

**HOUSING OPTIONS FOR MINeworkERS IN ARID  
AND SEMI-ARID REGIONS: THE CASE OF KATHU**

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**Housing options for mineworkers in arid  
and semi-arid regions: the case of Kathu**

by

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## **DECLARATION**

I declare that this dissertation submitted for the degree Magister Societatis Scientiae at the University of the Free State is my own, independent work and has not been submitted by me to any other university/faculty.

I furthermore cede copyright of the thesis in favour of the University of the Free State.

JS Cloete

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# TABLE OF CONTENTS

	page
<b>TABLE OF CONTENTS</b>	<b>i</b>
<b>LIST OF FIGURES</b>	<b>iv</b>
<b>LIST OF TABLES</b>	<b>v</b>
<b>LIST OF ACRONYMS</b>	<b>vii</b>
<b>CHAPTER ONE: SETTING THE SCENE</b>	<b>1</b>
1.1    INTRODUCTION	1
1.2    AIM AND OBJECTIVES	4
1.3    CONTEXTUALISATION	4
1.3.1    Housing options	4
1.3.2    Mineworkers	5
1.3.3    Arid and semi-arid regions	6
1.4    RESEARCH METHODOLOGY	7
1.4.1    Study area	7
1.4.2    Research design	9
1.4.3    Sampling	9
1.4.4    Technique for gathering data	11
1.4.5    Data analysis	11
1.5    ETHICAL CONSIDERATIONS	13
1.6    LAYOUT OF THE STUDY	14
<b>CHAPTER TWO: DEVELOPMENT IN ARID REGIONS</b>	<b>16</b>
2.1    INTRODUCTION	16
2.2    THE DESERTIFICATION PARADIGM	17
2.3    DRYLANDS DEVELOPMENT PARADIGM	20
2.4    FEATURES OF ARID REGIONS	24
2.5    LIVELIHOODS IN ARID REGIONS	26
2.5.1    Livelihoods	26
2.5.2    Livelihood diversification	28
2.6    MINING IN ARID REGIONS	29
2.6.1    The boom-bust cycle	30
2.6.2    Economic diversification as response	31
2.6.3    Long-distance commuting as alternative to the creation of mining towns	32
2.7    CONCLUSION	34

<b>CHAPTER THREE: MINEWORKER HOUSING IN SOUTH AFRICA</b>	<b>36</b>
3.1    INTRODUCTION	36
3.2    THE RISE OF MIGRANT LABOUR IN THE GOLD-MINING INDUSTRY	37
3.3    HOUSING MIGRANT LABOUR: THE COMPOUND	40
3.4    SETTLED LABOUR AS ALTERNATIVE TO MIGRANT LABOUR	41
3.4.1    Early attempts at settlement	42
3.4.2    Later developments towards settlement	43
3.5    MINE MANAGEMENT AND ALTERNATIVES TO COMPOUNDS	46
3.6    STATE RESPONSES TO THE HOUSING ISSUE SINCE 1994	49
3.7    CONCLUSION	53
<b>CHAPTER FOUR: MIGRANCY TRENDS AND PREFERENCES IN KATHU</b>	<b>56</b>
4.1    INTRODUCTION	56
4.2    MIGRATION AND SETTLEMENT	57
4.2.1    Place of origin	58
4.2.2    Number of years in Kathu	60
4.2.3    Reasons for staying in Kathu	61
4.2.4    Preference for partner/children to join them in Kathu	62
4.2.5    Preference for settlement	63
4.2.6    Synthesis	64
4.3    THE INFLUENCE OF THE DEMOGRAPHIC/SOCIO-ECONOMIC PROFILE ON MIGRATION/SETTLEMENT DECISIONS	65
4.3.1    Area of origin	65
4.3.2    Age	67
4.3.3    Education and training	69
4.3.4    Marital status	72
4.3.5    Dependants	75
4.3.6    Household income	78
4.3.7    Synthesis	79
4.4    CONCLUSION	81
<b>CHAPTER FIVE: AN EVALUATION OF HOUSING-PROVISION OPTIONS IN KATHU</b>	<b>84</b>
5.1    INTRODUCTION	84
5.2    BASIC HOUSING PREFERENCES	85
5.2.1    Location of housing unit	85
5.2.2    Tenure preference	87
5.2.3    Size and type of housing unit	93
5.3    WHAT CAN RESPONDENTS AFFORD?	97
5.3.1    Eligibility for government housing subsidy	97
5.3.2    Current housing related expenditure	98
5.3.3    Disposable income	100
5.3.4    Stated affordability	102

5.4	HOUSING-PROVISION OPTIONS	103
5.4.1	Hostel accommodation	104
5.4.2	Housing in area of origin	107
5.4.3	Private housing	110
5.4.4	The future of current housing solutions	111
5.5	CONCLUSION	115
<b>CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS</b>		<b>118</b>
6.1	INTRODUCTION	118
6.2	MAIN FINDINGS	119
6.2.1	Provisioning approach and role combinations: the need for state <i>and</i> individual agency	119
6.2.2	Resource management, environmental sustainability, infrastructure, and service delivery: limits of arid locations	121
6.2.3	Settlement, migrancy, and economic/social sustainability: the goals of the state <i>vs.</i> the goals of the individual	122
6.2.4	Housing solutions, tenure, and family housing: choice and consequences	123
6.3	RECOMMENDATIONS	124
6.3.1	Increased involvement by the state could enhance the choices of individuals	125
6.3.2	Reduce infrastructure commitments in arid regions	125
6.3.3	The individual as measure of development success	125
6.3.4	Choice and consequences	126
6.4	FURTHER AREAS OF RESEARCH	128
<b>REFERENCE LIST</b>		<b>129</b>
<b>ANNEXURE A: QUESTIONNAIRE USED FOR RESIDENTS OF THE HOUSING SCHEME</b>		<b>140</b>
<b>ANNEXURE B: QUESTIONNAIRE USED FOR RESIDENTS OF THE HOSTEL</b>		<b>148</b>
<b>SUMMARY</b>		<b>156</b>

## LIST OF FIGURES

	page
Figure 1.1: South Africa's Arid Regions, by rainfall, 2007	7
Figure 1.2: Framework of the chapters of the study	15
Figure 4.1: Length of stay for housing and hostel residents in Kathu, 2007	60
Figure 4.2: Age of respondents in the hostel and housing scheme in Kathu, 2007	68
Figure 4.3: Highest school grade passed for respondents in the hostel and housing scheme in Kathu, 2007	69
Figure 4.4: Number of dependants (if any) for respondents in the hostel and housing scheme in Kathu, 2007	75
Figure 4.5: Household income for respondents in the hostels and the housing scheme in Kathu, 2007	78
Figure 5.1: The level of appropriateness of the current tenure status of respondents in the housing scheme in Kathu, 2007	92
Figure 5.2: Preference regarding size of unit to own or rent to own among residents of the hostel and housing scheme in Kathu, 2007	95
Figure 5.3: Amount respondents in the hostel and housing scheme in Kathu indicated they are able to spend on housing, 2007	102
Figure 5.4: Tenure status of housing unit in area of origin for respondents in the hostel and housing scheme in Kathu, 2007	108



## LIST OF TABLES

	page
Table 2.1: A summary of the nine assertions of the Dahlem Desertification Paradigm and some of their implications.	21
Table 2.2: Summary of key views of the two broad paradigms of the chapter	35
Table 3.1: Summary of key views of apartheid and post-apartheid paradigms	55
Table 4.1: Place of origin for respondents in the hostel and housing scheme in Kathu, 2007	58
Table 4.2: Reasons for staying in the current location for respondents in the hostel and housing scheme in Kathu, 2007	61
Table 4.3: Marital status of respondents in the hostel and housing scheme in Kathu, 2007	73
Table 4.4: Residential arrangement with partner for respondents in the hostel and housing scheme in Kathu, 2007	74
Table 4.5: Residential arrangement with dependants (children) for respondents in the hostel and housing scheme in Kathu, 2007	77
Table 4.6: Cross-tabulation of preference for settlement with other variables	81
Table 4.7: Summary of key concepts discussed in this chapter	83
Table 5.1: Preference of other locations for housing scheme residents in Kathu, 2007	86
Table 5.2: Current housing related expenditures of respondents in the hostel and housing scheme in Kathu, 2007	99
Table 5.3: Disposable income of respondents the hostel and housing scheme in Kathu, 2007	101
Table 5.4: Hostel respondents' reasons for being happy with the accommodation in which they were staying in Kathu, 2007	104

Table 5.5:	Hostel respondents' reasons for being unhappy with the accommodation in which they were staying in Kathu, 2007	105
Table 5.6:	Reasons for being happy with their housing in their area of origin among respondents in the hostel and housing scheme in Kathu, 2007	107
Table 5.7:	Type of housing unit in area of origin for respondents in the hostel and housing scheme in Kathu, 2007	109
Table 5.8:	Housing scheme respondents' reasons for being happy with the area in which they were staying in Kathu, 2007	110
Table 5.9:	Housing scheme respondents' reasons for being unhappy with the area in which they were staying in Kathu, 2007	111
Table 5.10:	Province of alternative place of residence for respondents in the hostel and housing scheme in Kathu, 2007	112
Table 5.11:	Source of alternative livelihood for respondents in the hostel and housing scheme in Kathu, 2007	114
Table 5.12:	Summary of key concepts discussed in this chapter	117
Table 6.1:	Main findings and recommendations reflected against the central concepts of the study	127

## LIST OF ACRONYMS

ANC	African National Congress
BNG	Comprehensive Plan for the Development of Sustainable Human Settlements, also known as Breaking New Ground
DDP	Drylands Development Paradigm
DME	Department of Minerals and Energy
DoH	Department of Housing
FIFO	fly-in/fly-out
IQM	interquartile mean
GEM	Global Environmental Management
N/A	not applicable
NUM	National Union of Mineworkers
RDP	Reconstruction and Development Programme
SEP	Sishen Expansion Project
UN	United Nations

## CHAPTER ONE: SETTING THE SCENE

### 1.1 INTRODUCTION

According to Marais and Venter (2006a), the link between mining, migrancy and housing was fairly well researched before 1994, but since 1994 there has been very little research regarding new approaches to policy and practice to address the specific needs of housing for mineworkers (see Demissie (1998) and Marais and Venter (2006a) as exceptions in this respect). This is an unfortunate turn of events, as the single-sex hostels, which house most of the black<sup>1</sup> labour force employed at mines, were among the foremost tools developed under Apartheid for indenturing workers (Demissie, 1998).

