virus, similar to what is happening elsewhere in the province and in the country (pc: Modise, 18/6/04). Nevertheless, data from the 2003 IDP revealed that there were only 20 Aids infections and six Aids-related deaths at Koffiefontein in 2002 (IDP, 2003: 22).

[16] Personal communication (interview) with Ms. Cynthia Modise, acting ER Superintendent, Koffiefontein Mine.

1.5% of the members of the Koffiefontein community (urban and rural) are physically disabled, while 2% are disabled in terms of sight and 1.4% in terms of hearing (Statistics South Africa, 2001). This contributes to a relatively large proportion of residents that depend on government grants for their survival, a trend that has reportedly increased since December 2002 when a total of 188 employees of Koffiefontein Mine were discharged (pc: Tladi, 11/6/04)[17].

3.3.6 Cultural and Social profile

According to Mathye, Botha & Brand (2003: 5), the two major religions practised in the Koffiefontein are Christianity and traditional African beliefs, although a combination of the two is common. The major Christian denominations are represented by the Zion Christian Church, the Apostolic Faith Mission, the Catholic, the Dutch Reformed, the Lutheran, and the Methodist Church.

Sporting, recreational and entertainment facilities are well developed in the town. Most of the facilities are owned and managed by the mine (either via the agent or directly by the mine) (Mathye, Botha & Brand, 2003: 5). These include bowls, golf, soccer, squash, basketball, tennis, swimming, horse riding and a gymnasium. The local municipality has a very limited involvement and is responsible mainly for the maintenance of the cultural and heritage sites.

Sports, recreation and entertainment facilities are limited to the Koffiefontein central town area and are not available in the township. Mathye, Botha & Brand (2003: 5) noted during their fieldwork that football is the only established sporting activity, and that *shebeens* provide another means of recreation for both elderly and young people at Dithlake and Diamanthoogte. As a result, alcohol abuse and substance abuse are rife at Koffiefontein. Based on anecdotal evidence, Mathye, Botha & Brand (2003:5) report that “between 70 - 80 percent of people over the age of 15 years drink liquor excessively”. An increase in alcoholism and family

[17] Personal communication (interview) with Mr. Thomas Tladi, District Manager, Department of Social Development (Free State).

violence has also been noted after voluntary severance packages were offered to mine employees in December 2002 and December 2003 (pc: Tladi, 11/6/04).

Koffiefontein Mine has been instrumental in various **social and economic projects** in the community. For example, over the past few years De Beers has made total capital investments to the value of more than R12 million in the community. A breakdown of social and economic projects that Koffiefontein Mine has funded (or initiated funds to via De Beers Fund) is depicted below.

Table 3.5: Koffiefontein Mine's involvement in social projects (Pre 2002-2003)

Project	Funding amount (R)
1. Oranje-Riet/Koffiefontein Pipeline	3 000 000-00
2. Land donation to Letsemeng Municipality	25 000-00
3. Sewerage works	2 500 000-00
4. Municipal incorporation – Mine Villages	1 500 000-00
5. Community Centre Computer facility	40 000-00
6. Koffiefontein Intermediary School	3 500 000-00
7. Extensions to Ethembeni Clinic	1 300 000-00
8. Letsemeng Youth Care Centre	128 000-00
9. Firefighting in the community	35 000-00
10. Koffiefontein Brick Factory	Planning phase
11. Xhariep Education Resource Centre	Planning phase
Total value of project funding	**12 028 000-00**

Apart from the above, Koffiefontein Mine in 2003 made donations to a total value of more than R20 000 to various corporate beneficiaries. A breakdown of these donations appears in Table 3.6 below.

Table 3.6: Koffiefontein Mine's corporate donations (2003)

Activity/ Beneficiary	Value of donation (R)
1. Pipe work on Masiakhane pig project	480-00
2. Marquee tent for Ethembeni HIV/AIDS support group	2 000-00
3. Gifts for Diamanthoogte School	1 000-00
4. Upgrade electricity supply to the nursery school (Department of Social Development)	2 500-00
5. Scaffolding for St. Mark's Anglican Church	450-00
6. T-shirts for Department of Education	3 340-00
7. Computer donated to Lerethlabetse Primary School	1 500-00
8. Paint for Jagersfontein Publicity Office	2 940-00
9. Educational toys for Lerethlabetse Primary School	2 000-00
10. Marquee tent for Department of Health	2 150-00
11. Beds for sick bay at Ipetleng Seconday School (Petrusburg)	2 300-00
Total value of donations	**20 660-00**

3.3.7 Livelihood Activities

According to 2001 Census, 25 % of the population at Koffiefontein are not economically active, while a further 16% consider themselves to be unemployed. Only 20 % of the economically active population are employed.

Of the 3 943 households at Koffiefontein (including the rural areas), 13% earn no income and 53% of households earn up to R1 600 per month, while 25% earn up to R6 400 per month and 9% above this amount (Statistics South Africa, 2001). Of the male-headed households 42 % are paid employees, while only 7% of the female-headed households are paid employees. Of male-headed households 2.4% are self-employed, while only 0.2% of female-headed households are self-employed. (Statistics South Africa, 2001).

Migrant labour does not play a large role at Koffiefontein. According to the 2001 census data, only 0.2% of the population at Koffiefontein are migrants from SADC countries (Statistics South Africa, 2001). The members of the Koffiefontein community are economically active in the following areas (Table 3.7):

Table 3.7: Percentage of population active in different economic activities

Activity	Percentage male	Percentage female	Percentage male and female
Agriculture, hunting; forestry and fishing	14	1	8
Mining and quarrying	19	2	10
Manufacturing	1	0	1
Electricity; gas and water supply	0	0	0
Construction	2	0	1
Wholesale and retail trade	3	3	3
Transport; storage and communication	1	0	1
Financial, insurance, real estate and business services	2	1	2
Community, social and personal services	5	4	4
Other and not adequately defined	0	0	0
Private Households	1	9	5
Undetermined	3	2	2
Not applicable	47	77	62
Total	**100**	**100**	**100**

Source: Statistics South Africa 2001

Despite the fact that the mine and supporting businesses employ a large number of the local population, the area is still characterised by poverty. In 2001 the poverty line was R1 140 per household income. Census data indicate that 57% of the Koffiefontein population are below the poverty line. Compared to the

Xhariep District Municipal figure of 71%, Koffiefontein residents are better off than the general population in Xhariep.

Social grants (R740 old-age pension and R170 child grant per month) are thus an important contribution to household income and have become an increasingly important means of survival at Koffiefontein. It has also been reported that, as a result of poverty and/ or poor financial discipline, some members of the community are trying to manipulate the system in order to qualify for some kind of government grant, including disability grants (pc: Tladi, 11/6/04).

Rising unemployment levels due to limited new job opportunities have resulted in a dramatic rise in poverty levels with implications for people's health (particularly for vulnerable groups like the elderly and children) and mental well-being (specifically for family heads who are tasked by society to ensure the survival of their families) (Mathye, Botha & Brand, 2003: 5). This trend brings into effect an increase in social ills such as increases in local crime rates. These include violent crimes (although not highly organised) and social conflict such as child abuse, female abuse and family violence and breakdown (Mathye, Botha & Brand, 2003: 5; pc: Tladi, 11/6/04).).

Despite the downscaling of the mine, formal employment opportunities in the Koffiefontein area are still largely limited to the mine, mine-related business, retail, the local municipal council and other aspects of the civil service (Mathye, Botha & Brand, 2003: 6).

In terms of **agricultural activities**, the main economic activity in this area is sheep farming. The Kalkfontein Dam - located 30 km from the town and fed by the Riet River - irrigates 7 000 ha of land on which mainly lucern, seed, potatoes and groundnuts are grown. (Southern Africa Places, 2003: 1). Only a small proportion of the population is employed in the agricultural sector. Drought has

hampered agricultural production in the area and has led to a decline in agricultural activities (Mathye, Botha & Brand, 2003: 5).

Koffiefontein owns the largest area of municipal commonage in Letsemeng Municipality consisting of 4 539 ha divided into 26 camps. It is unclear whether this land is made available to emergent farmers or whether it is leased out to commercial farmers (IDP, 2003: 14).

Of the four projects in Letsemeng that are supported by the Department of Land Affairs, two are located at Koffiefontein: the Naledi Project and the Rorchshoop Project. The former has ten (10) beneficiaries and the latter eight (8). According to the IDP the Naledi Project is still operational, but there is no information regarding the operational status of the Rorchshoop Project.

There are also several projects that are supported by the Department of Agriculture at Koffiefontein. The Naledi, Berg van Hoop, Vukani Ma-Afrika, Ebenezer, and Sisokola Sonke projects are all operational and focus on crop (maize) production (IDP, 2003: 24).

In 1997, the Department of Agriculture promoted the development of ostrich farming in the area in order to address the large-scale unemployment in the Southern Free State (Nieman, 1997: 13). It is not clear, however, whether the project ever materialised.

Land use at Koffiefontein reflects the types of economic activities in the town. In 29 cases land is used for business purposes, in two cases for light industrial purposes (pottery and engineering works), and in one case for heavy industrial purposes. In six cases land is used for sports and recreational purposes, in four cases for cemeteries and in one case as a solid waste dumping site. In one case land is used for mining purposes and in one case it is used for a non-functioning railway system (IDP, 2003: 13).

Small and micro enterprises in the area include general dealer stores, *shebeens*, barbers, spaza shops, brick making and beer brewing. According to Mathye, Botha & Brand (2003: 5) there are more than 30 *shebeens* and liquor stores at Koffiefontein, making liquor highly accessible to the community.

The Department of Social Development has provided poverty funds and seed money to several projects at Koffiefontein. It is unclear, however, whether these projects are still operational:

- Reaiteka Sewing Club: 1997/1998
- Reaiteka Sewing Project: 1998/1999
- Furniture Making Project: 1998/1999
- Iketsetseng Food Garden: 1998/1999
- Leather Works: 1998/1999
- Leather Sandals Making Project: 1998/1999
- Ikgomotseng Handcraft Sewing: 2000/2001
- Relebohile Poultry Project: 1999/2000

3.3.8 Tourism

Tourism in Koffiefontein and surrounding areas is still very underdeveloped, although several initiatives are currently revolving around some of the existing attractions in the area. Current and future tourist attractions include the following:

- The Water Festival which takes place in March
- Historical buildings
- World War II monuments
- Victoria Emmanuel Mussolini Italian crafts
- Open mine
- Guest houses (IDP, 2003: 15)

Other attractions and ongoing projects include:

- The Koffiepot Fountain. The kettle serves as a reminder to visitors and inhabitants of the town that travellers (with their ox-wagons) used to fill up their water reserves at the fountain, as Koffiefontein was between Klaarwater (Griquatown) and surroundings. In 1878, when the erven of the town were determined, a long stretch of the old ox-wagon road was established as the main entrance to the town on which the Koffiepot fountain can be found (Kontrei, 2004a: 6).
- Look-out post onto the De Beers mine
- Sir Herbert Baker-buildings in town
- De Beers game farm
- Etienne Le Roux, a famous South African author, is buried outside the town on the farm *Ja-Nee* (currently owned by Mr Freddie Schreuder).
- There is an open-air museum at the entrance to the town.
- The pre-1970 mine hostels that were used as POW camps have murals painted by the Italian prisoners. After the war, the mine decided to demolish the wall on which the paintings were to be seen. The mine manager decided to preserve the paintings and moved the wall to a safe place. The paintings were restored in 2003 by a local painter (Kontrei, 2004a: 6).
- San rock art around the town. The art can be seen in the old library building next to the city hall. Only a few of the original art pieces remain, because with the rebuilding of the offices in 1973, they were all discarded, except those too heavy to move (Kontrei, 2004a: 6).
- Kalkfontein Dam
- A planned tourism route in the Southern Free State. A donation from the provincial Department of Environmental Affairs and Tourism's poverty alleviation programme enabled the announcement of the route in 2001. The Department was responsible for financing the establishing, development and marketing of the route. The route – known as the *Horizon Route* - will cover a distance of 250km and include the towns of

Philippolis, Jagersfontein, Fauresmith, Koffiefontein and Jacobsdal. Once established, it will cater for local and international tourists and is intended for organised tours as well as individual travellers. It aims to be a community project that will include contributions from schools, churches, community organisations, government departments, the business sector and De Beers (Smith, 2001: 2). At the time of compiling this report (July-September 2004) the route has *not* been established, although a Route Forum of 24 members has been appointed, and the non-profit organisation, *Open Africa*, became involved in a leading capacity. The next proposed date for the route to be launched is October 2004. Future opportunities that will emerge from the route include the training of tour guides, the development of alternative accommodation in traditional black townships, cleaning projects in towns and special weekends for, amongst others, fishing, hunting or mountain biking (Kontrei, 2004b:1).

- Fossilised deposits of human remains and animals from the Middle Stone Age or Late Stone Age. The remains are relatively undisturbed and thus of great value to anthropologists (National Geographic, 1999:1).
- National Heritage buildings
- Monument for the Koffiefontein inhabitants who died in World War I. Their names are displayed on a memorial plaque. The monument was established in 1922 with voluntary assistance (Kontrei, 2004a: 6).
- Oppermansgronde: The Evangelic Lutheran church building, the old school building, the bell tower and the graves of Frederick and Adam Opperman have been declared national heritage sites[18].

[18] Frederick Opperman was a slave who escaped from the Cape Colony in 1825 and settled close to Koffiefontein in 1860. He and his son, Adam, bought several farms in the area which came to be known as Oppermansgronde. In 1867, Adam came to an agreement with the Berlin Mission Association to use the farms for missionary work. The church building was handed over to the Mission Association (Rucheons, 1994: 3).

Table 3.8: Summary of comparative socio-economic data (2001)

Data category and indicators	Koffiefontein	Xhariep
Demographic		
Population 2001	11 384	135 245
Black urban population	73%	77%
Coloured urban population	20%	15%
White urban population	7%	8%
Indian/Asian urban population	0.1%	0.1%
Black rural population	40%	69%
Coloured rural population	41%	18%
White rural population	19%	13%
Indian/Asian rural population	0.2%	0.03%
Male-headed households above 65	8%	10%
Female-headed households above 65	19%	23%
Migrants from other SADC countries	0.2%	0.3%
Housing		
Population living in houses or brick structures on a separate yard or stand (urban and rural)	83%	80%
Population living in traditional huts (urban and rural)	2%	4%
Population living in Informal dwellings (urban and rural)	13%	16%
Literacy		
Urban population above 15 years who have not received any schooling	11%	18%
Rural population above 15 years who have not received any schooling.	21 %	24%
Urban population above 15 years with some primary education	21%	23%
Urban population above 15 years who have had schooling up to Grade 10	22%	28%
Urban population above 15 years who have matriculated.	15%	12%
Urban population above 15 years with tertiary education	2%	3%
Rural population above 15 years with some primary education	31%	36%

Literacy (Continued)	Koffiefontein	Xhariep
Rural population above 15 years with schooling up to Grade 10	13%	15%
Rural population above 15 years who have matriculated.	14%	9%
Rural population above 15 years with tertiary education	5%	5%
Health		
Teenage pregnancy rate (2003)	6.9%	6.5%
Lower respiratory infection under 5 years (new) workload (2003)	1.1%	9.1%
Increase/ Decrease in new Asthmatic treatments (2002-2003)	-16.7%	45.4%
Proportion male urethritis syndrome of STI (2003)	22.2%	29.7%
Water and Sanitation		
Percentage of households (urban and rural) that have piped water in dwelling	42%	25.3%
Percentage of households that have piped water inside their yard	48%	58.2%
Percentage of households have access to a community tap within 200m of their dwelling	5%	9.2%
Percentage of community for whom taps are located further away than 200	2%	7.3%
Sanitation: Urban: water borne flush toilets	96%	95.8%
Sanitation: Urban: septic tanks	0.3%	0.6%
Sanitation: Urban: pit- or bucket latrines	0.3%	2.9%
Sanitation: Urban: no sanitation facilities	4%	0.7%
Sanitation: Rural: water borne flush toilets	21%	43.7%
Sanitation: Rural: septic tanks	6%	18.5%
Sanitation: Rural: pit- or bucket latrines	35%	26.3%
Sanitation: Rural: no sanitation facilities	37%	11.5%
Households		
Total percentage of households headed by pensioners	11%	15%
Percentage of households that are male-headed	72%	64%
Percentage of households that are female-headed	28%	36%
Percentage of male-headed households located in Koffiefontein urban area	84%	60%

Households (continued)	Koffiefontein	Xhariep
Percentage of male-headed households located on farms and small-holdings	16%	40%
Percentage of female-headed households located in the Koffiefontein urban area	98%	90%
Percentage of female-headed households located in the farming area	2%	10%
Percentage of male-headed households that are paid employees	42 %	54%
Percentage of female-headed households that are paid employees	7%	25%
Percentage of self-employed male-headed households	2.4%	6%
Percentage of self-employed female-headed households	2%	1%
Economy		
Percentage of population not economically active	25%	38%
Percentage of inhabitants who consider themselves to be unemployed	16%	20%
Percentage of economically active population who are employed	20%	37%
Percentage of households that earn no income	13%	16%
Percentage of households that earn up to R1 600 a month	53%	60%
Percentage of households that earn up to R6 400 a month	25%	17%
Percentage of households that earn above R6 400 a month	9%	7%
Percentage of population active in agriculture, hunting; forestry and fishing	8%	15%
Percentage of population active in mining and quarrying	10%	1%
Percentage of population active in manufacturing	1%	1%
Percentage of population active in construction	1%	1%
Percentage of population active in wholesale and retail trade	3%	3%
Percentage of population active in transport; storage and communication	1%	1%
Percentage of population active in financial, insurance, real estate and business services	2%	1%
Percentage of population active in community, social and personal services	4%	5%
Percentage of population active in private households	5%	7%

Economy (continued)	Koffiefontein	Xhariep
Undetermined	2%	2%
Not applicable	62%	63%
Percentage of people earning below R1 200 a month (with R1 140/month considered to be below the poverty line)	57%	71%

Sources: Department of Health, Free State (2004); Statistics South Africa (Census 2001)

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CHAPTER 4

Mine downscaling: an overview of resultant socio-economic impacts and mitigation strategies

The purpose of this chapter is to provide background information on the socio-economic dynamics usually associated with the downscaling of mining operations. The profile established in this chapter informed the methodology of scenario simulation, and enabled the consultants to project probable impacts for the Koffiefontein environment realistically, based on other similar developments elsewhere in the world and in South Africa.

4.1 Introduction

Mine closure is a phenomenon that has affected both the developed and the developing world. With the Industrial Revolution, coal mining became one of the main economic activities in the western world. In the 1960s however, resources depletion, poor scale-economies, increasing labour costs and conflict, price fluctuations, the use of alternative fuel sources, (and) the increasing significance of importing cheaper coal from Third World producers led to the decrease of mining with a job loss of over a million in the western world between 1955 and 1968 (Nel, Hill, Aitchison & Buthelezi, 2003: 370).

Not only the coal mining industry, but also other mining industries were affected by this trend. With the decline of mining in the western world, it dramatically increased in developing countries with a surge in mining investments in the 1960s, 1970s and 1980s (World Bank, 2002: 3). Many of these mines are now approaching the end of their feasible existence. The World Bank predicts that a minimum of 25 large mines in developing countries are to close within the next ten years, which will have large-scale impacts on the local and national economies of affected countries (World Bank, 2002: 5).

Since the mid-1800's South Africa has been primarily dependent on mineral and energy production and export. With the fall of the gold price, increased mechanisation, and the exhaustion of mineral resources in certain areas, the mining industry has experienced a decline in the number of operating mines. For example, in the coal mining sector, "the number of operating coal mines… has declined by more than half, from 112 in 1986, to 53 at the end of 2000" (Limpitlaw, 2004: 1). This has had severe impacts on the socio-economic fabric of areas reliant on the mining industry. Towns that depend on mining as a mono-industry are hit the hardest as, upon closure of the mine, the towns' economic bases are erased (Laurence, 2002: 28).

Strongman (2000: 13) captures the impact of mine closure in the following:

> "Mine closure is often traumatic for local communities—especially in remote areas if local government is weak, labor productivity and non-mining income are low and labor mobility minimal".

The socio-economic impact of mine closure also extends over town boundaries and the ripple effect affects mining-related industries, the municipal area and even neighbouring countries from which mine-workers migrated (Nel *et al*, 2003: 369). Generally, one can say that the higher the dependency on the mining sector the higher the social impact once the mine closes (Kuyek & Coumans, 2003: 4).

The effects of mine closure are exacerbated by the fact that mining communities have several social characteristics that are unique to mono-industries. Although these characteristics are not generalisable, it is nevertheless necessary to consider certain degrees of prevalence of these characteristics within mining communities.

Firstly, mining communities may not be strongly cohesive. There may be strong social cleavages between mine workers and non-mine workers within the community. There may also be strong divisions between the mine workers' union and the company (Neil & Tykkylainen, 1992: 21). As a general point it should be borne in mind that communities are not homogeneous. They are based on class, status and power differences according to occupation, income and wealth, and ethnic background. Thus there are within any community fundamental and deeply held differences concerning objectives and priorities in relation to economic structure, social organisation and the role of government (Section II, 1992: 166). Secondly, due to the high level of dependency on the mine, there may be a lack of both entrepreneurial tradition and experience in a mining town. Thirdly, due to the support provided by a mine and the relative prosperity of mining towns, local government bodies might be less pro-active in community development than where mines are not present. Fourthly, community members who are most able to mobilise community action and support local development, are also those who are most likely to leave the town once a mine closes (Neil & Tykkylainen, 1992: 21).

Identifying the impacts of mine closure on the affected community is essential to determining mitigation strategies. Several kinds of social and economic impacts are identified in the relevant literature and are set out below. These have been grouped under the following headings:

- Economic impacts
- Migration
- Impact on service provision and assets
- Social impacts
- Demographic impact
- Impact on government structures
- Positive impacts

Most of the impacts of mine closure are negative and are listed in the first six sections. The final section deals with potential positive impacts that might arise from mine closure. This is followed by an analysis of mitigation strategies that can be employed to lessen the impact of the closure. They have been grouped under the following headings:

- Community consultation and Community-based planning
- Economic diversification and local economic development
- Diversification of employees' skills and retraining schemes
- Provision of support
- Gradual downscaling
- Utilisation of natural resources
- Infrastructure
- Creation of safety nets for the most vulnerable population groups
- Specific mitigation possibilities
- Thinking positively

4.2 Impacts of mine closure

4.2.1 Economic impacts

Job loss and business sustainability

The most direct impact that mine closure has on the community is the loss of jobs. Lack of employment is "one of the most serious and long-lasting consequences of mine closure, even five or more years after the downsizing of the local mining workforce" (Haney & Shkaratan, 2003:ii). Additionally, a large proportion of mine workers' skills are specialised to mining operations, which renders re-employment in other sectors difficult (Harichunder, 2000: 6).

Employment problems under mine closure are characterised by two facts: The *quantity* and the *quality* of the jobs available dramatically decreases. The quality of jobs decreases because long-term, stable jobs providing adequate wages are scarce (Haney & Shkaratan, 2003: ii). The examples of Russia, the Ukraine and Romania demonstrate that chronic under- and unemployment lead to the general decline of living standards as well as the reversion to the informal, less secure economic sector, which is characterised by lower wages and less social and legal security. This situation places vulnerable groups in jeopardy, as they are least able to protect themselves (Haney & Shkaratan, 2003: 17).

Job loss not only affects mine employees but also mine supporting industries. An example is in Kwa-Zulu Natal where the closure of coal mines has had a devastating impact on the secondary industries that produced iron and steel in Newcastle, and glass and cables industries in Dundee (Nel *et al*, 2003: 375).

Indirect impacts on local business should also be considered. The example of Virginia demonstrates that businesses in general suffer from mine downscaling to such an extent that they are rendered unsustainable (Seidman, 1993). Industries that provide services to mine workers and their dependants (such as taxi transport) would collapse completely (Thompson, 2003: 14). Taxis, hawkers, spaza shops and small and micro-enterprises are negatively affected by mine closure, the reason being that the loss of a fixed income and out-migration entails the consumer base being eradicated and the purchasing power of the community decreased (Seidman, 1993: 17; Sowetan, 1991: 4).

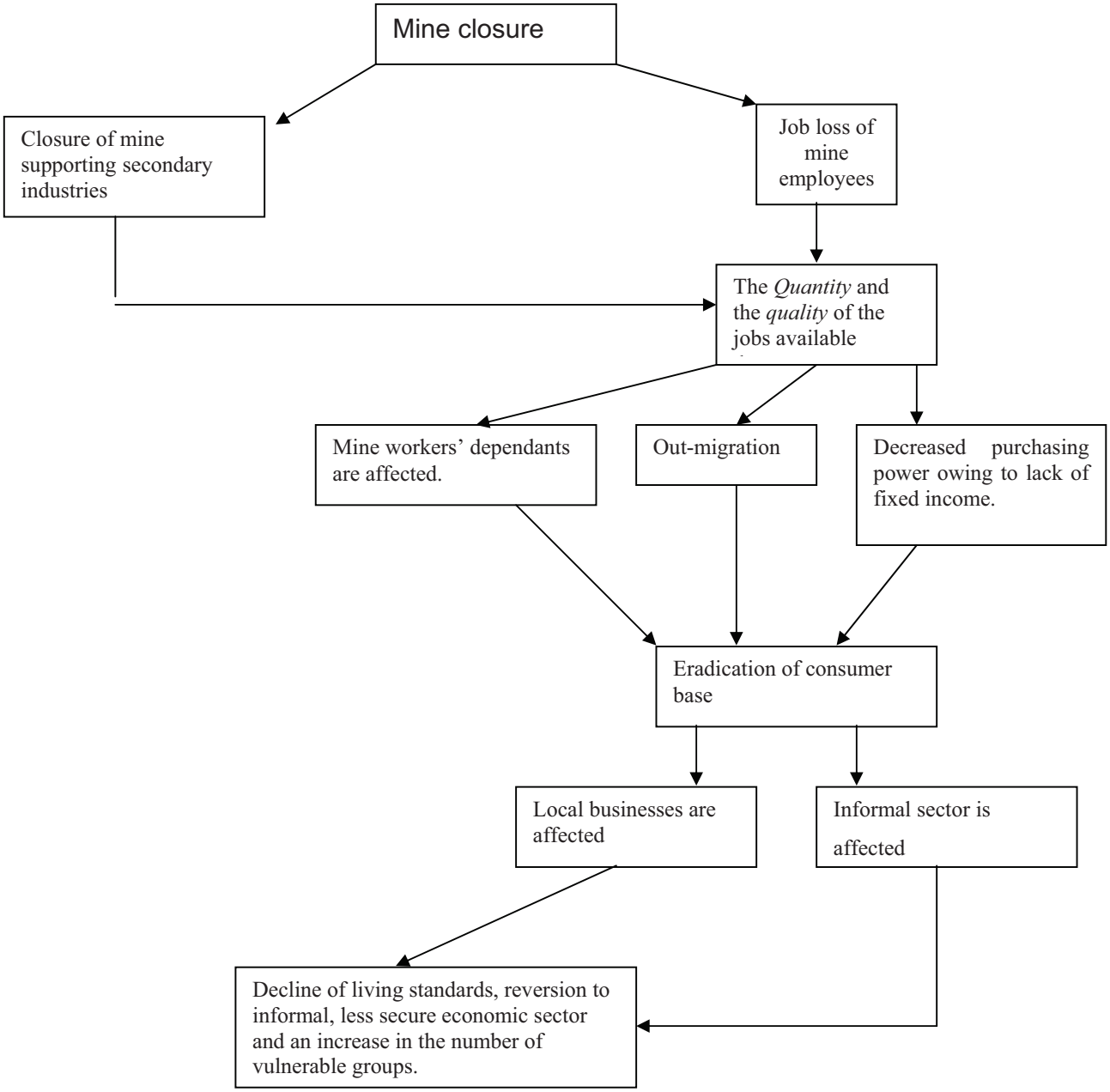
The informal sector also suffers: with the closure of a mine, the more senior and skilled mine staff leave, which implies the loss of jobs for domestic workers. Furthermore, a high level of unemployment in the region at the time of closure results in diminished opportunities for retrenched workers to find alternative employment due to a lack of skills (Laurence, 2002: 28; Seidman, 1993: 26). In addition to this, the dependants of mine workers would also be affected as “every

job on the mines accounts for the livelihood of at least 10" (Linscott, 1998: 8). Jacobson (1999: 13) affirms this figure for Lesotho mine workers.

Only the business sector, not being reliant on the mine or the local consumer base is able to survive mine closure. The example of Virgina demonstrates that an international plastics exporting company that does not rely on the town for its sales, remains sustainable after mine downscaling (Seidman, 1993: 20). It should also be borne in mind that real estate values could also fall in towns that are totally reliant on mines and where large-scale out-migration takes place (Laurence, 2002: 27).

Diagram 4.1 below demonstrates the impacts that mine closure has on job losses and business sustainability. However, the causal relationships set out below are based on the opinion of the author.

Diagram 4.1: The effect of mine closure on jobs and businesses



Wage dependency

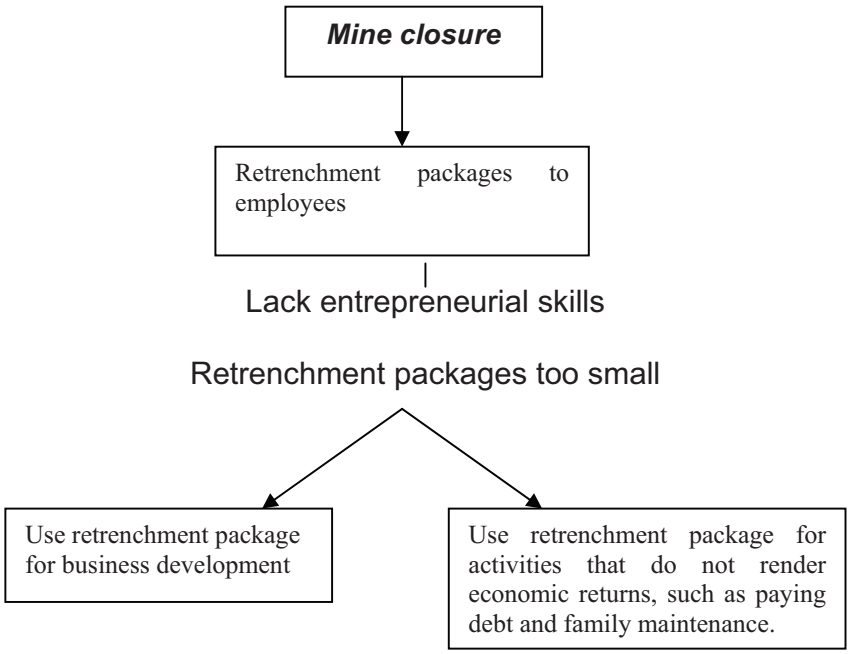
One of the major pitfalls of the mining industry is that communities become dependent on the mine for wages and service provision. A community might, for example, have practised agricultural production before the mine opened. With the introduction of wages, communities commence to buy their foods as this is more convenient, which reduces the community's ability to sustain itself post-mine closure. Additionally, with the downscaling of businesses in the area, commodities might become more expensive and less attainable (Strongman, 2000: 26).

Utilisation of retrenchment packages

Research conducted in the Virginia Goldfields demonstrated that some mine workers were able to utilise their retrenchment packages for business development such as opening tuck shops in the informal settlement and starting taxi businesses. Others, however, struggled to utilise their retrenchment packages to generate an income as they lacked entrepreneurial skills or their retrenchment packages were too small. The research showed that mine workers received no advice on what to do with their retrenchment funds and most of them spent it on "fixing houses, ...paying debts, or on family maintenance" (Seidman, 1993: 25; 28).

The diagram below illustrates how retrenched mine workers either use their retrenchment packages as business start-up capital or spend it on activities that yield no economic return.

Diagram 4.2: Impact of retrenchment packages on the community



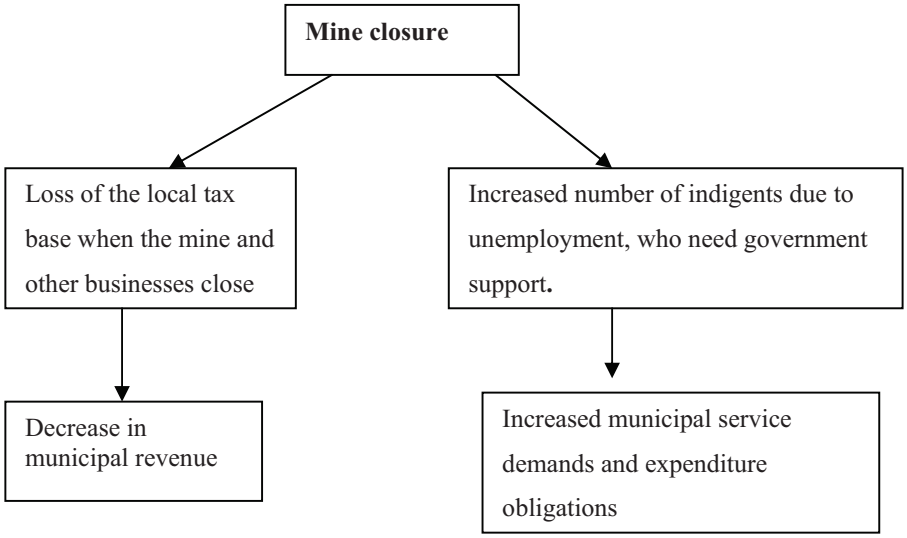
4.2.2 Impact on government structures

Impact on local government

Mine closure implies that municipalities suffer from a dual blow. On the one hand, local government would be severely hit by the loss of the local tax base when the mine and other businesses close (Nel *et al*, 2003: 376). On the other, the sudden unemployment of large parts of the community could lead to a dramatic increase in the number of indigents who need local government support. The case of the Ermelo mine closure, for example, demonstrates that employees who are unemployed are not able to pay for water and electricity (Sadler, 1997b: 11). This implies a dual impact on local government: Not only would the income and revenue base of the municipality decrease, but simultaneously, the service demands and expenditure obligations on the municipality would increase (Strongman, 2000: 14; Haney & Shkaratan, 2003: iii).

Diagram 4.3 below demonstrates the dual impact that mine closure would have on local government.

Diagram 4.3: Impact of mine closure on local government



In addition to the above, the downsizing of communities is very difficult as various systems and facilities would have to be modified to accommodate the reduced number of inhabitants. For example, water and sanitation systems would have to be modified to serve only a pre-selected area. Similarly, schools might have to be consolidated into smaller units. Provincial support is essential in the successful completion of these tasks. (Wolfe, 1992: 197).

Impact on Provincial Government

The potential impact of mine closure on provincial government should not be overlooked. Jackson (2002: 33) demonstrates that in Papua New Guinea, mining revenue flows into provincial budgets. Similar to the local government case, this could result in a double impact on provincial government: on the one hand, it may lose income generated through the mine, and, on the other, it has to invest in the area affected by mine closure. As municipalities face the double blow of having to maintain infrastructure and having to deal with the increased number of indigents, while also simultaneously losing large parts of their revenue, provincial assistance becomes imperative (Wolfe, 1992: 197).

