

**An assessment of the potential socio-economic impact of  
the future closure of DBNM's diamond mines in  
Namaqualand.**

**Proponent: De Beers Consolidated Mines: Namaqualand Division.**

**Report by:           Melanie Gosling**

A project submitted in partial fulfilment for the Master of Philosophy degree in the Department of Environmental and Geographical Studies, University of Cape Town.

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## EXECUTIVE SUMMARY

### 1. PURPOSE OF THIS REPORT

- To identify and assess the socio-economic impacts of mine closure.
- To recommend measures which would mitigate the negative impacts.

### 2. TERMS OF REFERENCE

De Beers Consolidated Mines, Namaqualand Division (DBNM) anticipate that the financially viable diamond reserves at their mines on the West Coast would be depleted by 2002, resulting in closure of the mine. DBNM commissioned the Environmental Evaluation Unit (EEU) of the University of Cape Town to assess the social and economic impacts of future mine closure and to recommend measures to mitigate the negative impacts. The aim is to assist DBNM management in future planning. Baseline data were compiled in a separate document: NM2005: Impact Assessment: Baseline Information Report. Using that data, this report identifies and assesses the socio-economic impacts of mine closure on DBNM employees, and on the two regions from where most employees originate, Namaqualand and the Herschel/Sterkspruit district of Transkei (Fig 2).

Integrated environmental management procedures and social impact assessment methods were followed in the assessment.

### 3. AFFECTED ENVIRONMENT

Namaqualand is a remote, underdeveloped arid region, with poor transport and communication links and a low population (60,000) with low education levels. Mining forms the region's economic base, employing 41% of the economically active population.

The Herschel/Sterkspruit region, Transkei, borders Lesotho, with a population of 350,000. Infrastructure and services are weak. Migrant labour wages are the basic form of income.

#### **4. MAJOR SOCIO-ECONOMIC IMPACTS OF MINE CLOSURE**

- Approximately 3,000 DBNM employees would be retrenched with mine closure in 2002, which is 33% of the total number of employees in Namaqualand's mining industry and 13% of the region's total economically active population.
- Secondary impacts would cause further retrenchments in other regional sectors, increasing the total percentage of retrenchments to 15%.
- Unemployment of retrenched workers is likely to be long-term because of the low labour absorption of the formal sector; particularly for DBNM employees from Namaqualand (63% of DBNM's total workforce) and Transkei (19%), who have low levels of education and skills.
- The major impacts on DBNM employees would be loss of income, loss of medical benefits and loss of mine housing. Secondary impacts would be inability to support dependants and a lowering of the quality of life.
- These impacts would be most severe on DBNM employees from Namaqualand and Transkei, largely because of their low socio-economic status, and their high number of dependants (average of eight for Transkei employees).
- A total of 6,219 dependants of DBNM employees would lose their only source of financial support with mine closure. A further 2,556 people, who are partially dependent on DBNM employees, would have their financial support substantially reduced.

- DBNM is the single biggest business activity in Namaqualand, constituting 32% of regional turnover. As a result, 93% of businesses in Springbok and 74% of businesses in the rest of Namaqualand would be negatively affected by mine closure.
- In Springbok, the loss of revenue from loss of DBNM's direct purchasing would be approximately R55.9 million; and the loss of DBNM employees' spending, approximately R19.3 million. This represents 15.7% of Springbok's turnover.
- The sectors in Springbok which would be most severely affected by loss of DBNM's direct purchasing are the mining sector (R31.5 million a year); construction sector (R5.1 million); transport industry (R6.8 million) and general suppliers (R1.4 million).
- The sectors in Springbok which would be most severely affected by loss of DBNM employees' spending are general suppliers (R6.6 million a year); clothing and furniture suppliers (R5.2 million); transport industry (R5.1 million) and construction sector (R1.4 million).
- Namaqualand's Regional Services Council would lose 30% of its total fees with closure of DBNM, which is approximately R735,000.

This would have a negative effect on Namaqualand's rural areas, where the RSC spends most of its funds on basic infrastructural needs such as water, sanitation and roads.

- Unemployment in Namaqualand and Herschel/Sterkspruit communities with a high retrenchment rate, is likely to lead to:
  - increased social pathology ( particularly crime, alcohol and drug abuse);

- lowering of education levels as former employees are unable to pay for dependants' education, and as older children are forced to leave school to seek work to supplement household income;
- lowering of health levels as a result of loss of medical benefits and lack of income to pay for health services.

## **5. RECOMMENDATIONS**

**It is recommended that DBNM:**

- attempts to find alternative employment for retrenched employees where possible, particularly in:
  - any commercial enterprise undertaken by DBNM in Namaqualand in the future;
  - transfers to sister companies;
- link retrenchment pay to years of service, thus rewarding long service and ensuring it is in the interests of employees to remain with the company;
- offer full pension at 55 years and early retirement with reduced benefits at 50 years to employees who have been with the company longer than 20 years;
- calculate pension to migrant workers on actual years of employment, not on the number of months worked in a year as is currently the case;
- improve the system of two-way communication between management and employees to ensure employees are kept informed about plans for mine closure and that management is kept informed about employee concerns and suggestions;

- establish a "2002 Working Group" of management and employees to plan the most advantageous closure strategy for both DBNM and employees. This group should consist of representatives of all levels of staff;
- assist employees to raise their education and skills by extending the company's adult education and training facilities to all staff;
- assist employees to save or invest by offering counselling and advice to all levels of staff;
- assist employees to obtain housing by making the company building loan more flexible;
- enable employees to increase their ultimate pension payout by increasing their contributions now.

**It is recommended that DBNM consider implementation of the following recommendations:**

- establish a Namaqualand Rural Development Fund to help finance development projects which have long-term implications;
- appoint a full-time co-ordinator of the fund, whose main tasks would be to:
  - liaise directly with regional authorities, community organisations and aid agencies to establish where development needs are greatest;
  - decide where to be financially supportive of existing development projects and where to be proactive and initiate the fund's own projects;
  - ensure that development projects are sustainable, environmentally sound and orientated to self-help so that the fund could withdraw its assistance in time;

- that the communities of Steinkopf, Komaggas, Buffelsrivier, Hondeklipbaai and Lekkersing, where a high ratio of DBNM employees to households exists, be the focus of development projects;
- fund an agricultural educational programme in the Rural Coloured Areas aimed at improving veld management and breeds;
- begin discussions with Rural Coloured Areas of Komaggas and Steinkopf on the land ownership issue, which aim at a negotiated solution such as joint usage of the land governed by a sound environmental management policy;
- provide financial support to development programmes in the Herschel/ Sterkspruit district of the Transkei, where the majority of DBNM's migrant workers live;

### **Recommendations to DBNM Employees**

During the estimated ten years before mine closure, it is recommended that DBNM employees:

- take advantage of DBNM's current training courses to increase their skills;
- make financial preparation for retrenchment by saving, investing or obtaining insurance policies which would mature by the time of mine closure;
- encourage their children to obtain some form of qualification such as a trade;
- make use of DBNM's home building loan to ensure they have adequate housing before mine closure;

- keep dependants and communities informed about plans for mine closure;
- focus on the future and plan for the era after retrenchment.

This concludes the executive summary.

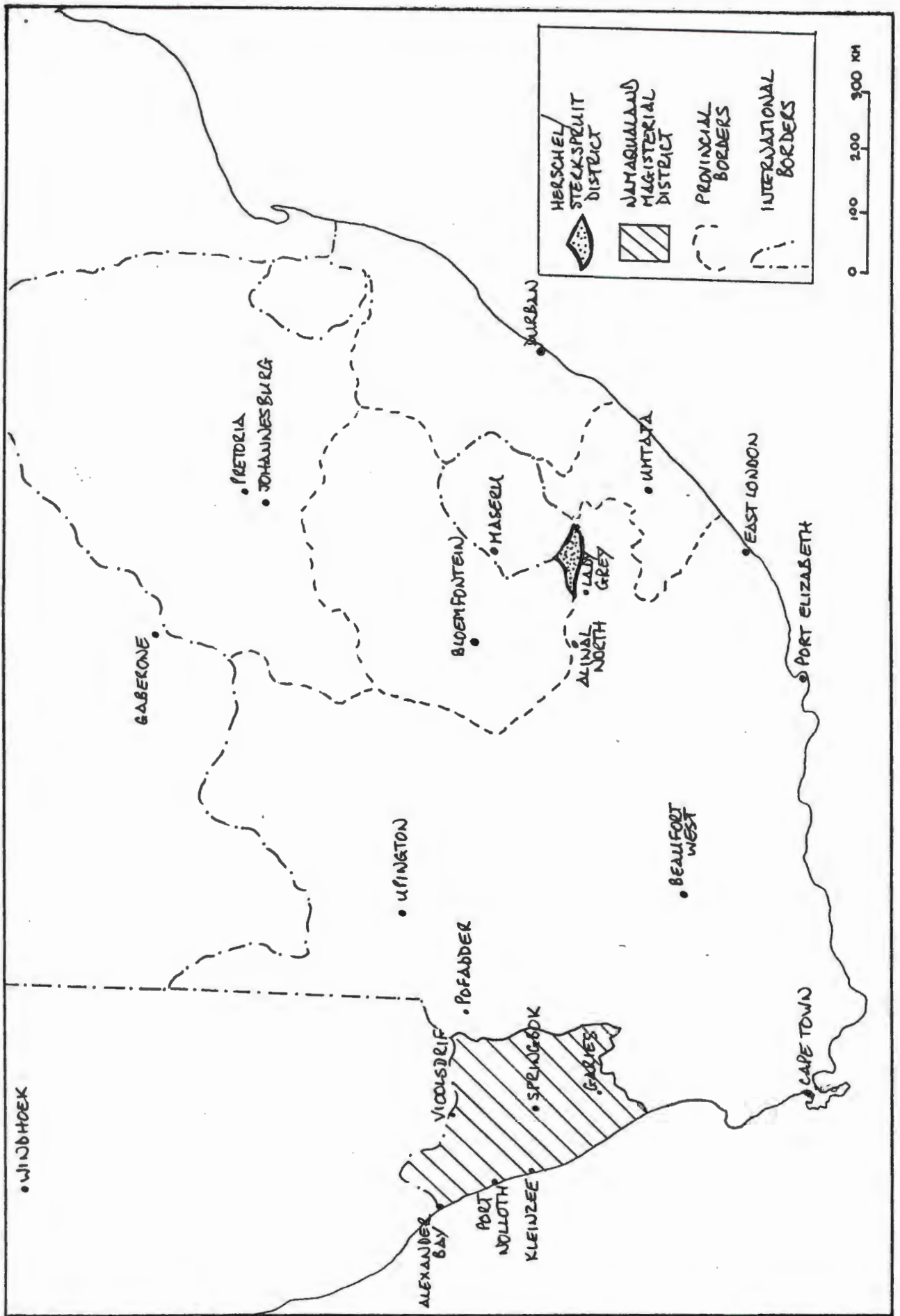


Figure 2.: The relative positions of Namaqualand magisterial district and the Herschel/Sterkspruit district, Transkei

# Chapter One

## INTRODUCTION

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# **Chapter 1 INTRODUCTION**

## **1.1 PURPOSE OF THIS REPORT**

The purpose of this report is twofold:

- To identify and assess the socio-economic impacts of mine closure;
- To recommend measures which would mitigate the negative impacts of mine closure.

The ultimate purpose of this report is to enable decision-makers to make more socially responsible decisions. Although it may generate some new knowledge about the people who would be affected by the project action - mine closure - this report is not the result of a research process in the strict definition. No formal hypotheses were posed to see if they could find support in the data. The immediate goal of this report, as with all social impact assessment, is best decision and management, rather than the generation of new knowledge (Taylor et al, 1990).

## **1.2 TERMS OF REFERENCE**

De Beers Namaqualand Mines (DBNM) anticipate that the financially viable diamond reserves at the company's mines on the West Coast will be depleted by the year 2002. This would result in the closure of DBNM's Namaqualand mines by early next century. As a result, the company has commissioned the Environmental Evaluation Unit (EEU) of the University of Cape Town to assess the social and economic impact of mine closure at both the local and regional scale, and to recommend measures to mitigate the negative impacts. The aim is to assist management in future planning. A secondary aim is to check the efficacy of the approach in this assessment so that it can be reapplied, with modifications if necessary, closer to the time of mine closure.

## **1.3 APPROACH**

### **1.3.1 Approach to the Baseline Information Report**

Integrated Environmental Management procedures were generally followed in the collection of baseline data, which was carried out by a group of eight researchers who worked as a team.

The first stage involved proposal generation, followed by stage two: assessment. Screening, the first step in the assessment stage to decide on the level of assessment, was not carried out formally. However, the level of investigation that was proposed in the planning of the study, was commensurate with a class 1 assessment.

Step 2 of the assessment stage, conducting an appropriate investigation, was then carried out. Data were obtained from literature, interviews and meetings on the following: history of Namaqualand; statistics on the socio-economic status and trends of the Namaqualand population; Namaqualand's physical infrastructure; land use in the regions; economic characteristics of the region; the nature of DBNM's mining operations; project actions; DBNM employees; groups of people likely to be affected by the project action. A consultant was appointed to compile baseline data on the Herschel/Sterkspruit district.

Scoping procedures, the third step in the assessment stage, were then followed in order to:

- involve a wide range of interested and affected parties, including the relevant authorities;
- identify the significant issues to be examined in the socio-economic assessment;
- facilitate the assessment process, thereby saving time, money and resources.

Scoping was done initially by letter; followed by discussions with DBNM management, the relevant authorities and other interest groups; public meetings with affected communities; controlled questionnaires with DBNM employees and surveys of businesses in the region.

Questionnaires and surveys were analysed by the team and compiled with the rest of the data into a single document entitled: NM2005 Impact Assessment: Baseline Information Report. The data in the baseline report consist primarily of:

- the current social, economic and land use characteristics of Namaqualand;
- the economic effects of mine closure locally and in the region;
- the social effects of mine closure on DBNM employees and affected communities in Namaqualand and the Transkei.

### **1.3.2 Approach to this Report**

Using the data contained in the Baseline Information Report, this report identifies and assesses the socio-economic impact of mine closure.

Whereas the Baseline Information Report was compiled by a team of researchers, this report is an individual interpretation of the data and compiled by only one of the eight researchers.

The first step in compiling this report was to identify the major socio-economic impacts of mine closure from the broad range of issues and concerns raised and recorded in the baseline report. Details of this procedure are contained in chapter 2, which describes the methods used in this report.

Impacts were then divided into those which affected DBNM employees and those which affected the two regions: Namaqualand and the Herschel/Sterkspruit district in

the Transkei, where the majority of DBNM's migrant workers live. These were described and assessed in chapter 3, according to criteria which are laid out in chapter 2.

Mitigatory measures were dealt with in a separate section, chapter 4, rather than at the end of each impact as suggested in Fuggle and Preston *et al* (1992). This was largely because mitigatory measures involved broad suggestions such as the creation of alternative job opportunities, rather than specifics, and because one suggestion could apply to several impacts.

The report ends with conclusions in chapter 5, recommendations to DBNM and other groups in chapter 6, and a review of the process used in this impact assessment in chapter 7.

#### **1.4 ASSUMPTIONS AND LIMITATIONS**

For the purposes of this report, the following assumptions have been made:

- That the reader has read and is familiar with the Baseline Information Report. Data contained in that report will be repeated only where it is essential.
- That the DBNM employee profile at the time of closure, or close to the time of closure, would be similar to the existing employee profile as regards the number of employees, their ages, education, skills, relative income levels etc. The exception would be employees from the Transkei. As DBNM has discontinued their policy of recruitment of labour from the Transkei, the age profile of employees from the Transkei would be 10 years older at the time of mine closure. Of the 700 Transkei employees, approximately 35% would be over 60 years and therefore on pension. Thus the total number of employees in 2002 would be reduced to 455.

- That the results of this study would be followed up with a further impact assessment closer to the predicted time of mine closure, when more and better information about the nature of the project action is available.

Limitations to this study are:

- The EEU researchers had intended to canvass opinion and concerns of Springbok residents through the media and a public meeting. Residents were regarded as an affected community because of extensive business connections with the mine. However, because of the sensitive political climate in South Africa at the time as a result of the pending referendum (March, 1992), DBNM instructed the researchers not to do so. Thus the concerns of the Springbok public, an important affected party, are not included in this study.
- One of the aims of the scoping procedure - to provide the proponent, authorities and interested and affected parties with an opportunity to exchange information - was not realised, as DBNM stipulated that the study be restricted to collecting and interpreting data, not disseminating information.
- Making accurate socio-economic predictions a decade away is particularly difficult at this point in South African history. National constitutional negotiations, involving people who have been denied political power for generations, are currently underway and are likely to result in a radical change in the system of power and administration in this country. The future political, social and economic scenarios are uncertain and predictions of impacts and suggestions for mitigation must be seen in this light.

This concludes assumptions and limitations. The following section contains a description of the affected environments.

## 1.5 DESCRIPTION OF AFFECTED ENVIRONMENTS

Details of the affected environments are contained in the Baseline Information Report. However, the major characteristics of the physical, economic and social environments of Namaqualand are summarised briefly in this report, in order to contextualise the environment in which the impacts of mine closure will occur. In addition, the major characteristics of the Herschel/Sterkspruit district in the Transkei, where the majority of DBNM's migrant workers live, are summarised here briefly.

### 1.5.1 Physical Environment

Namaqualand is a semi-desert area of 47,000 sq km in the north-west of South Africa (fig.1.5.1.). Vegetation is sparse and the terrain varies from sand to rugged mountainous landscapes. Temperatures fluctuate widely on a seasonal and daily basis and rainfall is low. In the east rain falls in summer (150mm - 300mm) and in the west erratic rainfalls occur mainly in winter (50 - 75mm). The major rivers are the Orange River in the north and the Buffels River which enters the sea near Kleinsee. The Orange River is the only one in the region which flows perennially. The availability of water varies sharply from area to area and limited water supplies are a major constraint on the region.

There are three major tarred roads, one of which is the N7 which runs from Cape Town through Namaqualand to Namibia. All other roads are dust and gravel and generally in poor condition. There is no rail service. There is a tarred airport at Springbok and civilian airports at Alexander Bay, Kleinsee, Koingnaas, Port Nolloth and Aggeneys.

DBNM's mining operation takes place in the narrow coastal zone (fig. 1.5.1.) where rainfall is low and moisture occurs mainly in the form of fogs and sea mist due to the cold Benguela current.

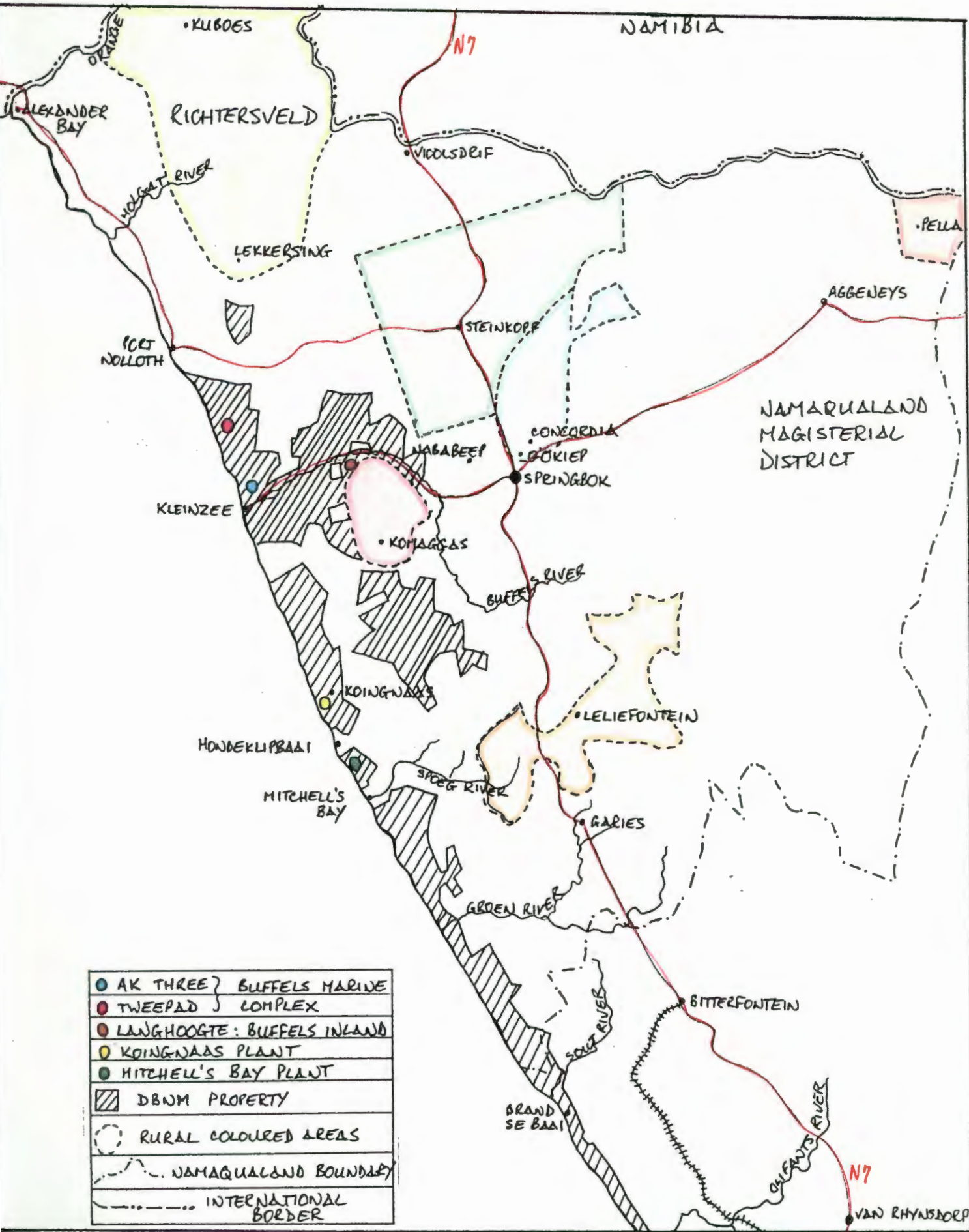


Figure 1.5.1:

The Namaqualand magisterial district

The remoteness of the area, poor transport and communication links, low population and arid climate are the basic causes for Namaqualand's underdevelopment and isolation (Dunne, 1988).

### **1.5.2 Economic Environment**

Approximately 41% of Namaqualand's economically active population are employed in the mining sector, which consists primarily of diamond and copper mining. Mining forms the economic base of the region and there is little economic diversification.

Small businesses are predominant among Namaqualand's non-mining activities. There is little diversification here too, with 58% being 'general dealerships'. There is little commercial activity in the rural areas, with 71% of businesses found in the urban areas.

Agricultural activity is limited by the climate, poor soils and irregular water supply, and consists mainly of small stock and mixed crop farming. Drought farming is a way of life and large areas are heavily overgrazed. Agriculture alone is insufficient to provide even a subsistence income for most families (Dunne, 1988).

The fishing industry, centred in Port Nolloth and Hondeklipbaai, is seasonal and offers irregular employment. The industry collapsed in the early 1970s and now employs about 10% of the economically active population (Dunne, 1988).

Dunne has classified Namaqualand as an economically "depressed/backward" area.

### **1.5.3 Social Environment**

Namaqualand is sparsely populated, with a total population of 60,084. Approximately 82% of Namaqualanders are coloured, 14% white, 4% black and 0.02% Asian. About 59% of the population is rural. The population is relatively young, with only 17% over the age of 45.

Education levels are low, with 24% of the population having no education at all and 57% with less than standard 6.

Apart from Springbok and the mining towns, most of Namaqualand is characterised by the "culture of poverty syndrome": low education levels, low income, low aspiration levels with locality-bound people who are reluctant to change. The standards of housing (Fig. 1.5.3.a & b) and health services are low, and recreational and educational facilities inadequate. Poverty related social problems include alcoholism, malnutrition and mental retardation (Dunne, 1988).

#### **1.5.4 Major characteristics of the Herschel/Sterkspruit district in the Transkei**

(A summary of Lund from Baseline Information Report)

A Chamber of Mines recruitment office is situated in the town of Sterkspruit, the major town in the Herschel/Sterkspruit district, which has historically drawn migrant workers from many of the 69 villages. The district, which spans 1,878 sq km, adjoins the southern Lesotho border in the north-east and the southern Orange Free State to the north-west (fig. 1.5.4.). It is physically isolated from the rest of the Transkei. The district falls within the summer rainfall region (700mm a year), and experiences dry, cold winters with severe frosts. Annual temperatures range from  $-5^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ .

**Population:** official estimates are 117,300. Lund (1992) estimates the population to be closer to 350,000. Most permanent residents are women, old men and children. Migrant labour remittances and old age pensions are the primary sources of income.

**Infrastructure:** Water supply is unreliable and inadequate, and villagers often have to walk up to four hours daily carrying water from streams and springs. Windmills, boreholes and handpumps are installed in some villages, but maintenance is poor.