The provision of housing to mineworkers is further complicated by the fact that many mineworkers have historically been migrant labourers, either from rural parts of South Africa or from other countries in southern Africa. While the latter class of workers do not have rights to permanent housing in South Africa, the former often prefer to maintain links with what they view as their permanent homes in the rural areas (Crush and James, 1995; Laburn-Peart, 1992). Under apartheid, the ability to migrate of both classes of mineworkers was restricted and regulated by a series of race-based legislative interventions. In the process, the mining compound, closely associated with migrant labour, was historically the main form of housing for black mineworkers.

Furthermore, international literature suggests that the specific features of mining communities render most forms of permanent residence risky and unsustainable. Mining and other resource-dependent settlements are subject to boom-bust cycles (see the edited collection of Neil, Tykkyläinen and Bradbury (1992) as illustration). When resources are discovered, the towns are developed at a fast pace – often supported by infrastructure development by the mine (Archer and Bradbury, 1992). The overall

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<sup>1</sup> While discussions in the literature generally refer to *Africans* or *Blacks* as individuals with a racial descent of African origin, the use of the term *Black* in this study could also refer to Coloured or Indian individuals.

risk of settlement development in mining areas is further complicated by the fact that many of these mining areas are located in arid regions. These arid regions surrounding the mines are characterised by small populations, remote locations and low productivity. This, combined with the success of mine employment (versus alternatives available) and often authoritarian mine management, represses possible economic diversification and makes the towns vulnerable to the more than likely future closure of the mines (O’Faircheallaigh, 1992).

The problem of settlement in arid mining regions has further been illustrated by a growing body of international literature on the specific problems associated with developing sustainable human settlements in arid regions (see Reynolds, Stafford Smith, and Lambin *et al.* (2007)). Comprising of specific features (variability, sparse population, low productivity, the “distant voice” and remoteness), arid regions tend to lag behind their temperate counterparts in terms of many development indicators (Reynolds *et al.*, 2007; Mortimore, 2005).

The lack of more common economic opportunities makes livelihoods in these areas precarious and often dependent on only a few sources of income – in many cases either agriculture or mining related. When these sources come under pressure, the communities have very little to fall back on in the form of government support or economic alternatives as a result of their physically and politically remote locations (Ellis, 1998; Reynolds *et al.*, 2007).

This nexus of mining, migrant labour, a history of forced migration, arid locations, and diversified livelihoods, results in specific challenges that need to be faced when considering the housing options of mineworkers in South Africa’s arid regions. This nexus forms the core of this study. Although the historical link between mining, migrant labour, and forced migration is not new to research in South Africa, these aspects have seldom been contextualised against the realities of arid locations or against the need for and limitations of diversification in such areas.

Against this background, the following primary research questions form the basis of the study:

- How does Kathu's location in an arid region influence the availability of housing options in the town?
- To what extent do the housing options in Kathu consider the legacy of migrant labour under apartheid?

In addition to these primary questions, the following secondary questions also need to be considered:

- What is the appropriate approach<sup>2</sup> to the provision of mineworker housing?
- What is the appropriate role combination<sup>3</sup> for government, the mining company (private sector) and the community?
- What is the influence of the various housing options on the use of settlement resources<sup>4</sup>?
- What is the appropriate balance between migration and settlement?
- How sustainable<sup>5</sup> are the various housing options?
- To what extent should infrastructure development and service delivery<sup>6</sup> take place?
- What housing type and tenure option(s) should be encouraged?
- Should family housing be encouraged?

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<sup>2</sup> *Approach* as used here refers to the manner in which the housing (and/or development) is planned and implemented: *top-down* (essentially driven through central planning), *bottom-up/grassroots* (containing significant community participation, see Botes (1999)) or a multi-level *managerial* approach.

<sup>3</sup> *Role combination* will refer to the various roles that are assigned to the sectors involved in providing housing, i.e. provisioning, subsidisation, facilitation, etc. (Chapter Three will illustrate the various roles as it reflects in the South African example).

<sup>4</sup> *Settlement resources* will be used as a broad term referring to the use of resources from the immediate environment to meet the needs of the community. The aim is to take into account the limitations of these resources, such as a lack of water.

<sup>5</sup> While there is little agreement on the definition of the term *sustainable*, this study will make use of three areas of urban sustainability identified by Camagni, Capello, and Nijkamp (1998). In their opinion *environmental*, *social*, and *economic sustainability* should be combined in such a manner that the positive consequences of the consensus reached outweigh the negative consequences for a sustainable settlement.

<sup>6</sup> While there is reason to include *infrastructure development*, like electricity reticulation, and *social service delivery*, like education and healthcare, when considering arid regions (as will be seen in the definition of *housing* in section 1.3.1 and the literature in Chapter Two), this study will focus on water reticulation as an example of a pressing issue regarding infrastructure development and service delivery.

## **1.2 AIM AND OBJECTIVES**

Against the above background, the aim of the study is to evaluate the current housing initiatives in Kathu keeping in mind the nexus of mining, migrant labour, housing for mineworkers and the implications of its particular location in arid South Africa.

Considering the overall aim, the following objectives are set:

- to investigate the international literature regarding the influences that the location of a mining town in an arid region has on housing options;
- to investigate literature addressing the character of mining and housing provision in pre- and post-apartheid South Africa;
- to investigate the extent of migrancy and settlement in Kathu and to reflect on the demographic/socio-economic influences on the choice either to settle or to continue with migration;
- to evaluate the housing options available in Kathu according to the desires of respondents, affordability, satisfaction of tenants/owners, and the future implications the housing options hold for the tenants/owners, and
- to suggest policy recommendations regarding the provision of housing options for mineworkers in arid regions.

## **1.3 CONTEXTUALISATION**

Housing, mineworkers, and aridness are three concepts used in the title that need to be clarified to guide the study.

### **1.3.1 Housing options**

While several definitions of the word *housing* exist, this study will generally make use of the definition of Dewar (1993), who defines *housing* as a process providing a household access to shelter, services and infrastructure, employment opportunities, tenure, and facilities. The *housing options* discussed in this study will include hostel accommodation, private family homes as seen in the housing scheme, and to a significantly lesser extent, the group of various housing options available to respondents in their individual areas of origin. The general use of the word *housing* in

this study can refer to any of these three options, while reference to a specific option will be done through description.

While shelter, as one factor of housing, is a given in all the different housing options that will be discussed, there is some variance between the different options in respect of the form and delivery of the other factors. The provision of services and infrastructure as well as tenure and facilities will be affected by choices as to whether to bring the whole household to stay at the mine. The same holds true for choices on housing option. While the presence of employment opportunities is the main reason for the need for local housing in the case of mining towns, the continued provision of employment opportunities, given the vagaries of boom-bust cycles in mining, is riddled with uncertainty.

### **1.3.2 Mineworkers**

Dictionary definitions of *mineworkers* generally refer to (manual) labourers who work in mines (WordWeb, 2008). In this study, however, some changes to this definition are required. First, the housing policy and the housing provided by mining companies are broadly formulated also to include other categories of mine employees involved in oversight, administration, and low- to mid-level managerial tasks who might be interested in housing. This broader delineation becomes especially important when the continued mechanisation and increase in skills levels among miners are considered. Second, during apartheid, mineworkers housed in the hostels were almost exclusively black. This is why discussions on mineworkers in hostels related to that era generally refer specifically to black mineworkers. Currently, the hostels in Kathu are still almost totally populated by black residents, while the housing scheme is multiracial.

