

**SOCIO-ECONOMIC IMPACT ASSESSMENT OF THE PROPOSED CLOSURE  
OF DE BEERS NAMAQUALAND DIAMOND MINES BY THE YEAR 2005**

**MAIN REPORT**

**Karen Liane Greeff  
Research Report  
June 1992**

The University of Cape Town has been given  
the right to reproduce this thesis in whole  
or in part. Copyright is held by the author.

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

NSJ 301.3 GREE

92/16356

*If the mine closes it will be  
like an artery that has been cut.  
We will bleed to death in Namaqualand.*

DBNM Employee (Baseline Report, Appendix B)

*"...growth is preceded by a state of imbalance or crisis.  
which serves as a basis for future development.  
In fact, without crisis, development is not possible."*

Danish, SJ, Smyer, MA & Novak, CA 1980 p6.

## ACKNOWLEDGEMENTS

I would like to thank the following people:

- My supervisors throughout the various stages of the course, Richard Hill, Fiona Archer, John Raimondo and Sue Lane for their help and advice;

- The many people I met in the Namaqualand who shared their problems and their hopes with me;

- My friends and colleagues from the environmental science department for making the last one and a half years such a pleasure;

- My mother, Lynne Greeff, for her guidance and encouragement;

- Cathy, Moira, David and Gio, for their never-ending support;

Lastly, I would like to dedicate this to my father, Dennis Greeff for something he would have loved and been proud of.

## TABLE OF CONTENTS

Page No

⌚	Table of Contents	i
⌚	List of Tables	iii
⌚	List of Maps	iii
⌚	Abbreviations	iv
⌚	Glossary of Terms	v
⌚	<b>TERMS OF REFERENCE</b>	viii
⌚	<b>EXECUTIVE SUMMARY</b>	
⌚	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	
 <b>CHAPTER 1. INTRODUCTION</b>		 <b>1</b>
	1.1. The purpose of this report	2
	1.2. Background	2
	1.3. DBNM's draft policy	3
	1.4. Structure of this report	3
	1.5. Structure of the supplementary Baseline Information Report	4
	1.6. Limitations	5
 <b>CHAPTER 2. METHODOLOGY OF ASSESSMENT</b>		 <b>7</b>
	2.1. Introduction	8
	2.2. The Integrated Environmental Management Framework	8
	2.3. Evaluation of Significance	9
 <b>CHAPTER 3. ASSESSMENT OF IMPACTS</b>		 <b>13</b>
	3.1. Introduction	14
	3.2. Issue 1: Discussion and evaluation of the loss of DBNM jobs and related impacts	16
	3.3. Issue 2: Discussion and evaluation of impacts associated with the cessation of the existence of DBNM	40
 <b>CHAPTER 4. MITIGATION</b>		 <b>53</b>
	4.1. Introduction	54
	4.2. Feedback	54
	4.3. Process of workforce reduction	55

4.4. Promotion of alternative development and employment opportunities	58
4.5. Miscellaneous mitigatory measures	63
<b>CHAPTER 5. REFERENCES</b>	<b>65</b>
<b>APPENDICES</b>	
Appendix 1. List of individuals or groups with interest in Namaqualand	
Appendix 2. Case study of mine closure - Atikokan	
Appendix 3. Recommended literature regarding mine closure	

**LIST OF TABLES**

Table 1. Summary of project impacts

Table 2. Age of Transkei employees in 2002 and 2005

Table 3. Salaries of DBNM workers according to Patterson Bands

Table 4. Links between DBNM employees and Namaqualand businesses

Table 5. DBNM employee expenditure

Table 6. Evaluation of impacts (Fold-out table at back of report)

**LIST OF MAPS**

Map 1. Namaqualand Magisterial District with DBNM Property and RCAs

Map 2. Location of potential Nuclear Power Stations

Map 3. Travel routes from Cape Town to the PWV area

Map 4. Property ownership in Namaqualand Appendix A

**ABBREVIATIONS**

BIR:	Baseline Information Report
DAG:	Development Action Group
DBCM:	De Beers Consolidated Mines
DBNM:	De Beers Namaqualand Mines
EEU:	Environmental Evaluation Unit
IDB:	Illegal Diamond Buying
I&AP:	Interested and Affected Party
IEM:	Integrated Environmental Management
NGO:	Non-Government Organisation
NUM:	National Union of Mineworkers
RCA:	Rural Coloured Area
RDAC:	Regional Development Advisory Committee
RSC:	Regional Services Council

## GLOSSARY OF TERMS

The following terms have been used in both the Baseline Information Report and this final report.

**CUMULATIVE IMPACT:** An action that in itself is not significant, but is significant when added to the impact of other similar actions (EEU, 1992);

**DE BEERS CONSOLIDATED MINES (DBCM):** refers to the whole De Beers organization, including all the subsidiary companies;

**DE BEERS NAMAQUALAND MINES (DBNM):** a part of the larger De Beers Consolidated Mines group. It is limited to the open-cast mining of terrestrial diamonds and includes ownership of the towns of Kleinsee and Koingnaas;

**ENVIRONMENTAL EVALUATION:** The process of obtaining, organising and weighing information on the consequences, or impacts of alternatives (EEU, 1992);

**EEU RESEARCHERS:** refers to the University of Cape Town master's students who compiled the two reports as part of the academic requirements for an M. Phil. in Environmental Science;

**INTERESTED AND AFFECTED PARTIES (I&APs):** Individuals or groups concerned with an activity and its consequences (EEU, 1992);

**INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM):** "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" (EEU, 1992);

**IMPACTS:** The outcome of an action whether positive or negative;

- First order impact: is any effect on the biophysical or socio-economic environments that arise from a cause directly related to the project (Shopley and Fuggle, 1984)

- Secondary Impacts: are those effects on the biophysical or socio-economic environments which arise from an action, but which are not initiated directly by that action (Shopley & Fuggle, 1984)

**IMPACT SIGNIFICANCE:** denotes the importance of the impact from the perspective of the interested and affected parties. In this report impacts are rated on a three point scale: high, medium and low significance

- low significance: implies that the impact is temporary in nature, limited to DBNM property, affects a small number of people who have high skills transferability and economic strengths to withstand the impact, there are no secondary impacts and there is potential to optimize. An impact is also considered low if reasonable mitigatory measures can be applied to reduce the severity of an impact to comply with the above definition.
  
- medium significance: implies that the impacts are likely to have a greater effect. The influence of the impact could be felt at the regional scale in both the short and the long- term future. A fair amount of people are affected with a medium level of skills transferability and economic strength. Secondary or cumulative impacts could arise from the primary impact. The importance of mitigatory measures increases.
  
- high significance: implies that the impacts are very serious. There could be long-term or permanent negative repercussions on a large number of people and areas at the regional or national scale. Skills transferability and economic strengths of affected people are very low and the resources required for mitigation could be substantial. There are likely to be significant cumulative or secondary impacts and the effects could be permanent or widespread.

MINE GROUP: refers to those employees interviewed in the questionnaire who "have permanent accommodation in Kleinzee or Koingnaas, either a mine house or single accommodation. This group excludes those who return home for the weekend or who have immediate family living elsewhere" (BIR, 1992,p53);

NAMAQUALAND: This refers to the Namaqualand Magisterial District which is depicted in Map 1. However for the purposes of this report the Namaqualand communities refer to all the people from the Magisterial District as well as those people who live further south but consider themselves "Namaqualanders" e.g. residents from Ebenhauzer and Nuwerus (Boonzaaier in EEU Report No 4/90/49, 1990);

**NAMAQUALAND GROUP:** consists of those people who although they live in the towns of Kleinsee and Koingnaas during the week, they return to their homes/families every weekend or every second weekend. Komaggas residents are an exception to this as many commute on a daily basis;

**PATTERSON BANDS:** refers to a system of job evaluation and grading upon which DBNM's wage scales and employee benefits are based. There are eleven bands based on the type of decision-making skills the job entails as well as the complexity, variety and tolerances of individual jobs;

**TRANSKEI GROUP:** consists of employees recruited from the Transkei or Ciskei and whose families live there.

## TERMS OF REFERENCE

Diamond mining forms the backbone of the Namaqualand regional economy, and therefore the closure of DBNM, the largest diamond mine, is expected to have a significant impact on the region. After a series of negotiations between the EEU and DBNM management it was decided to focus this impact assessment on:

- \* the socio-economic impacts of mine closure
- \* making recommendations for mitigation

It was stipulated that the emphasis should be on the regional impacts rather than the national or international impacts. The EEU used the M. Phil Masters Class as their research assistants, whilst the masters students have used this project as partial fulfilment of their degree requirements.

The project has been divided into three phases:

1. Compilation of a supplementary Baseline Information Report (BIR) describing:
  - need for the project
  - project actions
  - the affected social and economic environments

The Baseline Information Report was produced by the Masters class as a whole, with the aid of specialist consultants.

2. An individual socio-economic impact assessment report (this report) which identifies:
  - potential impacts
  - the main groups of people affected
  - the extent to which they are affected in terms of magnitude and significance
  - mitigatory actions to avoid or minimise the impacts and optimise positive impacts

This main report complements the Baseline Information Report by interpreting and evaluating the baseline information.

3. The EEU will then continue with the project and compile a Draft Initial Impact Assessment Report based on the information contained in the seven individual reports, of which this is one.



AERIAL VIEW - KLEINZEE



TREATMENT PLANT - KLEINZEE

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

The executive summary summarizes information contained in both the Baseline Information Report and this Main Report. It consists of the background and purposes of the socio-economic impact assessment, as well as the main project impacts. This is followed by the conclusions and recommendations of the study.

In 1991 the Environmental Evaluation Unit (EEU) of the University of Cape Town was appointed by DBNM to undertake a socio-economic impact assessment of the proposed closure of DBNM by the year 2005. According to De Beers, the source of viable diamond ore is finite and unless technological advances or market fluctuations make the reserves economically viable, the mine has no option but to shut down its operations. This is anticipated to have major social and economic impacts on the region and DBNM.

The emphasis is on regional impacts i.e. the Namaqualand Magisterial District. However, due to the concentration of employees originating from the Herschel District in the Transkei, special cognisance is taken of impacts likely to occur there.

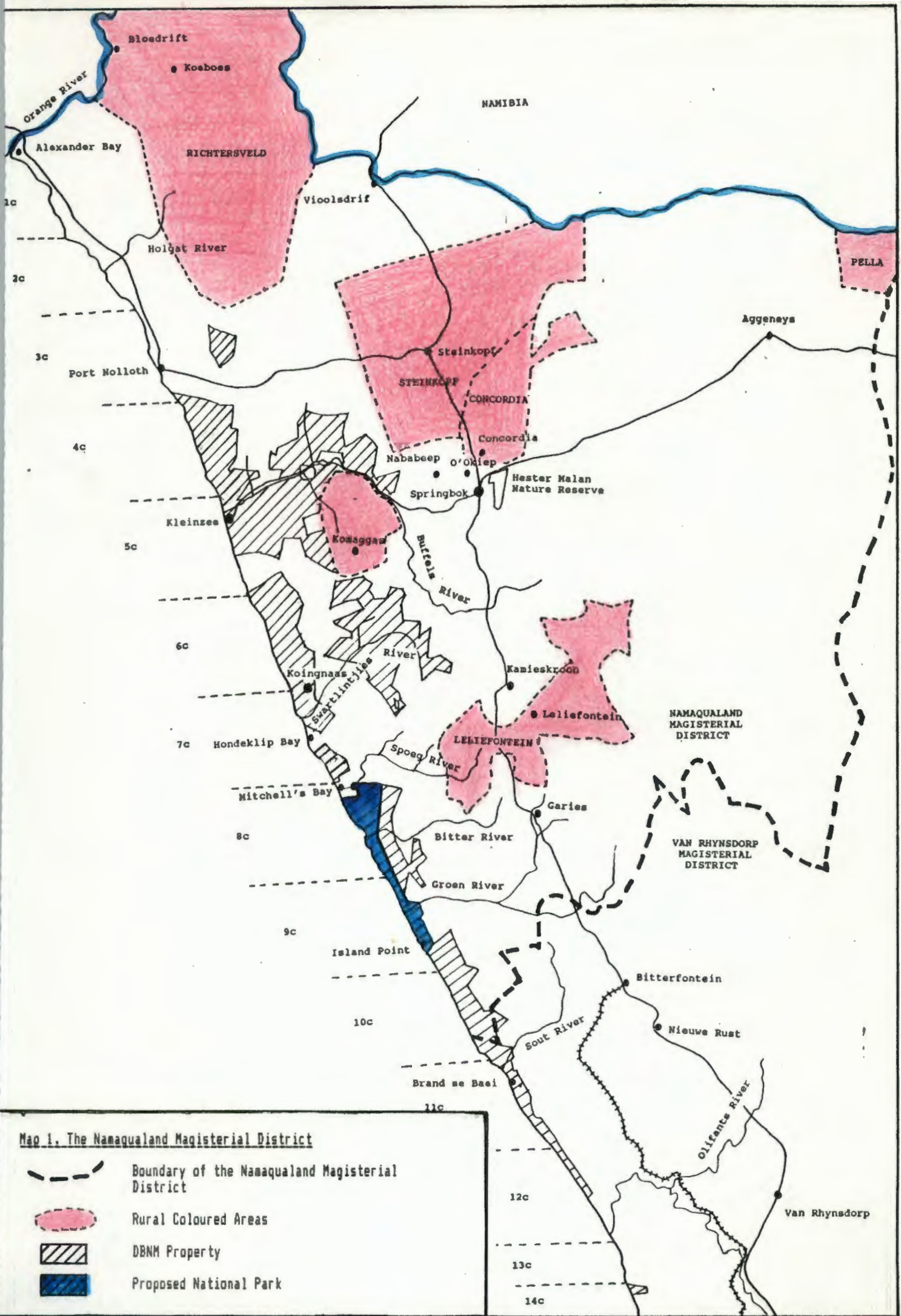
Therefore, the two main purposes of this report are to:

- \* identify and evaluate the potential major socio-economic impacts arising out of the closure of De Beers Namaqualand Mines (DBNM),
- \* determine mitigatory action which will reduce negative impacts and optimize positive impacts.

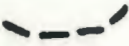



It should be noted that the study to date is the first stage of a long term project. It is expected that the collection and evaluation of baseline information will be repeated closer to the date of anticipated closure, as the socio-political context in ten years time is expected to have changed to a large extent.

### 2. PUBLIC PARTICIPATION

In accordance with the principles of Integrated Environmental Management, the project impacts have been identified by interaction with key interested and affected parties so as to take into account the concerns of parties affected by the envisaged changes and give them the opportunity to suggest ways in which their concerns can be addressed.



Map 1. The Namaqualand Magisterial District

-  Boundary of the Namaqualand Magisterial District
-  Rural Coloured Areas
-  DBNM Property
-  Proposed National Park

12c

13c

14c

### 3. APPROACH TO THE STUDY

During the collection of baseline information the study team divided into two main areas of focus - social and economic.

The social impacts were determined for the different groups in the following ways:

(i) **DBNM Employees** - An employee questionnaire was devised and undertaken with the aid of the employee representative organisations - NUM and the Artisan's Committee;

(ii) **The Namaqualand Communities** - Komaggas and Steinkopf were chosen as being the most affected by mine closure, as they had a high number and proportion of the economically active population working for DBNM. Community meetings were held with the aid of a specialist consultant on the region.

(iii) A broad range of **Interested and Affected Parties** were identified and invited by letter, to express their concerns and suggestions with respect to mine closure. The replies have been included in Appendix E of the Baseline Information Report.

The economic impact on the region was investigated through :

(i) An examination of the regional economy and money flows in Namaqualand

(ii) An input-output analysis of potential losses experienced by the different business sectors as a result of mine closure based on data from the Bureau of Central Statistics;

(iii) A survey of a representative sample of businesses located in the Namaqualand Magisterial District.

#### 4. PROJECT IMPACTS

The impacts resulting from mine closure can be divided into two main issues - those resulting from the loss of DBNM employment and those resulting from the cessation of DBNM's role in the socio-economic and socio-political aspects of the region.

Table 1 summarises the main project impacts according to the two issues.

**Table 1. Summary of project Impacts**

<p><b><u>ISSUE 1: LOSS OF DBNM JOBS</u></b></p> <p>Impact 1a: Loss of DBNM income</p> <p>Impact 1b: Loss of employee benefits and loss of access to DBNM services and infrastructure</p> <p>Impact 1c: Impact on local businesses due to reduced purchasing power of DBNM employees</p> <p>Impact 1d: Uncertainty regarding future</p> <p>Impact 1e: Reduced IDB activities</p> <p>Impact 1f: Impact of mine closure on Transkei and Ciskei employees</p>
<p><b><u>ISSUE 2: CESSATION OF EXISTENCE OF DBNM</u></b></p> <p>Impact 2a: Cessation of DBNM's contribution to Namaqualand RSC</p> <p>Impact 2b: Loss of DBNM's purchasing power</p> <p>Impact 2c: Renewed interest in land issue</p> <p>Impact 2d: Opening up of the coast</p> <p>Impact 2e: Decreased demand for infrastructure - future use of Kleinsee and Koingnaas</p> <p>Impact 2f: Increased unemployment and underemployment in the Namaqualand</p>

## DESCRIPTION OF THE MAJOR INTERESTED AND AFFECTED PARTIES EMERGING FROM IMPACT EVALUATION

The major affected party will be the DBNM workforce consisting of the three employee groups - the Namaqualand Group, the Mine Group and the Transkei Group, identified in the questionnaire, and their families and communities.

### *(i) Namaqualand Group and their families:*

This group consists mainly of people born in Namaqualand, who are unlikely to leave the region after mine closure. This is due both to their lack of mobility and to their attachment to the region. It consists largely of the local coloured workforce, numbering approximately 1860 or 63% of the workforce. The questionnaire sample revealed the average number of dependants to be 2.8.

This group has lower levels of education, and are mostly limited to the lower Patterson Band levels.

### *(ii) Mine Group and their families*

This group consists mainly of the white workers who have no ties to Namaqualand and who are likely to leave the region after closure. The group number approximately 533 or 17% of the workforce. Approximately 100 members of this group are eligible for transferral.

In the questionnaire sample this group had an average of 1.9 dependants and originated from a wide variety of different places all over Southern Africa. Characteristics of this group which indicate their higher probability of finding alternative employment include their more advanced levels of education and their high Patterson Band levels.

### *(iii) Transkei Group and their families:*

This group consists of approximately 700 employees. They are relatively old in comparison to the other two groups - the average age being 48 years - and it is expected that by the time of mine closure a relatively high proportion of this group will have retired. However, this assumes that no-one will be retrenched before 2002, which is unlikely especially if reduction of the workforce is phased.

This group is characterised by lack of education, a low skills level and low potential to find alternative employment after mine closure. Based on the employee questionnaire, the average number of dependants for the Transkei Group is 7.3 per household.

## CONCLUSIONS AND RECOMMENDATIONS

This section summarises the main conclusions and recommendations of the study. The information is based on the evaluation of the impacts and the mitigatory measure recorded in Chapter 3, and the expansion of the mitigatory measures in Chapter 4. Table 6 which folds out, is located at the end of this report and it is suggested that this is looked at in conjunction with the following discussion.

The conclusions and recommendations are given in the following format:

Section A: Impacts of High Significance

Section B: Impacts of Medium Significance

Section C: Further Recommendations

### SECTION A: IMPACTS OF HIGH SIGNIFICANCE

#### A.1. CONCLUSION:

The loss of income is a highly significant impact affecting the entire DBNM workforce. It is especially high for both the Namaqualand and the Transkei Groups. The significance for the Mine Group although still high, is lower than the other two groups.

#### A.1. RECOMMENDATIONS

The best form of mitigation would be the provision of alternative employment. In the short term this would best be achieved by the location of a viable diamond deposit or alternatively another mineral deposit which could be exploited.

For the Namaqualand Group the best long term mitigation is the promotion of economic diversity and tourism - this would benefit the local populations and open up coastal resources for the benefit of everyone. In order to achieve this DBNM should act as a catalyst and bring together all those people and organisations interested in regional development. Appendix 1 includes a list of potential investors and interested parties.

The Transkei Group should all be given the option of early retirement, irrespective of age as their future employment opportunities are low. This is especially important due to the impoverished state of the homelands and the long term loyalty of this group.

## **A.2. CONCLUSION**

**The significance of the impact on the local business of Namaqualand due to the loss of DBNM employee's purchasing power is very high.**

## **A.2. RECOMMENDATIONS**

- \* The promotion of economic diversification and alternative employment opportunities in the region would circumvent the above impact from occurring;
- \* The workshopping of DBNM closure nearer to the event with businesses in Springbok and in the smaller towns, could help them to plan accordingly;
- \* A generous retrenchment package plus the payout of unemployment benefits would both serve to stagger the impact of reduced employee purchasing power;

## **A.3. CONCLUSION**

**Uncertainty regarding the future, although less tangible is regarded as highly significant.**

## **A.3. RECOMMENDATIONS**

DBNM needs to improve its communications with its employees and local communities:

- \* to facilitate discussions, clarification of identified rumours and to elicit new uncertainties, which could clarify any misconceptions which provide unnecessary "psychological noise"
- \* the "Namaqualine" help-desk telephone - to help with technical problems and complaints - could be expanded to deal with other problems including mine closure;
- \* positive public relations and the encouragement of joint-problem solving and conveying a feeling that the employees are involved in the decisions being made - this increases the feeling of joint responsibility and problem-sharing and they are more likely to accept the decisions being made.
- \* a clarification of DBNM's responsibilities with respect to retrenchment packages - this could help to reduce future discontent since some of the employees in the survey indicated unrealistically high expectations,
- \* career counselling to help employees plan alternative careers in the future and training possibilities in the interim period should be provided and encouraged by DBNM

\* DBNM must ascertain and make public its plans for the communities, and to begin action as soon as possible, so quelling doubts as to the future viability of the community

#### **A.4. CONCLUSION**

The impacts felt by the Transkei/Ciskei employees are highly significant (as indicated in Conclusion A.1.). The diversification of the Namaqualand economy is unlikely to affect them, therefore special consideration should be given to this group.