4.2.3 Migration

Impact on migrant workers

With the externalisation of the labour force through the Apartheid migrant strategy, a large number of mine workers were recruited from neighbouring countries and the former homelands (Seidman, 1993: 29; Tromp & Muller, 2001: 26). The impact of the retrenchment of mine labourers on countries like Lesotho, from where a large number of miners had been recruited for the Free State Goldfields, is severe. According to Seidman (1993), the management structures of the Harmony goldmine in Virginia estimated that in 1992, "workers' remittances made up some 9% of Lesotho's GNP" (Seidman, 1993: 16). The remittances subsidised agricultural practices by mine-worker's families who had stayed behind in Lesotho. Without these funds, successful agricultural production is not possible. In this country, unemployment figures are exacerbated by mine retrenchments with ex-mine workers returning to their homes and joining the 70% (in 1998) urban unemployed (Hoeane, 1998: 18). It is to be expected that Mozambique is also affected by mine closure as, in 1999, it was estimated that approximately 70 000 Mozambican nationals worked in South African gold mines and contributed approximately R304 million to the Mozambican economy (Tempelhoff, 1999: 2).

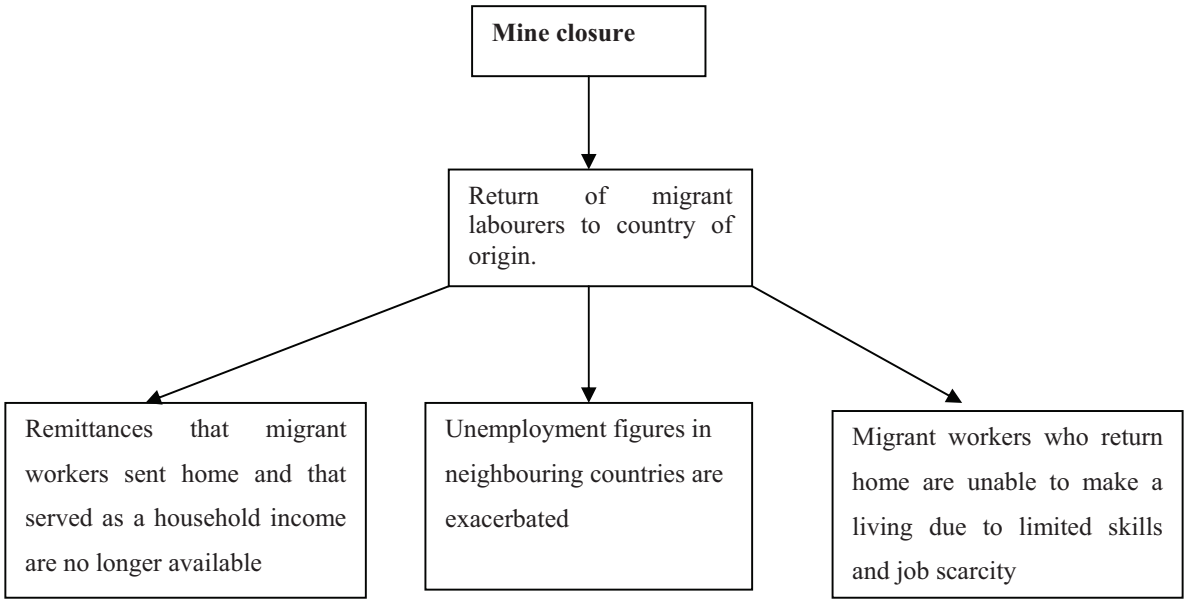
The impact that mine closure has on neighbouring countries is as devastating as within South Africa. Mine workers who return to their countries of origin are unable to make a living due to limited skills and job scarcity. Jacobson has this to say: "[t]he system of migrant labour left women in charge of the villages. Now they're filled with unemployed and demoralised men" (Jacobson, 1999: 13).

Migrant workers are further disadvantaged as they do not receive the unemployment insurance payments that are available to South African residents

(Seidman, 1993: 28). This raises the question of how migrant workers are affected by and included in the post-closure plans.

The diagram below shows the impact that mine closure has on migrant labourers, migration patterns and affected neighbouring countries.

Diagram 4.4: Impact of mine closure on migration patterns



Out-migration from the affected area

Out-migration of ex-mine workers from affected areas has two impacts on the local economy. Firstly, it acts as a response to the lack of employment (or employment acceptable to the migrating individual) and secondly, it relieves the pressure on the local labour market for non-migrants (Haney & Shkaratan, 2003: 22).

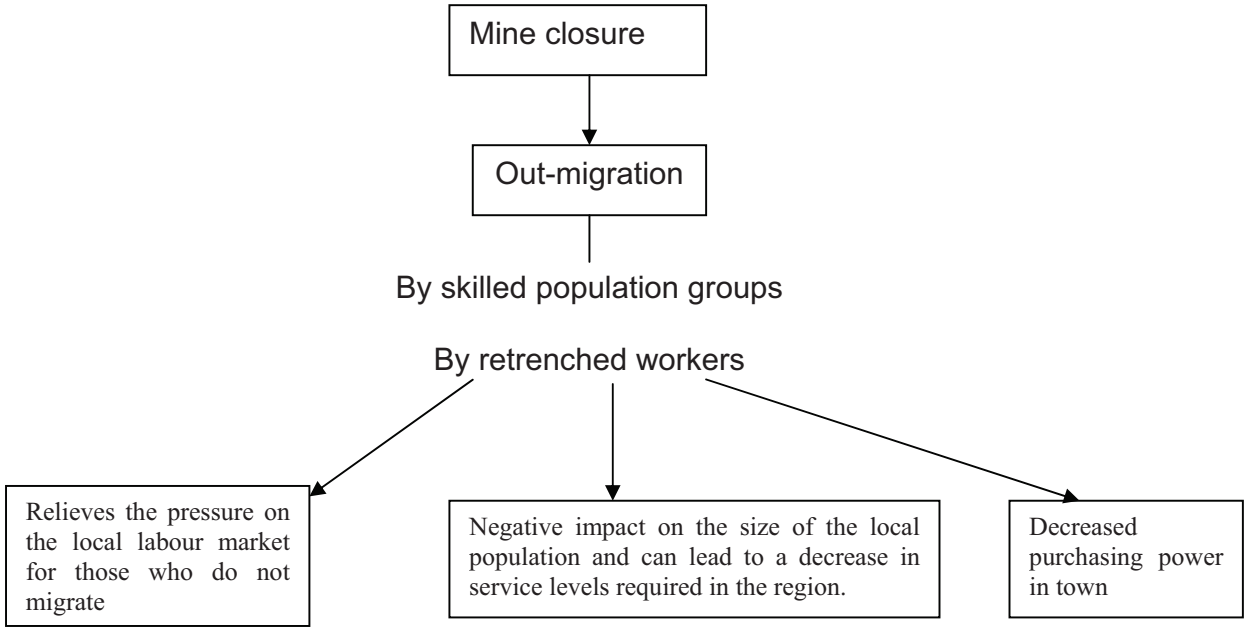
The example of Papua New Guinea (Jackson, 2002: 22) demonstrates, on the one hand, that due to the geographical isolation of mining sites and the lack of cash income possibilities, it is likely that many retrenched workers will leave the area. This would impact negatively on the size of the local population and lead to

a decrease in service levels required in the region. On the other hand, it is likely that many workers will remain in the mining area, due to the fact that the mining area will still provide better opportunities than their hometowns. The reason for this is that, although the mining site might be abandoned, it will still offer better infrastructure provision (e.g. schools and clinics maintained by the local authorities) than the rural areas where the workers migrated from (Jackson, 2002: 22).

South African case studies have shown that out-migration from the affected area usually occurs amongst the skilled population groups (Nel *et al*, 2003: 375). Seidman's study (1993) in the Free State Goldfields demonstrates that, despite the fact that less skilled residents from the informal settlement and township area realised that the town would offer them very limited job opportunities once the mine closed, most of them preferred to remain in the town in contrast to moving elsewhere. This implies that the skilled workforce might leave the affected area, while the less skilled/unskilled workforce *might* remain behind.

The diagram below demonstrates the causal relationship between mine closure and out-migration and the impacts that this has on the local community.

Diagram 4.5: Out-migration of population groups from areas affected by mine closure



4.2.4 Impact on service provision and assets

Breakdown of infrastructure

Mines provide a whole array of infrastructure including buildings and roads. In most communities they also provide clinics and subsidise or develop schools and community sport facilities. The example of Ghana shows that with the closure of a mine, communities continue to utilise mine-related infrastructure. However, due to lack of maintenance, these facilities, such as the provision of potable water, could eventually break down (Acquah & Boateng, 2000: 27). Local government would then have to take over the operation and maintenance of these facilities to ensure adequate service standards.

There are two kinds of mine infrastructure: physical and non-physical (Jackson, 2002: 22-24). Physical infrastructure includes the following:

- *Physical buildings on the mine, houses for mine workers and recreational facilities*. These buildings could be used for business, LED or tourism purposes.
- *Power generating equipment*. This would become redundant after the closure of the mine since it is unlikely to be useful to the community. In one town in Papua New Guinea, however, locals are hoping to take over the power generating equipment to sell power to the national energy grid.
- *Roads*. These are a major post-closure infrastructural problem due to the high costs of road maintenance.
- *Clinics, schools, etc*. Staff shortages, under-funded medical provision and infrastructure maintenance are challenges that local government would have to face once mines have closed. Examples in the Ukraine, Russia and Romania have demonstrated, that, although the health infrastructure is still utilised, it is in the process of falling apart (Haney & Shkaratan, 2003: 29).
- *Other infrastructure* that was built by private individuals such as banks, private stores, offices and houses. Closure of the mine could lead, as mentioned above, to the eventual closure of these businesses and will greatly impede the development of any possible alternative form of cash economy.
- Infrastructure that was built by the mine *for government purposes* such as government offices or police stations. This infrastructure would have to be maintained by local government and remain, in most cases, useful assets.

Non- physical infrastructure includes the following:

- *Social organisations* such as women's groups, sports federations, religious groups. These groups are likely to collapse after mine closure, depending on their reliance on the mine for organisation and funding.

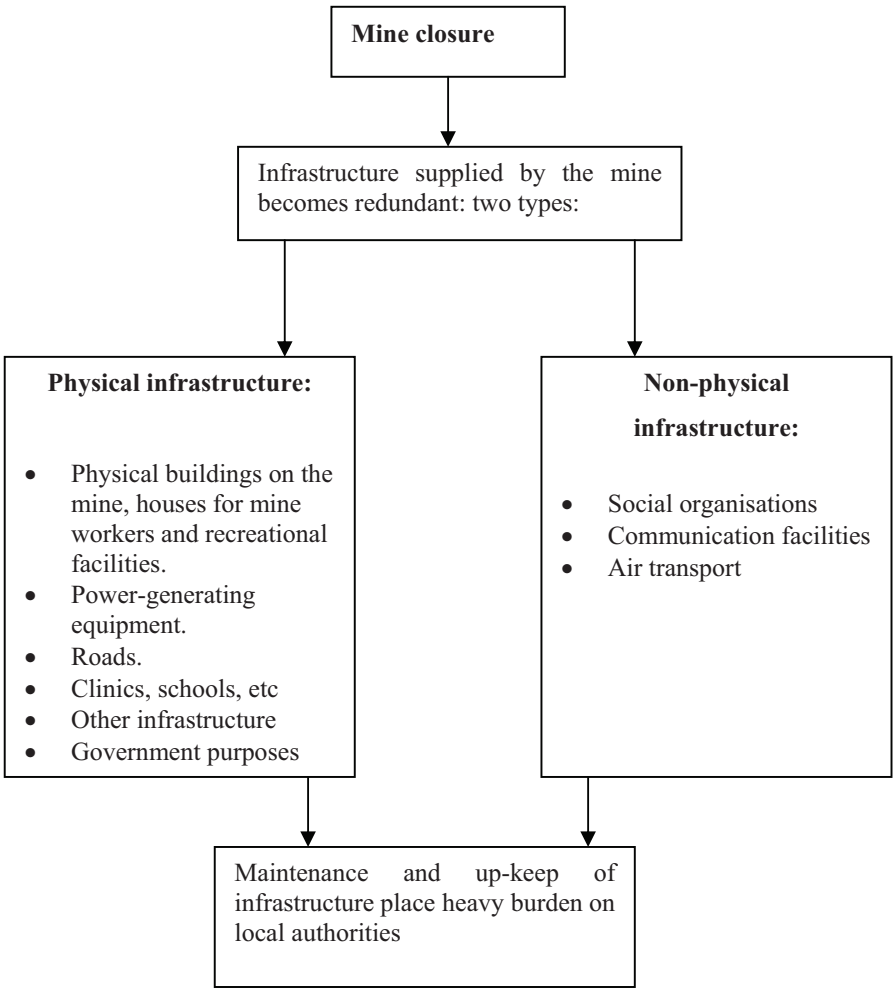
- *Communication facilities*, which Jackson regards as one of the most important assets left behind by mines since post-closure programmes, whether commercial or social, could benefit greatly from their maintenance for tourism and other developmental activities.
- *Air transport*. These facilities would become redundant after the closure of a mine due to their cost and the probable lack of commercial possibilities in the areas.

Research conducted by the World Bank demonstrates that simply handing over mining infrastructure to local government rarely brings about desired results since local government is often not geared towards maintaining the assets (World Bank 2002: 11).

The simplest case of infrastructure take-over is where local government is strong and where infrastructure left behind by the mine is minimal. Similarly, the most complex case of infrastructure take-over is where local government is weak and where infrastructure left behind is extensive (Jackson, 2002: 25). In contrast, communities might welcome extensive infrastructure more than minimal infrastructure as they might feel that they benefit for their own development purposes from the mine leaving behind extensive infrastructure (Jackson, 2002: 25).

Diagram 4.6 reflects the implications mine closure has on infrastructure maintenance and on local authorities.

Diagram 4.6: Mine infrastructure: redundancy and take-over by local authorities



4.2.5 Social impacts

Psychological impacts and increase of social ills

Direct psychological impact on mine workers

Mine closure can have a severe psychological impact on mine workers and their dependants. These include loss of sense of belonging, apathy and demotivation, leading to social ills, such as escalation of crime rates, alcoholism and other substance abuse (Laurence, 2002: 27; Haney & Shkaratan, 2003: 30). The loss of employment and the uncertainty about finding alternative sources of income can be highly demoralising to ex-mine workers: “They find themselves having to restart a career at the age of 40 and facing the prospect of losing their pensions and packages” (Thompson, 2003: 14).

Psychological impacts of mine closure on communities start before the mine even closes. The knowledge that their income base will be erased can lead to low morale amongst mine workers. This might lead to more accidents within the mine (Laurence, 2002: 36). Nygren and Karlsson (1992) found that communities have been proven to be in denial about mine closure. Mining communities denied the fact that the main employment generator would be closing down. The authors also show that such communities often strongly believed that government and the mining company would come to an arrangement that will solve all problems.

The way that the individual reacts to the trauma determines the coping measures that the individual will adopt. Nygren and Karlsson (1992) identify three patters of reaction to mine closure based on Swedish examples. The first is passivity. Here the individual does not react at all to the closure of the mine and falls back on government provided social grants. This sentiment is strongly associated with denial. The second reaction pattern is that an individual is active in an adequate way, which means that an individual “strives to reach maximum utility through efficient consumption or resource utilisation” (Nygren & Karlsson, 1992: 111).

The individual tries to maximise his or her income by seeking alternative employment and by changing consumption patterns. The third kind of reaction is that an individual is "active in an inadequate way". This occurs when an individual's consumption needs, which were previously satisfied with the income generated from mine work, are no longer met. These consumption needs can be transformed into substance abuse and alternative income-generating practices such as prostitution.

These different kinds of reactions to job loss have to be addressed differently and be provided with different kinds of external support (for example, from government). For example, if individuals react primarily passively to mine closure, a strategy will have to be employed that promotes pro-active behaviour such as through job-searching programmes. Support systems for mine employees should thus be developed to consider the three types of reaction and should provide adequate alternatives.

Limpitlaw (2004: 7) provides a South African example by illustrating the psychological impacts of mine closure on a mining community in Witbank. The mine had provided the community with "[f]ood security, security of tenure, employment and a vision of a secure future". Despite the fact that the mine had tried to reduce mine dependency amongst the community by informing it early about closure, "the community was despondent and disillusioned" which "was expressed in the form of alcohol abuse, crime, vandalism and theft" (Limpitlaw, 2004: 7).

Indirect psychological impact on the community

Community cohesion is also jeopardised by mine closure. Haney and Shkaratan (2003) identify two types of social consequences of mine closure. The first is "the loss or destruction of 'community space', including the various forms of infrastructure linking the individual/family to the community, social networks and family relations" (Haney and Shkaratan, 2003: 31). Deterioration of infrastructure

such as roads and telephone systems leads to an increased sense of isolation of communities. They develop a sense of being cut off from the external world, not only due to deterioration of infrastructure but also because of the lack of employment opportunities and other social structures (such as sports activities, clubs, etc.) that used to exist when the mine was functional (Haney & Shkaratan, 2003: 31).

This development is met with a general atmosphere of a lack of community cohesion and a lack of a shared sense of identity or a worthwhile future (Haney & Shkaratan, 2003: 31). The community is desperately trying to make a living and in the process neglects social ties with family and friends. The Russian, Ukrainian and Romanian examples demonstrate that due to this and due to the increased competition for limited resources, there is a growing sense of antagonism within affected communities.

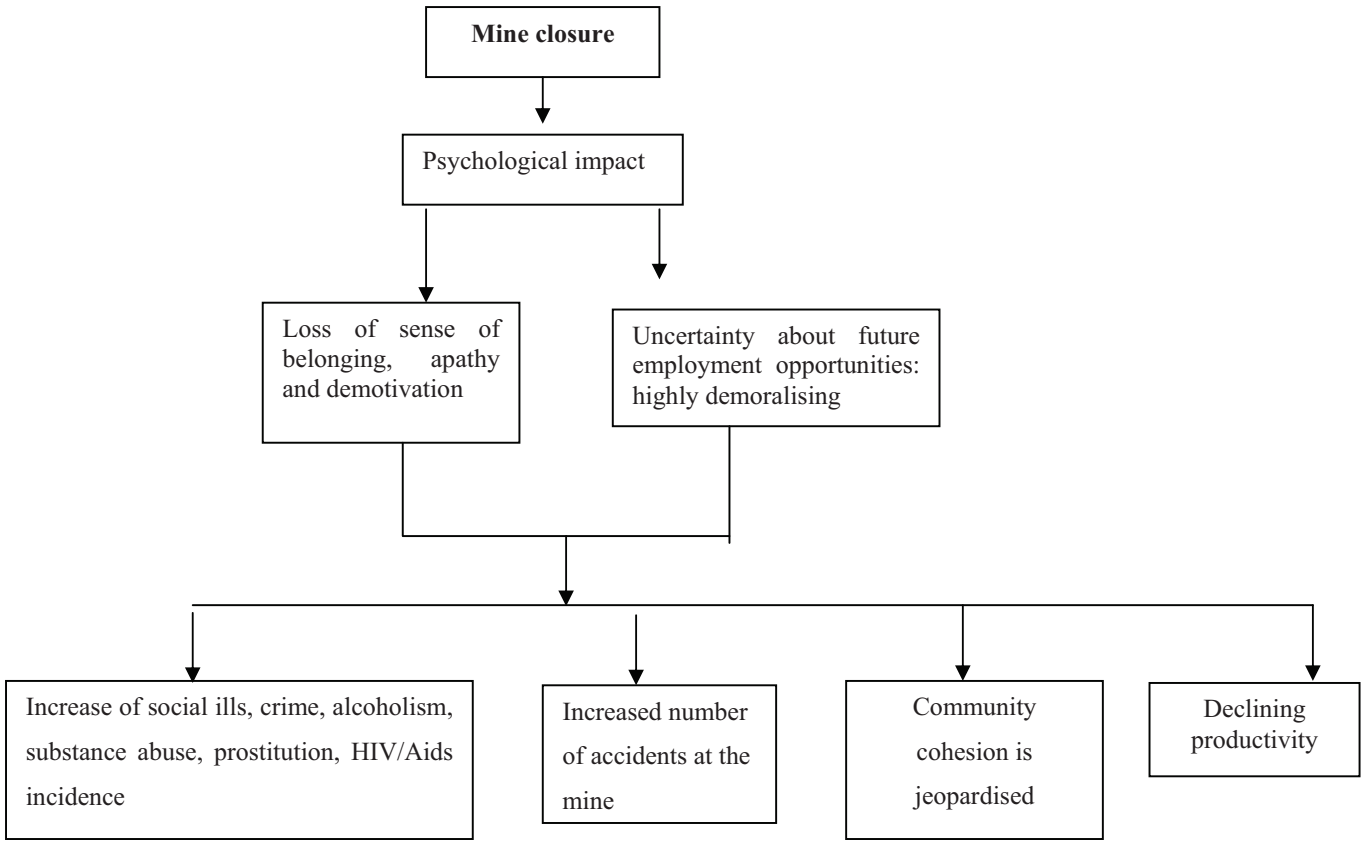
The second type of social consequence of mine closure is the loss of social status, which has implications at a micro level: firstly in economic terms of how individuals react to the labour market conditions they face, and secondly in social terms of how individuals relate to their society (Haney & Shkaratan, 2003: 31). Within their community, certain members may have enjoyed high social status due to their employment in the mine. The loss of employment and the consequent loss of this status can have a highly negative impact on the psychological make-up of the workers, resulting in a loss of self-identity.

The loss of social networks and the impact of such loss on the psychological make-up of a community are also addressed by Neil and Tykkylainen (1992). They state that with mine closure and the out-migration of large parts of the community, the social networks that served as a mutually supporting function for individuals, is reduced or erased. In essence, the social capital in an affected community is substantially reduced. In the case of the closure of the East Rand Proprietary Mines in South Africa, a team of psychologists was employed by the

labour union to help mine workers to deal with the trauma of losing their jobs (Tempelhoff, 1999: 2).

The diagram below, demonstrates the impact that mine closure has on the psychological make-up of mine workers.

Diagram 4.7: Psychological impact of mine closure



Assisting the most vulnerable groups

The least skilled miners and their families, as well as the most vulnerable groups, such as children, female-headed households and the elderly, are hit the hardest by mine closure (Seidman, 1993: 14; Neil & Tykkylainen, 1992: 13). Women are highly vulnerable and should receive special consideration during mine

downscaling and post-closure. Special provisions should be made to address the special needs of vulnerable groups.

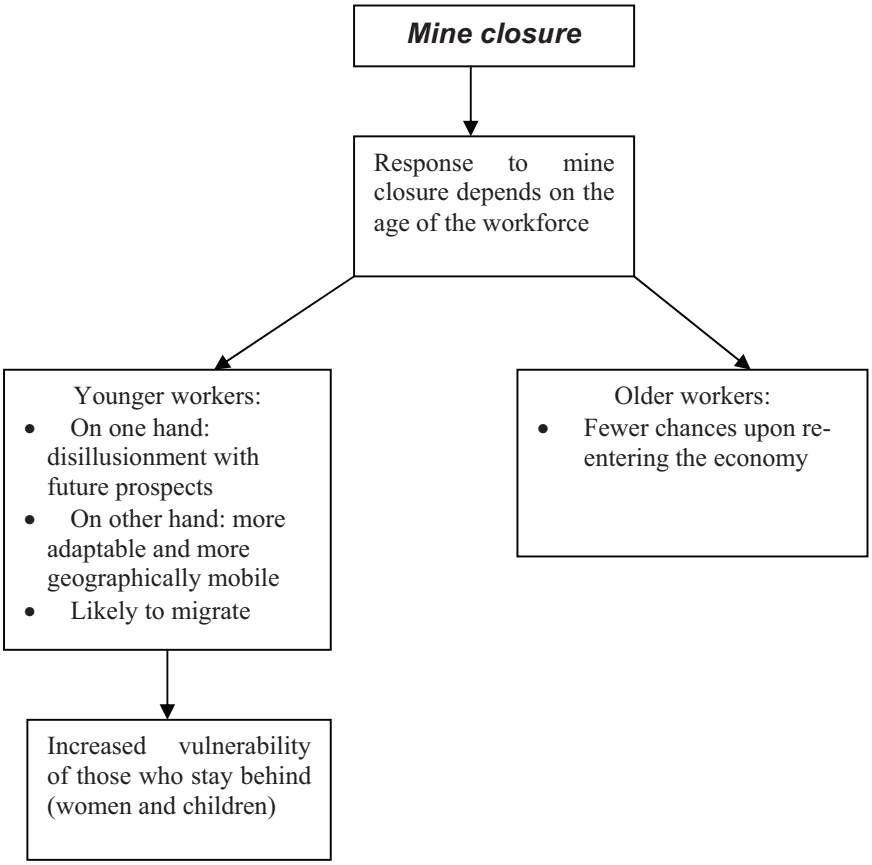
Health and social impacts

The resulting poverty and unemployment of mine-closure can have further severe socio-economic impacts on communities resulting in homelessness, prostitution, spread of HIV/Aids and tuberculosis (Harichunder, 2000: 6). Examples in KZN have shown that mine closure in specific areas has led to the dramatic increase of poverty, to such an extent that malnutrition-related deaths have been recorded in these areas and that food aid has been distributed amongst the communities (Harichunder, 2003: 16; Ryan, 2003: 25).

4.2.6 Demographic impacts

The age of the workforce has an important impact on how the community accepts and deals with the mine closure. A younger workforce is more adaptable to new training possibilities and is geographically more mobile. An older workforce has fewer chances upon re-entering the economy (Laurence, 2002: 28). Young males are more likely to migrate away from the town, which entails a demographic gender imbalance in the area. This renders the women who stay behind more vulnerable. In addition, the long-term unemployment and lack of economic prospects can lead to significantly changed perceptions of future employment and life prospects among young people (Haney & Shkaratan, 2003: 17; 30).

Diagram 4.8: Demographic impact



4.2.7 Positive impacts

Although it remains difficult to determine the positive impacts of mine closure on which, in many cases, a town's whole economy is reliant, there are some positive aspects. Firstly, municipalities are forced to live up to their mandate of developmental local government and they become more proactive in the development of the town (Nel *et al*, 2003: 377). Secondly, the community is forced to think and act entrepreneurially and to establish their own SMMEs.

Neil and Tykkylainen (1992:13) emphasise that mine workers and mine town residents should not be seen as victims of their environment. They state that individuals are highly adaptable to changing conditions and that they develop, maintain, and utilise the resources available to them to respond to the conditions

of everyday life. According to Laurence (2002: 28), in those cases where communities have been exposed to previous mine closure in the area, they may be more resilient and/or optimistic about the future.

Rise of small-scale mining

The rise of small-scale mining could be considered a positive impact of mine closure. In most cases of mine closure residual mineral resources are left behind. This creates an incentive, in some cases, for small-scale miners to exploit them. These mining practices, although creating employment opportunities, can be dangerous and environmentally damaging. Furthermore, these practices are difficult to monitor (MMSDa, 2002: 64).

4.3 Mitigation strategies

Initially, when determining appropriate mitigation strategies, is it important to establish whether there are any secondary industries or economic mainstays in the affected environment that residents are able to rely on before the mine closes (Nel *et al*, 2003: 377). Examples such as agricultural production, tourism or mine-independent industries are important when considering mitigation strategies and alternative economic focal points.

Liljenas (in Nel *et al,* 2003) identifies four stages of local response to mine closure. Firstly, the community attempts to preserve existing economic life, which is followed by the second stage of economic diversification through finding and expanding existing alternative local jobs. The third stage is the development of new economic activities such as SMME development, tourism, etc. Once this stage is complete, the affected town moves to high-technological sectors. However, it remains questionable whether a rural town which depends on the mono-industry of mining will be able to bring about these changes.

The South African National Social Plan strategy sets out steps prescribed by government to be taken to mitigate the impacts of mine closure:

1. Job loss avoidance
2. Retrenchment management
3. Development of regional and local economies (Cronje, 2000: 2).

Mitigation strategies to address these issues are discussed below.

4.3.1 Community consultation and community-based planning

The Mining, Minerals and Sustainable Development project (MMSD) states that "[a]dvance planning and close cooperation by the company with local authorities, communities and NGOs is a key to successful mine closure and achievement of post mine closure stability." (MMSD, 2002a: 44). The World Bank supports this by stating that early community consultation can have an important impact on the outcomes of the mine closure, leading to higher efficiencies and better management. Furthermore, consultation provides the means to bridge the gap between corporate and community expectations, as well as between company knowledge and community experience (World Bank, 2002: 7-8).

Community participation through the closure process is essential to the development of workable mitigation strategies. Papua New Guinea is a case in point. There, the mining company facing closure, employed a local agency to, through community participation, develop village plans that were based on the community's desires and within reasonable budgetary frameworks (Jackson, 2002: 34).

Limpitlaw (2004: 6) emphasises that although community involvement is crucial, community expectations should not be raised to unrealistic levels and that any excessive community focus on compensation must be carefully managed.

4.3.2 Economic diversification and local economic development

One mitigation strategy that has to be employed early in the mine closure process, is that communities have to be assisted by government and the mining company in realising that they need to reduce their dependency on the mine (World Bank, 2002: 14).

Economic diversification is the key element towards developing successful mitigation strategies in affected areas. Keyes (1992) identifies two kinds of economic diversification: vertical and horizontal diversification. Vertical diversification means the broadening of the economic base through the expansion of mining-related activities such as processing, transportation and mining other commodities. This form of diversification perpetuates the dependency of a community on the mining sector and the mining related sector.

The second kind of economic diversification, horizontal diversification, aims at creating activities in an entirely different economic sector (for example, manufacturing, forestry). This kind of diversification is the appropriate mitigation strategy in that it lessens a community's dependency on the mining sector.

In the event of mine closure, the local economy would have to absorb a large number of unemployed people. The economic environment should therefore be reshaped to such an extent as to enable it to accommodate the unemployed (Cronje, 2000: 5). Local Economic Development (LED) and identification of economic projects in local Integrated Development Plans (IDPs) aim at promoting horizontal diversification in order to lessen mine dependency.

Nel *et al* (2003: 377) identify three LED mitigation strategies pursued by the municipality and the community of Dundee in KZN, which correspond with broad international experience. Although it is not prescribed that these responses occur in all cases where economic crises occur, they provide possible local economic development responses to mine closure. The first is that local government would

try to draw in new large-scale investment by international firms. Secondly, local interest groups and the municipality pursue LED strategies in an attempt to address the unemployment and poverty levels of a region. This approach consists of an active attempt by the local community and the municipality to address local economic development co-operatively. The community of Utrecht in KZN, for example, developed a comprehensive LED action plan that enjoys the buy-in of the municipality, the local community and the business sector. Strategies employed include, amongst others, plans for the provision of land for urban farming activities and promotion of the production of local arts and crafts by township residents. Tourism initiatives are discussed in more detail below. A third strategy is that the community starts spontaneous and independent LED initiatives based on self-initiated projects.

Research conducted internationally has shown that only a very few LED initiatives really prosper. It should also be borne mind that LED initiatives might not create sufficient jobs immediately, but that in the long term the impact that these initiatives could have on the economy is significant (Nel *et al*, 2003: 376).

Local development initiatives can take several years before their positive impact becomes visible. Local economic development strategies such as economic diversification, SMME development, credit provision to entrepreneurs, business development assistance, training and skills development programmes only have an effect over a long period of time. The reason for this is the difference between the sudden large-scale job loss and the capacity of response systems to react to this phenomenon (Haney & Shkaratan, 2003: 18).

A further point in this regard is the limited household purchasing power that characterises households in areas affected by mine closure. Limited purchasing power constrains the development of effective small businesses.

Additional factors mentioned by Seidman (1993) and Nel *et al*, (2003) for small businesses to be successful are entrepreneurial initiative, risk-taking and creativity. Seidman (1993: 29) puts it thus:

> "The infrastructure is there, as is a potential workforce; what is lacking is any vision of alternative strategies, on the part of the mine, the business community or former workers."

Apart from local economic development, Haney and Shkaratan (2003: 19) stress the role of general economic growth in absorbing the larger part of the labour that is shed through mine closure. This refers to national economic growth in contrast to local economic growth. Given the current unemployment rate in South Africa, it is questionable whether the economy will be able to absorb low-skilled unemployed mine workers.

In contrast to the emphasis on *local* economic development, Seidman (1993: 29) argues that the only way to prevent economic disaster to an affected area is through large-scale job creation. He claims that retraining mine workers (see section 3.3 below) will not be sufficient as there are no jobs locally in which to employ trained workers. He also claims that in most cases LED strategies will not suffice as few former miners are likely to be able to sustain independent small businesses. Therefore, economic development *per se* without providing the necessary local growth will not result in sustainable job creation.

Some more specific examples for LED strategies are to be drawn from South African experiences. For example, in KZN, the Natal Agricultural Corporation has set up a soya bean processing plant worth 25 million in Dannhauser. The growing and processing of soya beans will create jobs for 3000 – 4000 people. Another initiative of the region is the promotion of the area for investment and industrial development purposes, with the emphasis on abundant labour and cheap land (Harichunder, 2000: 6).

Another example is the utilisation of the mine shafts for the growing of mushrooms. The dark and humid climate underground provides the ideal growing environment. This project was started in 1999 in the Kimberley mine shafts by De Beers. Instabilities in temperature and humidity levels, however, inhibit mushroom growth to such an extent that the project was found not to be financially viable. The project was terminated in 2004 (Van der Merwe, 2004: 10).

An example of a very creative initiative is that of the Iscor mine in Thabazimbi where a cement factory is planned where coloured cement is to be produced with aid of the black, red and yellow colour pigment produced from the mine's waste (Fourie, 2000: 12).

The Free State Gold Fields have also created several mitigation projects. The Free State Goldfields (FGF) Development Centre, linked to the Matjhabeng council, aims to create a conducive economic climate and about 100 000 jobs for the retrenched miners (Molefe, 2001: 6). The FGF aims at creating a culture of self-reliance through the promotion of entrepreneurship and self-sustainability. With the assistance of the FGF, the Matjhabeng municipality has identified five key sectors for developing the region's economy: intensified agricultural production; mass gold jewellery production; ecotourism and international tourism; freight and cargo distribution; and the establishment of (sector-driven) specialised training and support centre. Initial projects include the establishment of the Harmony refinery, two production plants and a Jewellery School in Virginia. Furthermore the area is to be declared a duty-free zone in order to attract buyers. Additionally, the council aims at providing support services to poor communities such as ensuring the provision of free water, sewerage subsidies and subsidised refuse removal (Molefe, 2001: 6). The progress on these initiatives, however, remains uncertain.

One of the LED-related local mitigation strategies is to revert to tourism-related activities. A town's tourist marketability would have to be investigated in which issues such as production of local arts and crafts, historical heritage and ecotourism option should be taken into account (Nel *et al*, 2003: 377). One example is Thabazimbi, which has been transformed from a mining town to a tourist destination. Initiatives include amongst others, hunting and the visiting of archaeological sites and artefacts. The mine also investigated the establishment of a large ecotourism reserve by involving private game farm owners. Furthermore the town's airplane landing strip has been transformed into a section 21 company that will contribute both to the tourism and investments in the town (Fourie, 2000: 12). Another tourist related initiative is that of the Hlobane mine where the Hlobane Mountain has been handed over to the National Parks Board to develop it into a nature reserve (Schutte, 1996: 12).

4.3.3 Diversification of employees' skills and retraining schemes

One of the most common mitigation strategies is the retraining of mine workers in other fields of expertise in order to broaden their narrow mining skills and then to seek employment in other areas. Retraining facilities should be available to all mine workers (and the community at large) and be supported with appropriate small business support infrastructure, such as "business incubators, workspace centers and other facilities where individuals can receive assistance in preparing business plans, courses in the fundamentals of business, marketing, management, sales and advertising, and so on." (Haney & Shkaratan, 2003: 20). Business Incubators and business parks have proven to be especially useful in the provision of business support to entrepreneurs and SMMEs and the provision of training (Haney & Shkaratan, 2003: 37).