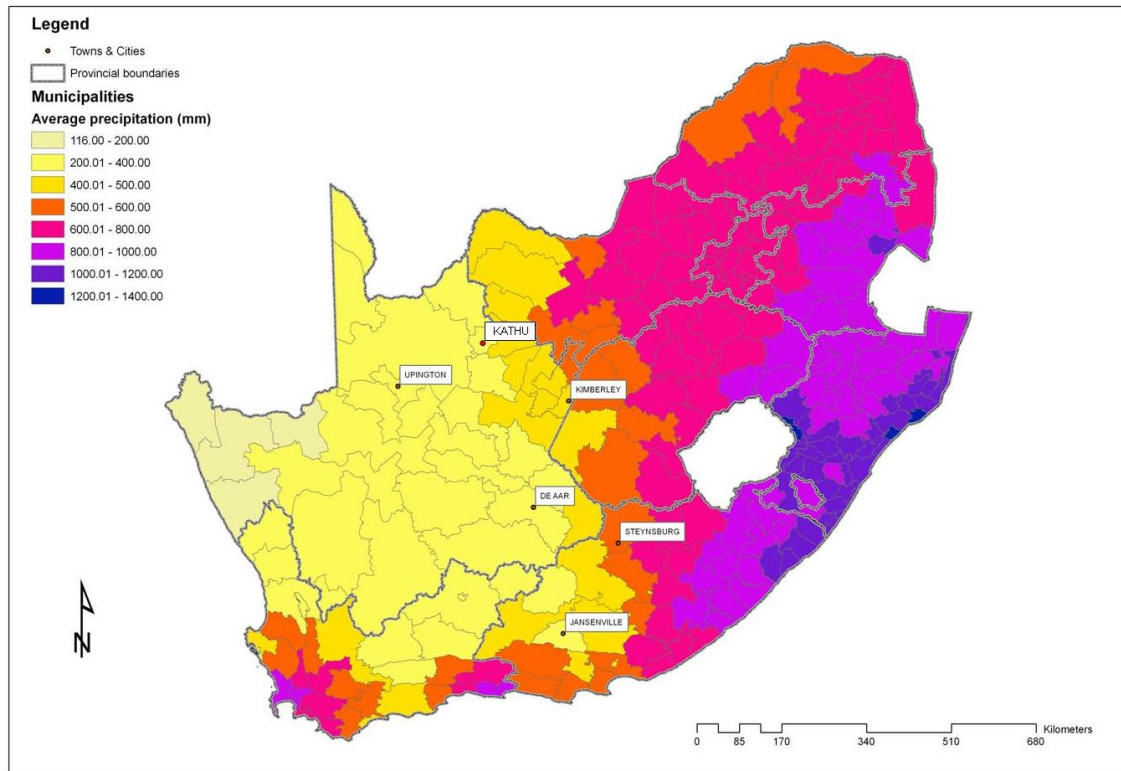
A distinction should also be made between those mineworkers who migrate between a permanent home and the mine, on the one hand, and those who choose to settle near the mine permanently, on the other. While the latter practice generally constitutes a permanent migration from the area of origin to the mine, the former constitutes a circular process of going to the area of work, residing there, and later returning to a home in the (frequently rural) area of origin (Mabin 1990; Houghton, 1993). In South Africa, both of these types of migration have historically been constrained by



legislation (Beinart, 1980; Murray, 1981). Where the concepts of *migrancy*, *migrant workers*, or *labour migration* are used in this study, they will refer to the continued process of migration that sees a differentiation between the area of employment and the area of origin.

### **1.3.3 Arid and semi-arid regions**

Defining what precisely constitutes an *arid region* is difficult, as different areas and different cultures have different perceptions. A common method used is to divide precipitation by the potential evapotranspiration. This provides an aridity index in which the upper boundary for semi-arid regions is 0.5 or in which rainfall accounts for half of the potential evapotranspiration (Clark and Noin, 1998). Another, simpler, method is to consider rainfall patterns as an indication. Along these lines, 500mm of annual rainfall in a winter-rainfall area and 800mm of rainfall in a summer-rainfall area would be considered the upper boundary of semi-arid regions (Clark and Noin, 1998). More severe boundaries are followed by the World Resources Institute. It suggests that semi-arid regions receive between 200mm and 400mm of rainfall (WRI, 1994 in Knerr, 1998). This study will employ the definition of the Arid Areas Programme (2007), which continues to use general rainfall per year as a guideline. In Figure 1.1 below, all regions that fall within one of the two shades of yellow (below 500mm annual rainfall) are considered to be arid regions. Where the phrase *arid region* is used in this study, it will refer to both arid and semi-arid regions.



*Figure 1.1: South Africa's Arid Regions, by rainfall, 2007 (Source: Arid Areas Programme)*

## 1.4 RESEARCH METHODOLOGY

This section will discuss the methodology that was employed in this study.

### 1.4.1 Study area

As with many small towns, the economy of Kathu is largely based on a single industry: mining. The town was founded by the now defunct ISCOR on the location of the current town of Dingleton (then named Sishen). The ore in the area has always been extracted by the open-cast method and, in time, the length of the quarry necessitated a shift in the location of primary activity and, consequently, the founding of the town at the current location of Kathu (Nel and Van Wyk, 2007).

The Sishen Iron Ore Mine has seen significant new developments in the last couple of years as a result of the demand, mainly from China, for iron ore. In addition to increased production through quarrying, the recent Sishen Expansion Project (SEP) has seen significant increases in yield because of the employment of jig technology that increases the iron concentration in previous dumping sites to the point where sale is possible. The increases in production capacity coupled with construction projects

have led both to significant increases in direct employment and to the number of contractors related to the developments. Consequently, demand for housing in Kathu has also risen sharply (Nel and Van Wyk, 2007). Since the fieldwork was conducted during December 2007, the international economic downturn towards the end of 2008 may however have changed the picture.

As Kathu is situated in an arid region, the development of water infrastructure in Kathu has always differed from that in wetter regions. The main sources of water were boreholes and the extraction of underground water from the mines. The provision of water was effected by means of a dual system: one set of pipes provided water for gardens and the other set provided water for household use. More recent developments in Kathu have, however, seen the abandonment of the dual system because of the cost of the initial infrastructure. Problems have also been experienced due to the increase in water demand faced by a growing town, and a local pipeline between the town and the Orange River now supplies water to the town (Botha, 2007).

A combination of the backlog caused by mineworker-housing strategies under apartheid and the recent expansions of the mine by means of the SEP beneficiation programme, has led to a substantial housing shortage in Kathu. Substantial subdivision of existing properties in the historically White area of Kathu has provided additional housing units in the private market. Other recent attempts at housing provision include townhouses – aimed at the upper middle-class – and mineworker housing provided by another local mining company, Assmang. Assmang also mines iron ore in the area. The other private housing solutions, i.e. the township and the housing projects of Assmang, are not investigated in this study.

The local township of Sesheng and the hostels are located in the historically Black areas of Kathu. In Sesheng most of the mineworkers live in informal housing or backyard rental accommodation, though no official figures exist regarding the living conditions of mineworkers in Sesheng (Nel and Van Wyk, 2007). The hostels are owned and managed by Kumba, which levies a rent while all other expenses (water and electricity and rates and taxes) are borne by the mining company. The mining company has recently initiated a process of upgrading the hostels (this upgrading, too,

is not specifically being investigated in this study). As the upgrade will require significant density reduction, those displaced by the upgrading have moved into neighbouring Sesheng or temporary rental accommodation elsewhere.

In an attempt to provide housing to their workers, Kumba have enlisted Matlapeng Housing Company, which is subsidised indirectly by various methods. One of these methods entailed that Kumba donated the land and paid for the provision of infrastructure. The housing provision takes the form of housing units on separate stands that are cheaper because of indirect subsidisation. Laketshona (a non-profit organisation created by Kumba) then helps prospective tenants/owners to access financing to buy the homes or, alternatively, they can rent-to-own or rent the house for a period of two years to prepare their finances for a bond. In addition, the company has also introduced a housing-subsidy scheme for employees, subsidising their mortgage bonds for the first five years (though this scheme was not yet active at the time of the survey). Furthermore, the company has the first right to purchase any house in the development that becomes available on the market.

Effectively, Kathu's housing stock will increase from 1 300 to  $\pm$  2 500 units by 2014 (excluding hostel and township accommodation) (Botha, 2007). At the same time, extensive expansions were planned by both Kumba and Assmang for the nearby town of Postmasburg (80km south of Kathu) at the time of the interviews in 2007.

#### **1.4.2 Research design**

This study employed a quantitative survey design supplemented by a literature review and interviews with representatives of the Gamagara Local Municipality, the mine, and the housing providers. The survey was conducted by means of questionnaires administered by fieldworkers and this was followed by a quantitative analysis of the results.

#### **1.4.3 Sampling**

Two separate surveys were conducted. First, in order to obtain an overview of the success of the current form of housing provision, questionnaires were distributed to those who have already occupied houses in the development in question. Since the houses are all situated in a single neighbourhood, this allowed for easy sampling by

using a map acquired from Matlapeng Housing Company. By February 2008, 477 houses had been completed although not all were occupied at the time of the survey. For a population of 477, Sekaran (1992) suggests a sample of around 210 respondents. Systematic sampling was used as it is the simplest method of probability sampling, and it provides results that are comparable to those of more elaborate methods (Babbie and Mouton, 2002). A random house on each block was selected from the map. From there, every second house on the same block was sampled. This allowed for a complete sample given that not all houses were occupied in the areas of the development that were being completed. In the areas where houses were still being finished, every available house was sampled. Where a house could not be sampled owing to refusal, or where a second attempt to locate the owners had been unsuccessful, the house to the right was sampled.

Second, the needs of the population of workers not participating in the housing programme also needed to be assessed. Officially there were 1400 Kumba employees residing in the hostels at the time of the survey. The actual numbers of the residents were, however, swelled by illegal family members and contractors. If one focuses only on the 1400 legal residents, Sekaran (1992) suggests a sample size of 302. Next to the hostel complex, there are also fifty formal houses for senior staff members. These have been included as part of the 1400 hostel residents. All fifty of these senior employees were included as part of the sample of 302 suggested by Sekaran. Multistage cluster sampling was used in the hostel proper, this being one of the few methods available in the absence of a sample frame. It further ensures heterogeneity of the sample given that workers are free to select their own rooms/levels and thus may cluster according to age, seniority, place of origin, etc. (Babbie and Mouton, 2002). Since there are eighteen blocks of three levels each, it could be calculated that five respondents were required from each level (this took into account the fifty individuals to be sampled from the formal houses). One or two were then taken at each end of the level and two in the middle of the level.

Sampling was purposive for the unstructured interviews. Respondents were selected based on their access to the information required. Interviews were conducted with Lategan Botha (Head: Technical Services) at the Gamagara Local Municipality, as

well as with Andre Nel (responsible for housing solutions at Kumba and trustee of Laketshona) and Gerrit van Wyk (of Matlapeng Housing Company).

#### **1.4.4 Technique for gathering data**

Prior to the survey, semi-structured interviews with the selected individuals at the interviewees' respective offices were conducted by the researcher and the supervisors.