#### **A.4. RECOMMENDATIONS**

\* the employees should all be granted pensions, irrespective of age as further employment is unlikely. These pensions need to be negotiated through NUM and should be based on the length of service at time of closure, combined with the number of years before retirement age.

\* The younger dependants: Each household should select, based on specified criteria, an individual for further entrepreneurial training sponsorship. These training options should be directed towards business and artisan skills and should begin at least five years before the date of mine closure.

\* DBNM should contribute towards the social infrastructure of Herschel, to mitigate the impact on medical services, and energy and water supply. This could be done in conjunction with the Environmental and Developmental Agency to ascertain where mitigating action would be most effective.

#### **A.5. CONCLUSION**

**The loss of DBNM's contribution to the Regional Services Council is considered highly significant**

#### **A.5. RECOMMENDATIONS**

\* Economic diversification would mitigate this impact. In the interim period, the Namaqualand RSC could focus on providing basic infrastructure which would strengthen the local communities.

\* DBNM also has a duty to warn the RSC of the impending reduction in RSC contributions to enable them to plan ahead.

\* It is recommended that in the light of its economic influence DBNM should have a representative on the Namaqualand RSC board in order to liaise, monitor and influence decision-making.

**A.6. CONCLUSION**

**Loss of DBNM's purchasing power is considered highly significant for the Springbok businesses.**

**A.6. RECOMMENDATIONS**

\* Economic diversification and the promotion of alternative employment opportunities are the best potential mitigatory measures which can be introduced.

\* In addition the early warning of closure and reduced business activities will help to reduce the severity of the impact.

**A.7. CONCLUSION**

The renewed interest in the land issue is considered highly significant, due to the controversy surrounding land ownership in the Namaqualand and the deficiency of grazing land in the Rural Coloured Areas.

**A.7. RECOMMENDATIONS**

\* Clarification with respect to rightful ownership would help to reverse the DBNM land controversy. Successful reversal would best be achieved by the redistribution of at least part of DBNM property. However, DBNM have indicated that they will retain ownership of the land.

\* By compromising on the land issue DBNM could show a real commitment to the Namaqualand communities and gain credibility.

\* An alternative would be to lease out the land to local communities at nominal rates and retain a joint management role. In this way, DBNM could ensure that the land is not overgrazed and could introduce some innovative farming practices such as wild game, ostrich and indigenous Afrikaner sheep.

**A.8. CONCLUSION**

The opening up of the coast is a highly significant positive impact with potential to promote economic diversification and employment opportunities.

**A.8. RECOMMENDATIONS**

\* DBNM should also become involved with the development of a regional strategic plan as the future use of DBNM property is of fundamental importance.

\* DBNM and the RDAC, together with the other parties interested in regional development - Ninham Shand, DAG and the Springbok Municipality should combine resources to prevent duplication.

\* Ensure that the local communities are included in planning for potential future land-uses, especially for developments which may be negatively perceived, such as a nuclear power station or a toxic waste dump.

#### **A.9. CONCLUSION**

The reduction in IDB is considered a potentially highly significant impact due its apparently high magnitude and the effect on the regional economy.

#### **A.10. RECOMMENDATION**

\* This should be taken into consideration in assessing the impact of mine closure on the regional economy. Even though it is illegal, the influence extends beyond the culprits and affects innocent people.

### **SECTION B: IMPACTS OF MEDIUM SIGNIFICANCE**

#### **B.1. CONCLUSION**

The loss of employee benefits is considered to be of medium significance for both the Mine and the Namaqualand Groups.

#### **B.1. RECOMMENDATIONS**

\* Transferral of as many employees as possible to De Beers other enterprises would successfully mitigate many of the impacts.

\* The introduction of housing subsidies to the Mine Group for property outside of DBNM would potentially mitigate against the loss of accommodation in the post-DBNM stage.

\* The best way of mitigating the impact on the Namaqualand Group would be the provision of alternative infrastructural needs especially the provision of the basics - water and electricity - and improvement of recreational and cultural facilities. This need not be DBNM's sole responsibility, but DBNM could use its influence and in conjunction with the RSC, Eskom, the Management Boards and Civic Organisations could determine how to satisfy the basic needs. It remains imperative that access to medical facilities be improved.

## B.2. CONCLUSION

The decreased demand for infrastructure and the potential future use of Kleinzee and Koingnaas is considered of medium significance.

## B.2. RECOMMENDATIONS

\* The towns of Kleinzee and Koingnaas could be more attractive and functional if their access routes to the coast were improved. Kleinzee which is located approximately 500 metres from the coast, is constructed in such a way that one is not aware of the sea. In addition, there is a wire-mesh tunnel to the beach which is very unattractive. With planning this could be mitigated. An associated advantage would be the improved atmosphere of the town. Koingnaas is situated further from the coastline, but its access route could also be enhanced.

\* It is imperative that the future of the towns is investigated thoroughly. The prohibitive costs described in the Baseline Information Report may in the broader sense be less expensive. Dismantling of the town, as is occurring in Prieska, may be the most expensive alternative in terms of foreclosure of future options.

\* The spectacular archaeological finds along the coastline, and the mining history of the towns, where some of the houses date back to when mining began, are important parts of South Africa's cultural heritage. These should be investigated.

\* The location of industries such as a Nuclear Power Station or a Toxic Waste Dump requires thorough investigation. It is imperative that the local communities are included in a joint decision-making role.

## SECTION C: FURTHER RECOMMENDATIONS

### C.1. FEEDBACK

There is an immediate need for DBNM or the EEU to report back to DBNM's employees and the communities of Komaggas and Steinkopf as both revealed a number of misconceptions, rumours and queries.

By giving feedback, the employees and the communities can see how their contributions have been incorporated, and will be reassured that their opinions have been heard. If these misconceptions and queries are successfully resolved the uncertainty regarding the future may be mitigated.

It is recommended that workshopping of the identified queries and misconceptions may be the most viable option for communication between DBNM and the Namaqualand communities.

#### **C.2. PROCESS OF WORKFORCE REDUCTION**

DBNM needs to consult with employees through their organisations, both NUM and the Artisan's Committee, regarding the retrenchment process and the retrenchment package, age when employees are eligible for pension etc. The guidelines proposed by the South African Industrial Court need to be consulted.

DBNM should employ a Transition Councillor and/or careers advisor to help employees with psychological problems arising from the impending mine closure, help with career advice and methods of looking for work and lastly, financial advice.

#### **C.3. PROMOTION OF ALTERNATIVE DEVELOPMENT AND EMPLOYMENT OPPORTUNITIES**

The promotion of economic diversification and alternative employment policies which would mitigate many of the significant impacts mentioned previously should be directed in the following directions:

- \* Cottage Industries
- \* Mineral Prospecting
- \* Education and skills training
- \* Development of infrastructure
- \* Tourism
- \* Future potential of Kleinsee and Koingnaas

#### **C.4. NEED TO LINK WITH REHABILITATION STUDY**

It is important that the rehabilitation impact assessment and the socio-economic assessments become more closely linked and do not proceed in isolation from each other.

#### **C.5. THREAT OF AIDS**

DBNM should start early with the implementation of an HIV program as the increasing occurrence of this disease coupled with the proposed mine closure may have an accumulative impact on the work force.

ES14

**C.6. UTILIZATION OF CASE STUDIES OF MINE CLOSURE**

Research should focus on previous case studies as they often give indications of likely social impacts and recommendations how those impacts have been mitigated before. An example of how planning helped a town to stay alive after mine closure has been included in Appendix 2, with the case history of Atikokan.

# **CHAPTER 1. INTRODUCTION**

**1.1. THE PURPOSE OF THIS REPORT**

**1.2. BACKGROUND**

**1.3. DBNM'S DRAFT POLICY**

**1.4. STRUCTURE OF THIS REPORT**

**1.5. STRUCTURE OF THE SUPPLEMENTARY BASELINE INFORMATION REPORT**

**1.6. LIMITATIONS**

1.6.1. Date of Mine closure

1.6.2. Changing terms of reference

1.6.3. Confidentiality Constraints

1.6.4. Language constraints

## 1.1. THE PURPOSE OF THIS REPORT

The two main purposes of this report are to:

- \* identify and evaluate the potential major socio-economic impacts arising out of the closure of De Beers Namaqualand Mines (DBNM),
- \* determine mitigatory action which will reduce negative impacts and optimize positive impacts.

This report is based on information contained in the supplementary report "NM2005 Impact Assessment Baseline Information Report: Introduction, methods and results of the socio-economic study". It is an initial socio-economic impact assessment and as such indicates the direction and gives recommendations for future research.

The emphasis is on those impacts in the local region i.e. the Namaqualand Magisterial District. However, due to the concentration of employees originating from the Herschel District in the Transkei, special cognisance is taken of impacts likely to occur there.

## 1.2. BACKGROUND

In 1991 the Environmental Evaluation Unit (EEU) of the University of Cape Town was appointed by DBNM to undertake a socio-economic impact assessment of the proposed closure of DBNM by the year 2005. According to De Beers, the source of viable diamond ore is finite and unless technological advances or market fluctuations make the reserves economically viable, the mine has no option but to shut down its operations.

The impetus for this study resulted from the earlier commissioning of the EEU by DBNM to undertake an assessment of the rehabilitation of disturbed mined areas after closure. The question regarding post-mining use of the land could not be answered which resulted in the EEU being commissioned to identify the socio-economic impacts associated with mine closure and to formulate alternative land-use options. At a meeting between the EEU and DBNM in February 1992, the scope of the project was reduced to focusing more specifically on the socio-economic impacts and to suggest mitigatory action.

Although the actual date of closure is uncertain the life of a mine is finite and even if new technologies are introduced or the diamond price increases the closure will be prolonged rather than avoided. DBNM have stated ten years as being the probable life expectancy of the mines, but 2005 has been chosen for the project title as "it is assumed that NM and DBCM will have, by that time, made the change from central business focus of diamond mining, to some alternative focus" (Minutes of meeting, 1991, September). For the purposes of assessing the impacts of mine

workers, 2002 has been used throughout this report.

The project impacts have been identified by employee questionnaires, economic questionnaires, interaction with interested and affected parties and by consultation with DBNM management. In addition to this the impacts in the Herschel district of the Transkei were determined in consultation with a specialist on the area, Ms Sue Lund, a consultant in Rural Development Planning.

### **1.3. DBNM'S DRAFT POLICY**

At a meeting between the EEU and DBNM held at Kleinzee on 27 September 1991 the following DBNM draft policy statement on mine closure was agreed upon:

#### "6.3. DBCM's business objectives for NM towards the year 2005.

It is DBCM objectives to maintain the business viability of NM by retaining a profitable enterprise in Namaqualand while aiming to:

- minimize the disruptions to existing social systems that will be caused by the gradual closure of the DBCM Namaqualand diamond mining activities;
- optimize the residual social and environmental conditions (after mining has ceased) for De Beers and local communities by managing the transition from a mining operation to alternative sustainable land uses and employment opportunities
- take the necessary steps to determine the most appropriate alternative land uses and business options and means by which mined land can be rehabilitated to the degree required for the identified land uses;
- take into account the concerns of parties affected by the envisaged changes and give such parties the opportunity to suggest ways in which their concerns can be addressed;
- invite key affected parties to participate in the planning process at specific stages of the process;
- promote an environmentally responsible ethic through the actions of the organization and its contractors
- act in compliance with all acceptable legislation"

### **1.4. STRUCTURE OF THIS REPORT**

The initial pages of this report consist of the Terms of Reference and Executive Summary. The executive summary summarizes information contained in both the Baseline Information Report and this Main Report, highlighting the important impacts and recommendations for mitigation.

The structure of the remainder of the report is as follows:

- Chapter 1: (this chapter) gives the background information for this Socio-Economic Impact Assessment Report, and lays out its structure;
- Chapter 2: briefly describes the assessment methodology as part of the IEM process and discusses the criteria used to evaluate the significance of the impacts;
- Chapter 3: describes and discusses the major issues and impacts resulting from mine closure and evaluates their significance;
- Chapter 4: provides an expansion of the mitigating measures mentioned in chapter 3.

Appendices are located after the list of references used and include:

- Appendix 1: List of individuals or groups interested in Namaqualand
- Appendix 2: Case study of mine closure - Atikokan where the impacts were successfully mitigated
- Appendix 3: Recommended literature on mine closure

Tables which can be opened out, are located at the end of this report. These are used to summarize and emphasize the impacts and mitigation. Colours together with codes are used throughout the report to highlight information and for ease of finding ones way around this report.

## **1.5. STRUCTURE OF THE BASELINE INFORMATION REPORT**

A supplementary Baseline Information Report, "NM2005 Impact Assessment Baseline Information Report: Introduction, Methods and Results of the Socio-Economic Study" (EEU Report Number 5/92/87), accompanies this Impact Assessment Report - and contains the information upon which much of this report is based. Appendix C, prepared by consultant Ms Sue Lund, is of special note as it provides the baseline information for the impacts on DBNM's migrant workers from the Transkei of Ciskei.

The structure of the supplementary report is as follows:

- Chapter 1: Introduction, background to the study and study motivation, approach to the impact assessment and the structure of the baseline report.
- Chapter 2: Characteristics of the Namaqualand Region. This gives the history, and the social, economic and land use characteristics of Namaqualand.

- Chapter 3: Project actions: briefly describes the current operations and potential mine closures
- Chapter 4: Social aspects of mine closure: describes the methods used and results of the social impact study of mine closure on both the employees and the local communities, and gives the results.
- Chapter 5: Economic effects following DBNM closure describes the methods and results of an economic analysis of money flows in Namaqualand and what role De Beers plays.
- Chapter 6: References

The following appendices are located at the end of the baseline report:

- A: Tabulated results of the DBNM employee questionnaire.
- B: Verbatim answers from the DBNM employee questionnaire.
- C: A Preliminary report on the socio-economic impact of De Beers Namaqualand Mines on the Herschel district of the Transkei.
- D: I&AP's letters and list of I&AP's.
- E: Summarized responses from Interested and affected parties (including the actual letters sent by the I&AP's).
- F: Responses from the Community Meetings.
- G: Input/Output Analysis Table.
- H: Verbatim Answers from the business interviews.

The Main Report is meant to draw out the salient impacts and suggest mitigation dependant on the Baseline Information Report without unnecessary repetition of information. Attempts have therefore been made to direct the reader to relevant sections by using the following reference "(BIR, p34)".

## **1.6. LIMITATIONS**

This socio-economic impact assessment is the first project of its kind in South Africa and is without precedent. It has taken place during the initial phase of planning for mine closure amid a high degree of uncertainty as to time of closure, future plans, and political uncertainty on a local as well as national level.

### **1.6.1. Date of Mine closure**

The actual date of mine closure is uncertain being dependant on the availability of economically viable diamond ore. The viability of the diamond ore is in turn dependant on both the market-price and the technology being used. Neither of

these can be determined in advance. DBNM has estimated that should conditions remain constant the mines should remain in use for another ten years, closing in 2002.

#### **1.6.2. Changing terms of reference**

The actual terms of reference changed during the course of the project, making initial planning strategy difficult and leading instead towards reactive planning which resulted in time-consuming ad hoc decisions being made.

#### **1.6.3. Confidentiality Constraints**

The research team was not always comfortable with the high degree of confidentiality DBNM wished to maintain, especially with respect to the community meetings as we were not able to share information, a concept fundamental to the philosophy of IEM.

#### **1.6.4. Language constraints**

The large number of employees from the Transkei and Ciskei spoke only Xhosa which made communication at times rather constrained. However, this was eased by helpfulness of the translators.

The remainder of the employee questionnaires and the community meetings were also held in Afrikaans which although the majority of the research team were bilingual served as a slight constraint.

## **CHAPTER 2. METHODOLOGY OF ASSESSMENT**

### **2.1. Introduction**

### **2.2. The Integrated Environmental Management Framework**

#### 2.2.1. Aims

#### 2.2.2. Stage of IEM Procedure

#### 2.2.3. Scoping

### **2.3. Evaluation of Significance**

#### 2.3.1. Significance Criteria- number of people affected

- (a) Potential duration of impacts
- (b) Geographical extent of the area impacted:
- (c) Number and severity of associated secondary impacts
- (d) Skills transferability (impact on people)
- (e) Economic strength (impact on people)
- (f) Optimization potential
- (g) Cumulative significance:

#### 2.3.2. Significance Rating

- (a) Low significance
- (b) Medium Significance
- (c) High Significance

#### 2.3.3. Confidence level

#### 2.3.4. Presentation of results

## 2.1. INTRODUCTION

This socio-economic impact assessment falls under the ambit of Integrated Environmental Management as it is practised in South Africa today. It differs from the usual impact assessment projects which are concerned with the evaluation of different alternatives and encompass all three phases of a project from "conception to exhumation" - construction, operation and decommissioning. In this project the focus is on the "exhumation" of De Beers Namaqualand Mines and the only alternatives available are associated with how the mine is closed and what mitigatory actions should be introduced to reduce any negative impacts and to optimize positive impacts.

IEM in South Africa is currently a voluntary process, however the President's Council Report on the Environment (1991, p188) states that it "is recommended that the statutory provisions be revised to reflect the IEM procedure and to make the process legally enforceable". DBNM are to be commended for having undertaken this project ten years before the anticipated date of closure. It appears to be the first of its kind in South Africa although Canada and Australia have undertaken assessments of a similar nature.

## 2.2. INTEGRATED ENVIRONMENTAL MANAGEMENT FRAMEWORK

### 2.2.1. Aims

Five broad aims have been identified which coincide with the IEM methodology of assessment as discussed by Fuggle (1990).

- \* to encourage the formulation of realistic options for the closure of DBNM early in the planning process
- \* to determine the relative effects of these options on the different I&APs
- \* to act as a role model for future decommissioning of mines or large industries in single-industry towns
- \* to foster implementation of environmental management and mitigation
- \* to act as a basis for future impact assessment of DBNM closure closer to the time and when more information is available with respect to manner of closure, the socio-political status of Namaqualand and South Africa and what alternative development options are feasible for the creation of employment and introduction of revenue,

### **2.2.2. Stage of IEM process**

This impact assessment is being undertaken at the planning stage of mine closure. It is envisaged that De Beers will use this report together with the Baseline Information Report to plan the strategies of mine closure in such a way as to reduce the socio-economic impact on its employees as well as on the region. However, DBNM have reserved the right not to use the impact assessment.

The preliminary and formal proposals have been accepted through negotiation between the EEU and DBNM management. Screening of the project revealed the existence of significant effects which indicates that a class 1 investigation is in order. Through scoping, the major issues and impacts have been identified. It is expected that a number of iterations will be completed before the decision phase of mine closure is reached.

### **2.2.3. Scoping**

Scoping has been defined as the "procedure for narrowing the scope of an assessment, and ensuring that the assessment remains focused on the truly significant issues or impacts" (EEU, 1992 March). As different groups have different value systems it is essential to include I&APs so they can identify the environmental components that they value and contribute to appropriate development strategies (Fuggle 1990). In this report a broad range of interested and affected parties were identified including the relevant authorities, DBNM management and employees, community organisations, non-governmental organisations, other mines, businesses and service industries, farmers unions and university research groups.

The I&APs identified as being the most significantly impacted were involved through meetings, workshops, and questionnaires. The remainder were asked for their concerns regarding mine closure, their suggestions regarding alternative land use and potential mitigating measures (BIR, Appendix D).

## **2.3. EVALUATION OF SIGNIFICANCE**

Significance is an assessment of the importance of an impact, usually from the perspective of an interested or affected party. Here the significance is limited to socio-economic factors. The act of evaluation necessarily involves social judgement which can be problematic if the person or people making the judgement have a different framework of social values to the people being affected by the impact. Thus it is important to:

- \* involve the affected public in the identification of significant impacts (achieved through public participation and scoping)
- \* to use objective criteria in the evaluation of significance.

### 2.3.1. Significance Criteria

The use of criteria acts as a guideline in the interpretation of data and transforms it into information (Raimondo, 1991).

Criteria used in this report to assess impact significance are:

(a) number of people affected

- small number (1 to 300)
- medium (301 to 700)
- large number (over 700)

(b) potential duration of impacts:

- temporary (number of months)
- medium term (few years)
- long term (many years)
- permanent

(c) the geographical extent of the area impacted:

- the immediate site area ie. current DBNM property
- the Namaqualand region - which follows the magisterial area, but also includes those people from towns outside the region such as Ebenhauzer and Nuwerus who consider themselves "Namaqualanders" (Boonzaaier, EEU, 1991);
- the national area i.e. the rest of South Africa, including the Homelands this includes:-
  - Cape Town
  - Johannesburg
  - Herschel District in Transkei

(d) number and severity of associated secondary impacts

(e) skills transferability (impact on people)

- low
  - low education
  - low Patterson Band grades
  - age and language constraints
  - skills limited to diamond mining
- medium: falls between low and high skills transferability - here the person affected may have some constraints but not all of them;
- high
  - high levels of education
  - high Patterson Band grades,
  - relatively young
  - fluency in English or Afrikaans;

- (f) economic strength (impact on people)
- poor - few sources of income
    - reliant on DBNM
    - low potential to save
    - does not own land or home
  - medium - between poor and good;
  - good - have sources of income independent of DBNM
    - high capacity to save
    - access to resources
    - owns a home or land
- (g) the optimization potential - optimizing beneficial effects of the project or making positive trade-offs to counter-balance negative impacts;
- (h) cumulative significance: the potential for project impacts, which are not significant on an individual basis to become significant on a cumulative basis;

### 2.3.2. Significance Rating

Each impact is then allocated a rating of low, medium or high significance, which is defined as follows:

- (a) low significance: implies that the impact is temporary in nature, limited to DBNM property, affects a small number of people who have high skills transferability and economic strengths to withstand the impact, there are no secondary impacts and there is potential to optimize. An impact is also considered low if reasonable mitigatory measures can be applied to reduce the severity of an impact to comply with the above definition.
- (b) medium significance: implies that the impacts are likely to have a greater effect. The influence of the impact could be felt at the regional scale in both the short and the long-term future. A fair amount of people are affected with a medium level of skills transferability and economic strength. Secondary or cumulative impacts could arise from the primary impact. The importance of mitigatory measures increases.
- (c) high significance: implies that the impacts are very serious. There could be long-term or permanent negative repercussions on a large number of people and areas at the regional or national scale. Skills transferability and economic strengths of affected people are very low and the resources required for mitigation could be substantial. There are likely to be significant cumulative or secondary impacts and the effects could be permanent or widespread.