Business centres should fulfil the following criteria:

- They should assist new and existing SMMEs in management, marketing, financing and manufacturing.
- They should provide administrative services such as telephone, copying, telex, word processing, and mailing facilities.
- They should serve as training centres.
- They should serve as a meeting point for SMME owners (Liljenas, 1992: 259).

The provision of micro credit and micro loans is also important for the provision of financial start-up capital for small businesses. Loans should either be provided by the mining company or by government. Loan applications should be accompanied with a feasibility study and a business plan developed with the assistance of the local support infrastructure (Haney & Shkaratan, 2003: 20; Kuyek & Coumans, 2003: 23).

Mine workers should also be assisted with job placement. For example, an Australian case demonstrates that the mine provides the workers with advice on job searching through workshops, CV writing skills, assistance with job placement and financial planning workshops (Laurence, 2002: 33).

Neil, Tykkylainen and O'Faircheallaigh (1992: 395).state that job-search packages should be provided to mine workers and should provide the following services:

- Travel assistance to cover both job search and family relocation;
- placement assistance, including the provision of a skills inventory to be made available to prospective new employers, and the publishing of current job-openings;
- assessment of abilities;
- information on the range of benefits for ex-employees of a particular company, and for the unemployed in general;
- assistance in developing job search skills; and

- provision of information about costs and standards of living in other communities offering employment.

As mentioned in section 2.1.2, communities move away from producing their own food sources once they receive wages with which they purchase their foods. With the closure of the mine and of secondary industries, food availability might become an issue especially in remote rural areas. Therefore, food security planning, agricultural training, and other support will be needed to ensure that communities can sustain themselves (World Bank, 2002: 4).

Haney and Shkaratan (2003) raise some of the negative issues surrounding retraining projects from the Russian, Ukrainian and Romanian experience. Ex-mine workers who have undergone training have demonstrated difficulty in finding and maintaining a new job. Interviews revealed a high degree of scepticism towards the value of learning a new profession. The best way to approach this matter is to link retraining to job placement, which includes the provision of some level of incentive to the new employer (Haney & Shkaratan, 2003: 20).

In the South Africa case, Cronje (2000: 4) suggests that once a retrenchment becomes known, the Department of Labour should deploy its Social Plan services to the mine, which include the establishment of job advice centres on the mine, and the provision of services with regard to counselling, re-skilling, training and placement services. Mine workers should be provided with the skills that are necessary to ensure that they are employable in other economic sectors.

Such an initiative was conducted in the KZN town of Hlobane where a training and business support facility was established which concentrated on skills development of retrenched mineworkers. Skills include amongst others carpentry, brick- laying, welding, motor repairs and vegetable cultivation (Jeffery, 1996: 9).

Another example is that of the Ermelo Mine where the mining corporations, Ingwe Coal Corporation and Total Exploration of South Africa (TESA) provided for the establishment of the Ermelo Development Centre (EDC) that provides basic skills training and business support (Sadler 1997a: 11). Entrepreneurs can use the Centre's facilities until they are adequately financially sustainable to run independently. The Centre also provides a driving school for Code 14 and Code 18 driver licenses. Vehicles for this project have been donated by the mine (Sadler, 1997a: 11; Sadler, 1997b: 11).

A further example is that of the South Deep Mine in Witwatersrand where, in 1999, 2567 workers were retrenched. In response to this the mining company launched the Care Project that aimed to address the social and economic needs of the retrenched workers and their communities. The project involved the registration of the retrenchees, counselling, retraining and a micro-finance strategy to provide fledgling entrepreneurs with seed capital. The initiative required strong company commitment, the appointment of a full-time project coordinator, the provision of community field workers and an investment of over R15 million. The ultimate aim of the project was to turn 70% of the retrenched people or nominated family members into economically active individuals within a two-year period and focused not only on South African residents, but also on migrant workers from other SADC countries (Limpitlaw, 2004: 5). However, according to Limpitlaw (2004: 5), "[t]he process enabling retrenched people or nominated family members to create their own jobs or find an alternative job is likely to be fraught with constraints such as dispersed markets or a complete lack of markets, infrastructure and cultural barriers".

4.3.4 Provision of support

Mining company support

One of the short-term mitigation strategies is to keep the mine open. This can be achieved either through subsidising mining operations from government funds, discovering a new ore body or by re-mining the mine dumps (Kuyek & Coumans, 2003: 17). Re-mining the mine dumps could simultaneously serve as a rehabilitation strategy by which the dumps are relocated in an environmentally friendly way. Another possible initiative to keep the mine operational is by decentralised labour bargaining at the plant level, where managers and workers could *inter alia* agree on mutual wage cuts just to keep the mine open until it could again be returned to profitability (*cf.* Kane-Berman, 2004: 4).

Mining companies should also consider transferring mine workers and relocating them from the mine that is closing down to another mine that is within the company group (Laurence, 2002: 28).

Government support

O'Faircheallaigh (1992: 347) identifies three policy options that governments can adopt in the light of mine closure: Firstly, refraining from any direct intervention and allowing 'market forces' to effect a redistribution of human and other resources. Secondly, to allow closure to proceed, but to invest public funds in an attempt to broaden the economic base of the mining community. This includes policies such as economic diversification (notably local economic development strategies) to find alternatives for an affected community. Thirdly, government can provide public assistance to the mining project to prevent its closure.

In accordance with the above, O'Faircheallaigh (1992: 367) provides three sets of factors that determine which one of the three policy options are the most favourable under which conditions:

Factors and conditions that favour closure and the working of market forces are:

- Mine is poorly integrated into domestic economy.
- Long-term financial prospects for the project are poor.
- Prospects for diversification are poor.
- Population is transient, and consequently its attachment to the community is weak; or it contains a high proportion of young single males who are highly mobile or of older workers close to retirement.
- Public infrastructure is scant.
- The community's regional service role is slight.
- There are other producers of the same mineral commodity in the relevant political jurisdiction.
- The mining company intends to use resources released by closure to develop replacement capacity in the same political jurisdiction.

Factors and conditions that promote economic diversification:

- The mining project's economic integration is not relevant, except to the extent that it affects prospects for diversification.
- Long-term financial prospects for the mining project are poor.
- Prospects for diversification are favourable.
- The community is well established and its population is stable, with the result that local attachments are strong and mobility is low.
- There is substantial public infrastructure and private investment in housing and businesses.
- The community plays a major regional service role.
- There are other producers of the same mineral commodity.
- The mining company does not intend to develop replacement capacity in the region concerned.

Finally, O'Faircheallaigh (1092: 368) provides factors and conditions that are favourable for government subsidisation of mining activities. These are:

- High degree of economic integration.
- Good long-term prospects for financial viability.
- Poor prospects for economic diversification.
- The community is well established and its population is stable, with the result that local attachments are strong and mobility is low.
- There is substantial public infrastructure and private investment in housing and businesses.
- The community plays a major regional service role.
- There are no other producers of the same mineral commodity in the relevant political jurisdiction.
- The mining company does not intent to develop replacement capacity within the same political jurisdiction.

These factors are merely guidelines towards determining what the most likely strategy could be that government could pursue.

Local government support

According to Neil *et al* (1992: 381), the ultimate survival of mining communities in the event of mine closure or wind-down is determined by the successful development of alternative local economic activities. Local government should thus be provided with revenue stability initiatives as mine closure would dramatically decrease their revenue and income base. Simultaneously, service demands could rapidly increase.

Provincial support

Apart from local support, provincial development support is imperative for assisting local municipalities in post-mine closure strategies. The Ukrainian, Romanian and Russian examples demonstrate that temporary public works programmes by which retrenched mine workers are employed, temporarily reduce the high unemployment rate and social stress. Although paying low wages, these programmes provide bridging mechanisms for ex-mine workers

(Haney & Shkaratan, 2003: 19). Since local government would have to take over the management and maintenance of infrastructure that used to be under mine-ownership, jobs might be created in the public works sector.

In the case of KZN and the decrease of the coal mining area, the KwaZulu-Natal Economic Council, which is the provincial development agency, identified the Coal-Rim as a special focus area for attention and development support and funds were made available for local development (Nel *et al*, 2003: 375). In Dundee, for example, economic base analyses and regeneration studies have been undertaken and the provincial agency supports new economic growth in the region. (Nel et al, 2003: 375). Provincial support is essential for the long-term sustainability of the local LED initiatives.

Central Government support

As mentioned above, local government plays an essential role in ensuring the survival of a mining town. In order to fulfil this tall order, central government funding and support is essential (Neil *et al*, 1992: 386). As mentioned in section 3.4.2, central government could create the incentive for a mine to prolong its life to mine lower grade or deeper ore bodies (Laurence, 2002: 37) through subsidising the mine in terms of tax relief. Mining companies and government should therefore set aside funds for social mitigation strategies for mine closure.

NGO and civil society support

Non-Governmental organisations can play an essential role in the support of mining communities. Haney and Shkaratan (2003: 48) identify two kinds of NGOs: those that focus on local business development such as SMME promotion, and those that provide social support, through social work, to the communities such as counselling, family support, etc.

Strongman (2000: 27) states that NGOs can provide strong moral and skills support to local communities affected by mine closure. They can help

communities overcome their dependency on the mine and provide them with assistance in strengthening their local capabilities to achieve self-sufficiency.

4.3.5 Gradual downscaling

Phasing-in and management of retrenchment

According to Cronje (2000), the retrenchment process is predictable by a mine well in advance and requires the notification of the Minister of Labour and the Department of Minerals and Energy 12 months in advance to the retrenchment of 500 employees or 10% of the workforce. Strongman (2000) suggests that parts of the retrenchment payments should be released in advance in order to allow ex-miners to develop their own income sources (for example, through farming and SMMEs) with the assistance of the released capital.

Phasing-out of mining activities

Mine closure should be phased in gradually. Mining houses should, for example, in the early stages already be made available for private purchase in order to mitigate the impact on the real estate market (Laurence, 2002: 36). In the case of Ermelo mine workers were given the first option to buy the mine houses in which they lived. Additionally, school fees were paid until the end of the year and study loans were written off (Sadler, 1997: 11). These initiatives facilitate in phasing-out the mine and also assist the affected communities to cope with the transition.

4.3.6 Utilisation of natural resources

Available resources

Water, agriculture and forestry provide useful alternatives to income-generation after mine closure. Canadian case studies demonstrate the utilisation of forests as alternative sources of income, such as through community forest projects. In another example, a community has developed and is running a small-scale

hydro-project. Agricultural projects include the establishment of pig farms, angora goat farming and the growing of agricultural products in mine shafts (Kuyek & Coumans, 2003: 20).

Healthy ecosystems are essential for the creation of sustainable livelihoods and food security. The environmental state in which the mine is left behind determines the viability of the above-mentioned projects. It also determines the extent to which communities can rely on their ecological environment for livelihood purposes (Kuyek & Coumans, 2003: 20; Limpitlaw, 2004: 2).

Benefiting from environmental rehabilitation

Several social mitigation strategies can be derived from the environmental rehabilitation of a mine site. The Ghanaian example demonstrates that the mine site was rehabilitated through re-vegetation and the establishment of the "pre-mine" environmental conditions. Although not explicitly mentioned, the community could play a substantial role in the rehabilitation of the mine site in order to render it suitable for alternative use. In the Ghanaian case, a nursery was established for the rehabilitation of indigenous vegetation and use of fertilisers accelerated the growth process (Acquah & Boateng, 2000: 26; 29).

Another example is the case of Thabazimbi, which demonstrates large-scale environmental rehabilitation projects. Rhodesian star-grass is being planted on the mine dumps for re-vegetation purposes. This type of grass grows only on disturbed ground and has a fast reproductive system. The grass is being cultivated in the mine's nursery along with indigenous trees that will be used for re-vegetating the disturbed area. In addition to this the mine is also in the process of fighting invasive plant species (Fourie, 2000: 12).

Back to subsistence farming

As mentioned above, one mitigation strategy for retrenched mine workers is for them to revert to agricultural production and that they should be trained for these

activities. It should be emphasised, however, that farming activities should be commercially viable and not based on subsistence farming.

Within an industrialised and developing environment, reversion to subsistence farming cannot always be achieved (Laurence, 2002: 28). Seidman (1993: 27), referring to migrant workers returning to Lesotho, also emphasises, that they cannot simply 'return' to subsistence farming, as the remittances that migrant workers send home are essential for supplementing farming practices. Without these remittances, farming practices alone do not sustain the ex-miners and their families.

Reversion to agricultural practices will also increase the pressure on scarce land (Randall, 1995: 1). The possibility of ex-miners reverting to agricultural practices depends on the availability of arable land in the area and on the efficiency of the land reform programme to deliver land.

4. 3.7 Infrastructure

Breakdown of infrastructure

Infrastructure that was supplied and maintained by the mine would have to be taken over by alternative management organisations such as local government to prevent its breakdown. In the cases where service provision infrastructure such as schools and hospitals has been established, such infrastructure would need immediate attention in order to prevent the closing of these facilities. At the World Bank Conference on Mine Closure in 2000, one of the recurrent themes was that local authorities are experiencing severe difficulties in taking over these service-delivery functions from mines (Jackson, 2002: 22).

In response to local government struggling to maintain infrastructure left behind by the mine, the World Bank Group's Mining Department suggests that capacity should be built at the local community level and at the local government level to

jointly maintain and manage the infrastructure and social services. An alternative to this is to subcontract the maintenance and management functions to external contractors. This was done in Zambia, were mining houses were transferred to local authorities. They, however, were not capable of maintaining the infrastructure and thus outsourced the function to local contractors (World Bank, 2002: 3).

Utilisation of redundant mine infrastructure

After the mine's closure, redundant mine infrastructure can be utilised by the local community for local economic development purposes. In the town, Coronation, in KZN, redundant mine buildings are being marketed by a locally developed company for business and tourism purposes (Nel *et al*, 2003: 375).

4.3.8 Creation of safety nets for the most vulnerable population groups

As mentioned in section 2.4.2, mine closure *affects* the most vulnerable population groups the most. Mine closure also brings about the *development* of vulnerable groups as a result of the loss of income and social services. These include, amongst others, women, children, the elderly and HIV/Aids-affected households. Safety nets for these groups should be established either by government or by the mining company. Mitigation strategies should recognise the specific impacts of mine closure on women in the workforce (World Bank, 2002: 4) in order to avoid rendering women affected by mine closure to become part of the vulnerable groups. This applies specifically to female-headed households.

4.3.9 Specific mitigation possibilities

Trust funds

In some cases, mining companies have established trust funds for affected communities. For example, in Papua New Guinea, a 'Future Generations Fund' has been established to protect some benefits for use by subsequent

generations (MMSD, 2002a: 46). The income from the fund could be used by communities for post-closure sustainable economic development (MMSD, 2002b: 15).

Another example is the establishment of an employee closure fund that may be developed by the mining company to provide retraining, assistance in placement and job relocation. Mining companies should also consider providing a seed fund for the funding of small businesses and new industries in the area. Furthermore, the mining company should establish a closure committee/advisory panel to which the company, relevant stakeholders and community representatives can voice their concerns (Laurence, 2002: 36).

Another initiative in Papua New Guinea is an infrastructure incentives scheme whereby, subject to certain rules, companies can use part of their income tax payments to construct infrastructure projects agreed with local communities (MMSD, 2002a: 46).

Wolfe (1992) also prescribes the establishment of a 'municipal decommissioning fund' by the company, which is based on a percentage of annual royalties from the company (Wolfe, 1992: 205). These funds are essentially reserved for the affected parties once the mine closes.

Support for migration

As mentioned above, out-migration can have a positive impact on the local population, as firstly, those who do not foresee themselves finding jobs in the affected area, leave; and secondly, out-migration mitigates the pressure and competition for those who stay behind. Mine closure policies should thus include assistance to the promotion of out-migration through transport subsidisation. This, however, is difficult when the overall economic situation of a country is problematic and there are no major industrial centres that can absorb migrant workers (Haney & Shkaratan, 2003: iii).

Retirement village

A Canadian example demonstrates the utilisation of empty and devalued mining houses for retirement communities. A similar approach was taken in Stilfontein in the North West Province (South Africa) where, after its gold mine closed in the early 1990s, the town marketed itself as a retirement village by utilising the renovated mine houses (Thompson, 2003: 14). Similarly, in Glencoe, a former mining town in KZN, 70% of the town's population consists of pensioners due to "its attractive rates structure, tranquillity and inexpensive cost of living" (Harichunder, 2000: 6).

The Canadian cases, however, have demonstrated problems with this approach as older persons require medical assistance of which the appropriate level is not always available in the remote areas. Additionally, only a limited number of secondary job opportunities are created (Kuyek & Coumans, 2003: 19).

Hazardous waste disposal

Mining sites can be used for hazardous waste disposal. This should, however, be conducted under strict control and supervision to avoid environmentally dangerous practices (Kuyek & Coumans, 2003: 20).

Small-scale mining

Small-scale mining could come to the fore after mine closure. If small scale mining were monitored by an external agency that undertakes to provide guidance to the miners and to monitor the environmental impact, then this could provide an important income-generating source for the unemployed mine workers.

4.3.10 Thinking positively

As mentioned above, Laurence (2002) states that mine closures can lead to low staff morale and increased accident incidents within the mine and to an increase

in social ills. He states that employees should, however, be made aware that mine closure is inevitable; that they should take advantage of the retraining and job placement programmes presented by the company, and should view the closure of the mine as an opportunity to expand their careers. It remains questionable whether this would be applicable to the South African situation where the job market is highly competitive and where limited opportunities exist for low-skilled workers.

The mining company should have regular community meetings to appease the community in their concerns (Laurence, 2002: 36). Kuyek and Coumans (2003: 30) identify a few points that need to be considered as psychological characteristics applicable to communities affected by mine closure:

- People need to feel like they have control over their lives.
- If people feel there is hope they would be more likely to become involved in activities for change.
- Social and cultural events and experiences can build social energy and resilience and may help a town survive.
- Frequently, towns that are undergoing a traumatic event, need time to grieve and commemorate what they have lost.

4.4 Conclusion

Mine closure has a severe impact on towns - especially if they are reliant on the mine as the primary economic activity of the town. Impacts of mine closure not only affect the immediate employees, but also have indirect impacts on businesses, the geographical area, government structures and even neighbouring countries.

Mitigation strategies should be employed not only by the mining company, but also by government and even by communities. It is of the utmost importance that

these will be sustainable in the long run and able to provide the necessary alternative income sources for those affected by the mine closure.

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CHAPTER 5

Assessment of expected socio-economic impacts on Koffiefontein environment

5.1 Concerns of I&APs

As mentioned earlier (see Chapter 2), I&APs were grouped in the following categories: community members, current Koffiefontein Mine employees, ex-employees, business sector, local government, and the public sector. All I&APs identified a broad range of concerns and issues during the scoping phase of the project. A list of I&APs and their individual concerns and issues is attached as Annexure C.

5.2 Broad sectors of impacts

The concerns of I&APs were not always either strictly stakeholder-specific or party-specific, but rather cut across all "stakeholder boundaries" and overlapped between various socio-economic sectors (see Tables 5.1 and 5.2). Five broad sectors of impacts were thus identified to consolidate the crosscutting nature of expected impacts, and also to capture the common denominators of concerns and issues raised by I&APs. These sectors also reflect the experiences of impacts that emerged in previous mine downscaling in South Africa and elsewhere in the world (see Chapter 4). As such, the identified sectors of impacts feed into the methodology of scenario simulation (see Chapter 2), while at the same time reflecting the main concerns and issues of I&APs. Impacts are thus assessed in terms of the following five broad sectors:

- Impacts on the demographic profile of Koffiefontein
- Impacts on the public sector at Koffiefontein
- Impacts on land use and infrastructure at Koffiefontein

- Impacts on the economic sector at Koffiefontein
- Impacts on the socio-psychological well-being of the community in the affected environment

The direct impacts for each of the above sectors appear in Table 5.2, while Table 5.1 illustrates the crosscutting nature of impacts likely to be experienced by the main affected parties. A list of all expected direct impacts per sector, as well as the indirect and cumulative impacts, is attached as Annexure F. Linkages between the various impacts are pointed out in this Chapter as part of the assessment of the nature of the impacts.

Table 5.1: Anticipated direct impacts per main stakeholder group at Koffiefontein

Stakeholder group	Anticipated direct impacts
Community	• Decrease in population size • Change in labour migrant patterns • Increased unemployment • Loss of community identity and increase in community isolation • Increased deprivation, fatalism and negativity • Recreational facilities may deteriorate if no longer maintained by Koffiefontein Mine • Decline in the general quality of life • Close down of mine clinic • Decreased contributions to educational institutions and termination of social programmes
Koffiefontein Mine employees	• Loss of job opportunities • Loss of service benefits and allowances • Decline in the general quality of life • Loss of community identity and increase in community isolation • Increased deprivation, fatalism and negativity • Recreational facilities may deteriorate if no longer maintained by Koffiefontein Mine

Business sector	• Downscaling of mine-related and mine-dependent businesses • Decrease in population size and subsequent purchasing power • Increased unemployment in mining and mine-related industries • Decrease in property values
Local government	• Decrease in revenue of district and local municipality • Termination of service agreements (formal and informal) with Koffiefontein Mine • Increase in number of indigent households • Decrease in property values • Vacancy of large number of properties
Public sector	• Decreased contributions to educational institutions and termination of social programmes • Increased burden for public clinic • Increased individual and community deprivation, fatalism and negativity • Increased unemployment in mining and mine-related industries (increased demand for assistance from some public departments)

Table 5.2: Anticipated direct impacts per socio-economic sector at Koffiefontein

Sector	Anticipated direct impacts
Demographic compilation of affected area	• Decrease in population size • Change in labour migrant patterns
Public sector	• Decrease in revenue of district and local municipality • Termination of service agreements (formal and informal) with Koffiefontein Mine • Increase in number of indigent households • Decreased contributions to educational institutions and social programmes • Close down of mine clinic
Land use and infrastructure	• Recreational facilities may deteriorate if no longer maintained by Koffiefontein Mine • Decrease in property values • Vacancy of large number of properties
Economic sector	• Loss of job opportunities at Koffiefontein Mine • Downscaling of mine-related and mine-dependent businesses, with accompanying job losses • Loss of service benefits and allowances of mine employees
Socio-economic well-being	• Loss of community identity and increase in community isolation • Increased deprivation, fatalism and negativity • Decline in the general quality of life

The above direct impacts are assessed according to a synthesis of the following assessment criteria (For a description of the assessment criteria, refer to Chapter 2):

- **Nature** of the impact (*A descriptive and explanatory overview)*
- **Status** of the impact *(Positive, Negative, Neutral)*
- **Extent** of the impact *(Local or Regional)*
- **Probability** of the impact *(Low, Probable, Highly probable, Definite)*
- **Intensity** of the impact *(Very low, Low, Moderate, High, Very high)*
- **Duration** of the impact *(Short term, Medium term or Long term)*
- **Most vulnerable group** *(A sectoral identification of groups)*
- **Significance** of the impact *(Low, Moderate, High)*
- **Potential to mitigate** the impact *(Low, Moderate, High)*

All impacts are assessed in terms of their status prior to any mitigation measures. The summary of impacts at the end of each sectoral assessment, however, also includes an “after mitigation” assessment.

5.3 Impacts on the demographic profile of Koffiefontein

Two direct impacts are anticipated for this sector, namely a decline in population size and a change in labour migrant patterns.

5.3.1 Decline in population size

Nature of the impact

Worldwide, the downscaling and closure of mines have been associated with a decline in the local population (see Chapter 4), mainly because (some) ex–employees often managed to find employment elsewhere and thus often had to leave the affected environment. Further contributing to an out-migration is the fact that only a relatively small proportion of employees usually have a historical

linkage with the mine town – something that makes the decision to leave the area that much easier. Koffiefontein is no exception: Following the previous mine closure in 1982, the town's population declined by almost 30% in less than five years (see Chapter 3). Understandably, therefore, a prominent concern of all I&APs thus relates to a potential decline in the Koffiefontein population, and the domino impact that it might have on a range of economic activities and services in town. In fact, the survey data show that 62% of municipality officials are of the opinion that it will not be worthwhile to stay at Koffiefontein if there is no mining in the future (refer Annexure G). In comparison, 58% of the business sector, 55% of current employees and 41% of the household sector are of the same opinion (see Annexure H, Annexure K & Annexure J respectively). Only one-third of the current mine employees (34.8%) who were sampled in the survey said that they would prefer to stay at Koffiefontein if mining were to be discontinued in the future.

A linear extrapolation of the 2001 population size of Koffiefontein shows that the current (2004) population size is approximately 12 426, and – assuming that past trends will prevail in future - that the town's population could increase to 13 468 in 2007, to 14 511 in 2010 and to 16 248 in 2015[19]. However, even if Koffiefontein Mine is to continue its operation, this "normal" population increase is unlikely to happen, since most demographic models currently indicate that within the next few years South Africa is about to enter a period of negative population growth, and eventually a decline in population size[20]. At the same time, urbanisation[21] in South Africa – as elsewhere in the world – is also increasing, thus further contributing to the erosion of rural populations. In time, therefore, a gradual decline in the Koffiefontein population seems inevitable, even if De Beers

[19] The basis for this calculation – using the method of linear extrapolation – is explained in Chapter 2.
[20] Allowing for the impact of the HIV/AIDS epidemic, demographic models of the United Nations Population Division and the Population Reference Bureau (Washington) predict a decline in the South African population of between 10% and 26% over the next few decades.
[21] Urban growth in South Africa is expected to occur at a rate of 2.1% a year between 2000 and 2005 – one of the highest rates in the world (SAIRR 2003).

should continue their activities in the area.

In order for a steep decline in the Koffiefontein population to materialise, a large number of people – most probably current mine employees and other people dependent on mine-related activities – will have to leave the area. The question is thus: What is the chance of this happening (i.e. people leaving the area)? Koffiefontein Mine currently employs 499 permanent staff members, who all reside in the Koffiefontein area. A large number of the 278 staff members employed by suppliers also resides at Koffiefontein. Not everybody, however, is likely to leave the town in the case of (further) downscaling of mine activities. Based on past experiences of mine closures elsewhere in the world and in South Africa, those most likely to leave – *assuming that they will find employment elsewhere* - are the well-qualified and skilled workers (see Chapter 4). This trend appears to be confirmed by the intentions of current employees of Koffiefontein Mine: The survey findings show that only 14% of those with a Grade 12 or higher qualification would prefer to stay at Koffiefontein if mining were to be discontinued in the future. In contrast, almost half (44.4%) of staff members with a highest qualification of Grade 11 or lower would like to remain behind at Koffiefontein, while 47% of this (less skilled) group nevertheless indicated that they would leave the area to look for a job – either with their families or alone. As expected – and probably as a function of differences in respect of qualifications - black employees would significantly be more inclined than their white colleagues to remain behind at Koffiefontein.

A biographic analysis of Koffiefontein Mine's permanent staff members, however, suggests that a large number of employees might find it very difficult to find alternative employment in the labour market (that will enable them to move). When it comes to highest formal qualification, almost two-thirds of the permanent staff complement of Koffiefontein do not have Grade 12 (see Chapter 3). This may seriously hamper their chances of finding alternative employment elsewhere, and thus being able to leave the area. At the same time, however,

many of these less-qualified and unskilled workers may choose to migrate to larger urban areas in the province and elsewhere *in the hope* of finding alternative employment. Koffiefontein Mine has a very young staff complement – more than 50% of staff members are younger than 40 years – and only a very small proportion (less than 3%) of the current staff will reach a retirement age of 60 in the next five years (see Chapter 3). Most of the staff will thus probably be compelled to find alternative employment. This increases the likelihood of their leaving the area.

Based on the assumption (and survey indications) that qualified and skilled employees may leave the area, and considering the current permanent staff profile, it would appear that approximately 170 permanent staff members *might* leave Koffiefontein. These are mainly people who are relatively well qualified, while a small proportion may also have reached retirement age and thus choose at settle elsewhere (or to retire at Koffiefontein). Assuming an average household size of 3.7 for Koffiefontein (Census 2001), more than 600 permanent staff members and their dependants *may* leave the area. This number will be supplemented by the departure of most contract workers and some of the workers employed by supplier agencies, as well as their dependants. Due to the cumulative impact of such an exodus on the business and service sectors, more people will inevitably leave the town.

The social and economic consequences that will be triggered by a decline in population are no doubt more important than the decline in the population itself. A steep decline in population will no doubt lead to a decline in income for the **business sector** as a result of the erosion of the consumer base, and eventually to the downscaling of many businesses in town. Approximately 52% of the businesses included in the survey indicated that they are either *entirely* or *very* dependent on the mine or mine employees for an income (see Annexure H). Only a quarter of the businesses in the sample (26.3%) indicated that they are *not at all*, or *not very much* dependent on the mine or mine employees for an

income. A significant drop in population could thus see the closure of a very large number of businesses at Koffiefontein, this despite the fact that only 50% of employees in the survey indicated that they do most of their monthly shopping at Koffiefontein (the remaining 50% mostly do the bulk of their monthly shopping in either Bloemfontein or Kimberley). More than half of the black employees (54.4%) compared with only one-third of the white employees (33.3%) indicated that they do most of their monthly shopping at Koffiefontein. This confirms the observation that was made during the 1982 mine closure. Since black employees would proportionately be less inclined than whites to leave the area, this could somewhat curb the real impact on the business sector, although such a comparison does not allow for differences in the amount of money spent at Koffiefontein.

Skilled people are usually more affluent than the unskilled or semi-skilled, and if large numbers of this group leave the town, this may leave the **municipality** with fewer people to pay rates and taxes. This, in turn, may lead to a decrease in service levels required in the area (see par. 5.4.1). **Schools** too, might experience a decline in the number of learners and in income as fewer parents remain behind and fewer will be in a position to afford school fees. The numbers of children of mine employees in all the local schools are very high, varying between 37% and 50%. Although it is likely that most of the children of unskilled workers will remain behind in the schools, a scenario of amalgamation between some schools in years to come is therefore not excluded. A dwindling number of learners will inevitably also trigger a decline in the numbers of teachers, causing the latter group (and their dependants) to join the exodus of skilled people and business people. This scenario further suggests that a decline in population may, in all likelihood, not affect Dithlake or Diamanthoogte to the same extent as it will Koffiefontein.

Considering the above scenario, a number of variables should be pointed out that may accelerate, delay or even curb the anticipated impact:

- The current permanent mine workers (and their dependants) constitute a smaller proportion of the Koffiefontein population than was the case at the time of the mine closure in 1982. In 1982, in total 1 200 workers were dismissed when the mine closed (see Chapter 3). With a total population of just more than 6 000, these workers constituted approximately 20% of the Koffiefontein population at the time of closure. Comparatively, the current (2004) total of 499 permanent workers constitutes less than 5% of the Koffiefontein population. Although this comparison does not allow for differences or assumptions in the economic scale of the two situations, it does leave room for an argument that the exponential impact of a decline in population will in all probability not be worse than was experienced in the early 1980s.

- The broader (i.e. regional and national) economic landscape of the early 1980s was economically more conducive to out-migration than is currently the case. In other words, prevailing conditions in the labour market of high unemployment and "jobless growth", and specifically of an over-supply of semi-skilled and unskilled labour, may hamper attempts at out-migration of particularly the lower-skilled workers. The Table below depicts the comparative unemployment rates in South Africa and the Free State for the period 1982 and 2002, and illustrates the harsher conditions in the current economic environment – at least from a job-seeker's perspective. Nationally, the unemployment rate has increased by 310% over the past 20 years. In 1982, the absorption rate of the labour force in the formal sector[22] of the economy was 81%; currently it is about 43% (SAIRR 2003). Only four out of every ten current mine employees will thus be able to find work in the formal sector of the economy; the rest will either be unemployed or will have to make a living in the informal sector.

[22] Formal sector employment as a proportion (percentage) of the total labour force.

Table 5.3: Comparative unemployment figures for 1982 and 2002

Region	Unemployment rate[23]	
	1982	2002
South Africa	7.43%	30.5%
Free State	7.21%	33.5%

Source: Compiled from SAIRR 2003; Viljoen 1991.

Prospective migrant workers' outlook to find employment in the nearest urban areas of Bloemfontein, Kimberley and the Free State Goldfields are also bleak, as indicated by some economic indicators for these areas (Table 5.4). The Table illustrates the often-mentioned problem of "jobless economic growth" in South Africa, and the three urban areas prove to be no exception in this regard.

Table 5.4: Selected economic indicators for three urban areas (2001)

Urban area	Economic growth	Employment growth	Proportion of people living in poverty
Kimberley	3.1%	-1.8%	26.1%
Bloemfontein	-3.0%	-5.6%	31.4%
Free State Goldfields	-8.8%%	-7.1%	39.4%

Source: Compiled from SAIRR 2003

[23] The "strict" or official definition of unemployment is used here (expressed as a percentage). According to Statistics South Africa, the unemployed are those among the economically active population who i) have not worked during the last seven days prior to the interview, ii) want to work and can start working immediately, and iii) have actively sought employment (or explored alternative sources of income). The "expanded" definition of unemployment excludes the last criterion, and thus always reflects a higher unemployment rate than does the "official" definition.

The survey findings reflect that more than half (55%) of the current staff at Koffiefontein Mine are pessimistic about their prospects of finding another job, in the event of their services being terminated in the future (see Annexure K). Yet, at the same time, almost 42% of black employees and 56% of white employees currently rate their prospects of finding another job as either *reasonably good* or *excellent*.

- The current political-economic policy framework in South Africa prescribes and encourages the appointment of previously disadvantaged individuals (PDIs) in the workplace. A large proportion of Koffiefontein Mine's skilled staff component are white males. This group, however, is pertinently excluded from the definition of "member of a designated group" (comprising blacks, women and disabled persons) for employment purposes. This further illustrates that the preferences and dynamics of the labour market today differ vastly from those of the early 1980s. Even the qualified and skilled staff members of Koffiefontein Mine – who are predominantly white males – may therefore find it very difficult to secure alternative employment in the labour market, and thus to "pack and go" immediately. The net effect of this may probably be that many of them either decide to stay on at Koffiefontein, or that it may take quite a while before they are able to find employment elsewhere and thus to leave the area. Both scenarios may curb the anticipated decline in population numbers.

- If DBCM would be in a position to re-deploy a large proportion or most of the Koffiefontein mineworkers elsewhere in the group, the expected decline in population could be sudden with rapid cumulative impacts for Koffiefontein. However, as pointed out in Chapter 1, four of DBCM's six South African mines are currently operating at a loss, and the assumption thus is that any chance of immediate re-deployment within DBCM's current operations – and thus immediate relocation - for the majority of the Koffiefontein Mine staff, must be considered slim under prevailing circumstances, unless new

developments are explored and put into operation. Re-deployment of staff members at new developments in the future may again trigger a decline in population numbers in the Koffiefontein area.

Status of the impact

The impact will be mainly *negative*, although an expected alleviation of population pressure on water sources, water provision and sanitation services may be seen as *potentially positive* as far as service delivery on the part of the municipality is concerned. Although there will be a lower requirement for municipal services, the decrease in municipal revenue will have to be considered (see par.5.4.1).

Extent of the impact

The impact will be mainly *local*, and to a lesser extent *regional*.

Probability of the impact

The impact is *improbable* in the case of the lower and unskilled cohort of the population, and *probable* for the skilled cohort. For Koffiefontein at large the impact is *highly probable* to *definite*.

Intensity of the impact

The intensity of the impact will be *moderate* to *high*, but probably not as high as in the case of a previous closure in 1982 (refer to discussion under *nature of impact*).