Two questionnaires were employed in the survey, one for those in the housing development scheme and the other for hostel residents. The two questionnaires varied only in order to accommodate the different situations (hostel versus housing), but the content remained similar. The questionnaires used in the survey were largely based on a combination of two questionnaires previously used in research. The first was a needs assessment for mineworker housing used by Marais and Venter (2006a). The second was a needs assessment for social housing which had previously been used by, among others, Marais, Venter, and Hoogendoorn (2006). The final questionnaires cover basic demographic questions, migration behaviour, income and expenditure patterns, housing needs, and the experience of the environments in which respondents reside (the questionnaires are available as Annexure A and Annexure B, respectively).

The questionnaires were administered by fieldworkers recruited by the municipal development officer of the local area and trained specifically for this survey by the researcher. The mandate of the fieldworkers was to approach a household and speak to the member of the household/unit who was employed at the mine. Where this was not possible, fieldworkers were asked to speak to someone who could answer the questions on his/her behalf, preferably a partner/spouse. Very few such questionnaires were, however, completed (generally less than 10% of interviews).

#### **1.4.5 Data analysis**

The results of the survey was captured to SPSS and put through a basic set of descriptive calculations. Cross-tabulations and comparisons of means were also employed to compare the housing needs of the various identified groups and to identify trends.

The Pearson Chi-square statistic was used to identify possible relationships in cross-tabulations of categorical data. As a measure of discrepancy, Chi-square assesses the “goodness of fit” (comparison of expected and observed values) (Rice, 1995). The value of the chi-square test statistic was then submitted to a test of significance.

The test of significance tests the probability that an observed relationship is spurious. The lower the p-value (generally referred to as significance in the study) the lower the probability of getting a value as extreme and the less likely it is that the result will be spurious (Rice, 1995). A p-value of less than 0.01 or less than 0.05 is generally preferred (indicating 99% and 95% confidence respectively), although values as high as 0.1 (90% confidence) will be accepted in this study.

The Gamma test statistic was used to identify trends in cross-tabulations of ordinal data. It employs the comparison of concordant pairs (if one partner ranks higher or lower on both variables than the other partner) and discordant pairs of observations (if one partner ranks higher on one variable and lower on the other variable than the other partner). The value of the Gamma test statistic can lie between 1 and -1, with 1 reflecting the strongest positive relationship (high or low on both variables), -1 the strongest negative relationship (high on one variable and low on the other) and 0 indicating no relationship (Agresti, 1984). Gamma can also be employed to look for trends when comparing ordinal variables with categorical variables with only two categories. In this case, the direction of the relationship indicates which of the two responses of the categorical variables achieved the highest score on the ordinal variable. The Gamma test statistic is also submitted to a test of significance.

The Gamma statistic is sensitive to the number of ties (pairs that are neither concordant nor discordant) in the data, making it less stable for tables with fewer categories of ordinal variables (Agresti, 1984). For these reasons, a variation on the Gamma test, Kendall tau-b, that provides greater stability across a varying number of categories, has been included. The test statistic of Kendall’s tau-b is further also submitted to a test of significance.

Differences in a continuous variable between two groups were assessed by the t-test, which compares the means that the two groups receive on the continuous variable and

tests for statistically significant differences (O'Mahony, 1986). The results of the t-test are, however, contingent on whether the variances of the continuous variable for the two groups are the same. This is tested by Levene's test of equality of variances which tests whether the variances of the two groups differ statistically significantly (Levene, 1960). If the two groups do not have equal variances, an amended t-test statistic is used. Both these measures yield results that are interpreted similarly to the test of significance, though the Levene's test is testing for a result opposite to that of the other tests (equality not difference), and thus the interpretation differs somewhat. A p-value higher than 95% is expected of a Levene's test to indicate that there is no difference in variance.

## **1.5 ETHICAL CONSIDERATIONS**

Housing itself is not an especially ethically sensitive issue, thus the research did not require special consideration beyond the standard best-practice ethical consideration that accompanies the research process. The rights of the respondent were stated on the cover of the questionnaire along with information regarding the survey.

Although addresses and phone numbers were collected for quality assurance purposes, this information is being kept confidential, and a clause to that effect was added to the cover of the questionnaire. Fieldworker training further emphasised the need for confidentiality.

Since this survey was not commissioned by Kumba, Matlapeng, or Lakotshona, their consent was received in writing. In accordance with their wishes, a clause was added to the cover of the questionnaire stating this for the convenience of the respondent. This clause also specifically stated that no housing was promised as reward for the co-operation of the respondents.

The results of the survey were communicated (while maintaining individual respondents' right to anonymity) to Kumba, Matlapeng, and Lakotshona to inform future developments in housing provision.



## **1.6 LAYOUT OF THE STUDY**

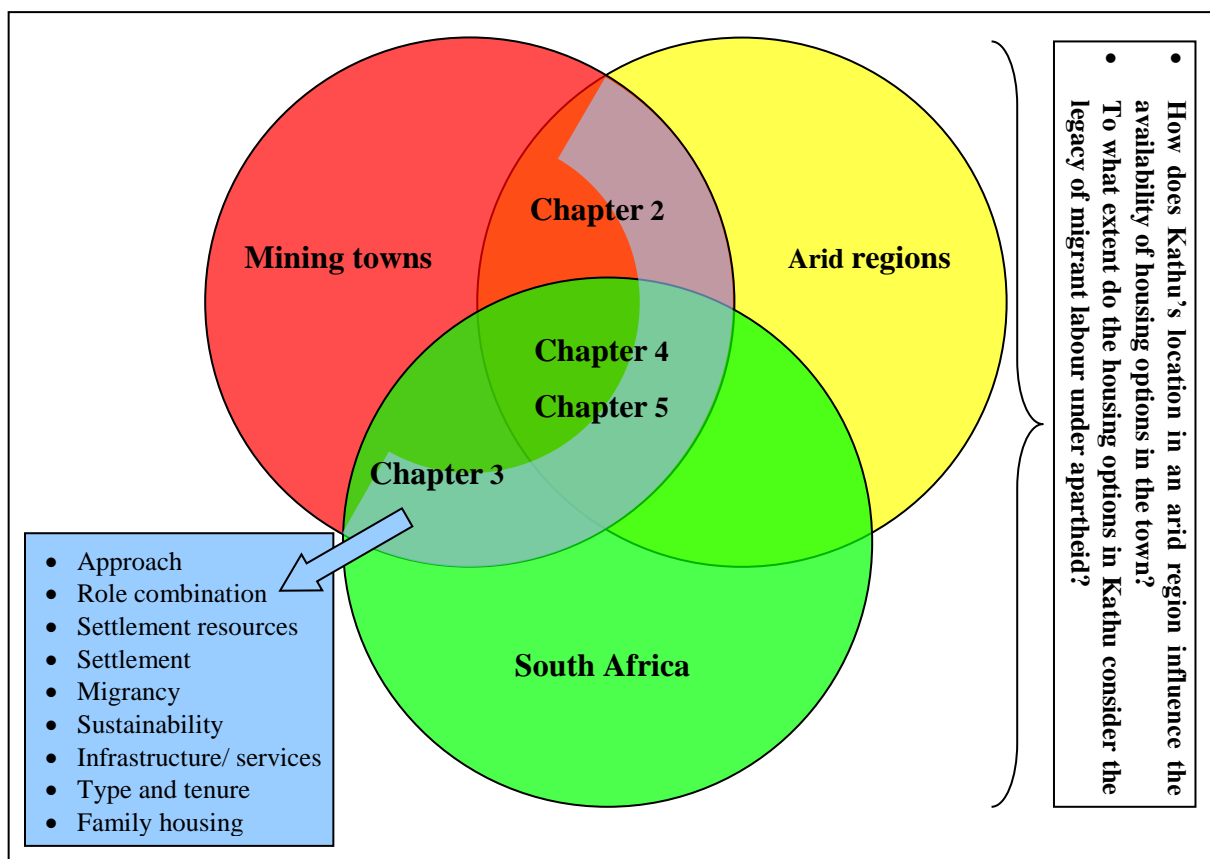
The report on this study will proceed as follows: The first two chapters will summarise the findings of the literature review. Chapter Two (Development in arid regions) deals with the history of thought concerning arid regions and with how, recently, this train of thought has changed to a more positive approach to development in arid regions. The cycles of development and stagnation experienced in typical mining towns in arid regions will also be discussed along with alternatives to settlement. In the course of the discussion, it should become evident that, according to the international literature, permanent settlement in arid regions may not always be the most desirable solution for housing mineworkers.

Chapter Three (Mineworker housing in South Africa) covers South Africa's own history regarding forced labour migration and the restriction of the settlement rights of South Africa's Black population. Against the background of these past statutory restrictions, the more recent attempts by mining companies and the South African government to normalise the South African housing situation will be discussed, with specific reference to the case for mineworker housing. From the discussion, the need to address the lack of adequate housing solutions – given South Africa's past inequities – should become apparent. The contradiction between the current ownership-driven approach and the need for diversified livelihoods, given the realities of arid locations, is also discussed.

Chapter Four (Migrancy trends and preferences in Kathu) considers the issue of continued labour migration. The data reflects that, despite attempts to abolish it, labour migration – at least in part – continues to be a reality fifteen years into democracy because those involved in migrancy choose to do so. It is argued that many workers maintain a home in the rural areas and that the desire to maintain said home, more than any other demographic indicator, appears to lead these individuals to eschew settling near the mine in favour of continued migrancy. The argument is also advanced that the links to these areas of origin are related to the diversified livelihoods suggested in the literature on arid regions.

Chapter Five (An evaluation of housing-provision options in Kathu) considers the variety of profiles seen in Chapter Four by reflecting on the efficacy of the housing solutions on offer to provide for the needs of the respondents. Issues of location, tenure, size, affordability and future livelihoods, etc., are addressed. The chapter shows that, in an arid mining location, many of the respondents are not always able to afford what they want, whether in the immediate financial sense or in terms of the long-term implications of their tenure choice.