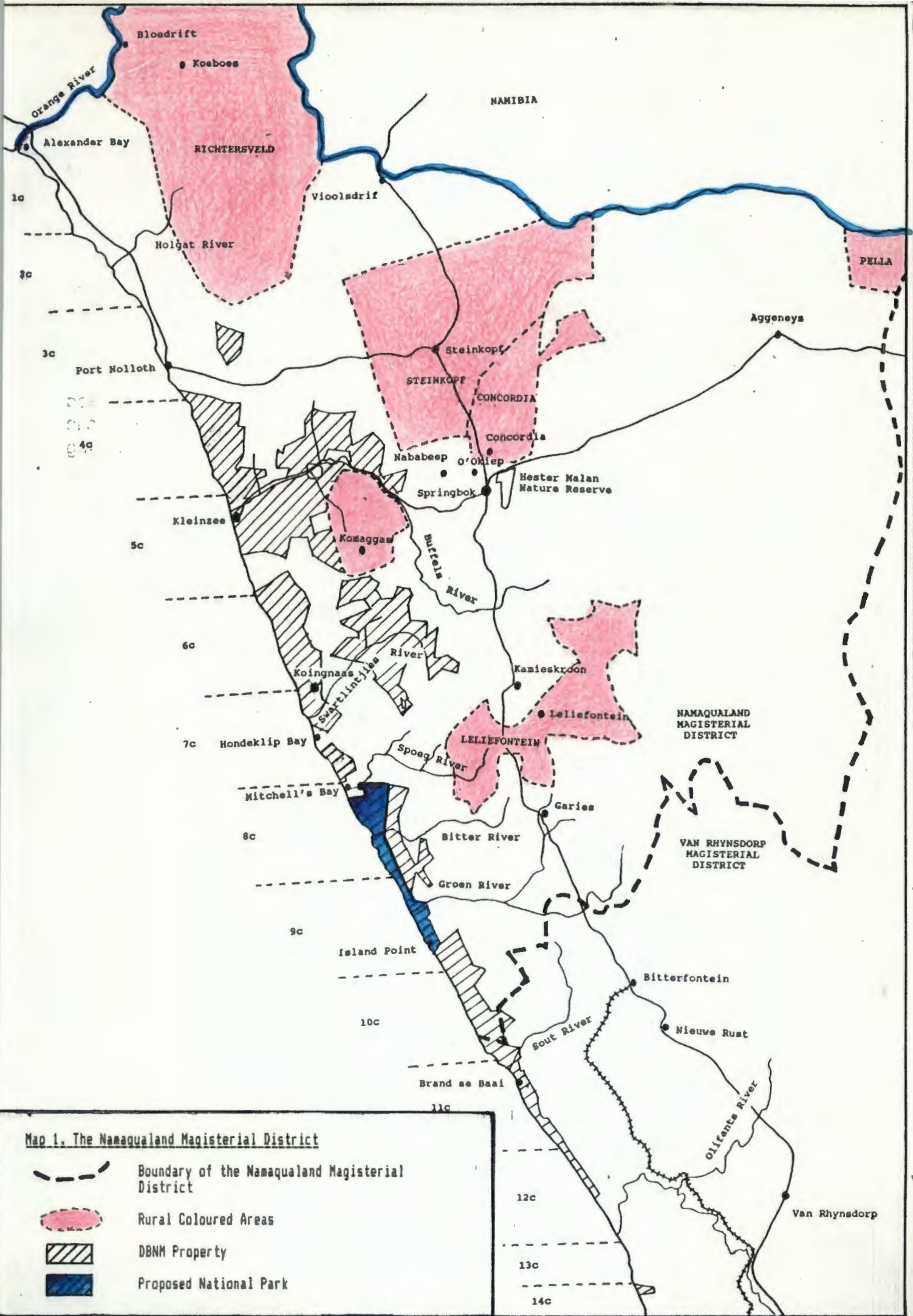
The criterion of whether the impact has potential to be reversed has not been explicitly stated because the difference between the significance rating before mitigation and after mitigation reveals whether the impact has potential for reversal.

**2.3.3. Confidence level**





The level of confidence with respect to the evaluation of significance has been included in the final significance rating after mitigation.

**2.3.4. Presentation of results**

Chapter 3 describes and discusses each issue and impact in detail. Tables are used to summarize all the information for each of the two issues in Chapter 3. These can be found at the back of this report. The reader should lay out the tables when reading the relevant section to facilitate comprehension.



Map 1. The Namaqualand Magisterial District

-  Boundary of the Namaqualand Magisterial District
-  Rural Coloured Areas
-  DBNM Property
-  Proposed National Park

12c  
13c  
14c

## **CHAPTER 3. ASSESSMENT OF IMPACTS**

### **3.1. Introduction**

#### **3.1.1. Chapter contents and structure**

- 3.1.1.(a) Impact statement
- 3.1.1.(b) Impact description
- 3.1.1.(c) Impact significance
- 3.1.1.(d) Potential mitigatory measures
- 3.1.1.(e) Research and monitoring needs

#### **3.1.2. Summary list of project impacts**

### **3.2. Issue 1: Discussion and evaluation of the loss of DBNM jobs and related impacts**

- 3.2.1. Impact 1a: Loss of DBNM income
- 3.2.2. Impact 1b: Loss of employee benefits and loss of access to DBNM services and infrastructure
- 3.2.3. Impact 1c: Impact on local businesses due to reduced purchasing power of DBNM employees
- 3.2.4. Impact 1d: Uncertainty regarding future
- 3.2.5. Impact 1e: Reduced IDB activities
- 3.2.6. Impact 1f: Impact of mine closure on Transkei and Ciskei employees

### **3.3. Issue 2: Discussion and evaluation of impacts associated with cessation of the existence of DBNM**

- 3.3.1. Impact 2a: Cessation of DBNM's contribution to Namaqualand RSC
- 3.3.2. Impact 2b: Loss of DBNM's purchasing power
- 3.3.3. Impact 2c: Renewed interest in land issue
- 3.3.4. Impact 2d: Opening up of the coast
- 3.3.5. Impact 2e: Decreased demand for infrastructure - future use of Kleinsee and Koingnaas

### 3.1. INTRODUCTION

The major issues resulting from mine closure, with the associated impacts arising from them, are listed below. As with any major socio-economic project the impacts are interwoven and may be cumulative in nature, therefore they should not be seen in isolation. However, for ease of assessment they are evaluated separately as far as possible. Since this is an initial impact assessment and it is unclear to what extent recommended mitigation will take place the impacts have been evaluated before mitigation.

The impacts are based on information from the baseline report and have been identified through interaction with :

- \* DBNM Management
- \* DBNM Employees
- \* Community workshops
- \* Consultant for Herschel area in the Transkei
- \* Economic survey
- \* Research Team discussions

#### 3.1.1. Chapter contents and structure

Each of the following impacts have been written up under the following headings:

##### (a) *Impact Statement*

A short statement, briefly stating what the impact is.

##### (b) *Impact Description*

The major impact is described in detail according to time of occurrence, the parties most affected, and the magnitude.

The project stages during which impacts may occur have been defined as:

- the current situation ie DBNM operating at full capacity
- the decommissioning phase of DBNM
- post-DBNM i.e. Namaqualand without DBNM, not necessarily without De Beers

The main interested and affected parties who are affected by the impacts. These include:

- DBNM employees - Mine Group
  - Transkei Group
  - Namaqualand Group
- DBNM/DBCM
- Namaqualand businesses
- Namaqualand communities

- Local and regional authorities
- Potential future users

The magnitude of the impacts vary according to the nature of the impact and have been quantified as much as possible.

*(c) Impact significance*

The criteria used to evaluate the significance of the impact have been described and analysed in Chapter 2. The significance is determined using the following criteria:

- number of people affected
- potential duration of impact
- geographical extent of the area impacted
- number and severity of associated secondary impacts
- skills transferability
- economic strength
- optimization potential
- cumulative significance
- confidence level

*(d) Potential Mitigatory Measures*

A cursory reference is made to potential mitigatory measures which could be introduced by DBNM to alleviate or minimize the impacts. These are expanded in greater detail in chapter 4.

*(e) Research and Monitoring needs*

As this impact assessment is in the initial phase, the identification of research and monitoring needs is especially important. A full list of recommended readings is available in Appendix 3 and includes those obtainable overseas which due to time constraints were not available in time for this report.

**3.1.2. Summary list of project impacts**

The impacts resulting from mine closure can be divided into two main issues - those resulting from the loss of DBNM employment and those resulting from the cessation of DBNM's role in the socio-economic and socio-political aspects of the region.

**Table 1. Summary of project impacts**

ISSUE 1: LOSS OF DBNM JOBS

- Impact 1a: Loss of DBNM income
- Impact 1b: Loss of employee benefits and loss of access to DBNM services and infrastructure
- Impact 1c: Impact on local businesses due to reduced purchasing power of DBNM employees
- Impact 1d: Uncertainty regarding future
- Impact 1e: Reduced IDB activities
- Impact 1f: Impact of mine closure on Transkei and Ciskei employees

ISSUE 2: CESSATION OF EXISTENCE OF DBNM

- Impact 2a: Cessation of DBNM's contribution to Namaqualand RSC
- Impact 2b: Loss of DBNM's purchasing power
- Impact 2c: Renewed interest in land issue
- Impact 2d: Opening up of the coast
- Impact 2e: Decreased demand for infrastructure - future use of Kleinzee and Koingnaas

3.2. ISSUE 1:      DISCUSSION AND EVALUATION OF IMPACTS ASSOCIATED WITH LOSS OF DBNM JOBS

This section begins with a discussion and evaluation of the major issue of DBNM job loss, followed by the evaluation of each of the major associated impacts listed above. As much of the information for the individual impacts in this section is similar to the main issue of DBNM job loss, reference to the relevant section is made in order to avoid unnecessary repetition.

### 3.2. (a) Impact Statement:

With the closure of DBNM, all the employees will lose their jobs and other package benefits at DBNM. Three possible options are likely to occur:-

- \* Employees over a certain age will retire
- \* Employees from the highest Patterson Band may be transferred - approximately 3%
- \* The remainder will be retrenched

### 3.2. (b) Impact Description

The loss of DBNM jobs is a first order impact arising directly as a result of mine closure. The magnitude is in the region of 3100 employees. This is the main socio-economic impact resulting from mine closure and gives rise to a large number of associated and secondary impacts, discussed under each specific impact.

The strategy of mine closure adopted is important in determining the timing of the impacts. Two main strategies of mine closure have been proposed (BIR, p47):

- (i) closure of all complexes simultaneously
  - \* a simultaneous phasing down of production gradually
  - \* to continue at maximum production until all complexes are simultaneously closed.
- (ii) phased closure of different complexes

Job loss is likely to begin during the decommissioning phase - as soon as DBNM initiates the process of mine closure. If mine closure is phased gradually, the retrenchment process could start a number of years before the predicted closure date. On the other hand, if mine closure occurs suddenly, jobs will be secure until sudden *en masse* retrenchment occurs.

A skeleton staff will be maintained to undertake the rehabilitation process. The duration of which is estimated to be in the region of one to two years.

The major affected party will be the DBNM workforce consisting of the three employee groups - the Namaqualand Group, the Mine Group and the Transkei Group, identified in the questionnaire (BIR, p53), and their families and communities.

The Namaqualand Group has been defined as consisting of employees who live in the mine towns during the week and return to their "homes" in the region, where their immediate families live, every weekend or every second weekend. Komaggas residents are an exception to this as many commute on a daily basis"

The **Mine Group** refers to "those people who have permanent accommodation in Kleinzee or Koingnaas, either a mine house or single quarters accommodation. This group excludes those who return home for the weekend or who have immediate family living elsewhere. The mine group consists of those people most likely to leave when the mine closes to find work and live elsewhere" (BIR, p55).

The **Transkei Group** consists of all the workers recruited from the Transkei or Ciskei, whose families live in those areas.

It has been difficult to directly apply the results of the survey to the total population of DBNM employees as it is not ascertainable where the people living in Kleinzee or Koingnaas consider their homes to be, and thus one cannot say conclusively what the magnitude of each group for the total work force is. Both classification according to Patterson Band levels or racial reasons are flawed. However, for the purposes of comparison, the mine workers are mostly white except for a small proportion of the local coloured workers who have attained Patterson Band level C or above, the Namaqualand Group are mostly coloured and the Transkei Group all black.

As the three groups will be impacted in different ways they have been discussed separately below.

*- Namaqualand Group and their families:*

This group consists mainly of people born in Namaqualand, who are unlikely to leave the region after mine closure, due both to their lack of mobility and to their attachment to the region. It consists largely of the local coloured work force, numbering approximately 1860 or 63% of the work force. In the questionnaire sample the Namaqualand Group constituted only 55%. The difference between the two can partially be attributed to a small proportion of the local population being eligible for mine accommodation and living with their families in Kleinzee or Koingnaas. The questionnaire sample revealed the average number of dependants to be 2.8.

This group has lower levels of education, and are mostly limited to the lower Patterson Band levels.

*- Mine Group and their families*

This group consists mainly of the white workers who have no ties to Namaqualand and who are likely to leave the region after closure. The group number approximately 533 or 17% of the work force. Approximately 3 to 3.5% of the work force are eligible for transferral. This constitutes approximately 100 employees from this group (Ms C. Claasens, pers. comm).

In the questionnaire sample this group had an average of 1.9 dependants and originated from a wide variety of different places all over Southern Africa.

Characteristics of this group which indicate their higher probability of finding alternative employment include their more advanced levels of education and their high Patterson

Grade levels.

*- Transkei Group and their families:*

This group consists of approximately 700 employees. Confusion as to the exact number is caused by the removal of approximately 150 migrant workers from the employee records at any period when they are at home on leave, and their subsequent reinstatement when they return.

As the employees from the Transkei are relatively old in comparison to the other two groups - the average age being 48 years - and DBNM's policy of discontinuation of the recruitment of migrant workers, by the date of mine closure a relatively high proportion of workers will have retired. The following table shows the ages of the Transkei Group at the two proposed dates of closure. However, this assumes that no-one will be retrenched before 2002, which is unlikely especially if reduction of the work force is phased.

Table 2. Age of Transkei employees in 2002 and 2005

Ages of migrant employees	2002	2005
Have retired (i.e. 60 +)	42% 288	57% 393
55 - 59	25% 171	23% 155
50 - 54	22% 152	17% 120
45 - 49	10% 69	2% 17
Remainder	1% 9	1% 4

Based on the employee questionnaire, the average number of dependants for the Transkei Group is 7.3 per household.

**3.2. (c) Impact significance**

Although the magnitude of the impact of job loss will be large for all the employee groups, the significance will vary according to their strengths and mobility.

*- Namaqualand Group, their families and communities:*

The loss of DBNM jobs is likely to be highly significant as:

- \* the Namaqualand Group constitute a high proportion of the work force
- \* the impact is potentially permanent as alternative employment opportunities are unlikely to be available and the employment level in the Namaqualand is

already high (Boonzaaier in EEU Report No 4/90/49, 1990),

- \* the group is characterized by low transferability of skills. They have poor educational qualifications, low Patterson Band grades and skills which reduces their chance of finding work and reversing the impact
- \* the group is largely localized in the communities of Komaggas and Steinkopf, where the employees constitute a large proportion of the community's economically active population
- \* they have a potentially high number of associated and secondary impacts resulting from unemployment and impoverishment
- \* the households are reliant on DBNM income - 34% of the questionnaire sample had more than one person in household working for DBNM
- \* loss of spending power will permeate throughout the region (discussed in impact 1c)
- \* this group are historically and socially attached to the Namaqualand region and less likely to leave it

However, according to the questionnaire results, a high proportion of the Namaqualand Group currently fall into the youngest age division (45%) , which means that at the time of mine closure they will be in a stronger position age-wise to find alternative employment.

*- Mine Group and their families*

The significance will be **medium to high** depending on the general availability of employment at the time of mine closure. As this group is more educated and has achieved higher Patterson Band grades, they have high skills transferability and are therefore likely to find work more easily in other South African centres. Thus, the impact for them is more likely to be reversible than for the other two groups, and to operate mainly over the short term. Other variables which might reduce the significance of the impact include:

- \* relatively small number of dependants
- \* small proportion of the work force

Variables which increase the significance include:

- \* high number of people per household working for DBNM and absence of alternative sources of income besides DBNM
- \* loss of good employment benefits (discussed in Impact 1b).
- \* possibility that skills learnt on the mine may not be

transferable

- \* the lack of a strong community cohesion which serves to help people in times of distress

As their place of origin is widespread throughout South Africa, no single community has been identified as being significantly impacted.

*- Transkei Group, their families and communities:*

The impact on the employees who are not eligible for retirement at the time of mine closure, and on their direct dependants will be of very **high significance**. If retrenchments do not begin before 2002, the number of migrant workers employed by DBNM below the age of 60 will approximate 400.

In terms of alternative employment opportunities this group would be hardest hit as they are characterised by little education, lack of skills, poor English and advanced age. Furthermore, many of the Transkei respondents during the employee questionnaire said that there were no jobs available for people over 30 years of age and that they would not look for other work.

Thus the impact on these individuals and their dependants is likely to be permanent and have a high number of associated secondary impacts including the stressing of already overgrazed land, removal of children from schools due to financial constraints, impoverishment and the associated reduction in the ability to meet basic daily needs for food, shelter, fuel, transport and medical care.

The return of DBNM employees to Herschel will stress the already "over-burdened and impoverished social fabric" (Lund, BIR, Appendix C) of Herschel, but the significance of this impact on Herschel is likely to be **low to medium** as the number of employees and direct dependants impacted only constitutes approximately 0.8% of the population.

**Cumulative Significance:**

The impact of job loss for DBNM employees and their families is even more significant if one takes into consideration that the expected life span of Alexkor, the second biggest diamond mine in the region, is reputed to be about nine years.

Aids is another cumulative factor which needs to be taken into consideration. The actuarial model developed by Peter Doyle of Metropolitan life, reputed to be more realistic than others (Russell, 1991), has estimated by the year 2005 there will be 7.4 million South Africans who are diagnosed HIV positive, and 2.9 million people will have died from aids. This estimate is based on the assumptions that behaviour will not change, a cure for aids will not have been developed, and it is transmitted heterosexually.

Confidence level:

As there is much uncertainty with respect to the phasing of mine closure, the economic climate and the state of the job market at the time of mine closure, it is difficult to predict the significance level with a high degree of confidence.

### 3.2. (d) *Potential Mitigatory Measures*

The best form of mitigation would be the provision of alternative employment both on a national and a regional scale. In the short term this would best be achieved by the location of a viable diamond deposit or alternatively another mineral deposit which could be exploited.

However, in the long term, the promotion of economic diversity and tourism would benefit the local populations and open up coastal resources for the benefit of everyone. In order to achieve this DBNM should act as a catalyst and bring together all those people and organizations interested in regional development. Appendix 1 includes a list of potential investors and interested parties.

DBNM should attempt to reduce the number of retrenchments by transferring as many staff as possible to its other operations in South Africa. If retrenchment does become the only route, this would have to be agreed upon with the employee organizations. An inventory of the employees and their skills should be kept and DBNM should actively attempt to find alternative positions for the employees.

A phased reduction of the work force would be preferable since DBNM could begin reducing the work force gradually by using methods such as the freezing of posts and allowing natural attrition due to retirement and resignation to take place. When DBNM begins to reduce the work force in earnest, various alternatives could be implemented. These have been discussed in detail in Chapter 4.

Early retirement is potentially the best mitigatory action for the Transkei Group as many of the employees will be nearing retirement age in the year 2002. If DBNM pensioned migrant workers at the age of 50, then 79% of the work force would have some form of secure income, even though it would be much less than if they retired at the age of 60. Thus the significance rating would depend to a large extent on the pension policy implemented at the time of closure. It is important that the pension granted is sufficient for the employees to live off and inflation related. In cases where their final pensions are not sufficient, alternative strategies, for example, increased employee contributions in the interim period should be investigated.

DBNM should start early with the implementation of an HIV program as the increasing occurrence of this disease coupled with immanent mine closure is likely to have an accumulative impact on the work force.

These potential mitigatory actions that DBNM should undertake have been discussed and expanded upon in Chapter 4.

### 3.2. (e) *Research and Monitoring needs*

Research is needed to determine the life expectancy of the other major mineral extractors in the region such as Alexkor, O'Okiep Copper Company, Black Mountain, etc.

The viability of DBNM and Alexkor combining their resources with respect to the identification of impacts and their cumulative significance should be investigated as their life expectancies are almost the same.

The following impacts all arise from the loss of DBNM employment. Although much of the information is similar to the above discussion regarding loss of DBNM employment, it has been felt necessary to discuss each related impact in detail as the main I&APs are all affected to varying degrees and it becomes cumbersome to try and evaluate it all together.

3.2.1. Impact 1a. Loss of DBNM income
---------------------------------------

#### 3.2.1. (a) *Impact Statement*

With the cessation of DBNM employment all of the work force, except approximately 3% who are eligible for transferral, will lose their secure source of income.

#### 3.2.1. (b) *Impact Description*

Loss of income will occur as soon as DBNM starts to reduce its work force. As discussed in Issue 1, this is likely to begin in the decommissioning phase, but will be most evident in the post DBNM stage.

