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**A SOCIAL AND ECONOMIC IMPACT ASSESSMENT  
OF THE SOUTH AFRICAN MINERAL AND PETROLEUM  
RESOURCES DEVELOPMENT ACT  
ON THE SMALL-SCALE DIAMOND MINING SECTOR**

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**Thesis submitted in fulfillment of the requirements  
for the award of the degree of Master of Arts in  
Environmental and Geographical Science.**

**University of Cape Town**

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**UNIVERSITY OF CAPE TOWN**  
**GRADUATE SCHOOL IN HUMANITIES**

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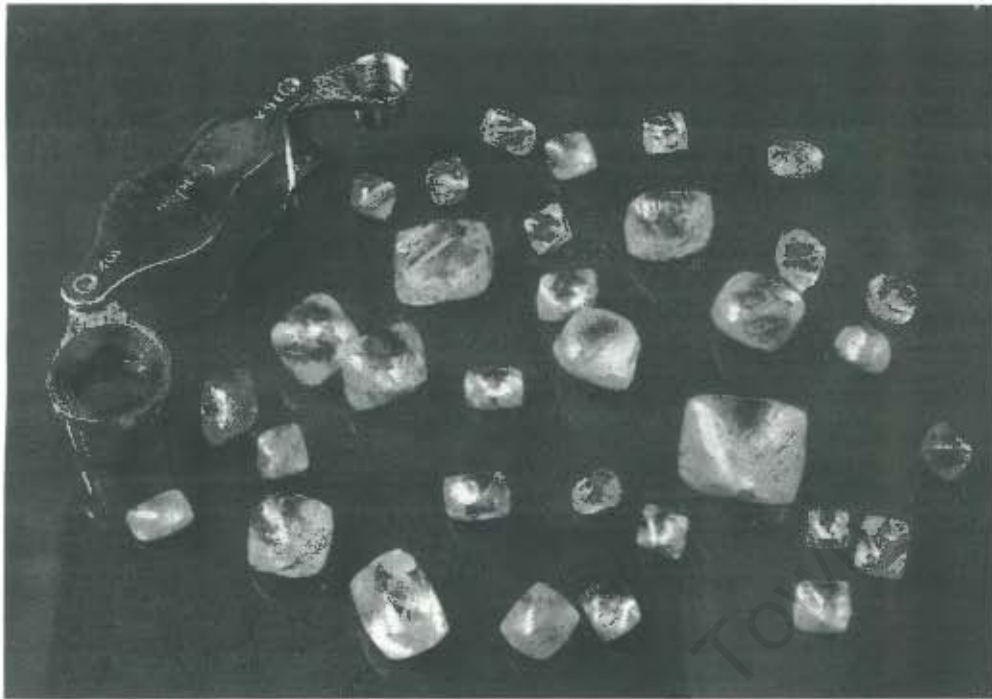
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(Kimberley Mine Museum)

*"No matter how bleak things may appear to be, the digger is always optimistic.*

*On the turn of the next sieve he could be up half a million"*

(Wanneburgh and Johnson, 1990:50).

## **ABSTRACT**

The small-scale mining (SSM) sector in South Africa has been overshadowed by the wealth generating capacity of the formal mining industry. To address the disparity between the SSM sector and the large formal mining industry, a number of government initiatives have been introduced, the latest being the preparation of the Minerals and Petroleum Resources Development Act 28, which was finalized in October 2002. The Act, which has not yet been implemented, is expected to redress some of this sector's current obstacles.

Two case studies conducted in the Northern Cape and North West Provinces, provided the basis for this social impact assessment (SIA). The aim of these studies was to identify the most serious issues faced by the SSM sector and to assess the likely socio-economic impacts of the Act.

Small-scale mining refers to mining activities ranging from pick-and-shovel mining to mobile mechanized operations. According to the findings of the case studies it follows that the most significant obstacles that prevent optimal functioning of the SSM sector include:

- (i) Access to finance** - The prerequisites for obtaining loans for mining practices are out of reach for a significant portion of the SSM sector.
- (ii) Access to minerals** - State land is generally allocated to small-scale miners. This land has typically been mined over a long time-span and is not rehabilitated, leaving it difficult to mine.
- (iii) Limited or lack of communication** between government departments and the SSM sector has led to a number of misconceptions and inadequate government control of mining activities.
- (iv) Organisational issues** - Ineffective organisation and administration make permit issuing a lengthy process, which has led to illegal mining.
- (v) Socio-economic problems** - Illiteracy, absence of general services, lack of development and growing unemployment, put enormous strain on the rural mining communities included in this study.

The Act is expected to redress most of these issues through:

- (i) Recognising the need for access to finance. No tangible measures are, however, proposed to provide this relief to the SSM sector;
- (ii) An improved mineral knowledge base to allocate more suitable mineral land to SSM;
- (iii) The establishment of a representative board, improved administration and communication between the relevant parties has the potential to improve;
- (iv) An efficient administrative process to streamline permit applications;
- (v) Social and labour plans, required to accompany mining rights applications, will ensure socio-economic development of rural communities affected by mining.

The Act does not in fact mention small-scale mining nor does it define or distinguish between the categories of SSM (small-, junior- and medium-scale). The provisions within the Act focus upon the larger mining operations, omitting direct emphasis upon SSM.

Small-scale mining at its lowest level does not provide a viable income, however, it does provide a degree of subsistence for a number of people and their dependants. No direct positive measures for upgrading this mining sector to a viable sustainable economic mining level have been provided for within the Act. Viewed within South Africa's current socio-economic context and with regard to discussions and debates and initiatives preceding the formulation of the Act, this is a major shortcoming.

## **ACKNOWLEDGEMENTS**

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*For Lushan and Micah, the diamonds in my life*

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## Abbreviations and acronyms

<b>CASM</b>	<b>Communities in Small-scale Mining</b>
<b>CBO</b>	<b>Community Based Organisation</b>
<b>DEAT</b>	<b>Department of Environmental Affairs and Tourism</b>
<b>DWAF</b>	<b>Department of Water Affairs and Forestry</b>
<b>DME</b>	<b>Department of Minerals and Energy</b>
<b>EIA</b>	<b>Environmental Impact Assessment</b>
<b>EMP</b>	<b>Environmental Management Programme</b>
<b>ENSMA</b>	<b>Environmental Network in Small-scale Mining in Africa</b>
<b>GIS</b>	<b>Geographical Information System</b>
<b>GPS</b>	<b>Global Positioning System</b>
<b>IDB</b>	<b>Illegal Diamond Buying</b>
<b>ITDG</b>	<b>Intermediate Technology Development Group</b>
<b>I&amp;APs</b>	<b>Interested and Affected Parties</b>
<b>MEPC</b>	<b>Minerals and Energy Policy Centre</b>
<b>MIASA</b>	<b>Minerals and Industrial Association of Southern Africa</b>
<b>MMSD</b>	<b>Mining Minerals and Sustainable Development</b>
<b>MRF</b>	<b>Mineral Resources Forum</b>
<b>NGO</b>	<b>Non-Governmental Organisation</b>
<b>NC</b>	<b>Northern Cape Province</b>
<b>NRF</b>	<b>National Research Foundation</b>
<b>NSC</b>	<b>The National Steering Committee (for small-scale miners)</b>
<b>NW</b>	<b>North West Province</b>
<b>RDP</b>	<b>Reconstruction and Development Programme</b>
<b>SADC</b>	<b>Southern African Development Community</b>
<b>SAWIMA</b>	<b>South African Women in Mining Association</b>
<b>SSM</b>	<b>Small-scale Mining</b>
<b>SIA</b>	<b>Social Impact Assessment</b>
<b>WCED</b>	<b>World Commission on Environment and Development</b>
<b>WIMT</b>	<b>Woman in Mining Trust</b>

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## CHAPTER 1: INTRODUCTION

### 1.1 The New South African reform

The new South African political dispensation established in 1994 constituted more than entrenching a majority Black<sup>1</sup> rule over an oppressive White regime. It was followed by the ongoing pursuit of a new constitution and by a plethora of new legislation and amendments to existing statutes, ordinances and by-laws and a wide range of structural adjustments. Much of this socio-political change can be described by the rubric 'reconstruction and development'.

Mining, which had been the cornerstone of colonial South Africa, continues to play an important part in South Africa's economy. However, almost paradoxically, one of the problems experienced in South Africa is its great reliance on mining.

The government's initiatives to address the perceived injustices and inequities of the past have led to many changes within the mining sector. New mining legislation has made provision for the inclusion of formerly excluded racial groups, ensuring them a meaningful role in the mining industry. However, a volatile currency, a fluctuating gold price and greater reliance upon technical machinery have led to major job losses affecting the mining and agricultural sectors especially. The manufacturing sector, having to compete with low prices of the Asian market, has also been affected adversely. New labour laws, Trade Union activity and crime have contributed to a decrease in foreign investment in South Africa. These factors have adversely affected the economic potential of South Africa. As a result unemployment figures are high, especially in rural areas. This is exacerbated by a lack of or inadequate access to municipal services such as housing, water, sanitation, health and education and public transport in many rural areas.

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<sup>1</sup> While the Constitution specifies a non-sexist, non-discriminatory society, official statistics still utilise the apartheid era Black, White, Coloured, and Asian classifications. Moreover the day-to-day reality of race consciousness amongst different social groups cannot be ignored. Neither situation is endorsed by the author but for pragmatic analytical purposes these categories are retained in this report.

## **1.2 Unemployment**

In 2002 the national unemployment figure was 41 percent of the economically active population (Kane-Berman, 2002/2003). The official incidence of unemployment was 43.8 percent in the North West Province (NW) and 33,4 percent in the Northern Cape (NC) although at the local level figures exceeding 60 percent are not uncommon.

The national mining sector employs four percent of the labour force in NW and two percent in the NC respectively. The agricultural sector employs 10 percent in NW and seven percent in the NC. (Statistics SA, 2001). These figures appear low, but they do not include the range of indirect services that depend on both industries, neither do they take the informal economy into account. Poverty amongst rural South Africans is endemic (an issue that will be elaborated on later in sections 3.3 and 6.2). Twenty-three percent of the population in the NC and 16 percent of the population in the NW Provinces earn less than R800 per month (Statistics SA, 2001). There is an urgent need for employment opportunities.

## **1.3 The mining industry**

The mining industry is recognised as an important employment contributor to the SSM sector. Although mining constitutes a number of direct and many more indirect economic opportunities, minerals are finite. This has emphasised the need for sustainable development. Mines in South Africa generally have a very long life span and as a result generations have come to depend on them for a source of income. As mines close, little or no provision has been made for alternative sources of income. This void has been recognised and new legislation requires mining companies to draft social plans that will provide alternative sources of income for labourers and mining communities after mine closure.

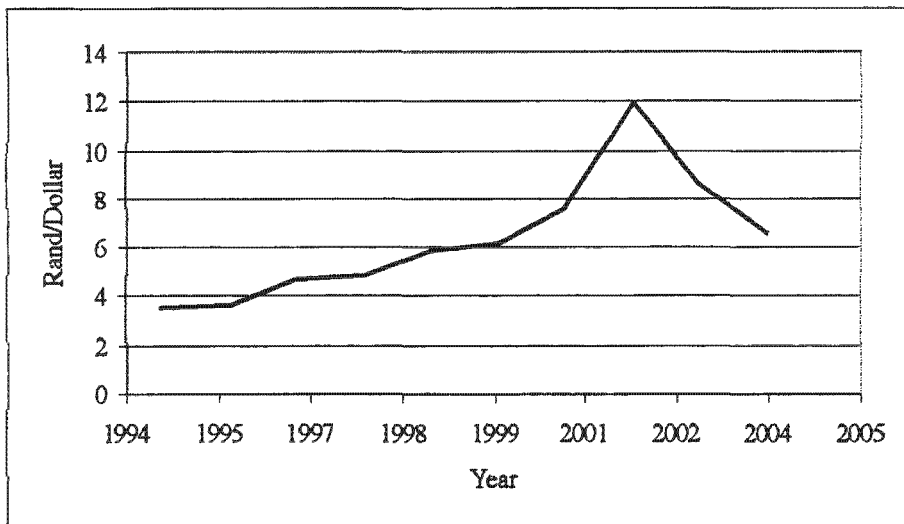
### ***1.3.1 Overview of the legislation and government initiatives leading to the formation of the Act***

The 1998 White Paper on a Minerals and Mining Policy for South Africa, dedicated a chapter to small-scale mining, highlighting the problems experienced within this sector. However no mitigating measures or solutions were provided for addressing these problems. In 1999 The National Steering Committee (NSC) for small-scale

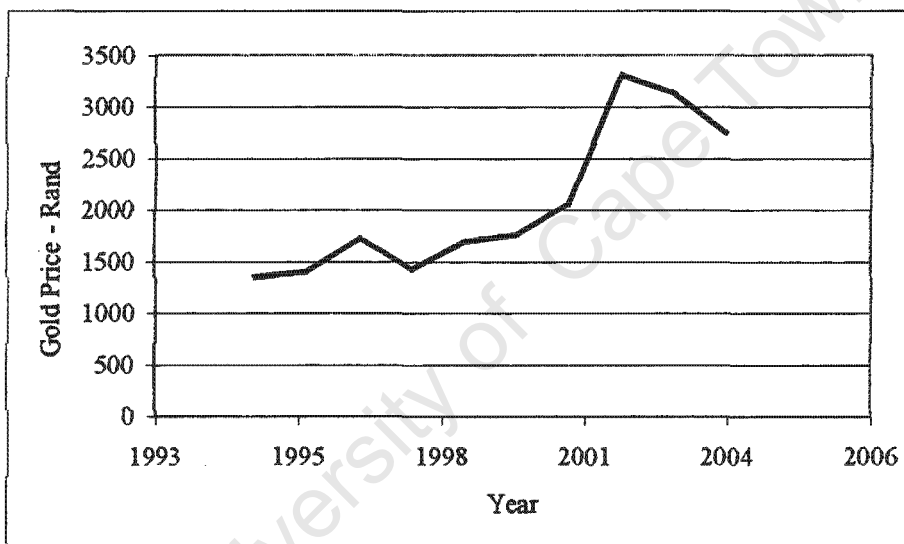
miners was initiated as a government initiative to uplift small-scale miners. It was stated by the Department of Mineral and Energy Affairs Department of Minerals and Energy NW that the NSC was politically motivated and consisted of too many high-ranking officials making the institution ineffective for dealing with small-scale miners at grass-root level. The Welverdiend Pilot project (NW), one of the NSC's nine pilot projects failed as a result of insufficient communication between the respective parties involved and a lack of background research. Subsequent to the introduction of the White Paper and the NSC, the need for the recognition of the SSM sector became emphasized. It was expected that the Minerals Development Bill (2000) which, subsequently led to the formation of the Act (2002), would fill the SSM legislature void. The provisions of the Act impinge to greater or lesser degree on the SSM, but neither the Bill, nor the Act, mentions small-scale mining. The bypassing of the SSM sector is a great omission in terms of international pressure, national poverty and unemployment. Compared to the other members of the Southern African Development Community (SADC) who initiated SSM organisations such as Environmental Network in Small-scale Mining (ENSMA) in Namibia, and Woman in Mining Trust (WIMT) in Zambia, South Africa lags behind in this regard (ENSMA November 1997 and SADC WIMT October 1999).

#### **1.4 Small-scale mining (SSM)**

The importance of small-scale mining has gained increasing international attention (Zamora, 1999; and Granville, 2001) and has subsequently also been recognised in South Africa. This has become even more significant in the light of major labour reductions in the large-scale mining industry, due to factors such as fluctuations in the gold price and the South African Rand against the US Dollar exchange rate. Graph 1 provides an overview of the SA Rand-US Dollar exchange over the past decade, and Graph 2 provides an annual overview of the gold price over the past decade.



**Figure 1: South African Rand US Dollar exchange rate (MacGregor, 2004)**



**Figure 2: Gold price (MacGregor, 2004)**

The government's focus on previously disadvantaged and marginalized people has drawn attention to the plight of the previously ignored small-scale mining sector. Through the promulgation of the Mineral and Petroleum Development Act 28 of 2002, and organisations and institutions such as the South African Women in Mining Association (SAWIMA), the National Steering Committee of Service Providers to the small-scale mining sector (NSC) and others, the government aims to uplift and provide the basis for a sound small-scale sector. The key principles of the Mineral and Petroleum Resources Development Act 28, of October 2002, include:

- The promotion of equitable access to the nation's mineral resources to all South Africans;

- The provision of opportunities for historically disadvantaged people, including women, to enter the mining industry;
- Employment promotion and social and economic welfare improvement of all South Africans;
- Ensuring that mining contributes to the socio-economic development of the areas being mined.

The implementation of these principles will impact significantly on small-scale miners, as well as to mining communities that experience little benefit from mining activities.

#### *1.4.1 Defining small-scale mining*

The term small-scale mining is vague and a universal definition for this sector is lacking (Mineral Resources Forum, 1997). In South Africa the term 'small-scale mining' is used by the Department of Minerals and Energy Department of Minerals and Energy (White Paper, 1998) to encompass mining activities ranging from individual pick-and-shovel miners to mechanised and capital intensive operations. Artisanal mining is generally of an illegal and highly migrant nature. In South Africa the simplest form of 'small scale diamond mining' comprises individuals or small groups of individuals using rudimentary tools who may, or may not, be operating legally and generally operate a claim for several years. For the purpose of this report I have categorised small-scale mining into 'small', 'junior-' and 'medium-scale' mining activities.

- **Small-scale mining** employs only pick-and-shovel diggers.
- **Junior--scale mining** involves small, partly mechanised operations.
- **Medium-scale mining** incorporates mechanised activities operating on a larger scale than the junior sector but they are smaller and more mobile than large-scale mining operations.

Collectively small-, junior- and medium-scale mining are referred to as the small-scale mining (SSM) sector.

#### **1.5 Study aim and objectives**

The Mineral and Petroleum Resources Development Act 28 of 2002 is widely expected to impact considerably on the small-scale mining sector. The Act constitutes

an institutional change as well as an environmental impact. This constitutes the fundamental focus of this research. Environmental Impact Assessment (EIA) and Environmental Management Programmes (EMP) are legal requirements for any/new mining venture from its inception until the decommissioning and rehabilitation phases. Social impact assessment (SIA) is an integral component of any EIA or Integrated Environmental Management (IEM) procedure.

### *1.5.1 Primary aim*

The primary aim of this research project is to investigate the potential social and economic impact on the small-scale mining sector of the policies specified in the Minerals and Mining Policy for South Africa 1998, and their more formal expression in the Mineral and Petroleum Resources Development Act 28 of 2002. The aim of the social impact assessment is to anticipate the likely change that will be brought about by the policy changes encapsulated by the Act on small-scale miners and communities. At best the results could be incorporated into management plans and at least they could provide the knowledge to assist these groups to cope with change. As the Act was only recently promulgated at the time of writing, the likely consequences of the Act need also to be considered against its precursor, the Minerals Development Bill of 2000.

### *1.5.2 Objective*

The importance attached by government to the social and economic development of the small-scale mining sector has resulted in new mining legislation. At the level of giving effect to policies, which are more exhaustively discussed in the Green and White Paper on a Minerals and Mining Policy for South Africa 1998, and the Minerals Resources Development Bill of 2000, the Mineral and Petroleum Resources Development Act constitutes an impact on the operational environment of the mining sector, in particular on small-scale diamond miners. The Act is, *inter alia*, an official attempt to develop and integrate the SSM sector into the formal mining industry. Poverty and unemployment are pressing problems in South Africa, particularly in certain geographical areas, including the NC and rural areas of the North West Provinces. In an attempt to combat poverty the government has recognised the significance of the mining industry as an employer through providing formerly

historically disadvantaged persons, through the SSM sector, access to the industry. This has also been reflected in the Broad-based Black Economic Empowerment Act 2003, which aims to promote economic transformation through change in the racial composition of ownership and management structures and to increase the access of formerly disenfranchised citizens to economic activities, infrastructure and skills training. To increase access of previously disadvantaged communities to mineral wealth and its related employment possibilities the Minerals and Petroleum Resources Development Act can also be seen as a poverty alleviation device. In light of this, the specific objectives of this dissertation are:

- (i) To conduct a social impact analysis of the effects of the Mineral and Petroleum Resources Development Act on small-scale diamond mining communities.
- (ii) To identify the most significant socio-economic issues related to the operation of small-scale mining activities and their organisation in the Northern Cape and the North West Province.
- (iii) To determine the potential success rate of the mining legislation thus far in achieving its stated objectives and to identify potential shortfalls.

In this context, the following questions are addressed:

- (i) How successful has mining legislation been thus far in empowering the SSM sector?
- (ii) Are the existing institutions and organisations aimed at uplifting the small-scale mining sector correctly identifying the major issues? (e.g DME, NSC, SAWIMA)
- (iii) Do individuals and social groups benefit from the new legislation?
- (iv) Is small-scale mining a viable source of income in its current context?
- (v) Is small-scale diamond mining economically viable?
- (vi) Has the need to target people from the local area rather than introduce new people from outside in building and expanding the SSM sector, been identified?

## **1.6 Thesis outline**

### **Chapter 1: Introduction**

This chapter provides a brief overview of the new South African reform, which has led to many legislative changes. Mining legislation, specifically, has also been amended and now recognises the small-scale mining sector as an important component of the minerals industry. This has subsequently led to the promulgation of the Minerals and Petroleum Development Act. This chapter also elaborates the aim of this report, which is to investigate the impact of the Mineral and Petroleum Resources Development Act 28, 2002, and the policies informing it on the small-scale mining sector.

### **Chapter 2: Small-scale diamond mining**

Here, an overview of small-scale mining on a global scale is provided. It highlights the general problems relating to small-scale and artisanal mining, such as environmental damage and illegal mining, with a brief discussion of the responses that have been adopted in other countries to combat these.

### **Chapter 3: Theoretical context**

A theoretical framework provides the analytical context of the research. The chapter contains a review of key concepts underpinning the investigation. These include 'social impact assessment' (SIA), 'sustainability', 'poverty' and 'livelihood assets', in relation to the South African mining legislation and the small-scale mining sector.

### **Chapter 4: Methodology**

The methodology incorporates a socio-economic impact analyses of two case studies undertaken in the North West and Northern Cape Provinces regarding the small-scale diamond mining sector and the potential impact of the Minerals and Petroleum Resources Development Act of 2002.

### **Chapter 5: Small-scale diamond mining in South Africa**

This chapter provides an overview of the mining history of South Africa. It includes a classification of the SSM sector, its legal requirements, mining methods, equipment and associated costs.

**Chapter 6: Case study analysis**

The case study analysis provides an overview of the most significant socio-economic issues that have been identified during the scoping and screening process of the SIA, and provides an explanation of the implications of the provisions made in the new Act for a diverse number of individuals and/or groups. It further relates specific provisions of the Act to social and economic impacts experienced by the small-scale mining sector deriving from analysis, observation, and the perceptions of key stakeholders.

**Chapter 7: Suggestions and Conclusions**

Conclusions are drawn from the results of the research and some initial mitigating measures are suggested that may be considered in future management plans.

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## CHAPTER 2: SMALL-SCALE MINING

Internationally SSM has gained increased attention as an important economic sector. This chapter attempts to provide an impression of the global occurrence of small-scale mining. It presents an overview of the type of minerals mined, and the social and economic significance of small-scale mining. It discusses the advantages and disadvantages that accompany SSM. It highlights the identification of problems, such as gender issues, illegal mining and environmental damage and the methods adopted by different countries to control SSM. This chapter should be seen as a backdrop against the insights that arise during the study analysis in Chapter 6.

### 2.1 Small-scale mining in an international context

Small-scale mining occurs worldwide. The minerals mined by the SSM sector can be divided into four main groups:

- (i) Precious and semi-precious minerals;
- (ii) Heavy minerals;
- (iii) Industrial minerals; and
- (iv) Base minerals.

Of the precious and semi-precious minerals gold is the most important mineral. Examples of artisanal gold mining occur in Tanzania, (Digby Wells and Associates, 1997 and 1999), Mali (Randgold Resources, 1998b and Digby Wells and Associates, 1998) and Zimbabwe (Digby Wells and Associates, 1998a). Gemstones are mined by more than half of the small-scale or artisanal miners. Examples of small-scale gemstone mining include rubies, sapphires and garnets in Cambodia (Sutherland *et al*, 1998); tourmaline in Brazil (Cassedanne and Roditi, 1996); and a variety of gems in Sri Lanka (Mathavan, Kalubandra and Fernando, 2000). All chrysoberyl deposits are mined by small-scale miners ('garimpeiros') in Brazil (Cassedanne and Roditi, 1993).

Internationally it has been acknowledged that a strong SSM sector results in a boost to exploration activity and a greater chance of mineral development (Engineering News, 1998). It is estimated that 13 million people, from 30 different countries are involved in artisanal/small-scale mining with another 80-100 million dependent on this sector (Communities in Small-scale Mining, 2002). A resurgence of SSM in Africa over the past 20 years can be attributed to a crisis in the mining industry during the 1980s as

well as the occurrence of natural disasters, especially droughts. The rise in the sector's contribution to gross national product is mainly due to formalisation of previous illegal activities. Examples of SSM in Africa include, gold and diamonds in the Central African Republic; gold in Guinea; sapphires in Rwanda (Krzemnicki, Hanni, Guggenheim et. al, 1996); emeralds and green beryl in Nigeria (Schwartz, Kanis, and Kinnaird, 1996); sapphires in Madagascar (Kiefert, Schmetetzer, Kremnicki, M.S et. al, 1996); tanzanite, rubies, sapphires and emeralds in Tanzania (Hangi, 1996) and various gems including aquamarines and emeralds in Somaliland (Kinnaird and Jackson, 2000).

### ***2.1.1 The economic and social impact of SSM***

Small-scale mining has considerable social and economic impacts at both national and local level and concerns individuals, families and communities directly or indirectly involved in these activities. In terms of its economic impacts it sustains a large number of poor people; it improves their living conditions and stimulates trade and economic activities, especially where gold and other precious metals are being mined. Both positive and negative social impacts have been identified. The movement of people to mining sites is often characterised by large numbers of people from different backgrounds and with different objectives (Traore, 1997). "Gold rush" type phenomena, often in regions without a mining history, have, in many cases, been unexpected by governments and caused considerable social disruption. In such cases miners have often encroached on mining land held by formal mining companies or land held by other users, resulting in conflict and violence (Digby Wells and Associates 1998).

### ***2.1.2 Gender issues***

A great number of women are involved in SSM (one out of three miners in Mali and Guinea) (Traore, 1997). Constraints faced by women miners include:

- (i) High levels of illiteracy;
- (ii) Limited mining knowledge;
- (iii) Inability to obtain bank loans without their husbands' consent;

- (iv) The burden of bearing the cost of their children's daily needs and, in the absence of a loan, devoting their income to the household instead of acquiring mining equipment;
- (v) Traditional taboos, such as in Ghana, forbid women to access mining sites during their menstrual period, they are thus forced to abstain from mining for at least a week each month; and
- (vi) Lack of status and power - stemming from old cultural beliefs, men are often not prepared to obey women, and thus, inhibit the work of women (Traore, 1997).

### *2.1.3 Environmental consequences*

Problems across the globe associated with small-scale mining include pollution, siltation of rivers, soil deterioration, erosion, destruction of flora and fauna, and failure to undertake rehabilitation. The most significant environmental consequence of small- and medium-scale diamond mining relates to land degradation as a result of lack of rehabilitation practices. Many of these problems create cumulative impacts as a function of the number of mining enterprises in an area and the associated activities of miners' dependants. Lack of rehabilitation can lead to soil instability, causing soil collapse, as well as alien vegetation infestation, which all add to soil erosion. Open pits and quarries pose dangers to animals and people and present a breeding ground for waterborne diseases such as malaria and bilharzias (Photo 20).

Diamond mining, by comparison, is less detrimental to the environment than many other mining practices. The main reason for this is the absence of harmful chemicals required to recover diamonds. Artisanal gold mining for example has many environmental ramifications. By way of comparison the following list provides an overview of the most significant environmental and health issues of artisanal gold mining as experienced in East Africa (Hangi, 1996):

- (i) Use of indigenous timber for mine support and hoisting of materials.
- (ii) Depths of single vertical mining shafts are between 15m and 150m. This results in lack of natural ventilation and often leads to flooding in the mines and caving in of shafts, burying people alive.
- (iii) Dust leading to respiratory problems due to inhalation of silica-containing dust as a result of drilling and crushing.

- (iv) Land degradation due to the numerous abandoned mine pits, which makes it impossible to use the land for agricultural purposes.
- (v) Mercury contamination – large amounts of mercury are used to amalgamate the gold. Much ore is treated in rivers and the mercury contaminates the water and the ecosystem affecting the food chain.
- (vi) Silting up of rivers - washing of ores in existing water sources for gold recovery has resulted in silting up of riverbeds and in some cases streams, rivers and dams have dried up.
- (vii) Environmental side-effects – large areas of bush are burnt to clear areas for mining and setting up of temporary artisanal mining villages.

#### **2.1.4 *Illegal small-scale mining***

Illegal gem mining occurs in all gem-producing countries. The discoveries of near surface gem deposits have caused rushes involving thousands of people in Sri Lanka, Brazil, Tanzania, Madagascar and many other countries. Illegal mining is a major problem, which creates a significant loss of state revenue. It further adds to the problem of rehabilitation control, which in turn has safety repercussions. Aspects that complicate effective control in South Africa include: persons with criminal records can obtain a mining license; foreigners convicted of IDB are allowed back into the country; punishments are ineffective deterrents as fines between R100 - R5000, are small compared to potential gains; some SSM associations have members convicted of IDB (Scott, Rocky and Hudson, 1998). Although illegal mining in South Africa is a problem, it is insignificant by comparison to the illegal artisanal activities that occur in other African countries such as Tanzania, Ghana, the Democratic Republic of Congo and Angola.

It has been realised that in order to limit negative environmental impacts, social disturbance, and smuggling, the SSM sector as a mainstay for many rural communities had to become formalised. This requires:

- (i) Regulation and promotion;
- (ii) Institutional and capacity strengthening; and
- (iii) Technology transfer (Economic and Social Council, 1996).

Examples of countries that have formalised artisanal/small-scale mining and implemented measures of assistance include:

- Zimbabwe: In a joint effort with a parastatal and NGOs, government provides technical support, management services and plant hire schemes, and so has significantly decreased the occurrence of illegal mining (Hollaway, 1992);
- Tanzania: The government has provided tenure security, transferability of mineral rights, and liberated markets;
- Chile: An autonomous public company provides credit, technical assistance, carries out exploration and development studies and buys up minerals from small- and medium-scale mines;
- Ghana: The revenues collected from small-scale mining are shared with the local authorities to assist them with the control of mine activities in the area. District centres register claims and offer technical advice;
- Venezuela: A parastatal is used as the vehicle for developing the SSM sector (Economic and Social Council, 1996).
- Burma has decreased the amount of illegal mining (Kammerling, Scarrat, Bosshart, et. al 1994).
- Indonesia has decreased illegal mining activities by adopting mining co-operatives (Hollaway, 1988).

The inability of the Nigerian government to control the SSM sector has been detrimental to the economy and to the exploitation of mineral resources of Nigeria. This situation has been exacerbated by the influx of migrant miners from neighbouring countries (Dharmaratne 2002).

### ***2.1.5 Small-scale mining organisation***

The discussion in 2.1.4 illustrates that it is imperative for any country where small-scale mining occurs to have some level of control over its activities. A number of debates, conferences and research projects have been undertaken to find an effective solution for countries in which SSM occurs. Unfortunately no one set 'recipe' exists that ensures the effective and successful functioning of SSM sectors.

Hollaway (1988) distinguishes between three levels of activity, namely artisanals, co-operatives and small mines. He points out that the latter category has the greatest short-term potential for Africa's economic development resulting in foreign investments, skills transfer and employment creation. In Indonesia SSM co-operatives

were introduced after the model was successfully applied in the agricultural sector. The philosophy behind a co-operative is that it must be owned, controlled and managed by its members. They get discount when buying equipment and have faster access to bank loans at better rates. This has price and marketing advantages as it eliminates unhealthy competition. This again leads to prosperity of the area rather than prosperity of the individual. In Brazil civil servants provide assistance and advice to SSM on a voluntary basis. In India four types of mining organisations exist; state mining companies, private mining companies, parastatal mining companies and co-operatives (Khosa, 2001). According to Hollaway (1998) SSM co-operatives only work in cases where low value industrial minerals are mined. Attempts to encourage co-operative ventures amongst gold and precious stones miners have led to pyramid systems which result in economic gain for those few holding top positions and little or nothing for the small-scale miners engaging in the physical work (Scott, 1998).

#### ***2.1.6 The role of the private sector***

In some countries, non-complementary non-competitive relationships have emerged between small-scale miners and multinational companies, which allow the former to rework tailings, and to operate in certain areas of the mine concessions. Such relationships, referred to as joint ventures in South Africa have been encouraged by the DME which considered this as a means for people to enter the SSM sector without significant capital or equipment and a way to obtain skills and income. As artisanal/SSM miners are responsible for many precious metal and gemstone discoveries, they could therefore exploit this ability by promoting themselves to major mining companies on a joint venture basis (Economic and Social Council, 1996).

#### ***2.1.7 The role of local communities***

“Communities can make a large difference in the character of the mining activity. In Ghana district mining committees work together with the local village councils. In Tanzanian mining villages village authorities maintain the security of their people and social infrastructure has been built by miners through self-help schemes organised by village leaders” (Economic and Social Council, 1996:21).

Local communities expect and need to receive a fair share of the economic benefits of mining, but unless mining companies are able to operate in a stable and cost-competitive environment no benefits will be realised (Barry, 1997).

### ***2.1.8 Organisations and workshops aimed at the small-scale mining sector***

A number of international organisations exist that focus on, or include, the SSM sector as part of their assistance role. The most significant include:

- **Communities in small-scale mining (CASM)**, launched in 2001 which aims at assessing and addressing problems experienced within the small-scale mining sector (CASM, 2002).
- **The Mineral Resources Forum (MRF) Small-scale Mining**. The MRF Small-scale Mining focuses specifically on issues in relation to artisanal and small-scale mining (MRF, 2002).
- **The Intermediate Technology Development Group (ITDG)** enables poor marginalized people to secure sustainable livelihoods in small-scale mining by using safer and environmentally acceptable methods (ITDG 1993).