Finally, in Chapter Six (Conclusion and recommendations) the different concepts discussed in the preceding chapters are brought together, and conclusions are drawn and recommendations made. For an overview of the relationship between the various chapters as well as the research questions in section 1.1, see Figure 1.2 below.



**Figure 1.2: Framework of the chapters of the study**

## CHAPTER TWO: DEVELOPMENT IN ARID REGIONS

### 2.1 INTRODUCTION

According to Mortimore (2003, 2005), the concept of desertification has dominated the debate on development in arid regions and resulted in the compilation of a large base of scientific and technological information regarding desertification. This has led to policies being decidedly biased towards addressing desertification rather than being appropriate for the broader concerns of addressing economic and social development in arid regions.

Addressing the development issues of arid regions is important as such areas cover 40% of the earth's surface and support 20% of its population. Considering Africa, the share of the human population supported by arid regions rises to 50% (Thomas *et al.*, 2002). Furthermore, arid regions pose specific challenges to their inhabitants because of the features of these regions. These challenges include lagging behind in terms of economic and social development, problems with the application of systems common to wetter regions, and the remoteness of arid regions from markets, other settlements and centres of power (Reynolds *et al.*, 2007).

The aim of this chapter is to contextualise the shift away from the dominant debate of desertification (which, between the 1930s and the 1970s, dominated discussions on development in arid regions) towards a broader, more inclusive approach to the economic and social development of arid regions. This discussion will attempt to illustrate the importance of a more inclusive debate towards the mobilisation of resources. This is done in order to address the challenges of arid regions which relate to their sensitive and variable conditions and which make livelihoods in such regions particularly vulnerable. The chapter will start with a discussion of the historical development of a *desertification paradigm* and also of alternative narratives that challenged these views. The discussion next shifts to the *Drylands Development Paradigm* as one example of said alternative approaches and to the particular features of arid regions that have an influence on the development of the paradigm. This discussion of the theoretical approach to aridness will be followed by an assessment

of the impact of aridness on the livelihoods of the people living there; it will also link up specifically with the mining towns in these regions as they are one of the limited sources of livelihoods available. The cycles through which mining towns go as a result of their single-industry characteristics will be discussed, as will the restrictions to addressing such single-industry characteristics and also the alternatives to the creation of mining towns. This will set the scene for the next chapter that will deal with the social milieu that has characterised mining labour in South Africa.

## **2.2 THE DESERTIFICATION PARADIGM**

During colonial times, the concept that is today known as *desertification* developed in West Africa in response to the Sahara increasingly encroaching on the Sahel, a process which was commonly held to be the result of the misuse of land by local land users (Swift, 1996; Mortimore, 2003, 2005). These ideas on human causation were developed in research conducted by Stebbing in the 1930s. Many of Stebbing's ideas on the large-scale degradation and migration of the Sahara, falling from favour by the late 1930s, were refuted by the Anglo-French Forestry Commission (based on problematic methodology on Stebbing's part). The commission, however, still held that the local degradation that they did detect had been caused by human mismanagement. The debate on human causality continued through much of the 1940s and 1950s, which in 1949 saw Aubreville coin the term *desertification*. According to Aubreville, *desertification* refers to large-scale degradation as a consequence of destructive land-management practices. After a period of relatively high rainfall in the 1950s and 1960s, which saw the human deterministic arguments losing ground, the debate was again resumed during times of widespread drought in the 1970s (Swift, 1996).

The view of human causality was consequently strengthened by scientific inquiries and codification in subsequent United Nations (UN) conventions on desertification. In reality, the scientific knowledge was often collected by scientists who did not capture the complex nature of desertification and who disaggregated the multiple subsets of causality and consequence, thus focussing only on the single area of study in which they were conversant. Many calls (often by the scientists who conducted the

research) to take into account the limitations of the studies in question and the paucity of data on the extent of desertification were further generally ignored by those who set the policy agendas (Swift, 1996; Mortimore, 2003, 2005; Herrmann and Hutchinson, 2005).

These studies – suggesting large-scale degradation and human causality – were also marked by ineffective communication between land users and scientists during erratic visits to the study-areas. Consequently, a large knowledge gap developed between those on the inside (those residing in the area) and those on the outside (the researchers). The result was a top-down enforcement of a Western scientific approach that ignored the people’s relationship with the land and moreover advocated the forced application of systems foreign to arid regions and the people who inhabited them (Hermann and Hutchinson, 2005). A similar scientific approach, were it to be repeated today, would be met with severe criticism because of its lack of community involvement and its ivory-tower conclusions.

Criticism of the Desertification Paradigm set the stage for a counter-narrative that began in the late 1980s with the work of Mortimore (1989) and Helldén (1991). Herrmann and Hutchinson (2005), in their article “The changing contexts of the desertification debate”, focus on four areas of change that have since led to a different approach to the desertification debate. These areas include an understanding of climate variability, the vegetation’s response to disruption, socio-economic responses to disruption, and the political dimension. These areas will be discussed in more detail in paragraphs to follow.

Firstly, changes in the understanding of climate variability were brought about by improvements in the tracking of global phenomena through the development of satellite remote sensing by satellite. *Remote sensing* refers to the use of satellite images to track changes in the spread of vegetation over time. The availability of remote sensing led to a broader perception and the inclusion of external forces (like weather oscillations) to the views of internal feedback mechanisms (like surface albedo caused by loss of plant cover as a result of overgrazing) that was dominant in the 1970s (Hermann and Hutchinson, 2005). Thus, the addition of remote sensing

changed the scale at which the problem was approached from local (and micro-causation) to regional and global (and macro-causation).

Secondly, changes in the understanding of the vegetation's responses to disruption have shown that rangelands in arid regions may not, contrary to what was widely believed in the 1970s, have a single equilibrium point. Instead, multiple equilibriums may apply, especially in the case of arid regions where the amount of rain that falls differs from year to year (Hermann and Hutchinson, 2005). This implies that the management of arid regions may require heightened sensitivity to these variable conditions.

Next, changes in understanding the socio-economic responses to disruption have shown that local land users are much more dynamic in their adaptation to changes in the environment and the ecology than they were previously credited with. A shift has also taken place towards a livelihoods approach in understanding the adaptation strategies of the residents of arid regions (Hermann and Hutchinson, 2005). The livelihoods approach points to the diversification of livelihoods beyond agricultural means. From this arises the notion that the residents of arid regions (given the right institutional support) may be best suited to address the problems of a challenging and complex environment. Local knowledge on challenges that have been overcome in arid regions may also inform people who live in non-arid regions and who are faced with a changing global climate.

Finally, there has been a shift in the political dimensions of the desertification debate. According to Hermann and Hutchinson (2005), it is now becoming ever clearer that many of the currently prevalent ideas on desertification, rooted in the Global Environmental Management (GEM) discourse, have been kept in place because of the political viability of these ideas as opposed to a more populist<sup>7</sup> approach. Populist discourses were both hard to justify and to fund as part of multilateral arrangements. Top-down approaches inspired by the GEM were more successful in attracting international attention (and funds), driven as they were by agencies such as the UN.

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<sup>7</sup> The use of the word 'populist' here is an extension of the use of the word in the source text, which was identified as having been influenced by Marxist and neo-Marxist ideas and the Dependency School of development

Populist approaches, in contrast, were necessarily *ad hoc* and flexible by nature as the principles could not always be generalised, which does not inspire trust among donors.

Within the desertification approach itself, it later became clear that both human and environmental factors influenced the process of degradation that ultimately becomes desertification. The 1992 UN Convention to Combat Desertification also began incorporating a broader approach to desertification by acknowledging that, for the land user, desertification is not only a physical process but a series of social consequences linked with their ability to provide for their basic needs (Thomas, Twyman and Harris, 2002).

The measure of successful management in arid systems, suggested by focussing on dry-land development instead of desertification, will no longer focus solely on the prevention of desertification. Instead, Mortimore (2005) suggests that success should be measured by means of achievement in four areas: effectiveness in the management of the ecosystem, an increase in land investment, an increase in productivity, and an increase in personal income or wealth.

This section dealt with the shift from a science of desertification towards a science of poverty alleviation and dry-land development. This shift is illustrated in the example of the shift from the *Dahlem Desertification Paradigm* (which, although including both human and environmental causality, still dwelled on desertification) to the *Dryland Development Paradigm* (which conceptualises the issues of development in arid systems). These paradigms are then the focus of the next section.

### **2.3 DRYLANDS DEVELOPMENT PARADIGM**

The 88<sup>th</sup> Dahlem Conference of 2001 set itself the goal of creating an interdisciplinary approach to the understanding of desertification. The conference contributors argued for the integration of human *and* environmental effects in understanding the causes of desertification (Stafford Smith and Reynolds, 2002). The output of the conference, known as the Dahlem Desertification Paradigm, was based on nine assertions. These

nine assertions are summarised in Table 2.1 below but will not be discussed further as they are better conceptualised, for the aims of this study, in the updated version of the paradigm published in 2007, which will next be discussed.