According to DBNM personnel, the value of DBNM's total payroll in 1991 was R 94 940 616.35 (BIR, p36), which includes salaries, allowances and employer contributions. Approximately 60% constitutes salaries, involving an amount of R 57 million.

Income levels vary according to different Patterson Band Grades - the following table depicts the salaries for the total employee population, according to Patterson Band levels, and also for the different employee groups according to the employee questionnaire sample.

Table 3. Salaries for DBNM work force according to Patterson Band grades

Patterson Bands and Income levels	Total work-force N=2866	Questionnaire Total N=143	Namaqua-land N=78	Mine N=39	Trans-kei N=26
A: 872-1211	29% 828	29% 41	39% 30	5% 2	35% 9
B: 1212-2379	52% 1484	52% 75	56% 44	36% 14	65% 17
C: 2380-4908	17% 476	16% 23	5% 4	49% 19	- -
D: 4909-8950	2% 71	2% 3	- -	8% 3	- -
E: 8951 +	0.2% 7	0.7% 1		2% 1	- -

The difference between the figure representing the total work force 2866 and 3100 previously stated is partially due to the Transkei workers on leave being taken off the employee records. Therefore the A and B bands are likely to be inflated by approximately 150 workers.

- DBNM employees and their families will be the major parties affected. Analysis of the employee groups revealed the:

The Mine Group's income tended to be much higher than the other two groups with 51% being over R 3000, and 23% being over R 4000 per month (BIR, p69). The income levels may be much higher than comparable positions elsewhere in order to attract skilled employees and as much of the living requirements such as accommodation, water, electricity, telephone, education etc are subsidized, these employees may be unable to maintain the same standard of living after mine closure.

Both the Namaqualand and the Transkei Groups had the highest proportion of employees with incomes between R 1000 and R 1500. This was 49% and 46% respectively. The Mine Group also has the highest number of people per household working for DBNM with 56% of the sample having more than the respondent working for DBNM. The Namaqualand Group had 27% and the Transkei 0%.

- Local businesses suffering as a result of the loss of employee purchasing power is discussed in Impact 1c and as a result of loss of DBNM's purchasing power is discussed under Issue 2, Impact 2b.

- The State who will lose the income tax paid by the employees. Income tax paid by DBNM employees amounted to approximately 12 million rands over the 1991/1992 tax year. This is paid to the central government. However, the employees who pay the highest tax are also those most likely to find alternative employment and therefore the impact will possibly be less than this figure.

### 3.2.1. (c) *Impact significance*

The significance of the impact varies for the different employee groups:

**Highly significant** for the **Namaqualand Group** (discussed in Issue 1) as:

- the duration is potentially long term
- the geographical extent is likely to be regional
- affects the highest number of people
- who have low transferability of skills
- low economic strength as are poor and have low capacity to save, and mostly do not own their own houses. Although they have access to the land, most do not own stock (72%);
- Secondary impacts such as removal of children from school due to lack of finances may impact future generations and generally retard development in Namaqualand. Other secondary impacts include impoverishment, increased dependence on already badly overgrazed lands, and increased crime, substance abuse and family violence which are all associated with unemployment,

Significance for the **Mine Group** will be **medium**:

- potentially short term as they will most probably be the first group to find alternative sources of income,
- Impacts will be mainly site-specific
- least amount of people with least number of dependants
- high transferability of skills
- economic strength is difficult to determine as they have high incomes and therefore a high capacity to save, but they do not own their own houses and the families are completely dependant on DBNM income.
- Secondary impacts include relocation, the break-up of social groups and uncertainty regarding the future.

Significance for the **Transkei Group** is very **high**. Those employees who are not given a pension and their families, will be very severely and permanently effected.

- duration probably permanent
- geographical influence localized in the Transkei/Ciskei

- by the time of closure the number of employees is likely to be approximately 400, but the number of dependants is high (questionnaire survey revealed an average of 7.8 dependants)
- low transferability of skills
- low economic strength but does own house and stock

Depending on DBNM's pension and retrenchment programmes, the district of Herschel could potentially be impacted as a high proportion of the migrant worker's salary is sent home every month. However, a large proportion of employees should be retired or eligible for retirement by the time of mine closure (as discussed in Issue 1).

#### Cumulative Significance:

The loss of income will be exacerbated by the loss of other employee benefits discussed in Impact 1b, which include the loss of subsidized shopping, medical aid, accommodation, etc. In addition, the utilization of credit systems by many of the employees could adversely impact households especially if little warning is given.

Other potential cumulative effects include the current down turn in the economy, the potential crisis of aids and the closure of other mines in the region.

#### 3.2.1. (d) *Potential Mitigatory Measures*

Loss of impact will only be reversed with the provision of alternative sources of income such as alternative work or pension packages. However, financial planning such as savings, retirement annuities, financial management education, etc. could be introduced to soften the blow.

Also it is imperative that the employees are given ample warning of potential retrenchments as many use the credit system - six months credit is available at Kleinzee and Koingnaas and two years for furniture and household equipment, bought in Springbok.

The impact on the Transkei Group depends to a high degree on DBNM's pension and retrenchment policies. It is recommended that all the Transkei employees are put on pension, (as discussed in Issue 1 and expanded in Chapter 4).

In addition to the above, the following have all been expanded in Chapter 4.

- \* encouragement of regional development
- \* career advisors
- \* pensions and alternative employment
- \* potential mineral exploitation - best alternative
- \* alternative skills training in the interim
- \* education of employees with respect to handling of finances
- \* encouragement of savings and insurance policies such as retirement annuities

\* discouragement of credit systems

- *Research and Monitoring needs*

\* an assessment should be made of the potential and scope of alternative employment opportunities and the status of other regional employers

\* an assessment of potential alternative land uses to encourage the creation of employment opportunities.

<p>3.2.2. Impact 1b: Loss of employee benefits and loss of access to DBNM services and infrastructure</p>
---

3.2.2. (a) *Impact Statement*

Loss of DBNM employment involves the loss of:

- \* employee benefits such as medical aid, educational assistance, building loans, subsidized accommodation,
- \* facilities including a hospital, clinic, subsidized shopping centres (with banks, post offices, bottle stores, bakery and laundromat), dairy,
- \* infrastructure such as recreational facilities (swimming pools, golf course, squash courts etc), water, electricity, telephone (subsidized for some employees), roads, houses and single quarters,

These benefits and facilities are not all of equal availability to the different employees groups.

3.2.2. (b) *Impact description*

As in Issue 1 above, this impact will begin as soon as the work force is reduced and will be most obvious in the post-DBNM stage when the benefits associated with employment will have dried up. As the future of the towns of Kleinzee and Koingnaas, where most of this infrastructure is situated, is uncertain, it is assumed that they will no longer be available to DBNM employees.

The DBNM employees and their families will be the main group affected. Of these, the **Mine Group** will be impacted the most as they enjoy free accommodation for their whole families and free electricity and water. Telephones are subsidized for Patterson Band levels above C3. They are also the group that use the recreational facilities to the largest degree and enjoy the highest educational assistance - subsidized primary school fees of R20, payment of transport to and the boarding fees of high school children.

They are followed by the **Namaqualand Group** who have access to medical aid and the hospital facilities and the recreational facilities for their families, and are granted a building loan of R10 000 at a interest rate of 3 or 4%. They also have subsidized shopping - the loss of this means they have to buy local goods which are significantly more expensive than in other metropolitan centres (Dunne, 1986). Educational assistance is in the form of financial assistance to local high schools at Steinkopf, Concordia and Springbok.

The **Transkei Group** will be the least impacted as their families are too far away to enjoy the use of the infrastructure and services, and the workers themselves are not on medical aid. However, they will lose the subsidized hospital and medical facilities. They will also lose the building loan of R10 000.

Local Authorities may have to play a larger role in the provision of substitute infrastructure and the maintenance of roads and services. This will depend on what occurs after mine closure.

RCA's will be impacted in that more pressure will be placed on the few facilities available within the reserves themselves, and the general state of health is likely to deteriorate due to the lack of clinical facilities and the cost of transportation to the major centres which inhibits the servicing of diseases. For example, in Leliefontein a trip to the local practitioner at Garies or Springbok ranges from R45-R60. Although there are maternity facilities, the costs are also prohibitive - in 1984 it cost R173 for a child to be delivered by a general practitioner at Garies hospital, therefore the local residents do without medical care (Dunne, 1986).

Telkom, Eskom and the Springbok Water Board will also be impacted as well as the contractors who construct and maintain the pipelines.

### 3.2.2. (c) *Impact significance*

Of the DBNM employees, the **Mine Group** is likely to be the most **highly impacted** as they might have to start paying market related prices for accommodation, electricity, water, telephones and education. The duration of the impact is uncertain as it is not known whether future employment will provide the same standard of living. The likelihood is that it will not. However, they do stand a much better chance of finding alternative employment and their coping skills are much stronger than the other two groups. These skills mitigate the impact and reduce the significance rating to medium.

The impact on the **Namaqualand Group** is likely to be of **medium significance** as they do not have as extensive subsidies as the Mine Group. However, they are also not as strong as the mine group and stand to have their already low standard of living reduced even further. The use of subsidized shopping (equivalent to urban centres and significantly lower than Namaqualand shops) and the six month credit option is likely to be a significant loss.

The impact on the Namaqualand region is likely to be of **medium significance** if alternative infrastructural services substitute those supplied by DBNM. The existing infrastructure will however, most probably be negatively impacted, as more people will be reliant on less resources. This is especially true of medical and recreational which are either non-existent or of very poor quality in the RCAs (Dunne, 1986). However, a positive side-effect for the region is the lack of subsidized shopping facilities will increase the dependence on local shops. Whether this is enough to compensate for the reduced purchasing power discussed in Impact 1c, is uncertain.

The **Transkei Group** will be affected mainly in the loss of medical facilities - not being eligible for many of the other benefits that would be lost. Thus the impact is of **low significance**.

The impact will be more diffuse in the rest of South Africa, except for Herschel District which is likely to have more pressure on the medical facilities. However, the overall significance rating would probably be low. The loss of medical facilities was mentioned repeatedly in the questionnaire sample by the Transkei employees as being a significant adverse impact.

Cumulative significance: The anticipated increase in aids within the next ten years is likely to increase the pressures on already inadequate medical facilities. This will be exacerbated by the loss of medical aid and the hospital and clinic, located at Kleinzee and Koingnaas respectively.

### 3.2.2. (d) *Potential Mitigatory Measures*

Transferral of as many employees as possible to De Beers other enterprises would successfully mitigate many of the impacts. The introduction of housing subsidies to the **Mine Group** (possibly making a trade-off for reduced subsidization) for property outside of DBNM would potentially mitigate against the loss of accommodation in the post-DBNM stage. The loss of housing was also cited by two employees during the questionnaire as the main reason for them having just handed in their resignation.

Possibly the best way of mitigating the impact on the **Namaqualand Group** would be the provision of alternative infrastructural needs. This includes the basics of water and electricity which both Dunne (1986) and Borchers, Archer and Eberhard (1990) recommend. Improvement of recreational and cultural facilities could also be targeted for aid as both resources are inadequate. This need not be DBNM's sole responsibility, but DBNM could use its influence and in conjunction with the RSC, Eskom, the Management Boards and Civic Organizations could determine how to satisfy the basic needs. It remains imperative that access to medical facilities be improved.

### 3.2.2. (e) *Research and Monitoring needs*

\* Need to determine the costs and viability of securing a reliable water supply for Komaggas in conjunction with the Komaggas Water Committee.

\* The provision of electricity for Komaggas could also be researched - presently the national grid crosses Komaggas land in order to bring power to the mines, but does not benefit the local community (Fig, 1991).

### 3.2.3. Impact 1c: Impact on local businesses from reduced purchasing power of DBNM employees

#### 3.2.3. (a) *Impact Statement*

The loss of DBNM employment and income is likely to adversely impact the spending power of retrenched DBNM employees and hence the local businesses where they spend their money.

#### 3.2.3. (b) *Impact Description*

The total remuneration of DBNM employees amounts to R 94 940 616.35 (BIR, p36), of which R 57 million constitutes their salaries. As in the before mentioned impacts, this will occur as soon as the work force is reduced and will be most evident in the post-DBNM stage.

The following table summarizes the amount (in millions of rands) and the percentage of turnover attributed to DBNM employees, the percentage of businesses which do business with DBNM employees, and what actions they think they would take as a result of DBNM employee's loss of spending power. The action businesses would have to take have not been included for Springbok and the "rest of Namaqualand" since they would result from the loss of DBNM rather than DBNM's employees purchasing power. In the table the "rest of Namaqualand" excludes Springbok, but includes both Komaggas and Steinkopf.

Table 4. Links between DBNM employees and Namaqualand businesses

Attributed to DBNM employees	Springbok	Rest of Namaqualand	Komaggas	Steinkopf
Amount in millions of rands	19.35	14.33	0.93	2.82
% of turnover	4%	10%	36%	40%
% doing business with employees	68%	67%	100%	100%
% who would take Action			38%	60%
- closure			0%	20%
- retrenchment			12.5%	30%
- no. of wkrs			2	15
- % of wkrs			10%	19%

In the employee questionnaire the employees were asked where they purchase their food, clothes, furniture and energy. The results were excluded from the BIR due to the researchers lack of confidence in the accuracy of the amounts given as many of the mine workers had no idea how much their wives spent on daily needs. However, the places where things are bought should serve as an indication of the impact on businesses. These are shown in the following table.

Table 5. DBNM Employee expenditure

	Springbok	Namaqualand	Komaggas	Steinkopf	Transkei	Mine shops	Other -
food	24%	16%	6%	0.6%	15%	41%	4%
clothes	43%	6%	3%	0%	11%	21%	18%
gas/wood/parraffin	18%	48%	18%	7%	23%	5%	4%
furniture	49%	6%	0%	0%	12%	14%	20%
Total	33.5%	19%	8%	2%	15%	20%	11%

It appears that Springbok businesses, especially furniture and clothes shops, are patronized the most. However, 65% of the respondents said that they did not spend money on furniture as they already had everything they needed. The mine shops were used the most for subsidized food and groceries.

### 3.2.3. (c) *Impact significance*

The removal of R 33.68 million of Namaqualand turnover attributed to DBNM employee's is **highly significant** as its loss is likely to be permanent, cover the whole of the Namaqualand region, and affect a large number of people. The major secondary effect would be the escalation of the "vicious cycle of poverty" (Sharp and West, 1984) and underdevelopment characteristic of Namaqualand communities.

The impact however, is likely to be unevenly distributed throughout the region:

Although a large proportion of businesses in Springbok and the rest of the Namaqualand do business with DBNM employees, the impact is considered of **medium significance** as it only represents a small proportion of their annual turnover. However, the combination of loss of DBNM employees and the loss of direct business dealings with DBNM could together be of high significance. As there are no direct dealings between DBNM and either Komaggas and Steinkopf, the combined effect will not be true for them.

This localized impact is considered to be of **high significance** for Komaggas and Steinkopf as it represents a large proportion of their annual turnover and the impact is likely to be of longer duration than in Springbok - if one assumes that alternative employment opportunities do not become available. However, the questionnaire sample indicates that 8% and 2% of DBNM employee's expenditure occurs in Komaggas and Steinkopf respectively. This could mean that the significance is in fact lower than anticipated. In addition, the loss of the subsidized mine shops may force locals to spend their money in their community shops, which could potentially reduce the impact to being of **medium significance**.

Research undertaken by Grady, Braid, Bradbury and Kerley (1987) on the socio-economic impacts of plant closure across three different areas, which differed in several important respects, revealed that contrary to community expectations, the impacts that were more general and the most feared such as widespread job loss, large regional declines in income and purchasing power and reduced utilization of service industries, would generally not be substantial. The reason given for this was that most economic effects occur through the household sector where expenditure mostly goes to local businesses which simply retail or wholesale goods manufactured outside the region. This is true of the majority of the Namaqualand businesses, therefore the significance rating may be lower than anticipated above.

Cumulative significance:

\* The anticipated closure of Alexkor.

\* Another exacerbating variable is that if the RCAs become electrified as recommended by Dunne (1986), Borchers et al (1990) and Fig (1991), then the consumption of gas, wood and paraffin - the highest item bought in local shops, would not be required.

\* The extensive use of purchasing goods on credit may potentially exacerbate the impact of loss of DBNM employee spending power, especially if little warning is given to the employees and they are unable to pay their debts before the date of closure.

### 3.2.3. (d) *Potential Mitigatory Measures*

\* The promotion of economic diversification and alternative employment opportunities in the region would circumvent the above impact from occurring;

\* The workshopping of DBNM closure nearer to the event with businesses in Springbok and in the smaller towns, could help them to plan accordingly;

\* A generous retrenchment package plus the payout of unemployment benefits would both serve to stagger the impact of reduced employee purchasing power;

### 3.2.3. (e) - *Research and Monitoring needs*

- Need to research the level of hire-purchase payments and their duration. It would be advisable to encourage the employees in wise management of their finances, as Dunne (1986) has commented on the poor skills of the Namaqualand people in this regard.

- Nearer the time of anticipated closure a more comprehensive survey should be taken of where employees spend their money. This should be asked of both the employee and their spouses to avoid inconsistencies.

- A number of businesses identified as potentially being impacted significantly should keep a record of who their customers are so they can anticipate any decrease in demand. These include the clothing and the furniture shops.

## 3.2.4. Impact 1d: Uncertainty regarding future

### 3.2.4. (a) *Impact Statement*

The anticipated closure of DBNM will increase DBNM's employee's uncertainty and anxiety regarding the future.

#### 3.2.4. (b) *Impact Description*

DBNM Management's Special Brief (5 February 1992 to all employees notified them of the anticipated closure of DBNM "early in the next century". As a result of this brief and the present study, all employees have become aware that the future is uncertain and that job security is finite. This impact will occur during the current stage with DBNM running at maximum production, and will last until DBNM closes. The entire work force of DBNM will be affected, those who are eligible for transfer to a lesser extent.

Being a social impact, it is difficult to measure or quantify but has insidious effects including de-motivation, feelings of desertion by DBNM, anxiety regarding the future, resignation etc. In a study undertaken by Wolff (1984) regarding the closure of a uranium mine he found that after employees had been laid off they experienced a mixture of relief due to the many months of uncertainty ending and sadness at the loss of their jobs. However, Wolff's study took place in a more affluent social milieu where loss of job did not involve necessarily impact the workers to such a significant degree.

Bradbury and St Martin (1983, p141) noted in the winding-down of Schefferville, a Quebec mining town, that with the uncertainty regarding the future, social relations became focused on the work place and rumours became an "important mechanism for passing information and misinformation and for creating and releasing tension". The rumours reflected the prevailing uncertainties and tended to mirror the residents feelings of neglect, as well as their feelings of impotence in the face of changing circumstances. This was exacerbated by the absence of local participation in the decision-making process.

#### 3.2.4. (c) *Impact significance*

Although this impact is less tangible or immediately quantifiable, it is nonetheless **highly significant** in that it:

- \* affects a large number of people
- \* its range of influence extends throughout the Namaqualand and the district of Herschel;
- \* the duration is likely to be until mine closure when the uncertain future becomes a reality
- \* it has a large number of secondary impacts which could impact DBNM in terms of reduced motivation and employee productivity
- \* it discourages investment and potentially encourages businesses to pull out of the area in anticipation of reduced markets

**Cumulative Significance:**

- \* The general uncertainty regarding the political and economic future of South Africa
- \* Closure of Alexkor
- \* Possible siting of a Nuclear Power Station and rumours of a toxic waste dump in the region are making the local communities antagonistic and increasing their feelings of powerlessness (EEU Report No1/91/64, 1991)
- \* Rumours which transmit incorrect information and exacerbate current uncertainties
- \* the "doom and gloom" scenarios such as global warming, the ozone layer and the aids threat.

**3.2.4. (d) Potential Mitigatory Measures**

- \* DBNM should improve its communications with its employees and local communities:

- to facilitate discussions, clarification of identified rumours and to elicit new uncertainties
- clear and frequent communication by DBNM would help to clarify any misconceptions which provide unnecessary "psychological noise"
- The "Namaqualine" help-desk telephone to help with technical problems and complaints could be expanded to deal with other problems including mine closure,
- positive public relations and the encouragement of joint-problem solving and conveying a feeling that the employees are involved in the decisions being made - this increases the feeling of joint responsibility and problem-sharing and they are more likely to accept the decisions being made.
- \* DBNM could also clarify what is expected of them in terms of retrenchment packages and what is unrealistic - this could help to reduce future discontent since some of the employees in the survey indicated unrealistically high expectations,
- \* DBNM could clarify when the actual retrenchment process is likely to begin and enable people to plan their lives accordingly. For example one employee asked what could she do about a 12 year insurance policy if her job only lasts ten years.

- \* career counselling to help employees plan alternative careers in the future and training possibilities in the interim period could be provided and encouraged by DBNM
- \* DBNM must ascertain and make public its plans for the communities, and to begin action as soon as possible, so quelling doubts as to the future viability of the community

#### 3.2.4. (e)- *Research and Monitoring needs*

- \* DBNM needs to stay informed regarding the employee's morale and work satisfaction;
- \* DBNM needs to ascertain what community aid it is prepared to give, so as to be able to inform its employees and the local population, allowing them to plan ahead

#### 3.2.5. Impact 1e: Reduced IDB activities

##### 3.2.5. (a) *Impact Statement*

According to a high level DBNM employee, the level of Illegal Diamond Buying (IDB) in Namaqualand is very high, with as much as R 500 million rand passing through Port Nolloth annually.

##### 3.2.5. (b) *Impact Description*

As IDB is illegal, there is very little reliable information on variables such as magnitude and the interested and affected parties. According to hearsay evidence, IDB is prolific at Alexkor where bedrock sweepers drive very expensive cars. According to two of the DBNM employees interviewed: "smuggled diamonds are an important source of cash flow" and "CDM have an office in Namibia which buys back the diamonds at a third of the market price" and that "Port Nolloth is a big centre of IDB".