In Southern Africa the following organisations are involved in mining activities:

- **Southern African Development Community (SADC)** supports the socially disadvantaged through regional integration and achieving sustainable utilisation of mineral resources in an environmentally responsible manner (Granville, 2001).
- **The Minerals and Industry Association of Southern Africa (MIASA)** deals with mining, minerals and metals and its main purpose is to represent this industry in regional organisations (Granville, 2001).

Several international conferences have been held to discuss the future and limitations experienced by the SSM. The most recent include the Ministry of Solids Minerals Development (MSMD) that held a workshop on formalising artisanal and SMM in Nigeria in May 2002. The Mining Minerals and Sustainable Development (MMSD) Southern Africa-Multi-Stakeholder Workshop in South Africa was held during September 2001, with SSM as its major topic (Granville, 2001). The World Bank has held regular workshops on the international status of the SSM sector. However little

development has been accomplished. This can be ascribed to a universal lack of government interest especially in the artisanal sector due to: minimal political influence, negligible tax revenue, operations that are usually in remote areas far from government control and are often unsafe, and environmentally damaging; actual or potential conflict with major foreign mining companies and investments that developing nations are trying hard to attract (Scott, 1998).

### ***2.1.9 Successful international practices of SSM***

A controlled or legal and environmentally sound small-scale mining sector is desirable for any mineral rich country. Unfortunately few countries have been able to control their small-scale mining sector successfully, often at a high cost to the economy and environment.

Internationally small-scale mining has been recognised for its potential to exploit otherwise uneconomic mineral deposits. The effects of small-scale mining in short can be summed up as follows:

- Artisanal mining/ SSM creates rural employment and income.
- Illegal SSM causes loss of revenue and has severe environmental consequences that subsequently affect a country's socio-economic structures.
- Due to use of rudimentary tools/practices mining is inefficient, low recoveries occur and foreign exchange opportunities are under-exploited.

To combat these problems, illegal mining operations need either to be discouraged or legalised. Better prices offered by the Bank of Tanzania and an organised market have decreased illegal operations in Tanzania. From the experience in Zimbabwe three main components are distinguished in ensuring SSM development and functioning:

- (i) Simple and transparent mining legislation that gives title to the discoverer of the mineral resource in the form of a freely tradeable property right;
- (ii) The availability of local and/or international sources to risk finance; and
- (iii) A workforce that includes numbers of persons who have been trained in the technical and financial aspects of practical mining (Hollaway, 1992).

According to Chakravorty (1997) cluster mining is gaining increased popularity as a means of sustained employment and 'eco-friendly' mining operation. Cluster diamond mining occurs in India. Cluster mining refers to a number of individuals mining small

areas of land adjacent to one another. Two types of cluster mining exist, namely those that developed naturally and those that were pre-planned. The following factors are important to consider before starting such ventures: the existence of an adequate market within a reasonable distance from the deposit; adequate facilities for mineral transport; availability of infrastructure, such as communication, public transport, power and water. The advantages of cluster mining include the shared cost of geo-technical investigation and EIAs and EMPs, common administrative, marketing, accounting and advisory support, as well as utilisation of costly equipment and machinery. With proper demarcation of an area into manageable small blocks, a defined mining right and monopoly purchase at international rates under a reasonable degree of government control, the 'goldrush' syndrome can largely be managed and mitigated. With active government support and by limiting the depth of mining, a formal mining company can exploit the deposit and maintain a favourable mutual relationship with the small operators. (Chakravorty, 1997).

#### ***2.1.10 Advantages and disadvantages of Small-scale mining***

Small-scale mining presents a number of constructive as well as destructive contributions to a country's economy and environment. Table 2.1 provides an overview of the advantages as well as the disadvantages associated with SSM.

**Table 2.1: Advantages and disadvantages of SSM**

<i>Advantages of SSM</i>	<i>Disadvantages of SSM</i>
<ul style="list-style-type: none"> <li>• Labour intensive and generally in remote areas far from cities.</li> <li>• Provides income and foreign exchange (Carman and Berger, 1990).</li> <li>• Prevents rural-urban migration and maintains the link between people and the land (Jennings, 1997).</li> <li>• Small operations often lead to the discovery of major deposits. For example hessonite in India (Kanif and Redman, 1994).</li> <li>• Small operations may form the basis for local processing and manufacturing industries (cutting and polishing of gemstones, clay brick making etc.). For example small-scale gold mining "orpillage" and jewellery creation in Mali (Randgold Resources, 1997).</li> <li>• The development of small-scale deposits is often faster at a fraction of the cost in comparison to large-scale operations (Carman and Berger 1990).</li> <li>• It is often the precursor for formal mining as it forms the first step in mineral exploration and often provides basic geological information (Hangi, 1996).</li> </ul>	<ul style="list-style-type: none"> <li>• Less than subsistence wages, poor working conditions and lack of health and safety measures. For example pit mining - gold in Tanzania and sapphires in Madagascar, are retrieved through sinking narrow shafts (up to 100m deep in Tanzania and 30m deep in Madagascar), creating honeycombed landscapes (Gubelin and Peretti, 1997).</li> <li>• Small-scale mining often leads to fractionalisation of ore bodies as they are uncoordinated and wasteful. For example shallow pits are dug with pickaxes and metal bars to recover gemstones in Somaliland, damaging many of the gems (Kinnaird and Jackson, 2000).</li> <li>• Control and regulation of SSM is often very difficult resulting in loss of government revenue (Carman and Berger 1990).</li> <li>• Uncontrolled SSM has many environmental implications, such as pollution, erosion, and pollution, and destruction of fauna and flora.</li> <li>• Prior to the introduction of joint leases in 1990, the Burmese government only controlled 5% of its country's gem production (Kammerling, 1995).</li> </ul>

## **2.2 Conclusion**

From the above discussion it has become apparent that small-scale mining is an important economic activity in many countries. Unfortunately a large number of these operations are lacking in government control. Although illegal SSM does occur in South Africa, its numbers and repercussions are insignificant when compared to the problems faced by some countries stricken by 'gold rush' phenomena. Nevertheless, the South African government lacks sufficient control of its SSM sector for this sector to develop and constitute a national asset. The lessons learnt from other countries thus need to be considered against problems faced within the South African SSM situation, which become evident in Chapter 6, the case study analysis.

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## **CHAPTER 3: THEORETICAL CONTEXT**

The topic of the dissertation is a social impact assessment of a national government policy using two case studies of communities pursuing small-scale diamond mining in terms of their socio-economic sustainability. An important feature of sustainability is that it incorporates socio-economic and political dimensions that are key elements in social impact analysis. Central to sustainability is the eradication of poverty. South African national policy in the form of the Mineral and Petroleum Resources Development Act 28 of 2002 constitutes an institutional impact. Its provisions will be specified more fully later. This chapter provides a brief theoretical overview of concepts that underpin the theoretical framework of subsequent research *viz* sustainability and environmental impact assessment (in particular social impact assessment).

### **3.1 The environment**

According to the South African Department of Environmental Affairs and Tourism (DEAT), the 'environment' means "the surroundings within which humans exist and that are made up of the land, water and atmosphere of the earth; micro-organisms, plant and animal life; any part or combination of the above-mentioned and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being" (Department of Environmental Affairs and Tourism, 1998:5). The Department of Environment and Tourism (DEAT) published its Environmental Management Policy in 1997. "Besides defining the environment as including biophysical, cultural, economic, political and social dimensions, the Policy states that people are part of the environment and at the centre of concerns for its sustainability" (Tarr, 2003:209). Apart from its physical component, the environment therefore also constitutes a social, economic, cultural and political component.

### **3.2 Sustainability**

The concept of 'sustainable development' was introduced into the global environmental debate in the 1980s, "as an expression of the interdependence between economic development, the natural environment and people" (Tarr, 2003:5). The

importance of sustainability arose when it was realised that the natural resource base is limited and therefore unable to support future continuation of current global consumption patterns. The need for sustainability is urgent as deterioration of the environment, our life support system, is finite (Goodland and Daly, 1995).

### *3.2.1 Sustainable development*

The most widely accepted definition, by the World Commission on Environment and Development (WCED) (1987), states: "Sustainable development is development that meets the needs of the poor without compromising the ability of future generations to meet their needs and aspirations" (in Tarr, 2003:5). Sustainable development seeks to find a way in which development can progress while enhancing the quality of life of people and ensuring the viability of natural systems on which that development depends. As a concept 'sustainability' is not free of controversy and critique. According to Mathew and Chapman (1995) sustainability has two main components, one relating to the ecological dimension and the other relating to economic, social and political dimensions, focussing on how development can be achieved and the environment can be protected. The Brundtland report presented sustainability as an ethic. To achieve sustainable development, the WCED suggests the following basic requirements of governance:

- "A political system that secures effective citizen participation in decision-making.
- An economic system that is able to generate surpluses, and technical knowledge on a self-reliant and sustained basis.
- A social system, that provides solutions to relieve the tensions arising from disharmonious development.
- A technological system that can search continuously for new solutions.
- An international system that fosters sustainable patterns of trade and finance.
- An administrative system that is flexible and has the capacity for self-correction" (Tarr, 2003:5).

According to Karimanzira (1999), sustainable development requires a fine balance between current exploitation of natural resources and future needs. This description of sustainable development places the focus upon natural resources, which is the most important, but is not all-inclusive, as sustainable development also needs to be considered from a social, cultural and economic perspective.

### ***3.2.2 Social sustainability***

“Social sustainability focuses on the development of programmes and processes that promote social interaction and cultural enrichment. Social sustainability emphasises protecting the vulnerable, respecting social diversity and ensuring that priority is placed on social, human and cultural capital” (Dewar, 2003). Social sustainability depends on the capacity to cope with disturbances in the political (freedom to participate, effective citizen participation and decision-making), economic (economic security) and social environment (to ensure that social, cultural and health needs are met) (Karimanzira, 1999).

### ***3.2.3 Sustainable development in relation to the Act***

The Mineral and Resources Development Act 26, of 2002 requires that any “prospecting or mining operation must be conducted in accordance with generally accepted principles of sustainable development”(Section 37:2). The Act defines sustainable development as “the integration of social, economic and environmental factors into planning, implementation and future generations” (DME, 2002:24). This definition is vague and does not recognise the different systems of a society. The following definition accommodates this limitation: Sustainable development is development that delivers basic environmental, social and economic services to all residents of a community without threatening the viability of the natural, built and social systems upon which the delivery of these systems depend” (Goodland and Daly, 1995). To conclude, sustainable development not only incorporates the natural environment it also includes the social, economic and cultural dimensions of a society. Social sustainability has as its core function the eradication of poverty. Poverty and vulnerability are antithetical to sustained development of a society and are closely linked to livelihood assets, which are discussed below.

## **3.3 Poverty and livelihood assets**

### ***3.3.1 Poverty***

In a country marked by significant unemployment, many people especially in rural areas live in poverty. The socio-economic conditions of the small-scale miners, in the areas visited during the research were generally dismal. The broad definition of

poverty extends beyond income or consumption and includes inequality, deprivation of health and education, and vulnerability which all affect well-being, empowerment and opportunity (Bojo, Bucknall, Hamilton et al. 2002). Hulme and Sheperd (2003) distinguish between the chronic poor (always poor and usually poor), the transient poor ('churning' poor, occasionally poor) and the non-poor (never poor, continuing through to the always wealthy). These different categorizations of poverty will be referred to in the case study analysis. Hulme and Sheperd (2003) define chronic poverty as significant capability deprivations of a person for a period of five years or more. The chronically poor experience several forms of disadvantage simultaneously, which deprive people of opportunities to improve their livelihoods and which keep them in poverty. Narayan (1999) mentions 'God's poor' who include the disabled, aged, widowhood and childlessness, and the 'resourceless poor' who include immigrant widowers and other landless poor. The greatest asset of the poor is their capacity for labour (in Hulme and Shepard, 2003).

### **3.3.2 Livelihood assets**

Poverty and vulnerability are closely linked to asset ownership or rather the lack of assets. Five broad categories of assets exist that people can invest in and develop in order to limit and offset the debilitating effects of poverty:

- (i) **Human capital** – labour, education and health;
- (ii) **Social and institutional capital** – household relations, social networks, communication, trust, access to decision-making;
- (iii) **Natural capital** – land, water, and common property and ecological services;
- (iv) **Built capital** – housing, productive and infrastructure;
- (v) **Cultural capital** – art, literature, architecture, music and traditional heritage (Goodland and Daly, 1995).

Vulnerability decreases proportionally to the amount of, or the access to, assets possessed by households and communities. Not only is poverty characterised by a lack of assets but also the inability to accumulate and manage assets. Access to municipal services contributes significantly to the expansion of the poor's asset base. Access to employment opportunities is largely dependent on the availability and the cost of transport. Access to primary health care and education strengthens human capital and thus improves the chance of long-term labour productivity and

incomes. The asset base of the poor is highly vulnerable to crime, violence and natural disasters such as fire and floods. This group is also most vulnerable to environmental degradation as they live on the most marginal land, in overcrowded conditions (Rogerson, 1998). Environmental conditions have major effects on the health, opportunity and security of poor people.

### **3.4 Social impact assessment (SIA)**

This research report constitutes a social impact assessment (SIA), it is thus appropriate to provide a brief background of the origin of SIA and to discuss its primary intent.

#### ***3.4.1 History and origin of SIA***

Social Impact Assessment was developed theoretically because early environmental impact assessments did not consider the social consequences of development. Once it was realised that altering physical and operational environments affected the livelihoods, behaviour patterns, social structure and culture of people, SIA became formalised with the passage of the US National Environmental Policy Act (NEPA) of 1969. Consequently SIA is now an integral component of environmental impact assessments when they concern decisions regarding any proposed projects or policies (Burdge and Vanclay, 1996).

#### ***3.4.2 The aim of SIA***

SIA is a process to attempt to identify the nature, the degree and the significance of the impact of envisaged policies, plans, programmes or projects on social groups. These impacts will vary according to time and place. The aim of a SIA is to anticipate the nature and degree of impacts, both positive and negative, upon a society and to assist people to cope with change (Vanclay and Bronstein, 1995). The purpose of SIA is to enable more socially responsible decisions, and to involve the affected parties directly (Mackenzie, 1992). Essentially SIA is a process that involves the identification of issues, analysis, evaluation, mitigation, management, and monitoring of impacts arising from policies, programmes, plans and projects. Although SIA has a set procedure, (which is discussed under methodology in Chapter 4), it has no standard checklist. Each assessment requires a specific approach and analytical method and must be geographically and historically case-specific. Nevertheless,

Burdge and Vanclay (1996) have postulated that four major guideline categories can be distinguished. These are:

- (i) **Demographic impacts** relating to population changes, displacement and relocation;
- (ii) **Socio-economic impacts** relating to changes in employment patterns, land tenure and income levels;
- (iii) **Institutional impacts** relating to demands on local services and local governance; and
- (iv) **Community impacts** relating to the social networks, integration and social cohesion.

Vanclay (2003) has referred to primary effects and secondary 'invoked' effects. This relates to "intended and unintended social consequences, both positive and negative of planned interventions (policies, projects or plans) and any social change processes invoked by such interventions" (Vanclay, 2003:5).

### **3.5 South African national policy**

The relevance of EIA and SIA has been recognized in South Africa and they have been integrated into South African environmental, spatial planning and mining legislation.

#### **3.5.1 Social impact assessment in South Africa**

With regard to South African legislation, the social element has been acknowledged as an integral part of the environment and is referred to, *inter alia*, in the Environmental Conservation Act (73 of 1989), the National Environmental Management Act (107 of 1998), the White Paper on Minerals and Energy Policy of 1998, and the Mineral and Petroleum Resources Development Act 28 of 2002. The Department of Labour requires a 'Social Plan' to accompany all development proposals submitted to it. SIA forms part of any EIA, but is often compiled separately. National environmental legislation provides for communities to participate in environmental management. According to the National Environmental Management Act 107 of 1998 "environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably" (Department of Environmental Affairs and

Tourism, 1998:7). They do however need to be assisted to ensure that this will be effective (Granville, 2001).

#### *3.5.1.1 Mining and environmental legislation*

Earlier the Environmental Conservation Act of 1989 (Section 21) specified a range of 'listed' activities that required an EIA. Mining was not embedded in this schedule as it was accommodated in a separate Act of Parliament. Mining became the pioneer for environmental conservation and management probably due to its huge impact upon the natural environment. Environmental legislation pertaining to the South African mining industry started in 1980 when the Mines and Works Act and Regulations required rehabilitation of mine surfaces. Mines were required to provide a rehabilitation plan of their operations.

#### *3.5.1.2 Environmental impact assessment and environmental management plans*

In terms of sections 38 and 39 of the Minerals Act, mines are required to operate within accordance of an approved environmental management programme (EMP). An EMP is expected to contain a chapter relating to a general description of the social environment. Small- and medium-scale mines are required to compile an EMP with their mining application. For small-scale operators, a copy of a blueprint EMP is kept at the DME offices. In terms of the White Paper on Minerals and Mining of 1998, larger medium-scale and large mines are required to compile an environmental impact assessment (EIA).

#### *3.5.2 South African mining legislation*

After the new political dispensation in 1994, the previously ignored potential of the small-scale mining sector for employment creation, rural development and economic growth was formally recognised. This has become even more significant with the decline in the gold mining industry which lost over 250 000 employees during the 1990s (National Steering Committee, 2000). The most recent endeavour to strengthen the position of Blacks in the mining and other sectors was promulgation of the Broad-based Black Economic Empowerment Act 53 of 2003. The Reconstruction Development Programme (RDP) regarded the dual system of mineral rights ownership (by the state and private individuals/groups) as an obstacle, preventing

optimal development of mining and suggested the return of private mineral rights to the democratic government in line with the rest of the world (Granville, 2001). This gave rise to the White Paper on Minerals and Mining Policy of 1998 which required that environmental, health and safety standards be maintained and that the small mineral deposits be explored optimally to make a positive contribution to the economy. The White Paper requires that prospecting and mining operations may not be conducted without an approved environmental management programme report (EMPR). The EMPR consists of a description of the pre-mining environment, a detailed project description, an environmental impact assessment and an indication as to how impacts will be managed, as well as possible alternative mining methods, provision for financial guarantees and arrangements for monitoring and auditing. Artisanal mining is discouraged but support is directed towards the development of a sustainable small-scale mining sector. Subsequent to the White Paper the Minerals Development Bill of 2000 was formulated which led to the Mineral and Petroleum Resources Development Act 28 of 2002<sup>2</sup>. This addresses the Reconstruction and Development Programme's consideration that mineral rights should be vested in the state. The objectives of the Act will be discussed next.

### *3.5.2.1 The Minerals and Petroleum Resources Development Act 28 of 2002*

This section provides a description of the major objectives of the Mineral and Petroleum Resources Development Act 28 of 2002. The South African system of dual ownership of minerals, in which some minerals belong to the state and some to private holders, has been redressed in the Act. This follows international trends, where the state presides over the minerals and controls the allocation of mining permits and rights. This provision has been made in **Section 3 (i) and 2 (a)** of the Act. **Section 3 (i):** *“Mineral and petroleum resources are the common heritage of all the people of South Africa and the state is the custodian thereof”*. **Section 2 (a):** *“To recognise the internationally accepted right of the state to exercise sovereignty over all the mineral and petroleum resources within the Republic”*. The Act specifies that minerals belong to the entire nation and therefore disadvantaged people require the opportunity to enter the minerals industry, should they so wish. This has been provided for in **Section 2 (d):** *“To substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the*

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<sup>2</sup> The Act was expected to be implemented in the second half of 2003, however at the time of writing this had not happened.

*mineral and petroleum industries and to benefit from the exploitation of the nation's mineral and petroleum resources”.*

The protection of mining rights of those involved in the mining industry receives attention in **Section 2 (g)** of the Act. **Section 2 (g)**: *“To provide security of tenure in respect of prospecting, exploration, mining and production operations”*. This ensures that application for mining and prospecting rights and permits is open to all South Africans and provides those in possession of such rights and permits to operate uninterrupted within the legislative parameters, and entitles them to first option of renewal of their rights and permits. In return permit and mineral and prospecting right holders have a responsibility to give back to the area that they are exploiting, in the form of assisting communities affected by the mining operations with development. **Section 2 (i)**: *“To ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating”*. As observed earlier, the Act requires an approved environmental management plan (EMP) and a social plan for remedial measures of negative social impacts.

The Act encourages the participation of junior- and smaller entrepreneurs in order to create jobs, as well as wider economic participation and optimised utilisation of mineral resources; promotion of investment in exploration and mining with its spin-offs; socio-economic development of South Africa and environmental sustainability in the mining industry. With the promulgation of the Broad-based Black Economic Empowerment Act 53, 2003, Black empowerment has become a requirement on state land permit applications. Black empowerment relates to employment, shareholding and training to uplift Black miners. In addition the labour law requires mining companies to have a social plan that will act as a safety net for communities dependant on the mine, in case of mine closure. Such a plan should uplift communities through employment opportunities, service provision and sustainable projects. Both prerequisites will assist the Act with its objectives of expanding opportunities for historically disadvantaged people in the minerals industry through poverty alleviation, through employment creation and providing sustainable livelihoods as well as for the promotion of economic growth of the country.

### **3.6 Conclusion**

This chapter discussed the theoretical concepts that form the main components of this report. It provided an overview of the history of SIA and how it currently relates to South African governing through the Minerals and Petroleum Resources Act 28, of 2002. Chapter 4 continues to describe how an SIA procedure is implemented and the study method that was followed for the compilation of this report.

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## CHAPTER 4 METHODOLOGY

The methodology adopted for this research project includes a social impact analysis of the Mineral and Petroleum Resources Development Act on small-scale mining operations. This was achieved through the compilation of case studies in the Northern Cape and North West Provinces.

### 4.1 The SIA procedure

The discharge of a SIA generally follows a well-established procedure, which involves:

- (i) **Social Profiling** - Establishes how people live, by studying aspects such as social and economic characteristics, cultural factors, social networks, political structure and community history.
- (ii) **Scoping** – This includes the identification of a range of issues by ‘interested and affected parties’ (I&APs) or key stakeholders. Scoping is not a fully developed public participation process. Its objective is to elicit a range of issues concerning particular impacts that are perceived by selected roleplayers and I&APs, through open and closed questions.
- (iii) **Screening** – This refers to the identification of the most significant impacts, which have been identified in the scoping process that requires further investigation. According to De Villiers Brownlie Associates (2000:2.38) “a ‘significant’ impact is one which through its magnitude (large, medium or small), extent (site-specific, localised, regional, national or international) or duration (short-term, medium-term, long-term or permanent), has a severe effect on important or valued resources”.
- (iv) **Analysis** – This provides an explanation of the implications of significant impacts for a diverse number of individuals and/or groups.
- (v) **Mitigation** – This involves the steps to be taken to avoid or minimise the adverse effects of the impact as far as possible.
- (vi) **Management** – In compiling an EMP it is appropriate to differentiate between impact analysis and integrated management planning. More recently the importance of commissioning environmental consultants has been recognised, not only for the identification of likely environmental impacts but also to formulate an integrated management plan that will provide methodologies for

monitoring and putting mitigation measures in place to avoid/minimise/alleviate adverse environmental impacts.

- (vii) **Monitoring** – Once an EMP has been compiled it needs to be implemented. This requires regular monitoring, to ensure that each phase of the EMP is implemented in accordance with the planned strategy and produces the intended result.

It is beyond the brief and scope of the present social impact analysis to attempt to develop an environmental management plan for the small-scale mining sector in the Northern Cape and North West Provinces. It is limited to identifying significant impacts and to suggesting some possible mitigatory responses that might be considered by future management planners.

#### 4.2 Case studies

Five major research strategies exist within the social sciences, namely experiments, surveys, archival analysis, histories and case studies. The case study is the preferred research method when “how “ and “why” questions are being posed. When there is little control over events the researcher relies on direct observation and systematic interviewing. As in the case of experiments, the case study does not represent a sample of a wider universe; the researcher’s aim is to “expand and generalise theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation)” (Yin, 1994:10). Evidence for case studies can be derived from documents, archival records, interviews, direct observation, participant observation and physical artefacts (Yin 1994:78).

In the present project the most significant constraint was the absence of formalised quantitative data on SSM activity from both provinces. As a result many statistics are derived from field observation. The general SSM sector, although becoming increasingly recognised, is still a relatively new focus of interest and the number of international, and especially national, publications is severely limited. In the compilation of both case studies, all the above strategies (barring participant observation) were used to gather information. Lacking an adequate statistical sample base makes it impossible to make a valid generalisation or to conduct inferential statistical analysis. In a strict statistical sense, case studies therefore rely on an internal procedural rigour for the confidence that a high degree of reliability has been

attained - that is, should another researcher undertake a similar analysis in the area, (s)he would yield the same results. All relevant supporting documentation thus needs to be detailed. In the present study the central tendency is that of the marginalized poor to develop a livelihood from small-scale mining. The activities of the miners and their descendants are broadly indicative of an empirically observed norm, that being poverty (either chronic or transient). While the case studies were selected to reflect general conditions in the Northern Cape and North West Provinces no statistically valid inferences can be drawn from them. In short, a case study is an “enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 1994:13).

#### **4.3 Field research**

Two field trips to the Northern Cape and the North West Provinces respectively were undertaken, during which use of qualitative and quantitative research methods were applied. Key ‘roleplayers’, such as DME and SAWIMA representatives were identified and permission for undertaking the research was requested. In both provinces these representatives undertook to make the necessary preparations for a site visit to significant small-scale mining areas and to answer questions pertaining to small-scale mining and the administration and regulation thereof. A scoping exercise was undertaken to identify a range of issues related to SSM. Initial contact was made with community leaders and small-scale miners were introduced. The site visits allowed a clear demarcation of the study field and provided valuable links with community representatives and small-scale miners, enabling the compilation of a social profile of the research area. During both studies, community representatives acted as guides giving direction to the whereabouts of the interviewees in the various areas that were researched. They formed integral links with the target communities<sup>3</sup> and the individual small-scale miners, acted as interpreters where necessary and assisted with informing the public of the study mission. They also arranged meetings with informed community members, leaders and SSM representatives.

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<sup>3</sup> The term ‘community’ is frequently used loosely and refers to geographic location (community in space) as well as to community of interest. It does not, unless specified, refer to a community of association.

Once a social profile had been established and the most significant issues had become apparent after the scoping exercise, a process of screening was adapted to investigate these issues further and to identify those deemed 'significant'. A 'significant' impact is one "which through its magnitude, extent or duration, has a severe effect on important or valued resources" (De Villiers Brownlie Associates, 2000:2.38). After the primary data had been gathered, it was analysed and systematically arranged into report format. Appendix B details the questionnaires and Appendix C the list of Interested and Affected Parties.

#### ***4.3.1 Questionnaires***

A number of semi-structured qualitative interview schedules (comprising open-ended as well as closed questions), were designed to interview various I&APs and key stakeholders. These included small-, junior- and medium-scale miners, community and community-based organisation leaders, women, government officials from DME and other institutions.

In addition to these field explorations, visits were undertaken to DME in Pretoria and Minerals and Energy Policy Centre (MEPC) and Mintek in Johannesburg. These visits provided insightful opinions and documentation on the topic of small-scale mining in South Africa. In addition the launch of the South African Women in Mining Congress (SAWIMA) Western Cape was attended in Cape Town. This provided essential links with key roleplayers within SAWIMA in the Northern Cape and North West Provinces. From contact with these organisations a number of keystoneholder groups were identified for which specific questionnaires were designed (Appendix B).

The questionnaires used during the field research were directed at obtaining the following information:

##### ***4.3.1.1 Small-scale miners***

Questions directed at this I&AP group were aimed at obtaining details of small-scale mining operations and included:

- **The type of machinery and equipment used and how these are obtained.** It also focussed on mining methods, skills and experience, where these were obtained and how long miners had been involved in small-scale diamond mining.

- **Claim identification.** The application process and rehabilitation were also discussed. This led to questions relating to understanding and perceptions of current mining legislation and the proposed Minerals Development Bill as well as their interaction and perceptions of DME. This aspect was discussed in order to establish whether government has made serious efforts in assisting the small-scale mining sector to become recognised within the minerals industry.
- **Obtaining an insight into the socio-economics of SSM.** Questions pertaining to income, diamond markets and diamond values as well as the costs associated with mining were asked. Financial responsibilities to wives, children and families were raised to establish sole income provider status and occurrence of financial support structures, such as relatives and/or government grants. These questions were important to establish whether mining on a small-scale is viable as a source of income and financial contributor to communities.
- **Establishing the employment potential of SSM.** Questions relating to labour force, salaries and occurrence of labour problems, as well as health, safety and security issues were asked. These questions were raised to establish the role of SSM as an employment contributor and the health and safety risks involved.
- **Establishing the successes and shortcomings of mining associations, and joint ventures and whether these are viable options for the future of SSM.** Issues relating to relationships and interaction between small-scale miners, between small-scale miners and medium-scale miners, and between small-scale miners and host communities were all discussed to establish the position of the small-scale miner within the mining industry.
- **Issue identification.** Identifying problems experienced by SSM, potential solutions as well as perceptions of the future of SSM were further solicited to provide an overview of the 'pro's and cons' of small-scale mining as a career option.

#### *4.3.1.2 Medium-scale miners*

Many questions overlap between the different I&AP categories. This is evident in the questions directed towards the small- and medium-scale miners. However, in addition to asking many of the above questions, greater focus was placed upon:

- **Claim identification.** The manner in which claims are obtained, financial resources and support as well as the cost associated with starting a mining

operation, the type of machinery used and average monthly turnover. Such questions were aimed at establishing whether mining at this level is economically viable.

- **Labour matters.** These questions related to the origin of employees (i.e. local or migrant). Literacy and skills levels were also discussed, as well as safety and security measures employed by the mine. These questions aimed at establishing whether medium-scale mining contributes to employment creation and thus poverty alleviation in rural areas.
- **Interaction between small- and medium-scale miners.** Questions were asked relating to the level of interaction between small- and medium-scale miners, the current obstacles that are experienced and the perceived future of small- as well as medium-scale mining. This was investigated in an attempt to understand the miners' problems, the level of interaction and the state of co-existence between small- and medium-scale miners.

#### *4.3.1.3 Community profiles*

In order to ascertain the role and impact of SSM on host communities and to augment other data sources, a brief overview of the respective mining communities was required. The community questionnaire aimed at obtaining information regarding:

- **Community history,** in order to ascertain the reason for its origin, i.e. if communities originated due to mining activities.
- **Authority and leadership structures and land use,** in order to establish how land is allocated, what land is used for and the impact of mining on land use. Patterns of authority, dependence and power relations were also investigated.
- **Population composition and social organisation,** in order to establish whether the community emerged as a cohesive community with a perceived uniform identity or as a mixture of disparate individuals and groups as a result of historical mining activities and how this has affected its dynamics as a community. This has relevance for the development of such social capital as networks, communication, trust and loyalty.
- **Availability of services and existing infrastructure** in order to establish the existence and nature of livelihood assets and poverty and the impact of miners on community services.

- **Access to health and education** relating to its empowerment potential to ensure livelihood assets and to minimise poverty.
- **Access to economic activities** in order to establish a community's potential income sources and asset base versus the occurrence of poverty.
- **Identification of the major issues** identified by the community to establish its most significant problems and the potential impact of recent government policy and legislation, upon them.

#### *4.3.1.4 Department of Minerals and Energy*

These questions focussed on:

- **The SSM sector** in terms of their numbers and occurrences, areas of activity, mineral availability, equipment used; other sources of community income; as well as any technical and financial support systems. Information of workshops and training programmes provided by DME for small-scale miners was also sought. Further questions elicited the opinions of DME officials on SSM, its sustainability and perceived future. The Department of Minerals and Energy interacts with small-scale miners on a daily basis, and thus requires a thorough understanding of the organisation, and problems experienced by small-scale miners. As a major stakeholder in this social impact analysis DME's opinion and perceptions regarding SSM constitutes a vital part of this report.
- **Legislative procedures**, including DME's requirements in terms of permit applications and mineral exploitation, rehabilitation, legislation and problems experienced by the Department in this regard. Perceptions regarding the envisaged role of the Minerals Development Draft Bill (this has already been tabled, debated, and translated into law), its imminent implementation and potential successes and shortfalls were also addressed. It was important to identify current shortcomings and problems experienced within, and as a result of, the institutional system to establish the probable impact of the new Act.
- **Identifying existing issues** within the departmental structure regarding communication, organisation, economic factors, and existing obstacles that to contribute or digress from the Department's current functioning and operation.

#### 4.4 Conclusion

The research strategy adopted for the purpose of this report comprised case studies of small-scale diamond mining communities and associated key stakeholders in South Africa. The field research comprised a series of qualitative and quantitative research methods that were broadly applied to four main categories of respondents, namely small-scale miners, medium-scale miners, host communities and the DME. Before these findings are discussed in Chapter 6, an overview of the diamond mining *milieu* as well as the current requirements, methods and organisation adopted by small-scale diamond miners in South Africa is provided in Chapter 5.

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## **CHAPTER 5: SMALL-SCALE DIAMOND MINING IN SOUTH AFRICA**

This chapter includes an overview of the major events and changes that have occurred regarding the diamond mining industry of South Africa. The term 'small-scale mining' is defined before an overview of the political history and legislation regarding small-scale mining is provided. This chapter forms the basis from which this research project is developed i.e. a social impact assessment of the Minerals and Petroleum Resources Development Act on the small-scale diamond mining sector.

### **5.1 South Africa's mining corporations**

Multinational mining corporations such as Anglo American, Gold Fields, Rand Mines, JCI, Anglovaal, General Mining and Union Corporation have historically dominated mining in South Africa. This situation has not changed substantially and large mining companies continue to hold mineral rights to large tracts of mineral bearing grounds. Originally mining houses were financed from abroad. In the mid-1990s the South African economy opened up to foreign competition, which forced emphasis on productivity resulting in large labour lay-offs (Granville, 2001). Periodic devaluation of the South African Rand against major currencies exacerbated the situation. Today the mining industry consists of a number of small- and medium- to global-mining groups.

#### **5.1.1 Brief historical background**

*"This is the only life for me. It's the excitement, the feeling of anticipation every time I turn a sieve over. They found a 300-carat stone there back in the 1800s, and it can happen that one day I'll turn my sieve over and find a really big one"* (Wanneburgh and Johnson. 1990:50).