**Table 2.1: A summary of the nine assertions of the Dahlem Desertification Paradigm and some of their implications (Stafford Smith and Reynolds, 2002:409)**

Assertion One: Desertification always involves human and environmental drivers	Always expect to include both socioeconomic and biophysical variables in any monitoring or intervention scheme
Assertion Two: “Slow” variables are critical determinants of system dynamics	Identify and manage for the small set of “slow” variables that drive the “fast” ecological goods and services that matter at any given scale
Assertion Three: Thresholds are crucial and may change over time	Identify biophysical and socioeconomic thresholds, beyond which there is a significant increase in the costs of recovery, and quantify these costs; seek ways to manage the thresholds to increase resilience
Assertion Four: The costs of intervention rise nonlinearly with increasing degradation	Intervene early in local degradation where possible; invest to reduce the transaction costs of intervention at increasing scales
Assertion Five: Desertification is a regionally emergent property of local degradation	Take care to define precisely the spatial and temporal extent and process represented in any given measure of local degradation. Use the term desertification only as a measure of generalized impact at higher scales
Assertion Six: Coupled human-environment systems change over time	Understand and manage the circumstances in which the human and environmental subsystems become “decoupled”.
Assertion Seven: The development of appropriate local environmental knowledge must be accelerated	Create a better partnership between local environmental knowledge development and conventional scientific research, involving good experimental design, effective adaptive feedback, and monitoring
Assertion Eight: Systems are hierarchically nested	Recognize and manage the fact that changes at one level affect others, create flexible but linked institutions across the hierarchical levels, and ensure processes are managed through scale-matched institutions
Assertion Nine: A limited suite of processes and variables at any scale makes the problem tractable	Analyse the types of syndromes at different scales, and seek the investment levers that best control their effects - awareness and regulation where the drivers are natural, changed policy and institutions where the drivers are social

The provisional nature of the Dahlem Desertification Paradigm, and the shortcomings of using the term *desertification* for the broader application of the paradigm in dry-land development, were already identified by the authors at the time of publication (Stafford Smith and Reynolds, 2002). More recently, in an attempt to move towards more general dryland development issues, the original nine assertions of the Dahlem Desertification Paradigm were reformulated into five principles, adding to the desertification literature ideas from rangeland ecology, vulnerability studies, poverty alleviation, and community-driven development. The new paradigm was dubbed the



Drylands Development Paradigm (DDP<sup>8</sup>) (Reynolds *et al*, 2007). These five principles are discussed in the paragraphs to follow:

The first principle reads that “Human-environmental systems are coupled, dynamic and co-adapting, so that their function and interrelationships change over time” (Reynolds *et al*, 2007:849). This principle embodies the recognition that humans and their environment have a two-way influence on each other as was already hinted at in the Dahlem Paradigm (Assertion One). It also incorporates the understanding that these systems do not have static equilibrium points but adapt mutually according to pressures from either the environment (such as droughts) or social systems (such as markets, interest rates, or poverty) (Assertion Six of the Dahlem Paradigm). This interrelationship is important as the residents of these regions have little influence on their political environment and are often far from those who set the policy agenda influencing their social environment (Stafford Smith and Reynolds, 2002; Reynolds *et al.*, 2007).

Principle Two states that: “a limited suite of ‘slow’ variables are critical determinants of human environment system dynamics” (Reynolds *et al.*, 2007:849). From mistakes made in the Sahel, by not acknowledging the variability of the region, it was learned that any human-environmental system consists of both “fast” and “slow” variables. Fast variables are normally the first to be picked up as indicating a change in the system (like decrease in animal numbers or a decrease in farm yields). However, they are quickly turned around when the system recovers and can vary from year to year. Slow variables, in contrast (like decreases in shrub diversity or a decrease in household assets), take time to degrade and much longer to recover, and they are thus more critical to understanding the system (Assertion Two of the Dahlem Paradigm). Identifying such key slow variables gives a more valid interpretation of the system, one that is less subjected to variability and leads to easier, more effective interventions, as the system and its long-term implications are better understood (Assertion Nine of the Dahlem Paradigm) (Stafford Smith and Reynolds, 2002; Reynolds *et al*, 2007).

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<sup>8</sup> All future references to the DDP refer to the Drylands Development Paradigm and not the Dahlem Desertification Paradigm which was also shortened to DDP.

“Thresholds in key ‘slow’ variables define different states of human-environment systems, often with different controlling processes; thresholds may change over time” (Reynolds *et al.*, 2007:849). The concept of thresholds refers to critical points along the continuum, which, once crossed, lead to a very different environment (a household may lose money up to the point where they no longer have the capital to ensure their livelihood, at which point they can no longer ensure their own survival) and apply to the ecological, social, and economic environments. Addressing these issues before the threshold is crossed, and at the local level, is usually both more efficient and cost effective in that the cost of recovery often also contains such thresholds (Assertions Three and Assertion Four of the Dahlem Paradigm) (Stafford Smith and Reynolds, 2002; Reynolds *et al.*, 2007).

“Coupled human-environment systems are hierarchal, nested, and networked across multiple scales” (Reynolds *et al.*, 2007:849). The actions of people are influenced by their habits, regional markets, culture, etc and these levels also influence each other (for example, habits may be influenced by the demands of the markets or the culture), indicating that the systems are playing out on multiple levels. Selecting which of these levels to address is important as a cross-scale approach is important but very difficult to achieve because of remoteness (see later discussion of remoteness as a feature of drylands). Hence special attention is required, with appropriate institutions at each level (Assertion Eight and Assertion Five of the Dahlem paradigm are now of only minor importance) (Stafford Smith and Reynolds, 2002; Reynolds *et al.*, 2007).

Finally, Principle Five states: “The maintenance of a body of up-to-date local environmental knowledge is key to functional co-adaptation of human-environment systems” (Reynolds *et al.*, 2007:849). Local environmental knowledge can play a key role in creating policies in individual regions because the locals have spent years or generations developing actions appropriate to the environment. The knowledge thus acquired, however, adapts slowly to change and cannot be reliably transferred to other regions. The Western scientific method on the other hand aims at more generalisable facts that can only with difficulty be tailored to individual and variable environments. Developing a system that combines the best of both these methods is then important at the local level for policy and management (Assertion Seven of the Dahlem Paradigm) (Stafford Smith and Reynolds, 2002; Reynolds *et al.*, 2007).

These five principles allow for the understanding of social systems in arid regions by moving away from the exclusive focus on the natural-sciences approach. As part of the paradigm, five biophysical and socio-economic features of drylands were also identified as components of “the drylands syndrome” (Reynolds *et al.*, 2007). These features also provide some insight into the functioning of social systems in arid regions and constitute the discussion of the next section.

## **2.4 FEATURES OF ARID REGIONS**

The five features were identified by Reynolds *et al.* (2007) as characterising a ‘drylands syndrome’, which affects the residents of these regions and impacts upon their development. These features include: variability, low productivity, sparse population, distant voice, and remoteness.

By definition, arid regions receive very little rainfall, and the rain that does fall is highly seasonal and highly unpredictable (both within the season as well as across multi-year periods) and is accordingly termed ‘variable’ (Mortimore, 2005; Tewari and Arya, 2005; Le Blanc and Perez, 2008). Temperatures also vary greatly between seasons and even during the day-night cycle. These realities thus obviously imply that the options in respect of the diversification of economies do not run beyond basic extensive agriculture.

Related to the low rainfall are the very low levels of organic material present in the soil of drylands. The combination of the two factors leads to low productivity, making drylands unsuitable for tillage except in the rare cases where local water supply and investment allow for irrigation or where native crops (like aloe or rooibos) are being cultivated. The result is a dependence on pastoral activity as an agricultural strategy that can lead to overgrazing, especially where unpredictable rainfall makes rangelands sensitive to exploitation (Mortimore, 2005; Reynolds *et al.*, 2007).

Low soil productivity and lack of water, in turn, lead to very sparsely populated areas (Le Blanc and Perez, 2008). The difficulty and cost related to the provision of services in these regions lead to ineffective and faulty service plans, even though

these might previously have been successful in other regions. The distances between residents and settlements in these regions make it difficult to provide services, and this leads to development backlogs in comparison with other, less arid, regions (Thomas *et al.*, 2002; Mortimore 2005; Reynolds *et al.*, 2007). The residents thus remain no more than a 'distant voice' to the policymakers because they are located far from both the main centre of power and the more local centres, which again affects implementation (Reynolds *et al.*, 2007).

Arid regions are lastly linked to remoteness. Definitions of *remote* vary according to region and are open to interpretation. For example, one definition used in Scotland states that those settlements that are located 90 to 120 or more minutes of travel from a substantial settlement (3000 to 30 000 inhabitants) are considered to be remote (Scottish Executive Policy Unit, 2000:3). This definition is, however, not easily transferable to regions that are settled on a different scale and moreover limits interpretation to a single measure. In Australia, for instance, any location in which the majority of the residents have limited access to services, programmes, facilities, goods, resources, opportunities, and the process of decision making in factors that influence their lives is viewed as a remote location (Cheers, 1998 cited in Turbett, 2004:985).

This more interpretive approach is also followed by Huskey (2006), who defines *remote areas* by looking at the variety of research associated with the theme. Ideas include specific regions requiring attention in more developed countries, "areas on the edge of development", areas in which one finds a specific need to address the problems of indigenous people, extreme climates, and isolated locations.

Another approach, conceptualised by Leven (1986, cited in Huskey, 2006), also gives insight into the social nature and consequences of remoteness. Leven focussed on what he termed *economic remoteness*: the remote location of a site as the cause of limited economic development. Economic remoteness is to a large extent caused by what Leven termed *geographic remoteness* (or geographic isolation). However, two other factors play a role: *cultural remoteness* or the wish of people in the area to remain there for whatever positive reason and *institutional remoteness* or the impact of the policies implemented by government, which might be inappropriate for the

region. The last factor can also be linked with the concept of the ‘distant voice’ already mentioned.

Despite differences in defining remote regions, definitions often share certain similarities: These remote communities often have difficulties in respect of large distances and transport, extreme climates, lagging development in the region compared to more connected/more populous regions in the same country, and general issues regarding the rights and development of indigenous people (Huskey, 2006).