According to DBNM management brief (21 January, 1992), in the first week of 1992 three employees were apprehended for diamond theft and related offenses. NUM expressed concern that the current study would be perceived as punishment for IDB. During the research team's visit to Steinkopf we were shown a new building which had been built by finances from the "informal sector" largely derived from IDB activities.

Whilst none of this information is reliable, it does serve to indicate that IDB plays an important role in the regional economics. The project stage where diamond smuggling will cease is likely to be as soon as productivity ceases. The main interested and affected parties will be the diamond mine employees, their families and communities and the diamond buyers. It will however, also cause a general reduction in local economic activity.

The amount which can be attributed to DBNM is unknown and the potential to continue finding diamonds after DBNM closes is also uncertain. A new source for IDB could be the off-shore and the intertidal zone exploitation.

### 3.2.5. (c) *Impact significance*

Due to the uncertainty of the impact of reduced IDB, the level of significance can not be stated with any degree of confidence. However, it seems possible that the significance could be high, especially if one takes the cumulative economic impacts resulting from mine closure into account.

### 3.2.5. (d) *Potential Mitigatory Measures*

The reduction of this impact would be reduced with increased security but obviously DBNM has done this to the best of their ability.

### 3.2.5. (e) *Research and Monitoring needs*

\* Research into the methods and magnitude of IDB to determine both how to reduce it and what the impact of its cessation will be.

<b>3.2.6. Impact 1f: Impact of Mine closure on Transkei/Ciskei Employees</b>
--

### 3.2.6. (a) *Impact Statement*

The closure of DBNM will result in socio-economic impacts on the migrant workers from the Transkei and Ciskei, who will be repatriated to their homelands.

### 3.2.6. (b) *Description of major and associated impacts*

The impact on the Transkei and Ciskei employees have been treated together with the Namaqualand and Mine employees under each of the above impacts. However, it is felt that the direct impact on the employees and their dependants is lost to a certain degree and needs to be emphasized. The information in this section is based on Sue Lund's report: "A Preliminary Report on the Socio-Economic Impact of DBNM Closure on the Herschel District of the Transkei" which was included as an appendix in the Baseline Information Report.

According to Lund the impact of mine closure will be felt at three levels:

(i) the direct impact on the employees and their dependants in loss of income to the household for meeting basic needs such as food, energy, shelter, transport, education and medical facilities;

(ii) If the household's income is lost or reduced, the dependants who are attending school may be forced to leave to supplement the household's income. With little education and training their chances will be reduced. This social and economic impact is far-reaching and "is a serious debilitating factor to any long term development initiatives in undertaken in rural or urban communities".

(iii) The return of the employees will exacerbate the "already over-burdened and impoverished social fabric" of Herschel, especially on infrastructural requirements such as water, fuel and health facilities.

### 3.2.6. (c) *Impact significance*

The impact is highly significant as it:

- \* affects a large number of people
- \* who have low skills transferability and virtually no chance of finding alternative employment
- \* the duration is permanent
- \* the side-effects are numerous and far-reaching
- \* DBNM should also take into consideration their loyalty and long-term service;

### 3.2.6. (d) *Potential Mitigatory Measures*

According to Sue Lund, mitigation should be aimed at the three levels identified:

(i) the employees who should all be granted pensions, irrespective of age as further employment is unlikely. These pensions need to be negotiated through NUM and should be based on the length of service at time of closure, combined with the number of years before retirement age.

(ii) The younger dependants: Each household should select, based on specified criteria, an individual for further entrepreneurial training sponsorship. These training options should be directed towards business and artisan skills and should begin at least five years before the date of mine closure.

DBNM in conjunction with an appropriate training institution needs to determine the criteria for selection and the management of the training undertaking;

(iii) DBNM should contribute towards the social infrastructure of Herschel, to mitigate the impact on medical services, and energy and water supply. A number of possibilities where these contributions should be given are listed in the BIR, appendix C.

The Environmental and Development Agency (EDA) has currently formulated an integrated developmental program for the district of Herschel which pools the resources of the community, government, non-government organizations and the private sector to build local management capacity to improve quality of life, and to encourage the development of economically and environmentally sustainable rural activity. DBNM's contribution to this project could possibly be the easiest and most beneficial route to aiding the local community.

### 3.2.6. (e) *Research and Monitoring needs*

Sue Lund noted that many of the Transkei employees may be resident in the New settlement of Merino Walk, and it may be necessary to enquire amongst the employees if this is so.

\* DBNM should confer with the Environmental and Developmental Agency to ascertain where mitigating action would be most effective

### **3.3. ISSUE 2: DISCUSSION AND EVALUATION OF IMPACTS ASSOCIATED WITH THE CESSATION OF EXISTENCE OF DBNM**

When the last diamond is removed from the bedrock, the reason for DBNM's existence will cease. The farming property will be transferred to a separate West Coast Farming Company which is in the process of being formed, 5% of the total land owned by DBNM is earmarked for a National Park - between the Spoeg and the Groen rivers, and the disturbed areas will be subjected to a rehabilitation program. The future of the mining towns, Kleinzee and Koingnaas, are uncertain. Mine personnel (BIR, 48) have said that the costs of water, electricity and telephones would be prohibitively expensive without subsidization.

Impacts here are on both the small-scale with the future of the mine site very uncertain, and the regional and national scales. There can be no doubt the impact is of high significance and is classified as a Class 1 impact assessment under the IEM procedure. Regional impacts here include DBNM's expenditure to the Namaqualand RSC and to local businesses.

The question of access to coastal resources is also uncertain. It has been assumed in this report that without diamond mining, the need for high security will no longer exist and the coastline will open up to the extent of parity with the rest of South Africa.

The following impacts all fall under the issue of Namaqualand without DBNM.

<b>3.3.1. Impact 2a: Cessation of DBNM's contribution to Namaqualand RSC</b>
--

#### **3.3.1. (a) *Impact Statement***

With the closure of DBNM in approximately ten years time, the contribution to the RSC based on DBNM turnover and employee remuneration will cease.

#### **3.3.1. (b) *Impact Description***

The Namaqualand RSC is the major affected group and is comprised of all local government bodies in Namaqualand. These include municipalities, the Coloured Rural Area's Management Boards, local councils (such as in Hondeklipbaai) and rural councils (such as the diamond and copper area rural councils) (BIR, p21). Thus the impact will be spread throughout the entire Namaqualand region. DBNM's contribution to the RSC will probably decline during the decommissioning phase as turnover will probably become smaller. It will however, be felt most strongly in the post-DBNM stage.

The DBNM contribution to the Namaqualand Regional Services Council is comprised of an establishment levy of 0.1% of the businesses turnover and a service fee, based on 0.26% of the total remuneration of staff. In 1991 DBNM contributed R 735 673 to the RSC which constituted approximately 29.6% of the total of R 2 486 504 which was contributed by the various sectors (BIR, p37). However, the RSC's budget for 1991 amounted to R 12 million rands. Thus the DBNM contribution to the total RSC budget was approximately 6%.

The reduction in RSC revenue has negative implications for the satisfaction of basic needs of the Namaqualand population such as electricity, water, clinics, roads, and sewerage systems. This is especially important for the RCAs as they have very poor infrastructure and the provision of basic needs is essential for development (Dunne, 1986). In addition to this, the RSC employs a number of people, it is possible that a reduction in income may necessitate retrenchment of staff members.

According to Dewar and Simmonds (EEU, 1990) the RSCs were partially established to redistribute wealth to the relatively disadvantaged communities. Thus a reduction in RSC revenue would negatively impact this process. However, there is no guarantee that the decision-makers would necessarily allocate resources to those most in need. The future of the RSCs are also uncertain as they have been criticised for not being democratic, elected institutions (Weekend Argus, June 13, 1992) and are not accountable. There is talk about a mini-codesa being held at local government level to negotiate a non-racial local authority.

### 3.3.1. (c) *Impact significance*

The impact has been classified as being of **high significance** due to its large magnitude, the regional extent of the impact, and the existing state of underdevelopment of Namaqualand. It is uncertain what the duration of the impact is. But the loss of approximately R 750 000 per year being spent on basic needs and infrastructure will probably have a long-term impact.

Circumstances which may have a cumulative effect include:

- the loss of Alexkor's contribution to the Namaqualand RSC of R 212 552 if it should close in nine years, as expected.

- the state of uncertainty with respect to future South African governments at the national, provincial and local levels. Future contributions by central government may be reduced or increased which may make DBNM's role insignificant. The current controversy surrounding the Cape RSCs is an indication of the changes to come (Cape Times June 13 1992).

- in addition the contributions to the RSC from the other sectors are also likely to be influenced by DBNM closure as other businesses, the Management Boards and the towns are all likely to be affected.

- the potential for tourism if realized and any new large-scale mineral developments such as Anglo American Heavy Mineral Sands could counteract this impact by providing alternative RSC revenue.

### **3.3.1. (d) Potential Mitigatory Measures**

The potential for reversing the impact lies with the development of alternative business and employment opportunities, which is hard to predict. In the interim period, the Namaqualand RSC could focus on providing basic infrastructure which would strengthen the local communities and help them cope with the envisaged negative impacts identified under Issue 1, associated with the loss of DBNM jobs.

DBNM also has a duty to warn the RSC of the impending reduction in RSC contributions to enable them to plan ahead. Forewarning of closure will enable the RSC to plan ahead and introduce temporary employment of excess staff members nearer the time and provide basic infrastructure in the interim period

### **3.3.1. (e) Research and Monitoring needs**

It is recommended that in the light of its economic influence DBNM should have a representative on the Namaqualand RSC board in order to liaise, monitor and influence decision-making (Dewar & Simmonds, EEU, 1990).

## **3.3.2. Impact 2b: Loss of DBNM's purchasing power**

### **3.3.2. (a) Impact Statement**

The proposed closure of DBNM will directly impact regional and national businesses through the cessation of DBNM expenditure. The focus of this study is on the impacts experienced in the Namaqualand region, therefore impacts in the national context have not been investigated.

### **3.3.2. (b) Impact Description**

Due to the scope of the study, the focus has been on regional rather than national impacts. Komaggas and Steinkopf have been excluded from analysis as neither deal directly with DBNM. This impact will probably begin during the decommissioning phase, but will be most evident in the post-DBNM phase. DBNM is the single biggest business activity in the Namaqualand region, contributing 32% to the regional turnover (BIR, p26). However, a large proportion of this leaves the region. The two Namaqualand towns identified by DBNM's purchasing department as being points of purchase are Springbok and Port Nolloth. Approximately R 20 million (28%) and R 22 million (31%) pass through these two towns respectively, and only

approximately R 0.2 million (0.5%) passes through the rest of Namaqualand. As the figure for Port Nolloth consists mostly (99%) of payment to Shell SA for petroleum, Springbok has been identified as the place where the regional impact is likely to be localized.

Results of the survey of business links indicate that 41% of Springbok businesses dealt directly with DBNM. However, some sectors had very strong business dealings with DBNM. The construction sector (87%) and mining related industries (85%) did the most direct business dealings, followed by transport and General Supplies (both 70%).

These figures are exacerbated by the business dealings that DBNM employees have with Springbok businesses. General supplies and Transport are the two sectors affected as 48% of their business dealings occur with both DBNM and DBNM employees.

Secondary impacts associated with the loss of DBNM purchasing power involves the actions which businesses would have to take - these include closure and retrenchment of employees. Of Springbok's businesses, 53% anticipated that they would have to take some action as a result of mine closure, 3% indicated that they would have to close, whilst 22% thought they would have to retrench employees, estimated at 165 people or 5% of the workers. These retrenchments would occur in the sectors affected the most i.e. construction and general supplies. Action taken would result from loss of both DBNM and its employee expenditure, however direct DBNM business accounts for approximately 14% of Springbok's turnover, whilst employee expenditure only amounts to 4%. The actions that businesses in the rest of Namaqualand would have to take have been discussed under Impact 1c as the employees expenditure plays a larger role in the local communities rather than direct DBNM business.

The results of retrenchment will be similar to the loss of jobs associated with DBNM closure and will not be repeated. However, the retrenchment package may not be the same.

Other interested parties affected by loss of DBNM expenditure include Eskom, Telkom and the Springbok Water Board who will lose in the region of 9 million, 0.75 million and 1 million rands respectively.

Analysis of the input-output tables (BIR, p113) indicate that the losses due to DBNM closure are likely to be felt the most in the broader South African context, excluding region A, of which Namaqualand forms a small part. The two sectors in South Africa which will experience the greatest losses will be the machinery and service sectors, where the losses would be spread amongst a large number of small business. The results are rather confusing, and at times contradictory. It seems unlikely that region A's machinery sector would only lose R 0.5 million per annum if DBNM closed in 1995. In addition to this the proportion of the diamond mining in region A which can be attributed to DBNM may not be reflected by the proportion of carats produced as carats per ton vary considerably for the different mines and hence the amount of materials used in production is likely to vary considerably.

### 3.3.2. (c) *Impact significance*

The significance of DBNM's loss of purchasing power depends to a large extent on the state of the economy and whether proposed developments have occurred in the Namaqualand region, at the time of closure. The significance of the impact to businesses in Springbok is potentially very **high** as they affect a large proportion of the businesses, the duration of the impact without alternative regional developments is likely to be permanent. The potential for reversibility uncertain and conditional upon many variables and the impact is likely to be cumulative in nature with respect to the plight of other local mines such as Alexkor, the retrenchment of DBNM employees, and the reduction in DBNM contributions to the RSC.

It should be noted that high proportions of DBNM's turnover and that of Springbok's businesses does not stay in the region but goes to head-office, and is used to buy stock, respectively. This reduces the severity of the impact. Also many of the business in Springbok are branches of larger firms and are used chiefly for through-put of goods.

The significance for businesses in the rest of Namaqualand is **low** as only a small percentage of DBNM's payments (0.5%), amounting to approximately R 0.2 million occurs there.

### 3.3.2. (d) *Potential Mitigatory Measures*

Economic diversification and the promotion of alternative employment opportunities are the best potential mitigatory measures which can be introduced.

In addition the early warning of closure and reduced business activities will help to reduce the severity of the impact.

### 3.3.2. (e) *Research and Monitoring needs*

In the next iteration of this study, the other mining companies such as Alexkor, Buffelsbank, O'OKiep and Black Mountain and their respective mine shops, need to be included.

## 3.3.3. Impact 2c: Renewed interest in land issue

### 3.3.3. (a) *Impact Statement*

Many of the local inhabitants feel that the land DBNM occupies rightfully belongs to the local communities of Komaggas, Steinkopf and possibly Leleiefontein. Both the closure of DBNM and the national upsurge in land re-allocation will focus

attention on the future land use of DBNM property. (BIR, p102).

### 3.3.3. (b) *Impact Description*

Namaqualand's history is one of land dispossession where "...the people of the Namaqualand have seen their communal land progressively alienated, restricted, encroached upon, eroded and privatized" (Fig, 1991, 113). DBNM Management have stated that they understand the land issue and its surrounding controversy, but feel that it is beyond the scope of this report. As such it was excluded from the Baseline Information Report. However, it is felt that the land issue is fundamental to a socio-economic analysis and needs to be taken into cognisance.

Land plays an important role in Namaqualand serving as a guarantee in a situation of insecure wage-employment opportunities, and forms a buffer against the dangers of total impoverishment (Sharp in Wilson and Ramphela, 1989, 313). This role is even more important in the face of DBNM's anticipated closure.

DBNM properties cover 366 000 hectares, of which 276 000 hectares is farmed by DBNM or leased by DBNM to farmers. De Beers have indicated that they will continue to farm the land after mine closure and are in the process of forming a separate West Coast Farming Company for this purpose.

It is not clear as to what land the communities feel belongs to them but there was unanimous agreement at both the Komaggas and Steinkopf community meetings that some of DBNM land historically belonged to Komaggas and Steinkopf. The question of rightful ownership of land in Namaqualand is not limited to DBNM property, but state land, private land and also land belonging to the other mining operators in the region. The Surplus People Project under the auspices of the National Land Committee are currently initiating a research programme to identify the former boundaries of the reserves and to ascertain how the land was alienated.

The question of the land issue is relevant at all three stages of the project, but is likely to become more intense when mining activities are completed. The main groups of I&APs are the Namaqualand communities which consist of descendants of the indigenous Nama-speaking people. Other parties with an interest include NGOs such as the Surplus People Project and the umbrella body, The National Land Committee who like governmental organisations such as the SA Land Commission are looking at the issue of land redistribution.

Potential secondary impacts include:

- the raised expectations of the local communities.
- increase or decrease in conflict between the different political camps within the RCAs.

- unemployment, as a result of mine closure is likely to increase the pressure on the already stressed reserve properties. Land redistribution would serve to mitigate against this. On the other hand DBNM have farmed at 65% of suggested stocking rates and their land is in very good condition.
- a potentially positive side-effect is that it may facilitate the reallocation of land by the SA Land Commission.

### 3.3.3. (c) *Impact significance*

The renewed interest in the land issue as a result of DBNM closure is part of a national movement into land redistribution. Therefore its importance is not solely due to mine closure. However, it is considered **highly significant** in terms of the historical background, the number of "Namaqualanders" directly affected, the permanent nature of the issue and especially the need for local people's concerns to be addressed and included in future planning.

#### Cumulative Significance:

With the loss of DBNM employment, many of the local inhabitants have indicated that they will be more reliant on stock farming. As the levels of overgrazing in the RCAs are already very high (BIR, p12), intensified farming can only make the situation worse.

The current state of uncertainty with respect to the future of the RCAs in a new non-racial South Africa and the final conclusion of the question will have a major impact on the question of land ownership.

### 3.3.3. (d) *Potential Mitigatory Measures*

Clarification with respect to rightful ownership would help to reverse the DBNM land controversy. Successful reversal would best be achieved by the redistribution of at least part of DBNM property. However, DBNM have indicated that they will retain ownership of the land, ostensibly to continue farming.

By compromising on the land issue DBNM could show a real commitment to the Namaqualand communities and gain credibility. An alternative would be to lease out the land to local communities at nominal rates and retain a joint management role. In this way, DBNM could ensure that the land is not overgrazed and could introduce some innovative farming practices such as wild game, ostrich and indigenous Afrikaner sheep.

### 3.3.3. (e) *Research and Monitoring needs*

- Support of projects such as that about to be undertaken by Surplus People Project and a sharing of information. If it is shown that the land was obtained in an illegal or immoral manner, DBNM has a moral responsibility to return it to its rightful owners.

### 3.3.4. Impact 2d: Opening up of the coast

#### 3.3.4. (a) Impact Statement

The cessation of DBNM is likely to reduce the need for heavy security and open up approximately 300km of coastline for alternative development.

#### 3.3.4. (b) Impact Description

The area of the land DBNM currently covers is approximately 366 000 hectares, of which 276 000 hectares is farmed by DBNM or leased by DBNM to farmers. There is a great deal of uncertainty regarding future land uses however De Beers has stated that it is looking towards the introduction of alternative business enterprises in Namaqualand.

Ideally alternative forms of development would grow simultaneously with the reduction in DBNM production but the Post-DBNM stage is probably the time when the coast can potentially be opened up, due to security requirements.

Interested and affected parties cover a wide spectrum of people from potential tourists, local communities and current residents of Kleinsee and Koingnaas. The following I&APs are currently working in the area or investigating the potential of the area.

- Western Kelp who currently use the state site at Jakkalsbaai to collect and accommodate approximately 25 kelp collectors (EEU,1991)
- Benguela Mining are considering construction of a small harbour at Jakkalsbaai to facilitate access to concession areas. This is likely to attract other interest groups and provide significant capital input to the region and influence future development.
- Eskom who have identified nine potential sites for a future Nuclear Power Station (Mr HF Rohm, I&AP letter) - three prime sites have been investigated by the EEU (1991) at Tweepad, Brazil and Skulpfontein (See Map on following page)
- Conservation groups - there are sections of the coast already earmarked for including a national park between the Groen and Spoeg rivers (see map).
- Archaeologists, whose research along the coastline has yielded "spectacular results" (Mr Tim Hart, I&AP letter)
- Farmers who currently lease DBNM property
- potential toxic waste dump !
- Ninham Shand has proposed a development plan for the West Coast.

- Regional Development Strategy is being developed by the Regional Development Advisory Committee (RDAC)
- Springbok Municipality who are in the process of developing a draft structure plan for the town
- Development Action Group (DAG) is to undertake some regional planning research in Namaqualand.
- small scale mining operators
- off-shore diamond concession holders
- inter-tidal diamond mining operations

#### 3.3.4. (c) *Impact significance*

This is a **highly significant positive** impact as it has a high potential for economic diversification and the creation of alternative employment which could mitigate many of the negative impacts identified in this report. In addition, it encompasses a wide area, and will potentially give local communities increased access to coastal resources such as beautiful beaches, fishing and cray-fishing enterprises and also increased potential for mariculture - the sustainable harvesting of limpets, mussels and algae. There is also great potential for increased and diversified recreational activities such as diving, surfing and sailing. Thus associated benefits are potentially permanent.

#### 3.3.4. (d) *Potential Mitigatory Measures*

- \* Efficient and imaginative use and relocation of land currently held as high security.

#### 3.3.4. (e) *Research and Monitoring needs*

- \* DBNM needs to keep the Regional Development Advisory Committee informed with respect to mine closure. DBNM should also become involved with the development of a regional strategic plan as the future use of DBNM property is of fundamental importance.
- \* DBNM and the RDAC, together with the other parties interested in regional development - Ninham Shand, DAG and the Springbok Municipality should combine resources to prevent duplication.
- \* Ensure that the local communities are included in planning for potential future land-uses, especially for developments which may be perceived as negative such as a nuclear power station or a toxic waste dump.

<b>3.3.5. Impact 2e: Decreased demand for infrastructure - future use of Kleinzee and Koingnaas</b>
---

**3.3.5. (a) Impact Statement**

As a result of the cessation of DBNM activities, the mining towns of Kleinzee and Koingnaas may become available for alternative utilization. If this fails they are likely to become ghost towns.