##### **(i) The diamond discoveries in South Africa**

The mining history of Southern Africa dates back 1500 years (Miller and Hammell, 1999). Modern mining is considered to have started in 1857 with copper recovery in Namaqualand. In 1866 alluvial diamonds were discovered near Hopetown in the Northern Cape (Bulpin, 2001). This discovery surpassed the diamond deposits of the rest of the world and provided the basis to convert South Africa's hitherto pastoral economy into a mineral-based economy (Department of Minerals and Energy, 1988).

In 1873 diamond pipes were discovered in the Kimberley vicinity. These discoveries overshadowed earlier diamond discoveries in 1871 and later in 1922 in the Bloemhof and Schweizer-Reneke districts respectively (Figure 2). The discovery of diamonds in the Lichtenburg district, led to the world's greatest diamond rush during 1926 and 1927. Gemstones flooded the market and led to the fall in the diamond price (Liebenberg, 1990 and Jessup, 1979).

**(ii) Evolution of the diamond mining industry in South Africa**

Cecil John Rhodes and Barney Barnato realised that to end the haphazard working of the kimberlite pipes, and to prevent diamond overproduction the South African diamond mining trade had to become monopolised (Cowey, 1994). This led to the merging of the De Beers Mining Company and the Kimberley Central into De Beers Consolidated Mines Ltd. in 1888. Under leadership of Ernest Oppenheimer from 1930, De Beers took over diamond production and sales control, which could be adjusted, to the state of the market (Maillard, 1980).

**(iii) Racial segregation and the role of the state**

From the onset Black people supplied the bulk of unskilled labour, although some were claim holders, share workers or dealers. This changed when the White diggers enforced their own regulations in 1871 (Allen, 1992), which subsequently resulted in formal exclusion of Blacks from any meaningful stake in the industry (Flynn, 1992). The state reserved 60 percent of the diamonds produced but had very little influence on production and trade (Maillard, 1980). Despite declining prices and increasing poverty the alluvial diggings were considered an important way to alleviate the state's responsibility to unemployment. A ten percent export tax added vast sums to the government coffers. In 1936 there were still 11 000 Whites and 40 000 Blacks working the mines, but only 13 percent of the diggers worked at a profit. As a result the general recommendation of the committee for the Ministry of Labour and Social Welfare and the Commissioner to the government was to close the diggings altogether because they were considered "poverty traps yielding too few precious stones to pay for the dreams of too many" (Newsbury, 1989:291).

## 5.2 Diamond mining in South Africa in its present context

*"This jewel, that you could hold between your fingers and thumb, seemed unfathomable as the heavens themselves.... The only one of us who kept his senses was Mr. Godfrey.... And looking compassionately backwards and forwards between the diamond and me, said, Carbon, Betteridge! Mere carbon, my good friend after all!"* (Collins in Worger, 1987:1).

Diamonds are pure carbon gasses that under exceedingly high temperatures through volcanic activity have fused deep under the earth (Worger, 1987). Diamonds are generally found in kimberlite rock, alluvial deposits, and marine deposits off the west coast (Department of Minerals and Energy, 1997). South Africa is the fifth largest diamond producer in the world with an output of 10,90 million carats<sup>4</sup> in 2002 (Department of Minerals and Energy, 2003). In 2002, 51 mines produced diamonds, of which 15 mined kimberlites, 19 exploited alluvial deposits and 17 recovered marine diamonds. The rough diamond industry in South Africa is dominated by De Beers, which produced 10 million carats, 95 percent of the diamonds in South Africa, in 2002 (Department of Minerals and Energy, 2003). Two other large-scale diamond mining companies include the Alexander Bay Development (ALEXKOR) and the Trans Hex Group Ltd. The remaining mines are classified as medium- or small-scale mines. Small- and medium-scale mining is opencast and involves the digging of alluvial gravels or the working tailings of former mining enterprises. These are located along the Vaal and Orange Rivers, near Lichtenburg, Cullinan, Schweizer Reneke, Barkly West, Kimberley, Wolmaranstad, Bloemhof, Coligny, Windsorton, Ventersdorp, Christiana, Warrenton and Hopetown (Department of Minerals and Energy, 1997). According to the DME (1997) there were some 500 alluvial diamond diggers (small-scale miners) accounting for 0.7 percent of the 1995 production total. This figure is probably underestimated because of a number of 'illegal' operations and ineffective department administration. No figures are given for 2001 but it is estimated that small-scale miners accounted for 150 000 ct in 2001 (Department of Minerals and Energy, 2000/2001). It is widely believed that the gemstone mining and processing industry both have the potential to contribute significantly to local economies and reduce employment, especially in the regions such as the Northern Cape where poverty is widespread (Department of Minerals and Energy, 1997). The

small-scale diamond mining sector is an effective vehicle for economic development, as diamonds have a very high value to weight ratio and are obtained through relatively simple mining and processing techniques and have a ready market (Scott, 1998). Diamond mining dominates the South African gemstone industry.

### **5.2.1 *The geological/mineral potential of South Africa***

*“When you are working a pipe or a fissures you can calculate what you are likely to get, but with alluvium you can work a hundred tonnes and find a hundred carats”* (Wannenburgh and Johnson, 1990:50).

According to Dr. Nok Frick from the Council for Geoscience, South Africa still has a vast mineral potential that awaits exploration. Junior-scale miners need access to finance. “The lack of access to most of a century’s exploration data remains an obstacle to would-be juniors, who face having to fund exploration in areas already explored, to discover what has already been discovered” (Campell, 2001:18). According to the Deputy Director of the DME, North West, it is believed that three or four large diamond pipes in the North West Province have not yet been discovered.

### **5.3 A classification of small-scale mining**

Small-scale mining in SA involves the exploitation of gold, diamonds, semi-precious stones, pegmatite minerals, coal, beach sands, mica, beryl, talc, lithium, tantalite, scheelite, clays and other industrial minerals. According to a UN study in 1972 (in Masialeti, 2002), the general characteristics of small-scale mining (SSM) include:

- Limited application of modern technology.
- Low cost per workplace, utilising low or intermediate technologies.
- Exploitation of surface or near surface deposits with little waste or overburden. But there are many pits whose depths exceed 60m.
- The operation requires relatively simple metallurgy and easy access.
- Organisationally, operations may include individuals, families or small groups of people.
- Lack of adequate infrastructure and community facilities, which has contributed to the poor living conditions of the people involved (Masialeli, 2002).

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<sup>4</sup> One ct. is equal to 0.5 grams.

- Activities are predominantly associated with high value, low volume products.
- Mining is undertaken haphazardly and miners abandon mines in favour of areas with more potential. The risk element is extremely high.
- The majority of the artisanal miners are unskilled with no formal education and limited technical financial capabilities.

For the purpose of this report, it has been decided to classify the small-scale mining (SSM) sector into small-, junior- and medium-scale miners. This categorisation may in certain cases still overlap but this will be mentioned wherever it occurs. Table 5.1 provides an overview of the characteristics of each of these three mining categories.

**Table 5.1: Defining the different categories of SSM**

	<i>Small-scale mining operations</i>	<i>Junior-scale mining operations</i>	<i>Medium-scale mining operations</i>
<b>Type of equipment used</b>	Rely on manual labour. Use of mechanical equipment is restricted to engine-driven water pumps and a mechanised pan.	Make use of machinery such as a backactor, front-end loader, conveyor belt driven mechanised pan.	Make use of mechanised plants usually more than one backactor, front-end loader and excavator. May make use of a sortex.
<b>Pan size</b>	Between 3ft and 8ft	Between 8ft and 12ft	14ft pan +
<b>Rehabilitation guarantee</b>	R500 – R5000	R5000 – R25 000	R50 000 +

(Terlien, 2002)

A common characteristic of all three categories is that unlike large-scale operations, they are fairly mobile and change locations frequently.

#### **5.4 Small-scale mining organisation and procedures**

A number of different types of activities fall within the small-scale mining category, i.e. mining, bantam sorting and prospecting. These require different types of permits and licences. An overview of the different types of equipment and associated costs are discussed as well as the types of mining organisations.

##### **5.4.1 Small-scale mining and required permits and licences**

Small-scale mining requires the physical extraction of diamondiferous ore which is done manually (pick-and-shovel), with limited use of machinery (junior-scale), or

mechanically (medium-scale). Prospecting involves testing of an area's mineral potential (medium-/large-scale) or involves mobile small-scale miners mining the near surface for very short time periods. Prospecting licences used to be issued to 'bantam' sorters in the NW Province. Bantam sorting relates to the sorting of washed gravel or reworking of old tailings (Photo 2). This requires the least physical effort, capital and equipment. Since July 2002, a more appropriate arrangement was instituted and bantam sorters now require a permit for the removal or reworking of tailings dumps. A distinction is made between a mining permit that costs R50 and is valid for two years and a mining licence at R100, which is valid for more than two years. Application for both is open to any person wishing to become involved in the SSM sector.

#### **5.4.2 Mining Methods**

*"Diggers believe that if your name is on a diamond you'll find it, and that's pretty well right. You can leave a piece of ground, and somebody else can start there and find in a week what you have not found in three years"* (Wannenburgh and Johnson, 1990:50).

The mining methods applied by small- and medium-scale mining operations are described below. Junior-scale mining methods involve a combination of both small- and medium-scale mining methods.

##### **5.4.2.1. Small-scale mining**

Picks and shovels are used for obtaining ore from the quarry (Photo 1). The ore is transported by wheelbarrow and/or bucket to the 'baby', a dry rocking sifter that separates the oversize gravel and sand (Photos 7 and 8). In a few cases use is made of a 'dommy', which is similar to the baby, but has a coarser sieve; the ore falls through the sieve onto the ground and the coarser ore falls out at the front. As the ore size is larger than in case of the baby, this device requires a pan of at least 6ft. Once the ore has been sifted it is mixed with water in the rotary pan or washing machine (Photos 3 and 12). The pan has revolving iron teeth. The teeth are wedge shaped and positioned in a spiral arrangement that stirs the water and the ore allowing the heavy deposit which contains the diamonds to settle to the bottom along the outside rim of the pan.

Several sizes are available. The sizes used by small-scale miners usually in the order of 2.5, 4, 6 and 8ft. Some pans are turned manually, others are engine driven. The pan has an opening on the side rim of the pan through which the deposit containing the diamonds can be removed, a process known as 'tapping'. A bucket is held under the tap hole under which a 'balie', is placed to catch any overflow. The 'balie' is a round drum with a metal stand on the inside designed to hold three different sized sieves, through which the tapped diamondiferous material from the washing pan is sifted (Photos 9 and 10). The top sieve retains the larger gravel, the middle sieve holds the medium material and the bottom sieve sifts the sand from the finest fraction. The sand that falls out the bottom sieve is dried and sorted for any bantams (diamondiferous gravel) that may have fallen out. Once the ore has undergone this sifting process, it is hand-sorted on the 'sorting table', a little table, usually with a shade roof, where diamonds are sorted from the gravel (Photo 13).

#### *5.4.2.2 Medium-scale mining*

An excavator is used to loosen the ore, which is transported by bulldozer to the coarse static or mechanised grizzly sieve. From the grizzly the sorted ore is taken to a vibrating sieve that separates oversize from the finer materials (Photo 11). Some mine operations make use of a mechanised scrubber that washes and crushes the alluvial material. From here the ore is placed on the conveyor belt of the mechanised washing pan, which separates the bantams from the muddy slurry. The bantams are either hand-sorted or transported by conveyor-belt to the sortex, a mechanised sorter. The sortex has three different size sieves (Photo 14). The large bantams are transported on a conveyor belt and are hand-sorted; the medium and fine size bantams each pass over individual grease tables. The grease is scraped off intermittently and melted to recover the diamonds.

### 5.4.3 Mining equipment and costs involved

*"It's in my blood; I always have been a diamond man. There are good times and bad times, but on the balance I do well. Hard work and the belief that one day I'll find a really big one keep me in business. But when you do get a big one, you start believing you'll find another, and another...that's the way it is with diamonds"* (Wannenburgh and Johnson, 1990:51).

Small-scale mining methods and techniques have experienced little change over the past 130 years. The most rudimentary form involves a pick and a shovel and a washing drum also known as a 'balie', which have been in use since the advent of modern mining (1870) in this country (Photos 1 and 9). The 'baby', a dry sifter for diamondiferous gravel invented in 1870, is still used by many of the miners in especially the Northern Cape (Photo 8). The 'dommy', a similar sifter was more popular in the North West Province. At all three levels, small-, junior- and medium-scale, use was made of rotary pans or washing machines and sorting tables (Photos 3, 4, 7, and 10-14). Table 5.2 provides an overview of the different types of equipment used by the three categories of SSM. To become involved in the SSM sector requires capital to obtain equipment, the relevant mining permit and rehabilitation guarantees. The larger the mining operation the more significant the cost. Diamond mining is considered a high-risk venture and for this reason commercial banks require collateral before considering loans. As a result another income source is required to ensure start-up and continued operation. Hire purchase or rental is in some cases an option when obtaining large technical equipment. The downfall is that the monthly payments may exceed the monthly income derived from diamond production. The majority of the people involved in small-scale mining bought their equipment second-hand, inherited it, or manufactured it themselves. In most cases, at small-, junior- and medium-level, miners started small and worked themselves up gradually. Table 5.2 also gives an overview of estimated average costs involved for each of the different categories of the SSM sector.

**Table 5.2 Overview and comparison of small-, junior- and medium-scale mining operation costs (2002)**

<i>Overheads</i>	<i>Small-scale mining Capital required</i>	<i>Junior-scale mining Capital required</i>	<i>Medium-scale mining Capital required</i>
<i>Government payment</i>			
Annual permit fee	R50	R 50	R50
Rehabilitation fee	R500 – R5000	R5000+	R25 000+
Monthly claim fee (state land)	R50/ha	R50/ha	R50/ha
Royalty tax	5%	5% - 15%	5% – 15%
Income tax <sup>5</sup>	X	X	X
<i>Equipment</i>			
Mechanical plant	N/A	R180 000+	R300 000 +
Rotary pans	R6 000 – R 16 000	R109 000 (10ft)	R190 000 - R220 000 (14ft)
Balie, dommy, jig	R10 000 – R20 000	R16 000 – R20 000	R16 000 – R40 000
Engine/ generator	R12 000 – R15 000	R44 000 – R100 000	R55 000 – R200 000
Water	R75/month	R0- R200	Drill boreholes
Fuel	R150/week	R10 000 - R100 000	15 000 / – 90 000 /
Electricity	R120 – R150		
<i>Labour</i>			
Number	0 - 4 labourers	3 - 22 labourers	10 - 50 labourers
Cost per week	R80 – R130	R150 - R400	R150 – R400
<i>Approximate cost to begin operation</i>	R50 000 – R500 000	R50 000 – R3million	R2.5 – R7million
<i>Average monthly overheads</i>	Labour cost, claim fees, water, and diesel	Machinery repairs, diesel, labour, claim fees, and water	Machinery repairs, diesel, labour, and claim fees
<i>Machinery rental</i>	R120- R280 hour	N/A	N/A

Table 5.2 excludes transport costs to DME. These figures are based on averages of the estimates obtained from information received from respondents. Operation costs may be lower or higher depending on the type of equipment used and whether it is new or second-hand.

#### **5.4.4 Organisation of SSM joint ventures and close corporations**

When small-scale miners rent out their claims to junior-/medium-scale miners, the agreement is known as a 'joint venture' (Photo 5). The Department of Minerals and Energy initially encouraged such arrangements as it enables entry into the SSM sector without significant capital or equipment, and it provides an income as well as skills transfer. Unfortunately joint-ventures are often treated as a steady form of income rather than a stepping stone to become self-sufficient. A number of people group together, often with equal shares and earning equal profit shares to form a 'close corporation'. Close corporations are advantageous where individuals are not capable

<sup>5</sup> Income tax is raised on the individual's mining income and varies accordingly.

of raising sufficient funds, equipment and or input themselves. The South African Women in Mining Association encourages the formation of close corporations amongst its members (Photo 6).

## **5.5 Conclusion**

Although the small-scale mining methods have changed little over the past century, the small-scale mining climate has experienced considerable change. Many changes have been made in within government's mining regulations and legal requirements and cost have been adjusted significantly. Mineral land availability is becoming scarce and Greenfield land is mostly in the hands of large mining corporations. The state land readily available to small-scale miners has generally been mined out. Diamond recovery of such areas requires costly mechanised equipment, which without access to funds is unavailable to small-scale miners. Chapter 6 contains the most significant field findings of the case study in relation to the above. It consists of two sections, namely the socio-economic background of SSM against which the most significant socio-economic provoke by the new Act are discussed.

## **CHAPTER 6: CASE STUDY ANALYSIS**

This chapter provides a socio-economic profile of the small-scale diamond mining areas that form the basis of this report. A social profile is a fundamental component of a case study and SIA. The aim of an SIA is to anticipate the nature and degree of impacts, both positive and negative, upon a society and to assist people to cope with change (Vanclay and Bronstein, 1995). The social profile provides baseline information regarding the context in which people live their lives. It is an important part of establishing important circumstances where change, in this case, as a result of the White Paper and the Act would alter the context in which people live their lives.

The social profile of this particular report provides a detailed overview of the socio-economic<sup>6</sup> circumstances in which the small-scale miners and their communities live. Certain aspects have been described in greater detail than others in order to provide an overview of the limitations, (mainly as a result of limited livelihood assets) that exist within these communities. These aspects include community organisations as an important component of social capital; as well as previous and existing projects, their successes and shortcomings. The social profile includes important factors such as poverty, unemployment lack of education and skills, few livelihood assets, (human capital, social and institutional capital, natural capital, built capital and cultural capital), vulnerability, lack of institutional support, and social networks. These all form essential elements of social sustainability.

The social probe aims at understanding community dynamics. This is obtained through qualitative and quantitative field research, which includes identification of I&APs and issues of significance as well as significant events that have occurred within the area of study (scoping). From this range of issues the identification of significant impacts weighed against a specific set of criteria, including social sustainability, and factors that constitute barriers to the success of SSM, are extracted (screening).

The social profile forms the basis from which the likely impacts of the provisions within the Act can be identified. The purpose of this SIA is to analyse these

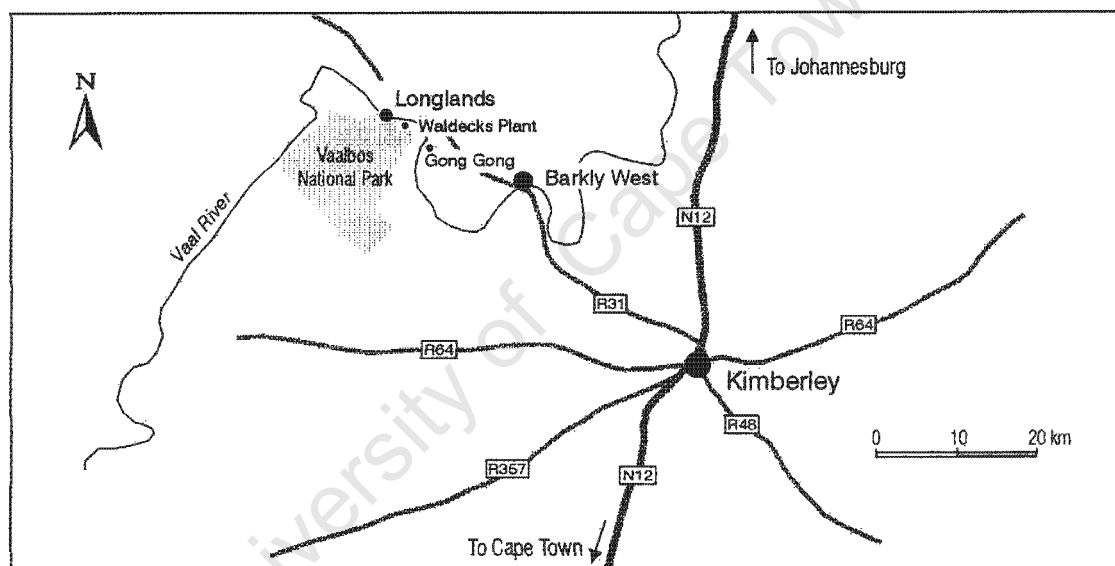
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<sup>6</sup> Unfortunately no information regarding detailed household income and expenditure exist to illustrate the actual level of poverty experienced for the areas included in this report.

provisions of the Act with respect to the degree that certain of them would constitute particular impacts on the activities and/or the lifestyles of small-scale miners and their dependants. Conclusions are based upon the findings of both case studies.

### 6.1 Background overview of the case study

Two case studies, “Small-scale diamond mining in the Barkly West area” and “Small-scale diamond mining in the North West Province” were undertaken in 2000 and 2002, respectively. A socio-economic profile of the regions in which these case studies were undertaken provides a context for later analysis of the probable impacts. The figures that are given below were applicable during the time of research, i.e. 2000 and 2002. Figures 3 and 4 provide a plan of the study area in both provinces.



**Figure 3: The Northern Cape study area**

Case study 1 included I&APs from Kimberley, Barkly West, Gong Gong, Longlands, and Waldecks Plant.

#### 6.1.1 Overview of small-scale mining in the Barkly West area, Northern Cape Province

The NC is the largest province in the country. It is sparsely populated with a population of 822 730 people. The provincial government departments are based in Kimberley, the provincial capital. The NC economy is reliant on two primary economic sectors, namely agriculture and mining. A wide variety of mineral deposits are found in the area, including tiger’s eye, tantalite/columbite, manganese ore, blue asbestos, feldspar, zinc ore, iron ore and diamonds.

According to Coetzee (2000), 35 percent of the population in the NC is unemployed and 26 percent of the population earn less than R500 per month (Table 6.1 provides further statistics). The main sources of income are derived from salaries, wages, and pensions, trade earnings and disability grants. Educational and literacy levels are low, with 39 percent of the population being illiterate.

The first case study was undertaken in the NC and includes Barkly West, Gong Gong, Longlands and Waldecks Plant (Figure 1). Barkly West is an established town whereas Gong Gong and Longlands are rural communities situated along the Vaal River within the Barkly West Magisterial District. Both Gong Gong and Longlands have limited service infrastructure. The inhabitants of both Gong Gong and Longlands mainly depend on state grants and small-scale mining, subsistence husbandry, piece-jobs and as medium- and large-scale mining labour. The Waldecks Plant mining area is situated close to Gong Gong and is mainly mined by junior- and medium-scale miners. Table 6.1 provides an overview of the socio-economic statistics for the NC.

**Table 6.1: Comparative socio-economic statistics for the NC and Barkly west District**

	<b>Northern Cape</b>	<b>Barkly West District</b>
<b>Population</b>	822 730	36 534 (4% of NC)
<i>Coloureds</i>	51%	33%
<i>Blacks</i>	36%	60%
<b>Employed</b>	39%	27%
<b>Unemployed</b>	20%	24%
<b>Income R1- R800/month</b>	23%	20%

(Statistics SA, 2001)

#### *6.1.1.1 Social profile of Barkly West*

- **Historical sketch**

Barkly West, formerly known as Klipdrift, originated after the discovery of South Africa's first alluvial diamonds. Diggings began in 1869. When the Transvaal Region, the Orange Free State, the Griqua Chief Waterboer and the Coranna Chief Jan Bloem laid claim to the region, the diggers formed the Diggers Mutual Protection Association to safeguard their rights. This led to the birth of the Klipdrift Diamond Fields Republic in 1870. Stafford Parker, a former sailor in the Royal Navy appointed

himself as its President. His rule ended a year later when Britain annexed the diamond fields. Klipdrift was later named Barkly West after Sir Henry Barkly and became the capital and seat of the government of Griqualand West for many years (Office of the Town Clerk, Municipality, 2000).

- **Location and jurisdiction**

Barkly West is situated on a bend of the Vaal River, 40 km northwest of Kimberley. It has its own municipality, which includes Delpoortshoop and Windsorton (Office of the Town Clerk, Municipality, 2000).

- **Population composition**

In 2000, the Barkly West municipality had an estimated population of 22 000 people. The town itself has an estimated population of a 1 000 people and De Beershoogte (the neighbouring township) some 5 000. The people comprise a wide variety of cultures, of which the White, Coloured and Tswana groups comprise the majority (Terlien and Miller, 2000).

- **Economic activities**

Barkly West is an established town with its own municipality. It houses several government departments, banks, and shops. A branch of the Electricity Supply Commission (Escom) is also situated in this town. Farms growing peaches, apricots, and grapes are situated along the Vaal River. Cattle and game farms also exist in the area (Terlien and Miller, 2000).

- **Communal infrastructure**

Barkly West has a police station, a hospital, several clinics and a general business infrastructure. It also has the diamond buyers' market, which operates on Saturday mornings. It has schools, a library and a town hall. Municipal services are provided to the residents in the municipal area. Increasing informal settlement is experienced on the northern edge of the town. These people are small-scale miners who have built structures adjacent to their mining pits (Terlien and Miller, 2000).

- **Health care**

The Barkly-Med clinic deals specifically with mining injuries and casualties. The most common ailments amongst mineworkers include arthritis, back problems, cataracts, lung disease, alcohol abuse, skin cancer, tuberculosis, HIV/AIDS, and heat stroke. The most common injuries relate to hands and fingers, which include lacerations, fractures, and amputations. Back injuries include slipped discs and arthritis. Foreign objects in eyes, such as dust, sand and rock splinters are common. Serious injuries and accidental deaths occur, but infrequently (Terlien and Miller, 2000).

The Barkly West Hospital caters for patients from the surrounding communities. It also provides mobile clinic services. The hospital has 16 nurses and a matron. Four private doctors visit the hospital in the mornings and afternoons, and also in cases of emergencies. The hospital has two ambulances. Teenager suicides occur on a monthly basis. The majority of patients are women and pensioners with influenza, burns and wounds. The majority of emergencies occur over weekends, relating to assault. On average the hospital treats 50 outpatients and 10 in-patients per day. Alcohol abuse amongst pensioners and the unemployed leads to frequent cases of assault. Malnutrition and drunkenness are the two most common problems amongst people of the rural communities. Injuries amongst mine labour of large- and medium-scale mines include cuts and loss of fingers. Amongst small-scale miners, injuries are generally related to slipped discs (Terlien and Miller, 2000).

#### *6.1.1.2 Social profile of Gong Gong*

- **Historical context**

The area presently known as Gong Gong was originally inhabited by the San. The former Transvaal Republic as well as the Thlaping attempted to claim ownership of the area. In 1871 it was annexed by the British Crown colony and incorporated under Griqualand West. In 1871 Gong Gong was proclaimed a diamond mining area (Erasmus and Sauls, 1995). The area was described as 'one of the most remarkable diggings ever discovered' by the *Diamond News* in October 1938. In 1922 the area came under control of the Berlin Missionary Station, when it was called "Rooistad". At this stage the community mainly consisted of Griquas and Tswana. In 1972 the

government bought the area and the name was changed to Gong Gong. The name apparently refers to the sound made by the waterfall, situated close to the community (Provincial Administration, 1997).

- **Location and jurisdiction**

Gong Gong is situated 50 km from Kimberley and 15 km from Barkly West, in the NC. It is situated in a rural area, which falls under the jurisdiction of the Vaal River Representative Council. As this body does not have executive power, Gong Gong relies on the Diamond Fields District Council and the Department of Local Government and Housing of the NC for financial and other support. Gong Gong is located in the same Magisterial District as Barkly West, Delportshoop and Windsorton (Africon, 2000a).

- **Population composition**

The majority of the population of Gong Gong comprises Coloured and Tswana cultural groupings. Afrikaans and Tswana form the two most commonly spoken languages. Many of the residents are inter-related. In 2000, Gong Gong had 209 households with a total population of 758 people. This comprised 389 women and 369 men of whom 339 were children under the age of 19. The population growth rate was 1.46 percent per annum (Africon, 2000a). The majority of the people live in mud structures with corrugated iron roofs. Plans for providing municipal houses and services were underway, but by May 2002, this had not materialized. An insignificant number of matrifocal (female-headed) households exist; divorce is uncommon. A few old widowers and widows exist. There are four churches, a Roman Catholic Church, a Lutheran Church and two Apostolic Churches.

- **Economic activities**

Economic activities within the community are severely limited due to the absence of an industrial sector. No government department offices, trade or service establishments exist in the area. Economic activities are limited to small-scale mining, subsistence animal husbandry, piece-jobs and mine labour for medium- and large-scale mines in the area. Local women collect river stones for a private business. Agates are sold at R10 per half maize bag and round stones at R3 a half/maize bag. Previous brick-making and needlework projects that were initiated by donor

organisations did not succeed. Unemployment is high and many people depend on state pensions and disability grants (Terlien and Miller, 2000). Table 6.2 provides an overview of the household income distribution.

**Table 6.2: Income distribution for Gong Gong**

<i>Monthly Income distribution of the community</i>	
<b>Income</b>	<b>Households %</b>
<b>R0 – R500</b>	<b>36</b>
<b>R501 – R1 000</b>	<b>47</b>
<b>R1 001 – R1 500</b>	<b>15</b>
<b>R1 501 – R3 500</b>	<b>3</b>
<b>R3 501 +</b>	<b>-</b>

(Africon, 2000a)

- **Agricultural activities**

Agricultural activities are limited to subsistence animal husbandry. People keep goats, pigs, sheep, chickens, donkeys and in some cases cattle and horses. Goats and cattle provide milk and are slaughtered for weddings and funerals. Pigs are used for their meat and are also sold. Hunting dogs are also kept by some. No crops or vegetables are grown. The Kagiso Trust funded a communal vegetable garden project but due to mismanagement and lack of training this project did not succeed (Terlien and Miller, 2000).

- **Communal infrastructure**

- (i) ***Education and skills***

No primary or secondary schools exist within the community. The primary school was burned down in 1971. Children attend primary and secondary schools in Barkly West. A school bus transports the children to school. Kagiso Trust built a pre-primary school in 1997. The school has 2 teachers and 33 pupils ranging from the ages of 3 to 6 years. Most of the parents of the children are unmarried. They receive a monthly single parent grant of R100, and are encouraged by the teachers to use these funds for school fees. Literacy amongst the younger generations is high. Apart from mining, skills include construction and welding (Terlien and Miller, 2000).

**(ii) Healthcare**

A clinic building exists in the community and the clinic provides general healthcare services to the public once a week. The most common ailments and illnesses include hypertension and arthritis. Many ailments are directly connected to the social problems experienced in the community. HIV/AIDS cases are increasing. Birth rates are decreasing and between 1 and 2 pregnancies are identified every two weeks. Pregnancies of women in the age cohort 16-19 years are common. Mortality rates are not significantly high. There are three cemeteries in the community. The nearest other clinic is Longlands. Hospitals and doctors are situated in Barkly West. An ambulance service based at the hospital in Barkly West, caters for the community (Terlien and Miller, 2000).

**(iii) Transport**

No bus or taxi service currently exists in the community. The former bus service proved uneconomical. People walk to the main road from where bus and taxi services are operated to Barkly West. Few people own vehicles. Donkey carts are used for water transport from the river to the small mining pits (Terlien and Miller, 2000).

**(iv) Telecommunication and power supply**

There are three private and one public telephones in Gong Gong. There is no electricity supply to the community. A few people own generators and the clinic uses solar power. Wood is a major source of fuel, but is becoming scarce in the immediate area (Terlien and Miller, 2000).

**(v) Water supply and sanitation**

Two of the four boreholes, sunk in 1996, provide water to the community. Monthly water rates are R15 per household but cost recovery is low. People dislike the taste of the chlorinating pills that are used to treat the water. It was reported that one of the boreholes was sunk in close proximity to a cemetery, which is also blamed for the water tasting "funny". The Vaal River, which runs past Gong Gong, remains an important source for household use. The majority of households have pit latrines. No refuse removal service exists and residents are responsible for burning or burying their domestic waste (Terlien and Miller, 2000).

**(vi) Recreation**

There are two soccer-fields, and a play park at the crèche. Community meetings are held in a privately owned hall (Terlien and Miller, 2000).

**(vii) Security**

There is no police station or mobile police unit in Gong Gong. The nearest police stations are in Barkly West and Delpportshoop (Terlien and Miller, 2000).

**(viii) Business centre**

Three tuckshops, which are run from private residences, exist in Gong Gong. Household and general goods are obtained from Barkly West and Kimberley (Terlien and Miller, 2000).

**(ix) Organisations**

No non-governmental organisations (NGOs) exist in Gong Gong. In 1995 the Council, Local Government and Land Affairs assisted the community with the creation of a Local Development Forum. A Water Committee was established after the Water and Sanitation Awareness Programme was implemented by Africon (Terlien and Miller, 2000).

**(x) Fishing and hunting**

Hunting occurs on a small-scale and is limited to rabbit hunting. The Vaal River provides a source of protein; fish include yellowfish, carp, barbel and mudfish (Terlien and Miller, 2000).

**6.1.1.3 Social profile of Longlands**

• **Historical context**

Longlands originated as a diamond mining village some 104 years ago. The community comprises two sections, the original Longlands that is characterised by corrugated iron roofed houses, the majority of which stand empty and the more recent development, which consists mainly of mud structures (Terlien and Miller, 2000).

• **Location and jurisdiction**

Longlands is situated adjacent to the Vaal River between Waldecks Plant and Wintersrus. Both Longlands and Wintersrus are administered by Delpportshoop Municipality. Longlands is located in the same Magisterial District as Barkly West, Windsorton and Delpportshoop.

- **Population composition**

The population has various ethnic origins. According to the survey undertaken by Africon (2000b) the population comprises a total of 316 households in Longlands and 107 in Wintersrus. Males total 804 and women 819. Children under the age of 19 number 779. Neither the current population growth rate, nor the dependency ratio, is known. Many people in Longlands are related to one another. However, a large number of people from the surrounding municipal towns and elsewhere have settled in Longlands (Terlien and Miller, 2000).

- **Economic activities**

As in the case of Gong Gong, economic activities in Longlands are severely limited due to the absence of an manufacturing sector. Economic activities include small-scale mining, subsistence animal husbandry, piece-jobs, and mine labour for medium- and large-scale mines in the area. A few people work as teachers and nurses in the surrounding towns. Government pensions, single care and disability grants also provide an important source of income. Unemployment in Longlands is also high (Terlien and Miller, 2000). Table 6.3 provides an overview of the household income distribution.

**Table 6.3: Income distribution for Longlands**

<i>Monthly Income distribution of the community</i>	
<b>Income</b>	<b>Households %</b>
<b>R0 – R500</b>	<b>38</b>
<b>R501 – R1 000</b>	<b>49</b>
<b>R1 001 – R1 500</b>	<b>10</b>
<b>R1 501 – R3 500</b>	<b>2.5</b>
<b>R3 501 +</b>	<b>0.5</b>

(Africon, 2000b)

- **Agricultural activities**

Agricultural activities are limited to animal husbandry. Livestock, including cattle, goats and pigs are common. Use of natural resources is limited to diamond mining, collecting river water and firewood (Terlien and Miller, 2000).