The features of drylands, discussed above, impact upon the social structure and livelihoods of people in drylands by influencing the decisions of these people concerning which forms of livelihood to pursue. The next section deals with livelihoods and their diversification.

## **2.5 LIVELIHOODS IN ARID REGIONS**

The livelihoods of residents in arid regions can be subjected to significant risk if the links between human and environmental factors are disrupted. Arid regions are fragile and variable, which means that thresholds can easily be crossed leaving residents with very few options in terms of survival (Reynolds *et al.*, 2007). In the following sections, livelihoods as a theoretical concept will be discussed before turning to the diversification of livelihoods as a means of coping with environmental shocks.

### **2.5.1 Livelihoods**

Chambers and Conway (1992:7-8) provided the seminal definition of livelihoods:

“A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable when people can cope with and recover from stress and shocks, maintain or enhance their capabilities and assets, and provide sustainable livelihood opportunities for the next generation...”

Among the important parts of the framework for approaching livelihoods are the five types of assets that people draw on for their livelihood. *Natural capital* refers to natural resource stocks like land, water, wildlife, and such. *Social capital* includes social resources like networks, relationships, institutions, and such. *Human capital* includes skills, knowledge, the ability to work etc. *Physical capital* like transport, shelter and water reticulation make up the infrastructure available. Finally, *financial capital* refers to access to savings, credit, and remittances (Carney, 1998).

The five types of capital are affected by the environment in which they occur. Two aspects of the environment need to be understood: firstly, the vulnerability context and, secondly, the structures and processes (Carney, 1998).

The *vulnerability context* refers to certain trends (like politics, economics, the condition of the resource stock), shocks (like the climate or conflict), and the cultural context that may influence the people (Carney, 1998). In arid environments, it can then be seen that the features of drylands suggest that the politically remote location, the lack of mainstream economic opportunities, the precarious resource base, the variable climate, and the cultures often developed in less arid regions influence the vulnerability of the livelihoods practiced by residents of drylands (Reynolds *et al.*, 2007).

*Structures* refer to organisations, the different layers of government and the private sector, while *processes* refer to certain policies, laws, and incentives that influence livelihoods. These structures influence who gains access to what resources and what the value of these resources is. It also has an influence on the strategies and resources that are open and attractive as livelihood options (Carney, 1998).

The livelihood strategy resulting from these processes can then be based on natural resources (like farming, collecting wood, or working on another farm for compensation), non-natural resources (like small-business activities, employment not associated with natural resources, and pensions), or based on migration (Carney, 1998). These different types reflect various levels of dependence on the immediate social environment.

Whatever form of livelihood is selected, it will lead to a set of outcomes, be they positive or negative. These outcomes will then, in turn, affect the capital resources at their disposal. In positive situations, the outcomes will aid them in expanding and developing the other forms of capital. In negative situations, the outcomes will result in the further degradation of the resource base to improve the quality of life (Carney, 1998). In arid regions, the results can however be mixed. Knerr (1992), for instance, found that, although the investment of remittances may improve the ability of farmers to use their land effectively, remittances may also allow residents to stay in an area long after the immediate natural environment is no longer able to sustain them. Increased investment of remittances in agriculture may also lead to overgrazing, the unsustainable use of water reserves, and the increased use of marginal areas that cannot support the population (Knerr, 1992).

One way of ensuring a continued livelihood is by engaging in multiple strategies. This is commonly known as *livelihood diversification*.

### **2.5.2 Livelihood diversification**

Livelihood diversification is the process by which a household expands its forms of income, social networks, land rights, access to social institutions, and social services to different sources with low covariate risk (risk of simultaneous failure) in order to cope more effectively with pressures from their environment (both biophysical and socioeconomic) (Ellis, 1998). Among the most prominent forms of livelihoods – and a popular choice for diversification – are land-based strategies.

Shackleton, Shackleton and Cousins (2001) emphasised the importance of land-based strategies (like pastoralism and natural-resource harvesting) in diversifying the livelihoods of households. They also emphasised their use as safety nets in cases of loss of formal income (see also Berzborn (2007) and Anseeuw and Laurent (2007)). In arid regions, pastoralism predominates over other forms of mixed farming. This can, for the most part, be attributed to the low productivity of arid soils (Tewari and Arya, 2005). However, arid regions are also very susceptible to overgrazing as a result of variable rainfall and drought (Reynolds *et al*, 2007). Communal areas, on which many South African farmers are dependent, are commonly overgrazed (Hoffman and Todd, 2000). Thus, in order for households in arid regions to survive,

it is important to diversify into areas that are less dependent on the fragile and variable environment.

Problems are further experienced in respect of service delivery in arid regions. Turbett (2004), in an overview of social work issues in remote rural locations, emphasised the effects of isolation. Social workers (and other service practitioners) are not only isolated from the very local authorities who supervise and direct them, but also from their peers and secondary support services, thereby making work in these regions more difficult. Wollett (1990, cited in Asthana and Halliday, 2004) discussed the cost implications of providing services in rural areas. Problems include: difficulties with economies of scale (more cost-efficient large centres cannot support the geographically diverse community, while smaller, dispersed centres are expensive), higher travel costs, unproductive time (spent in travelling), issues related to staffing, and institutional costs relating to training and development

This affects households in arid regions because, as was mentioned earlier, the use of public institutions and services is part of the livelihood of many households (Ellis, 1998; Carter and May, 1999). So, these households are faced with a 'double burden': not only are their livelihoods threatened by the sensitive and variable environments in which they live, but their other forms of ensuring a livelihood (access to public support) are also threatened by their remote, sparsely populated, and politically isolated locations.

As mentioned earlier, part of the livelihoods of the residents of arid regions are dependent on the formal employment supplied by the mining sector, which, as will be seen in the next section, is faced with insecurities of its own. The link between arid regions and mining will be further explored in the next section.

## **2.6 MINING IN ARID REGIONS**

International literature from Canada, Australia, Norway, Sweden, and Finland (see the essays collected in Neil, Tykkyläinen and Bradbury, 1992) suggests that dependence on mineral resources in mining towns leads to the development of single-resource,



resource-dependent, or single-industry towns. These small towns are often established for the express purpose of extracting the local mineral reserves (Keyes, 1992), and they lack the population to develop a more diverse economy and thus to specialise in the extraction of resources. If diversification does occur, it is often 'vertical' with the creation of new industries or businesses that are closely linked to the extraction process. Owing to complete dependence on the existence of mineral deposits, such towns are often located in harsh climates like arid regions where alternatives from the surrounding areas are scarce (Keyes, 1992).

### **2.6.1 The boom-bust cycle**

Dependence on resource industries leads to a cycle of boom-bust development. During the early stages and at the height of resource extraction, the town expands rapidly with strong growth in employment, population, and economic development accompanied by expansions, the establishment of business, and high property values (see Archer and Bradbury (1992) for an example). When extraction of the resource becomes uneconomical, the mine downsizes or closes with a resultant significant fall in employment and economic activity in the town. The subsidising of infrastructure by the mining company, started at the beginning of the development (although today not as common), would also cease, resulting in unsustainable infrastructure.

Mine closure can be the result of various causes, and very rarely is closure due to outright absence of more ore. The decision to close is normally the result of a combination of factors including a lowering in the grade of the ore being excavated, falling commodity prices, hikes in mineworkers' pay, or changing costs of production/transport in the particular location or in other, competing mining areas (Laurence, 2006).

The closure of a mine poses many risks to the immediate biophysical and socio-economic environment. Laurence (2001) identified six broad areas of impact through the development of the Closure Risk Factor. *Environmental risks* cover possible risks inherent for water, air, land, and waste management. *Safety and health risks* can include problems with openings, subsidence, infrastructure, security, preparations for emergencies, and possible sources of radiation. *Community and social risks* include many of the problems already discussed, like retrenchment of employees,

management of the closure, landowners and other general community problems (like unemployment), and local governance in the absence of the mining company. *Final land use risks, legal, financial, and technical risks* all deal with the rehabilitation of the area, the ending of company business in the area, or assessing potential and preparing for possible future recommencement of extraction. Many of these risks then need to be managed in an arid area in which, as was noted earlier, people have difficulty with implementing and monitoring appropriate interventions because of its geographically and politically remote location.

### **2.6.2 Economic diversification as response**

Opportunities for the economic diversification of mining towns are often limited (Keyes 1992) and, as O’Faircheallaigh (1992) indicates, are dependent on the presence or absence of certain factors. The regions in which mineral resources are found often lack other resources for primary activities. The remoteness of markets and other sources of material and transport, as well as the high cost and highly specialised skills (which often cannot be transferred) of mineworkers, rule out manufacturing, while many of these towns lack tourist attractions or find that tourism cannot sustain the town. It thus becomes clear that mining areas generally share several of the obstacles to the diversification of arid regions that have already been discussed, though in the case of mining towns in arid regions, such obstacles are intensified by both their arid location and the remote locations that characterise many mining settlements.

Even if the initial challenges discussed above can be surmounted, various further difficulties need to be addressed. The timing of new economic opportunities will have to be precise to employ the retrenched workers at the right time, and the numbers of the workers that will need to be employed by the new industries are likely to be significant, as mining operations in remote regions tend to be large (O’Faircheallaigh, 1992). Consequently, if the town is saved through diversification, it is likely to consist of a smaller group of residents, many of whom had never previously been directly employed by the mine.

An important factor towards the promotion of economic diversification is that it be an “open” town (O’Faircheallaigh, 1992). This includes a free market in property,

freeing the space for potential business development, and leadership headed by local government and business which is able to provide guidance and connections in employing government to provide assistance. Furthermore, a strong and involved local government can provide a sense of cohesion, vitality, and resilience in the community.

In summary then, diversification is difficult to achieve in small mining towns in the best of cases and near impossible in regions that lack other easily accessible livelihood alternatives. Settlement is then viewed as not advisable/sustainable in the long run.