**3.3.5. (b) Impact Description**

Kleinzee and Koingnaas provide accommodation for approximately 4100 residents and cost in the region of R 8 and R 4 million per annum respectively, to maintain. The Baseline Report (p42) includes a table of the comprehensive infrastructure in place in the towns. In the front of this report, in the Executive Summary, there is an aerial photograph of Kleinzee.

According to DBNM the provision of services such as electricity and water are only affordable because of the volume consumed by the mining operation. The towns consumption alone amounts to approximately R 120 000 per month, whilst Eskom's maintenance costs of roughly R 50 000 per month would remain the same. However, the recommended electrification of the Komaggas (Borchers, Archer and Eberhard, 1990), the nearest Coloured Rural Area could possibly involve the sharing of maintenance costs.

The provision of water is also expensive as annual maintenance costs of the pipeline from NababEEP amounts to R 45 000. However, cheaper water from Port Nolloth is possible, but would necessitate the construction of a pipeline.

High costs for services could also be off-set against what the provision of the towns's existing infrastructure facilities somewhere else in the Namaqualand would be.

Post-DBNM is the project stage where these towns will become available.

Interested and affected parties include:

- De Beers themselves who are responsible for rehabilitation of the mine towns should no future use for them arise. This includes the removal of buildings, structures and objects (The Minerals Act 50 of 1991).
- DBNM employees who are attached to the towns and have indicated they would like to live and retire there.
- Possible future users such as Eskom who could take over Kleinzee if Brazil or Tweepad were chosen for a Nuclear Power Station, or Koingnaas if Skulpfontein was chosen.

### 3.3.5. (c) *Impact significance*

The significance with respect to socio-economic impacts on the region is classified as being of **low** significance as the impact is localised to the mine towns and will affect very few individuals after the closure of DBNM as the towns would be empty.

However, the availability of the considerable infrastructural and recreational facilities of the towns could prove a significant impetus for development. With the rapidly increasing interest being shown in the Namaqualand region, and especially the coastal zone, the removal of these towns could prove to be significant in terms of the foreclosure of future opportunities and the associated hidden costs.

Therefore the significance rating is classified as being **medium**.

### 3.3.5. (d) *Potential Mitigatory Measures*

- \* The towns of Kleinzee and Koingnaas could be vastly improved if their access routes to the coast were improved. Kleinzee which is located approximately 500 metres from the coast is constructed in such a way that one is not aware of the sea. In addition, there is a wire-mesh tunnel to the beach which is very unattractive. With planning this could be mitigated. An associated advantage would be the improved atmosphere of the town. Koingnaas is situated further from the coastline, but its access route could also be enhanced.
- \* It is imperative that the future of the towns are investigated thoroughly. The prohibitive costs described in the Baseline Information Report may in the broader sense be less expensive. Dismantling of the town, as is occurring in Prieska, may be the most expensive alternative in terms of foreclosure of future options.
- \* The spectacular archaeological finds along the coastline, and the mining history of the towns, where some of the houses date back to when mining began, are important parts of South Africa's cultural heritage. These should be investigated.

### 3.3.5. (e) *Research and Monitoring needs*

The viability of the above suggestions need to be investigated. This should involve the cooperation between DBNM, regional and local authorities and other interested and affected parties.

The location of industries such as a Nuclear Power Station or a Toxic Waste Dump requires thorough investigation. It is imperative that the local communities are included in a joint decision-making role. According to Fig (1991), this did not occur during the development of Vaalputs, the Radioactive Waste Disposal Facility located near the Leliefontein Reserve.

### 3.3.6. Impact 2f: Increased unemployment in the Namaqualand

#### 3.3.6. (a) Impact Statement

DBNM is the single largest employer in Namaqualand, loss of DBNM jobs will decrease the employment in the mining sector of the Namaqualand region (No 10) by 35% (CSS, 1992). For the difference race groups this will be :

- \* Whites = 35% decrease
- \* Coloureds = 42% decrease
- \* Blacks = 24%

The total decrease in employment for all the employment sectors amounts to 14%.

#### 3.3.6. (b) Impact description

The most significant stage of the potential increase in unemployment or underemployment will be felt the most in the Post-DBNM stage. The affected parties include the present employees as discussed in Issue 1, people seeking employment in Namaqualand during and after closure and future generations, which were repeatedly mentioned by employees in the questionnaire.

The employment situation in the reserves is relatively complex as many of the residents work for short periods when the opportunity arises, or are seasonal workers. It is clear, however, that employment opportunities are severely limited for reserve inhabitants (EEU Report No 1/91/64, 1991). This was borne out by the community meetings, interviews with employees and relevant literature on the region.

The employment opportunities that there are, are mostly linked with mining and stock farming. The lack of alternative sources of income have resulted in a tremendous pressure on stock farming which have exacerbated the high degree of overgrazing and impoverishment characteristic of the local communities (Krohne and Sten, 1991).

A number of repercussions resulted from the O'Kiep Copper Company retrenchments in 1977 (Dunne, 1986). This included the forcing of whites and coloured employees out of the district to seek alternative employment and housing. A committee comprised of miners, businessmen, government officials and churchmen, was formed to find alternative employment. Many of the white workers were successfully absorbed into the job market, and the real concern was the re-employment and future of the coloured miners. The degree to which the committee was successful is unknown but some employees had to receive aid as no jobs could be found.

There are a high number of potential secondary impacts in addition to those discussed in Issue 1:

- exodus from the Namaqualand and the subsequent draining of skills, which has a negative impact on the region as a whole as the most highly skilled people are also the most mobile.
- intensified reliance on the land - increased levels of overgrazing in the RDA which is already at a critical level
- increased impoverishment and the associated reduction in quality of life - removal of children from schools - decreased educational levels, increased malnutrition and mental retardation which are both very high amongst the Namaqualand children (Dunne, 1986)

### 3.3.6. (c) *Impact significance*

The increased levels of unemployment are considered **highly significant** when one takes into consideration the reputed high levels of unemployment and underemployment, and the high levels of impoverishment existing in the region. The effects of the impact are potentially permanent. The impact will be felt throughout the region, but especially in the reserves where work opportunities are limited.

3.3.7. Impact 2g: Cessation of DBNM export earnings - national impact
---

In addition to the loss of DBNM expenditure and employee remuneration the DBNM contribution to the national economy by its generation of wealth through export earnings will cease. This has implications with respect to South Africa's foreign exchange position (Dewar and Simmonds in EEU, 1990).

As this study is limited to the regional area the magnitude and significance have not been investigated. Suffice to say it will negatively affect the national economy.



MATJIES HOME, LELIEFONTEIN  
RURAL COLOURED AREA



LOCAL BUSINESS - NAMAQUALAND RCA



GOEGAB NATURE RESERVE, SPRINGBOK

## CHAPTER 4. MITIGATION

### 4.1. INTRODUCTION

### 4.2. FEEDBACK

### 4.3. PROCESS OF WORK FORCE REDUCTION

- 4.3.1. Retrenchment Procedure
- 4.3.2. Pension policies
- 4.3.3. Transition Councillor
- 4.3.4. Careers Advisor and job search methods
- 4.3.5. Financial Advice

### 4.4. PROMOTION OF ALTERNATIVE DEVELOPMENT AND EMPLOYMENT OPPORTUNITIES

- 4.4.1. Cottage Industries
- 4.4.2. Mineral Prospecting
- 4.4.3. Education and skills training
- 4.4.4. Development of infrastructure
- 4.4.5. Tourism
- 4.4.6. The Potential of Kleinzee and Koingnaas

### 4.5. MISCELLANEOUS MITIGATION MEASURES

- 4.5.1. Need to link with rehabilitation study
- 4.5.2. Land issue needs to be resolved

## CHAPTER 4 MITIGATION

### 4.1. INTRODUCTION

Mitigation measures are essentially "those which can be taken to prevent, alleviate or minimize" negative impacts (Bisset, 1984) and the optimization of positive impacts. The purpose of mitigation is to "ensure that no individual, or habitat is worse off than they would have been without the development" (Raimondo, 1991). Translated to the present study, this reads "no individual or community is worse off than they would have been without the closure of DBNM in approximately ten years time."

Mitigation involves (Raimondo, 1991):

- ⌚ prevention of the negative impacts from occurring
- ⌚ repairing the negative results
- ⌚ redressing of damages e.g. through compensation
- ⌚ creation of new jobs
- ⌚ replacement of lost assets
- ⌚ land swap

As this is the first iteration of the socio-economic impact assessment broad mitigatory actions have been identified. In the discussion and evaluation of the impacts, brief reference has been made to potential mitigatory actions which DBNM could undertake to minimize social and economic disruptions resulting from mine closure. In this chapter these suggestions have been expanded.

The mitigatory measures have been discussed in the following order:

- ⌚ initial need for DBNM to give the employees and communities feedback
- ⌚ the process of work force reduction including retrenchment and pension policies
- ⌚ broad mitigatory measures linked to economic alternative employment opportunities

### 4.2. FEEDBACK

There is an immediate need for DBNM or the EEU to report back to DBNM's employees and the communities of Komaggas and Steinkopf, who took part in the preparation of the Baseline Information report. This is especially important as both revealed a number of misconceptions, rumours and queries. By giving feedback, the employees and the communities can see how their contributions have been incorporated, and will be reassured that their opinions have been heard. If these misconceptions and queries are successfully resolved the uncertainty regarding the future may be mitigated.

As Wondollek (1985) emphasized, this process of decision-making is as important as the content of the decisions. Where decision-making encourages consensus-building and collaborative problem-solving between the different parties, then the resulting decisions and trade-offs are understood, accepted and supported by the groups

involved. The misconceptions here are mainly related to the reasons for the closure of DBNM, and the queries are mostly concerned with the work force reduction process, and the benefits or compensation the employees will receive.

DBNM should answer these queries as honestly and directly as possible. And also commit themselves to a process of open communication. Haugh (Centre for resource Studies, 1984) stated that all communication with workers and towns people must endure ample warning of any potential difficulties and must be done in such a way that communities do not feel betrayed or misled by company action. From the hard lessons they have learnt in Canada, he recommends that communication should be on a frequent and regular basis.

DBNM could explain that the unions will be involved in the process of retrenchment, and in the decisions regarding the pension policies; that attempts will be made to find other work, and while there are no guarantees, they will be given as much warning as possible. Explanation as to the reasons why current production needs to be maximized at the cost of a longer lifespan should be given, and the future options with regard to Kleinzee and Koingnaas made clear. DBNM should encourage the use of the Namaqualine to handle employee's queries directly and could also encourage suggestions so as to include the opinion of the work force.

Workshopping of queries and misconceptions may be the most viable option for communication between DBNM and the communities as it allows a balanced and complete information transfer between parties and is particularly important in a region like Namaqualand where the people are dispersed over a large area and where many are illiterate (EEU Report No 1/91/64, 1991).

#### **4.3. PROCESS OF REDUCTION OF WORK FORCE**

##### **4.3.1. Retrenchment Procedure**

Work force reduction or retrenchment frequently means for the retrenched worker the "disappearance into the large mass of the unemployed" (Rycroft & Jordaan, 1990, 174). This is especially true for the Namaqualand and Transkei employees as alternative employment opportunities are very limited.

Challenges to the traditional managerial perception that the size and character of a work force is their prerogative, have led workers to expect procedural and substantive safeguards against retrenchment, and it is now common practice to negotiate the retrenchment procedure with worker representatives - in this case both NUM and the Artisan's Committee.

The South African laws regarding retrenchment practices are governed by the 1988 amendments of the Labour Relations Act which resulted in the SA Industrial Court laying down a number of guidelines regarding retrenchment. The guidelines relevant to the closure of DBNM imply that (Brassey, Cameron, Cheadle and Olivier, 1987; Rycroft and Jordaan, 1990):

\* DBNM should first consider alternative measures - ways of avoiding retrenchments such as:

- recruitment freeze transfers,
- filling vacancies by moving staff around - also increases employee's skills
- transfer of employees within De Beers to limit or avert the number of dismissals
- eliminating over-time and working short-time
- reduction of hours of work - a means of spreading dismissals over time
- voluntary retirements
- voluntary retrenchments

\* DBNM needs to give sufficient prior warning to a NUM, the Artisan's Committee and any other representative trade union of the pending retrenchment

- to enable affected workers to have as much time as possible to find alternative work.
- this needs to be communicated clearly in the language of the employees, and to take into account their literacy levels.

\* DBNM should consult with employees or their organizations. These include all the employee groups i.e. both NUM and the Artisan's Committee. Consultation includes:

- reasonable criteria to be used in retrenchment procedure, such as length of service, family responsibilities, productivity, and conduct of the employees as well as the operational requirements and the needs of the employer.

DBNM has to jointly agree and conform to criteria - workers generally prefer the LIFO (last in first out) principle which protects workers of long standing.

- explanation of reasons for retrenchment
- agreeing on the time-table of the retrenchment process

#### The rights of retrenched workers:

- advance notice of 1 to 2 months and consultation
- recommendation that retrenched workers get time off to seek new employment. However, the industrial court has said this might be insufficient and has recommended that the company could give assistance in obtaining alternative employment by:
  - directing workers to known job opportunities or retraining opportunities
  - render assistance in promoting geographic mobility if that is a solution. For example travel vouchers and allowances to cover costs of looking for employment.
- allowance for changing place of residence and relocation costs

- Compensation for loss of employment - this is a negotiated agreement to determine severance pay which "is not unemployment pay, but compensation for the loss of accrued rights in the job, and is payable even if the retrenched worker gets another job immediately. It has been held that an employer who does not offer reasonable severance pay to an employee taking into account such considerations as his length of service with the employer ...is guilty of an unfair labour practice. 'Reasonable' in this context has been defined as one or two weeks' wages for every completed year of service" (Rycroft & Jordan, 1990, p183).

In addition to the above recommendations with which DBNM should comply, it is suggested that the retrenchment package takes into consideration the employee's length of service, a point about which employees appeared to feel strongly. Secondly, it is advised that the employees are granted the option of receiving the retrenchment package as one lump sum or staggered over a period of months to reduce the impact of loss of income. This may complement the Unemployment Insurance Benefit to which most of the employees are entitled in terms of the Unemployment Insurance Act 1966. The benefit is calculated at 45% of the employee's normal weekly earnings and is payable for a period of 26 weeks (Rycroft and Jordaan, 1990).

However, migrant workers and those employees earning in excess of R 38 532 are excluded from the fund (Rycroft and Jordaan, 1990).

#### **4.3.2. Pension policies**

It is recommended that all the Transkei and Ciskei employees are given the option of early retirement, irrespective of age as the chances of finding alternative employment are virtually non-existent. Lund has recommended that the pension be determined by a combination of length of service and years of service remaining before retirement age. It is noted that these employees are not eligible for either unemployment insurance benefits or state pensions if they receive DBNM pensions. It is also very important that the rules regarding pension policies and the number of years of service are explained to the migrant workers as many expressed concern that their number of years had been reduced on their employment forms.

The minimum age at which the rest of the work force will be granted retirement needs to be negotiated with the Union. For reasons of confidentiality the exact nature and amounts of DBNM pensions have not been explored.

#### **4.3.3. Transition Councillor**

It is recommended that DBNM employ a Transition Councillor - see the Canadian study (Appendix 2) - to develop a program to assist employees with personal or family problems arising from anxiety due to unemployment, absence of family heads, relocation, migrancy amongst workers, and other problems due to mine closure. This need only be a temporary appointment to aid retrenched workers and their families.

#### **4.3.4. Careers Advisor and job search methods**

Retrenchment also offers opportunities for advancement, and it is important that employees are given advice regarding future career paths and how they should go about finding work. In the questionnaires, the employees were asked what career they would have chosen had they the chance. The highest number of respondents said they would have become teachers - this could possibly indicate that teaching was the only career option that the employees were aware of.

More emphasis should be placed on business skills and artisan skills. The former is especially important for development of the Coloured Rural areas, as even though the Spinning and Weaving Co-op appears to be successful in terms of productivity, the local people lack entrepreneurial skills and do not know how to market the hand-woven carpets.

In the study by Wolff (1989), five different methods of job searching were recorded; these included personal contact, advertisement, random application, referral and miscellaneous. Personal contact proved to be the most successful while advertisements and random application accounted for only 20% of the jobs found. This supports the recommendations of careers advisors: "informal social networks are the most important form of recruitment, which has significant implications for the structure of employment opportunities and job-search behaviour" (Callendar, 1987, p33).

DBNM could possibly contract an expert in career guidance to present workshops in job seeking, networking etc. to "demystify" the process for the different employee groups.

#### **4.3.5. Financial Advice**

DBNM should encourage employees to prepare themselves financially for mine closure. For example, financial consultants could advise employees, during work time, on different policies available - and in conjunction with Financial Houses could devise specific policies tailored to mine closure.

Poor management of financial resources has been highlighted by Dunne (1986) as being one of the Namaqualand people's faults - the work force's reliance on credit should be addressed. In the longer term wise financial management of both the retrenchment package and possibly the return of the employee's pension contribution, would mitigate against loss of employment and potentially a long pensionless future.

### **4.4. PROMOTION OF ALTERNATIVE DEVELOPMENT AND EMPLOYMENT OPPORTUNITIES**

The most important mitigatory action is that of the promotion of economic development and the creation of alternative employment opportunities, both at a site-specific level and at a regional scale covering the Namaqualand. This would reduce the region's

reliance on mining which currently dominates the economy. The aim of this section is to highlight suggestions and possibilities, the feasibility of which would require further investigation.

Since DBNM have indicated their commitment to alternative business objectives, and their moral responsibility to mitigation of the impact on their employees, it is suggested that they can act as a catalyst and bring together the other mining houses, local communities and the local, regional and/or national authorities - to encourage central government support and potential developers to develop an economic strategy for the region, of which tourism can play a large part.

Readers who are specifically interested in this section are advised to consult Dunne's thesis "Towards a Regional Development Strategy for Namaqualand" (1986) for a more comprehensive background and for her strategic plan.

#### **4.4.1. Cottage Industries**

The development of cottage industries appear to be one of the most promising alternatives as the Namaqualand people's skills already include reed-work, carpet-making and small-animal husbandry (Dunne, 1986).

These home industries could expand to the processing of leather products such as leather hides, which are already kneaded in the area to make blankets and mats. According to Krohne and Steyn (1991) there is already a market for these products in Cape Town and which are potentially popular with tourists. Current profits from selling skins could be increased by excluding middle men and selling directly to wholesalers.

Other leather products which could be marketed are riempie stools, gloves, sandals and shoes. According to Dunne (1986) in Kuboes there are carpets and wall-hangings made from tanned goat skins which are very pretty and could be marketed. The large number of goats farmed in the region could make the production of feta cheese a viable option.

Another possible industry is the manufacture and sale of Matjies houses. These are made from reed mats, and are ideally suited to both the pastoral lifestyle as they are portable, and to the warm climate as they allow light and air to pass through the walls during the hot days. Thus they provide shade and coolness, and during rainy weather, the reeds swell making it waterproof. These matjies houses, or the mats alone, could be marketed. Other crafts which Krohne and Steyn (1991) have suggested are wire-work, honey and the making of stone pipes.

The spinning and weaving co-operative in Komaggas has been very successful in terms of production. However, the marketing skills of the local community are non-existent, and the workers remain unoccupied while waiting for orders. For any home industry to be successful, it is essential that personnel are trained to market the goods. This need not be very expensive, but would involve private transport to get to the markets, and some training. Alternatively, the local communities located near the

main road to Namibia, such as Steinkopf, could have informal markets on the roadside.

DBNM should encourage the development of these alternative sources of employment for the local communities in the interim period between now and mine closure to mitigate against the impact on both the employees and the communities. The wives of DBNM employees could potentially be given preference for DBNM projects as this would reduce the impact on the household if another source of income was available. The potential environmental consequences of producing the above suggestions needs to be investigated to ensure that they can be produced on a sustainable basis.

#### **4.4.2. Mineral Prospecting**

DBNM needs to accelerate and concentrate geological and explorative activities - there being no better form of diversification for a mining community than the re-utilization of mining skills in a different medium (Haugh, 1984). This was supported by the community's suggestions that DBNM expand into mining other minerals in the region and thus continue to provide employment.

The potential for small scale prospecting and mining within the reserve areas also needs to be investigated as the region is very rich in minerals, especially in the pegmatite belt which lies mainly within the Steinkopf Reserve. In addition the region is very rich in precious stones which are being effectively marketed on a small scale at the Springbok Cafe. These could also form a tourist attraction and be sold at roadside stalls.

The communities and employees asked if DBNM could share some of their expertise to train local people in the exploitation of small scale diamond mining.

Large scale exploitation of heavy mineral sands is a strong possibility as Anglo American Heavy Mineral Sands Project are developing a mine at Brand se Baai (illustrated on map in chapter 1) and it "is known that further mine sites are likely to be developed further up and down the coast as prospecting continues" (EEU, July 1990, p1-5). There is the possibility that the infrastructure and at least some of the existing DBNM work force could be taken over. This which would circumvent or reduce the majority of the impacts, whilst enabling optimization of the opening up of the coast.

#### **4.4.3. Education and skills training**

In addition to the career advice for retrenched employees, DBNM should encourage education and skills training in the local communities. Education is important for social upliftment and offers an escape route from the "vicious cycle of poverty" described by Sharp and West (1984). The training of marketing skills as discussed under home industries is an urgent need, especially to realize the potential of the spinning and weaving co-op.

DBNM should encourage the education of the employees children through:

- bursary system to be continued for a number of years following mine closure
- recreational facilities in the local communities where resources are very scarce and in poor condition
- cultural facilities - such as sponsorship of libraries and encouragement of musical skills, both of which were identified by Dunne (1986) as lacking
- the sponsorship of leadership and entrepreneurial skills
- the creation of a training centre in conjunction with the RSC

#### **4.4.4. Development of infrastructure**

The viability of the continuation of the railway line from Bitterfontein to Springbok (approximately 170 kilometers north) needs to be investigated. This would reduce the high costs associated with road transportation which increases the prices of purchased goods, and has potential of improving access to outside markets for locally produced goods and minerals. This would mitigate against the region's economic isolation.