Duration of the impact

The lifetime of the impact will be *long term* to *permanent*, especially since current alternatives to the development do not allow for the re-opening of the mine in the future.

Most vulnerable group(s) to be affected by the impact

A significant drop in the Koffiefontein population will leave the following sectors of the community particularly vulnerable:

- A large proportion of the business community (in the form of erosion of the consumer base)
- The local municipality (in the form of loss of revenue)
- Schools (in the form of dwindling learner numbers), as well as some of those employed by the Department of Education
- Households of black ex-employees who remain behind and who will have to overcome a loss in social and economic opportunities.

Potential to mitigate the impact

The potential to mitigate a drop in population numbers and the subsequent impacts thereof, is directly related to the affected environment's ability to absorb the expected development, and, more specifically, to replace the loss in employment opportunities. The current economic capacity, in this regard, of Koffiefontein and the broader region is low (see Chapter 3 and previous section). Future developments in the region, however, may assist to mitigate the impact. These are dealt with more thoroughly in Chapter 6.

Summary of impact

Rating of impact	Impact on closure
Status	Mainly negative, and somewhat positive (water and sanitation provision)
Extent	Local
Intensity	High
Probability	Highly probable to definite
Duration	Long term
Significance	Moderate to High
Mitigation potential	Low to moderate

5.3.2 Change in labour migrant patterns

Nature of the impact

Past experience in mining environments that are affected by downscaling has shown that permanent out-migration from the affected area mostly occurs amongst the skilled population groups (see Chapter 4), as these groups are usually more marketable and thus capable of finding work more easily. Despite the fact that less skilled and unskilled workers, on the other hand, realise that the area would offer them very limited job opportunities once the mine closes down, most of them prefer to remain in the town in contrast to moving elsewhere. Therefore, in the event of Koffiefontein Mine closing down, existing trends of in-migration (in the form of contract workers and employees of supplier agencies) will probably be replaced by temporary out-migration of low-skilled workers who will be returning to their homes at Koffiefontein on a regular basis. The situation at Koffiefontein is not like the hostel system where, when workers are retrenched, they either return to their towns of origin, or they develop squatter camps. A large number of Koffiefontein Mine employees are home-owners at Dithlake. This creates an incentive for temporary migration, as they are not ensured of accommodation elsewhere. These people, mostly men desperate to earn money, leave their partners and families behind while they (the men) go off in search of work on farms, in urban areas, or as long-haul truckers. Yet, 33% of lower-skilled workers[24] in the survey indicated that they would either move with their families, or move alone until they found a job, and then get their families to join them. An inferential analysis of the data further confirm past trends, namely that mostly black ex-employees would be likely to resort to the option of temporary migration.

Of further significance is the fact that moving *alone* and visiting their families on a regular basis, would almost be a "last" option for many; only 11% of black employees opted for this as a most likely option. Most of them (38%) would

[24] For the purposes of data analysis," lower-skilled workers" are classified as those with a highest formal qualification of Grade 11 or lower.

prefer to stay at Koffiefontein, or to go in search for a job, and then get their families to join them (27%). The latter option would imply that a large proportion of women and children would have to stay behind for an indefinite period. A relatively large proportion of black employees (11%) nevertheless indicated that they are uncertain what they would do (i.e. stay or move)

Considering the current nature of livelihoods and that of the economic landscape at Koffiefontein (see Chapter 3), it is expected that most of the employment opportunities that may be created in the foreseeable future in the area are likely to be in the unskilled labour market. The competition for such vacancies will no doubt be fierce, especially if one bears in mind the fact that only 20% of the economically active population of the area are currently employed (see Chapter 3), and that four out of every ten lower-skilled workers would prefer to remain behind at Koffiefontein. Therefore, in accordance with past trends, a large proportion of less skilled workers would probably be *compelled* to migrate temporarily in the search for jobs elsewhere, while their families would remain behind at Koffiefontein. Once they have found a job, they will commute between their homes and their employment sites, returning to Koffiefontein only over weekends and/or at the end of the month. Another group of lower-skilled employees will probably stay behind and attempt to access social grants, or, if unsuccessful, become dependent on family and friends with an income. As suggested by the survey data, the black and coloured communities (mostly residing at Dithlake and Diamanthoogte respectively) will be affected most, since the larger proportion of them occupy unskilled/semi-skilled jobs. However, due to economic conditions and external variables mentioned in paragraph 5.3.1, a (small) proportion of the white community may well find themselves in a similar situation.

An increase in the number of temporary migrant labourers is bound to trigger a range of social impacts. Research has shown that migrant workers in South Africa and elsewhere, probably as a result of their living and personal conditions

while away from their homes, are particularly inclined to indulge in promiscuous sexual behaviour. These men often have easy access to sex workers or a *'town-wife'* with whom they soon pick up a second family and, quite often, also an ordinary STD and HIV. When they go home to their wives and girlfriends a few times a year, many of them unwittingly carry the HIV-virus with them. Hence migrant workers have been identified as a high-risk group when it comes to contracting and spreading STDs, especially HIV/AIDS. Migrant workers have also been found to be almost 2½ times more likely to be HIV-positive than non-migrant workers (Pelser 2004). This leaves the women who stay behind particularly vulnerable. Some contemporary studies even suggest that in order to find the roots of HIV/AIDS in South Africa *"one need not look further than the system of migrant labour"* (Horwitz 2001:1). Against this background, a significant change in current migrant patterns at Koffiefontein and, more particularly, a future increase in the number of less- and unskilled migrant workers, may also see a more rapid spread of the HIV-virus, and eventually also an increase in the HIV-prevalence rate in the area. In the medium to long term, this might even place an additional burden on health facilities and health care providers in the affected environment, while it may also have a detrimental impact upon the life expectancy of the community.

However, not only migrating men may be affected. Women who remain behind are often involved in multiple sexual relationships because of, amongst others, the need for financial support. Consequently, in nearly 40% of migrant couples, it is the *woman* who is (first) infected with HIV, and not her male partner (Lurie 2000). The circular patterns of migrant labour clearly put people at risk of HIV and STDs at both ends of the migration movement, and Koffiefontein will be no exception in this regard.

Apart from the likely negative impact on the health of the community, an upsurge in migrant labour may also disrupt and alter family and household structures. More specifically, an increase in the number of female-headed households and

households headed by elderly persons is likely to occur, while an increased fragmentation of households due to a higher incidence of divorce in affected families has been well documented. Female-headed households in particular are also associated with higher levels of poverty than conventional households, as an additional financial burden is put on these households to survive on an eroded income. Fragmented households, again, are also associated with social ills such as higher incidences of teenage pregnancies, school absenteeism (or early drop-out from school) and juvenile delinquency. Inevitably, such changes might put an increased demand for services and assistance on social agents such as the Department of Social Development.

Status of the impact

The status of the impact will be negative, since the social fabric and health status of the community are likely to be negatively impacted upon.

Extent of the impact

The extent of the impact will largely be *local*, and – depending on the locality of employment sites of migrant workers – to a lesser extent also *regional* and *national*.

Probability of the impact

The impact is rated as *highly probable*, based on historical experience and the prevailing socio-economic profile of the affected environment.

Intensity of the impact

The intensity of the expected impact is rated as *moderate*, since most of the processes of the social system in the Koffiefontein area will continue, albeit in a modified manner.

Duration of the impact

The impact will be *long term* to *permanent*, depending upon (i) future economic developments in the affected environment that might curb the probability of the impact and (ii) the outcome of intervention programmes and mitigation measures.

Most vulnerable group(s) to be affected by the impact

Two groups are particularly vulnerable in the context of this impact. For historical reasons and given the current socio-economic status of affected parties, these vulnerable groups are expected to be mostly black and coloured people, i.e.:

- Low and unskilled migrant workers, residing mostly at Dithlake and Diamanthoogte;
- Wives and female partners of migrant workers who will remain behind in the affected environment;
- Families of migrant workers; and
- The elderly, taking over the head-of-household function.

Potential to mitigate the impact

The potential to mitigate the impact is *low* to *moderate*. It is expected that the potential for mitigation will be closely linked to the outcome of information and education campaigns aimed at the most vulnerable groups to be affected by the anticipated impact.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Mainly local
Intensity	Moderate
Probability	Highly probable
Duration	Long term to permanent
Significance	Moderate
Mitigation potential	Low to moderate

5.3.2 Summary of impacts on the demographic profile of Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After mitigation
Decline in the population size	Mainly negative	Moderate to high	Low
Change in labour migrant patterns	Negative	Moderate	Low to moderate

5.4 Impacts on the public sector at Koffiefontein

Five direct impacts are anticipated for this sector, i.e. (i) a decrease in revenue of the district and the local municipality; (ii) the termination of service agreements (formal and informal) with Koffiefontein Mine; (iii) an increase in the number of indigent households; (iv) decreased contributions (of De Beers) to educational institutions and social programmes, and (v) closure of the mine clinic.

5.4.1 A decrease in revenue of the district and local municipality

Nature of the impact

The literature overview (see Chapter 4) has mentioned some difficulties with maintaining municipal infrastructure after the closing of mines. It seems that Koffiefontein and the LLM will be no different in this regard. The current financial affairs of the LLM seem to be fairly healthy. The municipality has a budget of R34 million (excluding capital investment grants from other tiers of government). In order to understand the nature of the impact should the mine close, the following overview is required: In the first place, a broad overview of the current municipal budget (both income and expenditure) is provided; this is followed by a description of the way in which this budget is linked to Koffiefontein Mine, as well as the nature of possible impacts should mining activities be terminated.

Table 5.5: An overview of the LLM's income, 2003/04

Item	R	%
Land tax	2 890 000	8.5
Services / water / sewage / waste management	18 360 000	54.0
Subsidies: Equitable share Clinic	 11 050 000	 32.5
Other	1 700 000	5.0
Total	**34 000 000**	**100.0**

Source: Financial Director (LLM)

LLM benefits from the following income from the Koffiefontein Mine:

- The rates and taxes for the 254 houses owned by De Beers at Koffiefontein are paid in advance each month. The amount totals approximately R4.3 million per annum, of which 43% is from land tax and

57% is for services delivered. In respect of land tax only, De Beers contributes over 60% to LLM's total income from land tax.

- In addition to this, LLM sells approximately R650 000 worth of purified water to the Koffiefontein Mine per annum.
- It should also be mentioned that when the mine closed in 1982, De Beers continued to pay these fees as if the mine were still operating and the houses were occupied. It is thus impossible to determine the impact on the municipality of the previous closing of the mine. In addition to this, the municipal environment and municipal boundaries have changed considerably since 1982. In 1982, the Koffiefontein municipality consisted of only the former white suburb at Koffiefontein. Today, Dithlake and Diamanthoogte, as well as commercial farms and other urban areas, have been added to the municipal boundaries.
- Furthermore, approximately 30% of the income from rates and taxes for LLM is generated in Koffiefontein.

The fact that the rates and taxes for the houses owned by De Beers are paid in advance, limits the risk of non-payment and reduces the income risks to the municipality in a considerable way. Table 5.6 provides an overview of LLM's expenditure for the 2003/04 fiscal year.

Table 5.6: An overview of the expenditure of the LLM, 2003/04

Item	R	%
Salaries	10 880 000	32.0
General costs	10 880 000	32.0
Maintenance fees	1 700 000	5.0
Capital	1 938 000	5.7
Contribution to funds	7 820 000	23.0
Contribution to loans	782 000	2.3
Total	**34 000 000**	**100.0**

Source: Financial Director (LLM)

A number of general comments need to be made with regard to expenditure in the budget of LLM:

- The fairly low percentage of the budget allocated to the salary component should be noted. This reduces the possibility that a sudden decrease in revenue will lead to municipal officials losing their jobs.
- The low percentage of the budget being spent on service loans is also a positive aspect. In fact, it seems that all loans might be fully paid within the next four years.
- In contrast to the average municipality, LLM has actually managed to build some reserves during the past three years. The current reserves are approximately R7 million. This provides a fairly good buffer should the mine close.

Against the above background, the question is what the impact of closing the mine might be to the local municipality. In the first place, it might result in a decline in revenue from land tax. De Beers will remain liable to pay the land tax on their properties if the housing units are not sold. At the same time, it seems highly unlikely that a large percentage of current De Beers' employees will actually buy the housing units in which they are currently residing. A recent survey by De Beers estimated this at 84%. Furthermore, it should also be noted that only 20% of the higher income bands have shown any interest in buying some of the housing units owned by De Beers. Therefore, the possible decline in land tax revenue only becomes a reality should De Beers sell the housing units or transfer the land to the LLM. If these units are sold to individuals, it will increase the income risk related to non-payment – something that is not a problem at the moment, as De Beers currently pays these fees in advance. Transfer of the land to the LLM will result in an immediate loss of land tax revenue. However, despite this state of affairs, it seems that the municipal respondents prefer the transfer of the properties to the LLM (see par. 5.5.3).

Secondly, the income from services and the sale of purified water to De Beers will decline. If those housing units were standing empty, at current rates it would result in a decline in income of R3 million per annum. This amount constitutes

approximately 8.8% of the total income of the LLM budget. In terms of income generated by the LLM itself (excluding inter-government grants), this might be as high as 15%. If these housing units were to be sold, the income risk of non-payment would probably increase as it might be the lower-income people who would occupy these units and the benefit of one advance payment from De Beers would be lost. The declining scale of service provision would also limit the potential to cross-subsidise water supply and increase the financial burden on the municipality

Thirdly, the indirect impact of closing the mine on the LLM's finances should be considered. Mine closure and the inevitable laying-off of the workforce, together with the subsequent decline in business activities and loss of jobs in businesses, would also increase the non-payment of services.

All these factors will most certainly impact negatively on the delivery of services, which in turn will have an impact on the inhabitants' levels of access to water, sanitation and waste management. From the CDS survey it seems that service provision by the municipality will be severely affected should De Beers discontinue their involvement at Koffiefontein. In this regard, 75% (6/8) of the respondents from the municipality indicated that the closing of the mine will impact severely on the ability of the municipality to render services to the community. One respondent was uncertain, while another said that services would be only somewhat affected. In addition to these results, 50% of businesses interviewed were of the opinion that the local municipality will be unable to maintain roads due to insufficient revenue. The percentages for the expected inability of the municipality to maintain the other service were: sanitation (35%), water (35%), electricity (20%), water supply (35%), storm water drainage (40%) and refuse removal (15%).

The increase in income risk to the municipality will also result in increasing pressure on the cash flow of the municipality. The expected increased pressure

on municipal income has subsequently also increased the fear that land tax will be implemented on farming communities in order to replace the loss of income from the mine and to increase municipal revenue.

Xhariep District Municipality[25]:

Mines usually contribute in taxes to some form of provincial government (see Chapter 4). Once the mining areas close, these second tier governments are usually affected negatively because they lose the income. In the South African context, businesses usually pay a percentage of their salary bill to District Municipalities. This levy was introduced to assist with the redistribution of funds to poorer areas in the late 1980s. Koffiefontein Mine only pays 0.35% of their salary bill and 0.14% of turnover to Xhariep District Municipality. The mine pays approximately R450 000 to the Xhariep District Municipality per annum. This is 13.6% of the total income from levies in the Xhariep. Furthermore, businesses (including the mine) at Koffiefontein contribute 22% of the total levy income in Xhariep. Should the mine close down, it will have a negative impact on the functioning of the Xhariep District Municipality. In the first place, it will probably lead to retrenchments as approximately 63% of the budget goes to salaries. Secondly, it will probably make the Xhariep District Municipality even more dependent on financial assistance from the provincial government as the provincial government has already assisted the Xhariep District Municipality with R5 million during the 2004/2005 financial year. However, there is no guarantee that similar assistance will be repeated in the future.

Status of the impact

The status of the impact will be negative as municipal revenue for the LLM and the District Municipality will decrease.

[25] Information provided by the Director of Finance in the Xhariep District Municipality.

Extent of the impact

The impact on the decline of the municipal revenue will be at both the local and the regional level. As the LLM covers areas beyond the Koffiefontein urban boundaries, the declining income will also impact negatively on service delivery in the other towns of the LLM. The decline in municipal revenue of the Xhariep District Municipality will also have an impact on the quality of services to be delivered to the Xhariep district. The fact that this municipality is already struggling to finance its expenditure – the provincial government had to provide an extensive input – will result in a fairly huge regional impact, should the mine close.

Probability of the impact

Should the mine close down, the impact will definitely be felt, as closing the mine will result in people migrating from Koffiefontein, leaving the mine-owned houses empty (see par. 5.3.1). Even if these houses are occupied, it will mean an increase in the income risk to the LLM, as they will not receive the payment in bulk and in advance from De Beers. The probability is further enforced by the fact that closing the mine will lead to higher levels of unemployment (not only mining related) and a subsequent decrease in the ability to pay for services (refer par. 5.6).

Intensity of the impact

The intensity of the impact is rated as ‘high’, as it will decrease the ability of the LLM to provide/maintain the necessary services and will increase the pressure on the cash flow of the municipality.

Duration of the impact

It is envisaged that the impact will prevail in the medium term. Although the largest impact will be during the first five years, it is highly unlikely that the municipality will be able to adjust totally during the short term.

Most vulnerable group(s) to be affected by the impact

Two groups are particularly vulnerable in the context of this impact:

- The most vulnerable group is probably all low-income people at Koffiefontein who will lose their employment and thus be unable to pay for their services.
- The LLM, who will lose a substantial part of their traditional revenue base.

Potential to mitigate the impact

The potential to mitigate the impact is low, as it is highly unlikely that another industry will replace the mining industry to create employment. Although the current financial management of the LLM is good, ongoing municipal financial management expertise will be required to ensure sound financial management. At the same time, some suggestions have been made to diversify the economy of Koffiefontein and in such a way ensure long term revenue for the town. It is unlikely, however, that any of the mentioned possibilities will have a significant impact (see Chapter 6).

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local & Regional
Intensity	High
Probability	Definite
Duration	Medium term
Significance	High
Mitigation potential	Low

5.4.2 The termination of service agreements (formal and informal) with Koffiefontein Mine

Nature of the impact

Usually there are close relationships between mining houses and the provision of municipal services in mining areas. Infrastructure formerly supplied and maintained by the mine will have to be taken over by alternative management organisations. Local governments are usually tasked with this responsibility. At the World Bank Conference on the closing of mines in 2000, one of the recurrent themes was that local authorities are experiencing severe difficulties in taking over these service delivery functions from mines (see Chapter 4). Koffiefontein Mine and the LLM have a number of informal service agreements at Koffiefontein. The following should be mentioned specifically:

- From time to time, De Beers provides water to the LLM. This has happened twice during the past year. This utilisation of water provided by De Beers is a result of regular maintenance to the main Kalkfontein canal by the Kalkfontein Water User Association. Also, no boreholes exist in the area that are able to provide sufficient water to Koffiefontein. Currently, De Beers pays a water levy to get water from the Kalkfontein Dam into the mine dam. If the municipality needs water, it pumps it from there to the municipal reservoirs. If the mine closes, attaining water for the municipality in such circumstances will become more expensive, as, currently, the municipality taps into the water supply of the mine during these maintenance periods.
- Koffiefontein Mine also provides some technical assistance in respect of the upgrading of the water purification system and with the sewage dams. The upgrading of both systems is currently in progress and has thus saved the LLM consultation fees.
- The LLM also uses some equipment from Koffiefontein Mine. More specifically, large trucks for transporting heavy items and earth moving

equipment are often used. On average, this happens approximately six times per year.

- The LLM also uses the vehicle for fire fighting from Koffiefontein Mine. The availability of these services from the mine means that the LLM does not have to maintain such a service.
- The Koffiefontein Mine IT team has also assisted the LLM in setting up some of their IT systems.
- Once in the past the mine has also assisted the LLM with land surveying.

It seems that the above services are provided for three reasons. The first is the fact that the municipality does not necessarily have the financial means to provide for these services itself. Secondly, the municipality might not have the required technical capacity. Thirdly, the technical expertise provided by De Beers also ensures that no external technical consultants need to be hired. All of these informal service agreements will disappear when Koffiefontein Mine is closed. This will mean that the LLM will itself have to provide these services, which might require some extensive capital investment, as well as investment in the technical capacity of the LLM. Considering the fact that the closing of the mine will already increase the pressure on municipal income (see par. 5.4.1) the ability of the municipality to provide these services will decline. The reason for this is that it will not be able to replace these services and that the technical capacity might not be available in the municipality. The inability of the municipality to provide the services mentioned above and others is further emphasised by the following results from the empirical survey:

- The following percentage of business people felt that the municipality will not be able to sustain the infrastructure due to lack of capacity: roads – 10%; sanitation – 30%; water – 15%; refuse removal – 6%.
- In addition, 87.5% of the respondents from the municipality have indicated that, should De Beers discontinue their involvement at Koffiefontein, the rendering of services are sure to be severely affected.

Status of the impact

The status of the impact is negative, as it is unlikely that the LLM will be able to provide the above-mentioned services without the technical assistance of De Beers.

Extent of the impact

Although the immediate impact will be at the local level (as De Beers' assistance in this respect has always been limited to Koffiefontein), it is also foreseen that this might impact on some of the other urban areas to which services need to be provided.

Probability of the impact

There is a high probability that the LLM will be unable to address the gap in the informal service agreements once the Koffiefontein mine closes.

Intensity of the impact

The intensity of the impact will vary from *moderate* (technical assistance) to *high* (water provision).

Duration of the impact

It is envisaged that the duration of the impact will be short term, as it will require rethinking by the municipality to address the problem.

Most vulnerable group(s) to be affected by the impact

The most vulnerable group will probably be the community at large, particularly as far as water provision is concerned.

Potential to mitigate the impact

The potential to mitigate this impact is rated as high. In the first place, it requires that the necessary technical capacity be provided or created over time. Secondly, a plan to reduce the impact over time will be implemented. For

example, a plan should be developed that enables the municipality to provide this service on its own without assistance from De Beers.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Mainly Local and somewhat Regional
Intensity	Moderate to High
Probability	High probability
Duration	Short term
Significance	Moderate
Mitigation potential	High

5.4.3 An increase in the number of indigent households[26]

Nature of the impact

The closing of mines usually goes hand in hand with large-scale retrenchments (see Chapter 4; also par. 5.6). These retrenchments often result in increased poverty. Although some of the ex-employees of mines migrate to other areas, the mining area usually has to cope with an increase in poverty rates. This increased poverty also increases the inability of those individuals and their households to pay for services provided by the municipality. The future closing of the mine at Koffiefontein will almost certainly increase the number of indigent households.

Current South African policy to address the non-payment of services due to low income includes, amongst others, an intergovernmental grant to subsidise low-income people. In the LLM, all households with an income of below R1 400 per month are seen as indigent and their services fees are being subsidised by an R8 million intergovernmental grant from the National Government. The size of this grant is determined by a national assessment of poverty in all local

[26] This section considers the impact for LLM only. For the impact on households, see par. 5.7.3.

municipalities relative to one another. The 2001 census data have already indicated that, despite the fact that the mine and supporting businesses employ a large number of the local population, the area is still characterised by poverty. In 2001, the poverty line was R1 140 per household income. Census data indicate that 57% of the Koffiefontein population are below the poverty line. Compared with the Xhariep District municipal figure of 71%, Koffiefontein residents are therefore proportionately better off than the general population in Xhariep (Statistics South Africa, 2001). Approximately 3 000 households in the LLM are currently registered as being indigent[27]. No specific figure was provided for Koffiefontein or Dithlake. The increasing unemployment (directly and indirectly related to the closing of the mine) will probably result in a sharp increase in the number of households that are indigent. Estimates by the interviewees were that this number could easily increase to between 3 500 and 4 000 households, should the mine close.

Most of these indigent households will be at Dithlake and Diamanthoogte. Three reasons can be advanced to justify this conclusion. Firstly, traditionally the largest percentages of poverty in South Africa are found amongst the African population. Almost 61% of the African population in the Free State were living in poverty in 2003 (SAIRR 2003). The comparative figures for white and coloured households are 5.4% and 25.4%. Secondly, almost 80% of Koffiefontein Mine's permanent employees are from the African population group[28] (see Chapter 3). Although a fairly large proportion of expected indigent households will be directly related to mining employees losing their jobs, a substantial number will probably come from businesses that have to retrench their workers. It can be expected too that these workers will be lower skilled, and that the majority will be from the African population group. The results of the survey show that only 48.1% of the employees, 39.4% of the households, 25% of the municipal interviewees and 45% of businesses are optimistic about the future of Koffiefontein – i.e. the

[27] Information received from the LLM.
[28] *African* in this context refers to black and coloured workers.

minority of all stakeholders. These results probably support the above arguments. Thirdly, it seems that larger percentages of black and coloured employees (of which a large percentage reside in Diamanthoogte and Dithlake) than white employees will remain at Koffiefontein after the closure of the mine. The survey indicated that less than half of the current permanent employees intend to remain at Koffiefontein after the mine has been closed. In essence, the economic future of Koffiefontein, without the mine, is bleak. Large-scale retrenchments in the mining sector and business at Koffiefontein will increase the number of indigent households in, especially, Dithlake.

Should the mine close before 2013 when the census results of the 2011 census will be available, the current formula (based on 2001 census data) will probably not be accurate. Closing the mine will cause the number of indigent households to increase. However, the current intergovernmental grant will only address the currently existing number of indigent households. This increase in the number of indigent households and the inability of the current formula to address such an increase will ensure further pressure on the cash flow of the municipality. This increased pressure on the cash flow might result in services deteriorating.

Status of the impact

The status of the impact will be negative, as the number of households that will become indigent will increase, should the mine close.

Extent of the impact

The impact of the decline of the municipal revenue will be at both the local and the regional level. As the LLM covers areas beyond the Koffiefontein urban boundaries, the increase of indigent households at Koffiefontein and the subsequent pressure on the budget of the LLM will result in lower levels of services in the LLM. However, the biggest increase in the number of indigent households will be at Dithlake.

Probability of the impact

Should the mine close, there will be a definite increase in the number of households classified as being indigent. This increase will be a result of the increasing unemployment caused by the closing of the mine, but also from decreasing employment by businesses in the area.

Intensity of the impact

The intensity of the impact is rated as moderate as it will decrease the ability of the LLM to provide/maintain the necessary services and, on the other hand, increase the pressure on the cash flow of the municipality.

Duration of the impact

It is envisaged that the impact will prevail in the medium term. Although the largest impact will be during the first five years, a new formula after the 2011 census will enable the LLM to receive similar treatment.

Most vulnerable group(s) to be affected by the impact

The most vulnerable groups to be affected will be:

- Low-income, employed mine workers and their families, currently mostly residing at Dithlake and Diamanthoogte;
- Unskilled and low-income workers (as well as their families) employed by businesses that may have to downscale and retrench their staff;
- The LLM.

Potential to mitigate the impact

There is a moderate potential for mitigation. Although it is impossible to mitigate the increase of indigent households, it is certainly possible to mitigate the impact of such an increase on the municipal budget. It is suggested that, once a final date for closing of the mine has been determined, a delegation from the LLM and De Beers make an appointment with the Department of Provincial and Local

Government to address this problem (see Chapters 6 & 7). In essence, the changing situation at Koffiefontein and the subsequent impact thereof on municipal finances should be explained. Furthermore, such a delegation should lobby for Koffiefontein to be declared a special case. They should also lobby for an increase in their share of the intergovernmental grant.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local & Regional
Intensity	Moderate
Probability	Definite
Duration	Medium term
Significance	High
Mitigation potential	Moderate

5.4.4 Decreased contributions (of De Beers) to educational institutions and social programmes

Nature of the impact

Over the past few years, Koffiefontein Mine has been instrumental in making capital investments of more than R12 million in the community (see Chapter 3). Contributions range from monetary donations to the provision of intellectual expertise and donations in terms of physical infrastructure. De Beers has also made significant donations to corporate beneficiaries at and around Koffiefontein. The company has made a significant contribution to the promotion of literacy and education in the LLM area with the emphasis on making monetary and physical donations to some local schools.

International trends indicate that although funding, donations and assistance from the mine to schools cease upon mine closure, the community continues to utilise the facilities (see Chapter 4). Lack of both maintenance and alternative

sources of funding, however, often leads to the deterioration of the facilities over time. Similarly, cessation of funding to social groups, NGOs and development initiatives by the mine could also lead to the deterioration of these activities. This depends on the extent of the dependence on mine funds and support.

Schools

De Beers has been highly involved in supporting local schools. Currently, De Beers subsidises the salaries of four English medium teachers in the Koffiefontein High School. Upon mine closure these subsidies will fall away, which will mean that the school will no longer be able to retain the teachers. This will further imply that English medium will no longer be taught at Koffiefontein High School, something that will negatively impact on the school's ability to maintain a quality level of education. In view of the projected population decrease at Koffiefontein and the impact that this may have on the local schools (see par. 5.3.1), this could create an incentive for parents to send their children to other schools, which will result in a further decrease in the numbers of learners.

Apart from formal support and donations, Koffiefontein Mine also provides informal services to the schools. The withdrawal of these services could place a higher financial burden on schools, as they would have to pay for these services themselves. Additionally, withdrawal of these services could lead to a deterioration of the school infrastructure. Ultimately, a decrease in donations and technical assistance results in an increased difficulty for a school to maintain itself. In the light of the decreasing population at Koffiefontein and the resulting decrease in learners, schools might have to be assimilated.

Apart from formal donations, the mine also has several in-house provisions such as the De Beers Adult Basic Education and Training (ABET) Centre and the De Beers Anti-Retroviral Treatment (DART) Programme that provide services to De Beers' employees and to the community (in the case of ABET). The likely impacts on these programmes are discussed below.

The ABET Centre

There are two ABET facilities at Koffiefontein - one run by the Department of Education and the other by De Beers. Whereas the De Beers ABET Centre concentrates more on literacy and numeracy, the Department of Education facility covers broader learning areas. In the case of mine closure, the De Beers ABET Centre will be closed down. The Department of Education will, however, continue to provide ABET classes. Due to the turmoil of social dynamics that the Koffiefontein community will be exposed to such as migration, job-seeking, etc. (as discussed in other sections of this chapter), people will stop attending ABET classes, which will, in turn, result in the perpetuation of their disadvantaged status within society.

Ultimately, education provision at Koffiefontein will be severely affected if the mine should close. Not only will schools be affected due to the fact that they will lose a strong support base, but adult education too will suffer. This will place an increased burden on the Department of Education to prevent a stagnation of services. This might entail that future education developments will not materialise, and that a general lack of investment in education and post-school training will be experienced. Eventually, there will be a decreased opportunity for children and adults to further their education.

The DART Programme

The DART Programme provided by De Beers will also fall away when the mine closes, although DBCM's current policy allows for the continuation of support to those already enrolled on the programme. The mine's local and provincial involvement in information and awareness programmes, however, will in all likelihood be terminated, thus leaving an important vacuum in this regard. Arguably the most important impact, however, will be that ex-mine employees, if they contract HIV/AIDS in future, will no longer be able to enrol on the DART Programme, but will have to access anti-retroviral drugs through the provincial

programme of the Department of Health - a programme still in the process of being rolled out. The option of joining the De Beers programme will fall away, which will imply an increased burden on the health clinic at Dithlake. With a possible increase in the HIV prevalence rate at Koffiefontein in the future due to, amongst others, an expected increase in migrant labour and erosion of the social fabric (see par. 5.3.1; par. 5.7), this impact points to a decrease in the health status and life expectancy of the community. Again, the communities of Dithlake and Diamanthoogte, who will largely have to rely on public health services, will be disproportionately affected.

Social development programmes

Other social programmes and assistance provided by De Beers (see Chapter 3) may also discontinue at Koffiefontein. Of particular importance in this regard is Koffiefontein Mine's proposed social upliftment programme (KLAC)[29] which – once operational – will aim to assist development projects in educational, health, welfare, skills development, conservation and cultural sectors in the Letsemeng and Kopanong[30] municipal areas, and to a lesser extent, also the greater Xhariep District. Although KLAC requires a level of sustainability and a broad donor base as prerequisites for assistance to projects, many potentially beneficial development projects may be terminated in the future if De Beers discontinues their involvement at Koffiefontein.

Apart from De Beers' own social programmes, the example of the 1982 mine closure demonstrates that, with the decrease in municipal revenue, the municipality had to delay implementation of planned projects. This scenario could be repeated in a future mine closure, which would entail that the community would be disadvantaged in terms of future social development initiatives. At the same time, such a scenario would in all likelihood see an increase in the number

[29] The stated objective of the programme of the Koffiefontein Mine Local Area Committee (KLAC) is to promote and advance the social, economic and environmental welfare of the communities surrounding the mine during its operational life and beyond.
[30] Consisting of Jagersfontein and Fauresmith.

of requests for assistance put to other agencies, such as the Department of Social Development.

The municipality, the business sector and the community provided suggestions for programmes (or development projects) that De Beers and/or Government should offer to the community if De Beers should discontinue its involvement at Koffiefontein. These suggestions are dealt with in Chapter 6.

Status of the impact

The impact will be **negative** as the educational sector (schools and ABET Centre) and other social development programmes and projects will lose valuable monetary contributions, assistance and support functions from De Beers. Additionally, the DART Programme will be discontinued, thereby diminishing the opportunity for the community to access anti-retroviral drugs and HIV/AIDS support.

Extent of the impact

The extent of the impact will be both *local* and *regional* as the mine has also made (financial) contributions to schools and development projects outside Koffiefontein.

Probability of the impact

The impact is *probable.* Although De Beers may no longer render the above assistance if they discontinue their involvement at Koffiefontein, some of these programmes (such as the HIV/AIDS programme and the ABET centre) may be continued by government agencies and NGOs.

Intensity of the impact

The intensity of the cessation of donations and support by De Beers to the educational, health and developmental initiatives of the region is *moderate* to *high*.

There will be a *moderate* impact on the social projects and programmes that will no longer receive funding from De Beers. Since donations made by the company are once-off, development initiatives will not be seriously affected in the short term. Generally, however, the lack of future social development funding will impact on the region. In terms of the closure of the ABET Centre, the intensity of the impact will also be *moderate* as the Department of Education will continue to run the ABET Centre.

Cessation of funding and assistance from De Beers to the schools (especially Koffiefontein School and the subsidisation of the English medium teachers) will have a *high* intensity, as these functions will fall away without the option of replacing the source of subsidisation. It is unlikely that the Department of Education will absorb this impact, especially if the expected decline in leaner numbers is considered.

Cessation of the DART programme will also be of *low* to *moderate* intensity, as current beneficiaries will still be supported in the future (provided that DBCM's policy in this regard remains unchanged). For newly infected ex-employees the impact will be moderate, as they will be deprived of the opportunity of joining the DART Programme. They will, however, be able to join the Anti-retroviral Drug Programme of the Department of Health.

Duration of the impact

The duration of the impact differs according to the sector: social donations and funding by De Beers are most likely to discontinue *permanently*. In the light of possible LED strategies and funding from government departments, funding and assistance to social development programmes and projects will continue. The impact will thus be *short term*.

In respect of the halting of funding to subsidise the English medium teachers, the duration will be *permanent*, unless the Department of Education continues subsidisation of the teachers' salaries.

The impact in respect of the ABET Centre and the DART Programme, will be *short term*.

Most vulnerable group(s) to be affected

The groups that will be most affected are:

- Schoolchildren at Koffiefontein High School
- English medium teachers at Koffiefontein High School
- The communities of Diamanthoogte and Dithlake who could have benefited from future development projects
- Employees who may contract HIV/AIDS after they have lost their jobs

Significance of the impact

The significance of the impact is rated as *moderate*.