- **Communal infrastructure**

- (i) **Education**

A primary school exists in the community. This is a privately owned building that is rented by the National Education Department. The school has 14 classrooms, 17 teachers and 428 pupils. In 2000 only 6 pupils were in matric. The number of matriculants is low owing to socio-economic problems of the community. Approximately 200 pupils from Longlands attend secondary schools in Barkly West and Delportshoop. Two school buses transport the pupils to school (Terlien and Miller, 2000).

- (ii) **Healthcare**

A clinic exists in the old part of Longlands. The clinic provides general healthcare services to the public four days per week. Once a week a doctor visits the clinic. The nearest other clinic is Delportshoop. Hospitals and doctors are situated in Barkly West. An ambulance service, which is based at the hospital in Barkly West caters for the community. There is one cemetery in the old part and there are three cemeteries in the newer part of Longlands (Terlien and Miller, 2000).

- (iii) **Transport**

Busses and taxis are operated from the main road to Barkly West. Few people own vehicles (Terlien and Miller, 2000).

- (iv) **Telecommunication and power supply**

A post office is situated in the historical part of Longlands. There are a few public phones. Five of the households in the old part and the clinic have electricity supply. A few people have generators (Terlien and Miller, 2000).

- (v) **Water supply and sanitation**

Four boreholes exist. These are operated by two diesel-engined pumps. Five households have water reticulation systems. The Vaal River runs along the one boundary of Longlands. The majority of households make use of pit latrines for sanitation, but five households have waterborne toilets. No refuse removal service exists and residents are responsible for burning or burying their domestic waste (Terlien and Miller, 2000).

- (vi) **Recreation**

One soccer field exists in the community (Terlien and Miller, 2000).

- (vii) **Security**

A mobile police unit caters for Longlands. The nearest police station is in Delportshoop (Terlien and Miller, 2000).

**(viii) Business centre**

Two large shops and five spaza (tuck) shops cater for Longlands (Terlien and Miller, 2000).

**(ix) Organisations**

There are no NGOs and CBOs in the community although a Local Development Forum and Civics Association do exist in the community (Terlien and Miller, 2000).

**6.1.1.4. The small-scale mining sector of the Northern Cape study area**

No formal occupational statistics of small-scale mining activity could be obtained. During field research it became apparent that most of the mining activity occurred at Barkly West followed by Longlands. According to one of the respondents, only seven small-scale miners from Longlands were still mining during the time of the research. Of the four areas, the least mining activity occurred in Gong Gong. This could be attributed to a (i) lack of finance to enable people to mine and (ii) diminished diamond supply. From discussions held with miners in Gong Gong, it was established that many people were not involved in mining but had kept their claims and would return to mining once they obtained funds to continue. The number of small-scale miners interviewed is presented in table 6.4.

**Table 6.4: Number of SSM respondents in the Barkly West Area, NC**

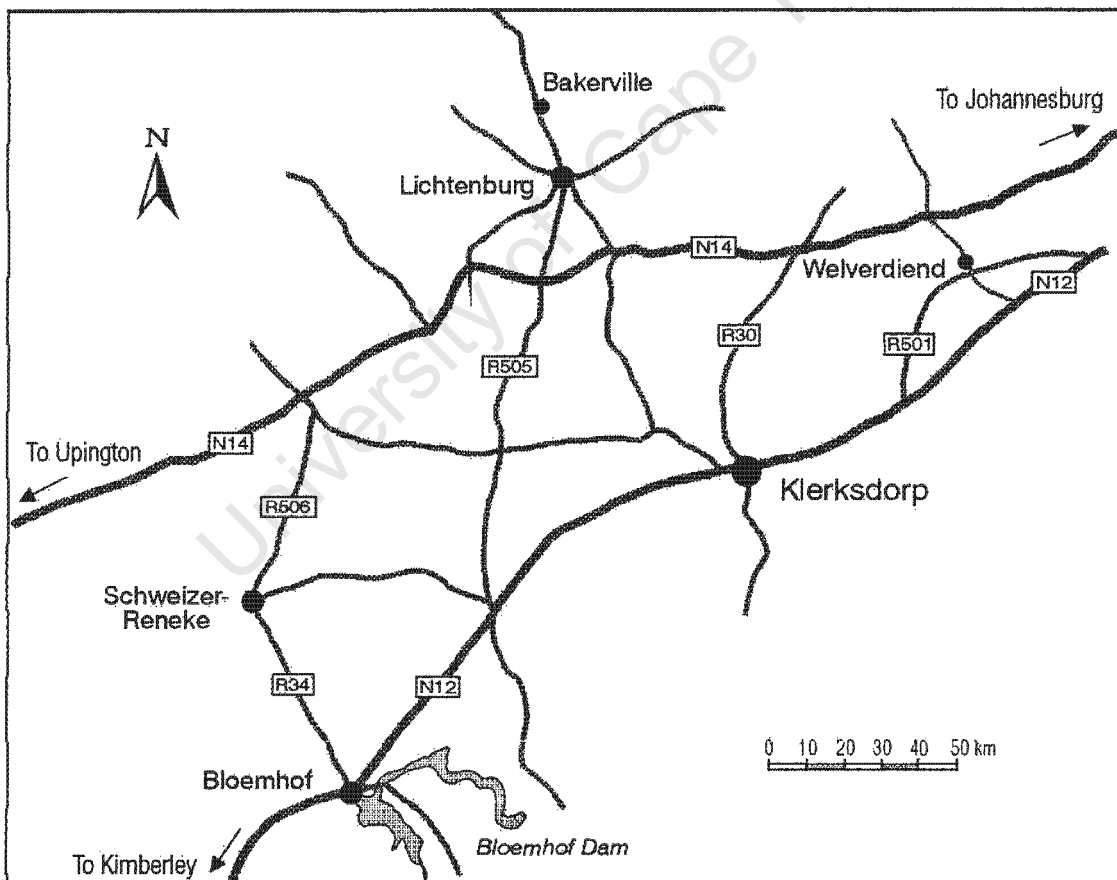
AREA	Small-scale Miners		Medium-scale Miners		Total number of Miners	
	Count	Percentage	Count	Percentage	Count	Percentage
Longlands	9	25%	2	6%	11	30.6%
Gong Gong	9	25%	2	6%	11	30.6%
Waldecks Plant	-	-	1	3%	1	2.8%
Barkly West	11	31%	2	6%	13	36%
<b>Total</b>	<b>29</b>	<b>81%</b>	<b>7</b>	<b>19%</b>	<b>36</b>	<b>100%</b>

(Percentages are based on a total of 36 respondents)

A total of 36 miners were interviewed, including 10 women miners (28%). This comprised 29 small-scale miners (81%), of whom 11 (31%) were mining in Barkly West under the aegis of the Barkly West Black Miners Association (BWMA), nine in Gong Gong (25%), and nine in Longlands (26%). Seven medium-scale miners were interviewed (19%), two in Longlands (6%), two in Gong Gong (6%), two from the Dumpco Mining Trust (6%) and one in Waldecks Plant (3%).

### 6.1.2. Overview of small-scale mining in the North West Province

The North West Province had a population of 3.7 million in 2001 with a high illiteracy level of 40 percent. Its main economic activities are mining and agriculture, which includes citrus, maize, tobacco and sunflowers. Klerksdorp, the provincial and administrative capital, which houses DME's provincial office, is a significant gold and uranium mining town, and an important agricultural centre. Due to flourishing agricultural and mining sectors the tourism industry has not gained much attention in the past. This is slowly changing and small-scale operators are beginning to exploit some of the region's new or previously overlooked tourist sites (Dovey, 2000). The second case study includes the Welverdiend and Bakerville communities in the Lichtenburg District, the farm Kameelkuil in the Schweizer-Reneke District and a number of farms in the Bloemhof District, all situated in the North West Province. Figure 4 provides a map of the study area.



**Figure 4: The North West study area**

The second case study includes the Welverdiend and Bakerville communities in the Lichtenburg District, the farm Kameelkuil in the Schweizer-Reneke District and a number of farms in the Bloemhof District, all situated in the North West Province

Both Welverdiend and Bakerville are rural communities with limited infrastructure. The population comprises Black people from different ethnic backgrounds attracted by the employment opportunities during the diamond rush of the 1920s. Economic activities are limited in both communities and include farm labour, small-scale mining, bantam sorting (sorting of processed diamondiferous ore) and junior- and medium-scale mining labour as well as a few jobs in Lichtenburg. The majority of the people are unemployed. Less dependence on state grants occurs here than in the case of the NC communities. The farm Kameelkuil is proclaimed state mineral ground, which is being mined by small- and junior-scale miners mostly from Schweizer-Reneke. Generally junior- and medium-scale miners mine the Bloemhof farms; the majority of whom are farmers and who were the most prosperous of the miners interviewed (Terlien, 2002). Table 6.5 provides an overview of the socio-economic statistics of the NW province.

**Table 6.5: Socio-economic statistics for the North West Province**

	North West	Lichtenburg District	Schweizer-Reneke District
<b>Population</b>	3 669 350	139 096 (4% of NW)	50 929 (1% of NW)
<i>Blacks</i>	92%	89%	91%
<i>Coloureds</i>	2%	2%	2%
<b>Employed</b>	32%	32%	32%
<b>Unemployed</b>	25%	22%	24%
<b>Income R1- R800</b>	16%	22%	22%

(Statistics SA, 2001)

#### 6.1.2.1 Social profile of Welverdiend

- **Historical sketch**

The history of the community of Welverdiend goes back to the 1920s when the first diamonds were discovered. People from all over South Africa were attracted to the job opportunities presented by the diamond discoveries. In 1972 the community was removed by the previous government from Klipkuil (approximately one kilometre away) to their current area of residence, Welverdiend. The community filed a land claim with the Department of Land Affairs and, as a consequence, it received a portion of the farm Welverdiend, including the area currently occupied for residential purposes.

- **Location and jurisdiction**

The community is situated on a portion of the farm Welverdiend, some 30 km NW of Lichtenburg. The community falls under the Lichtenburg District Council. The ward councillor resides in the neighbouring community of Grasfontein. The local community authority system comprises a community headman, who is elected by the community every five years assisted by a community council. Mr. B.A. Makgoro, the present headman was placed in this position as a tribute to his father, the previous headman, who had been very much loved and respected by the community. It appears as if some disunity exists between the present headman and the community (Terlien, 2002).

- **Population composition**

As the community is made up of people who migrated to the area during the 1920s, they comprise a variety of different cultural backgrounds. However, over the years people have intermarried and traditional cultural practices are no longer obvious within the community. In 2002, the population comprised some 1600 residents, living on 175 erven (at an average of nine persons per household). It is common for households to house three generations and often the second and third generations are economically dependent on the elderly. Approximately 23 percent of the residents receive a state pension. Eight residents are disabled. Divorcees, widowers and widows are uncommon but the occurrence of single mothers is. Common health conditions are stomach ailments, influenza, headaches and epilepsy. Occurrences of tuberculosis and asthma were also reported. Mortality rates were 11 per 1600 for 2001 and 6 per 1600 for the first half of 2002. It was stated that many of the deceased comprise young people but the reasons for death were not reported. No disability and single mother grants are received by any of the residents. Birth certificates are obtained from hospitals and clinics. Children under the age of seven with birth certificates receive a state grant (Terlien, 2002).

- **Economic activities**

The majority of the residents are unemployed. Some 30 community members are estimated to be employed, mostly as farm labourers and mine workers, and a few work in Lichtenburg. Informal employment includes prospecting/bantam sorting and a

few people run tuckshops. The headman estimated that some 20 community members have prospecting permits and two have mining permits. The number of people involved in mining activities has decreased due to lack of finances to obtain mining equipment (Terlien, 2002).

- **Agricultural activities**

A few community members have livestock (cattle, goats, pigs and chickens). None of them are involved in subsistence agriculture. It was stated that due to lack of water and the rocky soil, people could not farm. Another reason was given that “this is mine land not farm land”. Some of the community members have worked or are working on surrounding farms. Use of natural resources such as wood for fuel, grass for brooms, and plants for medicinal purpose play a significant role in the lives of the community members. It was stated during a meeting with the community structures that the community is expanding, which is limiting space for the potential development of livestock rearing. It was concluded that it would be advantageous to the community to grow cattle feed and establish vegetable gardens (Terlien, 2002).

- **Communal infrastructure**

Gravel roads lead to Welverdiend. The community consists mostly of mud-brick houses with iron roofs (Photo 15). Houses are placed in a haphazard fashion with small winding interleading gravel roads. Apart from a few tuckshops in Welverdiend, the nearest banks, shops and postal services are in Lichtenburg, some 30 km south of Welverdiend. The land committee issues erven at R280 per 30 m<sup>2</sup>. A certain area is set out for residential purposes. Water supply is restricted to a borehole that services seven standpipes. There are no public telephones or weekly transport services catering for the community. Five households have private telephones. On Saturdays a bus takes people to town and back (R14 return). There is a community sports field and a community hall. Three people in the community own a car each one owns an old bakkie with which he transports school children and people to Lichtenburg on a daily basis at R16 a return trip. The closest petrol station and café are in Bakerville village. The closest emergency services, hospital and police station are in Lichtenburg. A mobile clinic visits the community once a month. Previously a paralegal office existed to assist old people, children and workers in Welverdiend by processing pensions and employee registrations and as a centre for which to phone the ambulance in case of emergency. The NGO that funded this centre is no longer in operation and now

pensioners and workers need to travel to Lichtenburg for their pensions and to the Department of Labour to register. The community school has seven classrooms from grades 1 to 7. There are five teachers and 162 pupils. Some children from the surrounding farms (some 5-7 km radius) also attend the school. The school also has a library. There is no electricity. A water-borne ablution block belongs to the school. However the pump was stolen the day after the official school opening and a water supply problem has been experienced ever since. An annual fee of R30 is asked per child. School attendance is good. The nearest high school is situated in Lichtenburg. An intermediate school is between Welverdiend and Lichtenburg. Seven of 2001's grade 5 leavers went to the intermediate school and 14 in the year 2000. A primary school nutritional scheme provides children in grade 1 to 5, with breakfast. Volunteers who claim back their expenses from the government prepare the food. The volunteers in Welverdiend have not been active since January 2002. The majority of the children are malnourished and colds are a common ailment. The school needs water supply and additional teachers. Teacher accommodation is also a problem. Currently one of the teachers has to commute and due to unreliable transport is often late (Terlien, 2002).

- **Organisations (Photo 16)**

- (i) *Trust Committee* - The Trust Committee was established when a land claim was made to the Department of Land Affairs. The committee consists of 10 members and is responsible for the community funds from mining and the Mintek Pilot project (Photo 7).

- (ii) *Rural Movement for Struggling Women* - This committee aims to initiate woman's projects.

- (iii) *Health Committee* - This committee provides the community with workshops specifically regarding HIV/AIDS.

- (iv) *Water Committee* - The committee members are responsible for water provision to the community. In the past users paid R5/month per household. Now water is obtained free as the majority of households have a very low income. Water committees, initiated by the government, were supported for the first three years of operation. Presently they no longer receive financial support. As committee members are not paid for their services, a lack of interest exists.

- (v) *Mining Committee* - This committee deals with mining applications and general mining matters affecting the community. The committee consists of four

members, Mrs L. Mashaba, the headman and two other men (only Mrs Mashaba is active).

*(vi) School Committee* - The function of the school committee is to identify problems related to the school and ask the community to assist with food and clothing for the children. The school has no chairs and the water pump has been stolen. It would cost R3 500 to replace. None of the above committee members receive any grants for their committees, or any remuneration for their time and effort (Terlien, 2002).

- **Projects**

The Department of Agriculture implemented a chicken-raising project in 1999. The project employs two men and three women. The running costs, which include chick feed and machine operation are very high - the monthly food supply from the Lichtenburg co-operative totals R105 000 (including the transport). The coal to keep the chicks warm costs R2 500 for a monthly supply; the running costs of the machines are R900 – R1 000 per month and chicks are sold at R1.65 each. During the interview the project had 16 000 day-old chicks. They are sold at R4.75/kg after six weeks. The project is not making any profits and it is reported that sometimes five months pass before employees receive a salary (Terlien, 2002).

- **Community needs and problems**

From the social profile Welverdiend can be described as a poor rural community, typical of many of the diamond mining rural mining communities. Livelihood assets are few and poverty is exacerbated by lack of access to services to develop the human capital.

- (i) Unemployment*

The biggest issue of concern within the Welverdiend community is unemployment. People want to mine but without financial backup cannot afford to obtain equipment. If they had access to finances and good potential mineral ground, mining could form the basis of this community's economic existence, ensuring a livelihood for many households and providing children with access to education and health care. Another obstacle experienced by the local community is the general lack of services. Due to a lack of electricity people make use of wood for fuel. Not only is this a time consuming process, it is expensive to transport and destructive of the environment. Paraffin and candles bought at the café at Bakerville are expensive. Welverdiend also

lacks a public telephone booth. People with a private telephone charge community members R30 per call and people with cellular phones have no way of re-charging them. The cement long-drops, provided by the RDP, have become saturated, creating an overpowering smell at night. Requests to the government have been made to drain them (Terlien, 2002).

**(ii) Roads and transport**

The gravel road providing access into and out of Welverdiend is a problem and has resulted in the overturning of an ambulance on its way to fetch a patient. Ambulance transport costs R61, which many people cannot afford. The community requested a school bus but still have had no reply (Terlien, 2002).

**(iii) Community infrastructure**

The community has a RDP community hall but this lacks furniture such as chairs and tables. The road is not fenced and as a result livestock wander onto the road, which has safety implications and also results in loss of livestock. There is no school or crèche within the community. It has been stated that there is a serious need for a place where the elderly can gather and be involved in some sort of activity such as sewing and knitting projects, in order to forget their troubles. They are fixated on pension day and many buy beer on credit. It was suggested that they should be fed and cared for in the day so that they could go home happy and clean. The perception within the community is that the government only assists developed areas (Terlien, 2002).

*6.1.2.2 Social profile of Bakerville*

• **Historical sketch**

Bakerville village originated in 1926 during the first diamond rush in Lichtenburg. The village housed some 150 000 people during its peak and consisted mostly of makeshift iron shacks. Today Bakerville village remains but a shadow of its original magnitude and grandeur, a number of the original sink houses still remain and many are occupied by small-scale miners (Photo 18). Situated adjacent to the village is Bakerville community (Photo 17). Just as in the case of Welverdiend, this community originated in 1926 comprising people from all over the country in search of labour opportunities at the diamond diggings which began in the 1920s (Terlien, 2002).

- **Location and jurisdiction**

Bakerville is situated some 20 km north of Lichtenburg. A tarred road connects the two settlements. The land on which Bakerville is situated was given to the community in 1996. Bakerville village is situated on privately owned land. Both the Bakerville community and the village fall within the jurisdiction of the Lichtenburg Town Council. The local authority structure comprises a community headman, who is elected by the community every five years. His deputy assists him. His function is to stimulate and regulate community development, in terms of residential development and mining activities. He requires to be informed of any council plans regarding the community. His relationship with the ward council is not healthy. It was mentioned that the councillor appears to be insecure, threatened and duplicitous and as a result he had jeopardised development projects in the past. Examples of this are the garden project and the water project, both of which have been stopped partly as a result of his interference. They used to have an advice centre initiated by the North West Province paralegal association (Terlien, 2002).

- **Population composition**

The population of Bakerville community in 2002 was estimated at 4 000 people, living on 600 stands at an average of seven people per household. Approximately 54 people receive state pensions. Divorces are uncommon amongst the community. The number of widows and widowers is insignificant and estimated at a maximum of 30. It was stated that there are more single than married mothers, the former usually living with their parents (Terlien, 2002).

- **Economic activities**

Economic activities generally consist of farming and mining labour. Less than 5 percent of the population are said to work in Lichtenburg. Small-scale miners or labourers earn on average between R60-R100 a week. It is estimated that 45 percent of the population is illiterate (Terlien, 2002).

- **Agricultural activities**

There are 13 cattle owners in the community. Some people keep pigs and chickens and a few have goats and sheep. Vegetables are grown on a subsistence basis by some of the residents in their gardens. Indigenous plants and trees are used for medicinal purposes. A few wild fruits grow in the area and are used by the community (Terlien, 2002).

- **Communal infrastructure**

Gravel roads lead to Bakerville community. There are three general dealers and three spaza shops. Many of the houses are made from mud bricks, but cement brick houses also exist, generally with little gardens. Small inter-leading gravel roads connect the houses. In comparison to Welverdiend, this community is more developed. Houses have electricity supply, which is card operated. Water supply is obtained from a power driven borehole that supplies some 600 standpipes. Water is not paid for but the electricity to operate the borehole costs R3 per month per household. There are four private telephones in the community. Public transport consists of a school bus and three taxis that drive to Lichtenburg several times a day. There is a community hall and a sports field. A clinic was built in 1996, but without staff and equipment has never functioned. The majority of the houses have pit latrines that were built by an RDP project. There is a school that caters for grades 1 to 7. The school has 12 teachers and 12 classrooms with between 400-500 pupils. Children from Grasfontein community also attend the school. A secondary school is situated close to Lichtenburg, but because many parents cannot afford the transport costs, few children attend it. The majority of matriculants return to the community due to lack of employment elsewhere (Terlien, 2002).

- **Organisations**

The Land Committee discusses the residential and mining land applications. A residential erf measures 30m x 50m and is obtained by a once-off payment of R300. This money is used by the Community Trust to repair things such as the community hall and contributes towards water and electricity payment shortfalls. An advice centre, funded by the North West Paralegal Association, used to operate within the community until the funds ran out. It processed ID book applications and pensions,

held workshops on HIV/AIDS and sorted out problems and issues with DME. “Badirammogo Diamond Workers” – a group of 10 community members have submitted a proposal to the National Development Agency for machinery. They have requested a similar project to Mintek’s project in Welverdiend. Other committees include a Water Committee, a Land Committee, a School Committee and several Church Committees as well as a Community Trust Committee. These committees have similar functions to those operating in Welverdiend (Terlien, 2002).

- **Health, safety and security**

Due to large scale unemployment theft is a problem. As most of the employed people are employed on an informal basis, they have no insurance in case of an accident or death on the job. The most common diseases in the community are asthma, influenza and a few cases of HIV/AIDS have been reported. Many young people die, possibly HIV/AIDS related. Older people generally die from asthma caused by dust from many years involved in mining. Stomach ailments are common and may possibly be related to consumption of untreated water. Mortality rates do not exceed six people per month. The village is serviced by a mobile clinic three days a week. It was mentioned that the councillor should have arranged mobile clinic visits more evenly amongst the surrounding neighbouring communities as Welverdiend is only serviced by the clinic on a monthly basis (Terlien, 2002).

- **Community needs and problems**

By comparison, Bakerville community is more developed than Welverdiend, however it does require a number of services for it to be considered ‘urbanised’ and to increase the community’s access to livelihood assets. During the time of research the community identified a number of needs. One of the priorities is the need for employment. It was hoped that a large mining company would mine Bakerville communal land and so provide income and employment. A need for health workers and the necessary equipment to equip the local clinic building was also identified. The installation of public telephone booths would provide access to the outside world and a local high school would allow access to a larger number of local pupils to attend. In terms of infrastructure, it was argued that a tarred road within the community and grazing camps for livestock to prevent them from wandering into the road would contribute significantly to improving quality of life (Terlien, 2002).

### *6.1.2.3 Bloemhof district*

There are very few small-scale miners in the Bloemhof area. The majority of the junior- and medium-scale miners are local farmers, who have grown up in the area. Mr Wessel van Heerden, the Town Clerk, expected the number of small-scale miners to increase once the Mineral and Petroleum Resources Development Act was promulgated. The diamond mining activities in the early 1900s left many areas unrehabilitated, rendering the land useless for residential or agricultural purposes. These areas are characterised by waist-deep holes, which are expensive to rehabilitate. The farm Klipfontein used to be a residential area. In 1953 a 20-carat diamond was found on the farm and the area became a proclaimed mining area. In 1986 Mr C.J. Schneider became the first miner to mine deep-level, which led to a new diamond rush (Terlien, 2002).

### *6.1.2.4 Schweizer-Reneke district*

The proclaimed farm Kameelkuil is situated some 22 km from Schweizer-Reneke, 14 km on the tarred road to Bloemhof (R10) and another 8 km on a gravel road. Taxis drive the Schweizer-Reneke-Bloemhof route but the gravel road is not accessed by public transport (Terlien, 2002).

### *6.1.2.5 The small-scale mining sector of the North West study area*

A total of 50 miners were interviewed including 11 women miners (22% of survey sample). Table 6.6 provides a breakdown of the numbers of miners per area who were interviewed during the survey. This includes 30 miners in the Lichtenburg district (60%) nine miners in the Schweizer-Reneke District (18%), and 11 miners in the Bloemhof District (20%).

**Table 6.6: Number of SSM respondents in the North West Province**

DISTRICT	Men		Women		Small-scale Miners		Medium-scale Miners		Total number of Miners	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Lichtenburg	24	48%	6	12%	20	40%	10	20%	30	60%
Schweizer-Reneke	5	10%	4	8%	8	16%	1	2%	9	18%
Bloemhof	10	20%	1	2%	3	6%	8	16%	11	22%
<b>Total</b>	<b>39</b>	<b>78%</b>	<b>11</b>	<b>22%</b>	<b>31</b>	<b>62%</b>	<b>19</b>	<b>38%</b>	<b>50</b>	<b>100%</b>

## 6.2 Presence of culturally/historical significant areas

The existing small-scale mining activities have experienced little change from the early diamond mining practices. Great potential exists to combine the historical mine workings to the existing small-scale workings from one of the earliest and most significant diamond mining areas in the world. Combined with this the natural charm of the area's thorn bush vegetation and fauna in the private and national game parks, could provide a unique experience to the tourist industry.

A number of significant cultural/historical areas were encountered during both fieldtrips. A number of these areas have already been marketed as tourist attractions and with careful marketing and management the remainder of these areas can be transformed and/or included as a tourist attraction.

### 6.2.1 Places of interest in the NC study area

Places of interest around the study area in the NC include: Sydney on Vaal, an historical mining village which has been transformed into an exclusive game resort; Vaalbos National Park; Gong Gong Waterfalls; Canteen Kopje, a proclaimed nature reserve and heritage site marks the site of the first diamond diggings in South Africa. The bridge across the Vaal river and the toll house have both been proclaimed monuments. The Nooitgedacht Glacial Pavements which contain 1 500-year-old rock engravings on them (Office of the Town Clerk, 2000). A number of potential tourist attractions could include: The old Longlands mining village, situated along the Vaal river, which could be restored into a holiday resort. From a historical and industrial archaeology point of view the old mine dumps and mine pits situated in areas such as

Vaalbos and Gong Gong could be regarded as an important part of our national heritage. Instead of spending the millions of rands it would require to rehabilitate these areas, these mining remnants should, due to their age and significant part in the area's mining history, be viewed as an interesting feature unique to the area's landscape. Mr Potgieter of Diamond Tours has recognised the value and potential of these old mine workings and has integrated visits to these sites into his tour packages. Not only do these tours include visits to old abandoned mine works and equipment but they also include visits to former small-scale miners, who provide tourists with colourful narratives on the experiences of the diamond miners.

### ***6.2.2 Places of interest in the NW study area***

The following areas of historical significance are found within or around the study area in NW: Bakerville, Pienaars and Kings potholes; The cattle dip on the Farm Elandsputte, where the first Lichtenburg diamond was recovered, was declared national monument in 1980; Many of the old sink houses in Bakerville village are still intact and inhabited by present day small-scale miners; The historical remains of diamond diggings can be seen on Welverdiend community land. This has taken shape in beautiful natural scenery and consists of a number of large 'Jonah rocks' that have been dug out by old diamond miners creating the illusion of a miniature 'Grand Canyon'(Photo 19). By stocking the area with game, and building a number of rondawels, the community would like to turn the area into a tourist retreat (Terlien, 2002).

## **6.3 Poverty and livelihood assets amongst the SSM sector**

As discussed earlier, unemployment and poverty are critical issues that affect a significant portion of the South African population. Poverty and lack of, or inaccessible, household livelihood assets are closely linked.

### ***6.3.1 Poverty***

When relating Hulme and Sheperd's (2003) classification of poverty the following classifications apply to the different types of SSM that were investigated during the field research. The 'chronic poor' include the bantam sorters in Welverdiend, Longlands, Schweizer-Reneke (NW) and Barkley West (NC). The 'transient poor' include the small-scale miners and approximately 30 percent of the junior- miners in

Wolverdiend, Schweizer-Reneke, Bloemhof (NW) and Gong Gong and Barkly West (NC) and the bantam sorters in Bakerville (NW). The 'non poor' include the medium-scale miners in Bloemhof, Schweizer-Reneke (NW) and Waaldeckspant (NW). The 'chronic' poor lacking access to education and skills, health and employment are not in a position to 'break the chains of their circumstances'. These people include the most rudimentary of bantam sorters and small-scale miners as well as the inhabitants of Wolverdiend, and Longlands. The chances of diamond recovery, sufficient to pay off debts, finance mining equipment and provide a livelihood are virtually non-existent. The 'transient' poor, who include more sophisticated bantam sorters and small-scale miners with a washing pan, (the majority of inhabitants from Bakerville village and community) often end up in a cycle where their diamond recoveries are sufficient to pay off debts and keep their households and mines operating for long enough until the next find. Seldom do the profits of recoveries allow for, or are used to finance improved and larger mining equipment. Small-scale mining at its most basic level is thus not a feasible economic activity. However, in the absence of any other formal or informal economic activity, it does provide some sort of subsistence for numerous people.

Unfortunately no detailed figures regarding the household income and expenditure of these areas are available. In order to gain an insight into the levels of poverty the following statistics need to be considered. From the expenditure of 125 households in rural undeveloped areas in the North West Province, it follows that 37 percent of household income is spent on food, followed by seven percent on transport, five percent on housing, less than one percent on medical requirements and half a percent on education. The figures for the NC Province included 40 households for which the following statistics were retrieved: seventeen percent on food, five percent on housing, eight percent on transport, three percent on medical requirements and less than one percent on education (Statistics SA 2002a). The fact that food and transport constitute the two major expenditures, especially in the North West, as opposed to medical and educational services, is highly significant.

### **6.3.2 *Livelihood assets***

The population of the rural communities that were included in both studies lacked basic livelihood assets. Literacy levels amongst the age category of 30 years and older

are low, and livelihood skills relating to agriculture and vegetable gardening are not evident. Due to badly maintained gravel roads in Gong Gong, Longlands and Welverdiend, public transport was lacking or insufficient to provide affordable and reliable transport to employment opportunities or markets outside these communities. Access to primary health care and education strengthens human capital and thus improves the chance of long-term labour productivity and incomes. The communities that were researched in both case studies live in areas lacking basic access to services such as health (as in Welverdiend, Bakerville (NW) and Gong Gong (NC)), and education (as in Welverdiend (NW), and Gong Gong (NC)). Lack of access to basic services and assets makes the bantam sorters, small- and junior-scale miners highly vulnerable to poverty. The new mining policies have not improved the socio-economic circumstances of small-scale miners and their host communities thus far.

### 6.3.3 *The importance of small-scale mining contribution to household livelihoods*

In the Northern Cape, the small-scale miners from Gong Gong and Longlands largely comprised pensioners. Small-scale miners from Barkly West comprised pensioners, disability grant holders and unemployed people. Of the small-scale miners in the North West Province, 69 percent of the respondents were the sole income providers for their households. Only 5 percent comprised pensioners; 28 percent had an alternative source of income, albeit generally piece jobs; and 36 percent relied upon relatives, mostly pension holders for support during times of need. Table 6.7 provides an overview of the contribution of SSM to household income.

**Table 6.7: Importance of SSM to household income contribution**

<b>Small-scale and junior-scale miners</b>	<b>Household sole provider</b>	<b>Other sources of income</b>	<b>Financial support</b>
<i>Lichtenburg</i>	72%	40%	40%
<i>Schweizer-Reneke</i>	71%	-	14%
<i>Bloemhof</i>	50%	-	50%
<b>Total</b>	<b>69%</b>	<b>28%</b>	<b>36%</b>

(Percentages based on 36 respondents)

Although no reliable data regarding income derived from small-scale mining exists, the above table illustrates that SSM provides an important source of income for these rural communities.

## **6.4 Socio-economic impacts of small-scale mining in relation to new mining policy**

The beginning of this chapter provided a social profile, which formed an adjunct to the initial scoping phase of the SIA process. The social profile provides the basis for understanding the context and community dynamics of the SSM communities. This next section includes the outcome of the screening phase, which includes identification of the significant impacts preventing the optimal production of SSM. The criteria for evaluating significance include the magnitude of the impact, its spatial extent, its duration, the probability and irreversibility of the impacts, and indirect or secondary impacts as well as cumulative impacts (De Villiers Brownlie Associates, 2000). What follows is a discussion of responses that emerged from the range of interviews conducted. It needs to be remembered that the greater part of the survey followed a qualitative method comprising structured and open-ended interviews. Inevitably, issues frequently affected more than one of the key I&APs and interest groups, sometimes in slightly different ways, which will be mentioned where necessary. The Mineral and Petroleum Resources Development Act has been examined in order to ascertain the extent to which the Act deals with or makes provision for the most significant issues. Appendix A provides the content of the sections of the Act referred to in the text.

### **6.4.1 Access to finances**

#### **6.4.1.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector**

The White Paper on a Minerals and Mining Policy 1998, identified access to finance as a major hindrance experienced by small-scale miners. The decrease in small-scale mining activity is directly linked to the unavailability of finances, which leads to irregular workings. The increase in the price of diesel, and the cost of mechanical repairs that is exacerbated by hard ground and lack of diamond-bearing ground is forcing junior- and medium-scale miners to stop mining. Government is aware that lack of finances is preventing small-scale miners from acquiring a successful stake in the mining industry. The Act states that it will provide assistance to historically disadvantaged persons (Section 12) and expand opportunities for such persons to

enter the minerals industry (**Section 2-d**). The Act also makes provision for communities wishing to enter the mineral industry (**Section 104**).