(Photograph by Fiona Archer)

**Figure 1.5.3.a.: Namaqualand's Rural Coloured Areas are characterised by inadequate facilities and substandard housing**



(Photograph by Fiona Archer)

**Figure 1.5.3.b.: Traditional 'matjieshuise' in Namaqualand's Rural Coloured Areas are being replaced by substandard cement brick houses**

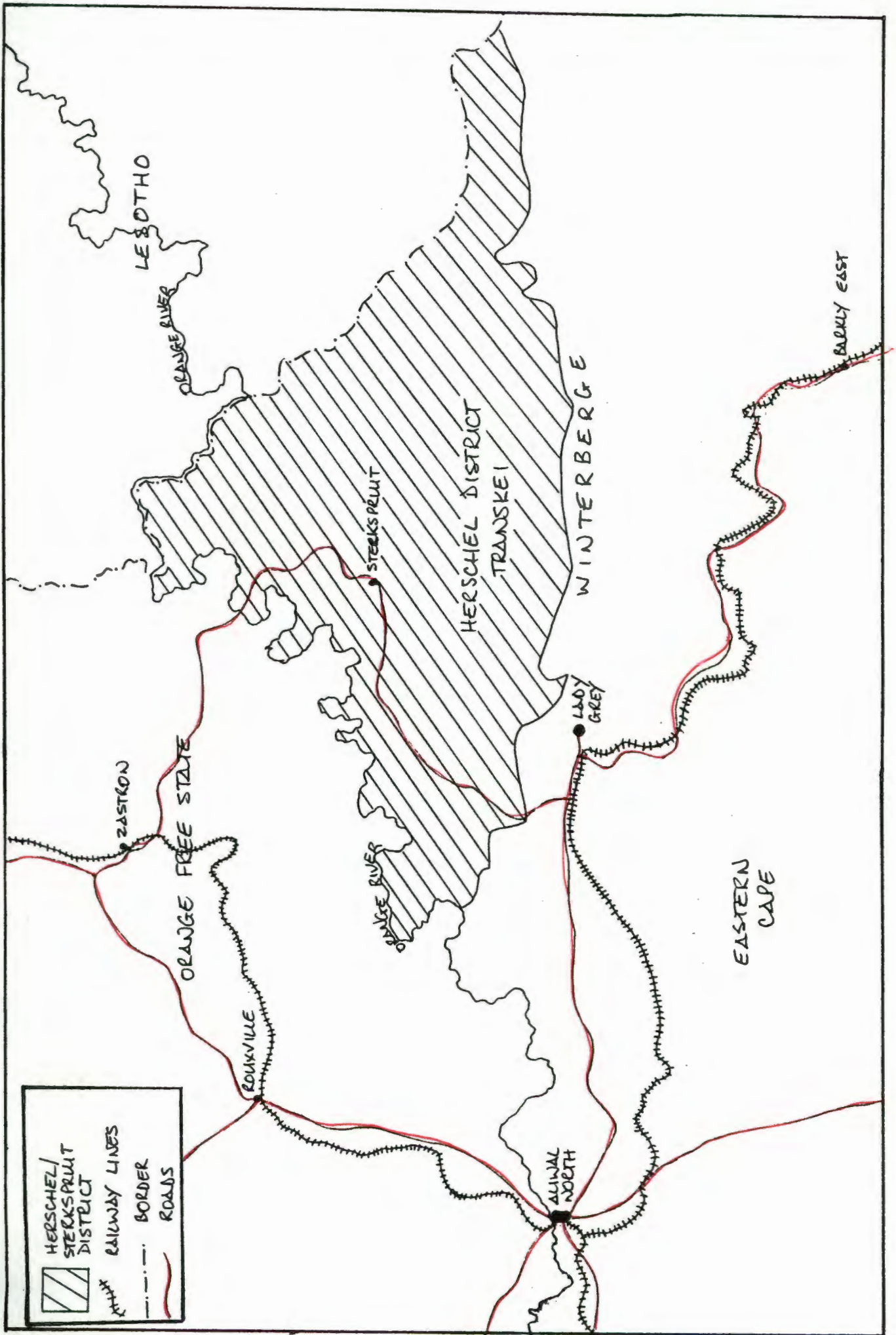


Figure 1.5.4:

The Herschel/Sterkspruit district, Transkei

Fuel is mainly wood, dung, paraffin and coal. Sterkspruit is linked to the Eskom electricity grid, and 18 villages within 1km of the town are connected up.

There are two district hospitals, village clinics and a mobile clinic. Education provisions are weak. There is one teachers' training college, nine high schools and about 110 primary schools. Adult illiteracy is about 60%.

**Land use:** Grazing lands are severely strained and erosion rates high. Agriculture is largely dryland cultivation of maize, wheat and sorghum for household consumption.

This concludes the description of the affected environments. The following section contains a description of DBNM employees.

## **1.6 DESCRIPTION OF DBNM EMPLOYEES**

In the Baseline Information Report, the 3,000 DBNM employees were divided into three categories - Transkei, Namaqualand and Mine groups. It is important for the decision-maker to understand why employees were separated into these groups in order that the validity of the groupings can be assessed. Consequently, this section describes the reasons for using these categories.

This is followed by a short profile of a typical individual from each category, in order to give the reader a more personalised understanding of the type of person within each group.

### **1.6.1 DBNM Employees: A microcosm of South Africa**

In the collection of baseline data it was clear that DBNM employees were not an homogenous group but came from vastly different socio-economic backgrounds. Because of this, impacts of mine closure, which are primarily concerned with the loss

of access to material resources, would vary according to the socio-economic status of employees. These socio-economic inequalities were largely due to the system of apartheid in South Africa, whereby an individual's access to power and resources was determined almost entirely by 'race'. However, the majority of EEU researchers were reluctant to divide employees according to race and instead categorised employees according to 'region', or more specifically, according to the place each employee considered 'home', which was usually where his family lived.

This may appear to be an arbitrary division and fairly meaningless as regards assessing impacts. However, the divisions become meaningful when one realises that the supposed 'regional' differences between employees in reality reflect the regional distribution of 'race' groups in the country, which until recently was determined by race as defined in legislation. Thus although it was not the intention to consider the race of employees in the study, the three 'regional' groups defined in fact represent three different 'race' groups:

1. Transkei group: (100% black; 18% of the study sample)
2. Namaqualand group: (100% coloured; 55% of the study sample)
3. Mine group: (approx. 80% white and 20% coloured; 27% of the study sample)

(The above percentages of the study sample reflect, approximately, the racial composition of DBNM employees as a whole.)

It could be argued that 'race' is an equally arbitrary reason for dividing people into categories, being a socio-political concept rather than a hard fact of nature, and would thus be an equally meaningless way of assessing impacts. However, the concept of 'race' must be seen in the historical context of South Africa.

Although the last apartheid laws were removed from the statute books last year, inequality between the races, particularly as regards political power and access to resources, still exists. The impacts of mine closure are essentially about loss of resources. Therefore, while not condoning the concept of categorising people according to 'race', it would be naive, and indeed inaccurate, to assume that the

impact of mine closure would be of the same magnitude and significance for all 'race' groups, who, like all South Africans, are the product of over 40 years of institutionalised inequality.

As this has a direct bearing on the magnitude and significance of impacts, for the purposes of this report, impacts were assessed within these categories.

The following section contains profiles of a typical DBNM employee from each category.

### **1.6.2 Profile of a DBNM Employee from each Category**

It should be noted that although the following profiles are interpretations of factual data collected from controlled questionnaires (Baseline Information Report), there is an element of subjectivity involved in describing a typical individual.

#### **1.6.2.1 A DBNM Employee from the Transkei Group: (a total of approximately 700 employees & 23% of DBNM's total workforce).**

**Age and income:** He is a 44-year-old, Xhosa-speaking married man who has worked at Namaqualand mines as a migrant labourer for 15 years. He is graded Paterson Band B1 and earns R1,250 a month, of which he sends R900 a month home to his family in the Transkei.

**Born:** He was born in a village in the Transkei near the town of Sterkspruit, in the Herschel/Sterkspruit district which borders the Orange Free State and Lesotho.

**Family:** His wife and six children live in the village where he was born near Sterkspruit. His wife and all the children were born in the same village where they are now living.

**Household:** Including himself, there are ten people in his household - wife, children, his brother's widow and his aged mother.

**Dependants:** He is the sole breadwinner for his wife, children and sister-in-law. Thus he supports himself and has eight dependants.

**Education:** He left school in Std 2 because his father could not afford to continue to pay for his tuition. Had he had the opportunity, he says he would have liked to become a school teacher. His wife has Std 3.

He has one child of pre-school age, three at junior school and one at high school. His eldest daughter left school in Std 6 and now helps her mother at home.

**Home town:** There are about 300 households in his village, which is one of 69 villages in the Herschel/Sterkspruit district. Most of the permanent inhabitants are women, children and old people. Like most villages in the Transkei, it is characterised by low standards of living, poverty, and limited development potential.

His home consists of three dwellings - a one-roomed cement brick dwelling with a corrugated iron roof, and two wattle and daub structures. There is no running water or electricity in the houses. Water is obtained from a communal handpump and when that does not work, from a stream an hour's walk away. For cooking, heating and lighting, his family use wood, paraffin and candles.

He keeps a few cattle and goats, but grazing is poor and the lands eroded. His wife grows pumpkins, mielies, cabbage and spinach, which are hand watered.

There is one primary school and one store in the village. A mobile clinic visits the village once a week.

His wife travels by taxi to Sterkspruit once a month to do the family shopping. Prices are higher than those in Johannesburg, for example, but cheaper than those at the village store, and the selection of goods wider.

**Born:** He was born in Komaggas, the largest town in Komaggas Rural Coloured Area, or coloured reserve, about 45km inland from Kleinsee (fig. 1.5.1).

**Family:** His wife and three children live in Komaggas in the house which he owns. His wife and children were all born in Komaggas.

**Household:** Including himself, there are six people in his household, as his youngest brother lives with them.

**Dependents:** He has four dependants - his wife and three children. His brother earns a salary of about R550 a month and contributes a small amount to the household expenses.

**Education:** He left school in Std 6 because his parents could no longer afford to keep him at school. He says he would have liked to continue his schooling and become a teacher. His wife left school in Std 7. He has one child of pre-school age and two at the local primary school in Komaggas. There is no high school.

**Home town:** The town of Komaggas has a population of about 2,650 and about 450 houses. Like most towns in the Rural Coloured Areas, it is characterised by poor infrastructure, low standards of living and high rates of unemployment. The area surrounding the town is undulating semi-desert, heavily overgrazed by goats and sheep.

He lives in a three-roomed house of cement bricks which he built himself. There is no running water, no electricity and no telephone. For cooking, heating and lighting the family use gas, paraffin and candles. His wife sometimes uses wood for cooking on an open fire outside in a type of traditional open kitchen.

There is one primary school, a pre-primary, one clinic, several stores, four churches, a garage, police station and the offices of the Management Board.

All the roads are dirt roads. Most of the houses are cement brick, but there are still a few traditional 'matjieshuise', although the mats have been largely replaced by sacking and plastic.

His wife does most of the grocery and other shopping in Springbok once a month. In between he buys groceries at Kleinzee where prices are lower than at Komaggas, and takes them home with him on the DBNM bus. He commutes daily on DBNM's subsidised buses.

**Where he spends most of his time:** He spends his working days at Kleinzee and nights and weekends at home in Komaggas. He sometimes plays soccer at Kleinzee's soccer grounds and plays rugby for the 'Gladiators' on the dirt field in Komaggas.

**Mine closure:** He does not believe the mine will close in ten years because, he says, there is still plenty of land available which DBNM can prospect.

**Alternative employment:** If he were retrenched he would definitely look for another job.

He believes it would be extremely difficult to find other employment because:

- unemployment in Namaqualand is already high
- he only has Std 6 and no special skills

He will try to find work in Namaqualand first, but will try as far afield as Cape Town if he has to. He is loath to leave Namaqualand as he says it is the only place he knows.

**Alternative land uses:** He believes the mine towns should be sold or leased to anyone who is interested in living there. The mine area should be rehabilitated so that it can return to its natural state. DBNM's farms should be returned to the people of the coloured reserves or they should be allowed to lease the land for grazing.

**Questions and comments:** His main question is what would the fate of employees be if the mine closed. His main comment is that if DBNM reduced its tempo of production, the life of the mine could be extended.

**1.6.2.3 A DBNM Employee from the Mine Group :(approximately 550 employees and 19% of DBNM's total workforce).**

**Age and income:** He is a 35-year-old bilingual (Afrikaans and English) married man who earns R4,000 a month. He is graded in Paterson Band C which makes him eligible to have his family live with him in mine accommodation. He has worked on the mine for seven years.

**Born:** He was born in Cape Town and worked for a while in Sasolburg and Port Elizabeth before working at the mine in Kleinzee.

**Family:** His wife and two children live with him in a mine house in Kleinzee. His wife and one of their children were born in Port Elizabeth; his other child was born in Kleinzee.

**Household:** Including himself, his household consists of four people.

**Dependants:** His dependants are his wife and his two children. However, his wife also works on the mine in an administrative position and earns R2,000 a month, and is thus not entirely financially dependant on him.

**Education:** He and his wife both have Std 10. After leaving school he completed a diploma in electrical engineering at the Cape Technikon and his wife completed a secretarial course. Both his children are in primary school at the local mine school in Kleinzee.

**Home town:** He and his wife now regard Kleinzee as their home. They live in a four-roomed house with a garden, running water, electricity and a telephone. They

own all the furniture but the mine owns the house. He does not pay for rent or services.

Kleinzee, built for mine staff exclusively, has 3,300 residents, and is like an average South African 'middle-income group' suburb. It has a shopping centre, two primary schools, one hospital and several recreational and sporting facilities.

He and his wife do all of their grocery shopping at the supermarket in Kleinzee which is cheaper than shops in Springbok. They visit Cape Town about four times a year where they also do shopping.

**Where he spends most of his time:** He spends most of his time in Kleinzee. He goes on holiday once a year with his family, usually to Port Elizabeth. He belongs to Kleinzee's angling club, and enjoys fishing and diving for crayfish.

**Mine closure:** He does not believe the mine will close in ten years. His reasons are that there is plenty of land still available to be prospected, and also because his colleagues, who have been at Kleinzee longer than he has, say they have heard the story about mine closure several times before, and it is still functioning fully. He thinks it is just a rumour.

**Alternative employment:** He will definitely look for another job if the mine does close, but does not think it will be easy to find work, largely because he will be 45 at the time of mine closure. He is prepared to go anywhere in South Africa to work. He believes his technical qualifications will be an advantage when looking for work.

**Questions and comments:** His main question is what will happen to DBNM employees when the mine closes. His main comments are suggestions regarding mitigation and the negative effect mine closure will have on Namaqualand.

This concludes the employee profile. The following section contains project actions.

## 1.7 PROJECT ACTIONS

Project actions are described in the Baseline Information Report, but are summarised here briefly in order to contextualise this assessment report.

DBNM's diamond mining operation consists of three different complexes (fig. 1.5.1), which interact and are interdependent. These are the Buffels Inland Complex (BIC), the Buffels Marine Complex (BMC) and the Koingnaas Complex (KNC). The size of the remaining ore deposits at each of these complexes is different. DBNM intends to exploit all viable ore deposits before mine closure.

### 1.7.1 Possible Scenarios for Mine Closure

DBNM has stated that closure of the three mining complexes could occur in several ways, but are unable to predict which they would adopt. These could include the following:

**A. Simultaneous closure of all three complexes.** This could be undertaken in two ways:

- sudden closure of the three complexes together
- gradual closure of the three complexes together

Sudden closure would involve full production to within days of closure with employees being retrenched en masse. It would involve adjusting the output rates of the three complexes to ensure that reserves were exhausted at all three complexes at the same time.

Gradual closure would involve reduced production of all three complexes over a period of time, with processing plants running on progressively shorter shifts and retrenchments occurring in a steady stream. Gradual closure would involve overheads being carried by an increasingly smaller production.

**B. Phased closure of the three complexes:** this would involve the three complexes closing at different stages. The order in which they close would be governed by the interdependencies of the complexes.

### **1.7.2 Mine Closure and Employees**

The closure of the DBNM operation would involve approximately 3,000 employees losing their jobs. Employees would receive retrenchment packages which DBNM has not yet decided on.

### **1.7.3 Mine Closure and Mining Towns/Infrastructure**

The towns of Kleinzee and Koingnaas, which were constructed by DBNM for their mining operations, would remain after closure. Details of the towns are contained in the baseline report. A summary follows:

Kleinzee, the larger town, is situated on the West Coast approximately 60 km south of Port Nolloth (fig. 1.5.1). It consists of 3,300 residents; 370 houses; 86 single quarters and 488 hostel beds. There is a shopping centre with two banks and a post office. There are two primary schools, one hospital, two recreation centres and several sports fields and club houses. One third of the town's water comes from boreholes and two-thirds from the Orange River pipeline at a cost of R2.50 per kilolitre. Sea water is used for the mining operation. Electricity is obtained from Upington and Kimberley which are linked to the national grid at a cost of 35c a kWh. Total running costs of Kleinzee are R7.9 million a year.

Koingnaas, the smaller town, is situated on the West Coast about 60 km south of Kleinzee (fig. 1.5.1). It consists of 864 residents, 122 houses, 122 single quarters and 648 hostel beds. There is one nursery school and one clinic. There is a shopping centre with a bank and a post office. There are two recreation centres and several sports fields and club houses. Water is obtained from boreholes. Electricity is obtained from Upington and Kimberley. Total running costs of Koingnaas are R3.6 million a year.

## Chapter Two

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## Chapter 2

# METHODS USED IN THIS REPORT

### 2.1 INTRODUCTION

Integrated Environmental Management (IEM) procedures were followed in the collection of baseline data which are compiled in the Baseline Information Report. The first stage involved proposal generation, followed by stage two: assessment. Step two of the assessment stage, conducting an appropriate investigation, was carried out, primarily to establish the project actions, the affected environment, the potential impacts, the groups of people most likely to be affected by the impacts and possible measures to mitigate the impacts. Step three of the assessment stage - determining the scope and focus of the assessment - was then implemented. The purpose of adopting scoping procedures was to:

- involve a wide range of interested and affected parties (I&APs), including the relevant authorities;
- identify the significant issues to be examined in the socio-economic assessment to ensure the assessment would be useful to the decision-maker and address the concerns of interested and affected parties;
- facilitate the assessment process, thereby saving time, money and resources (Sowman, in Fuggle and Preston *et al*, 1992).

The importance of using a combination of participation techniques in the scoping process is emphasised in IEM literature, as different techniques are more suitable at different stages of the assessment process and for different types of public. Scoping in the collection of baseline data was done initially by letter; followed by discussions with DBNM management, the relevant authorities and other interest groups; public meetings with affected communities; controlled questionnaires with DBNM employees, both to establish their socio-economic status and to include their concerns; and surveys of businesses in the region.

The above data was supplemented with relevant literature on social impact assessment (SIA); on the socio-economic status of the population and population trends in Namaqualand; on physical infrastructure; on land use in the region and on environmental characteristics.

Data were compiled in the Baseline Information Report.

Using data from the Baseline Information Report, impact identification, assessment, suggestions for mitigation and recommendations to the client were made and are contained in this report. Methods used to do so are described in this chapter.

## 2.2 IMPACT IDENTIFICATION

Environmental (social and biophysical) impact analysis is a process aimed at recognising causes and effects. A cause is any project action which has an effect on the environment, while the effects are the environmental impacts of the action (Fuggle and Rabie, 1983). Thus in identifying the socio-economic impact of mine closure it was necessary to establish the effects on the socio-economic environment caused by mine closure.

IEM theory holds that any method of impact identification should be:

- i) **comprehensive:** contain a full range of environmental impacts associated with the project action, including secondary or induced impacts.
- ii) **project specific:** that impacts from the project action be separated from environmental changes due to other factors, and from issues which are not an effect of the project action.
- iii) **precise:** that general categories of either project action (eg. 'mine closure') or impacts (eg. 'unemployment') be avoided; instead specific elements of the action (eg. 'retrenchment') and the effects (eg. 'loss of income', 'loss of medical benefits') should be identified and assessed.

- iv) **accurate:** that location, time and duration of impacts be identified. Time refers to the phase of the project actions which will cause the impact; duration to the time period over which the impacts will occur.
- v) **consistent:** free from analyst bias. (Fuggle and Rabie, 1983).

These five requirements were satisfied, as far as possible, in the method of impact identification used in this report. The method used in this report is described in the following section.

## **2.3 IMPACT IDENTIFICATION: METHOD USED IN THIS REPORT**

### **2.3.1 Step One:**

In order to be **comprehensive**, all the issues, concerns and perceived impacts raised by all interested and affected parties, which are compiled in the Baseline Information Report, were listed. To these were added those which were the result of the input-output economic analysis; results of the business survey and of the DBNM employee questionnaire, all of which are contained in the Baseline Information Report. In addition, potential impacts which were obtained from relevant literature on social impact assessment, and from the author's own brainstorming, were included (This list is contained in appendix A).

### **2.3.2 Step Two:**

Not every issue or concern raised by I&APs is necessarily an impact. In order to be **project specific**, each issue, concern and perceived impact was considered individually in the light of the following question: 'Is this an effect of mine closure?' Those to which the answer was 'yes' were considered to be potential impacts, and separated from the rest (This list is contained in appendix B).

(**Note:** Those to which the answer was 'no' were not discarded, but retained to be considered in the selection of criteria for assessing significance; in suggestions for mitigation and in recommendations to the client.)

### 2.3.3 Step Three:

In order to be **precise**, general categories of potential impacts were broken down into specific impacts. Thus "loss of jobs", for example, was broken down into specific resources which would be lost through retrenchment eg. "loss of income; loss of medical benefits; loss of mine housing".

However, this report then deviated from the requirement of 'precision', by grouping certain similar impacts into single categories. Thus 'increased crime rate', 'increased alcoholism', 'family problems' and 'drug abuse' were grouped under a single category of 'increased social pathology' and assessed as a single impact. Since the impacts that were treated in this way were difficult to quantify anyway, it was felt that little information would be lost in grouping them into categories. The advantages were that unnecessary repetition was avoided, and the reader would not lose the larger picture because of extensive detail which distracted without adding much information.

IEM theory requires that not only impacts, but project actions, be precise. However, specifying precise project actions, rather than the broad action of 'mine closure', was problematic. As indicated in section 1.7.1. the proponent was unable to predict accurately the precise nature of mine closure. The only project action which could be specified was retrenchment of 3,000 employees. Thus the broad project action of 'mine closure' was retained (This list is contained in appendix C).

### 2.3.4 Step Four:

In order to be **accurate**, the time, duration and location of impacts were identified as far as it was possible to do so.

**Time:** (ie. the phase of the project action which would cause the impact). The proponent was unable to specify whether mine closure of the three complexes would be simultaneous or phased (section 1.7.1). The only timing the client was able to give was that the expected life of the mine was a further 10 years. If phased closure meant some retrenchments were merely a year or 18 months earlier than the predicted 10 years, it is unlikely that this would

alter the significance ratings of impacts. However, if large numbers of people were retrenched in five years time, this would alter the significance rating. Since the chances of re-employment are low, retrenchment five years earlier would mean a loss of access to resources five years earlier.

For the purposes of this report the impacts of mine closure in 2002 were considered, rather than those of phased closure. However, it should be borne in mind that retrenchments much earlier in large numbers would exacerbate the negative impact of job loss.

**Duration:** Because the impacts under consideration are socio-economic, and because the socio-economic future of South Africa in 2002 is difficult to predict with accuracy due to current national constitutional negotiations, the duration of the impacts were similarly difficult to predict. As most impacts resulted from retrenchments compounded by unemployment, their duration would depend on such aspects as how much money a future government allocated, for example, to rural development or regional economic incentives, as well as to whether or not foreign investor confidence returned to this country. Thus the durations given can only be estimates, based on what economists have predicted for the immediate future.

**Location:** In describing the location of impacts, assessors frequently divide impacts into those which are local, regional and national. As regards 'national' impacts, the client stipulated that this impact assessment be restricted to the Namaqualand region only, and consequently the impact of mine closure on the rest of South Africa was not considered in the collection of baseline data. The exception was for the Herschel/Sterkspruit region in the Transkei, which was included because of the high number of DBNM employees who lived in this region.

'Local' socio-economic impacts are essentially those which affect DBNM employees only, as only DBNM employees live locally on the mines. These

were therefore listed under the heading of 'impacts on DBNM employees'. All other impacts were listed under the heading 'regional impacts' and were divided into those which affected the Namaqualand magisterial district and those which affected the Herschel/Sterkspruit region in the Transkei (This list is contained in appendix D).

### **2.3.5 Step Five:**

Not all effects of a project action arise from a cause directly related to the action. Effects, or impacts, which do arise from a cause directly related to the project action, are termed primary impacts. Secondary impacts are those effects on the biophysical and socio-economic environments which arise from a project action, but which are not initiated directly by that action. Their occurrence is defined by the interdependencies which exist within and between the two systems (Fuggle and Rabie, 1983). Thus the final step in impact identification was to divide impacts in those which were primary and secondary.

The final list of potential socio-economic impacts which resulted from the above procedure, is contained in the following section.

## **2.4. POTENTIAL SOCIO-ECONOMIC IMPACTS OF MINE CLOSURE**

Regional socio-economic impacts are those which are likely to effect change in the Namaqualand region and in the Herschel/Sterkspruit district as a result of closure of DBNM's diamond mine. Although social and economic impacts are not water-tight compartments in reality, for the purposes of assessing regional impacts, they were considered separately.

The literature refers to the difficulties of assessing change in a regional economy because:

- there is often a lack of substantial regional economic data;
- limits in current analytical techniques make the task of regional economic assessment difficult to advance beyond general description;
- little is known in a systematic way about small businesses and even less about rural small businesses (Kerr, 1990).

These problems were encountered by EEU researchers in the collection of baseline data. Consequently, the economic impacts identified can be described generally only.

Regional economic impacts are usually divided into primary and secondary impacts, in order to differentiate between the different sorts of regional changes. Primary economic impacts are those which are likely to arise as a result of the immediate requirements of a project (in this case the mine), which would include direct purchases by the project itself. The only primary economic impact identified was:

- loss of revenue to the region through loss of DBNM's direct purchasing.

Secondary economic impacts are those which are likely to arise from a decrease in production of goods and services which were formerly necessary to maintain and operate the project (in this case the mine). Induced economic impacts are those which arise from the decreased economic activity caused by decreased spending as a result of lowering of income earned directly or indirectly as a result of a project (Kerr, 1990). For the purposes of this report, secondary and induced economic impacts are grouped under one category. Those that were identified were:

- loss of revenue to the region through loss of DBNM's employees' spending;
- retrenchment of approximately 15% of Namaqualand's economically active population;
- negative impact of mine closure on small business;

- loss of 30% of total fees to Regional Services Council.

The regional social impacts identified for both Namaqualand and the Herschel/Sterkspruit districts were:

- increase in unemployment;
- lowering of the quality of life.

The final list of impacts identified was:

**Socio-economic impacts on DBNM employees:**

**Primary impacts on employees:**

- loss of income;
- loss of medical benefits;
- loss of mine housing.

**Secondary impacts on employees:**

- inability to support dependants;
- loss of quality of life.

**Regional impacts:**

**Economic impacts:**

**primary**

- loss of revenue to Namaqualand through loss of DBNM's direct purchasing.

**secondary**

- loss of revenue through loss of DBNM employees' spending;
- retrenchment of approximately 15% of Namaqualand's economically active population;
- negative effect on Namaqualand's small businesses;
- loss of 30% of total fees to the Regional Services Council.

**Social impacts: Namaqualand**

- increase in regional unemployment;
- lowering of the quality of life in affected communities.

**Social impacts: Transkei**

- increase in unemployment in Herschel/Sterkspruit district;
- lowering of the quality of life in the district.

Once the impacts had been identified, it was necessary to assess the significance of each. The following section deals with methods used to formulate criteria to assess significance.