Potential to mitigate the impact

The potential to mitigate the impact is rated as *moderate* to *high.* International and South African literature demonstrate that where the mine subsidised schools and clinics, termination of subsidies requires immediate attention in order to prevent the deterioration of services in the short term.

De Beers plans to establish a Xhariep Education Resource Centre on the mine hostel area. The aim of the centre is to provide teaching and the training of teachers for the whole District Municipality. Although this is still in the planning phase, negotiations with the DoE and the DME are in progress.

At the time of writing this report, De Beers was waiting for DME for closure certificates for that portion of the land (mine hostels area) on which the Resource Centre would be established. Simultaneously, De Beers was, in collaboration with the DoE, negotiating the lease agreements that would be finalised by the end of 2004. One of the limitations hindering the process is that the MPRDA does not specify closure procedures of portions of the mine as was the case under the old Act. Therefore the process has been delayed. In relation to the Education Resource Centre, consideration is being given to handing over the De Beers ABET Centre to this facility. Similarly, this option is still in the planning phase.

Another option under consideration is handing over the De Beers ABET Centre to the DoE's ABET Centre. Currently, the two stakeholders are attempting to promote interaction and the sharing of resources. Once the De Beers ABET Centre closes, the DoE could take over De Beers' resources and students.

For reasons mentioned above, the potential for mitigation of the DART Programme is *high.*

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local & Regional
Intensity	Moderate to High
Probability	Probable
Duration	Short term to permanent (depending on external factors)
Significance	Moderate
Mitigation potential	Moderate to High.

5.4.5 Close down of the mine clinic

Nature of the impact

The clinic operated by De Beers will close down when the mine closes. This clinic provides occupational and primary health care services primarily to De Beers' employees and if the clinic closes down, patients that have normally received health care at this clinic will probably make more frequent use of the public health care services provided at the town clinic. The town clinic will thus experience an increased patient load. The closing down of the clinic may impact negatively on the health status of people previously serviced by the clinic and also of the wider community due to the fact that an increased patient load at the public health clinic may decrease the ability of this facility to provide adequate health care. Through the clinic, De Beers' employees also receive regular medical examinations to provide the mine with up-to date health reports of its employees. This facilitates the early recognition and identification of health threats to workers, such as TB. Once this facility is no longer available, it could jeopardise the health of the workers and influence their life expectancy negatively. De Beers also provides transport assistance to employees to obtain specialist medical attention outside Koffiefontein. Once this transport is no longer available, employees may struggle to obtain proper medical assistance.

In addition to general health services, the mine clinic also provides paramedical services such as radiology and physiotherapy to the community. Once the clinic closes down, these paramedical services could either deteriorate due to a lack of skill and expertise in the public health care sector to continue to provide these services, or even disappear completely. There are, for example, concerns that the personnel at the town clinic are unable to operate the X-Ray machine currently operated by the De Beers clinic. One positive impact of the close down of the clinic would be that the equipment currently used at the De Beers clinic may be transferred to the town clinic.

One of the private doctors in town also allocates a proportion of his time to working at the clinic and is subsidised by De Beers to fulfil this function. In addition, the doctor is supported administratively in that doctors' bills incurred by De Beers' employees are deducted from their salaries and paid over to the doctor. When the clinic closes down, there will firstly be a definite financial impact on doctors, since the mine subsidy and support of private doctors will stop. In addition, the doctors in town could be more reluctant to provide services to patients without De Beers' support in place. In the event of mine closure, a large proportion of the people who now have a medical aid, and thus are able to afford private health care (spouses and children of mine workers), will then no longer be able to make use of private health care facilities and will thus have to rely more strongly on the public health care sector.

Due to support by De Beers there is a financial incentive for a doctor to maintain a private practice in town. Once the clinic closes, private health care at Koffiefontein could deteriorate, since the increased patient numbers the mine provides and the support given to doctors through administration and subsidising, make a private health care practice viable. If the private medical practice closes down, it could also impact negatively on the number of pupils in Koffiefontein's schools, particularly the Koffiefontein High School. The presence of a doctor twenty-four hours a day is a strong consideration for parents from the region to

send their children to Koffiefontein, rather than to nearby Jacobsdal or Petrusburg where constant medical care is not available (p/c Dr Botha, 18/6/2004).

If the mine clinic closes, training opportunities for public health care workers will also cease, since De Beers Clinic always involved the public health care workers in any training opportunities that they organised or attended. De Beers furthermore organised health awareness campaigns. Among these was an annual HIV/AIDS awareness week.

In sum, the close down of the clinic will impact severely on the quality of health care provided at Koffiefontein due to the overburdening of the public health care sector and the diminishing of high quality private health care. The deterioration of health care will, in turn, impact negatively on the health status of the Koffiefontein population and also of the region. Decreased access to health care may also lead to a decrease in life expectancy.

Status of the impact

The close down of the mine clinic will be *negative* for the Koffiefontein community.

Extent of the impact

The impact will be mainly *local,* although to a lesser extent, the whole region could be affected by the deteriorating health care services in the region. There is also an impact at the individual level - people's health status and life expectancy may be affected by the decreased access to health care.

Probability of the impact

Definite.

Intensity of the impact

Moderate: Due to the fact that there is an existing public health care sector, people will not be left totally without access to health care. A deterioration of access to services is, however, expected due to the removal of private health care and the overburdening of public health care.

Duration of the impact

Long term. In the event of mine closure there would be no prospects for private health care to continue due to a lack of financial incentive. No foreseeable changes in the public health care sector are envisioned to absorb the impact.

Most vulnerable group(s) to be affected by the impact

Two groups would be particularly vulnerable in the event of the mine clinic closing down:

- Those people making use of the clinic facilities – employees currently on medical aid (and their families) who will in future have to rely on an overburdened public health care sector.
- The aged – relying on the quality of private health care delivered.

Potential to mitigate the impact

Without an incentive for private health care to continue at Koffiefontein and with little prospect of the expansion of public health care, there is a low possibility of mitigating the impact through the provision of alternative sources of health care. However, a decrease in population numbers as a result of out-migration may alleviate the pressure on the existing health care services in town.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local, and to a lesser extent, regional
Intensity	Moderate
Probability	Definite
Duration	Long term
Significance	Moderate
Mitigation potential	Low

5.4.6 Summary of impacts on the public sector at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After mitigation
A decrease in revenue of the district and local municipality	Negative	High	Moderate to high
The termination of service agreements (formal and informal) with Koffiefontein Mine	Negative	Moderate	Low
An increase in the number of indigent households	Negative	High	Low to moderate
Decreased contributions (of De Beers) to educational institutions and social programmes	Negative	Moderate	Low
Close down of the mine clinic	Negative	Moderate	Moderate

5.5 Impacts on land use and infrastructure at Koffiefontein

The following direct impacts are anticipated for this sector: (i) recreational facilities may deteriorate if these are no longer maintained by Koffiefontein Mine; (ii) a decrease in residential property values; and (iii) the vacancy of a large number of properties that may, amongst others, trigger various social ills.

5.5.1 Deterioration of and decreased access to recreational facilities

Nature of impact

The majority of the sporting, recreational and entertainment facilities are owned and maintained by Koffiefontein Mine (see Chapter 3). The community and the local municipality have a very limited responsibility towards these facilities. Once the mine closes and De Beers withdraws from Koffiefontein, the company will no longer maintain the recreational facilities. With mine closure and the consequent decrease in population size, there will also be fewer people utilising these facilities. During the mine closure in 1982, it was recorded that, of the previous sports teams, fewer than 10% of the members remained (see Chapter 3).

Although funding, donations and assistance from the mine to physical infrastructure such as recreational facilities ceases with mine closure, the community usually continues to utilise the facilities (see Chapter 4). Lack of maintenance and alternative sources of funding, however, result in the gradual deterioration of these facilities. Table 5.7 reflects the extent to which mine employees and the community are at present utilising the recreational facilities. It depicts a relatively low frequency of usage of most facilities. It is also evident that mine employees are proportionately more inclined than the broader community to use these facilities, while a statistical correlation has shown that *white* mine employees in particular are more inclined to use the facilities than any other group. The frequency of usage amongst residents of Dithlake and

Diamanthoogte is even lower than that for households in general. One general complaint (and accusation) that emerged from respondents at Dithlake and Diamanthoogte was that the facilities are too far away for them to utilise, and that the mine has failed to develop any such facilities either closer to, or in these two areas. In the event of closure, and an expected exodus of skilled (*read*: also mostly white) employees, the overall usage of these facilities will no doubt be even much lower than is currently the case.

Table 5.7: Proportion of De Beers' employees and households who make use of the recreational facilities[31]

Facility	Koffiefontein Mine employees			Households		
	Regularly %	Seldom %	Never %	Regularly %	Seldom %	Never %
Golf course	11	3	86	2	8	90
Koffiefontein Club (bar, pool tables, etc.)	12	18	70	8	21	72
Gymnasium	11	20	69	9	12	80
Bowls club	3	9	88	3	6	91
Squash court	-	11	89	1	5	95
Adventure Club (swimming pool etc.)	11	19	71	10	23	67
Pony Club	2	5	94	2	4	94

Source: CDS Survey 2004

There are several options to the future of the recreational facilities once the mine closes. The first is that the facilities will be handed over to the municipality. This will place an increased burden on the local municipality – who by that time will also have to deal with an eroded tax base - to maintain the facilities. In the light of the expected decreased revenue (see par. 5.4.1), it is questionable whether the municipality would be able to maintain the same level of quality of services to the recreational facilities as under the mine's occupation. An additional problem is that De Beers has the necessary equipment to maintain the facilities, which the municipality does not. For example, De Beers has the equipment to provide for the maintenance of the lights on the sports fields. If the recreational facilities are therefore handed over to the municipality, the probability that they would deteriorate is very high.

[31] Percentages have been rounded off.

Another option is that the facilities be privatised (for example the privatisation of the golf club, gymnasium and the bowling club). Privatisation of (some of the) facilities would in all likelihood increase the chances of proper maintenance of the facilities. The level of maintenance thus clearly depends on the (future) owner. Privatisation does not imply a *guarantee* for proper maintenance, but given the current scenario for the municipality's financial position after closure, it probably is the more viable option of the two.

Deterioration of recreational facilities would also lead to the collapse of sports clubs that used to make use of the facility. This will impact negatively on community structures, as sports and recreation promote community interaction and the strengthening of social networks and ties.

Status of the impact

Depending on who the future owner will be, the impact can be either *positive* or *negative*. Regardless of the owner (municipality or private), if the facilities deteriorate, the impact will be *negative.* If the facilities are maintained (either under municipal or private ownership) the impact will be *positive,* as the community would continue benefiting from the facilities. These facilities also have tourist potential. The most likely scenario for the status of the impact, however, is *negative*.

Extent of the impact

The impact will be mainly *local* and to a lesser extent *regional*, as the local and surrounding schools and communities will no longer be able to utilise the sports and recreational facilities.

Probability of the impact

The probability of the impact for most facilities is *definite* - if the mine closes, it will not retain the ownership and management of the sports and recreational

facilities. In the case of other facilities, the impact is *probable*. Some facilities (such as the gymnasium) are more popular than others (such as the pony club), and may also be more popular during negotiations with a future owner – something that will increase the likelihood of maintenance and thus soften the predicted impact.

Intensity of the impact

The intensity of the impact is rated as *low*, for the following reasons:

- A relatively small proportion of employees and community members are currently using the facilities on a regular basis; 70% to 90% have indicated that they *never* use the facilities.
- Among those who are currently using the facilities on a regular basis, many are likely to leave the area after closure, which will result in a further erosion of the percentage of regular users.

Duration of the impact

The duration of the impact will be *short term* if the facilities are maintained. The impact will be *long term* if the facilities are not maintained and deteriorate to the extent of non-use. The most likely scenario, however, is that the duration of impact will vary per facility: For the more popular facilities the duration will be short term; for the less popular facilities it will be long term.

Most vulnerable group(s) to be affected by the impact

The most affected community groups will be

- A small proportion of regular users of these facilities; and
- Schools that will no longer be able to make use of the facilities.

Significance of the impact

The significance of this impact is rated as *low* to *moderate.* Although the frequency of usage is currently low for almost all these facilities, the future

maintenance of these facilities is important if Koffiefontein is to attract investors, or to capitalise on the newly established Horizon tourism route.

Potential to mitigate the impact

The future of the recreational facilities depends on the initiatives of De Beers. If (some or most of) the facilities are privatised, the probability that they will be maintained is high.

There is potential for tourism initiatives utilising, for instance, the Golf Club and especially the Adventure Club. This depends on whether De Beers will privatise the facilities, and whether the new owners have the expertise to promote the facilities as tourist attractions.

Par. 5.4.4 describes the establishment of the Xhariep Educational Resource Centre. The Centre will provide teaching and training teachers for the whole District Municipality. One option is that the Centre could focus on coaching sport-educators on the recreational facilities if these are maintained by the municipality. This could lead to joint maintenance of the facility between the municipality and the DoE.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local, to a lesser extent Regional
Intensity	Low
Probability	Probable to Definite
Duration	Short to Long term
Significance	Low
Mitigation potential	Moderate

5.5.2 Decrease in residential property values

Nature of the impact

The closing of mines usually goes hand in hand with a decline in the property values of the affected area (see Chapter 4). This decline is usually the result of a decrease in housing demand as out-migration takes place and ex-employees do not usually see the area of the mine as an area in which to invest. In Welkom (the traditional gold mining area of the Free State) the value of residential properties declined by approximately 50% after the dramatic decline of the gold price in 1989, and the subsequent closure of various mine shafts. It should also be mentioned that the current nationwide increase in urban housing prices has also occurred in Welkom. In this case, it has taken more than ten years for the residential property market in Welkom to recover from the losses it suffered in the late 1980s and early 1990s.

In order to describe the possible impact of mine closure on property values at Koffiefontein[32], an overview of the following aspects is provided:

- Current trends in property values at Koffiefontein[33]
- The willingness of financial institutions to lend money to prospective buyers
- The possible impact, should De Beers sell their properties at below market value
- Possible consequences of a declining property market at Koffiefontein.

[32] In this paragraph "property" refers to "residential property.

[33] In this section it is assumed that there is probably no secondary property market at Dithlake. This is based on recent research by Finmark Trust (2004), which found that the secondary property market in former black townships was mostly limited. Therefore the impact of closing the mine will probably be experienced at Koffiefontein only.

Nationally, there has been a major boom in property values over the past three years. It is especially the urban housing market that has been growing extensively. The average growth rate for house prices has been 16.5% during the past year, ending April 2004 (ABSA Property Index, 2004). On average, urban house prices in South Africa have risen by approximately 15%-20% per year during the past three years.

The price of housing units at Koffiefontein has historically been linked to the mining industry in the town. According to information received from the two attorneys at Koffiefontein, house prices before the closing of the mine in 1982 were in the vicinity of R40 000 per unit. After the mine had closed, prices dropped to R20 000 with virtually no property transactions taking place. In 1987, after the re-opening of the mine, property values again increased steadily to about R50 000 – R90 000. Current prices vary between R100 000 and R120 000 per housing unit. According to the respective attorneys, there has been a rapid increase in property values and transfers during the past year – an observation that is further confirmed by data obtained from the internet website *Property24*. According to *Property24*, 50% of transfers at Koffiefontein since 2000 have taken place in the period after January 2003. Furthermore, in the past six months, some of the up-market housing units have been sold at between R150 000 and R250 000. This can probably be ascribed to the general improvement of the housing market in South Africa over the past three years. However, according to the attorneys, rumours of the possible closing of the mine, as well as the possibility of De Beers selling their housing units, have already resulted in a decrease in housing demand at Koffiefontein.

It appears that financial institutions are careful of providing housing finance at Koffiefontein[34]. The current uncertainty around possible mine closure is having a negative impact on the willingness of banks to provide housing finance. Considering the fact that property finance is usually a long-term commitment (15-

[34] This was mentioned by the bank manager and other business people who were interviewed.

20 years), the behaviour of the financial institutions probably makes sense. In addition, it is probably a reflection of a general uncertainty pertaining to the future of mining at Koffiefontein.

The possibility that the mine might sell their housing stock is another reason why the house prices could decline. From a De Beers survey, completed amongst approximately 40% of their employees, there seems to be a considerable demand for owning a house at Koffiefontein. This demand is especially high under lower income employees of De Beers. This survey was, however, conducted before the latest rumours on the closing of the mine. It can be expected that the possible closure of the mine will have a number of people reconsidering their intention of buying a house at Koffiefontein. Furthermore, releasing 254 housing units in a town with limited residential stock (465 housing units at Koffiefontein[35], 1297 at Dithlake and 265 at Diamanthoogte) will result in the decline of the existing market prices, as well as a decline in demand. The value of the current mine-owned properties is estimated at R18.7 million[36] in 2003. The properties cover an area of approximately 30 000m^2. The overall average price per house is approximately R75 000. However, the valuations range from R214 000 for the most expensive housing units (E-band), to R115 000 for the LD-band, R81 000 for the UC-band, R71 000 for the LC-band, R36 000 for the LCDH band, R57 000 for the LCDIT band and R30 000 for the LB band. The question is at what price these housing units will become available in the market and what the demand will be. If these properties are to become available at lower than market price, the housing market in the remainder of Koffiefontein will stagnate. Approximately 40% of the household respondents and 40.6% of the current employees have indicated that it would not be worthwhile to stay at Koffiefontein after the mine has been closed. This is probably an indication that the demand for housing will also be limited. The

[35] The severest impact will be on Koffiefontein's former white suburb. This number excludes the erven belonging to De Beers.
[36] This estimate is based on data received from De Beers. De Beers valuated the properties in 1993 and increased the property values with 6% per annum since then.

possibility of a decrease in property values is further confirmed by the fact that 64.5% of the household respondents indicated that the property values would decline at Koffiefontein after the mine has closed. In comparing the perceptions of residents in this regard, it was found that 62.8% of household respondents from Dithlake, 40.7% of households at Diamanthoogte and 83.3% of household respondents from Koffiefontein were of the opinion that property values would decline after mine closure. Substantial proportions of residents in the three neighbourhoods are thus anticipating an inevitable drop in property values, following mine closure.

It seems that a decrease in property values will take place, either if the mine closes down, or if De Beers sell their units – especially at prices below the current market value. In fact, the current rumours about closing the mine seem already to have impacted negatively in this regard. Declining property values might impact negatively on the income from land tax for the LLM. Furthermore, as a house is usually a form of financial security and is often used for other investments, this could also reduce the available capital at Koffiefontein and the subsequent ability for new investments and possible job creation.

Status of the impact

The status of the impact is *negative*, as property values will decrease and it will probably impact negatively on the revenue of the LLM, as well as on the availability of investment capital at Koffiefontein.

Extent of the impact

The immediate impact will be at the *local* level in, especially, the historically white suburb of Koffiefontein. However, limited regional impact will be felt too, as it would have a negative impact on the land tax revenue for the LLM which would impact at the regional level.

Probability of the impact

It is *highly probable* that this impact will take place, as it has taken place in similar cases elsewhere. The demand for market-related housing will decline with people leaving Koffiefontein, while the housing stock will probably increase if De Beers sell the housing units.

Intensity of the impact

The intensity of the impact will be *moderate* to *high*, as it will lead to declining revenue for the Letsemeng Municipality and probably to a decline in investment capital.

Duration of the impact

The duration of the impact is expected to be of a *medium term*, as it might take up to ten years or longer to restore the initial losses in property value.

Most vulnerable group(s) to be affected by the impact

Current homeowners are probably the most vulnerable group to be affected, but it will also impact negatively on the service that *poor households* will receive from the LLM, and will also impact negatively on possible job creation for *the poor*.

Potential to mitigate the impact

The potential to mitigate this impact will be *low* to *moderate*. However, it might be possible to market the housing units to a broader market. A specific possibility is to market them amongst retired people, and probably also among investors looking for a ”weekend” home in the country.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Mostly local level, but also with regional impacts
Intensity	Moderate to high
Probability	Highly probable
Duration	Medium term
Significance	High
Mitigation potential	Low to Moderate

5.5.3 Vacancy of a large number of properties

Nature of impact

The closing of mining operations usually goes hand in hand with a decline in residential occupancy (see Chapter 4). This decline is usually the result of a decrease in housing demand in the affected mining environment. At the time of re-opening of Koffiefontein Mine in 1987, there were approximately 160 empty houses.

Before the nature of the impact can be established, an overview of the current housing units needs to be provided. This is depicted in Table 5.8.

Table 5.8: Available family accommodation provided by Koffiefontein Mine, 2003

Type of Units	Total	Company Employees	Guest Houses	Extended Single Quarters	Private Rentals	Vacant	% Utilisation
Total LB Units - D/Hoogte	**46**	**43**	**0**	**0**	**2**	**1**	**98**
LC Units - D/Hoogte	22	22	0	0	0	0	100
LC Units – Dithlake	3	3	0	0	0	0	100
LC Units - Phase 1	70	59	0	1	4	6	91
LC Units - Phase 2	22	18	0	3	0	1	95
Total LC Units	**117**	**102**	**0**	**4**	**4**	**7**	**94**
UC Units - Phase 1	30	22	0	2	1	5	83
UC Units - Phase 2	13	11	0	1	0	1	92
Total UC Units	**43**	**33**	**0**	**3**	**1**	**6**	**86**
LD Units - Phase 1	8	7	0	0	0	1	88
LD Units - Phase 2	17	14	0	0	0	3	82
Total LD Units	**25**	**21**	**0**	**0**	**0**	**4**	**84**
UD Units - Phase 1	4	4	0	0	0	0	100
UD Units - Phase 2	12	8	2	1	0	1	92
Total UD Units	**16**	**12**	**2**	**1**	**0**	**1**	**94**
LE UNITS - Phase 1	4	4	0	0	0	0	100
E Band Units - Phase 1	1	1	0	0	0	0	100
Total EBand Units	**5**	**5**	**0**	**0**	**0**	**0**	**100**
Transit Flats - Phase 2	2	0	2	0	0	0	100
Totals	**254**	**216**	**4**	**8**	**7**	**19**	**93**

Source: De Beers 2004

The following situation currently prevails at Koffiefontein with regard to mine-owned housing:

- There are 254 family units in total. Of these units, 68 or 26.7% are located at Diamanthoogte, and 3 or 1.2% at Dithlake with the remainder at Koffiefontein.

- Company employees occupy 216 (85%) of these units, while 7 (2.7%) are occupied by private households not linked to the mine.
- 19 (7%) of the units are not occupied at the moment.
- The remaining 12 units are used as guest houses or extended single quarters.

Table 5.9 provides an overview of the single accommodation provided by the mine.

Table 5.9: Single accommodation provided by Koffiefontein Mine, 2004

Single Accommodation	Rooms	Beds	Occupation	Vacant	% Utilisation
Single Quarters - LC Band	13	13	13	0	100
Hostel (Contractors)	30	60	12	18	40

Source: De Beers data, 2004

Hostel accommodation has been phased out for mine workers. However, a number of contractors to the mine still rent accommodation from the hostels for their labourers. The single quarters are small flats and should not be confused with the hostels.

Against the above background, the question is what the chances are for large-scale vacant properties after the mine is closed. Four related aspects will probably play a role in this regard. The first is the policy that De Beers will follow regarding the housing units that they own. The second is the preference of current occupiers; third, the level of out-migration of people from Koffiefontein to other areas and, fourth, the market demand to absorb these housing units. A fifth issue regards the chances that there will be vacant properties in areas not currently belonging to the mine.

Current policy is to let these housing units to the employees. It seems that De Beers is considering privatising these housing units. The transfer of these properties to the LLM is also a possibility. The properties can also be sold on the open market. Finally, these properties can be left to become dilapidated. The transfer of the properties from De Beers to LLM will ensure that De Beers will not have to pay property tax on these units after closing the mine. However, this might not be to the benefit of the LLM, as the municipality will not receive the necessary revenue from land tax. Interestingly enough, during interviews with officials at the LLM, the possibility of transferring the land to LLM was viewed positively. However, it should be stated that Council has not taken any decision in this regard. The argument was that the sooner the land was transferred to the municipality, the sooner they (the municipality) could address the problem. As long as De Beers owns the land, it will be difficult for the LLM to do anything about the problem.

The results from the survey further support the idea of transferring the land to the municipality. Municipal respondents were asked what role Koffiefontein Mine should play to ensure that municipal services and infrastructure are sustained in the future. In this regard, 50% of the respondents were of the opinion that the existing De Beers' properties should be transferred to the municipality. The same sentiments were expressed when municipal respondents were asked what the most important thing is that De Beers can do for the municipality. In response to this question, 87.5% indicated that they prefer that properties should be transferred to the LLM. The motivation for these responses is that it places the municipality in control of the properties. The municipality can actually plan and market these properties. To a large extent, it thus reduced dependency on De Beers. Furthermore, the problem of transferring these units to private ownership will now become the responsibility of the LLM. A third option is to open the market to anybody and market these housing units amongst retired people in particular. Finally, De Beers could also let the conditions of the housing units deteriorate to such a level that the municipal valuation decreases.

This will have a negative effect on municipal revenue. Another factor related to the policy approach to be followed by De Beers, is probably what the approach to current occupiers will be after closing the mine. The survey amongst employees indicated that 40.6% of the respondents did not view staying at Koffiefontein as being worthwhile. The period for which De Beers will allow current occupiers to remain in the housing units will also impact on the number of units that will be vacant. In interviews with employees, as well as in the findings of the survey, this possibility was raised. Three types of sentiments resulted. Firstly, that should the mine close, current occupiers be allowed to remain there for some time (one year at least). The second sentiment was that the properties should be transferred to the current occupier free of charge. A third sentiment related to a general transfer of properties to the community. The social survey indicated that 8% of the household respondents spontaneously requested this option from De Beers. This response was received when respondents were asked what the most important contribution was that De Beers could make after closing the mine.

The preference of current occupiers, coupled with the scale of out-migration of Koffiefontein, will also impact in this regard. Although the out-migration might not be as high as during the previous closing of the mine (see par. 5.3), it remains an impact that will definitely take place. In a survey among 171 occupiers of these housing units by De Beers in 2003, it was found that 96.5% would prefer buying a housing unit. Two important notes should be made with regard to this data. In the first place, the survey was conducted before widespread rumours of the closing of the mine became common. Secondly, only 40% of employees responded. Interestingly enough, this preference was highest among low-income employees and lowest among employees with fairly high salaries in the D and E bands. These statistics suggest that the higher income earners will probably rather move. Higher income earners probably do not view Koffiefontein as an area for investment. In addition, 40.6% of the respondents in the household survey and 36,4% of the respondents in the employee survey disagreed with a statement saying that it would be worthwhile living at

Koffiefontein after the mine has been closed. During focus group interviews with employees, the possibility of Koffiefontein becoming a ghost town was often mentioned. Although it is probably an over-exaggeration, it probably reflects a perception of vacant properties on a large scale.

De Beers are currently considering the privatisation of the housing properties under their jurisdiction. Furthermore, if the land is transferred to the LLM, it will have to be privatised anyway. The question is: Will there be a large enough demand to purchase these housing units? The answer to this question probably depends on the value of the properties. The preferences of higher income earners already suggest that the demand will probably not come from them, given the current values of these properties. Furthermore, taking into account the average value of properties at Koffiefontein (see par. 5.5.2), it seems unlikely that these housing units will be sold at their current value. Thus, unless a considerable decline in price is envisaged, it seems unlikely that the housing units will be sold. One possibility is to market these housing units beyond the boundaries of Koffiefontein – maybe as a retirement village.

The above paragraphs have considered the possibility of current property owned by De Beers at Koffiefontein becoming vacant. Although the biggest pressure in this regard would probably be on De Beers-owned housing properties, the indirect impact of mine closure might go beyond this. Considering the high dependence of certain types of businesses on the Koffiefontein mine, it is also likely that some properties not belonging to De Beers might become vacant. More importantly, it might limit the existing property market at Koffiefontein.

Overall, it seems that mine closure is most likely to increase the number of housing units that will be vacant at Koffiefontein. These vacant properties will result in a decrease in land tax, and probably also in an increase in social ills due to the vandalising and plundering of the vacant properties, while illegal land occupation cannot be ruled out either. It will also impact on the municipal

services utilisation – something that in turn will have a negative impact on municipal revenue and the municipality's ability to provide and maintain the necessary infrastructure and services. The declining scale of service provision could also impact negatively on the ability of the municipality to sustain services to the poor. Large-scale vacant housing units also leave open the possibility of unlawful occupations. From the community survey, some sentiments in this regard were forwarded and housing was identified as a major need at especially Dithlake. There is a definite expectation among residents at Dithlake that De Beers should transfer the housing units to the community.

Status of the impact

The status of the impact is mostly *negative*, as vacant properties could result in less land tax and service fees to the municipality, and probably also ignite acts of vandalism and theft. However, vacant properties and a lower level of utilisation of water and electricity might also be positive for the environment.

Extent of the impact

The impact of potential vacant properties will be *mainly local* and to some extent *regional*, as the probable decline in land tax to the LLM may also impact on service delivery in other towns of the municipality. The centre of the impact, however, will in all probability only occur in the historically white suburb of Koffiefontein, and not at Dithlake and Diamanthoogte.

Probability of the impact

It is *highly probable* that mine closure will lead to an increase in the number of vacant properties at Koffiefontein.

Intensity of the impact

The intensity of the impact is rated as *moderate* to *high*, as vacant properties will result in a decline in revenue for the LLM and an increase in property vandalism.

Duration of the impact

The duration of the impact for the municipality will be *short* term, as the LLM should be able to adjust their business in such a way as to minimise the impact of vacant properties. If initial attempts to sell the houses are unsuccessful, the duration of the impact may be extended to the medium term, as the houses may become a financial liability to DBCM in particular.

Most vulnerable group(s) to be affected by the impact

The most vulnerable groups are:

- the LLM;
- DBCM – if houses are not sold or transferred and remain vacant for an indefinite period of time.

Potential to mitigate the impact

The potential to mitigate this impact is *moderate*. Although it is unlikely that there will be much interest among current inhabitants of Koffiefontein to buy these units, the properties could be marketed to a broader target market, with emphasis on older people and investors.

Summary of impact

Rating of impact	Impact on closure
Status	Mostly negative, but could also lead to a decrease in resource utilisation
Extent	Mainly Local, and somewhat Regional
Intensity	Moderate to high
Probability	Highly probable
Duration	Short to medium term
Significance	Moderate
Mitigation potential	Moderate

5.5.4 Summary of impacts on land use and infrastructure at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Deterioration of recreational facilities	Negative	Low to Moderate	Low
Decrease in property values	Negative	High	High
Vacancy of a large number of properties	Negative	Moderate	Low

5.6 Impacts on the economic sector at Koffiefontein

Three direct impacts are expected on the economic sector: (i) loss of job opportunities for employees at Koffiefontein Mine; (ii) the downscaling of mine-related and mine-dependent businesses with accompanying job losses; and (iii) the loss of service benefits and allowances of mine employees.

5.6.1 Loss of job opportunities for employees at Koffiefontein Mine

Nature of the impact

Arguably the most significant impact that mine closure has on any community is the loss of jobs and the subsequent increase in unemployment in mining and mine-related industries (see Chapter 4). Employment opportunities under mine-closure are characterised by two facts: Both the *quantity* and the *quality* of the jobs available decreases dramatically. Furthermore, most mine workers' skills are often specialised to mining operations. This renders their re-employment difficult[37]. This reality is to a certain extent confirmed by the survey results amongst employees, where 5 out of 10 mine employees indicated that their prospects of finding another job - if De Beers should cease operations at Koffiefontein - are "not so good" or "very slim". Of the current mine employees a further 7.6% indicated that they would "definitely not" be able to find another job in the future if De Beers should decide to discontinue their involvement at Koffiefontein. The situation is aggravated by the fact that almost 88% of the employees indicated they did not have any additional source of income. Of those having an additional income, almost 50% indicated the amount to be insufficient to sustain their households. The current unemployment rate (narrow definition),

[37] Besides the fact that the mining sector decreased in the relative importance of the Free State provincial economy, the sector seems to have become less labour intensive and more capital and technologically intensive. In 1996, the mining sector of the Free State generated proportionately more employment opportunities than its contribution to the economy. By 2002, the situation had been reversed, with the sector then generating proportionately fewer employment opportunities relative to its contribution to the economy. In fact, mining employment opportunities in the province declined from approximately 120 000 in 1996 to about 58 000 in 2002 (c*f.* Reichardt, 2004; Urban Econ, 2004: 7-2).

as reported in Census 2001, is 25% for Koffiefontein and 38% for Xhariep District. With more than 1 out of every 3 economically active persons in the district unable to find a job, it is clear that the absorption ability of the broader region of Xhariep, should Koffiefontein Mine close, is very limited. This high level of unemployment in the region at the time of closure will substantially reduce the opportunities for retrenched workers to find alternative employment in the region.

If the profile of permanent staff members at Koffiefontein Mine is analysed (see Chapter 3), it is evident that the most vulnerable group in terms of ability to find an alternative job are those employees possessing a highest educational qualification of Grade 11 and lower, and those in the age cohort of 41 years and older. This means that between 50% and 60% of the current mine employees will find it extremely difficult to find another job subsequent to mine closure. If the 240 supplier-agency-related workers are added to this number, almost two-thirds of the current employees will struggle to find alternative employment. Almost as if in confirmation of this conclusion, 80% of the current employees have indicated that De Beers should help them to find another job, while 71% have admitted that they need to receive training in order to improve their prospects of finding another job. Most employees want to be trained in artisan skills i.e. those of boilermaker, fitter, electrician, plumber, mechanic, joiner, welder, etc. – skills which they believe will improve their labour mobility.

In-depth interviews during the scoping phase also identified the cohort with the lowest qualification to be the most vulnerable group in the labour sector. This was further confirmed by a statistically significant correlation in the employee survey data, where almost two-thirds of the employees with an educational qualification of less than Grade 12 indicated not to have good prospects of finding a job. More than three out of four employees with a Grade 12 or higher qualification reported “reasonably good” and/or “excellent” prospects of finding an alternative job. This finding confirms the important relationship between educational and skills level with labour mobility - a finding which should clearly be

considered in the design and roll-out of possible mitigation steps to soften the labour impact of mine closure.

Previous studies have put the number of people who are dependent on a single mine job as high as ten (see Chapter 4). However, the survey amongst employees revealed that the number of people dependent on one Koffiefontein mine income, is substantially lower at 5.7. If this number is utilised in an extrapolation for 520 employees - i.e. 67% of the work force as argued earlier - it means that the livelihood of (at least) almost 3 000 people could directly or indirectly be negatively affected due to mine closure and subsequent job loss.

Almost one-third (31.7%) of the employees indicated that they support people *outside* their households with their mine salaries. Of these people that mine employees support, 90% have no other source of income, *i.e.* they are *entirely* dependent on the wage income of the benevolent mine employee[38]. These people could thus also be considered as extremely vulnerable.

There is often a concern that ex-employees, once retrenched, handle their financial packages in a wasteful and irresponsible way. However, respectively 68% and 88% of the current employees indicated that they would use their retrenchment packages to cancel debt and to invest the money[39]. Yet, there are also 30% who will spend it on clothing, 14% will buy a car and a further 14% intend to purchase household durables. A substantial proportion (38%) of the employees will also attempt to start an own business once retrenched. Social and economic problems similar to those experienced over the past two years after voluntary separation packages were granted at the mine, can therefore surface in the future.

[38] Most of these dependants (83.3%) reside in the Free State and the Northern Cape.

[39] The percentages reported by ex-employees were very similar, with 76% reporting that they have cancelled their debt, and 91% that they have invested their money. However, larger proportions of ex-employees chose to spend (parts of) their retrenchment packages on less important expenses, i.e. household durables (38%), clothing (29%) and a car (29%).