The upgrading of the private road through Komaggas towards the coastline and Kleinzee should be investigated as it could provide an alternative route from the N7 to the coast and encourage the opening up of the region for development after mine closure. This would have a major impact on the community of Komaggas, in terms of decreased isolation and financial benefits accrued from increased tourism. The local community could encourage economic diversity by increasing recreational facilities such as Matjie House Camps and Hiking Trails through the beautiful Komaggas mountain range. The social impact on the community would however require investigation.

In order to accomplish this the provision of water and electricity is urgently needed.

#### **4.4.5. Tourism**

DBNM could help with the promotion of tourism by financial support for a large-scale advertising campaign such as the Cape's Green Season which could exploit Namaqualand as somewhere exotic, unusual and yet accessible. The beauties of Namaqualand include the incredible flowers, idyllic beaches, quaint fishing villages, large crayfish, the rugged desert mountains of the Richtersveld, the unique flora and fauna, the Nama culture and tradition, mountains rich with crystals, wagons pulled by teams of donkeys, whale-back granite covered passes and the life-giving Orange River. All these contribute to the large tourist potential of the Namaqualand.

For the tourism potential to be realized cooperation is needed between politicians, local authorities, mining companies and local businesses. Springbok Cafe has emerged as a popular pit-stop on the way to North. With the new Richtersveld National Park more interest will be focused on the region. According to Gordon Oliver, tourism is worth R70 million rands per year to Cape Town and that for every eight visitors to the Peninsula, it is estimated that one new job is created" (False Bay Echo, 11 June 1992). Tourism is likely to play a larger role in the national economy as new markets are opening up overseas.

Captour has begun marketing the "Kalahari-Namaqua Route: An alternative experience" as a "good example of an attractive and under-utilized en route destination located on an important national road. According to John Robèrt, Captour's managing director, the national road links two of the most important areas of the country, namely the PWV area and the Western Cape. The extra distance one would have to travel via the Namaqualand route is 263 or 272 kilometers more than if one drove via the Kimberley or Bloemfontein routes respectively. The accompanying figure depicts the different routes and the distances.

As these roads are under-utilized, the traffic congestion is likely to be less than on the usual routes. Effective marketing of the Namaqua Route in both the PWV area and the Western Cape together with the promotion of tourist attractions within the area will provide competition for the other major routes. This will require cooperation between the towns of the region.

An alternative route linking the N7 to the coast via Komaggas could promote tourism in Komaggas and the creation of cottage industries especially for the woman who are mostly unemployed or underemployed. The social impact on Komaggas would have to be investigated to determine whether the community would want change and if this change would be beneficial.

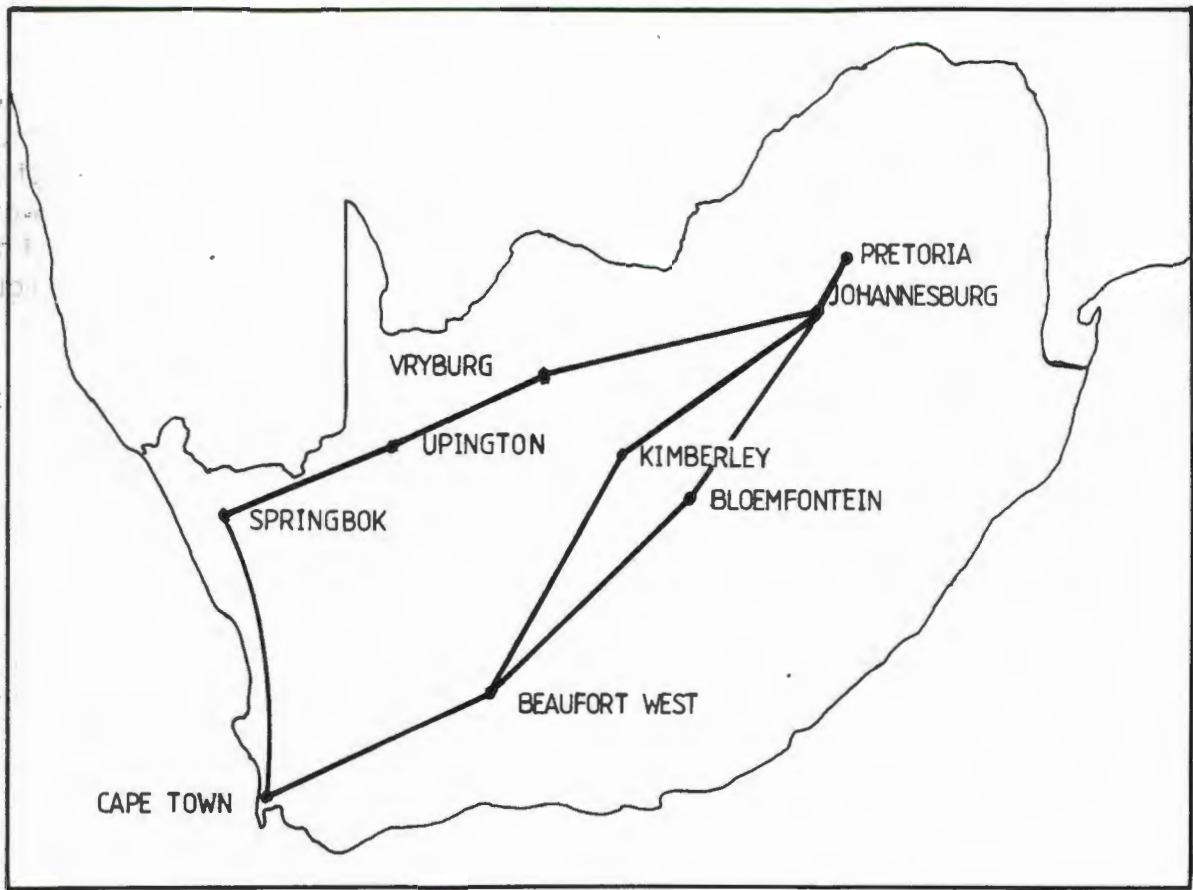
#### **4.4.6. The Potential of Kleinzee and Koingnaas**

The viability of these towns becoming municipalities is seriously hampered by their prohibitively high maintenance costs. According to DBNM the provision of water, electricity and telephones are only possible due to the high profit margin associated with diamond mining. When mining is discontinued, the maintenance costs of the infrastructure will remain the same, but the demand for these services will be far less. However, a number of factors need to be taken into consideration with respect to the costs of maintenance:

(i) in the short term, the provision of the same infrastructure elsewhere is likely to be more expensive than the costs of maintaining the towns;

(ii) the closure of the towns and dismantling of the infrastructure as has occurred in Prieska, where the town site has been sold, dismantled and the bricks been sold (Suttill, 1991), could be far more expensive in the long term with respect to the foreclosure of future options. In the case of Skagway, a mining town which experienced a number of boom-bust cycles, the retention of infrastructure during bust cycles enabled the town to become viable again during the next boom cycle (Burdge, Field & Wells, 1988).

This is true for the West Coast where there are a number of potentially exploitable resources such as heavy mineral sands and off-shore diamond mining concession areas. Coastal areas such as Brand se baai and Jakkalsbaai are currently being developed, therefore it is likely that Kleinzee and Koingnaas which are both close to the coast will become increasingly in demand in the future.



CAPE TOWN — SPRINGBOK — PRETORIA 1755 Km

CAPE TOWN — BLOEMFONTEIN — PRETORIA 1483 Km

CAPE TOWN — KIMBERLEY — PRETORIA 1492 Km

(iii) The cost of maintaining the towns needs to be balanced against the costs of demolition, since according to the Minerals Act 50 of 1991, DBNM has to "immediately prior to the termination of the mining activity shall demolish all buildings, structures or any other thing which was erected in connection with prospecting or mining operations on the surface of the land concerned" (BIR, p45).

(iv) If the nearby RCA of Komaggas becomes electrified as well as the new coastal resorts, the prohibitive costs mentioned by DBNM (BIR, 48) will be shared amongst a greater number of users and thus reduced.

It is recommended that both towns should improve their access to the coast. Although Kleinzee is located right next to the coast the access for pedestrians is very unattractive and one does not have the feeling of being next to the sea. This could be accomplished without compromising security. It will also improve the quality of life of both towns.

#### **4.5. MISCELLANEOUS MITIGATORY MEASURES**

##### **4.5.1. Need to link with rehabilitation study**

It is important that the rehabilitation impact assessment and the socio-economic assessments become more closely linked and do not proceed in isolation from each other. DBNM mine closure will have significant socio-economic impacts which in turn may increase the pressure on the land and this needs to be included in rehabilitation programs.

##### **4.5.2. Land issue needs to be resolved**

The anticipated closure of DBNM together with the upsurge in land re-allocation in South Africa, have contribute to the renewed interest in the land issue. This is fundamental to interaction between DBNM and the local communities. Both Komaggas and Steinkopf are unanimous in their conviction that some of DBNM property rightfully belongs to the reserves.

Surplus People Project under the auspices of the National Land Committee are initiating a research program to investigate the legality of the land claims and the manner in which land dispossession occurred. DBNM should acknowledge these claims and try and help resolve it through negotiations. A compromise should possibly be made with the return or lease of land to local communities for their desperately needed grazing purposes.

##### **4.5.3. Utilization of case studies**

Bisset (1984) has recommended the utilization of case studies as they often give indications of likely social impacts and recommendations how those impacts have been mitigated before

An example of how planning helped a town to stay alive after mine closure has been

included in Appendix 2, with the case history of Atikokan.

#### 4.5.4. DBNM needs to campaign against aids

According to the actuarial model developed by Peter Doyle of Metropolitan life, by the year 2005 there will be 7.4 million South Africans who are diagnosed HIV positive, and 2.9 million people will have died from aids (Russell, 1991).

As the mining sector is the major employer in South Africa, and aids is likely to affect economically active males between the ages of 16 and 49, the industry as a whole needs to develop a programme of education and counselling. The chamber of mines has recognised this and is busy developing a programme in consultation with employee organizations aimed at curbing the spread of HIV infection.

DBNM should start early with the implementation of an HIV program as the increasing occurrence of this disease coupled with immanent mine closure may have an accumulative impact on the work force.

## CHAPTER 5. REFERENCES

Albrecht S L and Thompson J G 1988. The place of attitudes and perceptions in social impact assessment, *Society and Natural Resources* Volume 1 69-80.

Automobile Association of South Africa 1988. *South African Book of the Road*, AA The Motorist Publications: Cape Town.

Barrow C F 1989. A suggestion for the presentation of impact assessment results, *Impact Assessment Bulletin* 7, 81-83.

Borchers M L, Archer, F M & Eberhard A A 1990. *Namaqualand Household Energy Survey Draft Final Report*, Energy Research Institute: Plumstead.

Bradbury J H and St Martin, I 1983. Winding down in a Quebec Mining Town: A case study of Schefferville, *Canadian Geographer* 27(2) 128-144.

Brassey M, Cameron E, Cheadle H & Olivier M 1987. *The New Labour Law: Strikes, Dismissals and the Unfair Labour Practice in South african Law*, Juta & Co: Cape Town.

Burdge R J 1990. The benefits of Social Impact Assessment in Third World development, *Environmental Impact Assessment Review* 10 (1 & 2)

Burdge R J, Field D R & Wells S R 1988. Utilizing social history to identify impacts of resource development on isolated communities: The case of Skagway, Alaska, *Impact Assessment Bulletin* 6(2), 37-54.

Callendar C 1987. Women seeking work, in Fineman, S (ed) *Unemployment: Personal and Social Consequences*, Tavistock Publications: London.

Captour *An Alternative Experience: The Kalahari-Namaqua Route*, South African Holiday Guides Publishers to the Tourism Industry.

Centre for Resource Studies, 1984. *Mining Communities: Hard Lessons for the Future*, Proceedings No 14, Queens University: Kingston.

Danish S J, Smyer M A & Nowak C A 1980. Developmental intervention: Enhancing life-event processes. In Baltes P B and Brim O J (eds) *Life-span Development and Behaviour* (Vol 3) Academic Press: New York.

Dunne J 1986. *Towards a Regional Development Strategy for Namaqualand*, MA Thesis: University of Cape Town.

Dunne J 1988. *Towards a Regional Development Strategy for Namaqualand*, SALDRU Working Paper No 75 Cape Town.

Emmett A B 1989. *Stimulating Rural Development: An Evaluation of Small Business Promotion in Namaqualand*, HSRC Institute for Social and Demographic Research Report

s-181.

EEU - NM CORRESPONDENCE

29/9/90 Meeting of minutes

7/10/91 Letter JR to CC & JC re timetable

12/12/91 Letter JR to CC re Masters students work prog

20/12/90 CC to JR Demographic Info

EEU 1990 July. *Anglo-American Corporation West Coast Heavy Mineral Sands Project Final Environmental Impact Report* No 4/90/49.

EEU 1990 December. Eskom Nuclear Siting Investigation Programme West Coast Site Screening Study EEU Report No 15/90/60.

EEU 1991 Nuclear Siting Investigation Program West Coast: Site-specific Environment Study EEU Report No 1/91/64

Main Report

Supplementary Report

EEU 1992 March. *Integrated Environmental Management: Recommended Procedures and Guidelines*. Report No 7/91/70.

Fig D 1991. *Flowers in the desert: Community struggles in Namaqualand*, in Cock J and Cock E (eds) *Going Green: People, Politics and the Environment in South Africa*, Oxford University Press: Cape Town.

Fuggle R F 1990. *Integrated Environmental management: An appropriate approach to environmental concerns in developing countries*, *Impact Assessment Bulletin* 8, 31-46.

Goodhart D E and Zautra A 1984. *Assessing quality of life in the community: An ecological approach*, in O'Connor, W A and Lubin B (eds) *Ecological Approaches to Clinical and Community Psychology*, John Wiley & Sons: New York.

Grady S, Braid R, Bradbury J & Kerley C 1987. *Socioeconomic assessment of plant closure: Three case studies of large manufacturing facilities*, *Environmental Impact Assessment Review* 7(2) 151-165.

Krohne H and Steyn L 1991. *Land Use in Namaqualand*, Surplus People Project: Cape Town.

Nesbitt T H D 1990. *Environmental planning and environmental/social impact assessment methodology in the cross-cultural context*. *Impact Assessment Bulletin* vol 8(3) 33-43.

Pelican Joint Venture (EEU and CSIR) 1992. *ALUSAF Expansion Project Draft Main Report: Working Document*.

*President's Council Report of the Three Committees of the President's Council on a National Environmental Management System*. Republic of South Africa PC1/1991.

Raimondo, J 1991. Managing the Impact Assessment Unpublished lecture notes.

Russell C 1991. The aides crisis: A mining industry perspective, *Mining Survey* 2.

Rycroft A and Jordan B 1990. *A Guide to South African Labour Law*, Juta & Co: Cape Town.

Sharp J and West M 1984. *Controls and Constraints: Land, Labour and Mobility in Namaqualand*, Carnegie Conference Paper No 71 Cape Town.

Shopley J B and Fuggle R F 1984. A comprehensive review of current environmental impact assessment methods and techniques, *Journal of Environmental Management* 18 25-47.

Suttill K R 1991. Back to the veld: Prieska copper mines finally close in January, *Engineering and Mining Journal* vol 192(2) 27-28.

Wilson F and Ramphela M 1989. *Uprooting Poverty: The South African Challenge*, David Philip: Cape Town.

Wolff L A 1989. The potential economic consequences of layoffs to affected employees, *CIM Bulletin* 82 55-57.

Wondolleck J 1985. The importance of process in resolving environmental disputes, *Environmental Impact Assessment Review* 5 341-356.

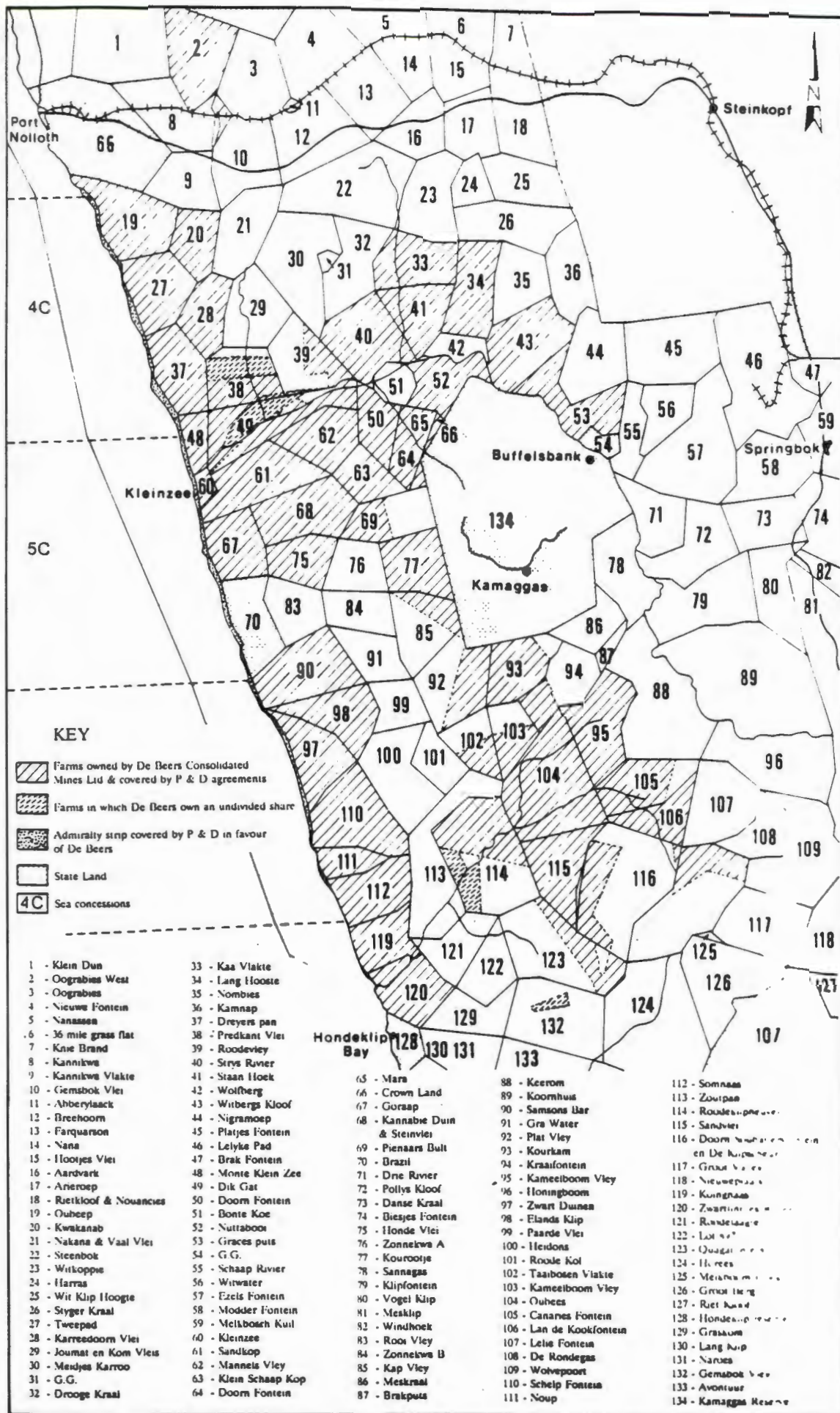
# APPENDIX 1

## LIST OF INDIVIDUALS OR GROUPS INTERESTED IN THE NAMAQUALAND

The following groups and individuals have been identified as being interested in the Namaqualand:

- ⌚ Anglo American Heavy Mineral Sands who are currently prospecting along the coastline for viable mineral sands. They are currently working at Brand se Baai, just south of Hondeklipbaai
- ⌚ Archaeologists whose research along the coastline has yielded "spectacular results" (Mr Tim Hart, I&AP letter)
- ⌚ Benguela Mining are considering construction of a small harbour at Jakkalsbaai to facilitate access to concession areas. This is likely to attract other interest groups and provide significant capital input to the region and influence future development (Boonzaaier, EEU, Feb 1991).
- ⌚ Conservation groups - there are sections of the coast already earmarked for including a national park between the Groen and Spoeg rivers (see map). According to
- ⌚ Development Action Group (DAG) is to undertake some regional planning research in Namaqualand.
- ⌚ De Beers and their West Coast Farming Company
- ⌚ DBNM employees - many of which have indicated they would stay in the region
- ⌚ Eskom who have identified nine potential sites for a future Nuclear Power Station (Mr HF Rohm, I&AP letter)- three prime sites have been investigated by the EEU (1991) at Tweepad, Brazil and Skulpfontein
- ⌚ Farmers in the region, who own adjacent land or who currently lease DBNM property, and their unions (See map on following page).
- ⌚ Fisherman
- ⌚ Groen River holiday-makers
- ⌚ Inter-tidal diamond mining operations
- ⌚ Jakkalsbaai Users and holiday-makers (State Land)
- ⌚ Mariculture
- ⌚ McDougall's Bay holiday-makers
- ⌚ Ninham Shand has proposed a development plan for the West Coast (the exact location is, however, uncertain)

- ⌚ Off-shore diamond concession holders
- ⌚ Potential tourists
- ⌚ Potential toxic waste dump !!
- ⌚ Property owners in the region - these are shown on the map on the following page.
- ⌚ Regional Development Strategy is being developed by the Regional Development Advisory Committee
- ⌚ Rural Coloured Areas
- ⌚ Small scale mineral extractors
- ⌚ Springbok Municipality who are in the process of developing a draft structure plan for the town
- ⌚ Western Kelp who currently use the state site at Jakkalsbaai to collect and accommodate approximately 25 kelp collectors (EEU, 1991) They currently hold the sole concession to collect washed-up kelp between the Olifant's and the Orange Rivers.