## **2.5 FORMULATION OF CRITERIA FOR ASSESSING IMPACT SIGNIFICANCE**

### **2.5.1 Problems in Formulating Criteria**

IEM and SIA literature refer to the difficulties and problems of determining 'significance' in impact assessment.

To say an impact will be significant is to suggest that it will have, or is likely to have, considerable influence or effect on some aspect of human well-being. But this is bound to be a subjective judgement: there are no objective, verifiable thresholds beyond which an action becomes socially significant

(Council for the Environment, 1989).

Not only is determining 'significance' a subjective process, but deciding on 'human well-being' can be equally subjective.

Since decision criteria reflect basic values as to what ought to be happening in society...social well-being can be whatever people assume it to be

(Taylor et al, 1990).

Because of the subjectivity of the process, IEM theory requires that the criteria for determining significance, and the reasons for selecting those criteria, are clearly indicated and justified in the assessment report, in order that reviewers can assess their validity (Council for the Environment, 1989). Therefore the following section lists the criteria for significance used in this report and explains why they were selected.

### **2.5.2 Process Used to Formulate Criteria for Assessing Significance in this Report**

Relevant IEM and SIA literature was consulted, as well as impact assessment reports. The Council for the Environment (1989) states that both context and intensity ought to be considered when deciding what constitutes a significant impact.

'Context' has a spatial dimension (ie. an impact may be insignificant nationally, but significant locally) and a time dimension (ie. an impact may have insignificant short-term impacts, but significant long-term or cumulative impacts).

'Intensity' refers to the severity of the impact as judged either by some knowledgeable authority or by those who will bear the impact (Council for Environment, 1989).

To satisfy the time dimension, the duration of the impact was selected as a criterion for significance, with short-term, medium and long-term duration being recorded as low, medium or high significance. The spatial dimension was taken into account as the impacts were considered on a local and regional scale. In consideration of intensity, magnitude of impact was selected.

Fuggle (1989) states that the evaluation process must reflect the needs, aspirations and values of all persons to be affected by a project action, particularly in developing regions where the evaluations are carried out by those whose value systems may be different from most of the affected people. Thus a further criterion was formulated - 'affected party importance rating'. If the impact were regarded as important by those who were to bear the impact, then the significance was considered 'high' in this assessment.

An important criterion to be considered is the reversibility of the impact, or degree to which mitigatory measures can lessen the impact. An example is the case of the closure of the Beisa Mine in the Orange Free State in 1984, where over 5,000 employees were retrenched (Taylor, 1986). What was potentially a highly significant impact of job loss was avoided because of the ability of the mining sector to absorb approximately 50% of retrenched workers within three months of shutdown and 100% within seven months of shutdown. In this report, the lower the potential to mitigate, the more significant the impact was considered to be.

'Who' is affected by the impact is also an important consideration. Since the impacts of mine closure are essentially to do with loss of access to resources, the impact of loss of resources on those whose socio-economic status is already low, will be greater because:

- they have fewer resources to fall back on in the form of savings and other material goods;
- low socio-economic levels are usually associated with low levels of education and training which decreases the likelihood of finding alternative employment and regaining access to resources.

Thus the criterion 'affected party socio-economic status' was included in the significance rating. The lower the status, the higher the significance of the impact.

Therefore the criteria for determining significance in this report were:

- a) magnitude of impact;
- b) duration of impact;
- c) range of impact;
- d) affected party's importance rating of impact;
- e) potential to mitigate impact;
- f) affected party's socio-economic status.

The above criteria reflect consideration of the following aspects suggested in the IEM and SIA literature as necessary when formulating evaluation criteria:

- a) 'magnitude' considers intensity and size of impact;
- b) 'duration' gives time context;
- c) 'range' gives space context;
- d) 'I&AP importance rating' reflects values of persons to be affected;
- e) 'potential to mitigate' considers reversibility of impact;
- f) 'I&APs socio-economic status' considers the nature of the persons to be affected.

It was assumed that the criteria selected had equal weighting in the final assessment.

## 2.6 HOW CRITERIA ARE USED IN THE EVALUATION PROCESS

The significance of each impact was considered in terms of each of the above criteria, and evaluated as 'low', 'moderate' or 'high'. A system of points was allocated to each. For the first four criteria (ie. magnitude, duration, range and affected party's importance), 1, 2 or 3 points were allocated to evaluations of 'low', 'moderate' or 'high' respectively. For the last two criteria (ie. mitigation and socio-economic status), 3, 2 or 1 points were allocated to evaluations of 'low', 'moderate' or 'high' respectively. The number of points were then added up. The highest number of points an impact could be allocated was 18, and the lowest was 6. A final overall evaluation of the impact was then given, according to the table below. The table indicates the number of points and the corresponding evaluation.

<u>number of points</u>	<u>evaluation of impact</u>
6	minor
7 to 9	low
10 to 12	moderate
13 to 15	moderate to high
16 to 18	high

In evaluating of the impact of 'loss of quality of life', the criterion 'socio-economic status' was omitted. As quality of life is a relative concept, it was felt that the socio-economic status of the person affected would have no value as a means of assessing the significance of this impact. The point system was adjusted in evaluation of this impact to 6 points for 'minor', 9-11 for 'moderate', 12 & 13 for 'moderate to high' and 14 & 15 for 'high'.

This concludes methods used in the selection of criteria for determining significance.

## **2.7 CONSIDERATION OF IMPACTS ON DIFFERENT EMPLOYEE GROUPS**

Each impact on DBNM employees was assessed separately within each of the three employee groups: Transkei group, Namaqualand group and Mine group. As discussed in section 1.6 of the Introduction to this report, each group consists of employees from similar socio-economic backgrounds, thus the magnitude and significance of each impact is likely to be similar for employees within each group. Some impacts did not apply to all three groups.

## **2.8 COMPILING SUGGESTIONS FOR MITIGATION**

Once the impacts had been assessed, it was necessary in terms of IEM principles to suggest mitigatory measures which could alleviate or reduce the negative socio-economic impacts described. The aim of mitigation is to ensure the maximum social benefit is derived from an action, with the minimum social cost (Rickson, 1990).

According to IEM principles, mitigation should include consideration of the following:

- avoiding impacts by not undertaking certain actions;
- minimising impacts by limiting aspects of an action;

- rectifying impacts by rehabilitation or restoration of the affected environment;
- compensating for impacts by providing substitute resources or environments (Council for Environmental Quality, in Fuggle and Preston *et al*, 1992).

Because of the nature of the project action, which is mine closure as a result of the exhaustion of a finite resource, it is logical to assume that suggestions for mitigation would be concentrated in the last two categories listed above. However, rehabilitation of the natural environment was not included in the terms of reference for this impact assessment, and thus 'rectifying impacts by rehabilitation' was not included in the mitigatory suggestions. Thus mitigation in this assessment was concentrated in the last category, ie. 'compensation for impacts by providing substitute resources'.

Suggestions for mitigation were generated by the author, by DBNM employees in the controlled questionnaires, by affected Namaqualand communities during community meetings and by a wide range of other interested and affected parties in interviews and by letter. Those for the Transkei were generated by consultant Susan Lund (1992), and by the employee questionnaire.

IEM procedures require that mitigatory measures indicate the effectiveness and practicality of the measures, and that the time when they should be implemented be specified (Fuggle and Preston *et al*, 1992).

In order to indicate the practicality of the measures, ratings of the relative cost to DBNM in time, personnel and money accompanied each suggestion for mitigation, as well as the estimated ease or difficulty of implementation. It should be noted:

- that the ratings were estimations only;
- that they were not indications of whether the suggestions ought to be implemented or not, merely indications of the costs and practical problems likely to be involved.

The timing of implementing the measures was indicated where possible, although it was difficult to be precise because of the uncertainty of the timing of the project action.

## **2.9 WRITING THE CONCLUSION**

The conclusion is divided into two parts. Part A summarises the main findings of the impacts and Part B contains descriptions of what the lives of three typical DBNM employees are likely to be, one year after retrenchment.

Part B is impressionistic and not the type of writing normally found in impact assessments. The purpose of including it was to convey to the reader the impacts of mine closure in more personalised terms, in addition to statistics. It is intended as a follow-up to section 1.6.2 in chapter 1, which contains profiles of three typical employees before mine closure. Part B of the conclusion therefore completes the 'before' and 'after' picture. The three individuals described represent the three employee groups - Transkei, Namaqualand and Mine groups.

The descriptions are based on factual biographical and other data contained in the Baseline Information Report, gleaned mainly from the employee questionnaire. However, they are a subjective interpretation of this data, and should be seen as such.

## **2.10 WRITING THE RECOMMENDATIONS**

Drawing on the suggestions for mitigation, recommendations for action to alleviate the impacts of mine closure were drawn up, most of which were directed to DBNM. However, it was felt that it was essential that all players in Namaqualand who were likely to be affected by mine closure become actively involved in mitigatory measures, to ensure that the negative impact is minimised as far as is realistically possible. Therefore recommendations were made to the following groups:

- DBNM;

- DBNM employees;
- Regional Services Council and local authorities;
- local and regional businesses.

Recommendations to DBNM were divided into two categories: those that were considered essential for DBNM to adopt and those which were important for them to consider.

The IEM procedures which remained to be completed were:

- step four of the assessment stage: review of the draft document;
- stage three of IEM: decision;
- stage four of IEM: implementation.

It was recommended that DBNM complete the IEM process by carrying out the last step in the assessment stage, which is review of this draft report. It was recommended that this report be circulated among I&APs to provide an opportunity for their review and comment. Finally it was recommended that DBNM complete the decision and implementation stages of IEM, the former by deciding on which recommendations should be implemented; the latter by devising a practical procedure, such as a management plan, for ensuring the approved recommendations were implemented in a sound manner. It was recommended that the management plan include procedures for regularly monitoring and evaluating the efficacy of the mitigatory measures.

## Chapter Three

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## Chapter 3

# IMPACT ASSESSMENT

### 3.1 INTRODUCTION

The previous chapter dealt with:

- methods of impact identification;
- how the criteria for assessing significance were formulated;
- how the system of allocating numerical points to evaluations of 'low', 'moderate' and 'high' was formulated.

This chapter assesses the impacts identified in the previous chapter in the following order:

#### **Impacts on employees**

##### **Primary impacts:**

- loss of income
- loss of medical benefits
- loss of mine housing

##### **Secondary impacts:**

- inability to support dependants
- lowering of quality of life

**Regional impacts:** This consists of impacts on the Namaqualand magisterial district and on the Herschel/Sterkspruit district, Transkei.

Although economic and social impacts are interlinked in reality, for the purposes of assessing regional impacts in this report, they are dealt with separately, as follows:

**Economic impacts: Namaqualand region**

**Primary economic impacts:**

- loss of revenue through loss of DBNM's direct purchasing

**Secondary and induced economic impacts:**

- loss of revenue through loss of DBNM employees' spending
- retrenchment of approximately 15% of Namaqualand's economically active population
- negative effect of mine closure on small business
- loss of 30% of total fees to Regional Services Council

**Social impacts: Namaqualand region**

**Secondary social impacts:**

- increase in regional unemployment
- lowering of the quality of life in affected communities

**Regional impacts: Transkei**

**Secondary social impacts:**

- increase in unemployment in district
- lowering of the quality of life in the district

The assessment of impacts on employees follows. Not all of the above impacts necessarily apply to all employee groups.

## **3.2 IMPACTS ON EMPLOYEES**

### **3.2.1 Primary Impacts**

#### **3.2.1.2 Loss of Income**

##### **Who will be affected?**

- All DBNM employees
- DBNM employees' dependants
- Businesses and services in Namaqualand and Transkei
- Receiver of revenue
- Unemployment Insurance Fund
- The South African taxpayer (ultimately)

##### **Impact description**

Mine closure would result in all DBNM employees being retrenched, with one of the resulting impacts being loss of income. Loss of income would affect 100% of DBNM employees, which is 2950 people. This represents one third (33%) of all people employed by the mining industry in the Namaqualand region (a total of 8,753) and 13% of the economically active population in Namaqualand (22,086).

**Time of impact:** The impact would occur immediately the mine closed, which DBNM predicts to be 2002.

**Duration of impact:** As discussed in section 2.3.4., it is difficult at this point in South African history to predict with accuracy the duration of socio-economic impacts which would occur a decade away. However, an estimation would be that duration of loss of income would be long-term, as rapid re-employment is unlikely. The reasons are:

- current national unemployment rates, the most severe in the post-war period, are likely to increase as the rapid population growth is not being

met by equally sharp increases in employment (Bureau for Economic Research, 1992);

- the labour absorption of the formal sector nationally has declined from 97% in the 1960s to 73% in the 1970s to 22% in the early 1980s. This has dropped to 7% for the period 1985 to 1990 (Bureau for Economic Research, 1992).

**Range of impact:** The range of the impact extends throughout the Namaqualand region, as approximately 63% of DBNM employees come from towns and villages in the region. The impact extends to the Transkei where approximately 20% of DBNM employees live. 'Range' has an added dimension, ie. the number of dependants who would be affected by employees' loss of income and regional businesses, services, authorities. These aspects will be discussed in detail under secondary impacts.

The magnitude and significance of this impact will be dealt with in the following order: Transkei group, Mine Group and lastly Namaqualand group.

**A. Magnitude for Transkei group:** At the time of mine closure, 31% of the 700 Transkei employees would be on pension, leaving a total of 455 who would be retrenched in year 2002 (Baseline Information Report). All 455 would lose their only source of individual income. However, some obtain financial support from members of their household. In 36 Transkei employees' households (8%), one or more members contribute R300 or less to the household per month. As the average number of people in a household is 10, each member, including the former DBNM employee, would therefore have financial support of about R30 a person a month. A further 68 former DBNM employees (15%) would have some form of financial support from their household, which they were unable to quantify. The remainder, 351 former DBNM employees (77%), would have no other form of financial support from their households.

However, for six months after retrenchment, former DBNM employees could apply to receive monthly payments from the Unemployment Insurance Fund, up to a period of six months. As the average monthly income of a Transkei employee is R1,250, the average monthly payments for six months at 45% of his last monthly salary would be approximately R562 (Dept Manpower, pers. comm).

The employee would also receive his pension contribution.

**Summary (Transkei):**

- Approximately 455 DBNM employees from Transkei (100%) would lose their only source of long-term, individual income.
- Approximately 36 DBNM employees from Transkei (8%) would have about R30 a month financial support from members of their households.
- Approximately 68 DBNM employees from Transkei (15%) would have some financial assistance from their households, but are unable to say how much.
- All 455 would be eligible to receive approximately R562 a month from the government Unemployment Insurance Fund for a period not exceeding six months.
- All would be entitled to receive their contribution to the pension fund.

**Significance of impact: Transkei group**

The significance of this impact, as with all following impacts, is evaluated according to the following criteria, the formulation of which is described in section 2.5.2. and values attributed to each which is described in section 2.6. A brief description of each criterion in relation to the Transkei group follows, which is then summarised in a table.

The numerical points allocated to each evaluation of 'low', 'moderate' and 'high' is indicated in brackets next the evaluation.

- magnitude of impact
- duration of impact
- range of impact
- affected party's importance rating of impact
- potential to mitigate
- affected party's socio-economic status

**Magnitude:** loss of income affects the entire group of 455 which is therefore rated 'high'.

**Duration:** of impact is likely to be high as the chances of these people being re-employed rapidly is low for the reasons stated above (high unemployment; low ability of formal sector to absorb). Added to this, the average education level of Transkei employees is only Std 2, and at the time of mine closure their average age would be between 50 and 59 years. Both these factors add to the unlikelihood of rapid re-employment. In addition, 65% of Transkei employees stated in the questionnaire that they would not look for other work if they were retrenched as they believed their chances of obtaining jobs were so low. 89% said they believed it would be difficult to find work.

**Range:** is high as the impact extends over an entire magisterial district in Transkei of 1,800 sq.km and includes a large number of dependants (8 per employee)

**I&AP importance rating:** is high as the Transkei group rated loss of income as their major concern in the employee questionnaire.

**Potential to mitigate:** In considering potential to mitigate, the ability of reversal of the impact is considered (ie. being re-employed) and the ability of the impact to be lessened (ie. by DBNM absorbing employees elsewhere; giving a good

retrenchment package; creating jobs etc). It is possible that DBNM would put all 455 Transkei employees on pension, particularly since they are fairly old. However, potential to mitigate must be seen realistically, and it is unlikely that a profit-making organisation would adopt a welfare approach. As regards reversal, this is 'low' as re-employment prospects are low. However, mitigation will also depend on employees' ability to save during the next ten years, of increasing their level of skills with DBNM's training programme etc. Thus overall, considering possibilities which DBNM could put into practice to mitigate (eg. retrenchment package, possible job creation etc) plus the employees' ability to make provision for retrenchment, the rating of potential to mitigate is 'moderate'.

**I&AP socio-economic status:** is low, as this group has low education levels, low job skills, is in the lower income group, has large numbers of dependants, lives in an impoverished rural area with weak facilities and infrastructure. Thus, they have fewer material resources and services to fall back on when they lose their income, making the impact more severe.

**TABLE 3.2.1.2.a.: Evaluation of loss of income on Transkei employees**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP Rating			High (3)
To Mitigate		Moderate (2)	
I&AP Soc/economic status	Low (3)		

According to the system of point allocation described in section 2.6., the overall impact of loss of income on Transkei employees is 17 which is evaluated as 'high'.

**B. Magnitude of impact on Mine Group:** A total of 38% of the 535 employees in the Mine Group are sole breadwinners in their households. Thus 203 Mine group employees would have no other source of income when they were retrenched. Although the remaining 62% of Mine group have two or more breadwinners in one household, 100% of these additional breadwinners are also DBNM employees and would thus also lose their income with mine closure. Thus the total number of people who would lose their sole income would be 1,605.

Employees from the mine group, whose average income is R4,200 a month, would be eligible for an average monthly payment of R1,890 from the UIF for a period not exceeding six months. Those whose monthly income was greater than R4,416 a month would not be eligible to collect UIF payments.

The average Mine group would be entitled to his or her pension contribution.

**Significance of impact on Mine group:**

**Magnitude:** the impact would affect 100% of employees in this group and is therefore rated 'high'.

**Duration:** Because of high unemployment nationally and low ability of the formal sector to absorb employees, the duration of unemployment is likely to be long-term. However, this would be minimised by the calibre of an employee from the Mine group, who on average has a relatively high education level (tertiary); is relatively young (33 years); has a high level of mobility and is prepared to live and work anywhere in the country. A relatively high number of respondents in the questionnaire in the mine group (31%) said they believed it would be easy to find work and only 13% said they would not look for other employment. Employees from the mine group have a socio-political advantage as well, as being 'white' they belong to the group which has the economic power in this country, and therefore would have easier access to the job market. However, this may have changed by the date of mine closure. Taking all the above into consideration, the duration is likely to be 'moderate'.

**Range:** is moderate as the Mine group is localised, living on the mine permanently.

**I&AP's importance rating:** was rated high in the employee questionnaire.

**Potential to mitigate:** includes the possibility of transfers to other De Beers companies.

When two of the OCC's copper mines closed in 1977, a high number of white miners were offered alternative employment (Dunne,1988). This may be repeated in the case of DBNM's closure, as DBNM's white employees are more highly educated and skilled. Added to this is the probability, discussed under 'duration', that employees from the mine group would have more chance of being re-employed fairly rapidly than employees from the other groups. Thus the overall rating is 'high'.

**TABLE 3.2.1.2.b.: Evaluation of loss of income on Mine group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration		Moderate (2)	
Range		Moderate (2)	
I&AP rating			High (3)
To mitigate			High (1)
I&AP Soc/economic status			High (1)

Thus the overall evaluation of the impact of loss of income is 12 which is rated as 'moderate'.

**C. Magnitude of impact on Namaqualand Group:** All employees in the Namaqualand group, a total of 1,865, would lose their sole source of individual income. 41% (765) of the 1,865 employees in the Namaqualand Group are sole breadwinners in their households, while 58% of (1,081) have additional breadwinners in their households. However, 27% (503) of these additional earners are DBNM employees and would thus also lose their income with mine closure. Thus 1,268 employees (80%) in this group

would have lost their personal income and would have no additional means of financial support in their household. The average additional income to the household is between R600 and R900 a month. The average number of people in a household is 5, which means 20% of employees from this group would have between R30 and R45 a month financial support from their households.

**Significance of impact for Namaqualand group:**

**Magnitude:** 100% of employees would be affected by the impact which is therefore rated 'high'.

**Duration:** Because of reasons stated above (high national unemployment and low ability of the formal sector to absorb labour) the duration of loss of income due to unemployment is likely to be long-term. In the employee questionnaire, 86% of the Namaqualand group said they would look for alternative employment, and 72% said they believed it would be difficult to find other work. Added to this is the aspect of the calibre of employees from this group. The average education level is low (Std 6) as is the level of skills, with 78% in the A and B Paterson bands which comprises unskilled workers. Most employees in this group have a low mobility and from information in the employee questionnaire, most stated that they would look for work in Namaqualand, not further afield. This adds to the unlikelihood of being re-employed rapidly, as there is little economic diversification in Namaqualand, with 41% of the economically active population being dependent on mining, a finite resource unlikely to expand. Thus the overall rating of duration is 'high'.

**Range:** is high as employees in this group are drawn from throughout the Namaqualand region.

**I&AP's importance rating:** as with all other employee groups, loss of income was rated high among concerns of the Namaqualand group in the employee questionnaire.

**Potential to mitigate:** The likelihood of reversal due to rapid re-employment is low. However, as with the other groups, the potential to mitigate exists and is dependent on DBNM's retrenchment package; DBNM's absorption of employees into other companies; job creation by DBNM or the authorities; provision employees make within the next ten years in terms of savings, increasing their level of skills etc. Thus the overall rating of potential to mitigate is 'moderate'.

**I&AP's socio-economic status:** is low, as employees from this groups have low education levels, are in a low income group, live in an impoverished rural area characterised by weak or substandard services and infrastructure (Borchers et al, 1990)

**TABLE 3.2.1.2.c.: Evaluation of loss of income on Namaqualand group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	
I&AP soc/ec status	Low (3)		

The overall impact of loss of income on the Namaqualand group is 17, which is rated as 'high'.

### 3.2.1.3 Loss of Medical Benefits

#### Who will be affected?

- All DBNM employees
- DBNM employees dependants, excluding those of Transkei workers
- Health services in the affected regions

**Impact description**

DBNM employees and their dependants are eligible to full medical aid benefits, excluding employees from the Transkei, who are described as non-benefit society members. Benefit society members and their dependants are entitled to free medical treatment at the hospital and clinic at Kleinzee and Koingnaas. Migrant workers are entitled to free medical treatment for themselves only, not dependants, except for visiting wives. Thus the impact would be loss of medical benefits for the employees and dependants for those in the Mine and Namaqualand groups, and loss of medical benefits for employees only in the Transkei group.

**Time of impact:** At mine closure, which is predicted to be 2002.

The magnitude and significance of the impact on employees will be evaluated on the Transkei group first, followed by the Mine group and lastly the Namaqualand group.

**A. Magnitude of impact on Transkei group:** 100% of Transkei employees (455) would be affected by loss of medical benefits. However, the loss would not extend to the employees' dependants, who do not qualify for medical benefits.

**Significance of impact: Transkei group**

**Magnitude:** 100% of Transkei employees would be affected and is therefore rated 'high'.

**Duration:** is likely to be long-term because unemployment is likely to be long-term. In addition, the probability of unemployed Transkei workers paying to join a private medical aid scheme are low, because of the expense. Thus duration is likely to be 'high'.

**Range:** As this extends to all Transkei employees, but not their dependants, the range is considered to be 'low'.

**I&AP's importance rating:** Transkei employees rated 'loss of benefits' second only to 'loss of jobs' in the employee questionnaire, thus the impact is regarded as 'high'.

**Potential to mitigate:** The chances to mitigate the impact through re-employment or joining private medical aid schemes are low, for reasons discussed previously. However, Transkei workers have access to two subsidised district hospitals in the Herschel/Sterkspruit district and to village clinics. Medication and treatment requires some payment. Thus the potential to mitigate is rated as 'moderate'.

**I&AP's socio-economic status:** is low, which generally means lower health levels due to poor nutrition and living standards. This would make the loss of medical benefits more severe.

**TABLE 3.2.1.3.a: Evaluation of loss of medical benefits on Transkei group**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration			High (3)
Range	Low (1)		
I&AP rating			High (3)
To mitigate		Moderate (2)	
I&AP soc/ec status	Low (3)		

Thus the overall evaluation of the impact of loss of medical benefits on Transkei employees is 15, which is 'moderate to high'.

**B. Magnitude of impact of loss of medical benefits: Mine group** Mine group employees are classified as benefit medical aid society members and they and their dependants are entitled to free medical treatment at the mine hospital and clinic. Thus the employee and his or her dependants would be affected by this impact.

**Significance of impact: Mine group**

**Magnitude:** impact applies to all employees in this group and is therefore rated 'high'.

**Duration:** As the chances of re-employment of people from this group has been rated as 'moderate' or medium-term, the chances of joining another medical aid scheme with re-employment must also be medium-term. Thus the duration of this impact has been rated as 'moderate'.

**Range:** As the impact extends to 100% of employees and their dependants in this group, the range is rated as 'high'.

**I&AP's importance rating:** In the employee questionnaire, the mine group rated loss of benefits third highest in their concerns about mine closure. Thus it has been rated as 'high' as it falls within the first three concerns expressed by this group.

**Potential to mitigate:** As the chances of re-employment have been rated as medium-term, the chances of joining another medical scheme are 'moderate', thus the rating of lessening the impact is also 'moderate.'

**I&AP's socio-economic status:** is high, which means the level of health among this group would generally be high due to adequate nutrition and good living standards. Thus the severity of loss of medical benefits would not be as great.

**TABLE 3.2.1.3.b.: Evaluation of loss of medical benefits: Mine group**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration		Moderate (2)	
Range			High (3)
I&AP's rating			High (3)
To mitigate		Moderate (2)	
I&AP soc/ec. status			High (1)

Thus the overall evaluation of loss of medical benefits for the mine group is 14 which is 'moderate to high'.

**C. Magnitude of impact of loss of medical benefits on Namaqualand group:** Namaqualand group employees are classified as benefit medical aid society members and they and their dependants are entitled to free medical treatment at the mine hospital and clinic. Thus the employee and his or her dependants will be affected by this impact.

**Significance of impact: Namaqualand group**

**Magnitude:** As the impact applies to all employees in this group, it has been rated as 'high'.

**Duration:** As the duration of unemployment of this group has been rated as long-term, the duration of loss of medical benefits is also rated as long-term. In addition, the probability of unemployed Namaqualand workers paying to join a private medical aid scheme are low, because of the expense. Thus duration is likely to be 'high'.