Job loss and subsequent unemployment always ignite a range of cumulative impacts, not only for the individual, but also for the community and for institutional arrangements in the affected area. These cumulative impacts usually are of a psychological, emotional, financial and economical nature, and are more thoroughly dealt with in par. 5.7.

Status of the impact

The impact will be *negative*, given the large number of current employees and their dependants who may be stripped of their sources of income.

Extent of the impact

The impact will be *mainly local* and, to a lesser extent, *regional*.

Probability of the impact

The impact is *highly probable* to *definite*.

Intensity of the impact

The intensity of the impact will be *very high*, as it will no doubt trigger a range of cumulative impacts (see par. 5.7).

Duration of the impact

In the absence of any mitigation measures or interventions, the duration of the impact will be *long term* to *permanent*.

Most vulnerable group(s) to be affected by the impact

The termination of job opportunities at Koffiefontein Mine will leave the following sectors of the community very vulnerable:

- The current employees, especially the less employable employees such as semi-skilled and unskilled labourers. For historic reasons, most persons in this category are black and residing at either Dithlake or Diamanthoogte.

- Dependants of mine employees, particularly women, children and the aged
- More than 50% of Koffiefontein-based businesses and their employees
- Suppliers to the mine and their employees

Potential to mitigate the impact

Prevailing conditions in the broader socio-economic environment suggest a *low* potential to mitigate this impact for the majority of employees, unless alternative mine-related initiatives can be explored. More specifically, this would entail the re-deployment of employees at other operations, or the lengthening of the lifetime of Koffiefontein Mine.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local and regional
Intensity	High
Probability	Highly probable to Definite
Duration	Long term, probably permanent
Significance	High
Mitigation potential	Low

5.6.2 Downscaling of mine-related and mine-dependent businesses and subsequent job losses

Nature of the impact

Job loss not only affects mine employees, but also mine-supporting industries and mine-dependent industries. A case in point is the Matjabeng community of Welkom, where at least 100 000 mining jobs have reportedly been abolished during the past 20 years. It is feared that, should these jobs not be replaced at least partially by other sustainable employment opportunities, demand for goods and services from the region's retail sector would be cut by 80% (Reichardt,

2004). Some studies commissioned by the International Finance Corporation clearly suggest that mining-dependent towns that do not develop non-mining dependent industries during the life of the mining operations do not survive (Reichardt, 2004).

Impacts on local business should also be considered. The example of Virginia in the Free State Goldfields demonstrates that businesses in general suffer from mine downscaling, to such an extent that many of them are rendered non-viable. Industries providing services to mine workers and their dependants (such as taxi transport) could collapse completely. Taxis, hawkers, *spaza* shops and small and micro enterprises are negatively affected by mine closure. The reason for this is that the loss of a fixed income, exacerbated by increased out-migration, erodes the consumer base and the purchasing power of the community.

Currently there are 10 supplier agencies at Koffiefontein Mine with a staff contingent of 240 whose employment is linked to the suppliers' mine contract. Interviews with these suppliers revealed that only one will face immediate closure if the mine closes down. There are, however, at least two other suppliers who indicated that more than 70% of their turnover is mine-related, although they have reported an ability to mobilise other contracts in the event of mine closure. On average, 40% of the turnover of all of the 10 suppliers dealing with Koffiefontein Mine will be lost if DBMC decided to cease its operations at Koffiefontein.

The possible impact of mine closure on the business sector of Koffiefontein is reflected in the following results from the survey among the business sector:

- Of the businesses 62% reported that mine closure would "severely" affect their businesses, while a further 19% of the businesses would be "somewhat" affected. Only 10% of the businesses – mainly businesses serving the agricultural sector - indicated that they would not be affected by mine closure.

- The mine dependency of businesses at Koffiefontein is confirmed by the fact that 58% indicated that it would not be worthwhile to stay on at Koffiefontein after mine closure. This correlates with 55% of the businesses at Koffiefontein that indicated their concern about Koffiefontein's economic future. Currently there is a sense of uncertainty pertaining to possible mine closure. Sixty percent of businesses that participated in the survey were uncertain whether the mine would remain in operation for many years to come.
- While 35% of the businesses would remain at Koffiefontein after mine closure, 25% would move away, and 40% were uncertain.
- All the businesses that indicated that they would move out of Koffiefontein, also indicated that they are more than 60% dependent on Koffiefontein Mine. This finding confirms a correlation between the extent to which a business is mine-related or mine dependent, and its perceived ability to survive the demise of a mine. The more reliant a business is on the mine's existence, the higher the likelihood that closure may severely affect such a business.

The above figures clearly suggest that the Koffiefontein business community (including Dithlake and Diamanthoogte) overwhelmingly depends on the purchasing power and opportunities generated by the mining operation in the area. It is mainly the proportion of the business sector not reliant on the mine, or on the local consumer base, that will be able to survive mine closure. The economic profile of the area shows that such businesses mainly operate in the agriculture-related sector (i.e. the local agricultural corporation, agricultural implement distributors and agro-related transport businesses.)

Closure of a large number of businesses will imply an additional impact to the local and district municipality. Not only will the LLM lose the property tax paid by these businesses; Xhariep District Municipality will also loose the 1% levy of the salary accounts of these businesses. Since most businesses fall in the category

of small enterprises with relatively low employment and salary levels, this will probably not be a significant loss to the district municipality.

Status of the impact

The impact will be mainly *negative*, although an expected downscaling of mine-related business may lead to an increase in the informal sector as people engage themselves more in entrepreneurial activities.

Extent of the impact

The impact will be *mainly local* and to a lesser extent regional.

Probability of the impact

The impact is *highly probable* to *definite*.

Intensity of the impact

The intensity of the impact will be *very high*.

Duration of the impact

The lifetime of the impact will be *long term* to *permanent*, unless alternative sustainable economic activities are pursued in the affected area.

Most vulnerable group(s) to be affected by the impact

- Businesses that are more than 60% dependent on the mine operations are the most vulnerable. This includes some of the retail businesses and guesthouses (which indicated that more than 90% of their turnover is mine-related).
- Lower-skilled employees currently in the service of businesses and supplier agencies. The largest group of these employees are residents of Dithlake and Diamanthoogte.

Potential to mitigate the impact

The potential to mitigate this impact is rated as *low* to *moderate*. From research on the international experience of mining towns surviving the end of mining, it emerges that mining-dependent communities do become sustainable if they manage, during the life of the existing mine operations, to develop economic sectors not associated with or dependent upon mining. Many of the possible mitigations are thus suggested attempts at building a post-mining economy for Koffiefontein.

A broad range of possible mitigations were raised during the interviews and the survey. These suggested mitigations are dealt with more thoroughly in Chapter 6.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local and regional
Intensity	High
Probability	Definite
Duration	Long term
Significance	High
Mitigation potential	Moderate - if commenced long before mine closure Low - if initiated after mine closure

5.6.3 The loss of service benefits and allowances of mine employees

Nature of the impact

De Beers provide several benefits to their employees including medical aid, a housing allowance, and water and electricity allocations. Some (upper) staff categories also qualify for car and telephone allowances. Once the mine closes and employees lose their jobs, these benefits will no longer be available to employees and their dependants. A breakdown of these benefits appears in

Table 5.10 below, followed by a discussion of the impact of the loss of each benefit.

Table 5.10: DBCM's contribution to employee benefits (January 2004)

Benefit	Range of DBCM's monthly contribution
Medical Aid	R473-40 – R619-80[40]
Housing allowance	R161 – R2 022
Water & Electricity allocation	R183 – full amount
Car allowance[41]	R5 760- R8 990
Telephone allowance[42]	R84

Loss of medical aid benefits

Currently, Koffiefontein Mine employees and their dependants benefit from medical aid membership. Once the mine closes and they become retrenched, this benefit will fall away, which will have several implications for ex-employees and their dependants.

Loss of medical aid benefits will entail that ex-employees may no longer be able to pay for private medical treatment, and that they will have to make use of public health facilities (such as the Ethembeni Clinic at Dithlake). This will place increased strain on the clinic to accommodate additional patients and will ultimately place a financial strain on the clinic's budget, which might be insufficient to cover the needs of the community. The lower-skilled (and thus poorer-paid) employees and their dependants will be affected disproportionately, as their chances of finding alternative employment – and thus to replace the lost benefit – are slim. Most of the employees in this category currently reside at Dithlake and Diamanthoogte.

[40] These amounts are De Beers' contribution to adult members of the Medical Scheme only, and do not reflect the company's contribution to members' children, which range from an additional R127 to R166 per child per month.
[41] Selected staff categories only.
[42] Selected staff categories only.

De Beers also provides transport assistance to employees to obtain proper medical attention outside Koffiefontein. Once this benefit falls away, employees who remain behind will either have to cope without this service, or probably pay for a private person to replace this service.

Loss of employees' medical benefits will also affect private medical services at Koffiefontein. With the termination of medical aid benefits, ex-employees will revert to public services, which will entail a decreased use of private medical doctors. In conjunction with out-migration and consequently decreased population size, this could lead to private medical doctors also moving out of Koffiefontein.

Loss of medical aid and increased dependency on public health services will lead to a decreased capability of the health system to support the community, which may entail a decrease in community health and consequently a decrease in life expectancy.

Loss of housing allowances

Currently the company pays municipal rates and taxes for the mine dwellings and also subsidises the rates and taxes of employees who have acquired private housing through the De Beers Home Ownership Scheme.

From a housing perspective, mine closure may have at least two implications. The first concerns the fact that mine houses will either be donated to the municipality after closure, or be sold. If the houses are donated to the municipality, there will be a definite loss of rates and taxes on these houses up to the point where the houses are leased out or sold and rates and taxes can be recovered. This matter has been dealt with in more detail in par. 5.4.1.

The second impact that mine closure has on payment of rates and taxes concerns employees who have made use of the De Beers Home Ownership

Scheme. Once De Beers' employees lose their source of income and the company no longer provides the housing subsidy, the probability exists that employees will have to use their retrenchment packages to buy or rent accommodation. This will erode the amount of money that will be available for investment and to sustain themselves and their families. Again, employees at the lower end of the remuneration scale will be disproportionately affected, as they will find it almost impossible to replace this benefit.

Loss of water and electricity allocation

Koffiefontein Mine pays for the water consumption of mine employees and provides electricity coupons to employees living in mine houses and in the town.

Once the mine closes, previous employees will be doubly affected. Firstly, they will no longer receive subsidies for water and electricity. Secondly, they will lose their jobs, which will entail a lower probability of being able themselves to pay for water and electricity. Lack of being able to pay for these municipal services further means that the municipality loses a part of its revenue. The impact that this will have is similar to the situation in respect of the housing situation. Not only will the municipality lose the *security* of payment, but it will also lose the *funds* that were paid on a regular basis by De Beers. Another impact will be added to this, namely that the number of indigent households within the municipality will increase, thus laying an additional financial and administrative burden on the municipality.

If jobless people are unable to pay for a service such as electricity, and the supply to households is cut off, this may create yet another problem for the municipality. Experience elsewhere in the country has shown that in such a case communities are inclined to resort to illegal electricity connections – something that in itself poses several threats to the community. This is over and above the fact that such a scenario may also evoke feelings of hostility towards the municipality.

Loss of car and telephone allowances

Unlike the case with medical, housing and water/electricity benefits, the loss of car and telephone allowances will not affect the majority of employees, since they currently do not enjoy these benefits. On a scale of basic requirements, car and telephone allowances may also be seen as *privileges* rather than *basic necessities* to maintain a decent quality of life. Most employees who enjoy these benefits are usually well qualified and experienced, and should be able to replace the loss of these benefits by securing alternative employment.

Status of the impact

The impact will be *negative* as employees will be deprived of their medical aid benefits, housing allowances, and water and electricity allocations.

Extent of the impact

The impact will be mainly *local*, as increased pressure will be placed on the population, their dependants and service providers to compensate for these benefits.

Probability of the impact

The impact is rated as *definite*. If De Beers in future discontinue their activities at Koffiefontein, the company will in all likelihood not continue to provide any of the mentioned benefits to ex-employees.

Intensity of the impact

With the exception of a loss of car and telephone allowances, the intensity of the cessation of all other benefits will be *high*, particularly to the majority of semi-skilled and unskilled workers. Although the loss of medical benefits may partially be replaced by accessing the public health sector, this still implies a significant loss of opportunities to employees.

Duration of the impact

The duration of the impact directly depends on the ability of employees to find alternative employment opportunities to replace the lost benefits. For the skilled and well-qualified employees, the duration may vary from *short* to *medium* term. In the case of most of the semi-skilled or unskilled workers, however, the duration may be *long term* to *permanent*.

Most vulnerable group(s) to be affected by the impact

The most vulnerable groups will be De Beers' employees with specific emphasis on the lower-skilled population groups (and their dependants) who will experience greater difficulty in finding alternative employment or employment that provides company benefits. In terms of the mine's biographic profile, this again means that this group consists of mainly black or coloured people residing at Dithlake and Diamanthoogte.

Potential to mitigate the impact

The potential to mitigate the impact is directly related to employees' ability to find alternative employment that will offer benefits similar to those they are currently receiving, or to compensate for the loss of benefits by means of increased cash remuneration. As argued in previous discussions, for most of the employees this likelihood will be slim; hence the potential for mitigation is seen as low to moderate. Any potential to mitigate this impact will therefore probably have to be initiated by DBCM, and probably entail re-deployment of workers.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local
Intensity	High
Probability	Definite
Duration	Semi- and Unskilled workers: Long term to permanent Skilled workers: Short to medium term
Significance	Moderate to High
Mitigation potential	Semi- and Unskilled workers: Low-skilled workers: Moderate

5.6.4 Summary of impacts on the economic sector at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After Mitigation
Loss of job opportunities of employees of Koffiefontein Mine	Negative	High	Moderate to High
The downscaling of mine-related and mine-dependent businesses	Negative	High	High
The loss of service benefits and allowances of mine employees	Negative	High	Moderate to High

5.7 Impacts on the socio-psychological well-being of the community at Koffiefontein

As far as the socio-psychological well-being of the community is concerned, the following direct impacts are expected: (i) an increase in the nature of and extent to which people experience a sense of loss of community identity and an increase in community isolation; (ii) increased individual and community deprivation, fatalism and negativity; and (iii) a decline in the general quality of life.

5.7.1 Loss of community identity and increase in community isolation

Nature of the impact

The community of Koffiefontein could experience a loss of community identity and an increase in community isolation in the event of mine closure. Any community is characterised by a particular social structure, which refers to the ways in which the parts of a group or society relate to one another. Families, churches, schools, clubs and workplaces are tangible examples of the units of social structure and collectively form the community. The community as a political and spatial unit of social organisation provides the people that form part of it with a sense of belonging and a particular sense of community identity (Schaefer 2001: 501). This sense of belonging strengthens the cohesion of the community.

Previous experiences of mine closure have shown that community cohesion is jeopardised by mine closure through the destruction of community space and the deterioration of infrastructure (see Chapter 4). This occurs because social structures, such as recreation, religious institutions, educational institutions and health institutions may all be impacted on by mine closure. In the case of Koffiefontein, the mine is a very pervasive unit of social structure that affects

almost every community member and various social institutions in town. Firstly, the mine's involvement in the development and maintenance of various social structures is beneficial to community cohesion. Secondly, the mine provides many members of the community with social status as well as with a sense of belonging. Thirdly, the mine is physically very visible and this physical presence contributes to Koffiefontein's identity as a mining town.

The expected decline in economic opportunities in town as a result of mine closure may further decrease community cohesion and increase community isolation. A definite decline in employment opportunities is expected once the mine closes, and people may spend so much of their capacity just to make a living, or to make ends meet. Social ties with family and friends may consequently be neglected in the process. Another facet of deteriorating community cohesion is the possible increase in conflict and competition as the community members compete for limited social and economic resources, such as employment opportunities (see Chapter 4).

Community isolation may increase due to the decrease in employment opportunities, the lack of opportunities for the business sector and the out-migration of people with employment prospects elsewhere. Decreasing economic opportunities in town means that people from other places will not come to town to do business. Currently, small traders regularly come to town to capitalise on the pay out of salaries and pensions. These traders will not come to town to the extent that they currently do if there is a decrease in money being paid out. Added to this, current social networks with people outside of Koffiefontein might be severed or deteriorate due to deterioration of infrastructure or a decline in people's ability to make use of existing infrastructure as a result of decreased economic means. People may not be able to communicate with family and friends through telecommunications because of an inability to pay for these services. Decreased opportunities in town may also lead to a decrease in the

availability of public transport to and from town. A decrease in transport availability coupled with a decreased ability to make use of this might increase the likelihood of the community becoming isolated. On an individual level, the fact that people may experience increased psychological stress and use most of their resources for day-to-day survival, may also isolate community members from each other.

Even if community members are not directly linked to the mine through employment or business association, indirect links to the mine are found in almost every sphere of life at Koffiefontein. The mine improves access to health care, supports education and is involved in the creation and maintenance of various recreational facilities. It must be noted, however, that although the mine developed and maintains various recreational facilities, most members of the community do not use these facilities on a regular basis. For example, the golf course is only used regularly by 2% of the population, the Koffiefontein Club by 8%, the gymnasium by 9%, the Bowls Club by 3%, the squash courts by 1% and the Adventure Club by 10%. Therefore, recreation may not be a significant factor in maintaining community cohesion at Koffiefontein.

At the micro social level, the mine provides community members with social status. When the mine is removed, people who have derived their status from being employed at the mine, or from being associated with the mine e.g. contractors, suppliers, family members of mine workers, may experience downward social mobility which in turn affects how the individual reacts to labour market conditions and to his/her society in general (see Chapter 4).

The mine also binds people from the community together through the shared identity provided by the mine. In the event of mine closure, the community will lose part of its identity, which could in turn affect their general health and well-

being. The effects of a poor sense of community identity on individuals at a psychological level are well documented, as are the effects of a loss of community identity on social interaction and group dynamics. When the factors that bind a community together are removed, people become dislocated from other people around them and, often even from themselves. Often the psychological damage resulting from a life-altering event, such as the closure of a mine, in a small town community is very high. In cases where people were subjected to life-changing events such as natural disasters, people afterwards displayed emotional symptoms such as uncontrolled crying, edginess, as well as increased violence (particularly domestic violence) (Gelles & Levine 1995: 11). Deteriorating health status, increased social ills such as vandalism, crime and violence, as well as an increase in social risk behaviour such as increased teenage pregnancies, prostitution, alcohol and drug usage, etc., may result from the loss of community identity and the increased isolation of the community.

A case in point is what happened in the aftermath of a dam burst in a small, close-knit coal mining town, Buffalo Creek in the 1970s. A year after the events, the impacts noticed on the small town community were apathy, a sense of being dislocated and a lack of people seeing a worthwhile future. It was concluded that the people suffered from a collective trauma, namely the loss of community. Most importantly, individuals in the community based their identity on a community that no longer existed. With the closure of the mine, people may face similar challenges. Community members may need to redefine their sense of community identity and their place within the community, this in the absence of the mine as a unifying agent.

Status of the impact

The impact will be *negative*. The fact that the mine plays a significant role in the community's sense of identity means that, in the absence of the mine, the community may experience a sense of loss of a shared identity. Since the mine

also brings economic opportunity to the town, and enables people to extend and maintain their social networks, mine closure would also increase the likelihood that the community will become isolated.

Extent of the impact

The impact is mainly *local* as the shared sense of community identity and the connection of the community with the other community members and the outside world is largely a local issue. The effects of a loss of community identity and increased isolation will affect individuals psychologically and will have definite implications at the household and community levels.

Probability of the impact

The impact is *highly probable*. The extent to which the community will experience this is directly related to the coping mechanisms existing in the community and the community's ability to find common ground in the absence of the mine. Current indications are that the community members do not have adequate social coping mechanisms in place in the form of social groups or involvement in recreation to act as cohesive sources in the event of mine closure. Labour migration may further decrease the cohesion of the community due to the breakdown of family and community life that may result.

Intensity of the impact

The impact is expected to be of *moderate* intensity.

Duration of the impact

The impact will be most severe in the *short* term (during the first 0-5 years), but the effects will decrease over time as the community develops new social structures and builds a new sense of community identity based on their changed social environment.

Most vulnerable group(s) to be affected by the impact

- People in lower socio-economic groups not able to afford professional support services and who may spend most of their resources on survival
- Women and children (mostly from Dithlake and Diamanthoogte) left behind as a result of labour migration, and who may experience isolation due to the deterioration of the family structure.

Potential to mitigate the impact

This impact can be mitigated very effectively by focusing on preparing the community for the possibility of mine closure, and thereby enabling them to develop a community identity that does not include the mine. The potential for mitigation is therefore rated as high.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local
Intensity	Moderate
Probability	Highly probable
Duration	Short term to medium term
Significance	Moderate
Mitigation potential	High

5.7.2 Increased deprivation, fatalism and negativity

Nature of the impact

Psychologically, mine closure can impact on a community by leading to feelings of deprivation, fatalism and negativity. Previous experiences of mine closure have shown that mine workers and their families experience a wide array of psychological impacts such as apathy, passivity, demotivation, a demoralised

attitude and denial. The psychological impacts may start to surface even before mine closure as facts about the development become known (see Chapter 4).

At present, a large proportion of the community members (45.7%) believe that the mine will be part of Koffiefontein for many years to come. It thus appears as if there might be a sense of denial among community members that the mine might close down in future. However, almost half of the employees (49.2%) were of the opinion that the mine would be operational for many years, and 27% were uncertain, while among the business sector 60% were uncertain and only 20% believed that the mine would still be operational for many years. The community in general is not over-optimistic about the economic future of Koffiefontein; 48% of the households surveyed said that they were optimistic about the economy of the town. Among business people, (only) 45% are optimistic about the economic future of Koffiefontein. In general, large proportions of the community either reflected sentiments of negativism, or of uncertainty about the future of the town.

The extent to which the community denies the possibility of mine closure may impact on the coping mechanisms that they employ to deal with this. Preparation for possible closure is therefore important in order to ensure that the community will react to mine closure with an appropriate reaction. Psychological problems such as passivity and dependence on government support may surface if communities are in denial about the possibility of closure (see Chapter 4).

Deprivation is a significant impact of mine closure as people are often left unemployed. Therefore, people need to adjust their lifestyles to their new economic and social reality. It may also happen that people feel deprived of the lifestyle that they previously enjoyed and they may attempt to meet their needs through substance abuse, risk behaviour, or alternative income-generating practices such as prostitution (see Chapter 4). Another facet of deprivation is that various structures and facilities previously available as a result of the presence of the mine may now longer be there and the community members, may, as a

result, feel deprived at this level. The loss of recreational facilities currently maintained by the mine, the possibility that certain commodities may become less obtainable when the mine closes, the decreased availability of education opportunities and the decreased availability of health care may, among others, increase feelings of deprivation among community members.

Fatalism is often experienced when people become demoralised in their current circumstances and are unable to see a worthwhile future. A fatalistic attitude refers to a state where people see no hope for change and they experience their circumstances to be so oppressive that there is no chance of appeal or release. Individuals experiencing fatalism thus see their future as hopelessly blocked. Fatalism is linked to negativity in the sense that people faced with a situation which they perceive to be hopeless react negatively to any prospects of change. Two behavioural patterns may result from the experience of negativity and fatalism. Firstly, people may become passive and fall back on government support or rely on the mining company to solve the socio-economic problems created by mine closure (see Chapter 4). Signs of such a behavioural pattern and expectation among stakeholders at Koffiefontein – particularly households and ex-employees – have already been detected. Secondly, people may react by increasing risk behaviour such as substance abuse and risky sexual behaviour. Since people experience no hope for a worthwhile future, an escalation of social ills such as vandalism, violence, crime and suicide may also be expected.

While deprivation, fatalism and negativity are psychological impacts experienced firstly at the individual level, the extent to which it occurs within a community also renders it a community impact. If these impacts are severe and extensive, the social fabric of the entire community is jeopardised. Increased social ills, violence, risk behaviour, crime and psychological stress place greater burdens on the psychological, social and law enforcement services to deal with the effects of such psychological impacts.

Status of the impact

The status of the impact is rated *negative*.

Extent of the impact

The extent of the impact will be *local*, thus limited to Koffiefontein, Dithlake and Diamanthoogte.

Probability of the impact

The impact is *highly probable*.

Intensity of the impact

The intensity of the impact will be *high*.

Duration of the impact

This impact might be most severe during the *short term* as people develop the necessary skills and coping mechanisms to manage their new situation. However, in the absence of appropriate support mechanisms, the psychological impacts may become a medium to long term problem.

Most vulnerable group(s) to be affected by the impact

In essence, the whole community may be affected psychologically, although the following groups are proportionately more vulnerable:

- Those who have relied on the mine as a source of income, as well as their dependants. Past experiences show that some men in particular may experience psychological feelings of depression and self-aggression, since they perceive themselves as having failed in caring for their families.
- People with lower skill levels whose prospects for alternative employment are low, may also be psychologically more severely affected.

Potential to mitigate the impact

This impact has a *high* potential for mitigation.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local
Intensity	High
Probability	Highly probable
Duration	Short term, but can extend to medium and long term in the absence of mitigation measures
Significance	High
Mitigation potential	High

5.7.3 A decline in the general quality of life

Nature of the impact

Quality of life is a concept that is often difficult to define in precise terms, but at its core it includes all elements that people think of as important in life. Quality of life is, therefore, determined by people and is to an extent relative and valuative. However, some factors would indicate a decline in the general quality of life in any social environment. In the case of Koffiefontein, a general decline in the quality of life is expected when the mine closes, because the current involvement of the mine in various sectors, such as education and health care, increases the opportunities available to the community. The negative psychological impact that mine closure may have on human well-being at Koffiefontein may also jeopardise the quality of life of the community.

From a community perspective, it is clear that there are some mixed feelings about the extent to which the mine is currently contributing positively to general well-being at Koffiefontein. From the community survey it transpired that 37% of the population felt that De Beers contributes positively to the Koffiefontein community, while 21% indicated that their influence was both positive and negative, and 32% indicated that the contribution was mainly negative. The community's perception of De Beers' contribution to the general quality of life can be deduced from the community's opinion on the best thing that De Beers has ever done for the community. On the one hand, a large percentage of the community (40%) felt that De Beers did nothing for the black community at Dithlake. On the other hand, 10.5% indicated the extensions to the clinic as the best thing, 15.9% felt that providing employment opportunities was the best thing that De Beers did, 12.6% indicated De Beers' involvement in schools, education, training and bursaries, while 8.1% mentioned their best contribution as general town development. Although a substantial proportion of the community – particularly those in the historically disadvantaged community of Dithlake - expressed feelings of aversion and resentment towards the mine, 75% of the community nevertheless believes that life without De Beers would be "severely" affected, and a further 18% felt that it would be affected "somewhat".

These sentiments suggest that De Beers is not always seen as a positive aspect of life at Koffiefontein. When asked to rate the contribution of the mine towards improving life at Koffiefontein, 40.4% of the households gave a mark of less than 5 out of 10, and 59.5% rated their contribution as better than 5. The most significant reason cited for giving a mark of less than 5 was that De Beers did nothing for Dithlake. Therefore, there is a strong feeling among the members of the Dithlake community that De Beers has not contributed much to the improvement of their lives. More than half of the respondents (51.9%) also indicated that they disagree that De Beers had done good things for the community.

Although the Dithlake community in particular does not perceive the mine to have made a large impact on their quality of life, there are some areas in which mine closure may indeed affect the well-being of the community at large, and those of the historically deprived communities of Dithlake and Diamanthoogte in particular.

With mine closure there would in all likelihood be **an increase in the number of unemployed people**, a resultant increase in **the number of people living in poverty** and a greater number of people **relying on government grants**. The Department of Social Development has expressed its concern that the community of Koffiefontein may increasingly apply for social grants. One reason for this may be an attempt by those that are unemployed and poverty-stricken to secure an income via social grants in order to maintain a minimum quality of life. Poverty and unemployment are strongly associated with a poor quality of life due to the impacts of these on physical and psychological well-being. Mine closure in KwaZulu-Natal, for instance, has resulted in an increase in the number of malnutrition-related deaths and in the need to distribute food aid (see Chapter 4). Poverty is also linked to issues such as low educational attainment, poor health status, and demographic trends - such as increased fertility and decreased life expectancy. As a result of poverty, people are often disadvantaged in terms of access to the provision of basic services such as fresh water, adequate sanitation and housing. All these services may deteriorate in the absence of the mine, which in turn may impact on the quality of life (see par. 5.4). Because of their already lower socio-economic status, residents of Dithlake and Diamanthoogte are proportionately more vulnerable and will thus be more severely affected than the residents of the historically white areas of Koffiefontein.

Mine closure may result in **decreased opportunities for economic development** at Koffiefontein. Currently, 42% of businesses at Koffiefontein are almost *entirely* dependent on the mine for business – 80% or more of their business is derived from the mine, while a further 11% of businesses are *very* dependent on the mine (between 60% & 80% of their business coming from the mine). Only 11% of businesses are not at all dependent on the mine, with less than 20% of their business being derived from the mine. The mine therefore fulfils an important economic function in town, and through this function provides a sense of stability to the community. With mine closure, many of these businesses would not be sustainable, resulting in a decreased number of businesses operating in town. Thus, the community may have more limited access to consumable goods and services than they currently do. For example, the bank may have to decrease its service provision drastically if the mine closes down, while it is also possible that private legal services would no longer be available, or scaled down drastically. All this will inevitably culminate in the loss of opportunities to the community, and thus a deterioration of their quality of life.

The quality of life of some **vulnerable groups** such as women, children and older people might be particularly affected by the closure of the mine. It is expected that mine closure will increase the number of female-headed households. Women are more vulnerable to the effects of mine closure due to the fact that men may migrate to other centres in search of employment, leaving the rest of their families behind.

As was discussed earlier, the mine makes a significant contribution to health care at Koffiefontein through the mine clinic and through supporting of the private medical doctor. It is unlikely that the doctor will remain at Koffiefontein once the mine closes, since it will not be financially viable to sustain a private practice without the mine support in place (see 5.4). Therefore, private health care will in all likelihood become non-existent at Koffiefontein. The close down of the mine

clinic will further **decrease access to health care** since the public health care sector will become overburdened, reducing people's chances of receiving health care at Koffiefontein. With increased unemployment and poverty, people's ability to afford better health care will also deteriorate. Therefore, mine closure would negatively affect the health status of the population through decreased access to medical services.

With the closure of the mine, some **educational opportunities may diminish** substantially. Currently the mine operates a number of educational facilities and also contributes financially to the schools in town, most notably Koffiefontein High School and Koffiefontein Intermediate School. With mine closure, it is expected that many of the educational opportunities currently available will not continue in the absence of the mine. Computer courses and the ABET Programme currently run by De Beers are two cases in point. The mine also currently subsidises four English medium teachers at the high school, which makes it possible for the school to provide English tuition. With mine closure this subsidy will no longer be provided and the school may lose their English teachers, with a resulting negative impact on educational opportunities for learners.

Mine closure could therefore affect the quality of life through the impact that this has on future opportunities for social and economic development at Koffiefontein. In summary, the quality of life of those remaining behind at Koffiefontein – including those at Dithlake and Diamanthoogte - will be negatively affected in at least the following ways:

- Increased unemployment and poverty, and consequently an increased dependence on welfare and social support mechanisms
- Decreased economic development and loss of economic opportunities and choices to consumers

- Increased exposure of and pressure on coping strategies of vulnerable groups such as women, children and older people
- Decreased access to health care and choices of health care provision
- Decreased opportunities in education.

Status of the impact

The impact will be *negative.*

Extent of the impact

The impact will be local, i.e. limited to the primary affected area.

Probability of the impact

The impact is *highly probable.*

Intensity of the impact

The intensity of impact will be *high to very high*, depending on the sector.

Duration of the impact

The duration may vary from *medium* to *long term* depending on the sector and/or specific aspect associated with quality of life. For a large part of the community, however, the impact in general will probably be *long term*.

Most vulnerable group(s) to be affected by the impact

The most vulnerable groups to be affected by this impact will be:

- people in lower socio-economic groups, especially those residing at Dithlake and Diamanthoogte;
- women and children, as these two groups are always disproportionately affected by poverty and poverty-stricken conditions; and
- older people, who will be under increasing pressure to use their old-age grants and pensions to support families and friends.

Potential to mitigate the impact

The potential to mitigate a general decrease in the quality of life is directly related to the potential to mitigate other impacts of mine closure. Considering the reasons and conditions mentioned in earlier parts of the assessment, the potential is rated here as *moderate*.

Summary of impact

Rating of impact	Impact on closure
Status	Negative
Extent	Local
Intensity	High
Probability	Highly probable
Duration	Medium to long term
Significance	High
Mitigation potential	Moderate, depending on the mitigation potential of other impacts

5.7.4 Summary of impacts on the socio-psychological well-being of the community at Koffiefontein

Type of impact	Status of the impact	Significance of impact	
		Without mitigation	After mitigation
Loss of community identity and increase in community isolation	Negative	Moderate	Low
Increased deprivation, fatalism and negativity	Negative	High	Low
A decline in the general quality of life	Negative	High	Moderate to High

5.8 Community response

The previous section, and paragraph 5.7.3 in particular, alluded to the fact that a large proportion of the respondents at Dithlake and Diamanthoogte have expressed negative sentiments concerning De Beers, and particularly concerning the role of Koffiefontein Mine in the community. Since the involvement of local communities is pivotal in mine planning and proposed development projects, and, in fact, is required by legislation (see Chapter 1), it is important to create a platform for communities to raise their concerns and to get "buy-in" from affected communities. Stemming from this, it is therefore important to identify and address any impediments that might negatively impact on an efficient communication process between the mine and the community. The purpose of this section is therefore to highlight some of the most pressing issues, criticisms and needs raised by the community, as they emerged from the survey data. It is necessary to take cognizance of these sentiments and perceptions, firstly, to further inform mitigation strategies and, secondly, to place future interactions with the affected community on a sound footing.

The role of Koffiefontein Mine in the community

The community are clearly divided in their opinion about the role of the mine in the Koffiefontein area. Although there is much appreciation for what the mine has done in terms of job creation, general socio-economic upliftment and the development of the town itself, a considerable number of households in particularly Dithlake have expressed negative sentiments concerning the mine's involvement at Koffiefontein. In this regard, the following issues were raised:[43]

- Koffiefontein Mine has been accused of "doing nothing for the black community", as can be seen, for instance, by the fact that all the (recreational) facilities are at Koffiefontein, while there is nothing at Dithlake. As a result, the

[43] Issues raised by 10% or more of community members are outlined here.

community members feel excluded from these facilities and regard them as beneficial to a small minority only.

- Several employment-related issues have been raised. There is a perception that the mine is employing "foreigners" (contractors) at the expense of the local community, while De Beers has also been accused of nepotism, favouritism and discrimination.

Communication between the mine and the community

Almost 60% of community members are of the opinion that De Beers either informs the community poorly, or not at all about new developments on the mine that might influence the lives of community members. Again, residents of Dithlake and Diamanthoogte were proportionately more critical on this than households at Koffiefontein. Community meetings and regular written communication were suggested as solutions to the problem. In similar vein, only 50% of the community members believe that De Beers will inform the entire community well ahead of time of any new developments that might influence the lives of the community. Inefficient communication has thus clearly created sentiments of distrust and scepticism amongst a large part of the community.