Neither a description of the type of assistance nor any specific reference to the financial aspect is given however. It was apparent that communities were not aware of these provisions. Even if they were it needs to be taken into consideration that entering the mining industry as a community is not viable nor sustainable because such communities are generally impoverished and lack livelihood assets including; general municipal services (such as road and transport access to administrative centres, water, and electricity required for mechanical mining operations); and they have low levels of literacy; and lack financial and technical organization skills to formulate and manage such a operation.

#### *6.4.1.2 Scoping the provisions of the Act as issues*

During the field research the issue of finance emerged frequently. The questions 22, 41, 42 and 49-55 (Questionnaire 1: small-scale miners) were designed to establish whether the numbers of miners in the area had risen or fallen. These questions also concentrated on the mining methods and type of equipment used in SSM. In addition they questioned the institutional organisation of SSM through joint ventures and mining associations. The economic input and output provided further clues to the financial problems experienced by the SSM. Questions 11, 13-16, 20, 21, 25, 26, 29, 30, 39 and 40 of Questionnaire 2: junior- and medium-scale miners - were designed to obtain a general overview of the background, experience and length of involvement in the mining industry. These questions concentrated on the income as opposed to the costs of mining to establish the viability of medium scale mining as an economic activity as well as the most significant obstacles experienced by this group of miners. Questions, 8 and 13 of Questionnaire 3 - DME, were directed towards eliciting information regarding the costs involved for a small-scale mining operation and the occurrence of financial institutions that assist miners at this scale. To establish the different costs and procedures required between mining permits for state and private land, question 6 of Questionnaire 4 – DME Administration, was asked.

These questions yielded the following observations: The number of full-time small-scale miners is rapidly decreasing due to lack of funds. As a result small-scale miners

in Bakerville and Welverdiend are resorting to bantam sorting. The White junior- and medium-scale miners generally acquire equipment on a cash basis: many have worked themselves up from small-scale level. The ever-increasing fuel price and cost of machinery and parts make diamond mining costly. Bantam sorting, prospecting and pit mining all require a significant amount of capital to obtain the appropriate permits, licence and necessary equipment. Due to the high-risk nature of mining, banks are reluctant to lend money without collateral. Small- and junior-scale miners require between R50 000 and R1.5 million to start a mining operation. This escalates to R2.5–R7 million for a medium sized operation, and R10 million or more for a large-scale mining operation. Financial and technical organizations and institutions such as Khula, Ntsika and IDC aimed at uplifting the SSM sector, require detailed project plans, financial guarantees and considerable cash deposits which are out of the reach of small-scale miners, even when they are organised into mining associations. This appears to be similar to the implementation of Black empowerment, which appears to enrich a few established Black organizations and individuals and not the poor and less skilled it was intended to benefit.

#### *6.4.1.3 Discussion of the impact*

##### *a) Significance*

From the above discussion it has become apparent that without access to finance there is virtually no future for the small-scale miners of the SSM sector. The provisions of the Act do not provide a guarantee that this group will reap any benefits. Access to finance does not have a simple solution as existing financial institutions do not, and cannot, afford to operate as aid relief agents. Without access to finance small-scale subsistence mining will terminate. One successful solution that has been applied in other countries is to share costs amongst a number of people through well organized and government supported co-operatives (Chapter 2). According to Scott (1998) this has, in cases where high value minerals were mined, resulted in pyramid schemes in the past. Cluster mining in India, where resources such as water, equipment and transport are shared, have provided a financial solution for individual small-scale miners.

##### *b) Benefits*

Financial assistance would significantly benefit small- and junior-scale miners. However in the past those that have benefited from any financial assistance have

usually been a few established organizations or individuals, instead of the poor and less skilled.

*c) Severity/intensity*

If the small- and junior-scale miners are not assisted soon with finance, they will either be forced to stop mining or will resort to illegal mining practices. Both eventualities will have implications for the well-being and the socio-economic situation of their host communities, the environment and the national economy.

*d) Duration*

The impact will have long-term implications, positive or negative depending on the manner in which the remedial measures are implemented.

*e) Probability*

It is unlikely that the small-scale miners in dire need will benefit from any financial assistance provided for according to the provisions in the Act.

#### *6.4.2 Access to mineral ground*

##### *6.4.2.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector*

The White Paper states that information on mineral deposits will be made accessible to the small-scale miners in particular. One of the aims of the Act is to provide access to mineral resources (**Section 2c**), and to promote historically disadvantaged people's stake in the mineral industry (**Section 2-d**). South Africa's dual mineral rights system, where some mineral rights were held in the hands of private individuals and organisations and others belonged to the state has been redressed by the Act. All minerals now belong to the state (**Section 2-a**) and (**Section 2 b**) and mineral and geological information needs to be made public to the state. Subsequently the Minister now has access to geological information and the authority to investigate land with mineral potential suitable for SSM (**Section 50**) and the power to assist small-scale miners with mineral land (**Section 30**). Under the Act the Minister has the authority to expropriate land for mineral exploitation against compensation (**Section 55**). In cases where landowners cannot be traced (**Section 105**); or in cases where owners refuse a permit holder access to the land (**Section 54**) the Minister has the authority to provide the applicant with a mining right. The Act thus makes liberal provision for means of obtaining geological data, which if applied, will hold

significant benefits for the SSM sector. These provisions significantly increase the chances of the SSM sector to obtain viable mineral land. Ideally, the DME will not only extract such information but also assist the SSM sector with identification of potentially rich mineral land.

#### *6.4.2.2 Scoping the provisions of the Act as issues*

During the interviews with small-scale miners the issue of access to mineral land was emphasised. Questionnaire 1: small-scale miners, question 60, related to the major obstacles. In addition Questionnaire 3: DME, question 4, investigated mineral types, availability, and access to them, as well as the sustainability of mineral supply and the equipment required for an economically viable mining operation. It became apparent that small-scale miners in their current situation require land with surface minerals. Article 46 of the White Paper on Minerals and Energy sets aside proclaimed farms for small-scale mining activities. Mining permits for such land are readily obtainable but these areas have been mined several times before, and have few minerals left. Historically mined land is very hard, making it physically almost impossible for the pick-and-shovel miner to recover a profit. As such areas have a low recovery potential, it requires heavy machinery to process large quantities of material. The hard ground results in high diesel and wear and tear costs on machinery. Small-scale miners, due to lack of transport, need to mine in close proximity to their homes, decreasing the chances of obtaining good mineral land. Questions 8-10 and 24 in Questionnaire 2: junior- and medium-scale miners, sought to obtain an insight into the availability of mineral land, and average duration of mining activity on a claim. Throughout these interviews it was evident that junior- and medium-scale miners are experiencing mineral land shortages. It is very expensive to buy mineral land. The royalties on private mineral land are high and it is often difficult to obtain mining rights.

#### *6.4.2.3 Discussion of the impact*

##### **a) Significance**

Small-scale miners without technical backup require surface mineral land. Without access to mineral land none of the miners in the SSM sector can continue to mine.

Under the new Act the state will be able to have more control over large mining organisations hoarding mineral land.

**b) Benefits**

Increased access to geological/information and mineral potential will provide the government with the knowledge to direct the SSM sector to mineral land with economic potential. This will hold benefits for small-, junior- and medium-scale miners.

**c) Severity/intensity**

Coupled to finance, access to minerals is the most important factor in determining the success of SSM. The implementation of both aspects will result in a major positive contribution to this sector.

**d) Duration**

It is not known how or when a complete overview of the country's geological information will be obtained, but the positive affects are expected to accrue in the long term.

**e) Probability**

There is a high probability that the state will pursue the collection of the country's geological information from the relevant private organisations and institutions.

### **6.4.3 Communication**

#### **6.4.3.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector**

It has become apparent that a lack of communication between the different levels of government and the mining industry exists. The White Paper suggests DME's initiation of a 'one-stop-shop' approach by providing information on all aspects relating to mineral development. Such an initiative would be highly beneficial if put in place and made accessible to small-scale miners. Such a structure has not been established yet.

The Act makes provision for the establishment of a Board (**Section 58 (i)**), which must consist of a representative sample of gender and race, including members of state, organized labour, organized business, NGOs, CBOs, and other people with specific skills and expertise. The functions of the Board include a report-back and

advisory role to the Minister on the state of the minerals industry, its development, and rate of transformation. It further has the responsibility to resolve disputes and is also responsible for the establishment of a regional development and environmental committee. If such a Board is representative of the various roleplayers (directly and indirectly involved in mining), and meets regularly, it is likely to close the existing communication gap. Bridging the communication gap will not only benefit the SSM sector, especially small-scale miners, but will also benefit their host communities, the functioning of DME and the mining sector as a whole.

#### *6.4.3.2 Scoping: issues emanating from the provisions of the Act*

Questions 12, 18, 19(i) of Questionnaire 3: DME, relate to perceptions of DME in terms of their relationship with the small-scale miners, general promotion of the SSM sector, as well as on communication between the department and the different structures that have been initiated to promote SSM. Through these interviews it was established that a communication gap exists at three different levels, namely (i) within the department (especially DME NW), (ii) between the provincial department and the national department, and (iii) between DME and small-scale miners. Limited communication within the department has led to lack of motivation amongst its employees. A number of questions were raised that brought focus on communication between the main roleplayers, namely small-, junior- and medium-scale miners and the DME. These included Questionnaire 1: small-scale miners, questions 33-40, and Questionnaire 2: junior- and medium-scale miners, Questions 38-44, and 59. From these questions it became evident that limited, or complete lack of, communication between government departments and small-scale miners has led to a number of confusing misconceptions regarding mining regulations and the general perception that DME does not care about this sector, especially amongst small-scale miners. The department is aware of a number of these misconceptions and a lack of resources is largely to blame for limited contact with SSM in the field. The economic importance of medium- and large-scale mines as well as limited human resources has resulted in DME focusing their time and efforts on these sectors. Limited, or absence of, communication between different levels of government has also led to misconceptions and misgivings. Communication should not only be channeled from the 'top down' but also encouraged from the 'bottom up'.

#### *6.4.3.3 Discussion of the impact*

##### **a) Significance**

Lack of communication has some serious implications for the effective functioning of the departmental structures and operation of the SSM sector. This has led to staff being unmotivated and/or leaving the department. Lack of communication between DME and the SSM has led to misconceptions and misinterpretations of laws and regulations, and has given rise to feelings of resentment.

##### **b) Benefits**

Improved communication would benefit the DME and the SSM as a whole. It would lead to increased DME staff productivity and increased productivity by miners.

##### **c) Severity/intensity**

A break-down in communication channels can have major economic repercussions. This has become apparent in the Welverdiend pilot project, which has failed largely due to lack of communication.

##### **d) Duration**

Improved communication will hold long-term positive results, for both the DME and the SSM sector.

##### **e) Probability**

The probability that communication between the departmental structures will improve is high. It is hoped that through improved DME administration and functioning, communication between them and SSM will improve.

#### **6.4.4 Policy and legislation**

##### *6.4.4.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector*

The White Paper states that regulations need to be administered consistently, providing guidance and advise to small-scale miners. No reference to information transfer, training programmes, nor language and illiteracy barriers for SSM are mentioned in the Act. DME is aware of these constraints, but they lack the resources and time to be able to provide a clear overview of the regulations. In the NW they have a number of women community representatives who have attended workshops to explain legislative procedures to small-scale miners and bantam sorters. It is important for small-scale miners to be aware of the terms and conditions attached to a

mining permit. The cost of lack of awareness may result in loss of a permit or claim. **Section 25 (2b)** of the Act states that the holder of a mining right must mine within a year from the date that the right becomes effective, or the right will be returned to the state. This will necessitate a stronger presence of field officers to control and to keep an overview of mining activities. According to the NW Department of Minerals and Energy (2002), between two and three thousand permits had been issued, but only an estimated 800 mining operations were active. Reasons for this include, lack of finances, waiting for larger companies to lease land from them (joint ventures), or as a cover for IDB. **Section 51 (i)** states that if mining does not commence optimally according to the mining work programme, the state has the right to confiscate the mining right. If this law is strictly enforced many small- and junior-scale miners whose income is based on an *ad hoc* mining, will lose their claims. Any financial investment in terms of permit and rehabilitation fees, as well as mining equipment will thus be forfeited. In addition, loss of permits and claims adds to the burden of DME administrative manpower, requiring additional administration and costs to adapt records. This provision refers to holders of a mining right, forcing people who cannot comply with these prerequisites to obtain mining permits (see section 6.6. for further clarification of this topic).

#### *6.4.4.2 Scoping: issues emerging from the provisions of the Act*

Questions relating to miners' comprehension of current legislation included: Questionnaire 1: small-scale mining, questions 31-40, Questionnaire 2: junior- and medium-scale miners, question 37 as well as Questionnaire 3: DME, questions 9, 15, and 19(ii), which relate to DME workshops and information transfer to SSM in terms of legislation; DME's legislative requirements and their organisational efficiency. These questions provided the following information. Permit applications are written in standardized format in English or Afrikaans, making use of technical terminology. This does not make provision for people with semi-literacy or lower educational backgrounds or for people with other home languages. Changes in legislation in the past 10 years have resulted either in ignorance about the changes or misconceptions amongst people who have been mining for such a time or longer. Regular changes in legislation often result in garbled versions of hearsay amongst miners themselves. Different procedures and costs exist for mining activities on state, municipal and privately owned land further compounding the issues of ignorance and confusion. The

DME no longer has the resources to provide SSM with workshops regarding legislation prerequisites. Instead DME personnel complete permit application forms on behalf of the small-scale miners. This means that miners do not always understand the terms and conditions with which they are required to comply. In certain instances, (Wilverdiend community, NW) community representatives trained by DME inform mining applicants of the conditions and terms attached to mining permits.

#### *6.4.4.3 Discussion of the impact*

##### **a) Significance**

A clear understanding of existing mining policy and legislation is imperative to ensure that small-scale miners operate legally and environmentally consciously.

##### **b) Benefits**

Through thorough understanding of the legislation, small-scale miners will benefit as they will have a better understanding of their rights and who or where to turn to in certain situations. It will also benefit DME, as small-scale miners will be better informed of the legal and procedural requirements attached to their permits and rights.

##### **c) Severity and intensity**

Much discussion and debate preceded the promulgation of the Act. This escaped the average small-scale miner, who due to low levels of literacy, and financial constraints does not have regular access to the media. The Act has a multitude of new legal requirements, and it is imperative that, for it to be implemented effectively, deliberate attempts are made to inform and educate small-scale miners on the Act's contents.

##### **d) Duration**

Until small-scale miners have been educated and informed of the Act's contents and purpose, its implementation cannot be expected to succeed effectively. It will take time and numerous resources to provide small-scale miners with the necessary knowledge regarding the new legislation.

##### **e) Probability**

The probability that serious attempts will be made to inform the small-scale miners of the legislation is quite likely. It will however take a long time to produce the desired effect and its success will depend on the frequency of such information dissemination and the number of small-scale miners such endeavours will reach.

#### 6.4.5 *Administration*

##### 6.4.5.1 *Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector*

The White Paper acknowledges that there is no agreed definition for the term small-scale mining. It does not even provide a working definition. The Act does not specify or acknowledge small-scale mining as a sector, nor does it provide a definition or distinction between different size mining operations.

The White Paper mentions the need to streamline administrative matters relating to mineral exploitation. **Section 6(i)** of the Act makes provision for an efficient process of awarding permits. Promulgation of the Act has resulted in the formation of a small-scale mining unit in the department although the Act makes no specific reference to employing additional human resources within the departmental structure. The department does however employ a Regional Manager (**Sections 7 and 8**) who will alleviate pressure on the Provincial Director for permit approval and probably will have a more 'hands on' effect which will be reinforced by the formation of a representative Board (**Section 57**).

The costs of ineffective administration are high and particularly impact the SSM sector. Small-scale miners have limited access to transport to get to DME's offices and junior- and medium-scale miners have limited time to abandon their operations to consult DME. Ineffective administration is time-consuming and often necessitates duplication of tasks which DME, in terms of its limited human resources, cannot afford. Ineffective administration further leads to ineffective control of mining activities and rehabilitation, allowing miners who have failed to rehabilitate to mine elsewhere. This compromises the natural environment and the people who could potentially depend on its use.

##### 6.4.5.2 *Scoping the provisions of the Act as issues*

The administrative issues relate to the shortcomings and problems within the organisational structures of the departments and offices within DME. Questionnaire 1: small-scale miners, question 31, and Questionnaire 2: junior- and medium-scale miners, question 26; relate to the mining permit application process and any obstacles

SSM faces in terms of adhering to legislative administrative procedures. Questionnaire 3: DME: question 13, relates to the legal administrative cost of SSM. Questionnaire 4: DME administration, questions 1-5, 6, and 13 were framed to obtain information regarding the manner in which claims are awarded, the mineral potential of a claim, length of claim validity, costs, and claim overlapping. The findings of the field research indicated that the present permit-issuing process is unacceptably slow. Claim applications should be recorded electronically to enable greater control of outstanding fees and renewal dates and for efficient handling of issues regarding permits and licences. Although the White Paper mentions that small-scale mining in South Africa “ranges from very small operations that provide subsistence living (artisanal mining) to the junior companies for which revenue is such that subsistence living is not the prime motivator”(Department of Minerals and Energy,1998:19) no distinction is made between small-, junior- and medium-scale miners in the Act. According to the junior- and medium-scale respondents it is becoming increasingly difficult to obtain a permit, as many more people apply for permits and the waiting period can be extended up to a year. Medium-scale miners require a surveyed claim plan but small-scale miners are permitted to compile their own sketches, which leads to overlapping of claims.

#### *6.4.5.3 Discussion of the impact*

##### **a) Significance**

The lack of acknowledgement of an SSM sector in the Act is significant. No reference is made to upgrading subsistence small-scale mining to viable economic operations through, for example, government-supported co-operatives. Inadequate administration is a significant issue and leads to much needless frustration and cost for SSM and duplication of work for DME officials. This is exacerbated by the lack of an SSM definition.

##### **b) Benefits**

Effective administration will result in less duplication of work to the advantage of DME and will save the SSM sector (especially those small-scale miners with inadequate access to transport), significant time, cost and frustration. It will enhance DME's control over SSM activities, thereby reducing illegal operations and environmental damage. Effective administration will strengthen DME's position and restore the faith of the SSM sector in the department. With the new legislation, mining

may commence while permit renewals are being processed. This will have major benefits for the junior- and medium-scale miners who by law have in the past had to refrain from mining during such time.

**c) Severity / intensity**

Ineffective administration has had some severe repercussions especially for small-scale miners. Lost permit applications have resulted in cases where applicants had to pay twice for the same application. A slow permitting process has resulted in miners having to refrain from mining for considerable lengths of time.

**d) Duration**

Efficient administration will have a long-term positive impact upon the mining sector as a whole.

**e) Probability**

It is highly likely that the permitting process will be speeded up. This in turn will also require the general administration to become more effective.

#### **6.4.6 Socio-economic issues**

##### **6.4.6.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector**

The Act acknowledges that previously disadvantaged people and mining communities have not received a fair share in the minerals industry. It aims to remedy this through application of the following principles:

- Creation of employment and improving social and economic welfare of all South Africans (**Sec: 2-f**);
- To ensure that mining contributes to development in the areas in which it is taking place (**Sec: 2-i**);
- Providing assistance to historically disadvantaged people (**Section 12**);
- To transform the minerals industry (**Section 100**);
- Establishing preferent prospecting or mining right in respect of communities (**Section 104**);

The concept of added value through mineral beneficiation has also received attention under **Section 26**. The proposed transformation of the minerals industry may hold promise for the SSM sector and rural mining communities. It remains moot however, how and to what extent these objectives can and will be implemented.

#### *6.4.6.2 Scoping the provisions of the Act as issues*

During interviews with I&APs a number of questions were raised that in response highlighted the socio-economic issues faced by small-scale miners and their communities. These questions included: Questionnaire 1: small-scale miners, question 21, which questioned the occurrence of an influx of miners from outside into the respective area of small-scale mining operations; Questionnaire 2: junior- and medium-scale miners, questions 39, 40, 42, 44, 57, and 58 aimed at soliciting opinions and perceptions of junior- and medium-scale miners on small-scale miners, the obstacles experienced and their perceived future; Questionnaire 3: DME, questions 7, 19(iv) related to important sources of income for rural communities within mining areas, and the impact of SSM on these communities: In Questionnaire 5: questions F1-F17, F20, and F22 focussed on the economic activities within the rural communities that were visited during the field research. This included formal as well as informal employment activities, the number of pensioners, and people receiving disability and single-mother state grants. It further elicited information regarding educational, literacy and skills levels, occurrence of agricultural practices and other land-based activities, the role of SSM in the community and the relationship between community members and miners.

From the responses to these interviews the following deductions were made: Increasing unemployment (43.8% in NW and 33,4% in NC) and cost of living have a particularly significant effect on small, previously disadvantaged, rural communities. Gong Gong and Longlands in the NC and Welverdiend and Bakerville in the North West Province are remote rural communities that lack general services. Illiteracy ( $\frac{2}{3}$  of respondents in NC), lack of sustainable development, growing unemployment and yearly addition of school leavers to the job market puts strain on these communities. A slow infiltration of retired state personnel and retrenched mineworkers, drawn to small-scale diamond mining especially from the goldfields, has occurred. In the four communities studied the majority of people depend on relatives receiving state pensions and grants. Few people were involved in small-scale mining, as they cannot afford mining equipment and monthly claim fees. Community members involved in small-scale mining face a number of additional expenses such as high transport fees to DME offices and, in the case of the Welverdiend and Bakerville communities,

transport to the diamond markets. There is a need for adult education programmes and skills transfer. The SSM sector has an important role to play in employment creation in these areas. To ensure further employment creation, value-added products should receive attention and attempts should be made to ensure that money earned from mineral resources remains within its province of origin. Lastly, the small-scale diamond mining sector should become actively involved in promoting and being fully integrated to tourism.

#### *6.4.6.3 Discussion of the impact*

##### **a) Significance**

Under the previous political dispensation, Blacks and Coloureds were not able to obtain mining permits. Communities affected by mining did not receive any benefits from mining. The new legislation requires that such communities benefit from mining by being included in a social and labour plan (a prerequisite for the application of a mining right).

##### **b) Benefits**

Socio-economic development through the implementation of the required social plan will ensure that communities benefit from mining activities within their own areas. The labour plan will ensure that historically disadvantaged people are given an opportunity to enter the minerals industry. On the other hand, both these requirements will burden junior-scale companies with additional financial obligations, which could either force them to revert to small-scale mining or to close down.

##### **c) Severity/intensity**

The need for socio-economic development in South Africa's rural communities is pressing. Mining companies have enjoyed great benefits from South Africa's mineral base and previously marginalized labour force. Current ideology holds that it is time that a portion of such profits benefits the communities that are directly or indirectly affected by mining operations. Concomitantly, socio-economic development initiatives advanced by large mining companies should be in proportion to their profits.

##### **d) Duration**

The contribution of mining through employment opportunities and development will not eradicate poverty. Poverty will likely always remain to some degree. However, the mining industry, through development, by providing access to health, education

and employment, can contribute greatly to the reduction of poverty and the improvement of the socio-economic situation of especially rural communities.

**e) Probability**

Through the new legislation, social plans will be drawn up by mining companies for local communities. The success of the implementation of such plans will be determined by the quality of the background study to such a social plan, the rapport with the I&APs and the capacity of the implementing agent.

#### **6.4.7 Rehabilitation**

##### **6.4.7.1 Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector**

Numerous abandoned mine-dumps and quarries exist in many areas in the NC such as at Barkly West, Gong Gong, Longlands and Vaalbos National Park and Welverdiend, Bakerville, and Kameelkuil in the North West Province (Photo 20). With regard to ecosystem functioning and agriculture this land has become degraded, sterile and useless. The Act places great emphasis upon the importance of environmental management (**Section: 39: (i)**). The conditions of a mining right require the compilation of an EIA and an EMP (**Section 22 (iii)**). The application for a prospecting right and a mining permit both require submission of an EMP (**Section 16 (iv) a**) and **Section 27:v a**). All state departments with any interest in the environment need to be consulted and need to comment on the EMPs and EIAs (**Section 40**). Mining and prospecting must ensure sustainable development by integrating social, economic and environmental factors (**Section 37**). Mining operations are required to address all their environmental impacts and to rehabilitate the environment to its natural or predetermined state (**Section 38**). In the past DME was often seen as a 'toothless guard dog', as they had limited power to suspend or instruct trespassing miners. **Section 93** of the Act provides the DME with the power to suspend, order or instruct miners should they be contravening any of the Act's principles. In the event where the miner fails to rehabilitate, the DME may use the funds from the rehabilitation guarantee for this purpose (**Section 41**). Should there be insufficient funds the DME may apply to the High Court for permission to sell off any mining equipment to supplement the cost (**Section 45**). If the miner cannot be traced

and there are not sufficient funds, the DME may use funds from the government fund that has been created for such purposes (**Section 46**).

#### *6.4.7.2 Scoping the provisions of the Act as issues*

A number of questions were asked that aimed at obtaining information regarding the implications of rehabilitation requirements and the omission of such practices on the land and surrounding communities. Questionnaire 1: small-scale mining, questions 22, 56, 57, and 60 related to the reasons for the in/decrease in mining activity in the area. A general decrease was experienced in all the small-scale mining activity areas. This was attributed the rehabilitation guarantee cost increase from R500 to R5000 in the event of occasional use of machinery required to get to the deeper levels in historically mined areas. Questionnaire 2 - junior- and medium-scale miners: questions 53-55 - these related to the awareness and perceptions of medium-scale miners of the environment, and the importance of rehabilitation. The miners in this category were generally in agreement that rehabilitation is an important aspect of mining. However, in certain cases, some of the junior-scale miners stated that their mining income did not provide for the cost of rehabilitation. As a result they suggested that rehabilitation requirements be judged on individual cases. Questionnaire 3: DME, question 16 and Questionnaire 4: DME administration, questions 20-33 refer to existing rehabilitation legislation opposed to the existing practice of rehabilitation, i.e. rehabilitation control, the number of officers, their tasks and the required legal rehabilitation procedures as well as their perceptions of the environmental responsibility amongst small-scale miners.

From the above questions the following deductions could be drawn. With the introduction of the rehabilitation fee, many small-scale miners can no longer afford to mine. A small-scale miner will need to hire a backactor for a couple of hours, because it takes at least two hours before potentially profitable ground is reached. Apart from hiring costs, DME requires a R5000 rehabilitation fee. Rehabilitation fees are often higher than income earned from a mining claim. It was stated that it is difficult for junior- and medium-scale miners to make a living on old historical un-rehabilitated mine grounds - exacerbated by the fact that DME often requires the rehabilitation of old mine-dumps as a prerequisite for mining them. Despite rehabilitation fees, many large excavations are left by medium-scale miners. These have safety implications for

people, livestock and fauna, as well as ecological implications for biodiversity, and erosion. Without rehabilitation the land becomes useless for any other use (agriculture, residential, business). According to the respondents no rehabilitation is ever undertaken by DME.

#### *6.4.7.3 Discussion of the impact*

##### **a) Significance**

Environmental damage due to lack of control over mining activities has significant repercussions as it leads to ecological degradation and erosion, has safety implications for people, livestock and fauna makes the land useless thereby incurring a considerable opportunity cost.

##### **b) Benefits**

Stronger environmental control will decrease the occurrence of erosion, alien infestation, water pollution and therefore preserve delicate ecosystems. Rehabilitated land can be used for other purposes such as agriculture or residential/business development.

##### **c) Severity / intensity**

Inadequate environmental control has severe implications for the natural environment, which also affects the human environment. The Act makes ample provisions for the control of environmental management, placing the preservation of the environment high on its agenda.

##### **d) Duration**

It will require a significant number of additional resources to enable the department to enforce the environmental management requirements of mining operations. There will be a considerable time-lag before this will be applied through to all the different levels of mining, with junior- and small-scale mining operations at the far end.

##### **e) Probability**

The probability that stronger environmental management will be enforced is not high, certainly in the short-term. As stated, it will take time before this diffuses to the whole minerals industry.

#### **6.4.8 *Illegal mining***

##### **6.4.8.1 *Provisions of the White Paper and/or the Act constituting an impact upon the small-scale mining sector***

Illegal mining is a significant problem and creates a considerable loss of state revenue. It further adds to the problem of rehabilitation control, which in turn has safety and ecological repercussions rendering the land useless for any other use. Neither the White Paper nor the Act mention illegal mining. If stronger control through improved administration and environmental management as envisaged in the Act is implemented, illegal mining will decrease significantly to the benefit of the environment, SSM, DME and the country's economy as a whole.

##### **6.4.8.2 *Scoping the provisions of the Act as issues***

Questionnaire 3- DME: Question 1 relates to the occurrence of informal settlements around mining areas, influx of outsiders into the mining areas and awareness of illegal mining activity. It is estimated that approximately 40 percent of all mining activity (including small- and medium-scale) in the North West Province is illegal. The majority of illegal miners are thought to be local. From questions 57, and 60 (Questionnaire 1: small-scale miners), designed to establish the current constraints experienced by small-scale miners, it became apparent that the slow permit issuing process also significantly contributes to people mining areas for which permits have not been issued. Similarly, people who cannot afford the rehabilitation guarantee required for occasional use of machinery, or permit renewals, may in some cases decide to continue mining without the proper papers.

##### **6.4.8.3 *Discussion of the impact***

###### **a) *Significance***

It is significant that neither the White Paper nor the Act mention illegal mining. Although illegal mining presents a great problem in many countries, South Africa is fortunate to have evaded the large-scale occurrence and many of the associated negative affects of illegal mining. Illegal mining in South Africa does nevertheless occur and has repercussions for the natural, human, cultural and economic environments.

**b) Benefits**

The lack of acknowledgement of illegal mining is disconcerting. However with the extensive emphasis on tighter control of environmental management, this issue may largely be overcome.

**c) Severity/intensity**

The repercussions of illegal mining can be severe if such mining occurs in environmentally sensitive areas in or near water sources, cultural heritage sites, and fauna and /or flora reserves.

**d) Duration**

The duration of the impact is unknown, as it will largely depend on when and how the provisions within the Act will be implemented. IDB however is likely to always constitute a problem, as new ways are always found to bypass new laws and regulations.

**e) Probability**

If the provisions of the Act relating to effective administration and environmental management are implemented efficiently, not much opportunity will be left for the existence of illegal mining; therefore the probability of its having a severe negative impact is low.

Table 6.8 provides a summary of the impacts of the Act upon the SSM sector.

**Table 6.8: Most significant impacts of the Act**

<b>Impact/issue</b>	<b>Significance</b>	<b>Benefit</b>	<b>Severity and time of occurrence</b>	<b>Duration</b>	<b>Probability</b>
<b>Access to finances</b>	Major	Small & Junior	Long term	Long term	Unlikely to target the most needy group
<b>Access to mineral ground</b>	Major	Small, Junior & Medium	Medium term	Long term	Probable
<b>Communication</b>	Major	Small DME	Medium term	Long term	Probable
<b>Policy and legislation</b>	Major	Small	Immediate	Long term	Unlikely
<b>Administration</b>	Major	Small, Junior & Medium DME	Medium term	Long term	Probable
<b>Socio-economic issues</b>	Major	Small	Long term	Long term	Unlikely
<b>Rehabilitation</b>	Major	Small, Junior & Medium DME	Medium-term	Long term	Unlikely
<b>Illegal mining</b>	Major	Small, Junior & Medium	Long term	Long term	Unlikely

## **6.5 Discussion of the Minerals and Petroleum Resources Development Act**

This section briefly discusses small-scale miners' expectations of the Act, its potential shortcomings and critiques from stakeholders.

### ***6.5.1 Opinions and criticism against the Bill***

Although these opinions and critiques refer to the Bill, they are still valid in terms of the Act. According to the Minister of Minerals and Energy the Bill/Act will balance the protection of existing investment with the need to enhance Black participation in the economy after centuries of White domination (Business news, 2002). The South African Chamber of Mines states as its fundamental premise on the issue that: "Metals and minerals in the ground do not constitute wealth. Wealth is created only when the capital invested in the process of converting minerals in the ground into saleable products is returned in real terms with a profit. Production of a product at a loss, or at a profit insufficient to provide a real market related return investment, does not add wealth to the country and should not be supported by the state" (Granville, 2001:81). Against this many of the large mines find the "use it or loose it principle" shortsighted as they argue that in many cases there are good reasons for not exploiting a mineral source. According to them, the Bill/Act undermines their security of tenure and later capital investment and will be an obstacle to foreign investment (Business news, 2002). Organised Black business, labour and political parties declared their broad support for the Mineral and Petroleum Resources Development Bill/Act. They accused the mostly White-owned companies of opposing the Bill in order to retain their stranglehold on the mining industry for reasons of profit (Business news, 2002). According to the Mineral and Energy Policy Centre (MEPC) report many large companies have stated that they would rather pay part of their royalties direct to local communities through social programmes and subcontracting opportunities than to pay the government (Scott, 1998). From the responses obtained from I&APs (small-scale, junior- and medium-scale miners) varying opinions arose. In short, the Bill/Act is expected to provide access to mineral land, provide poverty relief for the smallest part of the SSM sector and correspond to international standards but on the down-side is expected to create tension between farmers and miners, to discriminate against small-scale White miners and set unrealistic empowerment demands. According to some of the departmental sources the Bill/Act is unrealistic and has had a top-to-bottom

approach in terms of its provisions. In turn it did not account for insufficient manpower experienced in some of the department's provincial offices nor the problems the SSM and the departments are confronting. Few of the respondents believed that the Act would have a significant impact on SSM.

### ***6.5.2 Opinions on the Minerals and Petroleum Development Act***

Although it has been generally agreed that the contents of the Act are positive, it has been criticised that, under the present circumstances prevailing in the North West province, it is highly unrealistic. The department is struggling to cope with its current functions and will require significant additional resources to ensure sound implementation of the Act. It was stated by a spokesperson from DME "that we are only now recovering from rehabilitation legislation [White Paper of 1998], and now they want to implement the Act, we don't have the capacity to handle it". A new Act is thus going to take some time to understand and implement. The main concern of DME staff is how the Act will be implemented, as in its current state the provincial departments will not be able to cope with all the additional responsibilities. Potential shortcomings of the Act include:

#### **a) 'Top-to-bottom' approach**

The provincial offices have not been included in the formulation of the Act. According to the DME's NW director, insufficient research had taken place prior to the drafting of the Minerals Development Draft Bill. Every province has unique situations that have not been taken into account.

#### **b) Training of human resources**

With DME's current system new employees are trained who then reach a career ceiling and, on average, leave the provincial department after two or three years. DME's national branch employs people from outside, (rather than from provincial offices with actual mining experience) for its top-ranking positions.