**Range:** As this extends to all Namaqualand employees and their dependants, the range is considered to be 'high'.

**I&AP's importance rating:** Namaqualand employees rated 'loss of benefits' fourth out of seven concerns in the employee questionnaire, thus the I&AP significance is regarded as 'moderate'.

**Potential to mitigate:** The chances to mitigate the impact through re-employment or joining private medical aid schemes are low, for reasons discussed previously. However, Namaqualand workers have access to subsidised clinics at most towns in the region. However, these generally require some payment by the patient. The level of facilities is not generally as high as that of the mine hospital and clinic. Thus the potential to mitigate is rated as 'moderate'.

**I&AP's socio-economic status:** is low, which generally means lower health levels due to poor nutrition and living standards. This would make the loss of medical benefits more severe.

**TABLE 3.2.1.3.c.: Evaluation of loss of medical benefits: Namaqualand group**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating		Moderate (2)	
To Mitigate		Moderate (2)	
I&AP soc/ec. status	Low (3)		

Thus the overall evaluation of loss of medical benefits on the Namaqualand group is 16 which is rated as 'high'.

#### **3.2.1.4 Loss of Mine Housing**

**Who will be affected?**

- 'Mine group' of employees

**Impact description**

All DBNM employees are given accommodation on the mines at Kleinzee and Koingnaas, but only those in C1 Paterson Band and higher are eligible to have their families live with them. This therefore excludes the Transkei group entirely and applies to only 5% of the Namaqualand group and 61% of the Mine group. This number for the Mine group is actually higher as most of the B Paterson Band group within the Mine group are wives of employees who are eligible for family housing. Thus most of the Mine group live in family housing. The families of the Transkei and Namaqualand groups live in houses in Transkei and Namaqualand. When the mine closes, all DBNM employees would lose access to mine accommodation, but only the Mine group would lose their 'family home'. Unlike employees in the other two groups, the Mine group would not have been paying for water, sewage disposal or electricity (or equivalent heating, cooking and lighting supplies) for his or her family, as these services are free on the mine. This impact therefore only applies to the Mine group.

**Time:** With mine closure, predicted to be in 2002.

**Significance of loss of family housing: Mine group**

**Magnitude:** the impact applies to almost all of the Mine group. 72% do not own houses elsewhere in the country, thus the magnitude is rated as 'high'.

**Duration:** Loss of free housing is likely to be permanent, unless employees obtain employment where free housing is part of the benefits, thus duration is rated as 'high'.

**Range:** extends beyond employees to include their families. However, the number of dependants is low (2) and 28% of this group have their own family housing elsewhere. Therefore the range is rated as 'moderate'.

**I&AP's importance rating:** this group rated 'loss of benefits' which includes housing, third on their list of seven concerns. Therefore it is rated 'high'.

**Potential to mitigate:** Employees in this group, who would be paying nothing for housing during the next ten years before mine closure, could take the opportunity to buy a house during that time. Therefore the potential to mitigate is rated as 'high'.

**I&AP's socio-economic status:** is high, therefore the ability of this group to obtain housing would be easier.

**TABLE 3.2.1.4.: Evaluation of loss of housing: Mine group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range		Moderate (2)	
I&AP's rating			High (3)
To mitigate			High (1)
I&AP soc/ec. status			High (1)

Thus the overall evaluation of loss of housing on the mine group is 13, which is 'moderate to high'.

This concludes the evaluation of primary impacts on employees. The following section deals with secondary impacts on employees.

### **3.2.2 Secondary Impacts on DBNM Employees**

As discussed in section 2.3.5., secondary impacts are those which do not arise directly from a project action, but occur because of the interdependencies within the socio-economic or biophysical systems. Through the process outlined in section 2.2. and 2.3., the following secondary impacts on DBNM employees were identified:

- inability to support dependants
- lowering of quality of life.

As with primary impacts, these will be evaluated within the three employees groups, starting with Transkei, then Mine and lastly the Namaqualand group.

### **3.2.2.1 Inability to Support Dependants**

#### **Who will be affected?**

- DBNM employees's dependants

**Time:** At mine closure, predicted to be in 2002.

#### **Impact description:**

With loss of income after mine closure, many former DBNM employees will be unable to support their dependants. The impact would vary from one group to another, depending on the amount of additional income to employees' households and the number of dependants each employee has. The magnitude and significance within each group will be assessed.

#### **A. Impact of inability to support dependants: Transkei group**

**Magnitude:** Each of the 455 DBNM employees from the Transkei has an average of 8 dependants, and an average of 10 people living in his household. Of the employees, 350 (77%) are the sole breadwinners in their households. Thus a total of 2,800 dependants would lose their only source of financial support when the mine closes. In 36 (8%) of Transkei employee households, one or more people contribute to the household income, up to a maximum of R300 a month. In these households each person would be living on approximately R30 a month. This would apply to a total of 288 people. In a further 68 (15%) of households, one or more members contribute to the household income, but employees were unable to specify the amount. This is a total of about 544 people who, although they would lose their main source of financial support, would have some form of financial support which is unknown.

**Summary:**

- Approximately 2,800 dependants of Transkei employees would lose their only source of financial support.
- Approximately 288 people, who are largely dependent on Transkei employees, would have their financial support reduced to about R30 per person per month.
- Approximately 544 people, who are largely dependent on Transkei employees, would lose their primary source of financial support, but would have some alternative form of income which is not known.
- A total of approximately 3,632 people, some of whom are entirely and others partially dependent on DBNM's Transkei employees, would be negatively affected by employees' loss of income due to mine closure.

**Duration of impact:** As the duration of this group's unemployment is likely to be long-term, their inability to support dependants is also likely to be long-term. However, it is probable that the older dependants, possibly those at high school, would leave school to look for work to support themselves and the household. However, the jobs available to people without a matric would generally be low paying, and the wages within a few years may have to be stretched to support households of the younger generation as well. Thus the duration of is likely to be long-term.

**Range of impact:** The range extends over the Sterkspruit/Herschel district of the Transkei, which is 1,800 sq km.

**I&AP's importance rating:** This impact was not quantified separately in the Baseline Information Report, but was grouped under employee concerns as 'loss of quality of life' and was raised again under the section which provided for any comments. The frequency with which inability to support family is mentioned

in the questionnaire can be seen from the verbatim comments in the appendices, which is high.

**Potential to mitigate:** Short-term mitigation exists in the form of Unemployment Insurance Fund payments, pension payouts and possibly DBNM's retrenchment package. However, as re-employment of this group is improbable, the impact is not easily reversed or lessened, thus the potential to mitigate is low.

**I&AP's socio-economic status:** The lower the socio-economic status, the more severe the impact as the number of dependants is generally higher; the chances of re-employment lower and the chances of poorly educated, unskilled dependants being able to support themselves are also lower.

**TABLE 3.2.2.1.a. Evaluation of inability to support dependants: Transkei group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range		Moderate (2)	
I&AP rating			High (3)
To mitigate	Low (3)		
I&AP soc/ec. status	Low (3)		

Thus the overall evaluation of the impact on the Transkei group of inability to support dependants is 17, which is rated 'high'.

#### **B. Impact of inability to support dependants: Mine group**

**Magnitude:** Of the approximately 535 employees from the Mine group, each has an average of 2 dependants, thus the number of dependants who would lose their sole source of income would be 1,070. Although 62% of Mine Group employees have two breadwinners per household, 100% of these additional

breadwinners are also DBNM employees and would thus also lose their income with mine closure. Thus all dependants in this group are entirely dependent on DBNM employees.

**Summary:**

- Approximately 1,070 dependants in the Mine group would lose their only source of financial support when the mine closes.

**Duration:** As the duration of unemployment was rated as being medium-term, the duration of inability to support dependants is thus also medium-term.

**Range:** The home towns of the Mine group are Kleinzee and Koingnaas, thus the range is low.

**I&AP's importance rating:** This impact was not quantified separately in the Baseline Information Report, but was grouped under employee concerns as 'loss of quality of life' and was raised again under the section which provided for any comments. The frequency with which inability to support family is mentioned in the questionnaire can be seen from the verbatim comments in the appendices, which is high.

**Potential to mitigate:** Short-term mitigation exists in the form of Unemployment Insurance Fund payments, pension payouts and possibly DBNM's retrenchment package. More importantly, the Mine group is likely to find employment more rapidly than any other group, so the potential to mitigate is high.

**I&AP's socio-economic status:** The higher the socio-economic status, the less severe the impact, as the number of dependants is generally lower; the chances of re-employment are higher and the chances of better educated and better qualified dependants being able to support themselves sooner are also higher. In addition, higher socio-economic groups generally have more

material resources to fall back on in the form of savings, possessions and insurance.

**TABLE 3.2.2.1.b.: Evaluation of inability to support dependants: Mine group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration		Moderate (2)	
Range	Low (1)		
I&AP rating			High (3)
To mitigate			High (1)
I&AP soc/ec. status			High (1)

Thus the overall evaluation of the impact of inability of Mine group employees to support their dependants is 11, which is rated 'moderate'.

### **C. Impact of inability to support dependants: Namaqualand group**

**Magnitude:** A total of 42% (783) of the 1,865 employees in the Namaqualand group are sole breadwinners in their households. Each employee has an average of 3 dependants, which means 2,349 dependants would lose their sole source of financial support. However this number is actually higher: although 58% (1,081) of employees from the Namaqualand Group have additional breadwinners in their households, 27% (503) are DBNM employees and would thus also lose their income with mine closure. The average additional income into a Namaqualand employee's household is between R600 and R900 a month, which is between R120 and R180 per person per month.

#### **Summary:**

- Approximately 2,349 dependants of Namaqualand employees would lose their only source of financial support.

- Approximately 1,734 people, who are partially dependent on Namaqualand employees, would have their financial support reduced to between R120 and R180 per person per month.
- A total of approximately 5,595 people, about half of whom are entirely and half partially dependent on DBNM's Namaqualand employees, would be negatively affected by employees' loss of income due to mine closure.

**Duration of impact:** As the duration of this group's unemployment is likely to be long-term, their inability to support dependants is also likely to be long-term. However, it is probable that the older dependants, possibly those at high school, would leave school to look for work to support themselves and the household. However, the jobs available to people without a matric would generally be low paying, and the wages within a few years may have to be stretched to support households of the younger generation as well. Thus the duration is likely to be long-term. In addition, unemployment is already high in Namaqualand, which reduces the job prospects for dependants seeking to become self-supporting.

**Range of impact:** The range extends over the entire Namaqualand magisterial district, which is 47,000 sq. km. However, the density of DBNM employees is highest in Komaggas Rural Coloured Area, followed by Steinkopf Rural Coloured Area.

**I&AP's importance rating:** This impact was not quantified separately in the Baseline Information Report, but was grouped under employee concerns as 'loss of quality of life' and was raised again under the section which provided for any comments. The frequency with which inability to support family is mentioned in the questionnaire can be seen from the verbatim comments in the appendices, which is high.

**Potential to mitigate:** Short-term mitigation exists in the form of Unemployment Insurance Fund payments, pension payouts and possibly DBNM's

retrenchment package. However, as rapid re-employment of this group is improbable, the impact is not easily reversed or lessened, thus the potential to mitigate is low.

**I&AP's socio-economic status:** The lower the socio-economic status, the more severe the impact as the number of dependants is generally higher; the chances of re-employment lower and the chances of poorly educated, unskilled dependants being able to support themselves are also lower.

**TABLE 3.2.2.1.c: Evaluation of inability to support dependants: Namaqualand group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate	Low (3)		
I&AP soc/ec. status	Low (3)		

Thus the overall evaluation of the impact on the Namaqualand group of inability to support dependants is 18, which is rated 'high'.

### 3.2.2.2 Impact of Loss of Quality of Life

#### Who is affected?

- DBNM employees
- DBNM employees dependants

**Time:** With mine closure, predicted to be in 2002.

#### Description of impact: general

To define quality of life, or loss of it, is problematic as it is difficult to quantify and grounded in value judgements. For that reason it is tempting to omit it from the impact

assessment and restrict the assessment to those impacts which are more easily quantifiable and more objective. However, it has been included in this assessment because "the objective study may be more impartial, synthetic, inclusive and generalised, but it tells us little about the things which make life worth living" (Lewis, 1980). While this assessment does not pretend to answer any 'meaning of life' questions, it will attempt to give a superficial indication of how mine closure could reduce the quality of life for the three employee groups, drawing on employee questionnaires and interviews.

An aspect of reduction in quality of life which is likely to apply to all three groups, is the loss of self-esteem of the unemployed worker. "In most cases, job loss means an involuntary change in status from being employed to a lower status of being unemployed... The major breadwinner may have difficulty maintaining a positive self-image, 'turn inward' and become depressed. Depression is a potential outcome for the unemployed worker" (Ridley, 1988). This has ramifications on the family and on marital relations, and decreases the individual's chances of and interest in, finding alternative employment.

This impact will be discussed within each group. It should be noted that, as discussed in section 2.6., socio-economic status will be omitted from the evaluation of this impact, as to use this criterion would presuppose that loss of quality of life is greater or lesser for different socio-economic groups. The point system has been adjusted accordingly.

#### **A. Impact of loss of quality of life: Transkei group**

##### **Description of impact: Transkei:**

In 10 years I will be 53. If the mine retrenches me at that age, I will remain without work. I will no longer be able to provide for my children's education. There is no future for me and my family without work

DBNM Transkei employee: Kleinzee, 1992.

The Herschel/Sterkspruit region in the Transkei, where most of the DBNM Transkei employees come from, is an impoverished rural area with 60% adult illiteracy, weak

or non-existent infrastructure and high unemployment. The major sources of income into the region are old age pensions and migrant wages. The loss of DBNM jobs is likely to reduce the already poor quality of life even further. 'Quality of life' concerns which Transkei employees frequently raised in the questionnaire were:

- that they would not be able to feed their children
- that they would not be able to pay for their children to remain at school
- that they would not be able to pay for medical care for their family when they were ill.

**Magnitude:** The impact is likely to affect all 455 Transkei employees and their dependants.

**Duration:** is likely to last as long as unemployment lasts, which is likely to be long-term.

**Range:** will extend over the Sterkspruit/Herschel district

**I&AP's importance rating:** Transkei employees expressed concern frequently about various aspects of quality of life which would be lost with mine closure. It was rated third highest in their list of concerns.

**Potential to mitigate:** Short-term mitigation would be a retrenchment package, UIF payments and pension contribution payments. Longer term mitigation depends largely on likelihood of being re-employed, which is low.

**TABLE 3.2.2.2.a.: Evaluation of loss of quality of life: Transkei group**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of loss of quality of life on the Transkei group is 14, which is rated 'high'.

### **B. Impact of loss of quality of life: Mine group**

The mine has become part of my life. Things that have never been important in my life have come up. It will be a fundamental change in our lifestyles

DBNM employee, Mine group: Kleinzee, 1992.

#### **Impact description: Mine group**

Kleinzee and Koingnaas where the Mine group lives are average middle-income 'white' suburbs with a good standard of living. Because of the isolation of the towns, the atmosphere of a small rural village prevails. Although members of the mining community said there were disadvantages in living in so remote an area, they said the advantages outweighed those. These were security, sense of belonging, excellent recreational facilities, community spirit, free accommodation and services, cheaper shopping facilities and a safe, healthy environment for raising children. With mine closure, and probable migration to the cities, these qualities would be lost. In addition, expenditure would be increased.

**Magnitude:** This would apply to all 565 Mine group employees and their dependants.

**Duration:** Although the chances of rapid re-employment for the Mine group are higher than the other two groups, the loss of quality of life from moving away from the mining community would be permanent. Increased expenditure eg. for housing and services, is also likely to be permanent.

**Range:** Is restricted to the mining town population.

**I&AP rating:** The Mine group rated loss of quality of life fourth highest in the list of seven major group of concerns.

**Potential to mitigate:** The loss of quality of life due to financial loss is likely to be lessened in the medium-term as this group is likely to be re-employed more rapidly than the other two groups. However, the loss of the quality of life on the mine, both financial and social, is unlikely to be reversed.

**TABLE 3.2.2.2.b.: Evaluation of loss of quality of life: Mine group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range	Low (1)		
I&AP rating		Moderate (2)	
To mitigate		Moderate (2)	

Thus the overall evaluation of loss of quality of life on the Mine group is 11, which is rated 'moderate'.

**B: Impact of loss of quality of life: Namaqualand group**

If the mine closes it will be like as artery that has been cut. We will bleed to death in Namaqualand. People will have to migrate to the cities. Many of our people know only this area. I hope we get a good package if the mine closes

DBNM employee, Namaqualand group: Kleinzee, 1992.

**Impact description:**

Apart from Springbok and the mining towns, the Namaqualand district where this group comes from is an impoverished, predominantly rural region, with a harsh climate. There are high levels of unemployment, low education and health levels and poor facilities and infrastructure. The primary source of employment is mining. Extended households are common, with between 5 and 6 people per household. With

loss of wages from DBNM employees, the already low quality of life would deteriorate. Many Namaqualanders were concerned that their children would not be able to finish school and that they would not automatically be able to work for DBNM. Many did not own houses and were concerned about where they would live and how they would feed their families. In addition, employees would lose mine facilities such as recreational facilities and on-the-job training supplied by the company.

**Magnitude:** The impact would affect the quality of life of all 1,865 employees.

**Duration:** It is likely to last as long as the individual is unemployed, which is predicted to be long-term.

**Range:** Extends over the whole Namaqualand region.

**I&AP's importance rating:** Various aspects of loss of quality of life were frequently mentioned in the employee questionnaire.

**Potential to mitigate:** Retrenchment package, UIF and pension payouts are short-term mitigation; State pension at 60 years, the possibility of some form of re-employment before then are longer term mitigatory measures that exist.

**TABLE 3.2.2.2.c.: Evaluation of loss of quality of life: Namaqualand group**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of the impact of loss of quality of life on the Namaqualand group is 14, which is rated 'high'.

### 3.2.3 SUMMARY: Evaluation of Primary and Secondary Impacts of Mine Closure on DBNM Employees

A table summarising both the primary and secondary impacts on DBNM employees follows. The impacts are rated as follows:

'low significance': implies that the impacts will not be serious and are likely to be restricted in range and be short-term.

'moderate significance': implies that the impacts are likely to have greater effect, either over a larger spatial or time scale.

'high significance': implies that the impacts are very important; negative effects could be felt over extensive time and space horizons; substantial resources would be required for mitigation.

TABLE 3.2.3.a.: Summary of impacts on DBNM employees as a result of mine closure.

Primary impact	TRANSKEI GROUP	MINE GROUP	NAMAQUA-LAND GROUP
Loss of income	High	Moderate	High
Loss of medical benefits	Moderate to high	Moderate to high	High
Mine housing	N/A	High	N/A
SECONDARY			
Loss of quality of life	High	Moderate	High
Inability to support dependants	High	Moderate	High

This concludes the section on impacts on dependants. The following section deals with regional impacts, ie. those which affect the magisterial district of Namaqualand and the Herschel/Sterkspruit district in the Transkei.

### **3.3 REGIONAL: SOCIO-ECONOMIC IMPACTS ON NAMAQUALAND:**

Although economic and social impacts are interlinked in reality, for the purposes of assessing regional impacts, they will be dealt with separately.

The evaluation criterion 'socio-economic status' has been omitted from the list of evaluation criteria for regional economic impacts, as it is not relevant. The allocation of points has been adjusted accordingly, as described in section 2.6.

#### **3.3.1 Regional Economic Impacts**

The following regional economic impacts of DBNM mine closure on Namaqualand were identified according to the methods described in section 2.3. Each will be assessed and evaluated separately.

##### **Primary economic impacts:**

- Loss of revenue to the region through loss of DBNM's direct purchasing

##### **Secondary and induced economic impacts:**

- Loss of revenue to the region through loss of DBNM employees' spending;
- Retrenchment of approximately 15% of Namaqualand's economically active population (including DBNM employees);
- Negative effect on small businesses in particular;
- Loss of 30% of total fees to Regional Services Council;

### **3.3.1.1 Impact: Loss Revenue to the Region through Loss of DBNM's Direct Purchasing**

#### **Who would be affected?**

- The town of Springbok
- Regional commerce and industry
- Local and regional authorities

#### **Description of impact**

DBNM is the single biggest business activity in Namaqualand, constituting 32% of the regional turnover. Although DBNM purchases most of the company's supplies from outside the Namaqualand region, 28,5% are bought within the region. Of this, 28% are bought in Springbok and 0,5% in the rest of the region. This revenue would be lost with mine closure. In Springbok, 25% of firms have direct business links with DBNM. Those Springbok firms which would be particularly negatively affected by loss of DBNM purchases are:

- the mining sector (85% have links with DBNM, amounting to approximately R31,5 million a year);
- the construction sector (50% have links with DBNM, amounting to approximately R5.1 million a year);
- the transport industry (22% have links with DBNM, amounting to approximately R6.8 million a year);
- general suppliers (22% have links with DBNM, amounting to approximately R10 million a year).

The service sector (legal, auditing, accounting, advertising, engineering, architectural etc) would suffer the greatest loss of business in Region A as a result of DBNM closure. However, Namaqualand is only part of Region A, which includes Cape Town and the western Cape.

**Significance of impact**

**Magnitude:** As DBNM is the single biggest business activity in the region, the magnitude of the effect of the company's withdrawal from Namaqualand would be high.

**Duration:** is likely to be permanent, as the finite resource which the company mined, diamonds, would have been exhausted. However, De Beers intends to maintain ownership of the land and is investigating alternative economic possibilities in the region. It is unlikely, though, that the company would generate the amount of revenue with future land use as it did with diamond mining, given the economic and climatic constraints on the region. Thus the duration of the impact is likely to be long-term.

**Range:** The range of the impact would be felt throughout the region, and indeed, throughout the country.

**I&AP's importance rating:** In letters, surveys and questionnaires, commerce and industry regarded the loss of DBNM's business activity in the region as highly significant. Examples are:

- Black Mountain Mineral Development Company Pty (Ltd) said the regional economy would suffer;
- O'okiep Copper Company said the consequences would be 'disastrous', causing a downturn in the economy and negatively affecting the larger towns;
- 53% of businesses in Springbok said they would have to take some form of action as a result of loss of business with DBNM, which included closure and retrenchment.

**Potential to mitigate:** The impact could be mitigated by the creation of alternative business activity by De Beers in the region. However, as discussed under 'duration', the amount of revenue generated is unlikely to be as high as that of diamond mining.

**TABLE 3.3.1.1.: Evaluation of the significance to the regions of the loss of DBNM's direct purchasing**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of the significance of the impact of loss of revenue to the region through loss of DBNM's direct purchasing is 14, which is rated as 'high'.

### **3.3.1.2 Impact: Loss of Revenue to the Region through Loss of DBNM Employees' Spending**

#### **Who would be affected?**

- Regional businesses and services
- The towns of Springbok, Steinkopf and Komaggas in particular
- Rural small businesses

#### **Description of impact**

From the employees questionnaire, it was established that approximately 77% (2,300) of DBNM employees spend most of their income in Namaqualand. The migrant workers, about 23%, spend most of their income in the Transkei. The Namaqualand group (about 60% or 1,900 people) spend their money mostly in the towns of Springbok, Steinkopf and Komaggas. The Mine group (about 17% or 500 people), spend most of their money in Kleinsee.

From the business survey it was established that:

- 52% of businesses in Springbok conducted business with DBNM employees, amounting to R19,3 million a year
- 54% of businesses in the rest of Namaqualand conducted business with DBNM employees, amounting to R14,3 million a year.

The Springbok business sectors which would be particularly negatively affected by loss of DBNM employees' spending are listed below. The value of business they conduct with DBNM employees is indicated in brackets in millions of rand a year:

- general suppliers (R6.6 million)
- clothing and furniture suppliers (R5.2 million)
- transport sector (R5.1 million)
- construction sector (R1.4 million)
- miscellaneous (R1.2 million)

In Komaggas 36% (R0.93 million) and in Steinkopf 40% (R2,8) of turnover is attributed to business conducted with DBNM employees.

The percentage of businesses in various towns which indicated they would have to take some form of action (including closure and retrenchment) if they lost DBNM employees as clientele, are:

- |                        |     |
|------------------------|-----|
| - Springbok:           | 53% |
| - Steinkopf:           | 60% |
| - Komaggas:            | 38% |
| - Rest of Namaqualand: | 31% |

### **Significance of impact**

**Magnitude:** Over half the businesses in Namaqualand generally, and in Springbok particularly, would be negatively affected by loss of DBNM employees' spending.

**Duration:** The impact would last as long as it takes for the retrenched DBNM employees to find other employment. As discussed previously, the duration of unemployment of Namaqualanders is likely to be long-term. Those who do find employment indicated in the employee questionnaire that they would be

unlikely to find jobs with the same salaries as those of DBNM, thus their spending power would be reduced. The smaller Mine group is likely to find alternative employment more rapidly, but indicated in the employee questionnaire they would be more likely to find employment elsewhere in the country, thus their spending power would not remain in the region.

**Range:** Extends throughout the Namaqualand region.

**I&AP's importance rating of impact:** From the percentage of businesses which stated in the questionnaire that they would have to take some form of action if they lost DBNM employee clientele, it is clear they regard the impact as important. In addition, many of the comments they made in the questionnaire indicate their concern regarding to impact.

**Potential to mitigate:** As discussed under 'duration', the potential to lessen the impact depends on the likelihood of, and speed with which DBNM employees find alternative employment. It is unlikely that this would be rapid or that all would find other jobs. In addition, the salaries are likely to be lower.

**TABLE 3.3.1.2.: Evaluation of impact of loss of revenue to the region from loss of DBNM employees' spending**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of the loss of revenue to the region through loss of DBNM employees's spending is 14, which is rated 'high'.

### **3.3.1.3 Impact: Retrenchment of Approximately 15% of Namaqualand's Economically Active Population**

#### **Who would be affected?**

- Employees of a range of businesses
- DBNM employees
- Dependants of above employees
- Unemployment Insurance Fund

#### **Description of impact:**

Approximately 3,000 employees from DBNM would be retrenched with mine closure, and about 253 employees from various other sectors in Namaqualand would be retrenched because of the resultant loss of business. Thus about 3,253 employees of the 22,086 economically active people in the Namaqualand region, would be retrenched. This is 14,7%.

#### **Significance of impact**

**Magnitude:** 14,7% of economically active people in Namaqualand would be retrenched. Assuming that the retrenched workers represent one breadwinner per household and that the average number of people per household in Namaqualand is 5 (Borchers *et al*, 1990), approximately 15,000 people would be negatively affected.