Community needs in the event of discontinuation of mining activities

Four prominent needs emerged in the form of things that the community would like **De Beers** to do if a decision should eventually be taken to discontinue their (De Beers') involvement at Koffiefontein:

- Firstly, as could be expected, there is the need for job-related development projects. The nature and scope of suggestions in this regard, however, clearly show that most expectations are over-inflated and not aligned with the socio-economic realities and limitations of the affected environment. Most suggestions further signal a poor realisation and understanding of the

universal economic principles that guide and underpin investment and development decisions. Clearly, one challenge in the way forward will be to lower community expectations of DBCM's responsibility and capacity for "after-closure" economic developments to absorb job losses in the affected area.

- Secondly, a need for more support from the mine for training and education has been expressed. Four particular areas of support have been identified: -
  - a labour training centre for the acquiring of practical skills;
  - a trust fund for bursaries;
  - training in small business development;
  - a programme in farming.
- Thirdly, there is a stated need to transfer mine property to the community – specifically mining equipment and mine dwellings.
- Lastly, there was an emphasis on the transfer and re-deployment of workers to other mines of DBCM.

Actions and support that the community would expect from **Government** in the event of mine closure did not differ that much from the above. The most notable emphases were the following:

- The initiation of employment opportunity projects
- Financial assistance, presumably in the form of government grants
- Poverty alleviation programmes
- Assistance with training and education - particularly small business development and farming skills
- The maintenance of assets left behind by De Beers
- The transfer of the mine to the community.

The above perceptions, criticisms and expressions of need call for a proper communication structure between the mine on the one hand, and the community

on the other. Such a structure should be viewed as a prerequisite for future deliberations between all stakeholders, and is further dealt with in Chapter 6.

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CHAPTER 6

Recommendations to mitigate the anticipated socio-economic impacts on Koffiefontein environment

6.1 Introduction

The major policy contribution of an SIA is to "help plan for, manage and then mitigate any negative impacts" (Finsterbusch & Freudenburg 2002: 409). This chapter therefore outlines suggested mitigation measures for the anticipated impacts on the affected environment.

Following international practice, mitigation measures can be simplified into three primary components. The first and best is obviously ***impact avoidance***, i.e. preventing negative impacts from occurring in the first place, rather than applying corrective measures later. Examples include the alteration of proposed developments to avoid, or at least minimise, the impact on sensitive communities, or a rescheduling of changes to slow down the laying off of project workforces.

Secondly, for those impacts that cannot be avoided completely, attention should be focussed on ***impact minimisation***, or on efforts to alleviate any deleterious consequences. Most efforts in this category are of a financial nature, such as the provision of funds and services for dealing with negatively affected persons, and particularly the most vulnerable amongst them. The most common non-financial minimisation measures are public involvement programmes, whereby affected parties are given the opportunity to adapt to and perhaps even alter the course of the development.

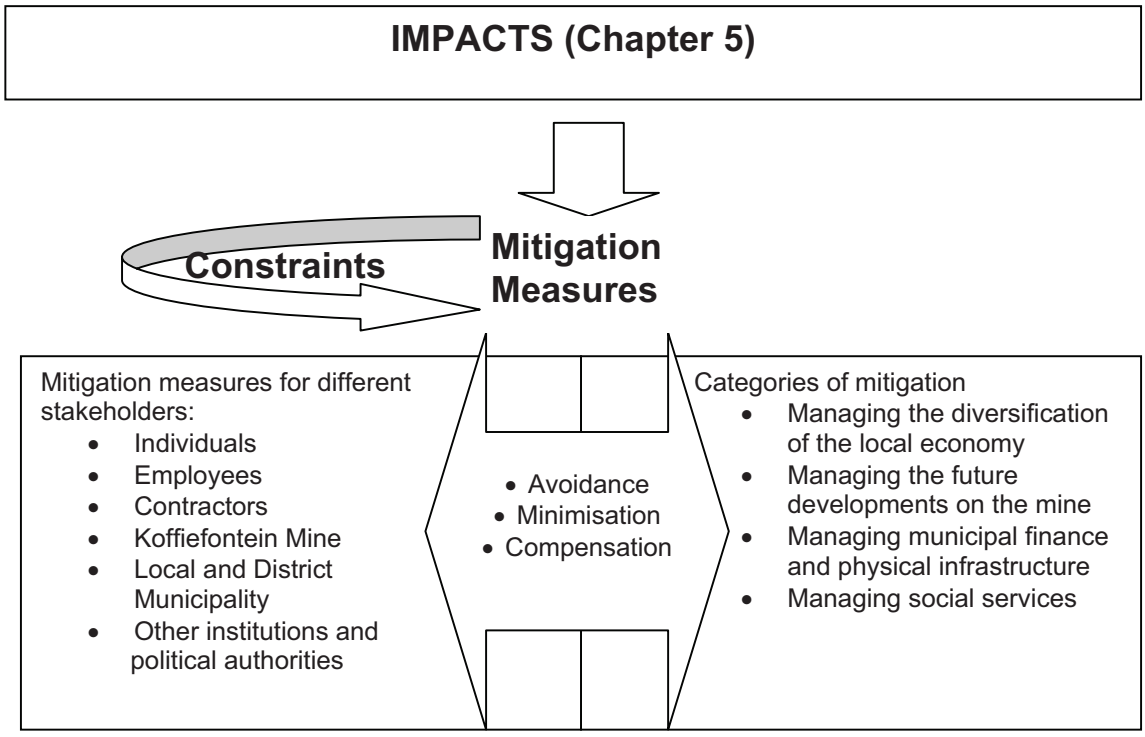
Thirdly, those socio-economic impacts that can neither be avoided nor be effectively alleviated raise the controversial question of ***compensation*** for affected parties. The simplest forms of compensation usually involve money,

although investments in infrastructure and the creation of new opportunities have become important alternatives.

Whatever mitigation measures are decided upon, it is important that such measures themselves be subject to impact assessments themselves, in order to ensure that they are indeed appropriate.

The conceptual outline of the chapter is presented in Figure 6.1 below.

Figure 6.1: Conceptual outline of Chapter 6



6.2 Potential of the affected environment to absorb the anticipated impacts

The biggest impact of mine closure will be the large number of lost job opportunities, which is, again, associated with a decline in local expenditure. Upon closure, the Koffiefontein community will face a choice between adjusting to economic decline, or considering economic diversification. Economic diversification requires alternative local economic activities. However, as

indicated in Chapter 4, meaningful economic diversification is difficult to achieve. This is even more difficult in a small and remote town such as Koffiefontein. Against this background, this section discusses the potential of the affected area to absorb the anticipated impacts and to diversify its economy. In order to do this, a wide range of social, economic and physical constraints is analysed. It is important that the suggested mitigation strategies be evaluated in terms of these constraints. Constraints have been categorised in terms of limitations of the physical environment, economic constraints, socio-cultural constraints, as well as political and institutional constraints. Each one of these broad categories is discussed in more detail.

6.2.1 Constraints in the physical environment

The South African Weather Service classifies the district of Koffiefontein as a semi–arid region with summer rainfall. The average annual rainfall is approximately 300mm. Rainfall is inconsistent and droughts are not uncommon. This renders Koffiefontein the agricultural area with the highest risk in the Free State, also due to the propensity of hailstorms[44]. Furthermore, Koffiefontein, although not totally isolated, is quite some distance far from Gauteng, KwaZulu-Natal and the Western Cape - the economic cores of South Africa.

6.2.2 Constraints with regard to economic diversification

The most direct impact of closing a mine is the loss of mine-related employment (see Chapter 4). It is virtually impossible to absorb large-scale job losses from one specific sector in an area. From research on the international experience of mining towns surviving the end of mining, it is clear that mining-dependent communities become sustainable if they manage, during the life of the existing mine operations, to develop economic sectors not associated with or dependant upon mining (Reichardt 2004). It is the opinion of some experts that at least seven years of co-development with the mine are needed. Although the

[44] Information obtained from Mr. Scholts van der Merwe – Chairperson Koffiefontein Agricultural District Farmers Union.

Koffiefontein Mine is still in operation, large-scale (voluntary) retrenchments already took place at the end of 2002 and 2003. Although initiatives to diversify the economy should be promoted, it is highly unlikely that these will address the economic consequences of mine closure in any significant manner. Economic constraints in absorbing job losses should thus be emphasised, and are discussed here in terms of the following: structural constraints in the economy of the Free State, the economic situation of small towns (often typified by low levels of skills and the absence of capital), constraints in respect of small-scale miners, as well as transferring redundant mine infrastructure.

Structural constraints in the Free State economy

During the past ten years, the Free State economy has been growing at a lower rate than the average for South Africa. During the last five years, the average annual economic growth rate for the Free State has been -0.5%[45], compared with 1.9% for South Africa (Urban Econ, 2003). Calculating economic growth rates for entities smaller than a province is a fairly complicated process. However, the Bureau for Market Research at Unisa considers the growth or decline in fuel utilisation as an appropriate alternative. According to their statistics, fuel consumption in the Koffiefontein Magisterial District has declined over the last five years. In addition to this, unemployment figures in the Free State have also increased (see Chapter 5). So, despite a positive economic growth rate of the past two years, the likelihood that the Free State economy will provide alternative job opportunities is slim.

In addition, although the international demand for diamonds has again increased during the past year, the last ten years have seen a reduced demand for diamonds. The current exchange rate and the Government's proposed 8% royalty bill on total production revenue of diamond mines are, furthermore, the most serious threats to Koffiefontein Mine being profitable (Ehlers *et al*, 2003:35).

[45] The Free State was the only province in South Africa with a negative growth rate, which was driven mainly by the declining mining sector.

Traditionally, the mining and commercial agricultural sectors dominate the Free State economy. However, in the past 10-20 years, the contribution of both these sectors to the Free State economy has declined steadily. For example, in 1990, mining contributed 15% and agriculture 12.5% of GDP in the Free State. The comparative figures for 2003 are 9% and 10.5% respectively. Both agriculture and mining have lost employment opportunities. Hartwig (2004) attributes these job losses to increased mechanisation, the downscaling of overheads due to global competition, generally poor agricultural conditions, increased pressure for on-farm tenure security to farm workers, and on-farm security risks to farmers. *Agriculture, therefore, cannot automatically be viewed as the sector to absorb the loss of employment opportunities at Koffiefontein Mine*. Agriculture in the Koffiefontein area consists mainly of stock farming, which leaves limited opportunities for irrigation. It thus seems highly unlikely that the commercial agricultural sector will be able to absorb the unemployment created by further downscaling of the mine. Apart from the fact that the relative importance of the mining sector in the Free State provincial economy is decreasing, the sector also seems to becoming less labour intensive and more capital and technologically intensive. In 1996, the mining sector in the Free State proportionally, generated *more* employment opportunities than its contribution to the provincial economy. By 2002, the situation had been reversed, with the sector at the time generating proportionally *fewer* employment opportunities relative to its contribution to the economy. In fact, mining employment opportunities declined from approximately 120 000 in 1996 to about 58 000 in 2002 (Reichardt 2004; Urban Econ 2004).

Economic situation of small towns in the Free State

The potential for mitigation is also inhibited by the economic situation of small towns in the Free State. This state of affairs is specifically typified by the outflow of skilled people and the urbanisation of mostly unskilled farm workers (Krige 1995). A recent study by Nel *et al* (2004) for the Premier's Economic Advisory Council indicated that the low level of skills is one of the major problems

confronting current manufacturers in the Free State. Literature on the experience of local economic development in small towns and subsequent attempts to diversify the economy, suggests limited success. The local market is seldom big enough to justify a wide variety of local production processes. Despite the existence of local resources, the considerable distance to markets usually makes it difficult for most manufacturing enterprises in the Free State to compete in national markets. In the study by Nel *et al* (2004), the distance to the Gauteng market was identified as being a major obstacle to manufacturing industries in the Free State. The same study also found that incentives provided by local municipalities (lower service fees, tax rebates), have very little impact on attracting investors. Thus, access to resources does not necessarily guarantee the economic viability of a manufacturing business.

The reasons for small towns being successful seldom relate to economic reasons *per se*. More often than not, these successes are related to individual capacity and vision. In some cases, the successes can be attributed to development institutions having driven these efforts. In addition, the availability of capital also plays a vital role. For example, the successful transformation of Clarens from small town to tourism Mecca can be related directly to available capital and individual vision (Marais 2004).

Limitations of small scale mining

A recent report on the small-scale mining potential of the Free State (McGill *et al*. 2004) indicated that the six key commodities (Sand/Aggregate, Clay, Gypsum, Limestone, Salt, Dimension Stone) were identified as being suitable for exploitation by small-scale operators. An important criterion for the suitability of exploitation is to match the overall viability of a deposit with the potential impacts on the "triple-bottom-line" (*i.e.* considering financial, environmental and social factors together). The possibilities for introducing small-scale miners to diamond mining, especially non-alluvial and kimberlite-related deposits, are therefore fairly limited, due to the depth and technically-intensive nature of kimberlite diamond

mining operations. However, there are some possibilities of initiating small-scale diamond operations in dump retreatment linked to high-tech operations. In this regard, a working group from the Koffiefontein Mine pointed to the possibility of establishing a work force of 145 employees at Koffiefontein for a 10-year period. At Jagersfontein, if sufficient water provision could be arranged, the potential is probably only for 60 people (with 80% unskilled workers from Jagersfontein and 20% semi-skilled workers from Koffiefontein) - also for a period of 10 years.

Limitations in respect of using redundant mine infrastructure

In realising a possible transfer of mine assets, the following issues need to be considered:

- the recognition that Koffiefontein is located 160 kilometres from Bloemfontein, the Free State capital, and off the main transport and communication arteries of the province. This is a disadvantage that must be overcome by means of incentives for new businesses;
- the need for municipal incentives for business development aimed primarily/exclusively at targeting and servicing non-Koffiefontein markets, in order to secure sustainable business development beyond mining; and
- the targeted use of dedicated individuals, contracted and given incentives to oversee the conversion of individual redundant mining assets on a project basis to kick-start new business ventures aimed at servicing non-Koffiefontein markets.

6.2.3 Socio-cultural constraints

Mention should also be made of a number of socio-cultural constraints. Although not uncommon elsewhere in South Africa, a culture of poverty does exist at Koffiefontein. This poverty is exacerbated by low levels of education and low income in the affected area (see Chapter 3). In addition, people are to a large extent locality bound. This situation usually impacts negatively on the creativity of people to address the problem of mine closure in an adequate manner.

6.2.4 Political and institutional constraints

In addition to the above reasons, it should also be mentioned that the ability of the affected area to address the expected economic decline subsequent to mine closure, is directly related to the provision of quality services. Chapter 5 has already suggested varying negative impacts in terms of physical and social infrastructure. Closing the mine will impact negatively on the ability of the Letsemeng Local Municipality to provide services. Schools could lose teachers or even be closed. A strong possibility exists, that one or both medical doctors might leave Koffiefontein. These factors will certainly impact negatively on the ability of the town to market itself – especially as far as the available properties are concerned. It is, for instance, unlikely that older persons will come to retire at Koffiefontein if quality medical services are not available.

6.3 Mitigation measures to reduce the impact of mine closure

The various communities, as well as I&APs, made numerous suggestions during the survey and in-depth interviews about potential mitigation in the event of the mine closing down. Much of the possible mitigation is focused on attempts at building a post-mining economy for Koffiefontein. The need to adopt a defined, assertive response to the economic crisis of mine closure runs through as a golden thread.

Section 6.2 above has offered an understanding of the limits of the affected environment to absorb the anticipated impacts. All the possible mitigation measures should be seen against these limitations. The following broad range of mitigation strategies should be considered (even if not relevant to all groups/institutions):

- Managing the diversification of the economy
- Managing municipal finance and municipal service provision
- Managing future developments on the mine
- Managing social services.

These mitigation measures require a mechanism through which they can be institutionalised. Some broad suggestions in this regard are made in this Chapter, but a more detailed framework is provided as part of the Monitoring and Evaluation Plan in Chapter 7.

6.3.1 Measures to be taken by employees, contractors and supplier agencies

Employees and contractors should consider the following mitigating measures:

Managing the diversification of the economy

- Employees should broaden their level of skills and education to improve their chances of finding alternative employment. The current level of skills of the lower-income mine workers in particular is limited. Consideration should specifically be given to skills that are not commonly available, yet in demand.
- The possibility of getting training on entrepreneurial skills should be considered.
- Supplier agencies should investigate ways of minimising risks, should the mine close. Those dependent mainly on the mine should explore possibilities to broaden their client base. This will in all likelihood mean considering opportunities outside of Koffiefontein.

Managing future developments on the mine

- Employees and contractors must ensure that they inform their dependants of the possible closing of the mine well ahead of time. Employees should develop their own mitigation strategies for their households.
- Employees and contractors should save enough money to address pressing financial and subsistence needs after the mine has closed. They

should also prepare themselves not to use the capital for some time if a retrenchment package is paid.

- Employees should seek professional advice to prepare for the financial consequences and challenges emanating from mine downscaling or closure.
- Employees and contractors should, as a priority, settle their debts *before* the mine closes and should refrain from accruing new debt.

Managing social services

- Employees should encourage their children to remain in school and acquire an appropriate education.

6.3.2 Measures to be taken by individuals/households

Individuals and households can take the following measures:

Managing the diversification of the economy

- Individuals should get involved in planning workshops and institutions that try to promote economic diversification.
- Pressure groups should be formed to lobby for special attention from government institutions.
- Households indirectly dependent on mine income should consider other options to broaden their income base. Some opportunities may exist in the informal economy.
- Households should settle their debts and save money.
- Households and individuals should consider other income opportunities not limited to the formal economy.

6.3.3 Measures to be taken by Koffiefontein Mine

Managing the diversification of the economy

Since Koffiefontein Mine has traditionally been the main employer in the region, it now also has a further obligation to address issues of economic diversification. A number of possible mitigating strategies are proposed below. More importantly, where specific suggestions are made it will be important to obtain expert advice on business plans. The constraints with regard to small town development and economic diversification should also be noted. The following specific measures should be mentioned:

- Koffiefontein Mine should initiate and support the establishment of a development agency with representatives from a broad base of I&APs that could try to rescue the local economy and drive LED. This should be seen as a tripartite (municipality, entrepreneurs, Koffiefontein Mine) attempt at initiating new business opportunities. Such an initiative could start with the creation of a joint planning committee between the local and district municipalities, as well as businesses at Koffiefontein. The provision of technical expertise to support this agency is of pivotal importance.
- Rework the mine dumps of Koffiefontein and Jagersfontein as a resource that could increase the mine's life. Opportunities to work the mine dumps at Koffiefontein are a lot less attractive than at Jagersfontein, because the average grade of the dumps at the former is only 3.56 cpht compared with an average grade of 9.5 cpht at Jagersfontein. There are inferred resources of just over 24 Mt of dump material at Koffiefontein. Yet, because of its low grade this would only yield 861 194 carats compared with an estimated 4.75 million carats in the Jagersfontein dumps (Ehlers *et al,* 2003:35).
- Utilise slimes dam soils for the fattening of flower bulbs for the European market.

- Lobby the provincial Department of Public Works, Roads & Transport to acquire crusher stone for brick making, road construction and other building purposes.
- Koffiefontein Mine should engage in a programme to diversify the skills of their employees. Most of employees (71%) admitted that they needed to receive training in order to improve their prospects of finding another job. Most of the latter want to be trained in artisan skills, *i.e.* boilermaker, fitter, electrician, plumber, mechanic, joiner, welder, etc., which they believe will improve their labour mobility.
- The mine clinic can be converted as a centre for occupational health, focusing on agricultural health. It could also be used as a training centre for occupational health workers.
- One of the challenges regarding mitigation will be the creative conversion of redundant mine infrastructure to play a critical role in creating those employment opportunities which are necessary to sustain the community beyond mining (Reichard, 2004). In doing so, it would capitalise upon the high level of awareness of the potential opportunities that exist among the Koffiefontein communities (see Chapter 5). There are important commercial benefits for Koffiefontein Mine, the new business ventures and the Koffiefontein communities associated with the responsible transfer of redundant mine assets to new business ventures. The redundant mine infrastructure may be made available for tourism development. Consideration can be given to the establishment of a mine museum.
- Sub-contract the maintenance and management functions of existing infrastructure and housing to external contractors.
- Koffiefontein Mine should pay their employees on the last Tuesday of each month (for as long as the mine is operational) to increase the percentage of spending at Koffiefontein itself.
- Koffiefontein Mine should support the establishment of the Xhariep Education Resource Centre on the mine hostel area. The aim of the

centre is to provide teaching and to train teachers for the whole District Municipality.

Managing municipal finance and service provision

- Koffiefontein Mine should change their current support to the LLM. It is proposed that the current support be phased out over a period of five years. However, at the same time a medium-term financial advisory service should be implemented to assist the LLM with their financial planning.
- Koffiefontein Mine should participate in a working group with the LLM on how to privatise the existing properties that belong to DBCM.
- Koffiefontein Mine should support the LLM in lobbying for a change in the intergovernmental grant covering the services fees of the indigent.

Managing future developments on the mine

The following specific mitigating strategies should be considered:

- Koffiefontein Mine should improve its communication with all stakeholders, specifically with a view to future developments on the mine, by establishing a community communication forum. This mitigating measure is important as all stakeholder groups pointed at the inadequacy of existing communication mechanisms on the part of the mine (see Chapter 5). The main purpose of the proposed communication forum would be to embark on relationship-building with local communities. The dire need for a communication forum between Koffiefontein Mine and the communities of Koffiefontein, Diamanthoogte and Dithlake in particular is evident. The issue of community liaison and continuous communication with the community and stakeholders is pivotal in attempting to bridge the information gap between Koffiefontein Mine and the community in which it is embedded. In addition to the establishment of the communication forum, it is further suggested that Koffiefontein Mine should appoint a

mediator to facilitate and oversee the establishment of the proposed communication forum.

- Any future retrenchments should be implemented gradually and, where possible, phased in over a period of several months at least.
- Current occupants of housing units belonging to Koffiefontein Mine should be given the opportunity to buy such properties. This opportunity should be made available as soon as possible.
- Once the mine has closed, households still renting housing units from Koffiefontein Mine should be given the opportunity to remain in the housing units free of charge for a minimum period of one year. Approximately 84% of the employees expressed a need for such action.
- Professional financial advice should be made available to mine employees, as a strong need for such a service, as well as a willingness to attend such sessions, exists. These sessions should focus on investment advice and the management of personal finances. It is further suggested that such sessions be implemented as a running service to all employees, and not only when retrenchments are looming.
- Koffiefontein Mine should contact employment agencies to place workers and to assist in compiling CVs. Approximately 77% of the employees expressed a need for assistance in this regard.
- Psychological and counselling services should be made available to all employees and their dependants. Of the current employees, 55% expressed the need for such a service.
- Consideration should be given to transferring mine workers to another mine in the De Beers Group. According to employees, this is the most important support that De Beers can provide them after the mine has closed. Approximately 84% of the employees listed this as a request.
- Koffiefontein Mine should provide the opportunity to have retrenchment packages paid out as per individual request. Although most of the employees indicated preference for a lump sum, 6% requested that the money be invested and the interest paid to him/her, while another 6%

preferred instalments over a period of 12 months. It is therefore suggested that packages be structured into three or four options from which employees may choose.

Managing social services

In terms of social services, it is suggested that Koffiefontein Mine should

- assist Koffiefontein High School to lobby at the Department of Education to take over the existing salaries of teachers who are paid by Koffiefontein Mine.
- support a proposal to the provincial Department of Health to increase the operational costs of the Ethembeni clinic.
- transfer the management of current sports clubs of Koffiefontein Mine to the sporting codes. The viability of sports clubs beyond mine closure will depend directly on the number of non-mine employees that are members of these clubs. Therefore, a specific effort should be made to increase the number of members that are not related to the mine. This may mean promoting the sports clubs and facilities to people in neighbouring towns. Particularly the existing Adventure Club and golf course could be marketed more prominently.
- transfer the ABET facility to the provincial Department of Education.
- intensify HIV/Aids awareness and information campaigns with specific focus on the vulnerable groups (women and migrant labourers).
- initiate the establishment of a sub-committee to address especially the educational needs of the children of current employees. It is important that the retrenchments of mineworkers should have as little as possible influence on the educational opportunities of their children.

6.3.4 Measures to be taken by local and regional government

The local and district municipalities will be heavily affected by mine closure. As a result, considerable attention should be devoted to the following mitigating strategies:

Managing the diversification of the economy

The Constitution of South Africa provides local municipalities with the competence of economic development. At the same time, the district municipalities also have responsibilities in this regard. The following specific mitigating measures are proposed:

- The municipality should play an active role in the process of diversifying the local economy. In this regard, a joint planning committee between Koffiefontein Mine, LLM and Xhariep District Municipality should be established. Such a joint planning committee should preferably also consist of business people. The possibility also exists of formalising such a committee into a development agency. The danger of such a committee is that it usually has limited technical capabilities. It is thus further suggested that technical capacity be co-opted onto this committee.
- The LLM should support and become part of the promotion of the newly established *Horizon Route*. As soon as an official decision on the remaining life of the mine has been taken, the LLM should start lobbying for provincial government funding for further research and the development of this route. Specific links should be established with *Open Africa* that could assist in marketing the route.
- A technical report from the CSIR has indicated that it is technically possible to produce bricks and ceramics from the mine dumps. The LLM should market this idea to private investors. Alternatively, it could lobby for funds from the newly-established Municipal Infrastructure Grant. This

grant makes provision for the creation of infrastructure to serve local economic development.

- The LLM should lobby the provincial government and the National Roads Authority (for the N1) that any road construction, road maintenance and public works construction in the Xhariep District should acquire their crusher stone from the Koffiefontein Mine dumps.
- Redirecting the main route between De Aar and Kimberley/Bloemfontein (via Jacobsdal) through Koffiefontein should be considered. This will be an expensive infrastructural project, as it would most probably include the reconstruction of the current bridge. However, it could contribute towards more money being spent at Koffiefontein. Furthermore, using labour-based construction methods could assist in creating employment locally.
- All attempts to diversify the economy after the mine has closed should start immediately. As noted in paragraph 6.2, the success of such attempts is directly related to the length of time that they (diversified developments) were in existence while the mine was still operating. Initiating such attempts only after the mine has been closed, has a very limited rate of success.
- A parallel approach, in which pro-poor economic development and capital intensive development are supported, should be followed.
- The proposed joint planning committee / development agency should also consider lobbying with various employers at Koffiefontein to pay their salaries on the last Tuesday or Wednesday of the month, and not on the last day of the month. This will increase the percentage of local spending at Koffiefontein and assist in keeping businesses open.
- The LLM should approach potential investors with a tax rebate package.

Managing municipal finance and physical infrastructure

The current state of municipal financial management in LLM is good, especially when compared with other similar municipalities. However, the following mitigating strategies should be considered:

- The LLM and Xhariep District Municipality should develop scenarios of what will happen to their income should the mine close. These two municipalities should start to develop a budget plan for the next three to five years.
- All Council decisions should be informed by the implications of possible mine closure. This should become a sub-section of all submissions to the two Councils.
- The current low percentage of the budget paid to salaries by the LLM should be maintained. No new staff should be appointed without a thorough assessment of the absolute need to do so. A Council decision stating that the salary bill should not exceed 35% of the budget could be helpful in this regard.
- The possible loss of revenue and service costs should be calculated. These costs should be projected and the implications on the financial situation of the LLM should be projected. Appropriate plans should be developed accordingly.
- The existing debt of the LLM should be settled as soon as possible and no new debt should be incurred.
- A cost analysis should be made of the existing support provided to the LLM by Koffiefontein Mine. The cost of this support should be phased into a budget over a term of five to seven years.
- The LLM should develop a proposal to change the current formula of the intergovernmental grant to reflect the increase in unemployment due to the future closing of the mine/retrenchments at Koffiefontein. A number of retrenchments having already taken place at the end of 2002 and 2003, this mitigating measure can already be initiated.

- Once residential properties of the mine become available, Koffiefontein could be marketed as a "retirement" town. It should be noted that the municipal respondents to the questionnaire overwhelmingly requested that the housing units be transferred to the LLM. However, the consultant maintains that this route should be avoided as it will immediately have a negative impact on municipal revenue from land tax. It is rather suggested that a joint working group addresses the problem and that the properties remain with Koffiefontein Mine. This will make De Beers liable for the land tax as long as it is their property. At the same time, it will reduce the financial risk to the LLM.
- LLM should ensure that their financial systems are geared to manage their income risks.
- A special campaign on the importance of payment for services should be implemented and maintained. This should be implemented as soon as possible, and not be left to the period after the mine has closed.

Managing social services

As mine closure will increase the pressure on the community as a whole, it will require specific attempts by the LLM and Xhariep District Municipality to mitigate the impact. Consideration should be given to the following:

- Lobbying with the Department of Education to take over the salaries of teachers currently paid by De Beers, for at least 3 years after the mine has closed.
- LLM should lobby for an increase in the operational costs of the Ethembeni clinic, as the number of people who will use the clinic will increase due to the downscaling or closing of mine activities.

6.3.5 Measures to be taken by other institutions and political authorities

Managing the diversification of the economy

- Various provincial and national government departments should provide the necessary support to assist Koffiefontein in diversifying its economy. Owing to the reality of mine downscaling, the LLM and Koffiefontein should be a priority.
- The Department of Public Works, Roads & Transport should consider all applications for job creation at Koffiefontein. Specific attention should be given to acquiring a stone crusher for brick making.
- The Department of Labour should be actively involved in providing training in alternative skills to the current employees.
- Koffiefontein should be used as location for the decentralisation of provincial officials in the Xhariep District Municipality. Enough housing units will be available and office space should not be a problem.

Managing municipal finance and the provision of services

- The national Department of Local and Provincial Government should increase the current intergovernmental grant allocated to subsidising the services of the indigent population in LLM. This will ensure that such a grant formula considers the increase of unemployment at Koffiefontein due to the downscaling of the mine.
- LLM should be prioritised in terms of capacity building and maintenance support by the newly established Municipal Infrastructure Grant.

Managing future developments at the mine

- Various provincial government departments should be represented on the proposed communication forum.

- Various provincial government departments should also be represented on the proposed joint planning committee / development agency.

Managing social services

- The HIV/Aids awareness and information campaigns should be intensified, specifically among vulnerable groups as indicated in Chapter 5.
- The Department of Social Development should become part of a proposed poverty alleviation committee that can support vulnerable groups. This should be done in collaboration with LLM and Koffiefontein Mine (see Chapter 7).
- The Department of Social Development should increase their regional budget in the event of future downscaling or mine closure.
- The Department of Agriculture should provide training on food security.
- The Xhariep Educational Resource Centre for District Municipality should be supported by the provincial Department of Education.

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CHAPTER 7

Social Management and Monitoring Plan

7.1 Introduction

The implementation of mitigation measures is to be reflected in a social management and monitoring plan. This Chapter therefore offers, amongst others, a breakdown of a monitoring and evaluation plan (M&E Plan), as well as a clarification of the roles and responsibilities of the various stakeholders in implementing the proposed mitigation measures.

7.2 What does monitoring and evaluation entail?

Monitoring and Evaluation (M&E) are important components of the SIA process. In the context of impact assessment, *monitoring* has been defined as an "activity that aims at establishing a system of continued observation, measurement and evaluation for defined purposes" (Barrow, 1997: 39). The process aims to determine if predetermined activities are being implemented as planned, and includes the collection, organisation and analysis of data to determine the progress towards a specific goal and its performance. The **objectives** of the monitoring plan have to be clearly defined to all stakeholders in order to clarify the issues to be monitored and evaluated, and must set the monitoring boundaries such as the outcomes and deliverables.

Monitoring includes the establishment of a specific target or targets for particular variable/s. The monitoring process includes the tracking of the variable/s within certain time periods to determine deviation or convergence with the original target/s by means of pre-determined indicators (Atkinson and Wellman, 2003: 11)

Monitoring is an important process for three reasons (Seila, 2003: 1-2):

- Firstly, monitoring enhances accountability, as it helps to demonstrate and verify that activities have been implemented in line with the given mandate, according to plan and in the prescribed manner.
- Secondly, monitoring helps to improve management and decision-making, as it enables the obtaining of information on the overall progress with project or program implementation.
- Thirdly, monitoring is a strong learning tool in that the monitoring process serves as an awareness raising tool as to what works well and what not. As a result, adjustments can be made to achieve better results.

Evaluation is seen as the periodic assessments of issues such as the efficiency, effectiveness, impact, relevance and sustainability of the programme in relation to the stated objectives (Atkinson and Wellman, 2003: 3). The reason for evaluation is to apply the findings from the project and programme in order to improve its performance if necessary. Evaluation of the targets and objectives should take place on a regular basis by means of applying performance indicators in order to determine if the targets are being met or not. Developing a set of performance Indicators is at the core of M&E, as they determine specifically the issue to be measured in order to determine if an objective has been achieved or not.

7.2.1 Participatory M&E

Monitoring and Evaluation can be conducted from different angles. It can be an external process by which an external agency, which is not involved in the project or programme, monitors the mitigation strategies for Koffiefontein. The process can also be an internal process whereby the municipality and/or Koffiefontein Mine execute the monitoring plan.

Involving the community in the execution of the plan and any other stakeholders who are interested, is known as Participatory M&E. Participatory Evaluation “provides for active involvement in the evaluation process of all stakeholders and

other interested parties. Participatory M&E ensures the continuous involvement and feedback from the community in terms of the progress of mitigation strategies. Furthermore, the process instills a sense of joint ownership amongst participants which prevents one party being left with the bulk of the work. Furthermore, this approach enables different stakeholders to provide their input, which facilitates the representation of all stakeholders' interests. It is believed that a **community communication forum** (see figure 7.2) as part of the proposed establishment of a **Development Agency** (see figure 7.2) will be instrumental in facilitating this process. Since the mitigation strategies should become developmental priorities in the Koffiefontein IDP, participatory M&E provides an excellent opportunity for the community, Koffiefontein Mine and the local municipality to identify developmental backlogs and opportunities and to note these in the IDP review.

The process, however, also has several limitations: A high level of resources and a large amount of time will be needed to ensure participation by all parties. Similarly, caution should be taken that the participation process is not used by stakeholders to try and further agendas that are not of relevance to the M&E process.

7.2.2 M&E Components

Several issues are to be taken into consideration when developing an M&E Plan for Koffiefontein.