#### **c) The provincial budget**

At present all the mining industry earnings end up in Gauteng. Provincial offices only receive a fraction of their mining income earned. The budget will require comprehensive redressing; this will need to be initiated by the treasury.

#### **d) Concerns amongst junior- and medium-scale miners**

Concerns amongst junior- and medium-scale miners regarding the new Act include:

- Fears that the state will give private land away at a minimum return to the owner.

- Fears that land will be taken away and that Black partners need to be taken in without a concomitant financial contribution / that a Company would require a Black partner before it can obtain land.
- It was stated that because running costs to operate a mine are so high, Black empowerment is not the solution. Fears exist that if the state does not approve of an individual's method of exploitation, they can confiscate land. Regarding skill transfer one of the respondents stated: "I can't afford to employ people who won't add to productivity within the first few weeks. It is unfair as we all started at the bottom and have worked hard to get where we are".

**e) Defining and categorising the SSM**

The small-scale mining sector lacks a uniform working definition or categorisation. The DME NC categorises SSM on claim size and the DME NW categorises SSM according to washing pan size.

*6.5.2.1 Discussion of the provisions in the Act in terms of small-scale miners' identified fears and concerns*

The Act mentions the appointment of a Regional manager (**Sections 7 and 8**) and a Board (**Section 57 and Section 58a (i)**). The addition of resources to deal specifically with small-scale mining issues is not mentioned. In addition no special reference is made to training and workshops for small-scale miners. The impending socio-economic empowerment Charter may make specific reference and provision for this. However a small-scale mining directorate is being put in place at provincial level, a direct consequence of the Act. In terms of fears amongst the SSM sector regarding expropriation of land, this will only occur under extreme instances where minerals are not being mined optimally (**Section 51 and Section 55**) and will occur under controlled conditions and in the event that the landowner or lawful occupier cannot be traced (**Section 105**). The Act secures mining operations provided that the Act's conditions are adhered too (**Section 2-g**) and guarantees administrative justice and fairness (**Section 6 and Section 23: (i)**) providing mining rights for land on a first come first serve basis (**Section 9: (i)**). The Act encourages fair competition (**Section 17, 2-b ii**) and protects miners from a situation in which of mineral resources become concentrated under exclusive control of a minority business group (**Section 17, 2-b iii**).

## **6.6 Secondary impacts of the Act on SSM**

A number of secondary socio-impacts have been identified during the screening and analysis phases of the SIA process. These receive brief mention below as do some of the provisions of the Act that are likely to impact on the SSM sector.

### **6.6.1 Health and safety**

#### *6.6.1.1 Provisions of the Act constituting an impact upon the small-scale mining sector*

The Act requires mining operations to comply with the Health and Safety Act 1996 (**Section 23**). Safety equipment is expensive, beyond the financial capacity of small- and most junior-scale miners. To date the DME have not put pressure on the SSM sector to comply with safety requirements. The erratic high turnover of mining labour, especially amongst junior- and medium-scale miners, is counterproductive and costly as it entails the training of new labourers. The requirements of the Broad-based Black Empowerment Act that accompany mining permit applications, place severe strain on the smaller and junior mining operations that often operate on a fine economical balance. In terms of labour issues, the Act does not protect the employer but rather protects the employee from retrenchment in case of mine 'mothballing' or closure. **Section 52** of the Act states the mining right holder will need to consult with a trade union which, in turn, must notify the Board in the event of large labour lay-offs or mine closure.

#### *6.6.1.2 Discussion of the impact*

##### **a) Significance**

Mine labourers seldom make use of safety equipment and are seldom registered with the Department of Labour. In the event of injury or death, there is no security for them or their dependants. This problem is exacerbated by the fact that junior- and medium-scale miners reported to have a high turnover of unskilled, generally illiterate labour, often with criminal records, who can not be employed elsewhere.

##### **b) Benefits**

Compliance with the Health and Safety Act is not a new obligation for mining companies. The department has however overlooked this aspect amongst smaller and

less dangerous mining operations that have not complied with this law for financial reasons. SSM labourers would benefit more from being legally registered under the Labour Law and being provided for in the event of serious injury or death.

**c) Severity and intensity**

No serious injuries were reported amongst the SSM operations or by the neighbouring health institutions. Lack of financial security for severely injured labourers is however of greater concern.

**d) Duration**

This is expected to be a long-term situation.

**e) Probability**

The health and safety regulations are not likely to be enforced on the small- and junior-scale mining companies for the same reasons that they have not in the past (namely that it is too costly and that surface diamond mining is relatively safe). Only once the DME has complete control over all its SSM mining activities, can the issue of financial security for unskilled labour be addressed.

## **6.6.2 Women Miners**

### *6.6.2.1 Provisions of the Act constituting an impact upon the small-scale mining sector*

One of the objectives of the Act is to facilitate incorporation of women into the mineral industry (**Section 2**). However further mention of this category of SSM is not made, nor is the manner and level of assistance they can expect to enjoy, discussed.

### *6.6.2.2. Discussion of the impact*

South African Women in Mining (SAWIMA) was formed in 1999 to assist small-scale women miners in the mining industry. SAWIMA is a DME initiative, but is not backed by government in terms of funding and project identification. This has affected its current success rate. Women are keen to join but costly membership fees prevent many from doing so. Few of SAWIMA's members in the NC and North West Province are involved in mining activities. This is largely a result of lack of funds for obtaining mining equipment. SAWIMA requires promotion and exposure but scope

for this is limited as members are not permitted to promote themselves under SAWIMA's name.

**a) Significance**

Women constitute a significant number of the small-scale miners. In terms of SSM they face considerable more obstacles than their male counterparts and lack effective power in terms of gaining access to decision-makers and of influencing decisions. If given the opportunity (access to finance and land) their numbers are likely to increase significantly.

**b) Benefits**

At present SAWIMA as an all women's mining organisation, does not provide women miners with any support, whether technical or financial. Apart from SAWIMA, no other organisation exists that could provide women miners with any type of assistance to enter the minerals industry.

**c) Severity/intensity**

The role of women in mining must be urgently addressed in order to allow them a successful stake in the mining industry.

**d) Duration**

The duration of the impact is not known as it is not clear how the provisions within the Act aim to address the role of women in mining.

**e) Probability**

Unless the role of SAWIMA is revised, it is unlikely that any positive change regarding women in mining will occur.

### **6.6.3 Employment**

#### **6.6.3.1 Provisions of the Act constituting an impact upon the small-scale mining sector**

The Act recognizes the employment potential of mining and one of the objectives of the Act is to promote employment. **Section 23 (i)** of the Act prescribes that the applicant of a mining right must have a social and labour plan. This is intended to ensure sustainable development of the area and its inhabitants after mine closure. **Section 26** makes provision for mineral beneficiation.

### *6.6.3.2 Discussion of the impact*

The SSM has an important role to play in terms of employment creation. It provides an opportunity for unskilled people or people without any experience to be employed as manual labour and security personnel. Independent bantam sorters can process worked gravel. The SSM further provides secondary employment opportunities through mineral beneficiation. Many different coloured and different sized pebbles and round rocks are found which could be sold for aquariums or for ornamental purposes. Crystals and semi-precious stones such as agates are found in the area; these could be polished and used in jewelry. Locally mined diamonds and locally produced items such as jewelry and crystal paraphernalia could add interest for tourists wishing to visit historical and present-day diggings which could be marketed as open-air museums. Mine tailings also provide a good base for road construction. Beneficiation of minerals would encourage local cutting, polishing and jewelry manufacturing. Marketing and expansion of diamond jewelry to export markets would significantly add to the diamond value and could serve as a major economic contribution at the current exchange rates.

#### **a) Significance**

The small-scale mining sector has a significant role to play in terms of employment creation, through mining labour and beneficiation of minerals.

#### **b) Benefits**

Employment creation through the labour plan and the social plan will provide historically disadvantaged people with an opportunity to enter or benefit from the minerals industry. However such additional financial obligations could result in junior-scale companies having to revert to small-scale mining or close down, which would be counter-productive.

#### **c) Severity/Intensity**

The mining industry can in a direct and indirect way lead to significant unemployment relief and general development.

#### **d) Duration**

It will take some trial and error before a general trend can be established as to what strategies are functional and successful and which are not in terms of the compilation and implementation of a social plan.

#### e) **Probability**

It is highly probable that strict enforcement of social plans and their implementation will be adhered to, but this constitutes a 'learning curve' and it will take some time before its benefits will 'trickle down' to the local host communities.

### 6.7 **Provisions within the Act likely to impact upon the SSM**

Firstly the distinction between a mining right, mining permit, mining license and prospecting license/permit needs to be clarified. According to the Act a **mining permit** pertains to an area not exceeding 1.5 ha and is valid for two years. A **mining right** applies to areas exceeding 1.5 ha and may not exceed a period of 30 years at a time. Prior to the implementation of the Act prospecting licenses were issued to bantam sorters who now require a mining permit for such activity. In the past, mining licenses were also issued which were valid for more than two years. It is not known how this will be redressed but it will result in additional administration for DME and, to be equitable, will require informing the respective claim owners of the legislative changes and providing them with a set time period to redress this situation. Potentially it may also require refunding or compensating miners for the loss of their claims.

#### 6.7.1 *Section 23: Granting and duration of mining right*

(i) *"The Minister must grant a mining right if – a) the mineral can be mined optimally in accordance with the mining work programme; b) the applicant has access to financial resources and has the technical ability to conduct the proposed mining operation optimally; c) the financing plan is compatible with the intended mining operation and the duration thereof; e) the applicant has provided financially and otherwise for the prescribed social and labour plan; f) the applicant has the ability to comply with the relevant provisions of the Mine Health and Safety Act, 1966 (Act 29 of 1966)."*

From the field observations it became clear that a number of small-scale miners were in position of mining permits ranging from claim areas of two to 25 ha. As for the junior-scale miners, claims ranged from two to 40 ha. According to DME NC a claim is 0.27 ha, and the average small-scale miner had 12 claims (3.24 ha), which take an

estimated 15 years to mine with a pick and shovel and four months with mechanical equipment. In terms of small-scale miners, lacking in mining machinery, large mining areas are not economically warranted, preventing larger mining operations from mining these. Under the Act small-scale miners will need to apply for mining permits, which may not exceed 1.5 ha in size. Section 23 thus prevents small- and junior-scale miners from obtaining a mining right, because:

- Small- and junior-scale miners cannot mine a mineral “optimally” or most effectively in the shortest time as they do not have access to financial resources to finance a mining operation in the long term and therefore generally mine on an *ad hoc* basis, according to income, which is dependant upon the mineral recovery.
- Both small- and junior-scale miners’ technical ability is largely dependent upon the income received from mining. Few small-scale miners have access to mechanical equipment. When their incomes allow, they make use of rented machinery on an hourly basis, junior-scale miners have limited access to mechanical equipment.
- Small- and junior-scale miners do not have access to finances and generally mine when their finances allow, thereby preventing the formation of a reliable mining duration plan.
- Small- and junior-scale miners, being poor and frequently illiterate or poorly educated, do not have the intellectual nor financial wherewithal to provide the prescribed social and labour plan.
- The Mine Health and Safety Act prescribes the use of safety gear and equipment, which is costly and even at medium-scale few miners make use of these because, with their high labour turnover, purchasing safety gear for labourers is not economically viable. Although **Section 23** will impact small-scale miners in the sense that they will no longer obtain large tracts of mineral land which were used for attracting joint ventures, the impacts are likely to have a more severe effect upon the junior-scale sector of SSM, the majority of whom will not be in a position to comply with the costly prerequisites set out under this provision. For many junior-scale miners it will not be economical to mine areas of 1.5ha as set out under mining permits. This will force them into a subsistence type of economy, the very thing DME is trying to eradicate.

### **6.7.2 Section 27: Application for, issuing and duration of mining permit**

*(i) "A mining permit may only be issued if a) the mineral in question can be mined optimally within a period of two years".*

As stated above, small-scale miners are not in a position to mine a mineral "optimally" due to lack of access to financial resources and therefore they mine on an *ad hoc* basis according to income which is dependant upon the mineral recovery. A mining permit may however be renewed three times for a year at a time, providing the small-scale miner with an average of five years to mine his or her claim.

### **6.7.3 Section 24: Application for renewal of mining right**

*(iv) "A mining right in respect of which an application for renewal has been lodged shall despite its expiry date remain in force until such time as such application has been granted or refused".*

**Section 24** will have a positive impact upon the junior- and medium-scale miners. Previously the long drawn-out process of permit renewals prevented many miners from continuing mining their operations. This was detrimental, especially in cases where junior- and medium-scale miners had bought machinery on hire purchase or had rented such equipment. As a result this often led to illegal mining. However, the Act does not make the same provision for the renewal of mining permits, which has also often led to illegal mining.

### **6.7.4 Section 51: Optimal mining of mineral resources**

*(i) Subject to subsection (2), the Board may recommend to the Minister to direct the holder of a mining right to take corrective measures if the Board establishes that the minerals are not being mined optimally in accordance with the mining work programme or that a continuation of such practice will detrimentally affect the objects referred to in section 2 (f)."* and **Section 52: Notice of profitability and curtailment of mining operations affecting**

**employment** – a) “where prevailing economic conditions cause the profit to revenue ratio of the relevant mine to be less than six percent on average for a continuous period of 12 months”).

Both Sections 51 and 52 will impact the lowest denominator of the SSM sector with the most implications for junior-scale miners. As discussed previously, neither small- nor junior-scale miners can be described as optimally efficient miners. In the case of the small-scale miner, income and profits vary greatly and are often minimal. In a positive sense this may prevent bantam sorters, small- and junior-scale miners from mining areas with a low mineral content. This would however require assistance from the state in terms of setting aside mineral areas to be mined profitably by small-scale miners. The Act does not specify the state’s responsibility in terms of providing SSM with access to minerals. As the majority of junior-scale miners are White, they will be even further precluded from any stake in the minerals industry.

#### **6.7.5 Section 104: Preferent prospecting of mining right in respect of communities**

*(i) Any community who wishes to obtain the preferent right to prospect or mine in respect of any mineral and land which is registered or to be registered in the name of the community concerned, must lodge such application to the Minister. (ii) The Minister may grant such preferent right if the community can prove that a) the right shall be used to contribute towards the development and the social upliftment of the community concerned; b) the community submits a development plan, indicating the manner in which such right is going to be exercised; c) the envisaged benefits of the prospecting or mining project will accrue to the community in question; and d) the community has access to technical and financial resources to exercise such right.”*

The majority of diamond mining communities within close proximity to mineral deposits (diamond-bearing land or semi-precious gems) are rural. These communities are generally impoverished and underdeveloped in terms of access to physical and social infrastructure and material resources. Therefore they are not in a position to

provide proof of access to technical and financial resources in order to obtain a prospecting or mining right, nor to provide for a social and labour plan. Community mining projects should aim at sustainable employment creation at minimal/low plant cost to the community. In case of the Welverdiend project, the employment creation potential is very low, (an expected 10 direct employment opportunities) and the cost very high (in the range of R2 million). In addition it does not seem as if the diamond potential will lead to the creation of a long-term diamond plant. The project raised a number of expectations which, especially since it was the first project in the North West Province, could potentially create disillusionment, which may affect future projects.

## **6.8 Conclusion**

The provisions within the Act focus on the larger mining operations, giving scant recognition of subsistence small-scale mining. Although subsistence mining in itself is not economically viable for the people involved, a large number of people and their dependants (relatives and/or labourers and piece-workers) involved in the SSM sector fall within the subsistence category. No tangible measures are provided to upgrade this category to viable economic mining operations. Even though small-scale mining at its lowest level does not provide a viable income, it does provide a precarious subsistence existence for people who have no other employment options and can, at least, augment other sources of income. Within South Africa's current socio-economic context and with regard to discussions, debates and initiatives preceding the formulation of the Act, this is a major shortcoming. From lessons learnt in other countries, small-scale mining co-operatives (through shared responsibilities) appear to be the most successful means to ensuring a viable small-scale mining sector. In order to prevent pyramid schemes, this does however require proper organisation and strong government support. Other options may include access to local or national risk capital; financial and technical training for practical mining; and the formation of cluster mining groups as has proved successful in India.

The junior-scale miners of SSM are the most prejudiced by the new Act. They have not been recognised as the bridge between small- and medium-scale mining operations and no provisions have been made to accommodate them within the minerals industry. This will force existing junior-scale miners either to revert to

small-scale mining or to attempt to upgrade to medium-scale size, both of which will have financial implications.

Now that the most significant impacts have been identified, chapter 7 continues to discuss some suggestions to address these impacts and provide some concluding remarks regarding the impact of the Act and future of small-scale diamond mining. It should be emphasised that the suggestions advanced are not exhaustive and, by definition, proposing possible mitigation measures does not constitute a stated objective of this research.

University of Cape Town



## CHAPTER 7: SUGGESTIONS AND CONCLUSIONS

*“Diggers never die – they fade away”*

This chapter is divided into four sections. Firstly it provides initial suggestions regarding the major socio-economic issues that were encountered during the SIA study that might be considered for future institutional restructuring and policy formulation. Secondly it attempts to answer the questions set out under the aims and objectives of the study and thirdly, it provides concluding remarks regarding the impact of the policies reflected in the Act on SSM. Lastly it provides a summary table of the concepts and issues discussed in each chapter of this report.

### 7.1 Initial suggestions

This section includes a number of initial suggestions regarding the most significant issues that were identified during the scoping and screening stages of the SIA, (discussed under 6.2), that could profitably be addressed by the authorities. It is however not the intention of this report to develop comprehensive mitigation responses, nor to develop comprehensive management plans. Nevertheless these would be fundamentally important aspects of any integrated environmental management process.

#### 7.1.1 Access to finances

The national capital gain from mining in South Africa is significant. Mining provides a source of much needed employment in a country that increasingly has to cope with unemployed and destitute societies. It is thus in the national interest that the small-scale mining industry is not compromised by financial constraints. Many models of financial assistance exist but it is not the intent of this report to provide mitigatory measures. They should however be explored by the relevant authorities.

#### 7.1.2 Access to mineral ground

Through the Act substantial geological information will become available to the government enabling the DME to make land areas available to the small-scale mining sector. Presently many small-scale miners are mining uneconomical areas. For the Act

to benefit the SSM sector, DME must utilise the newly available geological information to advise small-scale miners of the viability of new claims before mining commences.

### ***7.1.3 Organisational and bureaucratic issues***

#### ***7.1.3.1 Communication***

The following needs regarding communication between small-scale miners and DME have been identified:

- (i) Informing and work-shopping small-scale miners on the frequent changes in mining legislation and diamond valuations;
  - (ii) Introduction of DME field officers and/or satellite offices to accommodate and assist small-scale miners;
  - (iii) Identification of community representatives to assist the prospective miners and the DME with the administration and regulation of SSM; and
  - (iv) Provide education on topics such as bookkeeping and business processes.
- Inadequate communication appears to exist the head office and provincial offices of DME has resulted in a top-to-bottom approach in terms of policies and projects. It is suggested that head office utilize staff from provincial offices. Head office would benefit from knowledge obtained from first-hand experiences of experienced provincial DME employees. This would encourage ambitious employees rather than being attracted to the private sector.

#### ***7.1.3.2 Policy and legislation***

An audit of each provincial office should be undertaken to identify shortcomings associated with lack of manpower and funds in relation to small- and large-scale mining activities of that province. Once such audits have been completed, requirements and potential changes should be identified for each office individually, focusing on office structure, administrative and management efficiency, manpower and budget. The national office should make use of the knowledge and expertise provincial offices have acquired through their dealings with miners at 'grassroots' level.

### *7.1.3.3 Administration*

- **Claim application**

Office clerks, instead of permit officers, should capture permit data. This will prevent permit-issuing backlogs and will ensure that DME's records remain up to date. The DME computer database is not utilised as effectively as it should be; queries and actual permit issuing still require the original physical file. An effective database would have all information relating to a miner's history, the regularity of payment of monthly claim fees, rehabilitation history, as well as the mining of several claims in different areas. The department could operate more effectively and practise firm control over mining activities, especially rehabilitation. Other DME offices could easily access this information to prevent miners who have disregarded DME requirements in the past from obtaining mining permits. This information would also assist budgeting, prediction of monthly or annual income and generally aid the analysis of the mining industry and its contribution to the national economy. Monitoring of trends would identify when government's corrective intervention is required.

- **Claim locality plan**

DME has a drawing-plan section but lacks a sophisticated GIS system to compile comprehensive mine activity occurrence plans.

- **Sufficient resources**

To enable effective administration of the SSM sector, a definition of SSM as well as a clear distinction of the different types of SSM is required. The DME will require additional manpower to manage the tasks of the SSM sector. To eliminate distances that permitting officers must travel and to increase productivity in the field, it is suggested that satellite offices be established in the busiest mining centres. These satellite offices would also be able to function as technical support and information centres for small-scale miners. They would be more easily accessible to small-scale miners and DME staff would be able to give priority to small-scale mining. There is potential for the incorporation of SAWIMA branches with DME offices.

### *7.1.4 Socio-economic issues*

Access to equipment through effective methods of financing assistance, would assist small-scale miners. Adult education and basic service delivery from municipalities

could lead to development projects delivering electricity and transport to towns. The DME officials could visit communities regularly to collect permit applications, to claim fees and to deliver to permits, thereby saving the time and expense of having to travel to Klerksdorp in the North West, and Kimberley in the Northern Cape Provinces. The establishment of accessible local diamond buyers would save the small-scale miners costly transport to Wolmaranstad in the North West Province reducing illegal diamond trading.

### ***7.1.5 Environmental management***

#### ***7.1.5.1 Rehabilitation***

The current rehabilitation fees demanded of the small-scale mining sector are leading to its downfall. If these fees are not reduced, it is feared that the small-scale mining sector will disappear leaving an economic void and resulting in more impoverished and subsidy-dependent communities. A reliable field team having regular contact with miners would result in close supervision of mining and rehabilitation practices. This will decrease the occurrence of un-rehabilitated areas and environmental damage, and rehabilitation fees would therefore no longer need to be levied. Such a field team should communicate with the provincial office on a regular base in order to provide DME with a better overview of its provincial mining activities. At best, an improved overview of SSM activities can be obtained through the suggested database and through additional officers who can undertake regular field visits to determine an area's or mining operations rehabilitation requirements.

#### ***7.1.5.2 Illegal mining***

Illegal mining is difficult to control but through a more visible field team and improved administration, DME can reduce its occurrence significantly. The current permit-issuing process is inadequate and should receive urgent attention. Permit applications should be computerised so that minimal, or no, need exists to refer to permit files by DME provincial office staff. The DME should encourage the formation of community representative structures that are equipped to deal with mining issues within the communities.

## 7.2 Answering the key questions set out in the study objective

### 7.2.1 *How successful has mining legislation been thus far in empowering the SSM sector?*

- **Government initiatives to assist small-scale miners**

Under the new democratic government mining claims have become accessible to all people of South Africa. This has been a very positive change as it provides people with an option to become economically involved in the minerals industry. However, illegal diamond buying remains a significant problem. Soon after the new government came into being, focus was placed upon the mining industry and the government initiated mining ventures, such as Rainbow and others, hoping that this would empower small-scale miners. Unfortunately these have only benefited the venture leaders and have left its members resentful resulting in a loss of faith in mining organisations. The same applies to the Broad-based Black Economic Empowerment Act (2003), which appears to have benefited only a few Black individuals, instead of the people at grass-root it was intended to empower. Government's attempts to encourage joint ventures between individuals and larger SSM operations have not reaped the envisaged benefits. Due to lack of power and influence, DME staff generally focus on the larger mines, which require considerable attention in terms of rehabilitation and environmental regulations. These mines are also more important from a national income point of view. As a result the SSM sector does not receive the attention it requires, which has led the sector to believe that the government is not interested in it.

- **Mining legislation**

During the fieldtrip to the NC in 2000, no real changes in daily operations or lifestyles within the small-scale mining sector as a result of legislative changes were reported. It became apparent that many of the small-scale miners were uninformed regarding the new permit requirements of the White Paper and none had heard of the proposed Minerals Bill. During the second fieldtrip in May 2002, still no changes were apparent. At this stage none of the provincial departments had been briefed on the contents of the Bill. The DME officials considered that the Bill was written with a top-to-bottom approach. No input from the provincial offices had been canvassed. The departmental offices, even without the additional tasks and responsibilities proposed in the Bill, were unable to cope with their current functions. Inadequate resources and de-motivation as well as lack of efficiency all added to the limited

effectiveness of the department. The DME did not have any statistical data on the number and location of SSM activity. The number of issued licenses (estimated between 2000-3000) and the estimated number of SSM activity (800) compared to actual SSM activity (estimated 50) in the field were not compatible.

- **Empowerment of the SSM**

Although a number of initiatives and policies have been designed with the intention of empowering the SSM, none adequately provide the assistance the sector requires at grassroots level. Also, provisions within the Act that could potentially benefit small-scale miners may not because small-scale miners will be unaware of their rights or unable to gain access to these.

### ***7.2.2 Are the existing institutions and organisations aimed at uplifting the small-scale mining sector targeting the major issues?***

Existing institutions, such as NSC, Khula, Ntsika and IDC can become more active in SSM upliftment at grassroot level. SSM requires appropriate training, not necessarily in diamond extraction, as the majority of small-scale miners grew up with diamond mining, but rather in bookkeeping, diamond evaluation, organising and operating co-operatives/joint ventures. The NSC members comprise intellectuals, operating at a more abstract theoretical level beyond that necessary to engage meaningfully with grassroot issues. The provincial offices of DME are more exposed to grassroot issues but lack resources, staff and finances, which has consequently limited their level of interaction appreciably. A major drawback of SAWIMA is its membership fees, for which members do not gain anything in return (no training, no guaranteed claims). There is no actual involvement, backup nor assistance from DME.

### ***7.2.3 Do individuals and social groups benefit from the new legislation?***

According to questionnaire respondents, the only change brought about by the White Paper is the introduction of rehabilitation fees and additional red tape in order to obtain a permit. During May 2002, when the NW case study was undertaken, the majority of small-scale miners had not heard of the Mineral Development Bill. The DME provincial office had only received a copy of the Bill in April 2002, and the staff had not yet been briefed on its contents. A workshop on the Bill was scheduled for June, but by August still had not been held. The fact that the Act omits mention of

small-scale miners as an important component of South Africa's mining sector is significant. Historically disadvantaged individuals and the importance of integrating them into the mining industry is mentioned throughout the Act but no specific details are given as to how this can be achieved. Since 1994 little has been done to benefit small-scale miners and their host communities.

#### ***7.2.4 Is small-scale mining a viable source of income in its current context?***

With ever increasing unemployment, exacerbated by downscaling of mines and industries and the yearly addition of school leavers to the job market, there is need and desirability for the expansion of the SSM sector. Many minerals are appropriate for small-scale mining on an organised basis. In terms of diamond mining, this is a slightly more complex issue. From an environmental point of view, diamond mining is less damaging to the environment than most other minerals and forms of small-scale mining. However, alluvial diamonds are often mined on sensitive areas, within the legally prescribed 100m from rivers and water sources. In the case of the Northern Cape, small-scale miners wanted to mine Canteen Kopje and Nooitgedacht, two archaeologically important areas; Vaalbos National Park, a game reserve and ecologically sensitive area; and Sydney on Vaal, a private resort. Stringent controls remain necessary. Small-scale diamond mining in its current context is not viable. At present, the smallest form of SSM is generally conducted through the most rudimentary methods, i.e. pick-and-shovel mining. The areas that are being mined are previously mined areas and surface deposits are depleted. These areas require the use of heavy machinery to work the volumes required to be profitable. Diamond mining is a high-risk venture, but without collateral it is not possible to obtain loans. Currently the organisations aimed at promoting SSM do not provide loans to individuals or the smallest members of the SSM sector, which ironically are the ones who really need them.

#### ***7.2.5 Is diamond mining economically viable?***

As a high-risk mineral, diamond mining is perhaps not the most appropriate mineral to be mined by rural and or impoverished communities. It appears that once one has found a diamond, one is 'hooked for life'. The respondents almost always preferred to live from day to day with the possibility of a diamond discovery opposed to a form of

employment with a monthly income, or mining of any other mineral. Diamond mining can be compared to a gambling addiction, 'that one find can result in incomprehensible riches' and that possibility keeps each diamond miner going. In light of this it also needs to be emphasized that the majority of people involved in small-scale diamond mining are between the ages of 35 and 60 years of age. Few small-scale miners younger than 35 were encountered: the reasons being better education among the younger age group; the physical and economic hardship attached to SSM has increased significantly while diamond recovery has decreased; competition with mechanical operations is discouraging; and the start up cost of SSM is not viable for someone without an income or a pension. In summary, diamond SSM is viable in rural impoverished areas but requires very specific conditions for it to be of economic value to the community. It requires:

- (i) Geological information prior to any mining operation being undertaken or permits being issued;
- (ii) A degree of mechanised equipment albeit minimal - (this will require subsidised machinery or access to finance, which is currently lacking); and
- (iii) Co-operatives require proper organisation and government support. Mining projects should be tied to existing markets. The market should be identified before mining of a mineral commences. There is a need for an interrelated system throughout the whole country.

#### ***7.2.6 Measures required in terms of government intervention and in terms of organisation of miners to ensure a viable and sustainable form of economic activity.***

The small-scale mining sector requires accessible government assistance. This can be realised through the employment of permanent field officers and satellite offices. Geological information is imperative when it comes to determining the mineral potential of claims. Currently un-economical claims are being mined to the detriment of the miner (loss of wages for employees), community (financial reliance upon elderly for state pensions) and government (lack of taxable income). Often this also results in illegal mining practices, such as omitting to pay monthly claim fees and, more importantly, loss of taxable income derived from diamond recovery. Illegal mining further leads to lack of rehabilitation, which leads to soil degradation and erosion. Small-scale miners require basic mechanised equipment for an operation to

be functional. In the present situation finance is not accessible to the smallest small-scale miners. Ways to overcome this would require government subsidised machinery and/or loans. For the smallest denominator of small-scale miners, they will need to be reorganised through access to finance and minerals and possibly through well-organised and government supported co-operatives.

***7.2.7 Has the need to target people from outside the area rather than to introduce new people from outside in building and expanding the SSM sector been identified?***

From the field research it was apparent that skills and assistance were drawn from outside rather than from within the mining areas. This was especially evident in the Welverdiend Pilot Project, where use was made of theoretical knowledge rather than the utilisation of available local knowledge and skills. Many diamond miners have grown up in diamond mining areas. They know the area and often have a good understanding of the geology and mineral potential. This became apparent in the Lichtenburg area. One respondent who is very familiar with this area, offered to survey and help identify mining sites at no cost, for small-scale miners from Welverdiend. A medium-scale miner from Elandslaagte manufactures mining machinery and offered to make a number of washing pans at cost price with free training on their use, but DME was unable to pay money required to purchase the steel.

**7.3 Conclusion**

***7.3.1 Environmental awareness, mining legislation and sustainable livelihoods of poor communities***

National and international environmental awareness have increased pressure on DME to enforce environmentally responsible mining practices amongst miners. Due to conflicting priorities amongst the different government departments legislation appears to be skewed in terms of legal requirements and payments enforced upon the small-scale miner. It is understandable that environmental and agricultural aspects and issues relating to national water and forestry reserves are of vital importance to the country as a whole. Nevertheless eradication of poverty through employment and

increasing social and human capital assets plays a crucial underlying role in terms of sustainability of population resources. Although mining activities are frequently disapproved of by the general public and several departments (such as Environmental, Agricultural and Water Affairs), no initiatives appear to have been made by these departments to diversify economic activities and create alternative sources of income for the small-scale mining sector and their host communities. With the growing unemployment in the entire country's mining industry this is a serious issue of concern. What will happen to the people once the diamonds (or other minerals) have been mined out?

The Act advocates mining in a sustainable fashion. However no provision in policy or legislation has been made to achieve this goal. Although theoretically, the government should not have to take responsibility for this, poverty and unemployment are of national concern and ultimately become the government's responsibility. Tighter control of SSM especially in terms of rehabilitation is required to optimize future land use potential and to minimize illegal mining activities. One of the objectives of the Act (**Section 2-h**) is to ensure that mineral resources are developed in a sustainable manner while promoting socio-economic development. The Act requires environmentally sound mining operations through the compilation and implementation of environmental management programmes and plans (**Section 37, 38, 39 40, 41 and 43**). This provides the Minister with the power to act in cases where rehabilitation is omitted and environmental damage occurs (**Section 45 and 46**). It does however not provide any guidelines for DME staff on how to apply and implement these environmental management principles.

### ***7.3.2 The impact of the Act upon the SSM sector***

The Act as it now stands leaves little room for the pick-and-shovel miner, bantam sorter and junior-scale miner within the SSM sector, all of whom will either be forced to discontinue their activities or mine illegally. Both the NSC and White Paper have mentioned the upgrading of small-scale mining operations at subsistence level. Neither makes clear how this will be achieved and this is further omitted in the Act. One could argue that the Act makes provision for historically disadvantaged communities wishing to enter the mining industry (**section 104**). Once again the prescribed conditions in terms of financial obligations make this out of reach for most

of the rural communities within diamond mining areas that were encountered during both field visits.

### *7.3.3 Diversification of economic activities to ensure sustainable mining communities*

Both the White Paper and the Act mention that communities should benefit from mining activities. Diamond tax and royalties should be returned directly to the region. This could be done through the return of regional income from central government back to DME's regional offices. This would enable them to increase their capacity and therefore aid in improving mining conditions, thus benefiting communities as a whole.

To guarantee a future for SSM, uplift local mining communities and ensure a sustainable environmentally 'friendly' livelihood from mining, it is imperative that economic activities become diversified. This could be achieved through for example: selling the round pebbles and boulders found in both provinces to creating a landscaping/garden businesses, using the mined out diamond gravel for road and residential construction, initiating local cutting and polishing works; and open local jewellers who use the stones in their jewellery manufacture.

It is recognised by several of the departments that were contacted that the future of the province lies in tourism. Both the Barkley West and Lichtenburg areas present numerous possibilities for providing unique tourist attractions. The small-scale mining techniques used by present-day small-scale miners resemble those of the beginning of the 20<sup>th</sup> century. The old mining implements that are present in some of the mining areas, especially those areas that have already gained cultural or conservation status, such as Canteen Kopje and Vaalbos National Park could be developed as mining heritage destinations. Open-air museums containing diamond diggings that are currently being exploited could be promoted and used as a significant part of the 'diamond tour experience' that would supplement the meagre incomes of current small-scale miners.