**Duration:** Mining forms the base of the regional economy. Because a finite source is being exploited, ultimately all mining operations will cease, as it will with DBNM's operation in 2002. Therefore mining in Namaqualand is unlikely to expand and absorb DBNM's unemployed. In addition, trends indicate that unemployment will increase nationally. The labour absorption ability of the formal sector has declined from 97% in the 1960s to 72% in the 1970s to 22% in the early 1980s to 7% for 1985-1990. Thus duration is likely to be long-term.

**Range:** extends over the entire Namaqualand region.

**I&AP's importance rating:** DBNM employees rated loss of work as their most serious concern about mine closure. In addition, the business survey and letters from other I&APs stated their concern about loss of jobs in the region.

**Potential to mitigate:** With sufficient warning some businesses which are largely dependent on DBNM could attempt to diversify their interests in order keep stable and not to have to retrench staff. DBNM is likely to re-employ some people in their alternative land uses in Namaqualand (eg. farming) but this is unlikely to be as labour intensive as diamond mining. Tourism could develop and absorb some of the labour.

**TABLE 3.3.1.3.: Evaluation of impact of retrenchment of approximately 15% of Namaqualand's economically active population**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of 15% retrenchment in the region is 14, which is rated 'high'.

#### **3.3.1.4 Impact: Small Businesses are likely to be Negatively Affected by Mine Closure**

##### **Who would be affected?**

- Small businesses throughout the region
- Small businesses in Springbok, Steinkopf and Komaggas in particular
- Rural communities

**Description of impact**

100% of businesses in Steinkopf and Komaggas, all of which are small businesses, conduct business with DBNM employees. 93% of businesses in Springbok and 74% of businesses in the rest of Namaqualand conduct business with DBNM, DBNM employees, or both. Although the proportion of these which were small businesses was not quantified in the Baseline Information Report, it can be assumed that most of them are small, since Dunne (1988) states: "It is evident that small businesses are predominant among Namaqualand's non-mining activities".

In personal interviews, neither the SBDC nor the Central Statistical Services was able to quantify the contribution of small businesses to the regional or national economy. However, as an indication of their importance in another national economy, albeit a developed country, small businesses in New Zealand employ 54% of the private workforce and contribute between 32% to 50% to Gross Domestic Product (Houghton, 1990).

Small business have distinct problems compared to big businesses in the way they are affected by change. In particular, the constraints faced by small businesses mean that they are less able to take advantage of opportunities for development and might be more affected by negative effects than larger ones. (Houghton, 1990). Houghton points out that a common problem faced by small businesses is their dependence on a single large client which makes them vulnerable to any changes invoked by the client. This problem is especially important in many communities dominated by a single major industry, as Namaqualand is dominated by mining.

**Significance of impact**

**Magnitude:** As 93% of businesses in Springbok and 74% of businesses in the rest of Namaqualand conduct business with DBNM, DBNM employees or both, and as small businesses predominate among the region's non-mining activities, it can be stated that the majority of small businesses in Namaqualand would be negatively affected by mine closure.

**Duration:** The decreased production of goods and services necessary to maintain and operate DBNM, as well as the decreased spending resulting from loss of income to DBNM employees, is likely to be long-term. Whether the effect on small businesses would also be long-term depends on whether they are able to diversify before mine closure, or take advantage of other forms of development. But as stated above, the nature of small business is such that they are less able to take advantage of development opportunities than large ones and are more negatively affected by change. Thus the duration of the impact is likely to be permanent for many.

**Range:** extends over the entire Namaqualand region.

**I&AP's importance rating:** Comments in the business survey indicate the concern of many small businesses regarding mine closure. This concern was quantified in the Baseline Information Report, where 53% of businesses in Springbok said they would have to take some form of action following mine closure, which included closure, retrenchments or change of business focus.

**Potential to mitigate:** Because of reasons stated under 'duration', the potential to mitigate is likely to be low. However, with sufficient warning and time to prepare, some small businesses may be able to shift their business focus from dependence on DBNM and its employees to other interests. However, given the economic constraints of the region, this is unlikely to be easy.

**TABLE 3.3.1.4.: Evaluation of impact of mine closure on small businesses in the region**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating		Moderate (2)	
To mitigate		Moderate (2)	

Thus the overall evaluation of the impact of mine closure on small businesses in the region is 13, which is rated 'moderate to high'.

### **3.3.1.5 Impact: Namaqualand's Regional Services Council would Lose 30 % of its Total Fees**

#### **Who would be affected?**

- Regional Services Council
- Namaqualand's rural communities

#### **Description of the impact**

Every business in Namaqualand pays a percentage of its total turnover (0.11%) and a percentage of its total remuneration of employees (0.27%) to the Regional Services Council. The RSC received approximately R2.4 million in total fees last year, of which R735,673 (30% of the total) was paid by DBNM. DBNM is the single biggest contributor to the RSC. The RSC uses funds mainly to distribute some of the region's profits into the poorer areas, and RSC funds have been spent primarily on the provision of infrastructural needs such as provision of water, sanitation, electricity and roads (Claasen, RSC, pers. comm.) Thus the loss of funds would have a negative effect on the poorer rural communities.

### Significance of the impact

**Magnitude:** Approximately one third of the fees received by the Namaqualand RSC would be lost with closure of DBNM's mining operation.

**Duration:** The loss of DBNM as the single biggest contributor is likely to be permanent. However, as DBNM intend remaining in the region and are investigating alternative economic opportunities, it is assumed they will continue to contribute fees to the RSC, albeit significantly reduced fees.

**Range:** extends over the entire Namaqualand region.

**I&AP's importance rating:** The chief executive officer of Namaqualand's RSC said in an interview that the loss of DBNM's fees to the council would be "a catastrophe", particularly as Namaqualand was one of the poorest regions in the country which needed assistance. He said without DBNM "this place will look like all the other platteland villages where there is nothing growing or developing" (Claasen, pers. comm.).

**Potential to mitigate:** is low, as it is unlikely that any other development would contribute as much as 30% of the total fees received by RSC.

**TABLE 3.3.1.5.: Evaluation of loss of 30% of fees to the RSC**

CRITERIA	LOW	MODERATE	HIGH
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate	Low (3)		

Thus the overall evaluation of the impact of loss of 30% of fees to the RSC is 15, which is rated as 'high'.

This concludes the section on economic impacts on the Namaqualand region. The following section deals with social impacts of mine closure in Namaqualand.

### **3.3.2 Regional Social Impacts of Mine Closure: Namaqualand**

The following regional social impacts on Namaqualand were identified according to the methods outlined in section 2.3.

- Increase in unemployment in Namaqualand
- Lowering of quality of life in affected communities

Although IEM theory requires that impacts be precise and that general categories be avoided (Fuggle and Rabie, 1983), the general category of 'lowering of quality of life' has been retained in this assessment, as discussed in section 2.3.3.

#### **3.3.2.1 Impact: Increase in Unemployment in Namaqualand**

##### **Who would be affected?**

- Inhabitants of Namaqualand
- Local and regional services
- Unemployment Insurance Fund
- Health and welfare services
- South African taxpayer

##### **Description of impact**

Mining forms the base of the economy in Namaqualand and is the sector which employs the largest percentage (41%) of economically active people. Of the approximately 60,000 people in Namaqualand, 22,086 are economically active, of whom 8,753 are employed in the mining sector. About 3,000 of these are employed by DEBNM. It should be noted that the Central Statistical Service's definition of

'economically active' includes housewives, students and those who are unemployed in the sense that they are actively seeking work. Thus the actual number of people who earn an income is lower than 22,086, but this figure was not available. With the closure of DBNM, approximately 15% of the economically active population would lose their jobs.

### **Significance of impact**

**Magnitude:** It is not possible to quantify the increase in the unemployment rate, as there are no available statistics of unemployment rates for Namaqualand specifically (Central Statistical Services, pers. comm.) The only way the size of this impact can be quantified is to state that 15% of the economically active population in Namaqualand would lose their jobs.

**Duration:** is likely to be long-term since:

- the ability of the country's formal sector to absorb labour has dropped from 97% in the 1960s to 7% in 1990
- there is little economic diversification in the region and few alternative employment opportunities.

**Range:** extends over the entire Namaqualand region.

**I&AP importance rating:** In the DBNM employees questionnaire, unemployment in the region was rated as one of their major concerns. Another major concern employees raised was that mine closure would mean fewer jobs available for future generations of Namaqualanders. In responses from other I&APs to the question 'what are your major concerns' about future mine closure, unemployment in the region was cited the most frequently. In the survey of businesses in Springbok, concern about regional unemployment was also raised frequently, as it was in the public meetings with the affected communities of Steinkopf, Buffelsrivier and Komaggas. Thus the scoping process of all I&AP's concerns, revealed unemployment in the region as the major overall concern.

**Potential to mitigate:** The ideal mitigation would be job creation for 3,000. However, because of reasons cited under 'duration', it is unlikely that 3,000 jobs would be created in the region, given the economic, social and geographic constraints. De Beers intends to remain in the region and in possession of their land and will be investigating alternative economic land uses. It is assumed that this would create some employment. Other likely sources of employment would be the development of tourism in the region. Overall, the potential to effectively mitigate is low.

**TABLE 3.3.2.1.: Evaluation of unemployment in Namaqualand region**

<b>CRITERIA</b>	<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
Magnitude			High (3)
Duration			High (3)
Range			High (3)
I&AP rating			High (3)
To mitigate	Low (3)		

Thus the overall evaluation of the impact of increased unemployment in the region is 15, which is rated as 'high'.

### **3.3.2.2 Impact: Lowering of Quality of Life in Affected Communities in Namaqualand**

#### **Who would be affected?**

- Steinkopf, Komaggas, Buffelsrivier and Hondeklipbaai communities in particular
- Local schools and teachers
- Local business
- Health and welfare services
- Law and order staff

- Voluntary aid and development organisations
- South African taxpayer

**Description of impact:** Elements constituting 'lowering of quality of life' that were frequently cited by I&APs were:

- **increased poverty:** as a result of increased unemployment, particularly in those communities which had a high ratio of DBNM employees to the number of households.
- **drop in education standards:** teachers stated that pupil numbers were likely to drop as a result of unemployed parents being unable to support children at school. If numbers dropped sufficiently, they stated that some schools could close altogether, which in turn would lead to a marked increase in illiteracy and lowering of education standards.
- **increase in social pathology:** communities stated that they feared that unemployment would lead to an increased crime rate and an increase in alcohol abuse. In addition they felt unemployment would have a negative effect on the family structure if men left the region in search of employment elsewhere. Ridley (1988) states that job loss combined with changes in economic functioning could change the relationship between husbands and wives. He states, too, that loss of self-esteem or depression is a potential outcome for the unemployed worker.
- **lowering of health levels:** Namaqualand's rural areas generally have poor health facilities. Some of the major causes of death are heart disease, cancer, pneumonia, gastro-enteritis and tuberculosis (Dunne, 1988). Dunne states that in 1985, Operation Hunger reported that 51% of school children in the O'okiep, Nababeep, Springbok triangle were suffering from first degree malnutrition. Amongst children the rate of mental retardation was high. Withdrawal of wages and salaries of DBNM employees,

including loss of medical benefits to which the employees family was eligible, would exacerbate the situation.

### **Significance of impact**

**Magnitude:** It is difficult to quantify the magnitude of this impact, first because 'quality' is an abstract concept, and second because the number of people who would be affected can only be deduced. As 82% of people (48,361) in Namaqualand are 'coloured', it can be assumed that the coloured people would be the group most affected. Approximately 1,865 DBNM employees are coloured; each of whom has an average of 3 dependants. This means about 5,600 people, or 11,5% of coloured people in the region, are likely to experience a reduction in the quality of life.

**Range:** The impact would be centred on Steinkopf, Komaggas, Buffelsrivier and Hondeklipbaai, where the highest ratio of DBNM employees to households exists. However, DBNM employees are drawn from all over the region, thus the impact could be felt to a lesser degree over most of the region.

**Duration:** Because unemployment is likely to be long-term, the loss of quality of life is also likely to be long-term.

**I&AP's importance rating:** Community meetings in Steinkopf, Buffelsrivier and Komaggas expressed concern that mine closure would lead to the lowering of quality of life in their communities. DBNM employees cite this as a potential impact in the employee questionnaire.

**Potential to mitigate:** Aid organisations and possibly DBNM could raise aspects of quality of life eg. health facilities or feeding schemes.

**TABLE 3.3.2.2.: Evaluation of lowering of quality of life in the Namaqualand region**

CRITERIA	LOW	MODERATE	HIGH
Magnitude		Moderate (2)	
Duration			High (3)
Range		Moderate (2)	
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of the impact of lowering of the quality of life in the region is 12, which is rated 'moderate to high'.

### **3.3.3 SUMMARY: Evaluation of Regional Impacts: Economic and Social Impacts of Mine Closure on Namaqualand.**

A table summarising both the economic and social impacts on the Namaqualand region follows. The impacts are rated as follows:

**'low significance'**: implies that the impacts will not be serious and are likely to be short term and restricted in range.

**'moderate significance'**: implies that the impacts are likely to have greater effect, either over a larger spatial or time scale.

**'high significance'**: implies that the impacts are very important; negative effects could be felt over extensive time and space horizons; substantial resources would be required for mitigation.

**TABLE 3.3.3.: Summary of economic and social impacts of mine closure on the Namaqualand region.**

DESCRIPTION OF IMPACT	SIGNIFICANCE FOR NAMAQUALAND
Economic Impacts:	
Loss of DBNM's purchasing:	High
Loss of employee purchasing:	High
15% regional retrenchment:	High
Effect on small businesses:	Moderate to high
Loss of 30% fees to RSC	High
Social Impacts:	
Increase in unemployment:	High
Lowering of quality of life:	Moderate to high

This concludes the section on regional impacts of mine closure on the Namaqualand region. The following section deals with regional impacts of mine closure on the Herschel/Sterkspruit district of Transkei.

### **3.3.4 REGIONAL: Socio-economic Impacts on the Herschel/Sterkspruit District in the Transkei.**

The following regional impacts on the Herschel/Sterkspruit district in Transkei were identified according to the methods outlined in section 2.3:

- Increase in unemployment in the Herschel/Sterkspruit district;
- Lowering of the quality of life in the district.

As with regional impacts on Namaqualand (section 3.2.2), the general category of 'lowering of quality of life' has been retained as an impact on the Transkei district.

### 3.3.4.1 Impact: Increase in Unemployment in Herschel/Sterkspruit District, Transkei

#### Who would be affected?

- Inhabitants of the district
- Health and welfare services
- Local businesses
- Unemployment Insurance Fund
- Transkei government pension fund
- South African taxpayer

#### Description of impact

The majority of residents of this region are women, children and old men, as most of the economically active men work elsewhere as migrant labourers. The reason they seek work elsewhere is because of the lack of wage paying employment in the district. Lund (1992) states that few of the limited commercial enterprises in villages such as brick-making, taxi services and trading, contribute to household incomes. Primary sources of income are migrant labour pay and old age pensions. With mine closure, a further 455 people would be out of work in the district. In the DBNM employee questionnaire, some Transkei employees had said they would try stock farming as alternative employment. However, Lund (1992) states that farming in this district has "almost zero commercial value, serving only to top up household food consumption". Thus this is not a viable form of employment.

**Magnitude:** It is not possible to quantify the increase in unemployment rate, as there are no available statistics for this district specifically. The total number of black workers in the country is 6,1 million and unemployment rates for black people nationally is 11% of the economically active population; and in non-urban areas, is 8.6% (Central Statistical Service, 1990). This is according to the strict definition of 'unemployed' which requires that the person took specific steps during the four weeks preceding the CSS survey to find paid employment.

Housewives and students are regarded as employed. Thus the actual number of black people with no wage income is likely to be far higher.

The current population of the Herschel/Sterkspruit district is 350,000. At an unemployment rate for non-urban areas of 8.6%, approximately 31,100 people would be unemployed. The 455 DBNM employees would be an increase of 1,46% of unemployed.

**Duration:** Unemployment is likely to be long-term because of the advanced age of the DBNM employees and their low level of education and skills. However, at the age of 60 they would be eligible for Transkei government old age pensions (R235 a month). On average, they would receive this within 7 years of retrenchment. Thus although unemployment would be long-term, most former employees would receive a wage income, albeit far lower than the DBNM salary, within 7 years, and thus according to the strict definition would not be 'unemployed'.

**Range:** extends throughout 69 villages in the 1, 878 sq.km. district.

**I&AP's significance rating:** DBNM Transkei employees rated unemployment third on their list of 7 major concerns about mine closure.

**Potential to mitigate:** is low, as the ability of the formal sector to absorb labour is low. However, this is offset by the fact that the employees would be eligible for a government pension.

**TABLE 3.3.4.1.: Evaluation of impact of increased unemployment in the Herschel/Sterkspruit district in the Transkei**

CRITERIA	LOW	MODERATE	HIGH
Magnitude	Low (1)		
Duration		Moderate (2)	
Range			High (3)
I&AP rating			High (3)
To mitigate		Moderate (2)	

Thus the overall evaluation of the impact of unemployment on the Herschel/Sterkspruit district is 11, which is rated as 'moderate'.

### 3.3.4.2 Impact: Lowering of the Quality of Life in the Herschel/Sterkspruit District

#### Who would be affected?

- Inhabitants of the district
- Local schools
- Local health and welfare services
- Voluntary aid and development organisations
- South African taxpayer

**Description of impact:** Elements constituting a 'lowering of the quality of life' as a result of retrenchment cited by Transkei employees included:

- **inability to educate dependants:** 54% of DBNM Transkei employees have between Sub A and Std 5 education levels and 27% have no education at all. In the employee questionnaire, the majority stated that they had wanted to continue their schooling but their parents had been unable to support them at school. Many stated that they did not want the same

thing to happen with their children, and expressed concern that their older children would be forced to leave school.

Currently, 25% of Transkei employees have an average of 6 children at primary school and 75% have an average of 2 children at primary school. 62% have an average of one child at high school; 30% have two children and 8% have three children at high school. If children are forced to leave school, it is likely they would be caught in the trap of low education levels, no skills, and inability to lift themselves out of the trap of rural poverty. Lund (1992) states that the social and economic impact is far-reaching and is a serious debilitating factor of any serious long-term development initiatives.

- **inability to pay for dependants health care:** DBNM Transkei employees families were not eligible for company medical aid benefits. However, the employees stated in the questionnaire that without an income, they would be unable to pay for their wives and children to attend the hospital or clinic. Health services are subsidised by the government, but all medication and treatment requires some payment by patients. Although TB and infant mortality rates have declined, venereal disease, HIV and psychological disorders have increased (Lund, 1992)
- **inability to pay for daily living:** Inhabitants of the district are unable to subsist on agriculture, which only supplements the households food consumption. Most food has to be bought locally, where prices are higher than those of Johannesburg. Wood stocks as fuel supplies are depleted and most fuel has to be bought, with an average household paying R148 a month for cooking, heating and lighting. All DBNM Transkei employees owned their houses and thus rent was not an added expenditure.

## Significance of impact

**Magnitude:** As with the regional impact on Namaqualand, it is difficult to quantify this impact, first because 'quality' is an abstract concept, and second because the exact number of people who would be affected can only be estimated. As each of the 455 DBNM Transkei employees has an average of 8 dependants, about 3,640 people in the region are likely to experience a reduction in the quality of life. However, this is only 1% of the total population of the region.

**Duration:** is likely to be medium-term as employees would be eligible for government pensions within an average of 7 years. However, on average, the government pension (R235 a month) is only about 19% of Transkei employees' DBNM salaries, thus quality of life would not be restored by pension.

**Range:** extends over the 1,865 sq.km. of the district.

**I&AP's importance rating:** Although 'loss of quality of life' on an individual basis was high on the list of concerns in the employee questionnaire, the Transkei respondents seldom mentioned concern for lowering of the quality of life of the district as a whole.

**Potential to mitigate:** As re-employment is unlikely because of the high unemployment situation in the country and because of the Transkei employees' advanced ages, potential to mitigate is low. In addition, the infrastructure and services in the district are already strained, and an extra 455 people would put an added strain on the weak resources (Lund, 1992).

**TABLE 3.3.4.2.: Evaluation of the impact of lowering of the quality of life on the Herschel/Sterkspruit district, Transkei**

CRITERIA	LOW	MODERATE	HIGH
Magnitude	Low (1)		
Duration		Moderate (2)	
Range			High (3)
I&AP rating	Low (1)		
To mitigate	Low (3)		

Thus the overall evaluation of the impact of the lowering of the quality of life on the Herschel/Sterkspruit district in Transkei is 10, which is rated 'moderate'.

This concludes the assessment of regional impacts.

A summary follows of an evaluation of the all the identified socio-economic impacts of future mine closure on DBNM employees, on the Namaqualand region and on the Herschel/Sterkspruit district in the Transkei.

### **3.4 SUMMARY: EVALUATION OF THE POTENTIAL SOCIO-ECONOMIC IMPACTS OF FUTURE MINE CLOSURE.**

Three tables summarising the evaluation of impacts follow. The first summarises the primary and secondary impacts on DBNM employees; the second summarises the regional impacts on Namaqualand and the third summarises the regional impacts on the Herschel/Sterkspruit district in the Transkei. The impacts are rated as follows:

**'low significance'**: implies that the impacts will not be serious and are likely to be restricted in range and be short-term.

**'moderate significance'**: implies that the impacts are likely to have greater effect, either over a larger spatial or time scale.

'high significance': implies that the impacts are very important; negative effects could be felt over extensive time and space horizons; substantial resources would be required for mitigation.

**TABLE 3.4.a.: SUMMARY of impacts on DBNM employees as a result of DBNM mine closure.**

Primary impact	TRANSKEI GROUP	MINE GROUP	NAMAQUA-LAND GROUP
Loss of income	High	Moderate	High
Loss of medical benefits	Moderate to high	Moderate to high	High
Mine housing	N/A	High	N/A
<b>SECONDARY</b>			
Loss of quality of life	High	Moderate	High
Inability to support dependants	High	Moderate	High

**TABLE 3.4.b.: SUMMARY of regional impacts on Namaqualand as a result of DBNM mine closure**

DESCRIPTION OF IMPACT	SIGNIFICANCE FOR NAMAQUALAND
Economic Impacts:	
Loss of DBNM's purchasing	High
Loss of employees' spending	High
15% regional retrenchment	High
Effect on small businesses	Moderate to high
Loss of 30% fees to RSC	High
Social Impacts:	
Increase in unemployment	High
Lowering of quality of life	Moderate to high

TABLE 3.4.c.:

**SUMMARY of regional impacts on Herschel/Sterkspruit district  
as a result of DBNM mine closure**

<b>DESCRIPTION OF IMPACT</b>	<b>SIGNIFICANCE FOR TRANSKEI</b>
Increased unemployment in Herschel/ Sterkspruit district	Moderate
Lowering of quality of life in Herschel/ Sterkspruit district	Moderate

This concludes the assessment of impacts. The following chapter suggests measures which could mitigate some of the negative impacts of mine closure.

# Chapter Four

## MITIGATION

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## Chapter 4 MITIGATION

### 4.1 INTRODUCTION

The previous chapter dealt with the assessment of socio-economic impacts of future mine closure on DBNM employees, their dependants, and the regions of Namaqualand and Transkei. This chapter suggests mitigatory measures which could alleviate or reduce the negative socio-economic impacts previously described.

Because of the nature of the project action, which is mine closure as a result of the exhaustion of a finite resource, the focus of mitigation is compensation for impacts by providing substitute resources.

Suggestions for mitigation will be dealt with in the following sections:

- DBNM employees
- DBNM employees' dependants
- The Namaqualand region
- The Herschel/Sterkspruit district, Transkei.

Suggestions for mitigation were generated by the author, DBNM employees, Namaqualand communities and a wide range of interested and affected parties which included businesses and regional authorities. Those for the Transkei were generated by consultant Susan Lund and the employee questionnaire.

Ratings of the relative cost to DBNM in time, personnel and money accompanies each suggestion for mitigation, as well as the estimated ease or difficulty of implementation. The purpose is to provide an indication of the practicality of each suggestion. It should be noted that:

- i) these ratings are estimations only;

- ii) the ratings are not indications of whether the suggestions should be implemented or not, merely indications of the costs and practical problems likely to be involved.

Emphasis will be placed on measures to mitigate impacts on DBNM employees rather than on dependants or the regions, as the client has stipulated that "the core of our concerns is to investigate a company issue" (Bath, Senior Personnel Manager, DBNM, pers. comm.)

Suggestions for measures to mitigate impacts on DBNM employees follow.

## 4.2 MITIGATORY MEASURES FOR DBNM EMPLOYEES

Mitigatory measures for employees should be concentrated in the following spheres:

- re-employment where possible:
  - by transfers to sister companies
  - by negotiations with other mines in region
  - by offering employment in DBNM's continued economic activity in the region
- conditions of severance to offset material loss
  - retrenchment pay
  - pension payout
- preparation of employees for retrenchment:
  - improve the two-way communication between management and employees
  - establish a "2002 Working Group" of management and a cross section of employees to plan the most advantageous closure strategy
  - assist employees to raise their levels of education and training during the next 10 years.

- assist employees to save or invest during the next 10 years
- assist employees to obtain housing during the next 10 years
- enable employees to increase their pension contribution during the next 10 years
- inform employees of the details of Unemployment Insurance Fund benefits.

#### 4.2.1 Re-employment where Possible

- **Transfers:** DBNM should investigate the possibility of transferring retrenched employees to sister companies or organisations. Where possible, DBNM employees should be offered alternative employment in sister companies elsewhere in the country in preference to employing newcomers.

It should be noted that many employees asked in the employee questionnaire whether transfers were a possibility. If transfers are unlikely to occur, or if they are likely to include only a small proportion of DBNM employees, this information should be communicated to employees well before mine closure in order to quell unrealistic expectations. The reasons why transfers are unlikely should be explained simply and accurately.

##### Practicality Assessment

Time cost:	low
Personnel cost:	low
Financial cost:	low
Implementation difficulties:	low

- **Employment on other mines:** DBNM management should liaise with other mining operations in the region to establish whether it is likely that other mines would employ DBNM retrenched staff either at the time of mine closure or close to the time of closure. This is unlikely to be the case with other diamond mines as informed sources believe DBNM's closure is the start of a trend of closure of diamond mines in the region. However, the

copper mining companies should be approached in this regard. Findings should be communicated to DBNM staff, so that they understand the chances of re-employment in the regional mining operations.