Firstly, the *objectives* of the M&E Plan have to be clearly defined to all stakeholders (community, Koffiefontein Mine, local and district municipality and the provincial and national government). In the case of Koffiefontein, the objective of the M&E Plan is to provide a monitoring and evaluation system for the mitigation strategies linked to future developments on the mine. The objectives set in this M&E plan are set at three different levels. The first level contains the **development goal**. The development goal describes the

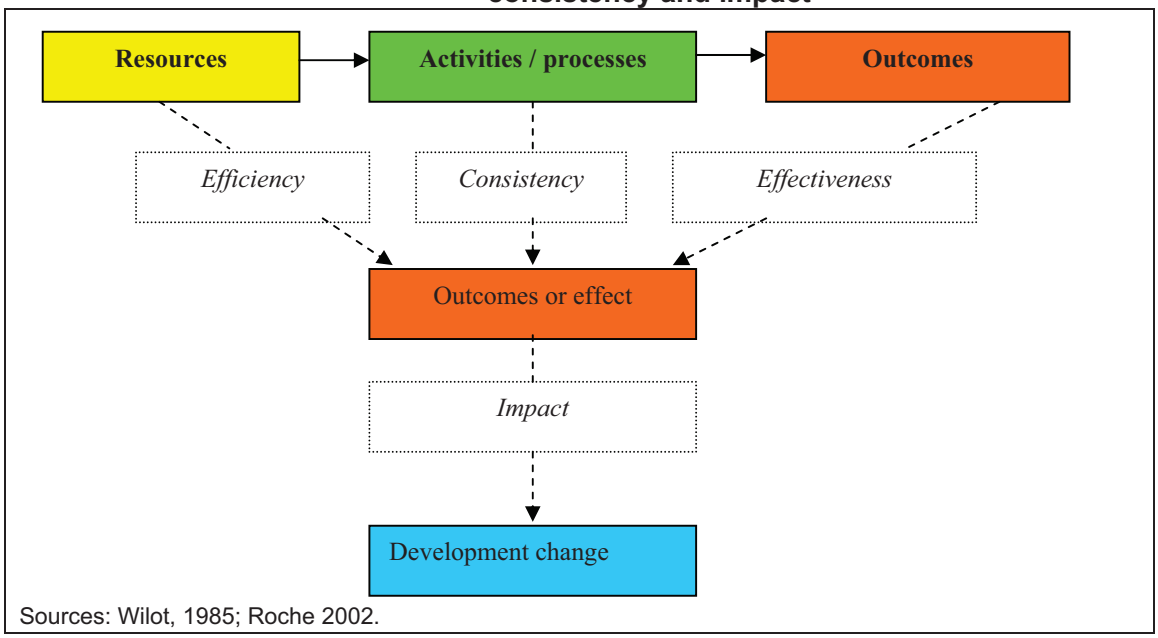
developmental benefits that the respective target groups can gain from the programme. The second level is the **project goal/purpose**. The project purpose describes the changes in behaviour, structures or capacity of the target groups that result from the utilization of the deliverable outputs the programme or project will be expected to yield. The third level of objectives is **outputs**. Outputs describe the goods and services (direct deliverables) that are contributed from the side of the project or programme. For each output, various activities are developed. For this exercise, groups of activities have been clustered as strategies under each output, with main activities.

Secondly, In Participatory M&E the *level of participation* has to be determined and the *roles* of the stakeholders have to be clearly defined. This includes clarification of issues such as who is responsible for the collection and administration of data and who is responsible for communicating outcomes to the community. The identified responsible role-players and stakeholders have to have sufficient *authority* to be able to fulfill their obligations within the M&E plan (the detailed action plan to monitor and evaluate the programme is provided in par. 7.4).

Thirdly, one should consider the framework to be used as part of the M&E plan. It is suggested that three interrelated questions should be asked in this regard. In the first place, the question of *efficiency* is an important consideration. Efficiency relates to the relationship between the resources that are utilized and the outcomes that are achieved. These outcomes can be at any of the three objective levels that have been identified earlier. A key question to be asked in this regard is whether resources could not have been utilized better. The second question relates to *consistency*. Consistency refers to the progress made with the programme – usually the activities. It also asks how consistent these activities are implemented. Finally, outcomes of programmes should be evaluated in terms of the effectiveness with which the programmes have reached the anticipated *outcomes*. In answering these three interrelated questions, it is

possible to determine the degree of impact and the rate of development change (see Figure 7.1).

Figure 7.1: Explaining the difference between efficiency, effectiveness, consistency and impact



Sources: Wilot, 1985; Roche 2002.

7.2.3 Roles and responsibilities of Koffiefontein stakeholders in the M&E Plan

A brief outline of the roles and responsibilities that the different stakeholders should play in the establishment of an effective M&E Plan is provided here.

<u>Responsibilities of the community (individuals and households) in the affected environment</u>

- Due to the fact that the community will be in constant contact with certain mitigation strategies they will be able to provide continuous feedback on the progress and problems experienced in the process.
- In order to ensure the above, appropriate communication channels between the community and the authorities have to be maintained.
- The community is able to provide valuable assistance to the collection of data and to serve as an early-warning system in the case of difficulties.

Responsibilities of Koffiefontein Mine in the affected environment

- Koffiefontein Mine, in cooperation with the local municipality (see below), should initiate and run the M&E plan for the mitigation strategies.

Responsibilities of the local municipality in the affected environment

- The local municipality, via the Development Agency, should be the primary M&E authority, in conjunction with support and assistance from Koffiefontein Mine, due to the fact that the municipality will have to take over and take ownership of mitigation projects and strategies once Koffiefontein Mine withdraws totally.
- The municipality will have to develop an appropriate M&E system that is internalised into the municipality's organisational structure. Certain staff and resources will have to be allocated to this function in order to ensure the effective functioning of the M&E Plan.
- The municipality, via the Development Agency, will be responsible for the primary data collection and analysis with support from Koffiefontein Mine and the community.
- Koffiefontein Mine would be expected to provide the necessary technical support and assistance to establish and internalise the M&E system, and to ensure that the process is in effective working order before the municipality takes full ownership and responsibility.

Responsibilities of the regional authority in the affected environment

- The Xhariep District Municipality should support the LLM and Koffiefontein Mine in the implementation and running of the M&E Plan.
- The Xhariep District Municipality should also maintain a regional overview of the M&E Plan on mitigation strategies that do not fall into the direct jurisdiction of the local municipality.

Responsibilities of provincial and national government in the affected area:

- Provincial and national government should fully support the implementation and the running of the M&E Plan.
- Additional funds and resources should be channeled to the LLM to establish an effective M&E system.
- Various government departments should be actively involved in the mitigation strategies that affect their fields of involvement. Similarly they should also be involved in the respective M&E functions.

7.2.4 The audience for the M&E Plan

A further point of consideration is who constitutes the *audience* for the M&E Plan, and who should be informed? In Koffiefontein there are several audiences and stakeholders: the community, Koffiefontein Mine, the local municipality, businesses, the regional authority and provincial and national government. Koffiefontein Mine, the Department of Minerals & Energy and the mining sector in general is another audience, which would be interested in the progress of the mitigation strategies.

7.2.5 Appropriate design strategy for the M&E Plan

What is the *methodology* or *design strategy* to be employed in the M&E plan? This will have to clarify the means of data collection, the nature of the data to be collected (for example qualitative vs. quantitative) and the analysis of the data. Issues that have to be taken into consideration in data collection and analysis are the following:

- What will be the “unit of analysis”, i.e. who/what will be consulted in the collection of data, e.g. individuals, households, project beneficiaries, etc?
- Determine the groupings of data, e.g. in terms of gender, location, (ex)-employees, indigent households, etc. It is strongly suggested that the identified “most vulnerable groups” (see Chapter 5) inform this decision.
- The means by which data collection will take place, e.g. random sampling, monitoring of specific households over time, etc.

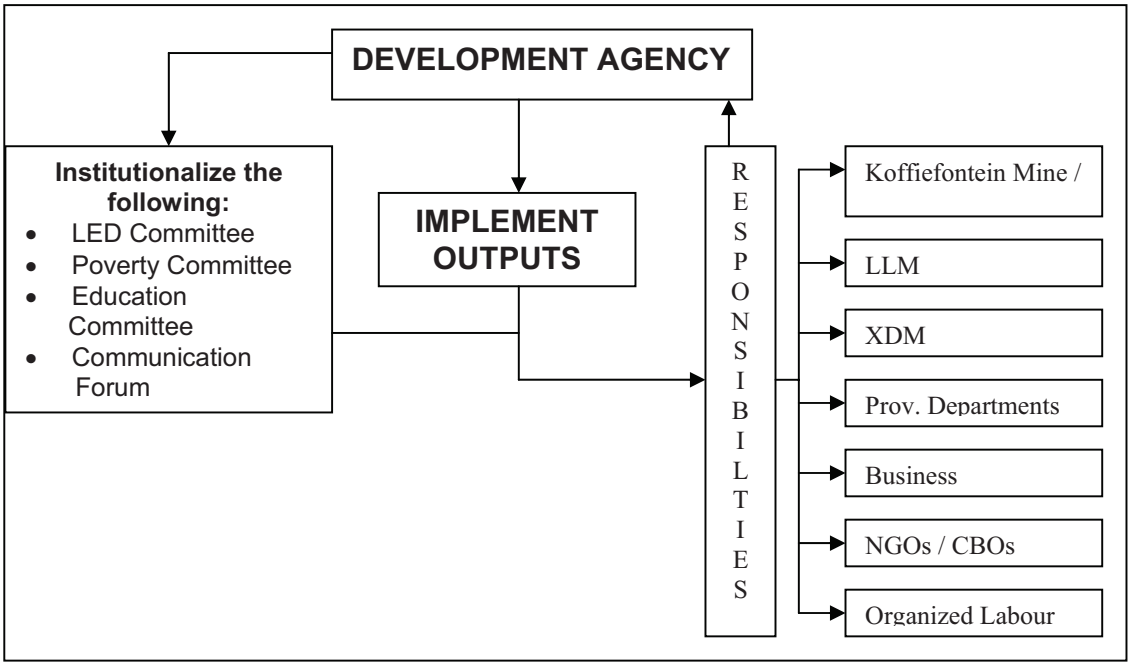
- Data acquisition techniques, e.g. survey, structured or unstructured interviews, etc.
- The frequency of data collection will have to be determined, e.g. once a month, quarterly, annually etc.
- Means of data analysis, e.g. qualitative or quantitative methods.

In the case of Participatory M&E, multiple stakeholders should be involved in the data collection and assist in the data analysis.

7.2.6 Institutional framework for the M&E Plan

The provision of an institutional home in which to locate the M&E Plan is essential to the success of the plan. In this case it is suggested that the proposed Development Agency should provide the institutional seat for the plan. The reason for this is that it should not be managed by only one existing entity. Furthermore, it should not merely be integrated into existing municipal or company structures, but stakeholders should ensure that the agency adopts a *separate status* that clearly distinguishes its role and function from that of existing structures. However, such an agency should be accountable to all the role players that form part of it. A schematic representation of the proposed institutionalization of such an agency is provided in Figure 7.2 below.

Figure 7.2: Schematic representation of the institutionalization of the M&E plan within the Development Agency



The following explanatory notes should be made with regard to the framework for institutionalisation:

- The Development Agency is responsible to oversee the overall implementation of the social plan, as well as the co-ordination of the M&E plan. Where a specific institution or role player is assigned responsibilities, such an institution or role player will be responsible for the actual activity, but with feedback to the Development Agency. This co-ordination means that the relevant role players should provide the necessary information and M&E support to the Development Agency.
- Apart from the institutionalisation of the Development Agency, four sub-committees should be formed within the Development Agency, namely the *Local Economic Development sub-committee*, the *Poverty alleviation sub-committee*, the *Education sub-committee* and the *Communication Forum*. The main task of each of the sub-committees is to provide specific guidance in mitigating the expected impacts as identified in Chapter 5.

- Although certain tasks will be directly related to the Development Agency, others might be related to specific stakeholders. For example, De Beers is responsible for the programme that teaches current employees new skills. However, in terms of the M&E plan, feedback will be provided to the Development Agency. A more direct approach would be that the Development Agency lobbies for certain provincial funding. These institutional aspects need to be clarified during the establishment process.

The current municipal structure, however, does not make provision for M&E. The municipal organisational structure will therefore have to be amended to allow for such an office and position within the municipality.

7.2.7 Administration of the M&E Plan

As far as the administration of the M&E Plan is concerned, the following questions need to be answered: Who will be responsible for the collection, analysis and dissemination of the data? How will the reporting process take place? As mentioned above, in the case of Koffiefontein, the Development Agency is most likely to be the seat of the M&E Plan with strong support from De Beers and the LLM.

7.2.8 Availability of resources

The parties responsible for carrying out the M&E objectives need to have sufficient financial and staffing resources. It should be determined if the institutional framework has sufficient capacity to provide the necessary resources.

In the case of LLM, it is suggested that an additional staff member be employed (or an existing one assigned) to focus on the implementation of the M&E Plan. It is further advisable that De Beers also appoints a permanent staff member at Koffiefontein Mine (or assigns an existing one), who in close cooperation with the municipality, will have to see to the implementation of the mitigation strategies and the monitoring and evaluation thereof. De Beers should also assist the

municipality in providing the necessary resources to the municipal official to execute his/her task efficiently. If necessary, the staff member to be employed to execute the M&E Plan should undergo training in data collection and analysis (funded by De Beers), unless it is decided to out-source this aspect of M&E. It is further suggested that the two proposed officials jointly assume responsibility for the position as Chief Executive Officer (CEO) of the Development Agency. The division in CEO responsibilities may be divided as follows:

- Koffiefontein Mine: Outputs 1 and 2
- Letsemeng Municipality: Outputs 3 and 4

All other resources will have to be acquired by the Development Agency.

7.2.9 Feedback and reporting

Feedback and reporting mechanisms have to be ensured in order to provide a transparent M&E process. The M&E Plan also has to consider the stakeholders to whom the information should be distributed.

Feedback and reporting should take place through the municipal M&E official and Koffiefontein Mine, and be further disseminated *via* the-to-be established Communication Forum. Information should be disseminated on a regular basis to the community and external interested parties such as the district authorities, provincial and national departments and the mining sector.

7.2.10 Continuous evaluation

Continuous evaluation of the process is essential to determine if the objectives are being met or not. Evaluation should be an integral part of the monitoring process and should be conducted by the municipal M&E official, De Beers assistant and the community (unless it is decided to out-source this function). Here it is particularly important to attain the community's opinion, as the community is in first-hand contact with the mitigation projects and programmes. The information gathered during evaluation needs to influence decision-making and bring about effective change to meet M&E targets. Information generated

could also be used to inform policy-making and future mitigation strategies in other mine closure scenarios.

7.3 Proposed M&E Plan

This section sets out the M&E Plan for Koffiefontein. It is outlined in terms of the Logical Planning Framework. The plan consists of the Project Planning Matrix and an operational plan for each output.

OUTLINE OF M&E PLAN

PROJECT PLANNING MATRIX FOR THE MITIGATION PLAN (STRATEGIC SUMMARY OF PLAN)

GOALS	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Development goal: The impact of possible mine closure or any future developments on the Koffiefontein socio-economic environment is reduced	• 80% of impacts with potential to mitigate are successfully mitigated three years after final mine closure and / or three years after 50% or more of the permanent staff have been retrenched.	• Monitor survey after mine closure / or after 50% or more of the current employees have been retrenched (annually for a period of three years) • Annual report of Development Agency	• De Beers, LLM, XDM and provincial government provide substantial support
Project Goal: Mitigating strategies are implemented by all stakeholders to reduce the impact of mine closure or any future development in Koffiefontein.	• A Development Agency is established by July 2005 • The Development Agency makes at least 70% progress in terms of the M&E plan by December 2008, or on depletion of the underground resources, which ever occurs first	• Constitution of Agency • Annual progress report with regard to M&E plan	• Mitigation is implemented prior to mine closure • Technical expertise and political support exist • Competent drivers of the process are available • Participation and commitment by all stakeholders (De Beers, LLM, XD and other provincial departments)
Outputs: 1. Measures for economic diversification are introduced and developed to assist in diversifying the economy of Koffiefontein.	• Unemployment in Koffiefontein does not rise to levels above the average for the Free State three years after final mine closure and / or three years after 50% or more of the permanent staff have been retrenched. • The number of people classified as indigent do not increase with more than 20% in Koffiefontein three years after final mine closure / or three years after 50% of the current employees have been retrenched	• Monitor survey after mine closure / or after 50% or more of the current employees have been retrenched (annually for a period of three years) • List of indigent people	• Effective planning is done to overcome the constraints to economic diversification • Skills are to be aligned with (1) economic growth of area and (2) needs of employees
	• At least 80% of retrenched employees who indicated that they require training are taught new skills or first skills before they are retrenched[46]	• List of employees that have completed training successfully	
	• At least 3 diversification projects have been implemented and a total of 50 long-term jobs have been created by these three projects at the time of final mine closure or when more than 50% of the current employees have been retrenched.	• Progress report with regard to M&E plan	
2. Future developments on the mine are managed in an effective and efficient manner for the benefit of employees and the Letsemeng community.	• The proportion of respondents that complains about poor communication decreases by at least 50% by December 2006. • All employees receive financial advice at least once per annum • Preferably, the community is informed of mine closure at least one year in advance. • Sell houses in excess of the mine's requirements during the operational life of the mine[47].	• Communication audit by the end of 2006 • List of people that attended financial advice sessions • Progress report with regard to M&E plan • Number of transfer deeds	• No unforeseen circumstances are present, e.g., dramatic change in the demand for diamonds or the Rand/Dollar exchange rate (see Chapter1).

[46] The time frame for this training will be determined in the retrenchment agreement reached between the company and the NUM.

3. The impact of Koffiefontein Mine closure or any other developments on municipal finance and infrastructure is reduced by effective planning and mitigating measures	• For 2 years after mine closure, municipal income budget does not decline with more than 10%. • LLM clients rate their services better than current baseline, one year after mine closure / or one year after 50% of the current employees have been retrenched • The intergovernmental grant for the indigent in LLM is increased one year after mine closure / or one year after 50% of the current employees have been retrenched	• LLM budget • LLM community survey (for performance management purposes) • LLM budget	• Financial advice support from De Beers if requested
4. Social services are provided to address the social ills related to mine closure or any future development	• All social services are successfully transferred to the respective government departments • At least 80% of people living under the poverty line are assisted with social services by the Department of Social Development • Poverty sub-committee of the Development Agency has been established six months prior to mine closure • An education sub-committee of the Development Agency has been established six months before mine closure / or at the time of the retrenchment of 50% or more of the current employees	• Progress report with regard to M&E action plan • Monitor survey annually one year after mine closure or after 50% or more of the current employees have been retrenched. • Sub-committee ToR • Sub-committee ToR	• Successful lobbying and networking implemented

LLM= Letsemeng Local Municipality
XDM= Xhariep District Municipality

Note: All programmes should take note of the HRD plan

[47] The mine will attempt to sell off as many houses as possible depending on the prevailing market conditions and demands after mine closure. The criteria and circumstances will be determined by the above mentioned situation.

OUTPUT 1: Measures for economic diversification are introduced and assist in diversifying the Koffiefontein economy

Strategies	Main activities	Time-frame	Responsibility
A. Establish a Development Agency	1.A.1 Establish Development Agency	March 2005	For establishment: LLM and Koffiefontein Mine
	1.A.2 Lobby for an operational budget and a dedicated executive officer	July 2005	Development Agency/ Koffiefontein Mine
	1.A.3 Consider constraints in all plans (see Chapter 6 of SIA)	Continuous	Development Agency
B. Broaden the skills levels of current employees and their dependants	1.B.1 Do portable skills training for employees in line with the HRD plan (e.g. technical)	On announcement of mine closure	Koffiefontein Mine
	1.B.2 Provide entrepreneurial training on request	On announcement of mine closure	Koffiefontein Mine
	1.B.3 Involve the provincial Departments of Labour and Public Works in all training initiatives	On announcement of mine closure	Dept of Labour / Koffiefontein Mine / Contractors
	1.B.4 Supply business risks training for contractors	On announcement of mine closure	Development Agency
	1.B.5 Supply skills training for employees of contractors	On announcement of mine closure	Contractors
	1.B.6 When opportunities exist, expand training to dependants of employees	On announcement of mine closure	Koffiefontein Mine
C Find investors for possible job creation projects	1.C.1 Do viability studies to market projects in open market	Continuous	Koffiefontein Mine
	1.C.2 Lobby Department of Public Works, Roads and Transport for a stone crusher	Dec 2005	Development Agency
D. Use of redundant mine infrastructure for economic purposes	1.D.1 Investigate best use for the health clinic	Dec 2005	Koffiefontein Mine
	1.D.2 Support the establishment of the Xhariep Education Resource Centre	Dec 2005	Koffiefontein Mine
	1.D.3 Support the establishment of a tourism centre.	Dec 2005	Horizon Route steering committee
	1.D.4 Support the establishment of a tourism steering committee which could investigate the use of redundant mine infrastructure	June 2005	Horizon Route steering committee/ Koffiefontein Mine
E. Support tourism development	1.E.1 Support Horizon Route	Continuous (first report back by Dec 2005)	Development Agency
	1.E.2 Use of mine as tourism attraction	On mine closure (planning should start immediately)	Development Agency
	1.E.3 Market all sporting codes (e.g. Golf club and adventure club) through events	Continuous	Respective sporting codes

F. Support local economy[48]	1.F.1 Subcontracting the maintenance and management functions of existing infrastructure to external contractors	Continuous	Koffiefontein Mine
	1.F.2 Lobby for payment of employees on the last Tuesday of the month	Dec 2005	Development Agency
	1.F.3 Redirect the road through Koffiefontein	Dec 2008	Development Agency/ XDM/ LLM
	1.F.4 Incentives are available for possible industrialists	Dec 2005	LLM
	1.F.5 Investigate possibilities to prolong mine life	Dec 2005	Koffiefontein Mine
	1.F.6 Investigate possibilities of small scale mining	Dec 2005	Koffiefontein Mine
G. Lobby for funding from various government and other institutions	1.G.1 Develop a networking system to lobby for funding	Continuous	Development Agency

[48] Use a parallel approach of pro-poor LED and capital driven LED

OUTPUT 2: Future developments on the mine are managed in an effective and efficient manner to the advantage of employees and the Koffiefontein community

Strategies	Main activities	Time-frame	Responsibility
A. Establish Communication Forum	2.A.1 Establish forum	May 2005	Koffiefontein Mine (interim) and Development Agency (long term)
	2.A.2 Appoint mediator	June 2005	Koffiefontein Mine
	2.A.3 Develop plan of actions / communication strategy	Aug 2005	Development Agency
B. Manage retrenchments and support employees[49]	2.B.1 Implement retrenchment in terms of the process to manage downscaling and retrenchments agreement	As needed	Koffiefontein Mine
	2.B.2 Dependents and employees are informed about mine closure well ahead of time[50]	As needed	Koffiefontein Mine
	2.B.3 Financial advice sessions are held. Financial advice to be included in mine's induction programme	As needed	Koffiefontein Mine
	2.B.4 Employees and households should be encouraged to save and settle their debt	As needed	Koffiefontein Mine
	2.B.5 Employment agencies assist with CVs and placing	As needed	Koffiefontein Mine
	2.B.6 Transfer current employees to other mines in the De Beers Group	As needed	Koffiefontein Mine
	2.B.7 Establishment of various possibilities of release of retrenchment packages for mine-employees (investment, lump sum release, release over 12 months etc)	As needed	Koffiefontein Mine
	2.B.8 Counseling for employees and their dependants is made available	As needed	Koffiefontein Mine
	2.B.9 Preferences for redeployment determined	As needed	Koffiefontein Mine
	2.B.10 Support services such as UIF etc to assist employees with application	As needed	Koffiefontein Mine
	2.B.11 A joint venture to reduce the debt of Koffiefontein residents	Dec 2005	Development Agency, Koffiefontein Mine, and LLM
	2.B.12 Allow occupants at time of mine closure to rent houses for at least one year	On mine closure / retrenchment	Koffiefontein Mine
	2.B.13 Negotiate assistance with respect to mortgage bonds with each retrenched individual	As needed	Koffiefontein Mine
C. Residential property management	2.C.1 Market properties to employees, De Beers pensioners and retrenched employees	Concurrent with operations	Koffiefontein Mine
	2.C.2 Market available properties on the open market	Concurrent with operations	Koffiefontein Mine
	2.C.3 Market mining houses on open market (maybe as retirement village)	On mine closure and beyond	Development Agency

[49] All activities under section 2B are subject to the De Beers/NUM Downscaling and Retrenchment Agreement.
[50] As stated in the Project Planning Matrix this period is preferably one year but could be less due to unforeseen circumstances.

OUTPUT 3: The impact of mine closure on municipal finance and infrastructure is limited by effective planning and mitigation measures

Strategies	Main activities	Time-frame	Responsibility
A. Manage municipal finance with the view of possible mine closure	3.A.1 Maintain low percentage of budget paid to salaries in LLM	Continuous	LLM
	3.A.2 Determine cost of existing support by De Beers to LLM and possible loss in revenue for LLM and XDM	June 2005	LLM
	3.A.3 Develop financial scenarios without revenue from De Beers	June 2005	LLM
	3.A.4 Integrate the implications of possible mine closure in all submissions to Council	Dec 2005	LLM
	3.A.5 Take a decision not to raise the salary bill of LLM beyond 35%	June 2005	LLM
	3.A.6 Embark on a special campaign with respect to the importance of services payment	Dec 2005	LLM
	3.A.7 Ensure that financial systems can manage the increase in financial risk	Dec 2006	LLM
	3.A.8 Settle all debt and do not make new debt	Continuous	LLM
	3.A.9 Task a unit / individual with the responsibility to manage all mine related aspect	March 2005	LLM
	3.A.10 Lobby for a bigger share of the Municipal Infrastructure Grant	June 2005	Development Agency
B. Change the current service agreements	3.B.1 Develop a plan on how current support is phased out over five years	June 2005	LLM Koffiefontein Mine
	3.B.2 Assist LLM with technical and financial planning to address service provision	Continuous	Koffiefontein Mine
C. Lobby for an increase in the intergovernmental grant for indigent households	3.C.1 Approach the national Department of Provincial and Local Government	One year before mine closure	Development Agency LLM
D. Residential property management (see output 2)	(see output 2)		

OUTPUT 4: Social services are provided to address the social ills related to mine closure / downscaling

Strategies	Main activities	Time-frame	Responsibility
A. Transfer of social services that are partially / fully provided by Koffiefontein Mine to the relevant authorities	4.A.1 Lobby the provincial Department of Education to take over the existing salaries of teachers paid by Koffiefontein Mine	Dec 2005	Koffiefontein Mine
	4.A.2 Lobby an increase in the current intergovernmental grant to support the local clinic (if not taken over by the provincial government)	One year before mine closure	Development Agency Department of Health
	4.A.3 Investigate the most appropriate way to integrate recreation facilities into Koffiefontein community	December 2005	Koffiefontein Mine
	4.A.4 Increase the number of non-mining related members of sporting codes	December 2005	Management of sporting codes
	4.A.5 Amalgamate all ABET facilities under auspices of the provincial Department of Education	December 2005	Koffiefontein Mine Development Agency
B. Intensify social services	4.B.1 Intensify HIV/AIDS awareness and information campaigns with specific reference to vulnerable groups	December 2005	Development Agency
	4.B.2 Development Agency to establish poverty alleviation committee	On announcement of final mine closure	Development Agency
	4.B.3 Lobby the Department of Social Development to increase their regional budget	On announcement of final mine closure	Development Agency
	4.B.4 Lobby the Department of Agriculture to provide training on food security	On announcement of final mine closure	Development Agency
	4.B.5 Market bursaries and scholarships that are available for scholars through the education sub-committee	December 2005	Koffiefontein Mine
	4.B.6 Counseling services should be provided (see also 2.B.8)	On announcement of final mine closure	Koffiefontein Mine

7.4 Monitoring and evaluation action plan

In the section above, the social plan for the affected environment was outlined. At the same time, indicators and means of verification were developed to be able to monitor and evaluate the process. However, these plans have been developed from an implementation point of view. The evaluation of the impact / development change brought about by implementation will require a specific action plan with regard to monitoring and evaluation. This section first lists all Monitoring and Evaluation steps that should be undertaken. It further suggests the possible methodology and detail required, and also indicates the responsible institution. *It is also extremely important that most of this information is gathered* ***as soon as possible***. This will ensure that baseline information is available and will make the identification of trends easier.

Data required on a quarterly basis - needs to be transferred to an annual basis (before mine closure or before 50% or more of the employees have been retrenched)

Data required	Method	Level of detail	Responsible agent to provide the info / ensure that info is available	Activity / output related to:
1. The number of employees that are retrained.	List of employees	The number of employees per programme and an indication how that fits into the economic growth of the LLM area	Koffiefontein Mine	Output 1
2. Number of employees (and dependants) that have received financial advice	List of people who attended, as well as type of advice provided	Gender and numbers of people who attended	Koffiefontein Mine	Output 2
3. Information with regard to mine houses	Use database at Koffiefontein Mine	Number of houses occupied by employees and non employees; number of houses sold.	Koffiefontein Mine	Output 2
4. Number of contract workers retrained	List of workers	The number of employees per programme and an indication how that fits into the economic growth of the LLM area	Contractors	Output 1
5. Incentives available for businesses in LLM	List and detail	Detail information	LLM	Output 1
6. Number of people retrenched or having received voluntary packages	List	Detail information Gender Age Type of package	Koffiefontein Mine	Output 2
7. Current debt of Koffiefontein Mine employees	Amount that is being deducted from their monthly salaries	Amount per person	Koffiefontein Mine	Output 2
8. Number of current employees that have received entrepreneurial training	List	Age, gender, race etc	Koffiefontein Mine	Output 1

Data required on an annual basis before mine closure / or before 50% or more of the employees have been retrenched

Data required	Method	Level of detail	Responsible agent to provide the info / ensure that info is available	Activity / output related to:
1. A consolidation of all information	Annual report of the Development Agency	A report-back on progress with regard to all objectives and activities	Development Agency and other role players	Development Goal
2. Progress report on all activities in the social plan	Relate progress to all activities in the plan	A rating of progress per activity	Development Agency	Project goal
3. The number of households registered as indigent	Annual list by 30 June each year	List should be provided. Also location in LLM and gender.	LLM	Output 1
4. The number of economic diversification programmes that have been undertaken / or the progress with regard to these programmes (including tourism initiatives)	Annual report	The number of programmes and the number of employment opportunities (short-term and long-term) that have been created.	Koffiefontein Mine	Output 1
5. The income side of the LLM budget	Annual budget of LLM	Income per main categories	LLM	Output 3
6. Client satisfaction information with regard to service provision by the municipality	Annual client satisfaction survey	Detailed information	LLM	Output 3
7. Size of the equity grant	Annual budget of LLM	Size of equity grant	LLM	Output 3
8. The social services provided by Koffiefontein Mine transferred to provincial departments	List current service Determine transfers	Type of services, budgets, number of people involved.	Development Agency	Output 4

9. Information on the number of poor people receiving social grants	A list of social service provided per institution an number of people involved	Type of services, age and gender of beneficiaries	Development Agency/ Department of Social Development	Output 4
10. Information on the operational budget of the Development Agency	Use budget	Income budget per item Expenditure part of the budget	Development Agency	Output 1
11. Data on the different role players involved in the Development Agency	List those involved and describe the nature of their involvement	Number involved Financial contribution Other contributions	Development Agency	Output 1
12. Information on the transfer of all services provided by Koffiefontein Mine to LLM	List and description	Detail information	Koffiefontein Mine and DBCM	Output 3
13. Information on the percentage paid by the LLM on salaries	Use Budget	% spent on salaries	LLM	Output 3
14. Information on the current debt of LLM	Use budget	% of total expenditure	LLM	Output 3
15 Information on rates of services payments	Use information provided by LLM	Payment rates per month with specific reference to Koffiefontein	LLM	Output 3
16. Information on technical support with regard to financial management provided to LLM	Information provided by Koffiefontein Mine	Detail description of assistance	Koffiefontein Mine	Output 3
17 All information on ABET programmes	Detail reports from various role players	Detail info with regard to type of programmes, age and gender of participants	Department of Education and Koffiefontein Mine	Output 4
18. Information on the impact of HIV/AIDS awareness campaigns	Client satisfaction survey	Detail information with regard to high-risk groups in particular	LLM	Output 4
19. Bursaries and scholarships made available	Detailed report	Age, gender of beneficiaries Amount spent etc.	Development Agency (Education sub-committee)	Output 4

Once-off data / information required

Data required	Method	Level of detail	Responsible agent to provide the info / ensure that info is available	Activity / output related to:
1. List of impacts for which the mitigation potential is high or moderate by July 2005	List these impacts from the SIA report	List of impacts	Koffiefontein Mine / Development Agency	Development Goal
2. Constitution of Development Agency by July 2005	Constitution to be available	Information in constitution	Development Agency	Project goal
3. The percentage of people that complain about poor communication, by December 2006	A communication audit	Should be able to compare with baseline data in SIA report	Koffiefontein Mine	Output 2
4. Communications with regard to mine closure / downscaling	Record all communication efforts / action plan	Types, number of times and to whom communication takes place in this regard	Koffiefontein Mine	Output 2
5. Initial action plan of poverty alleviation sub-committee / also report on all activities	Action plan	All information in regulations	Development Agency	Output 4
6. Action plan of Education sub-committee / also report on all activities	Action plan	All information in regulations	Development Agency	Output 4
7. Redeployment preferences determined	List	All preferences available	Koffiefontein Mine	Output 2

Annual data required only after mine closure / or after 50% or the current employees have been retrenched

Data required	Method	Level of detail	Responsible agent to provide the info / ensure that info is available	Activity / output related to:
1. Monitor Survey. This survey is required on an annual basis for three years after the mine has closed or after 50% or more of the current employees have been retrenched.	Monitor survey	Detail information is needed. Important that the current baseline of employees is recorded.	DBCM	Development Goal
2. Unemployment figures after mine closure	Monitor survey	Detailed enough to show employment figures	Koffiefontein Mine	Output 1
3. Size of the equity grant	Annual budget of LLM	Size of equity grant	LLM	Output 3
4. The percentage of people in need of social services that is receiving it	Monitor survey	Detailed information on age, gender and location	LLM Dept. of Social Development	Output 4
5. Number of people counseled	List	Detailed, age and gender	Koffiefontein Mine	Output 2
6. Redeployment preferences determined	List of individuals and their preferences	Detailed information	Koffiefontein Mine	Output 3
7. Size of the intergovernmental grant for the clinic (if not taken over by the Provincial Government)	Budget from the Department of Health, also reflect in the LLM budget	Size of the amount	LLM	Output 4
8. Information with regard to training provided on food security.	Report from the Department of Agriculture	Amount spent, who received training, success or failure of the initiative	Department of Agriculture	Output 4

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PROJECT TEAM

All names appear in alphabetical order:

☐ *Consultants responsible for SIA*

Name & project role	Highest Qualification	Affiliation
Benseler, Anja *Researcher*	MA (Land & Agrarian Studies)	Freelance consultant & Research Associate: Centre for Development Support
Botes, Lucius *Researcher*	Ph.D. (Sociology)	Professor of Development Studies & Director: Centre for Development Support
Marais, Lochner *Researcher*	Ph.D. (Geography)	Senior researcher: Centre for Development Support
Pelser, André *Researcher, principal compiler and report editor*	Ph.D. (Sociology)	Professor of Sociology (University of the Free State) & Senior Research Associate (Centre for Development Support)
Redelinghuys, Nola *Researcher*	M.Soc.Sc. (Sociology)	Lecturer of Sociology: University of the Free State

☐ Support staff

De Bruyn, Sylvie *Project Coordinator*	B.Arp. et Scien (Planning)	Town planner: Urban Dynamics Incorporated
Pretorius, Marius *Language editor*	BA Hons. (English)	Teacher and language practitioner
Van Rooyen, Deidré *Data processor*	M.Soc.Sc. (Gender Studies)	Research assistant: Centre for Development Support

☐ ***Fieldworkers and Interviewers: Household and Staff Survey***

- Bahumi, Michael (Koffiefontein)
- Botes, Tonie (Bloemfontein)
- Dibe, Tshepo (Koffiefontein)
- Du Plooy, Igna (Bloemfontein)
- Mdube, Fekile (Koffiefontein)
- Molutsi, Edwin (Koffiefontein)
- Mosime, Kagisho (Koffiefontein)
- Motia, Elias (Koffiefontein)
- Mtsila, Richard (Koffiefontein)
- Raad, Piet (Koffiefontein)
- Ramatima, Lerato (Koffiefontein)
- Rens, Zenzile (Koffiefontein)
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- Thipe, Vincent (Koffiefontein)
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- Zinza, Samuel (Koffiefontein)

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