Ancilliary industries could also attach to the tourist industry. Crystals, coloured pebbles and agates are commonly found, which could be collected by local women, and be used in jewellery or be polished and used for ornamental purposes. The

municipality could use mined-out diamond gravel for upgrading roads to these potential tourist areas. Local meals could be prepared and sold to tourist wanting an authentic experience.

#### **7.4 Report summary**

In order to provide a brief summary of this report, significant concepts and issues have been produced in a table format. Table 7.1 provides a summary of this report.

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**Table 7.1: Summary table**

<p><b>The new South African reform</b></p>	<ul style="list-style-type: none"> <li>• This has led to many legislative changes and SSM is now recognised as an important component of the South African mining industry. This has subsequently led to the promulgation of the Minerals and Petroleum Development Act of 2002. The Act constitutes an institutional change as well as an environmental impact, forming the fundamental focus of this research.</li> </ul>
<p><b>Small-scale diamond mining (SSM)</b></p>	<ul style="list-style-type: none"> <li>• SSM occurs worldwide and is acknowledged to boost exploration activity and mineral development.</li> <li>• Formalisation of illegal activities has led to a rise in the sector's contribution to the gross national product.</li> <li>• SSM has considerable social and economic impacts at both national and local level and concerns individuals (men and women), families and communities directly or indirectly involved in these activities.</li> <li>• Internationally the environmental consequences of SSM include pollution, siltation of rivers, soil deterioration, erosion, destruction of fauna and flora and failure to undertake rehabilitation.</li> <li>• The most significant impact of small-scale diamond mining is land degradation as a result of lack of rehabilitation.</li> <li>• Illegal mining is an international problem, which causes loss of state revenue and environmental degradation, and has led to much debate. In order to limit illegal mining, the SSM sector has to become formalised. This requires regulation and promotion, institutional and capacity strengthening and technology transfer.</li> <li>• There is no one set way in which SSM can successfully be controlled. According to Hollaway (1998) co-operatives have the greatest short-term potential for Africa's economic development, but are only successful where low value industrial minerals are mined. Both the private sector (joint-ventures) and local communities (providing social infrastructure and security) have an important role to play in terms of successful SSM practice. The three main</li> </ul>

	<p>components for successful SSM development in Zimbabwe include simple mining legislation, access to finance and technical and financial training. Cluster diamond mining has proven successful in India where individual miners mine adjacent to one another and share equipment and administrative costs.</p>
<b>Key concepts</b>	<p>The key concepts of this study include:</p> <ul style="list-style-type: none"> <li>• <i>Social impact assessment</i> is a process to attempt to identify the nature, the degree and significance of the impact of envisaged policies, plans, programmes or projects on social groups (I&amp;APs) and to assist them to cope with change.</li> <li>• The <i>Environment</i>, which constitutes a biophysical, cultural, economic, political and social component</li> <li>• <i>Sustainable development</i> not only incorporates the natural environment it also includes the social, economic and cultural dimensions of a society, with at its core function the eradication of poverty.</li> <li>• <i>Poverty</i> broadly extends beyond income or consumption and includes inequality, deprivation of health and education and vulnerability, which affect well-being, empowerment and opportunity.</li> <li>• <i>Livelihood assets</i> include human capital, social and institutional capital, natural capital, built capital and cultural capital. Vulnerability decreases proportionally to the amount of, or the access to assets possessed by households and communities.</li> </ul>
<b>Methodology</b>	<p>The methodology for this study included a SIA of the Mineral and Petroleum Resources Development Act on the SSM sector which was achieved through the compilation of cases studies in the NC and NW provinces.</p> <ul style="list-style-type: none"> <li>• Social impact assessment follows a well-established procedure which involves (i) social profiling, (ii) scoping, (iii) screening, (iv) analysis, (v) mitigation, (vi) management and (vii) monitoring.</li> </ul>

	<ul style="list-style-type: none"> <li>• The Case study is the preferred method where investigating a contemporary phenomenon in the absence of a statistical sample base. Two field trips to the NC and NW provinces respectively were undertaken during which qualitative and quantitative research methods were applied.</li> </ul>
<b>SSM in South Africa</b>	<ul style="list-style-type: none"> <li>• For the purpose of this report SSM is categorised into <i>small-scale</i> (pick-and-shovel), <i>junior-scale</i> (limited machinery) and <i>medium-scale</i> (mechanical) mining.</li> <li>• A number of different types of activities fall within the small-scale mining category, such as mining; bantam sorting; and prospecting, which require a mining permit that costs R50 and is valid for two years or a mining licence at R100; a permit for the removal or reworking of tailings; and a prospecting licence, respectively.</li> <li>• Start-up mining costs include between R50 000 and R500 000 for a small-scale operation, R50 000 and R3 million for a junior-scale operation and between R2.5 and R7million for a medium-scale operation.</li> <li>• Apart from individually owned mining operations, distinction is made between joint-ventures, when small-scale miners rent out their claim to junior- or medium-scale miners; and close corporations when people group together to share the costs and profits.</li> </ul>
<b>Case study analysis</b>	<p>The population of the rural communities that were included in both studies lacked basic livelihood assets. Poverty and lack of, or inaccessible household livelihood assets are closely linked. The poverty classifications apply to the different types of SSM as follows:</p> <ul style="list-style-type: none"> <li>• The '<i>chronic poor</i>' - include the bantam sorters in Welverdiend, Longlands, Schweizer-Reneke (NW) and Barkly West (NC).</li> <li>• The '<i>transient poor</i>' - include the small-scale miners and approximately 30 percent of the junior miners in</li> </ul>

	<p>Wolverdiend, Schweizer-Reneke, Bloemhof (NW) and Gong Gong and Barkly West (NC) and the bantam sorters in Bakerville (NW).</p> <ul style="list-style-type: none"> <li>• The <i>'non-poor'</i> - include the medium-scale miners in Bloemhof, Schweizer-Reneke (NW) and Waaldeck's Plant (NW).</li> </ul> <p>Lack of access to basic services and assets makes the bantam sorters, small- and junior-scale miners highly vulnerable to poverty. The communities that were researched in both case studies live in areas lacking basic services such as:</p> <ul style="list-style-type: none"> <li>• <i>Health</i> as in Wolverdiend, Bakerville (NW) and Gong Gong (NC) and</li> <li>• <i>Education</i> as in Wolverdiend (NW) and Gong Gong (NC).</li> </ul> <p>The Minerals and Petroleum Resources Development Act of 2002 constitutes a number of impacts on the SSM sector of which the most significant ones include the following:</p> <ul style="list-style-type: none"> <li>• Immediate impacts: <i>Policy and legislation.</i></li> <li>• Medium term impacts: <i>Access to mineral ground, communication, administration and rehabilitation.</i></li> <li>• Long term impacts: <i>Access to finance, socio-economic issues and illegal mining.</i></li> </ul>
<p><b>Conclusion and suggestions</b></p>	<p>Initial suggestions regarding the major socio-economic issues</p> <ul style="list-style-type: none"> <li>• <i>Access to finances</i> – Mining provides an important source of employment in South Africa and it is imperative that SSM is not compromised by financial constraints.</li> <li>• <i>Access to mineral ground</i> – DME should utilise the newly available geological information to advise the small-scale miners on the claim viability before a claim is issued or mined.</li> <li>• <i>Communication</i> – Educating and keeping small-scale miners up to date with mining legislative changes;</li> </ul>

introducing field officers and or satellite offices to assist the SSM sector; provision of basic bookkeeping and business skills training.

- *Policy and legislation* – Provincial office audits are required to identify shortcomings of its functioning.
- *Administration* – Sufficient resources to effectively deal with administrative matters such as electronically capturing permit data, and a claim locality plan to capture the occurrence of mine activities.
- *Socio-economic issues* – adult education and basic service delivery from municipalities would improve human capital base. The establishment of local diamond buyers as well as regular permit collection trips by the DME officers would save small-scale miners the cost and hassle of transport and reduce illegal mining.
- *Rehabilitation* – A DME field team is required that will be in regular contact with small-scale miners to facilitate close supervision of mining and rehabilitation practices, decreasing environmental damage and the need for rehabilitation fees.
- *Illegal mining* – Through an effective field team and improved administration, the occurrence of illegal mining can be reduced significantly.

Key questions and answers of the study objective:

- (i) The extent to which the mining legislation has empowered the small-scale mining sector over the past decade has not been maximised. Inadequate resources and inefficiency have limited the effectiveness of the DME at provincial level and government initiatives and policies thus far have not succeeded in reaching the people at grassroots level.
- (ii) The existing organisations and institutions such as NSC, Khula, Ntsika and IDC should become more active at

grassroots level if they want to uplift the SSM sector.

- (iii) Although the new Minerals and Petroleum Resources Development Act acknowledges the importance of integrating historically disadvantaged individuals into the mining industry, it does not specify how this should be achieved nor does it make mention of small-scale miners or the SSM sector as a whole.
- (iv) Many minerals are appropriate for small-scale mining on an organised basis and with increasing unemployment SSM should be encouraged to expand.
- (v) For small-scale diamond mining to be economically viable it requires, geological information, a degree of mechanised equipment and properly organised co-operatives.
- (vi) SSM requires accessible government assistance in the form of geological information and through permanent field officers and satellite officers.
- (vii) There is a need for utilising existing skills and expertise from the local areas to maximise SSM efficiency.

In conclusion:

- In terms of addressing environmental issues and sustainable livelihoods, the Act calls for sustainable and environmentally sound mineral development while promoting socio-economic development, but lacks any provisions or policies regarding how sustainable mineral development is to be achieved nor does it provide any guidelines as to how DME staff should apply and implement the environmental management principles.
- Previous mention of upgrading subsistence miners have not been addressed nor mentioned in the new Act. Under the new Act, pick-and-shovel miners, bantam sorters and junior-scale miners have little future, and will either have to discontinue operations or mine illegally.

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|  | <ul style="list-style-type: none"><li>• For mining communities to become sustainable it is imperative that economic activities be diversified. This could be achieved by using mined out gravel for construction purposes, selling pebbles, boulders and using commonly found crystals and agates in locally manufactured jewellery. By returning a portion of mining taxes and royalties, local cutting and polishing works and jewellers could for example, be initiated. In addition the combination of present small-scale miners and historical mining relics, all to be found in largely natural surroundings, makes the small-scale mining sector a potentially valuable contribution to the provincial expansion of tourism.</li></ul> |
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## PHOTOGRAPHIC PLATES

### I Different categories of small-scale mining

**Photo 1:** Pick-and-shovel mining is a strenuous exercise and miners may mine for several years before recovering a diamond. Small-scale mining is generally limited to pensioners amongst the local diamond miners of the Barkly West surrounds (NC).



**Photo 2:** BANTAM sorters from outside the area have erected a makeshift house adjacent to Bakerville community. Lack of basic equipment such as a sorting table requires that the bantams have to be dry before they can be sorted.



**Photo3:** A small-scale mining operation in the Lichtenburg area (NW). The rotary pan is engine driven and operated by a team of two people.



**Photo 4:** A medium-scale mining operation at Bloemhof farms (NW).



**Photo 5:** Mrs D. Damon, National SAWIMA chairperson, has a small-scale mining operation which is in a joint venture with a junior company (NC).



**Photo 6:** A close corporation from Schweizer-Reneke (NW) under SAWIMA. The corporation consists of ten members, but due to lack of transport only four women work on a regular basis.



**Photo 7:** Local Welverdiend employees operating the mechanised jig of the Mintek Pilot Project at Welverdiend (NW). The operation has a engine driven rotary pan, a backactor, front-end loader and a mechanical jig.

## **II. Small-scale mining equipment**



**Photo 8:** A "baby" – a rocking sieve used by small-scale miners and prospectors.



**Photo 9:**

A "washing balie" – a drum consisting of three different size sieves that are used to sort the washed diamondiferous gravel.



**Photo 10:**

A jig or "boesmantjie" – a more advanced version of a washing balie, used by junior-scale miners.



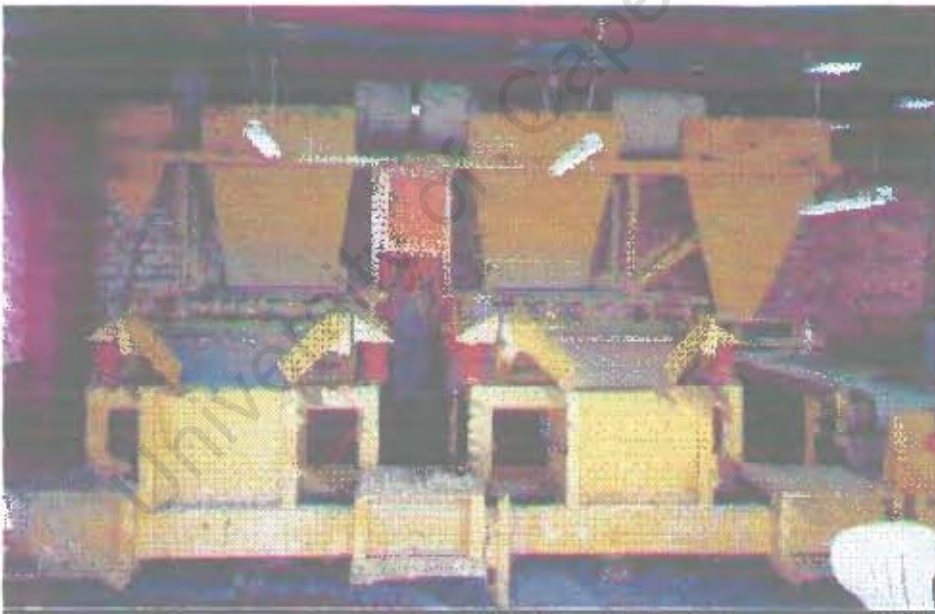
**Photo 11:** A "diggers dream" – a high-tech jig used by junior- or medium-scale miners.



**Photo 12:** A handmade engine-driven "rotary pan" used at a junior-scale mining operation.



**Photo 13:** A "sorting table" – the majority of small-, junior- and medium-scale miners that were interviewed, hand sorted their diamonds.



**Photo 14:** A "sortex" – A mechanised grease table. The bantams are transported by a conveyor belt and pass through individual grease belts. To recover the diamonds the grease is scraped off the table and melted.

III. Local communities



Photo 15: Welverdiend community (NW) – the majority of the community is unemployed. Income is derived from pensions and small-scale mining/bantam sorting activities. The community lacks basic services, such as electricity and tarred access.



Photo 16: Representatives from the Welverdiend community structures.



***Photo 17:*** Bakerville community (NW) – this community is accessible by tarred road and has electricity. The majority of the people are unemployed and income is derived from small-scale mining and pensions.



***Photo 18:*** Bakerville historic mining village (NW). The majority of its present inhabitants depend on small-scale mining. The village has great tourism potential.



**Photo 19:** The Welverdiend Jonah rocks – early diamond miners have dug out these rocks. The Welverdiend community would like to incorporate these rocks with rondawels and stock the area with game as a tourist attraction.

#### **IV Environmental consequences**



**Photo 20:** Old mine excavations that have been deserted as in the case of the old Gong Gong Mine (NW), pose significant danger to people, livestock and fauna. Exposed soils are prone to alien vegetation infestation. Without rehabilitation, the land becomes useless to other forms of land use.

**APPENDIX A: Provisions within the Act and the White Paper that have been mentioned in Chapter 6 and 7**

This appendix includes the formalized version of the provisions within the Act and White Paper that have been referred to in the text in Chapters 6 and 7. These are discussed under the relevant headings in sections 6.3, 6.4 and 7.3.

**6.4.1. Access to finances**

**a) *The White Paper***

**1.4.4.2 Access to finance and technology (i)** *“Access to funding for small-scale mining will be encouraged and facilitated through appropriate and targeted institutions”.*

**b) *Provisions within the Act***

**Sections 12:** the Minister has the right to *“assist historically disadvantaged persons to conduct prospecting or mining operations”.*

**Section 2-d:** *“to expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nation’s mineral resources”.*

**Section 104:** *“(i) Any community that wishes to obtain the preferent right to prospect or mine in respect of any mineral and land which is registered or to be registered in the name of the community concerned, must lodge such application to the Minister. (ii) The Minister may grant such preferent right if the community can prove that a) the right shall be used to contribute towards the development and the social upliftment of the community concerned; b) the community submits a development plan, indicating the manner in which such right is going to be exercised; c) the envisaged benefits of the prospecting or mining project will accrue to the community in question; and the community has access to technical and financial resources to exercise such right”.*

## 6.4.2 Access to mineral ground

### a) *The White Paper*

1.4.4.1 Mineral rights: "Information on mineral rights and mineral deposits available for development will be made accessible, particularly for the benefit of small-scale miners".

### b) *The Act*

**Section 2c:** "To promote equitable access to the nation's mineral and petroleum resources".

**Section 2-d:** "Substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nation's mineral resources".

**Section 2-a:** "Recognize the internationally accepted right of the State to exercise sovereignty over all the mineral and petroleum resources within the Republic".

**Section 2 b:** "Give effect to the principles of the State's custodianship of the nation's mineral and petroleum resources".

**Section 29:** "Minister's power to direct submission of specified information or data. The Minister may, in order to achieve the objects of this Act and to fulfil any of the functions in terms of this Act, direct in writing that specified information or data be submitted by – a) an applicant ..... b) any holder of a prospecting right, mining right, ..... or mining permit; or any owner .... of land which is the subject of ..... an application for such a right or permit or of a prospecting or mining operation".

**Section 50:** "Minister may investigate occurrence, nature and extent of mineral resources (i) The Minister may cause an investigation to be conducted on any land to establish if any mineral ... occurs in, on or under such land and if so, to establish the nature and extent thereof. (ii) a) The Minister must compensate the owner of the land in question if any loss, or damage is caused during an investigation contemplated in subsection (i) b) The Minister and the owner of the land may agree upon the compensation to be paid. c) If no agreement is reached, the amount of compensation must be fixed by arbitration in terms of the Arbitration Act 1965... or by a competent court".

**Section 30:** "(i) a) in order to give effect to the right of access to information ..... if such information is already publicly available or if the relevant right, permit or permission has lapsed or been cancelled, or the area to which such right or

*permission relates has been abandoned or relinquished. (ii) No information or data may be disclosed to any person if it contains information or data supplied in confidence by the supplier of the info or data”.*

**Section 55:** *“(i) If it is necessary for the achievement of the objects referred to in section 2 (d), (e), (f), (g) and (h) the Minister may in accordance with section 25 (2) and (3) of the Constitution, expropriate any land or any right therein and pay compensation in respect thereof”.*

**Section 105:** *(i) ” If the applicant for a right, permit or permission, who must notify and consult with the landowner ... notify the Regional Manager that the landowner... cannot be readily traced; or is deceased and no successor entitled can be readily traced. (ii) ... the Regional Manager ... may grant consent to such a person to install a notice on a visible place on the land and enter the land ...and subject such a person to such other terms and conditions as the Regional Manager may determine.”*

**Section 54: “Compensation payable under certain circumstances**

*(i) The holder of a ... .. mining permit must notify the relevant Regional Manager if that holder is prevented from conducting ..... mining operations because the owner or the lawful occupier of the land in question –a) refuses such holder to enter the land; b) places unreasonable demands in return for access to the land, or cannot be found to apply for access”.*

**6.4.3 Communication**

**a) The White Paper**

**1.4.4.2. (v)** *“Information on all aspects relating to mineral development and exploitation will be made available by the DME by means of a ‘one-stop shop’ approach”.*

**b) The Act**

**Section 58: (i) –** *“The Board – a) Must advise the Minister on-the sustainable development of the nation’s mineral resources; the transformation and downscaling of the minerals and mining industry and dispute resolution”.*

**6.4.4. Policy and legislation**

**a) The White paper**

**1.4.4.3 i):** *“Mining regulations will be administered consistently while adopting an approach of guidance and advice towards small-scale miners”.*

**b) The Act**

**Section 25 2(b):** *“The holder of a mining right must – commence with mining operations within one year from which the mining right becomes effective ... actively conduct mining in accordance with the mining work programme”.*

**Section 51(i):** *“..... the Board may recommend to the Minister to direct the holder of a mining right to take corrective measures if the Board established that the minerals are not being mined optimally in accordance with the mining work programme ...”.*

**6.4.5. Administration**

**a) The White Paper**

**1.4.1 (iii):** *“There is no generally agreed definition of the term small-scale mining – although it is often defined with regard to a mine’s output, capital investment, numbers employed or managerial structure. Small-scale mining is a relative term; thus the choice of limiting criteria to distinguish between small and larger-scale mining (such as production rate, capital and labour employed) will differ from commodity to commodity and from country to country. In South Africa, small-scale mining ranges from very small operations that provide subsistence living (artisanal mining), to the ‘junior’ companies for which revenue is such that subsistence living is not the prime motivator”.*

**1.4.4.3 (ii):** *The DME, in conjunction with other relevant Government Departments, will streamline the regulatory and administrative procedures”.*

**b) The Act**

**Section 6(i):** *“Any administrative process conducted or decision taken in terms of this Act must be conducted or taken ... within reasonable time .... with lawfulness, reasonableness and procedural fairness”.*

**Section 7&8:** *“The DG must ... designate an officer in the service of the Department as regional manger for each region”.*

**Section 57:** *“Establishment of Minerals and Mining Development Board”*

#### **6.4.6 Socio-economic issues**

##### **b) The Act**

**Section 2 f):** *“To promote employment and advance the social and economic welfare of all South Africans”.*

**Section 2 i):** *“To ensure that holders of mining and production rights contribute towards socio-economic development of the areas in which they are operating”.*

##### **Section 12: Assistance to historically disadvantaged persons**

*(i) “The Minister may facilitate assistance to historically disadvantaged persons to conduct prospecting or mining operations.*

*(ii) ...subject to terms and conditions as the Minister may determine.*

*(iii) ....the Minister must take into account all relevant factors, including*

*a) the need to promote equitable access ...*

*b) the financial position of the applicant*

*c) the need to transform the ownership structure of the minerals and mining industry*

*(iv) ... the Minister may request any relevant organ of State to assist the applicant concerned....”.*

**Section 100:** *“ (i) The Minister must, within five years from the date on which this Act took effect – a) and after consultation with the Minister for Housing develop a housing and living conditions standard for the minerals industry and b) develop a code of good practice for the minerals industry in the Republic. (ii) a) To ensure the attainment of Government’s objectives of redressing historical, social and economic inequalities as stated in the Constitution, the Minister must within six months from the date on which this Act takes effect develop a broad-based socio-economic empowerment Charter that will set the framework, targets and time-table for effecting the entry of historically disadvantaged South Africans into the mining industry, and allow such South Africans to benefit from the exploitation of mining and mineral resources. b) The Charter must set out, amongst others how the objects referred to in section (ii) c), d), e), f) and i) can be achieved”.*

**Section 104:** *“ (i) Any community who wishes to obtain the preferent right to prospect or mine in respect of any mineral and land which is registered or to be registered in the name of the community concerned, must lodge such application to the Minister”.*

#### **6.4.7. Rehabilitation**

##### **a) The White Paper**

**1.4.4.4. (i):** *“Small-scale mining like the rest of the mining industry, will be required to adopt measures that will promote environmental sustainability by means of the application of consistent standards and acceptance of the ‘polluter pays concept.’ All the policy principals contained in Chapter 4 – Environmental Management, will also apply in the case of small-scale mining. (ii) Government will support the provision of training and skills development for small-scale miners in environmental management. (iii) Intensive environmental management guidance will be provided in areas where there is a high concentration of small-scale miners. (iv) Financial guarantees for rehabilitation will be flexible and site specific”.*

##### **b) The Act**

**Section: 39:** *(i) “ Any person who has applied for a mining right ... must conduct an EIA (ii) Any person who applies for a reconnaissance permit, prospecting right or mining permit must submit an EMP as prescribed. (iii) An applicant who prepares an environmental management plan or programme must – a) establish baseline information concerning the affected environment to determine protection, remedial measures and environmental management objectives; b) investigate, access and evaluate the impact of his or her proposed prospecting or mining operations on – the environment, the socio-economic conditions of any person who may be directly affected by the prospecting or mining operation; any national estate .... in the National Heritage Resources Act, 1999 .... ; c) develop an environmental awareness plan describing the manner in which the applicant intends to inform his or her employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment”.*

**Section 22: (iii) “ If the application does not comply with this section, the Regional Manager must notify the applicant in writing ... within 14 days ... (iv) If the Regional Manager accepts the application, ... within 14 days from the date of acceptance notify the applicant in writing. a) to conduct a EIA and submit an EMP; b) notify and consult I&AP’s”.**

**Section 16 iv a) - (iv) a) ....to submit an environmental management plan.”**

**Section 27:v a- .”.... to submit an EMP”.**

**Section 40 (i):** (i) *“When considering an environmental management plan or environmental management programme ... the Minister must consult with any State department which administers any law relating to matters affecting the environment.*

*(ii) The Minister must request the head of a department being consulted in writing, to submit the comments of that department within 60 days from the date of the request”.*

**Section 37 (ii):** *“Any prospecting or mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects in order to ensure that exploitation of mineral resources serves present and future generations”.*

**Section 38: Integrated environmental management and responsibility to remedy**

*(i) The holder of a ... mining right, mining permit ...*

*a) must manage all environmental impacts ....*

*b) must as far as is reasonably practicable rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development.*

*(ii) Notwithstanding the Companies Act, 1973 (Act 61 of 1973) or the Close Corporations Act, 1984 (Act 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any unacceptable negative impact on the environment, including damage, degradation or pollution advertently caused by the company or close corporation which they represent or represented”.*

**Section 93: Orders, suspension and instructions**

*(i) “If an authorized person finds that a contravention ... or failure to comply with*

*a) any provision of this Act b) ..... such a person may*

- order the holder of the relevant right ... to take immediate rectifying steps, or*
- order that the .... operations or part thereof be suspended or terminated...*

*(ii) The Director General must confirm or set aside any order contemplated in subsection (i) a) or b)”.*

**Section 41: “Financial provision for remediation of environmental damage**

*(ii) If the holder of a prospecting right, mining right or mining permit fails to rehabilitate or manage, or is unable to undertake such rehabilitation ... the Minister may, upon written notice ... use all or part of the financial provision ... to rehabilitate or manage the negative environmental impact in question”.*

**Section 45: “Minister’s power to recover costs in event of urgent remedial measures**

*c)... the Minister may ... apply to a High Court for an order to seize and sell such property of the holder necessary to cover the expenses of implementing such measures.*

*d) in addition .... the Minister may use funds appropriated for that purpose by Parliament to fully implement such measures.*

*e) The Minister may recover an amount equal to the funds necessary to fully implement the measures from the holder concerned”.*

**Section 46: “Minister’s power to remedy environmental damage in certain instances**

*(i) If the Minister....establishes that the holder of the .... mining permit ....cannot be traced ...the Minister may instruct the Regional Manager ... to take the necessary measures .... (ii) The measures ... must be funded from the financial provision made by the holder of the relevant ... right or mining permit .... if there is no such provision or if it is inadequate, from money appropriated by Parliament for that purpose”.*

**6.5.2.1 Small-scale miners fears and concerns**

**a) The Act**

**Section 7 and 8:** *“The DG must ... designate an officer in the service of the Department as regional manager for each region”.*

**Section 57: “Establishment of Minerals and Mining Development Board”**

**Section 58a (i); “The Board - a) Must advise the Minister on-the sustainable development of the nation’s mineral resources the transformation and downscaling of the minerals and mining industry and dispute resolution”.**

**Section 51: “Optimal mining of mineral resources (i) ... the Board may recommend to the Minister to direct the holder of a mining right to take corrective measures if the Board established that the minerals are not being mined optimally in accordance with the mining work programme .... (ii) Before making the recommendation, the Board must consider whether the technical and financial resources of the holder of the mining right in question and the prevailing market conditions justify such a recommendation”.**

**Section 55: “Minister’s power to expropriate property for purpose of prospecting or mining (i)”** *If it is necessary for the achievement of the objects referred to in section 2 (d), (e), (f), (g) and (h) the Minister may in accordance with section 25 (2) and (3) of the Constitution, expropriate any land or any right therein and pay compensation in respect thereof”.*

**Section 105: “Landowner or lawful occupier of land cannot be traced (i)”** *If the applicant for a right, permit or permission, who must notify and consult with the landowner ... notify the Regional Manager that the landowner... a ) cannot be readily traced; or b) is deceased and no successor entitled can be readily traced. (ii) ... the Regional Manager ... .may a) grant consent to such a person to install a notice on a visible place on the land and enter the land ... .and subject such a person to such other terms and conditions as the Regional Manager may determine”.*

**Section 2-g:** *“Provide security of tenure in respect of prospecting, exploration, mining and production operations”.*

**Section 6: (i)** *“Any administrative process conducted or decision taken in terms of this Act must be conducted or taken ... within reasonable time ... with lawfulness, reasonableness and procedural fairness”.*

**Section 23: (i)** *“.... the Minister must grant a mining right if – a) the mineral can be mined optimally ... ; b)the applicant has access to financial resources and has the technical ability to conduct the proposed mining operation optimally; c) the applicant has provided for financially and otherwise for the prescribed social and labour plan; d) the applicant has the ability to comply with the relevant provisions of the Mine Health and Safety Act, 1996. (iii) The Minister must refuse to grant a mining right if the application does not meet all the requirements referred to in subsection (i) providing mining rights for land on a first come first serve basis”*

**Section 9: (i)** *“If a Regional Manager receives more than one application for .... or a mining permit on the same day .... (ii) .... he or she must give preference to applications from historically disadvantaged persons”.*

**Section 17, 2-b ii:** *“The Minister must refuse to grant a prospecting right if b) the granting of such a right will –result in an exclusionary act; prevent fair competition...”.*

**Section 17, 2-b iii:** *“... result in the concentration of the mineral resources in question under the control of the applicant”.*

### **6.6.1. Health and safety**

#### **a) The Act**

**Section 23: Granting and duration of mining right (i)** .. *the Minister must grant a mining right if - d) the applicant has the ability to comply with the relevant provisions of the Mine Health and Safety Act, 1996*".

**Section 52: "Notice of profitability and curtailment of mining operations affecting employment (i)** *The holder of a mining right must, after consultation with any registered trade union or affected employees or their nominated representatives where there is no such trade union, notify the Board in the prescribed manner – a) where prevailing economic conditions cause the profit to revenue ratio of the relevant mine to be less than six percent on average for a continuous period of 12 months, or b) if any mining operation is to be scaled down or to cease with the possible effect that 10 percent or more of the labour force or more than 500 employees, whichever is the lesser, are likely to be retrenched in any 12 month period. (ii) The Board must after consultation with the relevant holder, investigate – b) the socio-economic and labour implications thereof and make recommendations to the Minister*".

### **6.6.2 Women miners**

#### **a) The Act**

**Section 2:** *"The objects of this Act are to – d) substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nation's mineral resources"*.

### **6.6.3 Employment**

#### **a) The White Paper**

**1.4.2** *"Government will encourage and facilitate the sustainable development of small-scale mining in order to ensure the optimal exploitation of small mineral deposits and to enable this sector to make a positive contribution to the national, provincial and local economy"*.

#### **b) The Act**

**Section 2:** *"The objects of this Act are to - f) promote economic growth and mineral and petroleum resources development in the Republic; promote employment and advance the social and economic welfare of all South Africans"*.

**Section 23 - (i) e:** *“The applicant has provided for financially and otherwise for the prescribed social and labour plan.”*

**Section 26: Mineral beneficiation (i)** *“The Minister may initiate or prescribe incentives to promote beneficiation of minerals in the Republic. (ii) If the Minister acting on advice of the Board and after consultation with the Minister may promote such beneficiation subject to such terms and conditions as the Minister may determine”.*

### **7.3.1 Environmental awareness, mining legislation and sustainable livelihoods of poor communities**

#### **a) The Act**

**Section 2-h:** *“The objects of this Act are to - give effect to section 24 of the Constitution by ensuring that the nation’s mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development”.*

**Section 37: Environmental management principles (ii)** *“Any prospecting or mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects in order to ensure that exploitation of mineral resources serves present and future generations”.*

#### **Section 38: Integrated environmental management and responsibility to remedy**

**(i)** *“The holder of a ... mining right, mining permit ...*

*c) must manage all environmental impacts ....*

*d) must as far is reasonably practicable rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development.*

**(ii)** *Notwithstanding the Companies Act, 1973 (Act 61 of 1973) or the Close Corporations Act, 1984 (Act 69 of 1984), the directors of a company or members of a close corporation are jointly and severally liable for any unacceptable negative impact on the environment, including damage, degradation or pollution advertently caused by the company or close corporation which they represent or represented”.*

**Section 39: Environmental management programme and environmental management plan**

*(i) "Any person who has applied for a mining right... must conduct an EIA.*

*(ii) Any person who applies for a reconnaissance permit, prospecting right or mining permit must submit an EMP as prescribed. (iii) An applicant who prepares an environmental management plan or programme must -*

*a) establish baseline information concerning the affected environment to determine protection, remedial measures and environmental management objectives*

*b) investigate, access and evaluate the impact of his or her proposed prospecting or mining operations on -*

- the environment*
- the socio-economic conditions of any person who may be directly affected by the prospecting or mining operation*
- any national estate .....in the National Heritage Resources Act, 1999.*

*c) develop an environmental awareness plan describing the manner in which the applicant intends to inform his or her employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment".*

**Section 40: Consultation with State departments** *(i) "When considering an environmental management plan or environmental management programme ... the Minister must consult with any State department which administers any law relating to matters affecting the environment. (ii) The Minister must request the head of a department being consulted in writing, to submit the comments of that department within 60 days from the date of the request".*

**Section 41: "Financial provision for remediation of environmental damage** *(ii) If the holder of a prospecting right, mining right or mining permit fails to rehabilitate or manage, or is unable to undertake such rehabilitation...the Minister may, upon written notice ... use all or part of the financial provision ...to rehabilitate or manage the negative environmental impact in question".*

**Section 43: "Issuing of a closure certificate** *(i) The holder of a prospecting or mining right ... or mining permit remains responsible for any environmental liability, pollution or ecological degradation, and the management thereof, until the Minister has issued a closure certificate to the holder concerned. (iv) No closure certificate may*

*be issued unless the Chief Inspector of Department of Water Affairs and Forestry have confirmed in writing that the provisions pertaining to health and safety and management of potential pollution to water resources have been addressed”.*

**Section 45: Minister’s power to recover costs in event of urgent remedial measures**

*c)” .... the Minister may ... apply to a High Court for an order to seize and sell such property of the holder necessary to cover the expenses of implementing such measures.*

*d) In addition .... the Minister may use funds appropriated for that purpose by Parliament to fully implement such measures.*

*e) The Minister may recover an amount equal to the funds necessary to fully implement the measures from the holder concerned”.*

**Section 46: “Minister’s power to remedy environmental damage in certain instances (i)”** *If the Minister ... establishes that the holder of the ... mining permit ... cannot be traced ... the Minister may instruct the Regional Manager ... to take the necessary measures .... (ii) The measures ... must be funded from the financial provision made by the holder of the relevant ... right or mining permit ... if there is no such provision or if it is inadequate, from money appropriated by Parliament for that purpose”.*

**7.3.2 The impact of the Act upon the SSM sector**

**Section 104: “Preferent prospecting or mining right in respect of communities**

*(i) Any community who wishes to obtain the preferent right to prospect or mine in respect of any mineral and land which is registered or to be registered in the name of the community concerned, must lodge such application to the Minister.(ii) The Minister may grant such preferent right if the community can prove that:*

- a) the right shall be used to contribute towards the development and the social upliftment of the community concerned;*
- b) the community submits a development plan, indicating the manner in which such right is going to be exercised;*
- c) the envisaged benefits of the prospecting or mining project will accrue to the community in question; and*
- d) the community has access to technical and financial resources to exercise such right”.*

## APPENDIX B: INTERVIEW SCHEDULES

### Questionnaire 1: Small-Scale Miners

#### *Mining details*

- 1 Name.
- 2 a) Name of area where claim is held.  
b) Name of neighbouring community.  
c) Name of mining company.
- 3 a) Size of mine.  
b) Number of claims.
- 4 a) Is this a primary or a secondary claim?  
b) How did you obtain this?
- 5 a) How long have you been mining here?  
b) How long have you mined in this area?  
c) Where did you mine prior to this claim?
- 6 a) Do you mine full-time?  
b) What are your regular working days and hours?
- 7 How long do you intend to continue to mine here?
- 8 What are your plans after finishing here?
- 9 a) Number of other claims.  
b) Where are these held?  
c) How many people work for you on these claims?
- 10 What are the merits of small-scale mining?