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	low
Financial cost:	low
Implementation difficulties:	moderate

- **Employment in DBNM's future Namaqualand activities:** DBNM is currently investigating alternative land use options for the 366,000 ha the company owns in Namaqualand. Approximately 75% of this land is currently being farmed and De Beers is in the process of forming a separate West Coast Farming Company for this purpose. Where possible, retrenched mine employees should be offered employment in this company.

DBNM has already embarked on a programme of rehabilitation of the mine area. Retrenched employees should be used where possible in the rehabilitation programme. This could be accompanied with basic instruction on, for instance, methods of combatting erosion or improving veld management which would be of use to employees who may farm stock at a later date.

In any other commercial enterprises De Beers undertakes in Namaqualand in the future, staff currently employed by DBNM should be considered for employment. This would include alternative use of the towns of Kleinsee and Koingnaas.

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	moderate
Financial cost:	low
Implementation difficulties:	low

#### 4.2.2 Conditions of Severance to Offset Material Loss

- **Retrenchment pay:** DBNM should link retrenchment pay with years of service, thus rewarding those who have stayed with the company longest and ensuring that it is in the interests of employees to remain with the company. Management should investigate whether there are employees who would rather receive retrenchment pay spread over several months, and if so, offer it as an option to receiving a lump sum. This should not be seen as converting severance pay to a pension, but rather as giving those who want it, an opportunity to continue receiving a monthly income for the months immediately after retrenchment.

The amount of retrenchment pay should be negotiated with employees. "The gains in trying to achieve minor economies in settling staff severances are often illusory. It is better to err on the generous side as the opportunity for saving money in this way has not proven to be worth the risk of costly litigation" (Stoten, 1989). While South Africa does not have a tradition of litigation, the cost to DBNM in terms of damage to company image or the cost of industrial action at sister companies, could be high.

##### **Practicality Assessment**

Time cost:	moderate
Personnel cost:	moderate
Financial cost:	high
Implementation difficulties:	low

- **Pension payout:** DBNM employees go on pension at 60 years and can opt for early retirement at 55 years with reduced benefits. As well as offering pension payouts of a lump sum on being retrenched, DBNM should offer the option of early retirement at 55 years with full benefits and early retirement at 50 with reduced benefits, to staff who have been with the company longer than 20 years. This offer could be made to employees before mine closure, thereby reducing staff as well as benefitting

employees. A well-designed early retirement programme can be a cost-effect tool in reducing staff (Stoten, 1989).

Pension payout to migrant workers should be calculated on actual years of employment, not on the number of months worked in a year as is currently the case.

#### **Practicality Assessment**

Time cost:	moderate
Personnel cost:	moderate
Financial cost:	high
Implementation difficulties:	low

### **4.2.3 Preparation of Employees for Retrenchment**

- **Ensure effective two-way communication:** It is clear from the results of the employee questionnaire that staff have very little information about future mine closure. 48% do not believe the mine will close and 27% are unsure. Of the questions that employees asked, 30% wanted to know what the fate of employees would be when the mine closed; 21% about compensation and 18% about the reasons for mine closure. This uncertainty can place severe stress on staff morale as well as affecting productivity.

DBNM should improve the existing two-way system of communication between management and employees to keep employees informed about future plans regarding mine closure and to keep management informed about employees' concerns and suggestions in this regard. This information should be available in Xhosa, English and Afrikaans. In the absence of information, rumours are likely to flourish, again affecting morale and productivity. Clear and consistent information should be given to employees at all levels. Accurate and timely information can assist employees in preparing for mine closure.

**Practicality Assessment**

Time cost:	high
Personnel cost:	high
Financial cost:	low
Implementation difficulties:	high

- **Establish a "2002 Working Group":** This group should consist of representatives of management and a cross section of other employees or employee representatives to plan the most advantageous closure strategy for both DBNM and employees.

There is a tendency for senior management to close ranks in planning retrenchments. However, a major advantage of spreading responsibility and decision-making is that those who have contributed to the decision usually are far more willing to accept the results. In addition, employees often have constructive ways of suggesting new operational approaches, since they also have a stake in the long-term success of the company.

This group should make use of the two-way communication to disseminate and obtain information.

**Practicality Assessment**

Time cost:	high
Personnel cost:	high
Financial cost:	low
Implementation difficulties:	high

- **Assist employees to raise level of education/skills :** The lower the level of education or skills, the less chance employees will have of finding alternative employment. Of the Transkei group, 27% have no schooling, 54% have less than Std 5 and 19% have between Std 6 and Std 8. Of the Namaqualand group, 32% have primary school education only and 40% have between Std 6 and Std 8. DBNM's adult education facilities and skills training in the evenings should be made available to all employees, not just to those who have been nominated by their seniors as is currently the

case. In the 10 years before mine closure, is it possible for many employees to pass matric or Std 8 and to learn a skill. DBNM should investigate which skills are most needed in the labour market and concentrate on providing those. Full-time staff should be appointed to run the courses which should be designed in consultation with employees.

#### **Practicality Assessment**

Time cost:	high
Personnel cost:	high
Financial cost:	moderate
Implementation difficulties:	moderate

- **Assist employees to save or invest:** Savings started now could help employees when the mine closes. From interviews with staff, it was apparent that many employees, especially from the lower Paterson Bands, had no savings. DBNM should offer counselling on the best savings or investments to all levels of staff, and encourage them to initiate some sort of saving now.

#### **Practicality Assessment**

Time cost:	moderate
Personnel cost:	low
Financial cost:	none
Implementation difficulties:	low

- **Enable employees to obtain housing:** From the questionnaire, it was established that 55% of DBNM employees did not own housing (64% from the Namaqualand group and 72% from the Mine group). Although 100% of Transkei employees own housing, this is of a substandard nature, frequently one-roomed cement brick houses with a couple of wattle and daub dwellings on the property (Lund, pers. comm.) DBNM's current building loan system is available to those who are not entitled to family housing on the mine and is tied to the pension scheme which employees said makes it difficult to build. DBNM should make the building loan scheme more flexible to ensure that within the 10 years to mine closure,

all employees who do not have mine housing would have had the opportunity of building their own houses.

DBNM should encourage the Mine group to buy houses in urban centres now.

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	low
Financial cost:	none
Implementation difficulties:	low

- **Enable employees to increase pension contributions:** Employees currently contribute 7.5% of salary to the Pension Fund, and DBNM an amount which is not less than 7.5%. On retiring employees receive 2% of salary for each year of service. DBNM should enable employees to increase their ultimate pension payouts by increasing their employees contributions now.

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	low
Financial cost:	none
Implementation difficulties:	moderate

- **Inform employees of UIF:** DBNM should explain the workings of the UIF and urge employees to apply for unemployment benefits after retrenchment. It should be explained who is eligible (those who have worked longer than 3 years and who earn less than R53,000 a year); that applicants must apply within 91 days of being retrenched; that they will receive about 45% of their latest salary for a period of six months only. Closer to the time of closure, DBNM should supply employees with lists of where their nearest UIF claim point is in Namaqualand or Transkei. DBNM should ensure that employees UIF cards are available at the time of mine closure.

### Practicality Assessment

Time cost:	low
Personnel cost:	low
Financial cost:	none
Implementation difficulties:	low

#### 4.2.4 Key Points for DBNM in Dealing with Mitigatory Measures

- **Effective communication** is crucial. Lack of it is unfair to employees and could lead to significant labour problems. "Single enterprise towns are relatively closed social systems. Social relations are focused on the workplace and the mine becomes the source of concern, especially in periods of uncertainty and economic downswing...Rumours tend to mirror the residents' feelings of neglect as well as impotence in the face of changing circumstances resulting from changes in the company structure" (Hodgson, 1983). In the absence of information, rumours are likely to flourish.
- The **involvement of employees** on all levels is important to the success of mitigatory measures.
- The formulation of mitigatory measures should be sound, but **flexible** to allow change.
- Management should make various **options** for retrenchment packages available to employees.
- DBNM should **take the initiative in offering counselling and advice** to employees on matters regarding preparation for retirement, savings and investments, and in-house education and training. What may seem like general knowledge to those who have had the advantage of tertiary education, could be quite unknown to employees who have never been to school and come from isolated communities.

- DBNM should be aware of the 'fish bowl' analogy to their mining operations in Namaqualand, and in their handling of mine closure. "The monopoly situation enjoyed by companies in single-industry mining towns, especially when they are isolated from other possible employment sources, makes them a **more visible example of deindustrialization** than many manufacturing firms that undergo similar processes" (Bradbury, 1983).
- Although a certain number of 'handouts' are inevitable and necessary, the **emphasis of mitigatory measures should be social investment** in employees to raise their socio-economic status over the next ten years.
- In dealing with mine closure, DBNM should **establish a strong focus on the future** in terms of preparation for retrenchment and opportunities available to employees in the era after closure.

This concludes mitigatory measures for DBNM employees. Mitigatory measures for DBNM employees' dependants follows.

### **4.3 MITIGATORY MEASURES FOR DBNM EMPLOYEES' DEPENDANTS**

#### **4.3.1 Training Sponsorship**

Currently boarding school fees for employees in the Mine group are paid by DBNM, and primary school education on the mines is largely subsidised. DBNM should therefore concentrate assistance on the dependants of the Namaqualand and Transkei groups, as education levels of dependants are low, and the cost of education is often high because of the large distances to, for instance, secondary schools in the rural areas. The recommendations of Lund (Baseline Information Report) could be adopted for both groups:

- DBNM should award entrepreneurial training sponsorship to one young, adult from each employee household

- training should be directed towards business and artisan skills
- training programmes should begin at least five years before mine closure
- DBNM should commission a training institution, non-government organisation or consultant to manage the training.

#### **Practicality Assessment**

Time cost:	high
Personnel cost:	moderate
Financial cost:	high
Implementation difficulties:	high

This concludes mitigatory measures for employees' dependants. The following section deals with regional mitigatory measures.

## **4.4 REGIONAL MITIGATORY MEASURES: Namaqualand**

### **4.4.1 Introduction**

Although DBNM has indicated that the core of their concerns in commissioning an impact assessment was to investigate company issues, rather than regional or national issues, this report includes suggestions for regional mitigatory measures for the following reasons:

- De Beers states that it endeavours to live up to the ideal of former chairman, Sir Ernest Oppenheimer, who said: "The aims of the Group have been - and they still remain - to earn profits, but to earn them in such a way as to make a real and permanent contribution to the well being of the people and to the development of southern Africa" (De Beers Philosophy, undated).

- For over 60 years DBNM has extracted substantial wealth from diamond mining in Namaqualand, which remains one of the poorest, least developed regions in the country.

Regional mitigatory measures should be seen against the background of what DBNM mine closure will mean for Namaqualand:

- a general downswing in the regional economy which is based on mining
- loss of access to resources in towns and communities where employees salaries were spent
- substantial loss of revenue to regional authorities responsible for financing infrastructural needs
- an increase in unemployment and associated social pathology

Regional mitigation, therefore, should be aimed at alleviating these aspects.

The following sections will deal with:

- how DBNM can play a part in Namaqualand's rural development
- how DBNM can contribute to specific Namaqualand communities where a high ratio of DBNM employees live
- provision of training to improve local stock farming
- alternative land uses for DBNM property
- the land ownership issue
- preparing the regional business community for mine closure

#### **4.4.2 DBNM's Involvement in Namaqualand's Rural Development**

- **Establishment of a Namaqualand rural development fund:** It is suggested that DBNM establish a fund for rural development in Namaqualand now, which would operate along the lines of the Anglo American De Beers Chairman's Fund. As with the Chairman's Fund, the Namaqualand fund should consist of a 'responsive fund' where donations can be made to

appeals within its terms of reference; and a 'special projects fund' which would help finance development projects which have long-term implications. These should be projects from which the fund can withdraw in time, leaving behind something sustainable and worthwhile.

The fund can be seen as DBNM's equivalent of Namaqualand's 'Diamond Fund'. This is a fund which was established by central government whereby companies which mined diamonds on land they did not own, paid royalties into the fund. Money from the funds are now spent in Rural Coloured Areas only (Baseline Information Report).

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	low
Financial cost:	high
Implementation difficulties:	moderate

- **Appointment of a rural fund co-ordinator:** A fund of this nature in so poor a region can be expected to have hundreds of appeals. It is important that the funds are spent on appeals and projects which would be the most effective, and ultimately, the most sustainable. It is equally important that any development the fund finances is structured in a way which is appropriate to the whole region's history and overall economic development (Dunne, 1989). For this reason the fund would need a permanent co-ordinator, whose main tasks would be to:
  - be familiar with development strategies for the region
  - be familiar with development projects currently underway in the public and private sectors and with aid agencies
  - establish terms of reference for the fund, which should be flexible but appropriate to the region's needs
  - liaise directly on a continuous basis with the regional authorities, grassroots community organisations and aid agencies to establish development needs

- decide where to be financially supportive of existing development projects, and where to be proactive and initiate the fund's own projects
- ensure that development projects are sustainable, environmentally sound and orientated to self-help so that the fund could withdraw its assistance in time.

The co-ordinator should preferably have a background in rural development planning.

#### **Practicality Assessment**

Time cost:	high
Personnel cost:	low
Financial cost:	high
Implementation difficulties:	moderate

#### **4.4.3 DBNM's Involvement in Specific Communities**

Although DBNM employees are drawn from the whole of Namaqualand, the following communities have a particularly high ratio of DBNM employees to households: Komaggas (89%); Buffelsrivier (59%); Hondeklipbaai (48%); Steinkopf (43%); Lekkersing (21%). With the exception of Hondeklipbaai, these towns are all in the Rural Coloured Areas, which are characterised by poor infrastructure and inadequate health, educational and recreational facilities. It is suggested that these communities be the focus, initially, for the financing of projects and development from the fund.

The perception exists among these communities that 'De Beers' invests aid in the rest of the country and internationally, but not in their communities close to the mine. Community needs should be discussed with residents, particularly with the civic associations, rather than the Management Boards only, which do not enjoy extensive community support. Areas of need which are likely to be pinpointed are:

- education
- health
- water provision
- sanitation

- recreation
- services of social workers

#### **Practicality Assessment**

Time cost:	high
Personnel cost:	low
Financial cost:	high
Implementation difficulties:	moderate

#### **4.4.4 Training in Stock Farming**

Namaqualand has a serious problem of overstocking in the Rural Coloured Areas. In 1984, 60% of the white-owned farms in central Namaqualand were overstocked. An extensive education programme by the Department of Agriculture has brought this problem under control (Smit, pers. comm). It is suggested that DBNM fund a long-term, 'hands on' education programme, particularly in the Rural Coloured Areas, aimed at improving veld management as well as improving breeds. The programme should aim to train certain members within the communities, who eventually would run the education programmes themselves. Training could be carried out on DBNM farms, and incorporated into the management of the farms.

#### **Practicality Assessment**

Time cost:	high
Personnel cost:	low
Financial cost:	moderate
Implementation difficulties:	moderate

#### **4.4.5 Alternative Land Uses of DBNM Property**

Economic activity on DBNM's 36,000ha of land, mainly in Namaqualand's coastal zone, would provide jobs and thereby alleviate unemployment. The extent to which it would mitigate unemployment depends on the nature of the economic activity. Given the climatic and water constraints, and the remoteness of the areas, alternative land uses are limited. Various suggestions for land uses were gleaned from a wide cross-section of interested and affected parties, including DBNM employees, regional

authorities, businesses, farmers, conservation bodies and local inhabitants. It should be noted that these are merely suggestions, and that the feasibility of such suggestions is beyond the scope of this report. It is recommended that whatever land uses are adopted by DBNM, are first subjected to an environmental impact assessment.

**DBNM towns:** most of the suggestions for alternative use of DBNM's land were for the towns of Kleinsee and Koingnaas. The most frequent suggestions were that the towns be privatised and developed for tourism. However, the high maintenance costs of Kleinsee (R7.9 million a year) and Koingnaas (R3.5 million), were probably not known to those who made the suggestions. Other suggestions were that the towns be sold or leased to DBNM employees; that small industries be established; that Kleinsee be developed into a fishing and yachting harbour; that the towns be used to house Eskom staff if a nuclear power station were built on the West Coast.

**DBNM farms:** suggestions were mainly from DBNM employees, of whom 27% said the farms should be sold or leased to anyone interested; 24% said they should be sold or leased to employees; 17% said DBNM should continue farming; 14% said the farms should be given or returned to Namaqualanders and 8% said Namaqualanders should be allowed grazing rights.

**DBNM mined areas:** suggestions included rehabilitate the area to be used for farming; allow prospecting concessions to small companies; use the area for off-road vehicle racing and establish a mining museum.

#### 4.4.6 Land Ownership Issue

Although not strictly a mitigatory measure, it is suggested that the land issue be addressed by DBNM, as the matter could have significant bearing on the future economic activity of DBNM in the region. For that reason, the matter will be discussed briefly.

The land ownership issue is highly contentious. Many DBNM employees and all three communities interviewed (Steinkopf, Buffelsrivier and Komaggas) stated that the land now owned by DBNM ought to be returned to the Rural Coloured Areas after mine closure. The land issue is not a legal dispute. DBNM employees and inhabitants of the reserves are aware that DBNM has title deeds to the land and that by law they therefore own it. It is essentially a political dispute. The difference is that in a legal dispute, there is consensus as to the validity of the general rules and laws of arbitration. In a political dispute, the values themselves, which give rise to the legal system, are in dispute.

In Namaqualand there has been an increasing cognisance among the descendants of the indigenous population, of the coercive process built into colonial land acquisition, and the exploitation of people who did not appreciate the significance or consequences of what was happening at the time. Generally, in post colonial societies this rise in cognisance is accompanied by an increased resistance, which gives rise to the land conflicts inherent in such societies. If the resistance is strong enough, it will eventually reach a threshold, as it has in many countries in Africa, which could manifest itself in violence and demands for restitution.

How to resolve the land issue is not easy. However, it is suggested that DBNM and people of the 'coloured reserves' begin discussions on the matter. A negotiated solution could result in, for instance, both parties having joint usage of the land governed according to a sound environmental management policy.

Avoiding the issue is likely to be of little advantage to a company which aims to remain economically active in a post-apartheid Namaqualand.

#### **4.4.7 Preparing the Business Community for Mine Closure**

While conducting the business survey for this assessment, it was apparent that businesses were generally unaware of future mine closure, and expressed concern at the prospect (Baseline Information Report). It is suggested that DBNM establish contact with business associations in Springbok such as the Afrikaanse Handelsinstituut to inform them of future closure. If this is done early enough, those

businesses which are particularly dependent on DBNM could begin plans to alter their focus of business.

#### **Practicality Assessment**

Time cost:	low
Personnel cost:	low
Financial cost:	low
Implementation difficulty:	low

This concludes suggestions for mitigation of regional impacts in Namaqualand. The following section deals with mitigation in the Herschel/Sterkspruit district of the Transkei.

## **4.5 REGIONAL MITIGATORY MEASURES: Transkei**

### **4.5.1 Introduction**

About 80% of DBNM's 700 migrant workers come from the Herschel/Sterkspruit district in the Transkei, adjoining the southern Lesotho border. Like Namaqualand, it is an impoverished area with inadequate infrastructure and facilities. The population has a low level of education with adult illiteracy of about 60%. There is little economic enterprise, and migrant wages and old age pensions are the primary source of income.

A consultant was appointed to assess the impacts of mine closure on the area, which is contained in the Baseline Information Report. Her recommendations for mitigation will be summarised in this section.

### **4.5.2 Rural Development Assistance (a summary of Lund, 1992)**

- **Health, water and fuel:** The return of about 455 retrenched employees would place an added strain on an already over-burdened and inadequate infrastructure, particularly on medical services, water supply and wood fuel. A contribution should be made by DBNM to mitigate the

impact on these three essential aspects. Consideration should be given to the following possibilities:

- financial support to emergent development programmes in the district which are aimed at improving water supply, social forestry and health care
- supporting specific clinics in employees' villages
- supporting an aspect of the district's hospital needs
- supporting the training of village health workers
- supporting the extension of electricity grids to the employees' villages.

#### **Practicality Assessment**

Time cost:	moderate
Personnel cost:	low
Financial cost:	high
Implementation difficulties:	high

- **Investigation:** The above require further investigation with suitably qualified assistance, and discussion with trade unions representing the Transkei employees.

This concludes the section on mitigatory measures. The following chapter contains conclusions of the major impacts.

# Chapter Five

## CONCLUSION

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## Chapter 5 CONCLUSION

### 5.1 INTRODUCTION

The major conclusions of the socio-economic impacts of the future closure of DBNM's diamond mining operation in Namaqualand are contained in this chapter. The conclusions are divided into two parts:

- Part A:** summarises the main findings of the impacts
- Part B:** contains descriptions of what the lives of three typical DBNM employees are likely to be, one year after retrenchment.

The purpose of Part B is to convey the impacts of mine closure in more personalised terms. This should be read as a follow-up to section 1.6.2 in chapter 1, which contained profiles of three typical employees before mine closure. Part B therefore completes the 'before' and 'after' impression. The three individuals represent the three groups that DBNM employees were divided into for this assessment:

- **Transkei group:** about 23% of all DBNM employees, all of whom are black migrant workers from the Transkei
- **Namaqualand group:** about 63% of all DBNM employees, all of whom are 'coloured' people, whose families do not live with them on the mine
- **Mine group:** about 18% of all DBNM employees, of whom approximately 80% are white and 20% 'coloured', all of whom live on the mine with their families.

The reasons why these categories were selected are detailed in section 1.6.

It should be noted that the future scenarios described in Part B are based on factual biographical and other data contained in the Baseline Information Report, as well as on the predicted impacts assessed in this report. However, they are a subjective interpretation of this data, and should be seen as such.

Part A is factual information only.

## Part A

### 5.2 UNEMPLOYMENT: GENERAL

- Approximately 3,000 DBNM employees will be retrenched with mine closure, which represents 33% of all people employed by the mining industry in Namaqualand and 13% of the economically active population of the region.
- Further retrenchments in other sectors as a result of secondary impacts of mine closure will increase the percentage of retrenchments in Namaqualand to approximately 15%.
- Assuming that the retrenched workers represent one DBNM employee per household, and that the average number of people per household is 5, approximately 15,000 people will be negatively affected by mine closure. The negative effect is the result of extended households in rural Namaqualand and Transkei, in which members are financially inter-dependent.
- Unemployment of retrenched workers is likely to be long-term because of the following:
  - current national unemployment rates, the most severe in the post-war period, are likely to increase as the rapid population growth is not

being met by equally sharp increases in employment (Bureau for Economic Research, 1992)

- the labour absorption of the formal sector nationally has declined from 97% in the 1960s to 73% in the 1970s to 22% in the early 1980s. This has dropped to 7% for the period 1985 to 1990 (Bureau for Economic Research, 1992)
- the increasing tendency of the private sector to replace labour with capital
- the advanced age of some of the DBNM employees, particularly those from the Transkei
- the low levels of education and skills of most of the DBNM employees
- the probability that DBNM's mine closure is indicative of the start of a trend in Namaqualand, with other diamond mines likely to close soon afterwards, thus exacerbating unemployment.

### **5.3 MAJOR IMPACTS ON DBNM EMPLOYEES**

- The major impact of mine closure on DBNM employees is loss of jobs, which is essentially a loss of access to resources - income, medical benefits, housing. Secondary impacts are an inability to support dependants and a lowering of quality of life.
- The impact of loss of jobs, and thus loss of access to resources, would be most severe on the DBNM employees from the Transkei and Namaqualand groups because of:
  - their low socio-economic status (27% earn between R500 and R1,000 a month; 46% between R1,000 and R1,500), which indicates a lack of capital in their households and a consequent lack of material resources to fall back on
  - the high number of dependants to support (an average of 8 for the Transkei group)
  - the fact that they live in the impoverished rural areas of Namaqualand and Transkei where resources as already scarce, both natural resources (water, fuel) and infrastructural resources such as education and health care.

- The impact on the Transkei and Namaqualand group is likely to be long-term because of the poor chances that employees from these groups have of being re-employed. This is largely because of:
  - their low levels of education (on average Std 7 for the Namaqualand group and Std 2 for the Transkei group)
  - their low levels of skills (95% of the Namaqualand group are in the unskilled Paterson Bands A and B; 100% of the Transkei group are in A and B)
  
- The impact of loss of jobs, and thus of access to resources, would be of moderate significance to DBNM employees from the Mine group. This is because of:
  - their higher socio-economic status (51% earn over R3,000 a month; 16% between R2,000 and R3,000), which indicates they are likely to have material resources to fall back on
  - the lower number of dependants to support (an average of 2).
  
- The impact of loss of jobs on the Mine group is likely to be medium term. This is because they are more likely to obtain re-employment for the following reasons:
  - they have higher education levels (31% have matric and 36% have tertiary education)
  - they have higher levels of skills and expertise (50% are in Paterson Band C which requires skills; 12% are in the higher managerial bands of D and E)
  - they have a higher mobility than the other two groups and are therefore exposed to a larger job market.

#### **5.4 IMPACTS ON DBNM EMPLOYEES' DEPENDANTS**

With loss of income after mine closure, many former DBNM employees will be unable to support their dependants. The impact will vary from one group to another, depending on the amount of additional income to employees' households and the number of dependants each employee has.

- Dependants of the 455 DBNM Transkei employees:
  - approximately 2,800 dependants of Transkei employees would lose their only source of financial support
  - approximately 288 people, who are largely dependent on Transkei employees, would have their financial support reduced to about R30 per person per month.
  - approximately 544 people, who are largely dependent on Transkei employees, would lose their primary source of financial support, but would have some alternative form of income which is not known
  - thus a total of approximately 3,632 people in the Transkei would be negatively affected by employees' loss of income due to mine closure.
  
- Dependants of the 1,865 Namaqualand group of DBNM employees:
  - approximately 2,349 dependants of the Namaqualand group would lose their only source of financial support
  - approximately 1,734 people, who are partially dependent on Namaqualand employees, would have their financial support reduced to between R120 and R180 per person per month
  - thus a total of approximately 4,083 people in Namaqualand would be negatively affected by employees' loss of income due to mine closure.
  
- Dependants of the 500 Mine group of DBNM employees:
  - approximately 1,070 dependants of the Mine group of employees would lose their only source of financial support when the mine closes.
  
- **Totals:**
  - a total of 6,219 dependants of DBNM employees would lose their only source of financial support with mine closure
  - a total of 2,556 people who are partially dependent on DBNM employees, would have their financial support reduced.