**KEY**

- Farms owned by De Beers Consolidated Mines Ltd & covered by P & D agreements
- Farms in which De Beers own an undivided share
- Admiralty strip covered by P & D in favour of De Beers
- State Land
- 4C Sea concessions

- |                            |                       |                                |                          |                        |
|----------------------------|-----------------------|--------------------------------|--------------------------|------------------------|
| 1 - Klein Dun              | 33 - Kaa Vlakke       | 65 - Mars                      | 88 - Keerom              | 112 - Somnaas          |
| 2 - Oograbies West         | 34 - Lang Hooste      | 66 - Crown Land                | 89 - Koomhuis            | 113 - Zoupaan          |
| 3 - Oograbies              | 35 - Nombes           | 67 - Gorap                     | 90 - Samsons Ibar        | 114 - Rousdepoort      |
| 4 - Nieuwe Fontein         | 36 - Kamnap           | 68 - Kannabie Duin & Steinvlei | 91 - Gra Water           | 115 - Sandvlei         |
| 5 - Vanassen               | 37 - Dreyers pan      | 69 - Piensars Bult             | 92 - Plat Vlei           | 116 - Doornvlei        |
| 6 - 36 mile grass flat     | 38 - Predkant Vlei    | 70 - Brazil                    | 93 - Kourkam             | 117 - Grootvlei        |
| 7 - Knie Brand             | 39 - Roodevlei        | 71 - Drie Rivier               | 94 - Kraaifontein        | 118 - Nieuwvlei        |
| 8 - Kannikwe               | 40 - Srys Rivier      | 72 - Pollys Kloof              | 95 - Kameelboom Vlei     | 119 - Kungraab         |
| 9 - Kannikwe Vlakke        | 41 - Staas Hoek       | 73 - Danse Kraal               | 96 - Honingboom          | 120 - Zwartvlei        |
| 10 - Giesbok Vlei          | 42 - Wolfberg         | 74 - Biesjes Fontein           | 97 - Zwart Dunes         | 121 - Rousdepoort      |
| 11 - Abberlylaack          | 43 - Witbergs Kloof   | 75 - Honde Vlei                | 98 - Elands Klip         | 122 - Lotvlei          |
| 12 - Breehoorn             | 44 - Nigraoep         | 76 - Zonnekwa A                | 99 - Paarde Vlei         | 123 - Oudvlei          |
| 13 - Farquarson            | 45 - Platjes Fontein  | 77 - Kourrooie                 | 100 - Heidons            | 124 - Heides           |
| 14 - Nana                  | 46 - Lelyke Pad       | 78 - Sannagas                  | 101 - Rooie Kol          | 125 - Meerkop          |
| 15 - Hooftes Vlei          | 47 - Brak Fontein     | 79 - Klipfontein               | 102 - Taabosen Vlakke    | 126 - Grootvlei        |
| 16 - Aardvark              | 48 - Monte Klein Zee  | 80 - Vogel Klip                | 103 - Kameelboom Vlei    | 127 - Rietland         |
| 17 - Aneroep               | 49 - Dik Gat          | 81 - Mesklip                   | 104 - Ouhees             | 128 - Hondeklip        |
| 18 - Rietkloof & Nouancies | 50 - Doorn Fontein    | 82 - Windhoek                  | 105 - Cananes Fontein    | 129 - Grassom          |
| 19 - Oubeep                | 51 - Donte Koe        | 83 - Rooi Vlei                 | 106 - Lan de Kookfontein | 130 - Lang Klip        |
| 20 - Kwakanab              | 52 - Nuttaboos        | 84 - Zonnekwa B                | 107 - Lelie Fontein      | 131 - Narus            |
| 21 - Nakana & Vaal Vlei    | 53 - Graces puis      | 85 - Kap Vlei                  | 108 - De Rondegas        | 132 - Gemabok Vlei     |
| 22 - Steenbok              | 54 - G.G.             | 86 - Meskraal                  | 109 - Wolvepoort         | 133 - Avontuur         |
| 23 - Witkoppie             | 55 - Schaap Rivier    | 87 - Brakputs                  | 110 - Schelp Fontein     | 134 - Kamaggas Reserve |
| 24 - Harras                | 56 - Witwater         |                                | 111 - Noup               |                        |
| 25 - Wit Klip Hoogte       | 57 - Ezels Fontein    |                                |                          |                        |
| 26 - Styger Kraal          | 58 - Modder Fontein   |                                |                          |                        |
| 27 - Tweepad               | 59 - Melkboosch Kul   |                                |                          |                        |
| 28 - Karredoom Vlei        | 60 - Kleinsee         |                                |                          |                        |
| 29 - Jomat en Kom Vleis    | 61 - Sandkop          |                                |                          |                        |
| 30 - Medjes Karroo         | 62 - Mannels Vlei     |                                |                          |                        |
| 31 - G.G.                  | 63 - Klein Schaap Kop |                                |                          |                        |
| 32 - Drooge Kraal          | 64 - Doorn Fontein    |                                |                          |                        |

**ESKOM NSIP WEST COAST : SITE SPECIFIC ENVIRONMENTAL STUDY**  
**Map 2 Property ownership and farm boundaries**

## APPENDIX 2

### CASE STUDY OF MINE CLOSURE

Case studies are very useful in predicting potential impacts, and how they have been successfully mitigated in the past. This is the first socio-economic impact assessment of mine closure in South Africa, according to library searches. Canada and Australia have led the field of mine closure literature so it has been decided to include a case study to benefit from some "hard lessons" that have been learnt (Centre for Resource Studies, 1984).

CASE 1: The Atikokan Story: Life in a small Community that suffers economic collapse (Brown in Centre for Resource Studies, 1984)

The town of Atikokan is located in Canada and in 1982 had a population of approximately 4 744 people. During the period 1979 to 1980 two of Atikokan's mines Steep Rock Iron ore and Cholent Ore Co closed, due to their economic limit being reached. The main impacts resulting from this were:

- 1 100 jobs were lost out of a town of 2000 workers
- loss of \$16 mill annual payroll
- loss of 60% of the tax base

The Atikokan Council felt the town could be a model for learning about how to cope with sudden economic disruption in a single-industry town. The potential for survival of the town and economic diversification were promising as there were good transportation and communication links, natural beauty and potential for other resource industries.

In 1972 Steep Rock Mine announced anticipated closure in 1976. Closure eventually took place in 1979, but the town had continued with developments such as a community centre, airport, swimming pool and a park for camping and recreation.

The approach to reducing the impact on Atikokan has been described in the following order:

- A. Summary of Atikokan's actions
- B. The AJMAPC Committee
  - terms of reference
  - recommendations

#### A. SUMMARY OF ATIKOKAN'S ACTIONS

1. Energy conservation policy - aiming for 20% reduction;
2. 1973/4 municipality recognised problem and started Aid Committee to attract new industry. Opening of new businesses in the area helped maintain a healthy climate:

1981 opening of wood product co. - development of an alternative economic base  
1982 opening of Industrial Park and Mall  
1982 opening of a new Tourist Information Centre

3. Employment of an **economic development officer**;
4. **5 Year plan** for infrastructure;
6. **Council seminars** to plan for next 2 years;
7. **Atikokan Joint Manpower Assessment and Planning Committee (AJMAPC)** created to help people find employment, welding schools and carpentry courses were provided to improve skills of local people (terms of reference and recommendations described in B);
8. Included provincial and federal government - Atikokan council stressed the important role they played;
9. Strengthened communities' amenities
10. 1974 Seminar on diversification potential - indicated the basic community needs to attract people and businesses.

#### **B. THE ATIKOKAN JOINT MANPOWER ASSESSMENT AND PLANNING COMMITTEE (AJMAPC)**

##### **Terms of Reference**

- i. to assess the impact of the phase-out of mining operations on the community
- ii. to draw together all available data on demographic factors, employment, serviced land, commercial floor space, tourism and other aspects of the community's economy
- iii. to identify any information gaps or deficiencies which would preclude the development of an adequate economic strategy for the community, and undertake remedial action where required;
- iv. to evaluate the present and future economic base, workforce, local resources, and the potential for locating new enterprises;
- v. to explore all options for the efficient administration of the economic development function;
- vi. to recommend to their principles and appropriate governmental authorities a basic economic development strategy, the means whereby the planning, development and management of the strategy may be enhanced, and a suitable worker adjustment program developed;
- vii. with the assistance of Manpower Consultative Services, the Employment Adjustment Service and Minister of Northern Affairs, to bring to bear and make the most effective use

of all public measures and services available from the federal and provincial governments.

1. Financing: 100% participation by all spheres of business, labour & social in terms of personal and financial involvement - fund raising
2. Assessment of the situation and development of a plan of action
3. Committee recognised that its function was " to lay a base for the future survival and rehabilitation of a community that obviously could no longer depend on a major industry (mining) to sustain its workforce or financial structure

Problem: Hundreds of steelworkers didn't appreciate the long-range planning of the committee when immediate problems needed to be addressed - committee did help with some of the immediate community needs

4. Used municipal information to create a community profile which was used to develop an economic strategy
5. Immediate problem of finding work for retrenched employees as their unemployment benefits came to an end - joint management labour committee
  - catalogued the skills available and found job opportunities throughout the country
  - committee recognised that this program deleted the most able and best qualified workers from the town's workforce - this had to be an important factor in long-range planning
6. Commissioning of a community profile study which gave a profile of A's resources in all phases and areas
  - available workforce
  - up to date and indepth community profile
    - pinpointed lack of serviced industrial land
    - pinpointed condition of housing

This was done by local people and continually updated

7. Involvement and participation of provincial and federal governments recognised as a primary factor
8. Committee commissioned the development of an inventory of investment opportunities that covered a broad spectrum of industry and identified about 100 opportunities. It was important to have additional industrial land and industrial park - used local volunteer labour.
9. Commissioned a feasibility study of investment opportunities and also an inventory of investors.
11. Recommendations of Company labour-management committees with respect to training
  - possibility of establishing training courses to upgrade the skills of unemployed workers - welding and carpentry courses successful

12. other projects of other organisations - assessment of clay (Mine)

- assess of wood supply (Ministry of Natural Resources)
- tourism potential (Ministry of Northern Affairs)
- A Chamber of Commerce - Tourism Officer
- Tourist Information Centre on highway
- marketing of A in American cities
- federal task force

13. Air commuter service for unemployed miners to work at nearby mines and still live in A

14. Recognition of social impact - suggestion of professional advice and assistance to the families faced with the loss of longtime employment and the loss of a home they had considered permanent - recommended municipality and Dept of social services to appoint a "transition counsellor"

Role of transition counsellor was to established direct link between community and committee

- compiled social data relevant to impact of mine closure on the communities
- provided understanding and advice

#### TRAINING PROGRAMS

Committee tried to generate courses in: electricians, skidder operators, computer technology, data processing, servicing of equipment, line cutters (prospecting and mine claims), machinists, tool and die operators, industrial maintenance mechanics, restaurant waiters, tourist operator employees.

Heavy machinery operators course  
programs in arts, business and woodcraft  
Skills program in 1977-79

#### Transition Councillor

Appointed from September 1979 to August 1980 to identify and assess the impact of social upheaval and consequences as a result of closing of both mines in Atikokan; and to develop a programme to assist residents with personal and family problems that can be expected and have already appeared as the result of anxiety, unemployment, absentee family heads, moving, migrant construction workers, and other probs.

A local person was chosen who was held in respect by all walks of life in community and aware of confidential nature. Her duties included:

- 1) identifying human crisis situations which could result in personal or family upheaval and trauma
- 2) promote an awareness of the probs, symptoms, and need for concern and medical support and the services available
- 3) provide direction as appropriate
- 4) identify, provide contact and co-ordinate the application of government services
- 5) produce monthly reports and a final report that could be a model for other small single industry communities with similar

situation.

Recommendations of AJMAPC

Need for full cooperation of and between government, mines and communities.

1. Government study of Atikokan to develop a standard procedure in case of closure in industry town;
2. Terms of reference broadened to enable federal direct aid to projects areas identified in the economic strategy;
3. Committee should include other members of the community besides only those who had contributed financially - include others by majority ruling as voting members;
4. Hiring of an Economic Development Commissioner - follow up industrial opportunities which could restore the tax base;
5. Committee also have a supportive role for other committees such as steep rock subcommittee, and that chairman of subcommittee also be a member of AJMAPC  
committees function should also include assistance to the town workforce which had been dependant in a service function to the main industry ,  
The Government should study the air shuttle and be more flexible with respect to regulations.
6. As soon as closure is identified, government and industry should cooperate in the provision of professional counselling and support systems to enable affected workers to identify their realistic career options and the means of pursuing them
7. Committee should see as a priority the matter of retraining and upgrading the skills of the unemployed workforce with help of federal funding to explore all avenues of training and the acquisition of learning space and equipment
8. Committee should consider the social impact on the families and the bread winner as a result of mass layoff and the provision of Transition councillor
9. When single industries develop or enlarge a small community, during the production years a continuous contingency fund or 'closure impact' fund which would be tax free, for the benefit of the community.

### APPENDIX 3

## RECOMMENDED LITERATURE

Aris S, 1963. Struggles of a dying town, *New Society* 1 (18) 9-10.

Baldwin D, 1982. The development of an unplanned community: 1903-1914, in Bowles, LT (ed), *Little Communities and Big Industries: Studies in the Social Impact of Canadian Resource Extraction*, 112-128, Toronto: Butterworths.  
Canada, case study, mining, historical analysis, boomtown.

Borland J, 1986. Keeping a town alive, *North Miner Mag.* Vol 1(9), 25-27.

Bowles RT, (ed), *Little Communities and Big Industries: Studies in the Social Impact of Canadian Resource Extraction*, Toronto: Butterworths.  
rural community, mining, Canada, large scale projects, case study, industry.

Bradbury JH, 1979. Towards an alternative theory of resource-based town development in Canada, *Economic Geography* 55(2), 147-166.  
Canada, mining, community development, planning, institutional role, local govt.

Bradbury JH, 1978. Class structure and class conflicts in "instant" resource towns in British Columbia - 1965 to 1972, *British Columbia Studies*, 37, 3-18.  
Canada, mining, class analysis, community structure, boomtown.

Bradbury JH, 1985. Housing policy and home ownership in mining towns: Quebec-Canada, *The International Journal of Urban and Regional Research*, 9(1), 16-32.

Bradbury JH, 1988. Living with boom and bust cycles: New towns on the resource frontier in Canada, 1945-1986, in Brealey TB, Neil CC, Newton PW, (eds), 1988. *Resource Communities: Settlement and Workforce Issues*, Melbourne: CSIRO.  
Canada, mining, boomtown, historical analysis, remote community.

Brealey TB, Neil CC, Newton PW, (eds), 1988. *Resource Communities: Settlement and Workforce Issues*, Melbourne: CSIRO.  
mining, workforce, siting

Brealey TB, Newton PW, 1978. Migration and new mining towns, in Burnley IH, Pryor RJ, Rowland DT (eds) *Mobility and Community Change in Australia* 49-66, St Lucia: University of Queensland Press.  
mining, case study, Aust, boomtown, workforce, resettlement.

Brealey TB, Newton PW, 1978. *Living in Remote Communities in Tropical Australia: The Headland Study*, Melbourne, CSIRO Division of Building Research.  
case study, mining, boomtown, planning, inequality, workforce, services, women, remote community.

Bulmer MIA, 1976. Sociological models of the mining community, *Sociological Review*, 23, 61-92.

mining, community development, boomtown, company housing.

Bureau of Industry Economics, 1983. Job losses in Small Country Towns: A Case study of abattoir closures in Tenterfield, NSW, Canberra: AGPS.

Burdge RJ, Field DR, Wells SR, 1988. Utilizing social history to identify impacts of resource development on isolated communities: The case of Skagway, Alaska, *Impact Assessment Bulletin*, 6(2), 37-54.

mining, case study, Alaska, historical analysis, methodology, remote community.

Burnley IH, Pryor RJ, Rowland DT (eds) *Mobility and Community Change in Australia 49-66*, St Lucia: University of Queensland Press.

Burvill PW, 1975. Mental health in isolated new mining towns in Australia, *Australian and New Zealand Journal of Psychiatry*, 9(2), 77-83.

mining, health, psychosocial impact, women, normalization, case study, social impact.

Butt, P 1980 *No Such a Place* (Video), Paddington, Sydney Filmmakers Cooperative. case study, Aust, mining, closure.

Centre for Resource Studies, 1984. *Mining Communities: Hard Lessons for the Future*, Proceedings No 14, Kingston: Centre for Resource Studies, Queens University. Canada, mining.

Chase A, 1988. Anthropology and impact assessment, in Hindmarsh RA et al (eds), *Papers on Assessing the Social Impacts of Development*, 142-150, Brisbane: Institute of Applied Environmental Studies, Australian National University.

anthropology, Aborigines, indigenous people, case study, mining, land rights, EIS, Aust.

Clark, D et al, 1985. The psycho-social consequences of intermittent husband absence: an epidemiological study, *Social science and medicine*.

commuting, family life, workforce, mining, case study.

Clayton HM, 1974. *Instant Towns: A Report on the Problems of Community in the Pilbara Mining Towns with Suggestions for Future Development*, Perth: Office of the North West, Government of Western Australia.

mining, West Aust, community development.

Connor DM, 1983. A participatory approach to social impact assessment: a proposed mine near Atlin, BC, in Daneke, GA, Garcia MW, Delli Priscoli J (eds), *Public Involvement and Social Impact Assessment*, 185-194, Boulder, Westview.

participation, case study, Canada, mining.

De Pape D, 1985. Alternatives to single project mining communities: a critical assessment, *Canadian Journal of Agricultural Economics*, 32, 100-113.

Canada, mining, remote community, company town.

Grady, S, Braid, R, Bradbury, J, Kerley, C 1987. Socioeconomic assessment of plant closures: three case studies of large manufacturing facilities, *Environment Impact Assessment Review*, 7(2) 151- 165.

Halstead, JM, Chase RA, Murdoch SH, Leistritz FL, 1984. *Socioeconomic Impact Management: Design and Implementation*, Boulder: Westview.  
env mgmt, participation, mediation, planning, closure.

Hegadoren D, Day, J 1981. Socio-economic mine termination policies: a case study of mine closure in Ontario, *Resources Policy* 7(4) 265-272.  
Canada, mining, policy analysis, closure, case study.

Henshall Hansen Associates 1988. *Small Town Study in Victoria, Melbourne*, Department of Agriculture and Rural Affairs  
rural community, closure, case study, community development.

Humphreys JF, 1988. Planning for remote settlements: people, place and prosperity, in Brealey TB, Neil CC, Newton PW, (eds), *Resource Communities: Settlement and Workforce Issues*, 97-111, Melbourne, CSIRO.  
Aust, planning, community development, normalization, remote community.

Jones, II 1988 *Adjustments to a declining base: the recent case of Texas economy*, *Impact Assessment Bulletin* 6(2).

Keyes RJ, 1988. Policy responses and alternatives for addressing mining community issues: the recent Canadian experience, in Brealey TB, Neil CC, Newton PW, (eds), *Resource Communities: Settlement and Workforce Issues*, 97-111, Melbourne, CSIRO.  
Canada, mining, remote community, policy analysis.

Little RL, Krannich RS, 1988. A model for assessing the social impacts of natural utilization on resource-dependent communities, *Impact Assessment Bulletin*, 6(2), 21-35.  
mining, models,

Massey, D 1984. *Spatial Divisions of Labour: Social Structures and the Geography of Production*, Houndmills, Macmillan.  
UK, mining, workforce, retraining, closure.

Mazza, J et al 1982. *Shutdown: A Guide for Communities facing Plant Closures*, Washington: Northeast-Midwest Institute.  
closure.

Neil CC, Brealey TB, 1982. Home ownership in new resource towns: will it change or reinforce existing social trends, *Human Resource Management Australia*, 20(1), 38-44.  
Aust, mining, remote community, housing.

Neil CC, Brealey TB, Jones JA, 1988. Delegitimation of mental health myths of new remote mining communities in Australia, *Community Health Studies*, 7, 42-53.

health, psychosocial impact, mining, Aust, boomtown, women.

Neil CC, Jones JA, 1988. Environmental stressors and mental health in resource boom communities, *Australian and New Zealand Journal of Sociology*, 24(3), 437-458.  
Boomtown, health, psychosocial impact, mining, Aust, women, remote community.

Office of Research and Social Policy, 1982. *The Kyabram Cannery Closure: A Study of the Social Effects*, Submission to the Industries Assistance Commission Enquiry into the Fruit Canning Industry Melbourne: Department of Community Welfare Services.  
closure, case study, Aust, rural community, retrenchment.

Perrucci CC, Perrucci R, Targ DB, Targ H 1988. *Plant closings: International context and social costs*. Aldine De Gruyter, New York.

Pleeter, Saul 1980 *Economic Impact Analysis: Methodology and Applications*. Martinus Nijhoff Publishing: Massachusetts.

Seley JE, Wolpert J, 1985. The savings/harm tableau for social impact assessment of retrenchment policies, *Economic Geography*, 61 (April) 158-171.

Sturmev R 1990 *The Social Impacts of restructuring practices in the Australian mining industry*, Melbourne CSIRO.  
Aust, mining, closure, workforce.

The Rural Development Centre, 1990. *An economic Development Study of Werris Creek, NSW, Armdale: The Rural Development Centre, University of New England*.  
case study, Aust, economic impact, closure, rural community.

Wildman P, 1987. Social impact assessment for new resource projects, in Parker P (ed), *Resource Development and Local Government, Policies for Growth, Decline and Diversity*, Canberra: Centre for Resource and Environmental Studies, Australian National University.  
resource development, mining, local government.

Wildman P, Baker G, 1985. *The SIA Facilitator: A Guide to the Role of Community Development Officers in Australian Mining Towns*, self published: 38 Royal Street, Virginia Qld 4014.  
Aust, mining, rural community, planning.

Wolff LA, 1989. The potential economic consequences of layoffs to affected employees. *CIM Bulletin*, vol 82 no 924, 55-57.

Zanders HLG, 1975. The re-adaption of an occupational group: A research amongst ex-miners, *Sociologica Neerlandica* 11 (1) 41-59.