#### *Personal profile*

- 11 a) Where do you live?  
b) If not here, where do you stay when involved in mining?  
c) How often do you go home?  
d) Do you or any of your workers ever sleep on this claim?
- 12 a) Do you have a family at home?  
b) Are you their sole financial provider?  
c) Other sources of income? i.e. pensions disability grants etc.

- 13 a) Are any of your family members involved in mining?
  - b) If so, name type of mining.
  - c) Where do they work?
- 14 a) Do you think your children are interested in mining?
  - b) Reasons – why / why not?

***Experience and skills***

- 15 a) Where did you gain your mining experience?
  - b) How long have you been a miner?
  - c) How long have you been on your own?
- 16 a) What is the highest level of education you have obtained?
  - b) What other skills have you got?
  - c) What other type of jobs have you been involved in?

***Labour force***

- 17 a) How many people work for you on this claim?
  - b) Where are they from?
  - c) Are they literate?
- 18. Do you ever have problems with your work force?
- 19. Do you pay your workers per day/week/on commission?

***The small-scale mining community***

- 20 a) What is your interaction with the other small-scale miners?
  - b) Is there a sense of community?
  - c) Is there a formal or informal authority structure specifically designed for regulating the small-scale mining sector?
- 21 Has there been an influx of “foreign” miners into the area?
- 22 a) Do you think mining in this area has in/decreased over the past years?
  - b) Reasons?

***Community interaction***

- 23 a) Do you interact with the community/LDF.
  - b) What is your relationship with them?
- 24 What do you think do the communities think of small-scale miners?

***Use of community infrastructure and services***

- 25 Where is the nearest clinic/hospital?
- 26 Where do you obtain water from? Cost ?
- 27 Do you shop etc./ make use of the local community businesses & services.

***Health, safety and security***

- 28 What type of accidents are common with this type of mining,
- 29 a) Have these occurred on your claim?
  - b) Do you make use of protective gear and safety measures?
- 30 a) Is security a problem?
  - b) Where is the nearest police station/patrol?
  - c) Is theft a problem?

***Legislation and administrative procedures***

- 31 Has the claim application process been smooth?
- 32 a) Do you think that you understand the mining legislation?
  - b) Do you think that the majority of small-scale miners are/are not up to date with mining legislative requirements?
  - c) Reasons – how or why?
- 33 Has there been a change in attitude from government to support and uplift the small-scale mining sector?
- 34 How has DME assisted you in past or present?
- 35 What do you think is DME's perception of small-scale mining?
- 36 What do you think could DME do to boost the small-scale mining sector?
- 37 What is your relationship with DME? Have they ever visited your claim?
- 38 Has the mining legislation had any impact on your business?
- 39 a) Are you aware of the Minerals Development Draft Bill?
  - b) What do you think will its implications be?
  - c) How will it affect you?
- 40 a) Do you think the mining requirements are fair and make sense?
  - b) If so /not – why?

### ***Mining methods and equipment***

- 41 What type of equipment do you use on your claim?
- b) Where did you obtain your equipment from?
  - b) Do you own this equipment?
- 42 a) Do you ever make use of mechanised equipment?
- b) Who do you hire the equipment from?
  - c) What are the costs per hour?
  - d) Do you find SSM rewarding in terms of input and output success?

### ***Markets and diamond values***

- 43 a) What is the price per carat on average?
- b) How many carats do you find on average per ton?
- 44 a) Where do you sell your diamonds?
- b) Do you have a standard buyer?
  - c) Do you think that you are paid the same/more/less than large-scale companies per carat?
- 45 Who is your biggest competition?

### ***Mining associations and joint ventures***

- 46 Do you know of any associations?
- 47 a) Do you currently belong to any association – union, small-scale miner's association etc.
- b) Did you ever belong to such an organisation?
  - c) When?
  - d) Reason for terminating membership?
- 48 a) What are the advantages of such organisations opposed to individual mining operations?
- b) What are the negative aspects associated with such organisations?
  - c) What would be required for such organisations to be successful?

### ***Economic input vs output***

- 49 What has the financial input roughly been to start up this mine?
- 50 a) Did you receive financial assistance to start your business?
- b) From whom?

- c) How long ago?
- 51 Do you have financial backup in case you don't make any profits this month?
- 52 Do you have insurance/pension/any other source of income?.
- 53 What are your monthly costs?
- 54 What has the financial output been (i.t.o the input  $\pm \frac{1}{2}$  ;  $\frac{1}{3}$  etc) specify per month etc.
- 55 Who do you think makes the most profit compared to their financial input – small or medium?

***Rehabilitation, cultural and environmental heritage sites***

- 56 a) What are the rehabilitation requirements?
- b) Do you feel these are fair, if not what do you suggest instead?
- 57 Would you attach greater importance to mineral exploitation or to preservation of cultural heritage sites?

***Perceptions of medium- and large-scale mines***

- 58 a) Do you interact with medium-scale miners?
- b) What is your opinion of them?
- c) What are the pros and cons of such an arrangement?
- d) What do you think are the problems/hindrances faced by medium-scale miners?
- 59 a) How do you feel about large-scale mines?
- b) Have you ever interacted with them?
- c) What do you think are their problems?

***Issues***

- 60 a) What are your problems/hindrances?
- b) What do you think are the main obstacles for small-scale miners?

***Future of small-scale mining***

61. What do you think is the future of small-scale mining?
62. What would happen to mining communities if SSM discontinued?
63. What would you do if for some reason you could no longer mine?
64. Any suggestions or comments?

## Questionnaire 2: Medium-Scale Miners

1. Name.
2. Area.
3. Size of claim.
4. Do you have any other claims - how many and where?
5. How long has your organisation been in existence?
6. Are others mining on your claim?
7. Where are you from originally?
8. How long have you been working this claim?
9. Is this your claim?
10. How did you find this claim? How do you usually find claims? Are they secondary or primary claims?
11. Are you permanently involved in the mining business?
12. Where does your family live? In the area?
13. Does mining constitute to your sole economic income, or do you derive income from other economic initiatives as well?
14. Do your family members add to your household income – name activities?
15. Do you have any other work experience/skills?
16. What is the approximate cost for setting up a medium-scale venture?
17. Where did you work before?
18. How many people are currently employed? Are they employed on a permanent basis? How long have they been in your service?
19. Are your employees local?
20. What mining equipment do you use (pan size)– is it paid off?
21. Is medium-scale mining worth the cost and effort in terms of output – can you make a living?
22. What mining methods do you use?
23. Do you make use of secondary local resources – washing, vegetables, food?
24. How long do you expect to work this claim?
25. Did you receive financial aid?
26. When and how did you buy your prospecting permit/claim?
27. Do you pay your labourers daily wages, do they receive commission – how does commission work – per carat or per diamond?
28. Who do you sell your diamonds to?

29. What is your average monthly turnover in number of diamonds / carats?
30. What are your expenses?
31. Does the price of diamonds fluctuate? Do different buyers pay different sums per carat?
32. Do you think you earn more per carat than small-scale miners do? If so, what is the reason?
33. What are the health implications?
34. Do accidents occur regularly, type and severity?
35. Which health facilities do you and employees use in case of emergency?
36. Where/how did you obtain your mining skills?
37. Do you understand the minerals law?
38. Do you interact with DME – have you received any assistance from them?
39. What are the problems experienced in small-scale mining?
40. How do you feel about artisanals/large mining houses?
41. How would you differentiate yourself from them?
42. Is there any history of conflict with them?
43. Does competition exist between medium-scale mining operations, in what way?
44. Does competition exist between artisanals/mining houses? In what way?
45. Who are your biggest competitors?
46. Is crime/theft a problem?
47. What are the merits of medium-scale mining?
48. What do you think is the future of medium-scale mining in this area and in the future in SA?
49. What is the main factor for determining the future of medium-scale mining – available minerals and claims/legislation/competition of large mines?
50. What would you do if for some reason you could no longer mine?
51. What do you suggest should be done to uplift medium scale mining houses
52. Would you welcome additional education on mining legislation/ mining skills/ something other?
53. Are you aware of environmental laws and rehabilitation methods?
54. How do you feel about the environment/archaeology and heritage sites?
55. Do you think it is important to preserve them – how do you think could small-scale mining be done without destroying them?

56. What do you think of the Minerals Development Bill – advantages /disadvantages?
57. What do you think is the future for diggers?
58. Do you interact with small-scale miners – problems?
59. Do you rent out your equipment? How often, at what price?

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### Questionnaire 3: DME Interview Schedule

#### *Small-scale mining details*

1.
  - a) Number of small-scale miners in North West Province and type of minerals exploited (are they all alluvial?)
  - b) Areas of small-scale mining activity – if possible numbers per area.
  - c) Number of “outsiders” vs local miners – are number increasing or decreasing?
  - d) Role of women in mining?
  - e) Is illegal mining a problem?
  - f) Is illegal/informal settlement a problem around mining areas?
2. History of small-scale mining of the NW Province.
3.
  - a) Formal mining activities in NW Province – medium/large-scale.
  - b) Numbers, names, type of minerals exploited and location.
4.
  - a) Typical traits of small-scale miners.
  - b) Bantam sorting vs mining - compare numbers of miners involved in these.
  - c) Equipment used.
5.
  - a) Mineral availability.
  - b) Are diamonds becoming exhausted in current areas that are being exploited.
  - c) Are other mineral deposits available? (known and potential).
6. Is there a history or current threat of diamonds being mined in environmentally sensitive or on cultural heritage sites?
7.
  - a) Can the communities surrounding the mining activities be described as typical mining communities?
  - b) What are other important sources of income for rural communities?
  - c) What do you think are the impacts of small-scale mining on the surrounding communities?
8.
  - a) Technical/financial support systems – NGO, parastatals etc.
  - b) Pilot project run by Mintek at Nietverdend – potential?
  - c) Existence of DME workshop/training programmes i.t.o permit application and mining operation procedures?

- d) Are there any other projects running aimed at the upliftment of the small-scale mining sector?
- 9
- a) Does DME provide workshops/training to SSM in terms of permit legislation?
  - b) Do you think that the average small-scale miner understands the permitting procedures?
- 10
- a) Past and present occurrence of small-scale mining organisations/joint ventures between medium-/large-scale mines/unions.
  - b) Advantages of these?
  - c) Shortcomings of these?
- 11.
- a) Merits of small-scale mining opposed to medium- large-scale mining.
  - b) Disadvantages of small-scale mining.
  - c) Is agricultural land affected by small-scale mining activities?
  - d) Is residential land affected by small-scale mining activities?
12. Relationship between DME and small-scale miners.
13. a) What is the approximate cost of setting up a small-scale mining operation in terms of equipment?
- b) What are the legal administrative costs involved?
  - c) How do the majority of miners finance their equipment?
  - b) How are legal administrative costs financed?
  - e) What do you think is the average income per month for small-scale miners – do you think they make sufficient to subsist?
- 14.
- a) Do you think that small-scale diamond mining is sustainable?
  - b) What is the attitude of the younger generation towards small-scale mining.
  - c) Do you think anything can/should be done to encourage them to become involved in mining.

***Legislative procedures***

- 15.
- a) DME's requirements in terms of small-scale mining applications and exploitation.
  - b) Do you think changes have occurred in the mining industry since the implementation of the White Paper on Minerals and Mining Policy of 1998? In what way?

- c) Advantages vs disadvantages.
- 16. a) Legislative rehabilitation procedures.
- b) Existent rehabilitation practices.
- 17. a) Merits of the Mineral Development Draft Bill i.t.o the small-scale mining sector.
- b) Expected implementation of the Bill.
- c) Expected changes in terms of the mining industry.
- d) Are any parties opposed to this/what are major concerns?
- e) Potential pitfalls or shortcomings of the Bill.
- f) Role of Diamond Board or its predecessor.
- g) Envisaged future of mining legislation.
- 18. a) DME successes in terms of promoting small-scale mining.
- b) DME's manpower availability – do you have sufficient personnel to cope with the number of mining operations in the province.
- c) Do you have access to GIS?

***Potential issues***

**19. (i) Communication**

- What is the current status of the Interdependent Steering Committee – do they meet quarterly?
- Is there sufficient communication between other departments and local government/ municipalities?
- What is the role of Local government/ Municipalities i.t.o small-scale mining?
- Does the department have sufficient field staff?
- Is there a continuous communication process between DME and miners?

**(ii) Organisational issues**

- How are permit applications recorded and stored?
- Do you have a claim locality plan?
- Do you have sufficient financial resources?
- Do you have access to mineral-bearing ground?

*(iii) Intrinsic issues*

- How are rehabilitation procedures controlled? Do you have field officers?
- Is the appointment of permanent field officers a possibility?
- Is the use of subsidised machinery in place of expensive rehabilitation guarantees a possible solution?

*(iv) Socio-economic issues*

- Unemployment figures for NW & NC.
- Money earned from mineral resources should stay within the Province.
- Diamonds should be cut and made into jewellery locally.- Gabane project

*Hindrances/ Obstacles experienced*

- 20 What do you think are the biggest hindrances to achieve a successful small-scale mining industry?
- 21 Who are most opposed to small-scale mining?
22. Envisaged future of large-/medium- and small-scale mining.
23.
  - a) What type of issues/problems does the DME have to solve?
  - b) What problems are experienced by DME?
  - c) Any suggestions / comments?

## **Questionnaire 4: DME Administration**

### **Permit application procedures**

#### *Claims*

1. Is there a minimum/maximum number of claims a small-scale/medium-scale miners are required to obtain.
2. What is the cost per claim? Monthly/annual cost
3. How long is a claim valid?
4. How are claims awarded? How is it decided who gets the "good claim".
5. How are claim overlaps controlled?

#### *Costs*

6. Is there a difference between State and private land – i.t.o of cost/payment procedures?
7. How is payment controlled – are invoices sent by post?
8. Do people come to DME to pay or are there field officers who collect the fees?
9. How are claims recorded (renewal/closure/re-registration under new owner)
10. When is a claim considered closed? After rehabilitation?
11. What if a claim is not rehabilitated nor worked, is the initial owner still invoiced?
12. What if it is not paid, can the claim then be transferred to another person?
13. What happens to money collected from claims?

#### *Small vs Medium-scale joint ventures*

14. If a medium-scale miner works a small-scale miner's claim, who is responsible for the rehabilitation guarantee?
15. What are the cost implications if a small-scale miner works a medium-scale claim?
16. When small-scale miners rent excavators do they require a permit beforehand?  
How is this controlled?
17. Do you have a record of small/medium joint ventures?
18. What are the problems associated with such ventures? Any type of control?
19. Advantages/disadvantages?

20. Rehabilitation cost and responsibility?

**Rehabilitation**

21. Number of rehabilitation officers?

22. What is their role/how often do they go to site?

23. What are the rehabilitation requirements for small-scale miners?

24. How do these differ for medium-scale and large-scale mines?

25. What does the rehabilitation process entail?

26. What are the problems associated with rehabilitation from DME's point of view?

From the miners' point of view?

27. What happens when a mine is left un-rehabilitated? Who's responsibility is it then?

28. Does DME have its own machinery?

29. Which type of miners (small/medium/large) are the best/worst at following rehabilitation procedures?

30. Are workshops held relating to rehabilitation?

31. Do you think that people understand the necessity of rehabilitation?

32. Are the rehabilitated areas up to standard?

33. What do you think is required for a smoother process?

## Questionnaire 5: Community Profiles

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### *A. History of the Community*

1. When did the Community originate – first settlement take place?
2. What were the reasons for settlement?
3. Where did these people come from?
4. Who was their leader?

### *B. Authority & Leadership Structure*

1. Type of authority structure
2. Traditional/Local Leadership
3. Government authority structures – mayor, police, magistrates
4. Where does the village leader stand in position with regard to local government
5. What is the relationship with the district/provincial governing body?
6. Political structure.
7. Presence of Government offices.
8. Presence of NGOs.
9. Presence of CBOs.
10. Presence of aid organisations.

### *C. Land issues*

1. How is land allocated?
2. Are allocated plots a standard size?
3. Does land ownership/tenancy involve payment?
4. What are the requisites for residential land ownership?
5. What are the requisites for business land?
6. What are the requisites for agricultural/pastoral land?
7. Are specific areas set aside for the above?
8. Is the number of cattle per person controlled in any way/ government control i.t.o of vaccination?
9. Is there any governmental aid i.t.o agricultural practices
10. Existence of development projects – plans

***D. Population Composition/Social Organisation***

1. Size of the community
2. Number of people, number of households – has it grown positively/negatively?
3. Population composition – ethnic cultural composition
4. Number of children
5. Number of men & women
6. Number of pensioners
7. Number of disabled
8. Number of houses
9. Are households grouped according to family/
10. Do extended family practices prevail/
11. Does matrilocality prevail – divorce/widows/single parent?
12. Is polygamy practised?
13. Description of the village?
14. Is the village built on State land?
15. Are houses privately owned?
16. Where are building materials for homes obtained from?

***E. Services & Infrastructure***

1. Describe present infrastructure
  - Roads
  - Shops
  - Banks
  - Water supply – boreholes/taps/rivers/dams
  - Power supply
  - Telecommunications
  - Refuse disposal
  - Community hall, sports and recreation facilities, library, etc
2. Where do people obtain water from?
3. Who is responsible for water supply and repairs?
4. How are boreholes operated?
5. Do people pay for services?
6. Police protection

7. Emergency services
8. Where do people shop for?
  - Food
  - Clothes
  - Furniture
  - Tools
9. What types of transport exist?
10. Is public transport available
11. Which routes do they take and how often?
12. Where is petrol and mechanical supplies obtained from?
13. Are there any government services – agricultural officers, veterinary, health etc?
14. Presence of cemeteries and old grave sites

**F. *Economic Activities***

1. Formal employment patterns
2. Informal employment patterns
3. Unemployment figures
4. Pensioners –pension earners
5. Educational levels – literacy amongst adults
6. Skills levels
7. Types of natural resources available
8. Agricultural practices – crops/cattle – at subsistence level/commercial
9. What products are sold – where
10. Who buys these products?
11. Does hawking provide a stable source of income?
12. Types of livestock kept
13. Uses of livestock
14. Veld foods and small game
15. No of livestock permitted per person
16. Mining activities – full/part-time/seasonal (after harvest/rain)
  - Type of mining – Formal mine employees/small-scale/artisanals
  - Minerals mined – diamonds/gold/other
17. Relationship between miners and villagers
18. Problems between miners and villagers

19. Do the villages rely heavily upon miners - secondary sources of income?
20. Future of mining in your opinion
21. Presence of migrant workers – where from, number, do they send money home, are they year round/seasonal, economic activities, how often do they go home, do they rent houses/rooms in Gong Gong?
22. Do outsiders buy consumables from the village – what and estimated income derived from this?
23. What is the village relationship with these people?
24. Informal settlement – problems
25. Conflict –past/present
26. Is crime prevalent – type, by whom, has it increased, reason?
27. How are criminals dealt with?

**G. Health**

1. Are medical facilities available?
2. Are traditional healers preferred or modern doctors?
3. Where is the closest clinic/hospital?
4. What are the most common diseases – are certain diseases seasonally more prevalent?
5. What is the largest contributor to death?
6. Annual mortality rate
7. Is polluted domestic water a health risk?
8. Have any epidemics occurred in the past 10 years
9. Have any natural hazards occurred within the last 10 years – drought/floods/fire/locusts?

**H. Education**

1. Number of schools: preschool/primary/high school
2. Number of pupils
3. Number of teachers
4. Number of classrooms
5. Pass rates
6. Tertiary education – where, how many pupils from community are yearly enrolled?

***I. Religious aspects***

1. What type of religions are practised?
2. What is the dominant religion?
3. Places of worship?
4. Worship rites
5. Specific times for worship – times, days, seasonal celebrations
6. Traditional healers
7. Initiation rituals
8. Plants used for medicinal purposes

***J. Issues***

1. What are the village needs?
2. What is the biggest problem?
3. Is there any conflict – in , outside of village?

***K. Schools***

1. When did the school originate?
2. How many pupils does it accommodate?
3. Where are the pupils from?
4. How many standards?
5. How many teachers?
6. Where do teachers live?
7. How many classrooms?
8. How many desks?
9. What are pass/failure rates?
10. Is there electricity?
11. Is there a water supply?
12. Are there toilets? How many?
13. Is there a sports fields?
14. What are the school fees – do parents pay?
15. What happens when parents can't pay?
16. Is absenteeism high – specific times of year – agric/girls – housework?
17. Are adolescent pregnancies common?

18. What is the male/female ratio?
19. What is the average distance pupils travel?
20. Are there boarding facilities?
21. Where is the nearest primary/secondary school?
22. How many pupils go yearly onto secondary/tertiary education?
23. What is general attitude of parents regarding education?
24. What are most common diseases amongst pupils?
25. Are there cases of pupils being undernourished - Is there a distinction between children of miners and others?
26. What are general problems experienced by the school?
27. What are general problems of children/teachers?

**L. Medical Facilities**

1. When did clinic originate?
2. Who does it cater for?
3. Where are most patients from?
4. Are medicines subsidised?
5. How many rooms does the clinic have/
6. Does clinic have maternity ward?
7. Does it have an emergency service?
8. How many doctors, nurses and staff?
9. Can patients stay overnight - Number of beds?
10. How many day patients on average (week/month)?
11. Most common cases?
12. How many in patients (week/month)?
13. Most common cases?
14. Male/female/children patient ration?
15. Are mining accidents frequently reported?
16. Are miners – formal/informal differentiated in community?
17. How many births per month?
18. How many deaths per month?
19. Most frequent causes of death?
20. Is there a mobile clinic service?
21. Where is the nearest hospital?

22. Do you have electricity/water?
  23. Number of toilets/latrines?
  24. Where and how often do you get medicine?
  25. Do you supply food to the destitute?
  26. Main problems of clinic?
  27. Main problems of area?
  28. Relationship between traditional and modern medicine in area?
  29. Problem with STDs – HIV/Aids?
  30. Are there a lot of single mothers? General attitude towards contraception?
  31. Do you have hygiene awareness/family planning/Aids awareness Programmes?
-

## Questionnaire 6: SAWIMA

1. How long has the organisation existed?
2. How many members do you have?
3. Have the numbers increased/decreased recently – reasons?
4. Are all your members currently involved in mining activities?
  - Where are they mining? / What are they mining?
5. Number of teams - do women work in teams/associations?
6. What does membership entail - Costs/Benefits.
7. Does SAWIMA receive support/assistance – in what way and from whom?
  - What are the successes of SAWIMA?
  - What are its current shortcomings?
  - What is required for their success?
8. Do you think that sufficient communication exists between SAWIMA members?
  - Is there communication between the different provincial organisations?
  - Is there communication between government structures?
9. What is the role of women in mining?
  - How are they treated/perceived by male miners?
  - Does competition exist between male miners and women?
  - Is there a sense of community amongst miners?
10. Do you think that the current legal requirements in terms of mining are fair?
  - Do you think that the average miner is fully aware of the meaning of these requirements?
11. How do you see the future of small-scale mining?
  - Do you think that there is a sustainable future for small-scale diamond mining?
  - Do you think women have a greater role to play in this sector?
  - Do you think that small-scale mining has changed over the past decade?
  - Do you think that the Minerals Development Bill will be to the advantage of the small-scale mining sector? In what way?

## **APPENDIX C: KEY ROLEPLAYERS AND I&APS**

### **1. NORTH WEST PROVINCE**

#### **1.1 Welverdiend**

- Mr Henry Austin - Small-scale miner
- Mr Dintwe - Welverdiend Primary School Principal
- Mr Smuts Du Toit – Small-scale miner
- Mr Brian Hitchings – Small-scale miner
- Mr Lefu Lefuma – Community Trust
- Mr Dave Macquire - Small-scale miner
- Mrs Maria Maimane – Small-scale miner
- Mr BA Makgoro – Welverdiend Headman
- Mrs Lizzy Mashaba ('Mamashaba') – Small-scale miner and DME mining representative
- Mr Paulus Matoka – Small-scale miner
- Ms Angelina Matlamelle – Small-scale miner
- Mrs Johanna Matoko – Community Trust
- Mr Petrus Mohlaudi – Small-scale miner
- Mr John Mokgoro – Poultry Project
- Mrs Anna Motgatle – School governing body
- Mr John Ntetha – Small-scale miner
- Mr Shaquat – Small-scale miner
- Mrs Gladys Segone – Community Trust / Small-scale miner
- Mr Ishmael Sehume – Paralegal Association
- Mr Solly Seketele – Water Committee
- Mrs Mabel Tebesse – Community Trust / Small-scale miner
- Mr Danie Roux – Small-scale miner
- Mr Theo Roux – Small-scale miner
- Mr Gideon van Wyk – Mintek Welverdiend Pilot project
- Mr Johnny van Wyk – Small-scale miner
- Mr Marius van Rensburg – Small-scale miner

#### **1.2 Bakerville**

- Mr Hendrik Bonsile Loane - Small-scale miner

- Ms Rhonda De Swart – Small-scale miner
- Mr Hendrik Licht – Small-scale miner
- Mr Attie Lummis – Small-scale miner
- Mr David Mafulako – Small-scale miner
- Mr Samuel Thlotleng – Small-scale miner
- Mr David Mendell – Small-scale miner
- Mr Nick Mendell – Bakerville community headman
- Mr Samuel Moshemane – Small-scale miner
- Mr Gawie Nel – Small-scale miner
- Mr Piet Netawa – Small-scale miner
- Mr Partick Swart – Small-scale miner
- Mrs Gladys Stone – Small-scale miner
- Mrs Liesbeth Tlholatleng – Community entrepreneur
- Mr Paul Tlholathleng – Small-scale miner

### 1.3 Schweizer-Reneke – Kameelkuil

- Mr Joba Akkers – Small-scale miner
- Mr Gerard Badenhorst – Small-scale miner
- Ms Lydia Kealapa – Small-scale miner
- Mrs Johanna Ndaba – Small-scale miner
- Ms Beauty Ndaba – Small-scale miner
- Mr Piet Ngamole – Small-scale miner
- Mr Jerry Tata – Small-scale miner
- Mr John Taunyane – Small-scale miner
- Mrs Josephine Puthegay – Small-scale miner
- Mr Georgio Rasello - Small-scale miner
- Mr John Selomedi – Small-scale miner
- Mr Johnny Van Wyk – Small-scale miner
- Mr Piet Van Wyk – Small-scale miner

#### **1.4 Bloemhof**

- Mr G. Dunhin – Small-scale miner
- Mr Franscois Du Toit – Small-scale miner
- Mr H.J. Du Toit – Small-scale miner
- Mr Gabriel Mokgable – Small-scale miner
- Mr Joseph Moremi - Small-scale miner
- Mr Klaas Saaiman - Small-scale miner
- Mr C.J. Sneyders – Small-scale miner
- Mr Johan Sneyders – Small-scale miner
- Mr Roelf van Vuuren – Small-scale miner
- Mr Dawie Viljoen – Small-scale miner
- Mr Wynand Visser – Small-scale miner
- Mr Willem Wouter – Small-scale miner

#### **1.5 Wolmaranstad**

- Mr Richard Bond – Diamond buyer
- Mr Keith – Diamond buyer
- Mr Phillip Niehaus – Diamond buyer
- Mr Michael Stander – Diamond buyer

#### **1.6 Department of Minerals and Energy - Klerksdorp**

- Mrs R. Coetzer – Secretary
- Mr Pat Connolly – Environmental Mine Rehabilitation
- Mr Cecil Khosa – Environmental Mine Rehabilitation
- Mr Koos Komane – Director
- Ms Porscha Namapula - Minerals laws
- Mr Abe Papane – Mineral laws
- Mr Levi Rapo – Mineral Laws
- Mrs Elize Strydom – Mineral Laws
- Mr Pieter Swart – Deputy Director

## 1.7 Other

- Mrs Coetzee – Schweizer-Reneke Municipality
- Mrs Riani De Wet - Klerksdorp Municipality
- Liaison Officer - Klerksdorp Municipality -
- Mrs Annemarie Swanepoel – Lichtenburg Info Centre
- Telephonic interview with Mrs Lucy Ngwabeni – North West Province  
SAWIMA chairperson
- Mr Wessel van Heerden – Office of the town clerk

## 2. Northern Cape

### 2.1 Barkly West

- Mr Alwin – Ex-marine diamond miner
- Mrs A. Bloem BWBSMA
- Dr Burger Barkly-Med
- Mr Cloete BWBSMA
- Mrs Daisy Damon – SAWIMA National Chairperson and  
chairperson of the Northern Cape and small-scale miner
- Mr Tommy Darson – Small-scale miner
- Mrs T. Du Preez Barkly West Municipality Information  
Office
- Mrs Leeuw - BWBSMA
- Mr J. Leeuw - BWBSMA
- Mr Madupe - BWBSMA
- Mr J. Modjana - BWBSMA
- Mrs V. Olifant - BWBSMA
- Mr I. Plaatjies - BWBSMA - President
- Mr S. Swarts - Dumpco Mining Trust
- Mr I. Tsiholo - BWBSMA - Treasurer
- Mr A. Visser - BWBSMA - Assistant Secretary
- Mr D. van Rooyen - BWBSMA
- Sister Moshounyana - Barkly West Hospital
- Sisters Elizabeth and Margaret - Barkly West Hospital

## **2.2 Longlands**

- Mr B. Andrewy - Small-scale miner
- Mr C. Araujo - Small-scale miner
- Mr Cornelius - Shop owner
- Mr S. Cronje - Small-scale miner
- Mr Joey Damona - Small-scale miner
- Mrs V. Dlamini - Small-scale miner
- Mr J. Dlamini - Small-scale miner
- Mrs E. Mali - Small-scale miner
- Mr Frans Matjubie - Small-scale miner
- Mr P. Mogalagadi - Small-scale miner
- Mr S. Oleng - Small-scale miner
- Mr G. Raditshela - Small-scale miner
- Mr B. White - Councillor, Teacher and LDF Member

## **2.3 Gong Gong**

- Mr Coetzee - Small-scale miner
- Mr Daniels - Local Development Forum
- Mrs E. Daniels - Small-scale miner
- Mr P. Du Ploog - Local Development Forum -
- Mrs M. Du Preez - Land Claim Committee
- Mrs T. Du Preez - Small-scale miner
- Mr I. Jacobs - Local Development Forum
- Mr E.J. Keeble - Small-scale miner
- Mrs L. Louwe - Local Development Forum
- Magdalena - Sonskyn Community Creche
- Mr J. Mabhelani - Land Claim & Chairman Civics Association
- Mr Joshua Moitze - Small-scale miner
- Mrs R. Murdocks - Small-scale miner
- Mrs Nomsa - SANCO
- Mrs M. Roro - Small-scale miner

- Mr Ross Small-scale miner
- Mr Seekoei - Small-scale miner
- Mrs Y. Sneyders - Local Development Forum
- Mr Van Wyk - Small-scale miner
- Sister E. Weideman - Gong Gong Clinic
- Mr W. P. Williams - Small-scale miner

#### 2.4 Government departments

- Ms C. Du Plesis Permit Officer, DME Kimberly
- Mr S. Huntley Economist, DME Kimberly
- Mr J. Jansen Local Government and Housing
- Mr G. Josephs Economic Affairs
- Mr Koen Nature Conservation and Environment
- Mr L. Selekane Director of DME - Kimberly
- Ms M. Tenyane Rehabilitation Officer, DME - Kimberly
- Mr B. Van Lent Vaalbos National Park
- Mr H. Van Rensburg Deputy-director, DME - Kimberley
- Mr L. Van Rooyen Head of Parks Board

#### 2.5 Other

- The Africana Library personnel
- Mr T. Botha - South African Diamond Board
- Mr P. Beaumondt - Archaeologist, McGregor Museum
- Ms Coetzee - SABC Kimberley
- Diamond Cutting Factory<sup>1</sup>
- Mr M. Goliath - Small Miners Trust, Kimberley
- Mr H. Labuschagne - Kimberley Municipality
- Mr D. Morris - Archaeologist, Mc Gregor Museum
- Mr D. Potgieter - Diamond Tours Ltd
- Mr B. Roodt - De Beers, Kimberley
- Mr S. Swarts - Managing Trustee – Dumpco Trust
- Mr D. van Wyk - Small-scale miner – Waldecksplant

<sup>1</sup> The respondent of the diamond cutting works wished to remain anonymous.