## 5.5 ECONOMIC IMPACTS ON NAMAQUALAND REGION

- DBNM is the single biggest business activity in Namaqualand, constituting 32% of the regional turnover. Thus the negative impact on the regional economy when the mine closes would be high.
- Namaqualand would experience loss of revenue to the region through loss of DBNM's direct purchasing and loss of DBNM employees' spending. The town most severely affected would be Springbok, where the loss from DBNM's purchasing would be approximately R55.9 million, and the loss of DBNM employees' spending, approximately R19.3 million. This represents 15.7% of Springbok's turnover.
- In the rest of Namaqualand (ie. excluding Springbok) the loss from DBNM's purchasing would be approximately R16.5 million and R14.3 from employees' spending.
- In Springbok, 25% of firms have direct business links with DBNM (this excludes those which have links with DBNM employees). The firms which would be particularly negatively affected by loss of DBNM purchases are listed below. The percentage of each sector's business links and the amount of money this represents a year, is contained in brackets:
  - mining sector (85%; R31.5 million a year)
  - construction sector (50%; R5.1 million)
  - transport industry (22%; R6.8 million)
  - general suppliers (22%; R10 million)
- In Springbok, the business sectors which would be particularly negatively affected by loss of DBNM employees' spending are:
  - general suppliers (R6.6 million a year)
  - clothing and furniture suppliers (R5.2 million)
  - transport sector (R5.1 million)

- construction sector (R1.4 million)
- In Komaggas 36% (R0.93 million) and in Steinkopf 40% (R2.8 million) of turnover is attributed to business conducted with DBNM employees.
- 93% of businesses in Springbok and 74% of businesses in the rest of Namaqualand conduct business with DBNM, DBNM employees or both. As most of the non-mining activity in Namaqualand are small businesses, it can be assumed that small businesses will be the hardest hit by mine closure.

## 5.6 SOCIAL IMPACTS ON NAMAQUALAND REGION

- About 60% (1,865) of DBNM employees are 'coloured' people who come mainly from rural communities all over Namaqualand. This whole region is therefore likely to experience the negative impacts of mine closure
- Namaqualand's Regional Services Council will lose 30% of its total fees with mine closure. The RSC received approximately R2.4 million in total fees in 1991, of which R735,673 was paid by DBNM. The RSC uses funds mainly to distribute some of the region's profits into the poorer areas. In Namaqualand the RSC funds have been spent primarily on infrastructural needs such as provision of water, sanitation, electricity and roads. This loss of funds would have a significant negative effect on the poorer rural communities.
- There will be an increase in poverty as a result of the increase in unemployment, particularly in communities which have a high ratio of DBNM employees to the number of households - Komaggas, Buffelsrivier, Hondeklipbaai, Steinkopf and Lekkering.

- There is likely to be a drop in education standards if pupil numbers drop sufficiently low as a result of unemployed parents being unable to support children at school. Older children are likely to be forced to leave school in search of employment to contribute to the household income. If pupil numbers drop low enough, it is possible that some rural schools would close altogether, which would lead to a marked increase in illiteracy and a general lowering of education standards.
- Unemployment is likely to lead to an increase in social pathology, particularly an increased crime rate and an increase in alcohol abuse.
- With the loss of medical aid, the health levels of DBNM employees' dependants is likely to drop, as a result of loss of income and medical benefits. This is significant in a region where relatively easy to treat diseases such as pneumonia, gastro-enteritis and tuberculosis, are among the major causes of death in Namaqualand.

## **5.7 SOCIAL IMPACTS ON THE HERSCHEL/STERKSPRUIT REGION IN TRANSKEI**

- About 23% (700) of DBNM employees come from the Transkei. As DBNM has stopped recruiting migrant workers, the number of employees from the Transkei at the predicted time of mine closure in 2002 will be approximately 455. Of these, 80% come from the magisterial district of Herschel, generally known by locals as Sterkspruit.
- The impact in the Herschel/Sterkspruit district will be felt at three levels:
  - loss of income to employees' households to meet basic daily needs for food, shelter, fuel, transport, medical care and education
  - loss of income is likely to force the household's older children to leave school in search of employment for household support. This impact has far-reaching implications and is a serious debilitating factor to any long-term development initiatives

- the return of 455 unemployed people to the district places added strain on an already over-burdened and impoverished social fabric, particularly in demands on medical services, water supply and wood fuel (Lund, 1992).

This ends Part A. The following section, Part B, contains lifestyle sketches of three typical DBNM employees, one year after retrenchment.

## **Part B**

It should be noted that the following scenarios are based on factual biographical and other data contained in the Baseline Information Report, as well as the predicted impacts assessed in this report. However, they are a subjective interpretation of this data, and should be seen as such.

The purpose of this section is to convey to the reader, a more personalised idea of what mine closure could mean to DBNM employees.

### **5.8 A FORMER DBNM EMPLOYEE FROM THE TRANSKEI GROUP OF EMPLOYEES, ONE YEAR AFTER RETRENCHMENT**

He is a 55-year-old Xhosa-speaking married man, who worked at Namaqualand mines as a labourer for 25 years. He was a migrant worker, and worked at Kleinsee for six months at a stretch after which he returned home to his family at a village near Sterkspruit, Transkei, for two months. At the end of the two months he was re-recruited by DBNM for a further six months' employment. The company recruited the same individuals on a continuous basis for years.

He never believed the mine would close. But last year, in 2002, it did. He made the long bus ride from Namaqualand to Sterkspruit near the Lesotho border for the last time. He usually enjoyed the ride, looking forward to seeing his family again, but that

time he did not. At 54 he was too young to go on pension, and too old to be re-employed.

For the first six months after retrenchment, things had not been too bad. Every two weeks he took a taxi from his village into Sterkspruit, where he collected his unemployment pay, but the payments had ended six months ago. The money he had received from retrenchment pay had been used up too. He had spent it on extending his one-roomed cement brick house into a three-roomed house, which meant his family did not have to use the two wattle and daub huts as living quarters any more.

Now he relied on two of his six children to support him. He was proud that he had managed to pay for their education. He himself had had to leave school in Std 2 because his father could not afford to keep him at school. He had paid for his son, now 23, to go to training college and he was now a teacher at a school in Aliwal North. Although his son was married with two children, he managed to send money home to his father every month. His 20-year-old daughter was a nurse in Bloemfontein, who sent money home most months. Both his son and his daughter had agreed to pay for their 17-year-old brother, who was in Std 9, to finish matric. But the two younger children, in Std 5 and Std 7 would have to leave school at the end of the year. The village primary school was affordable, but the high school was further afield and transport costs and boarding fees were expensive. He regretted this as he knew how difficult it was to get jobs with no education or training.

He sat on the steps in the weak winter sun. It had been a cold night. He did not need a weather report to know that it had been below freezing last night, with his old mine boots crunching through the frost on the way to the pit latrine. At least the house had been warm, but how much longer would they be able to afford fuel? Paraffin was getting more and more expensive and even wood cost a lot. He remembered as a boy how he used to help his mother collect wood. They never seemed to have to walk far and it was free. Now there was hardly a tree in sight and they had to buy wood at the village store. And in those days his father's stock had been plump. Now there were few cattle that had survived the drought were scrawny and grazing was hard to come by.

There was seldom meat to eat these days as there had been when he was working on the mines. His wife grew vegetables but was getting old and complained about having to carry so many buckets to keep them watered. They had no running water in the house. In the drought the village hand pump had dried up and villagers had to walk to the nearest stream, an hour there and back. The vegetables had died. Some people had visited the village a few year's ago and talked about irrigation, but nothing had come of it.

It was the day for the mobile clinic to visit the village. He would not bother to go. The mine doctor had understood the pains in his chest and had given him pills which relieved the pain. The doctor had given him a prescription before he left the mines, but the mobile clinic did not stock them. He had once made the trip to the hospital, but it was far and the pills expensive. He did not think he would go again, not unless the pain became worse.

In five years time he would be 60 and eligible for a government pension. It was not much, but would keep them going. Until then he would have to rely on his older children. But his younger children - it made him sad to think of them. Now they would probably end up like him.

#### **5.9 A FORMER DBNM EMPLOYEE FROM THE NAMAQUALAND GROUP OF EMPLOYEES, ONE YEAR AFTER RETRENCHMENT**

He is a 39-year-old Afrikaans-speaking married man, who worked for DBNM as a semi-skilled worker for 18 years. He lives with his family at Komaggas, a town of about 3,000 people in one of Namaqualand's Rural Coloured Areas, or 'reserves', about 45km inland from Kleinzee.

He never believed the mine would close. Perhaps eventually, but not in his lifetime. There seemed so much land available for De Beers to prospect. He had told his supervisor that the company should reduce the tempo of production. They were

always over target. If they had done that then perhaps they would not have run out of diamonds so quickly and he would still have a job.

Things had looked good for the first six months after retrenchment. He had made a down payment on a new bakkie with his severance pay and had planned a small building business. He used to drive to Springbok to get building materials, using the bakkie as a taxi on the trip there, giving his passengers a lower rate than the ordinary taxis. At first there was enough business. The 400 DBNM employees in Komaggas were all collecting unemployment pay and had their retrenchment pay as well. But it did not last long. People who had commissioned him to build could not pay and he in turn fell behind with the instalments on his bakkie. Two months ago his bakkie was repossessed. He should have listened to his brother and paid cash for an old one.

He had tried to get work in Springbok. Everywhere jobs were hard to find, and with only Std 6 and no skills, he had no luck. Besides, since the mine had shut, so had several businesses in Springbok. He had even travelled to Cape Town and tried to find work there, but could not. If only he had a trade, like his brother.

He was worried about his children's education. His oldest daughter would finish matric this year and he had two sons who were also at high school in Steinkopf. He had already fallen behind with the boarding fees but the school had said they would nevertheless allow the three children to complete the year. But then they would have to leave. That depressed him. He had hoped to give his children a good education so they would not end up like him. His youngest daughter was at primary school in Komaggas, which was cheaper as she stayed at home, but unless he found work, she would never be able to go to high school. If they had had a high school in Komaggas, it would have been easier.

For the present his younger brother, a trained mechanic in Springbok, sent him money when he could. The only other income was from his wife who worked at the local spinning and weaving co-operative in Komaggas that De Beers had built. The money helped buy a few essentials, but not much. It was not that the women did not produce a lot, it was that they had no means of transporting or marketing their goods. They

relied on a few regular customers who came up from Cape Town, with the result that enormous piles of hand-woven carpets and wall hangings lay gathering dust in the storeroom.

At least his house was his own. It had been a 'matjieshuis' in his grandparents' time, and had been changed to a corrugated iron shack and finally to the cement brick, three-roomed house it was now. He had built it himself. He leant against the gate and looked at the withering vegetable garden. His water had been cut off last week and they had to use the communal public tap. His wife had given him money to pay the water bill and half the gas bill this morning. The store would not give them another gas cylinder until he had paid off some of their bill. Water was always a problem in this part of the world. He had sold the last of his goats a few weeks ago, both because he needed the money and because the land was so over-grazed and drought-stricken, they would have died anyway.

He walked off down the dusty street, passed the garage and the bottle store, one of the few businesses that was doing well. A friend called out to him to join them for a drink. He declined. With so many unemployed people, the rate of drinking had increased dramatically. He had steered clear of it.

But perhaps just one drink wouldn't matter. There would probably be enough over for the water and gas. Besides, a drink would probably relax him, make him think more clearly. Plan what to do. Perhaps he should try Jo'burg. Probably a better chance of jobs there. If only he were qualified to do something. But he didn't know anyone in Jo'burg and anyway it would cost more than he had to get there. But something would turn up. It had to. If it didn't, well....He stopped and looked out over the dusty town and hills. He stood there a long while. The expression on his face changed slowly, hardly noticeable. Not quite sadness, not despair. More like resignation.

He turned and walked towards the group of men outside the bottle store.

## **5.10 A FORMER DBNM EMPLOYEE FROM THE MINE GROUP OF EMPLOYEES, ONE YEAR AFTER RETRENCHMENT**

He is a 46-year-old bilingual (Afrikaans and English) married man. He worked as an electrician on the mine at Kleinzee for 17 years where he had lived with his family. He now lives at Witbank in the Transvaal.

He misses Kleinzee - the close community life of the mine, the angling club, diving for crayfish, darts evenings. Never having to lock the house. He had never believed the mine would close - there seemed so much land still to prospect. Besides, the older chaps on the mine had told him they had heard the story about mine closure so often before, but the mine kept on going. Just a story to make you appreciate your job, they said.

And then it had closed. Finding a job had been harder than he had expected. He had thought with a matric and a diploma it would be easy. But times had changed and he was older, and it was the young guys that got the jobs.

At first he and his wife had moved to Cape Town where they had stayed with his parents. His three children were all at high school in Cape Town where De Beers had paid for their boarding fees. He had hoped to find a job and buy a house. He had found a job within three months, but prices for houses were so high, he could not afford to buy. He could not go on living with his parents. He regretted not having bought a house while he was working on the mines. It would almost have been paid off by now, and living rent free at Kleinzee, it would have been easy. He could have had tenants to help pay the bond.

He decided to try the Transvaal. He stayed with his brother in Brixton for about a month, looked around in Johannesburg, found a job but again the prices of houses were so high he realised he would be better off on a mine. He eventually found a job on the mines at Witbank, living in mine accommodation, where his wife and children joined him. His children were now day pupils at the local high school and his wife had a clerical job in the administration section of the mine.

Things weren't too bad. At weekends he sometimes joined a few guys fishing at Loskop dam. It was not quite the same as throwing your catch onto the coals at Kleinzee's angling club, with the smell of the sea and the sunset on the dunes, but it was alright. Life could be worse.

## 5.11 SUMMARY

This chapter sketches how closure of DBNM's diamond mines on the west coast could affect the 3,000 people who work for the mine and for their dependants. It sketches, too, what the changes are likely to be to the economy of Namaqualand, to the people of the region and the people of the Herschel/Sterkspruit district in Transkei. Part A contained factual material; Part B a subjective interpretation of this material.

The major impact of mine closure is, of course, loss of jobs. This in theory is not necessarily a negative impact, if it can be readily reversed, as was the case with the closure of the Beisa Mine in the Orange Free State in 1984. Within 10 days of closure, the company had found alternative employment for 80% of its staff, and eventually for 100%. (Taylor, 1986). However, South Africa's economic and political climate has changed considerably since then, and current unemployment levels are described by economists as the most severe in the post-war period (BER, 1992). With the decline in the labour absorption ability of the formal sector, there is little chance of the success of the Beisa Mine re-employment programme being repeated with the closure of DBNM. As this primary impact - job loss - is unlikely to be reversed, a ripple effect of negative impacts is thus also unlikely to be reversed, and will spread through families, towns, communities and regions.

However, although they cannot be reversed, this does not necessarily mean nothing at all can be done to lessen the negative impacts of mine closure and job loss. Suggestions as to how these impacts could be alleviated were discussed in chapter 4, under 'mitigation'. Drawing from these suggestions, the following chapter recommends measures that DBNM should adopt, with the help of their employees, regional authorities and the people of the region, to ensure that the negative impact of mine closure is kept to a minimum as far as is realistically possible.

# Chapter Six

## RECOMMENDATIONS

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## **Chapter 6 RECOMMENDATIONS**

The various actions that need to be taken to mitigate the socio-economic impact of mine closure are contained in this chapter. Most of these are recommendations to DBNM. However, it is essential that all players in Namaqualand, who are likely to be affected by mine closure, become actively involved in mitigatory measures, to ensure that the negative impact is minimised as far as is realistically possible. Therefore recommendations for mitigatory action will be made to the following groups:

- DBNM
- DBNM employees
- Regional Services Council and local authorities
- local and regional businesses.

The chapter ends by recommendations to DBNM to complete the IEM procedure.

### **6.1 RECOMMENDATIONS TO DBNM**

These are divided into two categories:

- Category 1: those which are essential for DBNM to adopt
- Category 2: those which are important for DBNM to consider

#### **6.1.1 CATEGORY 1: Recommendations essential for DBNM to adopt**

##### **6.1.1.1 Re-employment**

It is recommended that:

- in any commercial enterprises that DBNM undertakes in Namaqualand in the future, people currently employed by the company should be offered employment in preference to others. The extent to which this is possible

will depend on the nature of future enterprises, the employee skills needed and the employee skills available in DBNM's existing employee complement in the mining operation.

- closer to the time of mine closure, appropriate skills and other in-house training is made available to employees by the company in order that employees would have the necessary qualifications to be able to fill jobs in DBNM's future economic activities in the region.
- DBNM re-employ retrenched employees in the programme for rehabilitation of the mined area.
- DBNM re-employ retrenched employees where possible in the company's proposed farming operations in Namaqualand.
- DBNM investigate the possibility of retrenched employees being transferred to sister companies elsewhere in the country. If such a possibility exists, management should inform employees as to the number of employees and types of skills needed. If transfers are unlikely to occur, this should be communicated to employees in order to quell expectations which the EEU survey indicates already exist.
- DBNM management liaise with other mining operations in the region to establish the likelihood of other mines being able to absorb DBNM staff. Findings should be communicated to employees in order that they understand the chances of re-employment in the regional mining operations.

### **6.1.1.2 Conditions of Severance**

It is recommended that:

- DBNM link retrenchment pay to years of service, thus rewarding long service and ensuring that it is in the interests of employees to remain with the company. This should be made known to employees.
- DBNM negotiate retrenchment pay with employee representatives.
- DBNM investigate whether there are employees who would rather receive retrenchment pay spread over several months, and if so, offer it as an option to receiving a lump sum.
- DBNM offer full pension at 55 years to employees who have been with the company for 20 years or longer (as an option to receiving a lump sum when retrenched).
- DBNM offer early retirement at 50 years with reduced benefits to employees who have been with the company for 20 years or longer (as an option of receiving a lump sum when retrenched).
- DBNM calculate pension to migrant workers on actual years of employment, not on the number of months worked in a year as is currently the case. This would have bearing on the above two recommendations.

### **6.1.1.3 Preparation of Employees for Retrenchment**

It is recommended that:

- DBNM improve the existing system of two-way communication between management and employees to ensure that employees are kept informed

about plans regarding mine closure, and that management is kept informed of employees' concerns and suggestions in this regard.

- DBNM establish a "2002 Working Group" of management and employees to plan the most advantageous closure strategy for both DBNM and employees. Employees often have constructive ways of suggesting new operational approaches, since they also have a stake in the long-term success of the company. The group should be made up of representatives of all levels of staff.
- DBNM assist employees to raise their education and skills by extending the company's adult education facilities and skills training to all employees, not only to those who have been nominated by their seniors as is currently the case.
- DBNM investigate which skills are most needed in the national labour market and concentrate on providing those in the above courses.
- Full-time staff be appointed to design and run these courses which should be done in consultation with management and employees.
- DBNM assist employees to save or invest by offering counselling and advice to all levels of staff. This should be done in appropriate language. It was apparent from EEU interviews with employees that many employees, particularly in the A and B Paterson Bands, had no form of savings, investment or insurance.
- DBNM assist employees to obtain housing by making the building company loan scheme more flexible so that within the 10 years to mine closure, all employees who do not have mine housing would have had the opportunity of building their own houses.

- DBNM encourage employees who currently have family accommodation on the mine to consider buying houses in urban areas in preparation for when they leave the mine.
- DBNM enable employees to increase their ultimate pension payout by increasing their pension contributions now.
- DBNM explain, nearer the time of closure, the workings of the Unemployment Insurance Fund, who is eligible and what employees can expect to receive. UIF cards should be available at the time of mine closure.

#### 6.1.1.4 Key Points concerning Effective Implementation of Mitigatory Measures for Employees

- **Communication:** Effective, two-way communication between management and employees regarding the planning of mine closure is crucial. Lack of it is unfair to employees and could lead to significant labour problems.
- **Involvement:** The involvement of employees on all levels is important to the success of mitigatory measures. Those who are not part of the solution could become part of the problem.
- **Flexibility:** The formulation of mitigatory measures should be sound, but flexible to allow for change.
- **Initiative:** DBNM should take the initiative in offering counselling and advice to employees on matters regarding preparation for retirement, savings, insurance and in-house education and training.
- **'Fish bowl' analogy:** DBNM should be aware in their handling of mine closure of the 'fish bowl' analogy of single-industry mining towns, which makes them a more visible example of deindustrialization than others.

- **Social investment:** The emphasis of mitigatory measures should be social investment in employees to raise their socio-economic status over the next ten years.
- **Focus on future:** In dealing with mine closure, DBNM should establish a strong focus on the future in terms of preparation for retrenchment and opportunities available to employees in the era after closure.

### 6.1.2 CATEGORY 2: Recommendations Important for DBNM to Consider

It is recommended that DBNM consider implementation of the following mitigatory measures:

- the establishment of a Namaqualand Rural Development Fund by DBNM to help finance development projects which have long-term implications.
- that a co-ordinator for the fund be appointed, preferably with a background in rural development planning, whose main tasks would be to:
  - be familiar with rural development strategies and projects for the Namaqualand region
  - establish the terms of reference for the fund
  - liaise directly with regional authorities, community organisations and aid agencies to establish where development needs are greatest
  - decide where to be financially supportive of existing development projects and where to be proactive and initiate the fund's own projects
  - ensure that development projects are sustainable, environmentally sound and orientated to self-help so that the fund could withdraw its assistance in time.
- that the communities of Steinkopf, Komaggas, Buffelsrivier, Hondeklipbaai and Lekkersing, where a high ratio of DBNM employees to households exists, be the focus of development projects.

- that any proposed development within these communities be discussed with residents. Areas of need which are likely to be pinpointed are:
  - educational facilities
  - health facilities
  - water provision
  - sanitation
  - services of social workers
  - recreation
  
- in order to help redress the serious over-grazing problem in Namaqualand, that DBNM fund a 'hands on' education programme, particularly in the Rural Coloured Areas, aimed at improving veld management as well as improving breeds. The programme should aim to train certain members within the communities, who would eventually run the education programmes themselves.
  
- that DBNM and the residents of the 'coloured' reserves begin discussion on the land ownership issue, which aims at a negotiated solution such as joint usage of the land governed by a sound environmental management policy.
  
- that DBNM establish contact with business associations in Springbok such as the Afrikaanse Handelsinstituut to inform them of future mine closure. Those businesses which are particularly dependent on DBNM could begin plans to alter their focus of business.
  
- that DBNM give financial support to development programmes in the Herschel/Sterkspruit district of the Transkei, where the majority of DBNM's migrant workers live, which are aimed at improving water supply, forestry and health care.

This concludes recommendations in category 2, and the section on recommendations to DBNM. The following section contains recommendations to DBNM employees.

## 6.2 RECOMMENDATIONS TO DBNM EMPLOYEES

During the estimated ten years before mine closure, it is recommended that DBNM employees:

- take advantage of DBNM's current training courses to increase their skills.
- raise their educational qualifications by correspondence courses.
- encourage their children to remain at school at least until Std 8, and then to obtain a qualification such as a trade or secretarial diploma.
- make financial preparation for retrenchment by saving, investing or taking out insurance policies which would mature by mine closure.
- budget to pay for their children's education, particularly post-schooling.
- make use of DBNM's home building loan scheme during the next ten years to ensure they have adequate housing which is paid for before mine closure.
- those who live in family accommodation and are not eligible for home building loans, investigate buying a house in one of South Africa's urban centres which, after retrenchment, can either be occupied or sold.
- make constructive suggestions to employee representatives, management or the "2002 Working Group" about new operational approaches in their own sections of the mining operation which would facilitate mine closure.

- keep dependants and community members informed about plans for mine closure and encourage them to prepare for 2002.
- focus on the future and plan for the era after retrenchment.

This concludes recommendations to DBNM employees. The following section contains recommendations to the Regional Services Council and local authorities.

### **6.3 RECOMMENDATIONS TO THE REGIONAL SERVICES COUNCIL AND LOCAL AUTHORITIES**

It is recommended that:

- the Regional Services Council (RSC) plan for the era after DBNM mine closure when the council's total fees from levies would be reduced by approximately 30%.
- the RSC make use of eg. the findings of the development strategy currently commissioned by the House of Representatives to plan where development needs in Namaqualand, particularly infrastructural, are most acute.
- the RSC inform local authorities, management boards, and other authorities which participate in the RSC, of the substantial decrease in fees that the council will experience after mine closure.
- the RSC ask the above authorities to focus their requests for financial assistance where the needs are greatest.

## 6.4 RECOMMENDATIONS TO SPRINGBOK BUSINESS COMMUNITY

It is recommended that:

- business representative organisations such as the local Afrikaanse Handelsinstituut or a local Chamber of Commerce, inform members of DBNM's predicted mine closure in 2002.
- that businesses which are particularly dependent on DBNM investigate the possibility of altering their focus of business after 2002.

This concludes recommendations to the various groups. The following section contains recommendations for DBNM to complete the IEM process.

## 6.5 COMPLETION OF THE IEM PROCESS

It is recommended that:

- DBNM complete the final step of the assessment stage of IEM procedure, which is review of this draft document. The draft document should be circulated widely at the end of the assessment stage to provide an opportunity for review and comment by all interested and affected parties. The object is to ensure that all concerns have been heard and understood.
- that the interested and affected parties include:
  - DBNM management
  - DBNM employees' representatives (eg. NUM and Artisan's Liaison Committee)
  - communities which have a high ratio of DBNM employees to households (Steinkopf, Buffelsrivier, Komaggas, Hondelipbaai and Lekkersing)

- specific organisations within these communities which should include civic associations, management boards, teacher associations, local business members, church leaders and women's organisations.
  - Regional Services Council
  - Springbok's Afrikaanse Handelsinstituut
  - other I&APs which the above group may identify
- the draft copy be available in English and Afrikaans, and a summary in Xhosa.
  - I&APs are informed of the purpose of circulating the draft copy, which is:
    - to inform them of the findings of the impact assessment
    - to ask for their comment on the findings of the impact assessment before the final report is compiled.
  - that DBNM complete the next stage of IEM, the decision stage, and decides which of the recommendations will be implemented. This decision should be made available on request to I&APs.
  - that DBNM complete the final stage of IEM, implementation, which is to devise a practical procedure for ensuring that the approved recommendations are implemented and managed in a sound manner. This should take the form of a management programme for the ten years leading up to mine closure, and should be drawn up by the end of 1992.
  - that the management programme includes procedures for regularly monitoring and evaluating the efficacy of mitigation measures, for modifying measures that are found to be inadequate and for detecting and responding to potentially serious consequences that could arise (Council for the Environment, 1989).

- that after approximately five years, when more detailed information of mine closure is available, consideration be given to repeating the impact assessment process.

This concludes the chapter on recommendations.

The following chapter reviews the methods and techniques used in this impact assessment.

# Chapter Seven

## REVIEW OF PROCESS

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## Chapter 7 REVIEW OF PROCESS

### 7.1 INTRODUCTION

A secondary aim of this report was to review the process of this impact assessment.

The reasons were:

- to check the efficacy of the approach and methods so that the process could be reapplied, with whatever modifications were necessary, closer to the time of mine closure.
- to check the approach and methods against existing principles and methods of impact assessment.

The basic process followed was that of Integrated Environmental Management (IEM), and within IEM, the methods of social impact assessment (SIA).

This chapter looks briefly at the principles and procedures of IEM, followed by a description of the aims and methods of social impact assessment (SIA). The process used in this report will then be reviewed against these aims and methods, in order to establish the extent to which the aims and methods were adhered to. Inadequacies will be pointed out, reasons given and suggestions for modification of the process if reapplied in the future.

### 7.2 PRINCIPLES AND PROCEDURES OF IEM

The purpose of IEM is to ensure that considerations of the biophysical and social environments are efficiently and adequately taken into account at all stages of the development process. The procedure encompasses a broad range of methodologies, including terrain analysis, ecological studies, cost-benefit analysis and social impact analysis (Council for the Environment, 1989).

IEM can be applied to all actions, which fall into one of three main categories:

- policies
- programmes
- projects.

Any of the above usually have four stages of evolution - proposal generation, assessment, decision and implementation. IEM is applied to each stage. Some of the basic principles underpinning IEM are: informed decision-making; an open, participatory approach; consultation with interested and affected parties; due consideration of alternative options; an attempt to mitigate negative impacts; an attempt to ensure the social benefits of an action outweigh the social costs; an opportunity for both specialists and the public to contribute to the decision-making process.

The four stages of IEM will be described briefly:

**A. Proposal generation stage:**

- Step 1: define the purpose and need for the proposed action
- Step 2: identify alternative ways to meet the objective of the proponent
- Step 3: investigate the environmental acceptability of the proposed action
- Step 4: formulate the most promising version of the proposed action and its alternatives so they can be formally assessed.

**B. Assessment stage:**

- Step 1: screen to determine what level of investigation would be appropriate

- Step 2: conduct an appropriate investigation, depending on the class of assessment
- Step 3: determine the scope and focus of the assessment, by seeking input from public interest groups and the relevant authorities.
- Step 4: circulate the draft report at the end of the assessment stage for review and comment by all interested and affected parties.

#### **C. Decision stage:**

- Step 1: consider the findings of the report and decide whether the proposal or some alternative should be approved.
- Step 2: if approval is granted, specify mitigatory measures or other conditions of approval
- Step 3: record the decision in a document which is available to the general public on request
- Step 4: if the decision is contested, initiate an appeals procedure

#### **D. Implementation stage:**

- Step 1: monitor the conditions of approval
- Step 2: evaluate the IEM process

This concludes the description of IEM. The following section describes aims and methods of SIA.

## **7.3 AIMS AND METHODS OF SIA**

### **7.3.1 SIA Aims**

SIA is the systematic, advanced appraisal of the impacts on the day-to-day quality of life of individuals and communities whose environments will be affected by development or policy change

(Bowles, 1981).

In general, SIA refers to assessing (as in measuring or summarising) a broad range of impacts (or effects or consequences) that are likely to be experienced by an equally broad range of social groups as a result of some course of action (Freudenburg, 1986).

Its origins can be traced back to the earliest days of sociology, with the concerns of Durkheim on the consequences of the Industrial Revolution, but the field as it is practised today, can be traced back to the United States' National Environmental Policy Act 1969. Nepa requires that federal agencies make "integrated use of natural and social sciences" in "decision-making which may have an impact on man's environment". SIA differs from empirical social science in that it contributes to the decision-making process. (Freudenburg, 1986).

### **7.3.2 SIA Methods**

There are a multitude of SIA methodologies and techniques currently practised, with two main paradigms dominating the field - the technocratic and socio-political. Some practitioners have called for a convergence of the two paradigms and have warned of the danger of SIA becoming an "ever-increasing, uncategorised and fragmented number of techniques without integrating methodologies" (Wildman, 1990).

The practice of SIA in South Africa today is probably similar to the practice of SIA in Australia: "If social impact studies around the world can be described as moving towards adolescence, in Australia the art is still in its infancy: there are still no well developed and tried models for adaption" (Donovan, 1986).

Although SIA has no single, universally accepted definition, and although several methodologies and techniques exist, SIA practitioners in the US have identified five features characteristic of the SIA process:

1. SIA is a systematic effort to identify, analyse and evaluate social impacts of a proposed project or policy change on the individuals and social groups within a community, in advance of the decision-making process, in order that the information derived from the SIA can actually influence decisions.
2. SIA is a means for developing alternatives to the proposed course of action and determining the full range of consequences for each alternative.
3. SIA increases knowledge on the part of the project proponent and the impacted community.
4. SIA raises consciousness and the level of understanding of the community and puts the residents in a better position to understand the broader implications of the proposed action.
5. SIA includes within it a process to mitigate or alleviate the negative social impacts likely to occur (Burdge, 1990).

Burdge further suggests a process for implementing SIA in third world countries, which would be appropriate for South Africa. This is:

1. Use of existing organisational resources where possible.
2. Flexibility in choice of methods, with the avoidance of the wholesale adoption of one methodology only.
3. Use of nationals to decrease the perceptual gap between the researcher and community under investigation.

4. Use of appropriate methods and concepts
5. Quantification of social characteristics and impacts.
6. Allowing indigenous populations to express their opinions in their traditional way.
7. Consult anthropological literature.
8. Selection of SIA variables to include in the assessment through scoping.
9. Avoid repetitive data collection because of third world financial constraints
10. Never use SIA as a justification for decisions already made.
11. Include specific recommendations as to appropriate mitigation measures (Burdge, 1990).

Grady *et al* (1987) refers to three features which are important components of SIA:

1. the use of triangulation for verification
2. extensive public involvement
3. the quality and extent of primary data.

This concludes the description of SIA aims and methods. The following two sections will review the process adopted by the team of researchers in this assessment, against the aims, methods and procedures of IEM and SIA. Those of IEM will be considered first.

## **7.4 REVIEW OF THE IMPACT ASSESSMENT METHODS USED IN THIS PROJECT IN TERMS OF IEM PROCEDURES**

### **7.4.1 Stage One of IEM: Proposal Generation**

Step 1, proposal generation, entailed defining the purpose of the proposed action, mine closure, which was the result of exhaustion of economically viable ore. Steps 2 to 4 were not carried out as they were not pertinent to the nature of the project action.

### **7.4.2 Stage two of IEM: assessment**

**Step 1:** Screening was not formally carried out in this project. However, in the planning and execution of the process, the level of investigation was that of a class 1 assessment.

**Step 2:** conducting an appropriate investigation, was carried out in the following way:

- compilation of data on the affected physical environment (biophysical and infrastructural) from relevant literature, interviews, field observations, local and regional authorities.
- compilation of data on the affected social environment by relevant literature on the history of the region; regional demographic statistics and trends; socio-economic status of the affected employees, as well as biographical data on employees from management records and from a controlled questionnaire; data on affected communities from public meetings and small group discussions; and field observations.
- compilation of regional economic data from the relevant literature; from input-output analyses; export base models and a controlled business survey.

**Step 3:** determining the scope and focus of the assessment by seeking input from I&APs and relevant authorities, was accomplished in the following manner:

- a preliminary list of approximately 130 individuals, authorities and organisations, whom the researchers believed would be interested in or affected by closure of DBNM mines, was compiled. The list included central, regional and local authorities; business and service industries; labour unions; political parties; university departments; conservation bodies; and various other non-governmental bodies. Individuals and organisations were notified in writing of the proposed project action and the proposed impact assessment, were provided with a copy of all I&APs to whom researchers had sent the letter, and asked to respond by letter or telephone to the following:
  - to state their concerns about future mine closure
  - to state how mine closure would affect them
  - to suggest alternative uses for mine property
  - to suggest what DBNM and the authorities could do to alleviate the potential impacts of mine closure
  - to suggest other I&APs not on the list compiled by the research team.

Responses were followed up, where necessary, with interviews.

- a sample of 5% of DBNM employees were selected systematically and a controlled questionnaire conducted with each employee. As well as obtaining quantitative biographical data, the opinions and concerns about pending mine closure were elicited through the questionnaire, in order to identify the main issues and concerns of this interest group.
- in order to establish which communities would be most affected by mine closure, the home towns of all DBNM employees were established, the number of employees from each town, the total population of each town, and finally the ratio of DBNM employees to the number of households in

each town. Four towns had a substantially higher ratios than most, and were targeted for investigation.

- in order to establish interest groups within each of these towns, a process of 'networking' and chain referral was adopted. Initial contact was made by telephone and personal visits. Each individual or organisation identified was notified by letter of the project action, of the impact assessment and asked to participate. They were asked to consult the members of their specific organisation to elicit their concerns and suggestions, and then to meet the researchers at a pre-arranged date to discuss these concerns.
- a list of regional firms which conducted business with the client was obtained and a sample of these businesses were surveyed to establish the magnitude of their dealings with DBNM and their concerns and suggestions about mine closure.
- interviews were conducted with local and regional authorities, and their concerns and suggestions obtained.
- this data was analysed and compiled into a baseline document, from which the impacts were identified and assessed.

**Step 4:** circulate draft report: it has been recommended to the client that this draft report be circulated to I&APs in order to provide an opportunity for review and comment.

### **7.4.3 Stage Three (decision) and Stage Four (implementation)**

It has been recommended to the client that these two stages of IEM be carried out.

This concludes the review of this assessment process in terms of IEM procedures. The process will be reviewed in terms of SIA in the following section.

## **7.5 REVIEW OF THE IMPACT ASSESSMENT METHODS USED IN THIS PROJECT IN TERMS OF THE FIVE FEATURES OF SIA**

This section determines the extent to which the five features determined by Burdge (1990) as being characteristic of SIA, were present in the methods used in this project.

### **7.5.1 Systematic Identification**

Systematic identification, analysis and evaluation of impacts in advance of decision-making: this was carried out in the assessment.

### **7.5.2 Develop Alternatives**

Develop alternatives to the proposed course of action: alternatives were not developed. The proposed action - mine closure - was a result of the exhaustion of a finite resource, and as such, there were no alternative actions that the proponent could adopt. Suggestions for alternative land uses for the proponent's property were elicited from I&APs, but no feasibility studies were conducted on the suggestions. Thus the second feature of SIA was only partially present in this assessment, because of the nature of the project action.

### **7.5.3 Increased Knowledge**

Increased knowledge of proponent and impacted community: the impact assessment provided the proponent with increased knowledge about the predicted impacts on their employees and other affected communities. However, the reverse was not true. The proponent stipulated that the impact assessment was to gather information, not to disseminate it. The researchers had little information about the timing and nature of the project action and were unable to answer the many queries in this regard raised by I&APs. Thus only one aspect of this feature of SIA is contained in the assessment. However, this could be reversed to some extent if the recommendation in this report is implemented, namely that the draft impact assessment report be circulated to all I&APs.

#### **7.5.4 SIA Raises Consciousness**

SIA raises consciousness of the community and enables them to understand the broader implications of the proposed action: during interaction with I&APs, consciousness was raised. The implications - retrenchment and loss of access to resources - were also understood.

#### **7.5.5 SIA Includes Mitigation**

SIA includes mitigation: this impact assessment recommended mitigatory measures, which were generated by the researchers, by employees, by affected communities and other I&APs.

In summary, this impact assessment contained three of the five features which Burdge (1990) describes as being characteristic of SIA. The remaining two features were only partially present in the assessment; the one because of the nature of the project action which did not lend itself to alternatives, and the other because of limitations imposed on researchers by the proponent.

This concludes this section. The following section examines the extent to which this assessment carried out the eleven suggestions made by Burdge (1990) for implementation of SIA in the third world.

### **7.6 IMPLEMENTATION IN THIS ASSESSMENT OF BURDGE'S SUGGESTIONS FOR IMPLEMENTATION OF SIA IN THE THIRD WORLD**

#### **7.6.1 Use of Existing Organisations:**

DBMN employee representatives were used to consult employees, ie. the National Union of Mineworkers and the Artisans' Liaison Committee. In the communities, various organisations were used to consult community members, such as churches,

school committees, management boards, civic associations, sports clubs and political parties.

### **7.6.2 Flexibility in Choice of Methods:**

A variety of methods was used, including letters, interviews, public meetings, controlled questionnaires, random surveys, use of statistics and relevant literature.

### **7.6.3 Use of Nationals to Decrease the Perceptual Gap:**

Although the researchers themselves were nationals, they represented different language and cultural groups from the language and cultural groups of many DBNM employees and some of the community members. Consequently, translators were used in the administration of the questionnaires. Before the questionnaires were administered, union shopstewards and artisans committee members, called a meeting of their members and explained the purpose of the impact assessment and the reasons for questionnaire being conducted. This was done in the two dominant languages, Afrikaans and Xhosa. The researchers did not attend these meetings in case their presence inhibited the members. This same group acted as translators when the questionnaires were conducted.

As regards the community meetings, these were conducted by members from the communities themselves, who spoke the local language, Afrikaans.

### **7.6.4 Use of Appropriate Methods:**

This was done where possible, and appears to have been successful. One method which was not appropriate was that selected for the communities in Namaqualand. Once a broad section of organisations had been identified, the leaders of each had been asked to consult their members and meet the research team on a pre-arranged date with lists of their members' concerns and suggestions, which would then be discussed. However, on the night of the first community meeting, nearly three times the number of people arrived, none of whom had recorded their members' concerns, and most of whom did not represent any group at all. However, the majority had

plenty to say and the researchers changed their methods on the spot to accommodate a semi-public meeting. One of the community members recorded all comments, questions and suggestions on a flip chart, where all could see. This method was then used successfully for further meetings with other communities.

#### **7.6.5 Quantification of Social Characteristics and Impacts:**

The demographical data of the region, and of employees, was quantified and compiled in the baseline report. Impacts were identified and quantified as far as was possible.

#### **7.6.6 Allowing Indigenous Populations to Express their Opinions Traditionally:**

This was not done. The controlled questionnaire, for instance, was a foreign way of expressing opinions to many of the DBNM employees.

#### **7.6.7 Consult Anthropological Literature:**

Apart from limited literature on the history of the Namaqualand region's indigenous populations, this was not done.

#### **7.6.8 Selection of SIA Variables through Scoping:**

Scoping helped identify what the local population anticipated as the negative impacts of mine closure, as well as its evaluation of the meaning of social change that would accompany the project action. Examples of the variables were: population change; change in occupational opportunities; change in commercial focus of affected communities; disruption of social networks; perception of public health; change in leisure opportunities; change in economic status.

### **7.6.9 Avoid Repetitive Data Collection:**

National and international literature searches were conducted in order to draw on existing data from similar SIAs. However, although some literature on plant closure does exist, very little was pertinent to this impact assessment.

### **7.6.10 Never use SIA as Justification for a Decision Already Made:**

The researchers had no reason to believe that the proponent had already taken decisions about the nature of mine closure.

### **7.6.11 Include Specific Recommendations for Mitigation:**

This was done in this assessment.

In summary, nine of the eleven suggestions for implementing SIA in the third world were used in this impact assessment.

The following section reviews this impact assessment against the three features which Grady et al (1987) regard as important components of SIA.

## **7.7 IMPLEMENTATION OF GRADY'S CHARACTERISTICS OF SIA IN THIS ASSESSMENT**

### **7.7.1 Triangulation:**

Three of the four types of triangulation identified by Denzin, in Grady (1986), were used in this assessment. They are:

- data triangulation (use of a variety of data sources)
- investigator triangulation (use of several different researchers)
- methodological triangulation (use of multiple methods)

The fourth, theory triangulation, (use of multiple perspectives to interpret a single set of data) was not used.

### **7.7.2 Public Involvement:**

There was a high degree of public involvement in this assessment, which included a broad cross section of interested and affected parties. Input was provided by letter, telephone, meetings, interviews, controlled questionnaires and surveys.

### **7.7.3 Quality and Extent of Primary Data:**

Qualitative primary data on the perceptions, opinions, concerns and fears of the impacted employees, communities and businesses were obtained through controlled questionnaires, public meetings, informal interviews and surveys. The controlled questionnaire was used to obtain primary quantitative data on employees, which included age, occupation, income, marital status, family size and education levels, ages of children, number in household, number of dependants, alternative income sources to households, household expenditure, employment history, perceptions about the likelihood of re-employment and suggestions for alternative land uses of the proponent's property. The questionnaire, which was personally administered, had 100% return rate.

The controlled business survey was used to obtain primary data on the percentage of turnover of a sample of firms in the region, that was attributed to the mine, directly through the company's purchasing and indirectly through employee spending.

In summary, three out of four methods of triangulation for verification were used; there was a high degree of public involvement; extensive primary data were collected.

## 7.8 ECONOMIC IMPACT PREDICTION

Two of the three recognised techniques for prediction regional economic impacts were used in this assessment:

- input-output analysis
- export base model (McDonald, 1990).

The third, regional Keynesian multipliers, was not used.

## 7.9 CONCLUSION

The methods and techniques used in this impact assessment concur with the basic principles and procedures of IEM. The methods and techniques used in the SIA component of the assessment, display three of the five features practitioners have identified as characteristic of SIA; implemented nine of the eleven suggestions by Burdge (1990) for implementing SIA in the third world; and contained the three features which Grady et al (1987) regard as important components of SIA - triangulation, public involvement and the quality and extent of primary data collection.

This assessment realised the aim of SIA, which is the systematic, advanced appraisal of the impacts on the day-to-day quality of life of individuals and communities affected by some course of action, the purpose of which is to contribute to the decision-making process.

Thus it is concluded that the methods and techniques used in this assessment could be reapplied in the future.

## GLOSSARY

**affected environment:** those parts of the socio-economic and bio-physical environment affected by the project action.

**baseline information:** data which records the existing elements and trends in a given environment.

**biophysical environment:** that part of the environment which did not originate with and is not dependent on human activities (eg. biological, physical and chemical objects and processes).

**environmental assessment:** the process of collecting, organising, analysing, interpreting and communicating data that are relevant to some decision.

**environmental impact:** an environmental change caused by some human act.

**impact:** the outcome of an action, whether considered desirable or undesirable.

**integrated environmental management:** a philosophy which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process in order to achieve a desirable balance between conservation and development.

**interested and affected parties:** individuals and groups concerned with an activity and its consequences.

**management plan:** a plan which organises and co-ordinates mitigation and monitoring measures in order to guide the implementation of the proposal.

**mitigate:** the implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

**monitoring:** an activity which ensures that the requirements of the management plan are met.

**primary impacts:** impacts which are a direct result of some action (cf. with secondary impacts).

**scoping:** a procedure for narrowing the scope of an assessment, and ensuring that the assessment remains focused on the significant issues or impacts.

**screening:** the classification of proposals

**secondary impacts:** impacts which derive from activities that arise as a consequence of the original action (cf. with primary impacts).

**socio-economic environment:** that part of the environment which has its origin or being in human activities (eg. social, economic, cultural and political objects and processes).

**subjective:** arising from an individual point of view.

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## **PERSONAL COMMUNICATIONS**

Bath, E. Senior personnel manager, DBNM, Kleinzee.

Claasen, P.B. Chief executive officer, Namaqualand Regional Services Council, Springbok.

Lund, S. Consultant in rural development planning, Johannesburg.

Smit, C. Department of Agriculture, Springbok.

## APPENDIX A

**Step one of impact identification:** In order for the impacts to be comprehensive, all the issues, concerns and perceived impacts concerning future mine closure raised by a broad range of interested and affected parties during the collection of baseline data in this study, were compiled into the list below. The list includes potential impacts from the input-output economic study; from employee biographical data; from the results of the employee questionnaire and from relevant literature on social impact analysis and on the Namaqualand region. The list is not in any order.

- loss of jobs
- loss of salary
- loss of benefits
- increase in unemployment in Namaqualand
- fewer jobs available for future generations in Namaqualand
- lowering/loss of quality of life
- concern about the nature of compensation to employees
- concern regarding the fate of employees
- lowering of health levels
- lowering of education levels in affected communities
- increase in illiteracy in affected communities
- lack of material input by DBNM into Namaqualand
- concern as to whether future mine closure was a reality
- land ownership issue (ie. that DBNM land belonged to the Rural Coloured Areas, or reserves of Komaggas and Steinkopf.)
- lack of other jobs available in Namaqualand
- concern about an increase in crime rates
- concern about an increase in alcohol and drug abuse
- increase in migrant labour out of Namaqualand
- breakdown of the family structure
- poverty
- negative impact on the regional economy

- negative impact on local and regional authorities
- concern that mine closure was a result of DBNM's fear of nationalisation
- concern that the EEU impact assessment report would not reach top DBNM management
- concern that DBNM would not heed the concerns of the affected communities in the report
- queries regarding DBNM's motives in commissioning the study
- concern regarding rehabilitation of mine dumps
- concern that authorities, desperate to attract tourism to make up for lost revenue from mine closure, would do so at the expense of the natural environment
- concern that DBNM employees would not be involved in the planning of mine closure
- loss of mine housing
- difficulty in finding other jobs
- concern that the West Coast would die
- inability of employees to support dependants
- concern that children of employees would be forced to leave school
- difficulty in getting other jobs because of advanced age
- concern that lack of skills and formal training would be a disadvantage when trying to find other jobs
- Transkei people would have no other jobs to go to
- RSC would lose 30% of its total fees
- concern by employees that they had no written documentation describing the type of experience they had acquired at DBNM
- concern that employees' children would have to work to help support the family
- concern that poverty would lead to religious and moral degeneration
- concern that small business would be hard hit
- queries as to why DBNM was expanding infrastructure at the mine if it were going to close

- queries as to why DBNM did not decrease production in order to prolong the life of the mine.
- loss of self esteem through unemployment
- machinery sector would lose 4% of its business
- financial loss for South Africa
- small businesses in Namaqualand would have to 253 retrench employees
- 17% of Namaqualand's total turnover would be lost

## APPENDIX B

**Step two of impact identification:** In order that impacts were project specific, each of the perceived impacts contained in appendix A was considered with the regard to the following question: "Is this an effect of mine closure?" Those to which the answer was 'yes' were considered to be impacts and are contained in the list below. Those to which the answer was 'no' were set aside to be considered in other sections of the assessment report. This list is no order.

- loss of jobs
- loss of salary
- loss of benefits
- increase in unemployment in Namaqualand
- fewer jobs available for future generations
- loss of quality of life
- lowering of health levels in affected communities
- lowering of education levels in affected communities
- increase in illiteracy in affected communities
- increase in crime rates due to unemployment
- increase in alcohol and drug abuse due to unemployment
- unemployment in Transkei
- breakdown of family structure
- RSC would lose 30% of its fees
- poverty
- negative impact on regional economy
- negative impact on local and regional authorities
- loss of mine housing
- inability of employees to support their dependants
- children would be forced to leave school
- loss of self esteem due to unemployment
- negative effect on small businesses
- machinery sector would lose business

- financial loss for South Africa
- small business would have to retrench 253 employees
- 17% of Namaqualand's total turnover would be lost

## APPENDIX C

**Step three in impact identification:** in order to be precise, general categories of impacts were broken down into specifics, eg. 'loss of jobs' was broken down into 'loss of income', 'loss of medical benefits' etc. Impacts that were repeated in slightly different wording, were eliminated. This list is in no order

- loss of income
- loss of medical benefits
- loss of mine housing
- increased unemployment in Namaqualand
- increased unemployment in Herschel/Sterkspruit
- lowering of the quality of life in affected communities
- lowering of health levels in affected communities
- increase in alcohol and drug abuse in affected communities
- breakdown of the family structure in affected communities
- lowering of education levels in affected communities
- increase in crime due to unemployment
- loss to Namaqualand region of DBNM's direct purchasing
- loss to Namaqualand's RSC of 30% of its total fees
- inability of retrenched employees to support their dependants
- loss of self esteem among retrenched workers
- loss to the region of DBNM employees' spending
- retrenchments in other sectors as a result of loss of business due to mine closure
- negative effect on small businesses

However, in order to avoid repetition, certain similar impacts were grouped into one, eg. 'increase in alcohol and drug abuse', 'breakdown of family structure', 'increased crime rate', were grouped under one impact description: 'increased social pathology' to be assessed as a single impact. Several similar impacts were then grouped under the umbrella impact 'loss of quality of life'.

## **APPENDIX D**

**Step four in impact identification:** location of impacts were identified, and impacts were consequently grouped into those which were 'local', under the heading 'impacts on DBNM employees' and those which were 'regional' - either the magisterial district of Namaqualand or the Herschel/Sterkspruit district of Transkei. As the client has stipulated that the impact assessment should not consider national impacts, these were omitted. Thus the final list of impacts that were identified are:

### **Impacts on DBNM employees:**

- loss of income
- loss of medical benefits
- loss of mine housing
- inability to support dependants
- lowering of the quality of life

### **Regional impacts: Namaqualand**

- loss of revenue to region through loss of DBNM's direct purchasing
- loss of revenue to region through loss of DBNM employees' spending
- retrenchment of approximately 15% of Namaqualand's economically active population
- negative effect on region's small businesses
- loss of 30% of fees to RSC
- increase in unemployment
- lowering of quality of life in affected communities

### **Regional impacts: Transkei**

- increase in unemployment
- lowering of quality of life in affected communities.

**APPENDIX E****THE STUDY TEAM****Project Manager**

Dr John Raimondo: BSc (Chem Eng) (Natal) MSc (Environmental Science) (Cape Town) Doctorate (Univ. Grenoble)

**Researchers**

Judy Beaumont: BA (Hons)(African Studies)(Cape Town)

Melanie Gosling: BA (Cape Town) BA (Hons) (Journalism) (Stellenbosch)

Liane Greeff: B Soc Sc (Cape Town) BA(SS) Hons (Psychology) (UNISA)

Paul Lochner: BSc (Civil Eng) (Cape Town)

Andrew Mackenzie: BSc (Hons) (Zoology) (Natal)

Gregory McCulloch: BSc (Mech Eng) (Cape Town)

Robin Short: BSc (Hons) (Zoology) (Venda)

Rachel Wynberg: BSc (Hons) (Marine Biology) MSc (Zoology) (Cape Town)

**Consultants****Social Impact Assessment consultant for Namaqualand**

Fiona Archer: BA (Hons) H.E.D (Stellenbosch)

**Social Impact Assessment consultant for Herschel District (Sterkspruit), Transkei**

Susan Lund: MA (Rural Development Planning) (East Anglia)