### **2.6.3 Long-distance commuting as alternative to the creation of mining towns**

The costs involved in the development of a mining town and the costs subsequent to mine closure have led to a consideration of alternatives to the establishment of new towns in areas where towns are not already present near mineral deposits. The most commonly used alternative is long-distance commuting or fly-in/fly-out (FIFO). The system was first used on offshore oilrigs to transport workers from their homes onshore to the rigs on a set schedule (Storey and Shrimpton, 1988 cited in Houghton, 1993). The schedules often consist of equal blocks of time at home and away, ranging from seven-day to 28-day blocks. Alternatively, workers returning after a two- to three-week shift are placed on a “last-in, last-out” list for reassignment (Clark, McCann, Morrice, and Taylor, 1985).

The greatest advantage provided by FIFO is that the initial layout in respect of large-settlement establishment becomes unnecessary, and unsustainable settlements are avoided. Workers migrate without their families and thus need only the basic amenities, while other services (like schools, libraries, non-essential businesses, etc.) are unnecessary. This translates into a significant reduction in initial expenditure on the construction of towns, housing, and infrastructure and the spreading of costs across the life of the project. In the case of mines with a shorter life, it translates into savings and makes possible the extraction of small, remote deposits that cannot support the development of a town by their extraction. Another advantage to the company is the flexibility provided by means of the system. Because no town is constructed, the mining company is allowed greater flexibility in respect of opening,

suspending, and closing operations at a particular site in accordance with the market. Additional benefits can also be derived in the areas of tax domain, depending on legislation in applicable regions and whether labour relations are eased as FIFO attracts a specific type of worker (less likely to engage in industrial action) to a workforce that is then further fragmented and difficult to mobilise (Houghton, 1993).

For the worker, the choice to take these jobs is often motivated by the good salaries paid because of the long absences. Those involved also report that time spent at home with family during off-periods are of higher quality. In terms of livelihood, it is also reported that families value the fact that the entire family is not uprooted when one member accepts a new job because economic and social investments in other employment, education, housing, and another community are not disrupted. Furthermore, the family (and the employee when not at the mine) has the benefit of an urban location with the attendant lifestyle and livelihood benefits (Jackson, 1987). The extended periods spent away from home, however, have significant effects on home life. The problems experienced include an unstable division of household labour and parenting problems resulting from the absent/present-again-cycles and problems with communication and the expression of feelings between the couple due to the cycle (Clark *et al.*, 1985). In short: an unstable and often unpredictable domestic life results.

Further problems with FIFO systems are experienced at the community/regional level. Storey (2001) focussed on the effect of “fly-over” as a case in point in the west of Australia. To make recruiting operations easier, the companies making use of a FIFO system recruit workers from the larger centres. The result is that local workers have to move to the larger settlements in order to be employed in a mine that is relatively close to their previous place of residence. In addition to this, the supplies for the camps associated with the FIFO operations are flown in from the larger centres, and the mines do not contribute to the infrastructure of the local communities. This means that local communities benefit very little – or not at all – from the mines in their area, which again has serious implications for regional development (Storey, 2001). Attempts have, however, been made by the state to enforce preferential employment and procurement among local residents to remedy the situation (Houghton, 1993).

## 2.7 CONCLUSION

This chapter focussed on the character of development in arid regions. The study of desertification and the specific needs of arid regions began in colonial times and in the arid regions of West Africa. The paradigm shifted from desertification towards a more critical understanding of these environments and the adoption of a more people-centred approach. It was emphasised that arid regions have certain features, constituting “the drylands syndrome”, which has an influence on the human systems that function within these regions. The livelihoods of the residents of these regions are influenced by such features and thus often lead to diversification into mining employment. The mining towns that then provide settlement to the mineworkers themselves have to contend with their nature as single-resource industries characteristics as well as with being located in an arid area. Limited possibilities for the diversification of the economies of arid regions, the principles of low productivity, variability, sparse populations, a distant voice, and remoteness – coupled with the need to have a more positive development-orientated approach towards development of arid regions – could all lead to conflicting implications for mining towns and the type of housing that is provided in such settings. There are international examples where a deliberate attempt has been made not to establish settlements. In South Africa, migrant labour, which originated from a political-ideological background has, to a large extent, also prevented extensive settlement in mining areas – an aspect to which Chapter Three turns.

Table 2.2 below compares the DDP and international perspectives on resource-driven communities discussed in this chapter by looking at the differing views (or the implications of their views) of the two paradigms by comparing key concepts regarding communities and housing.

**Table 2.2: Summary of key views of the two broad paradigms of the chapter**

<b>Central concepts</b>	<b>DDP</b>	<b>International perspectives on resource-driven communities</b>
<b>Approach</b>	Grass roots: residents pro-active in finding their own solutions. Do not import solutions foreign to arid regions	Managerial: individual actors/groups/organisations address problems experienced at the appropriate level
<b>Government/private sector/community</b>	Community-driven provision with private-sector support and limited government involvement	Provision driven by the private sector. Community manages local effects and government attempts to regulate
<b>Resource management</b>	Limited and needs to be managed to diversify livelihoods of locals and secure sustainability	Limit the need for resources in the settlement – mostly flown in. Profit from local deposits dispersed nationally
<b>Settlement</b>	Some form of settlement inevitable as many make these regions their home; however, settlements constrained and characterised by the drylands syndrome associated with arid locations	Limited settlement needed to extract resources. Settlements existing before resource extraction should continue to be considered because of the potential effect of resource extraction
<b>Sustainability</b>	Settlement size limited by the ability of the natural and resource environment to sustain the settlements and the livelihoods of the residents	Settlements temporary and likely to be abandoned at the end of extraction. Plan for closure. Communities existing before extraction should diversify
<b>Migrancy</b>	A natural solution: to diversify livelihoods and address the limited resources of the environment	A manageable process that prevents unsustainable settlements near resources. Side-effects to be managed
<b>Infrastructure development/service delivery</b>	Severely constrained by environment. Locally applicable solutions needed	Anything beyond the basic necessities to be avoided
<b>Housing solutions/tenure</b>	Any solution that takes physical and social realities into account	Temporary and cheap solution required
<b>Family cohabitation</b>	Migration and its consequences acknowledged to be a means of livelihood diversification	Separation from family. Settlement at the mine unsustainable and expensive.

Despite the theoretical frameworks discussed in this chapter, very little research has been done on the relationship and links between arid regions, mining towns located in these regions, and the type of housing-delivery employed. Furthermore, owing to historic political realities, South Africa has faced specific issues regarding mineworker housing. This last issue will form the basis of the discussion in the next chapter.

## **CHAPTER THREE: MINEWORKER HOUSING IN SOUTH AFRICA**

### **3.1 INTRODUCTION**

Chapter Two outlined the development of paradigms concerning arid areas indicating a change from a desertification paradigm to a dryland development paradigm. Within these paradigm shifts, the dilemma of mineworker settlements was outlined, while the inability of these areas to diversify their economies beyond mining was also and also touching on vulnerability of the boom-bust cycle amid such shifts.

Besides focussing on the above realities, research concerned with migrant labour and mineworker housing in Southern Africa has for the most part focussed on gold mining in the larger urban complexes of South Africa – ignoring the realities of mineworker migrancy, housing, and settlements in remote or arid locations. A few notable exceptions to the situation in the gold-mining sector relate to diamond mining (Worger 1987), coal mining (Crush and Soutter, 1999), and mining in the “Rhodesian (or Zimbabwean) copper belt” (Van Onselen, 1976). The iron-mining industry, on the other hand, has received only limited attention. For the most part, the dominance of gold mining in the literature can probably be attributed to the prestige of gold mining and the significant role it has historically played in the South African economy (as was noted by Wilson (1972a)) but probably also to an inherent urban bias in South African housing research (Marais and Venter 2006b).

Given the above, the aim of the chapter is to discuss the historical development of mineworker housing and migrancy in South Africa. In this chapter, it is essentially argued that despite past, mainly inhuman, migrant labour systems and the rise of the compound as a housing mechanism, a system of continued (though modified) migrancy and housing solutions other than the favoured system of ownership may be the most appropriate option in arid mining regions. If the problems associated with mining settlements in remote locations are considered against the Dryland Development Paradigm described in Chapter Two, some form of migrant labour system is not necessarily to be evaluated negatively.

This chapter begins by discussing physical and socio-economic conditions that have led to the development of a system of migrant labour in South African mining and of the compound as a housing option within the system. This historical background will serve as a contextualisation of the environment both within and outside the hostels, which have resulted from South African policies in respect of migrant labour. The historical background will be followed by a discussion of settlement as an alternative to the migrant system and of the political conflicts of the 1970s and 1980s as a catalyst that changed in the view of mine managements on migrancy. This will offer a historical perspective of the debate of continued labour migration versus settlement, which, though considered at various times, never came to fruition during Apartheid. The chapter next moves to a discussion of the alternatives to compound housing, dealing with the alternatives as managed by mining companies and then with the private housing environment as housing reality and state responses to the need for housing.

### **3.2 THE RISE OF MIGRANT LABOUR IN THE GOLD-MINING INDUSTRY**

In order to understand the dilemmas of mine settlements, an overview is required of the history and consequences of migrant labour. As already noted, most of the research in this field originates from the gold-mining industry.

Although gold was discovered in several areas throughout the 1870s and early 1880s, no large-scale extraction took place until the discovery of gold in conglomerates on the farm Langlaagte (the current site of the city of Johannesburg) in 1886. Extraction quickly spread along the Witwatersrand, and over the following decades, later discoveries led to the opening of mines in the West Wits, Klerksdorp, Free State, and Evander goldfields (Department of Minerals and Energy (DME), 2007).

Demissie (1998) noted that among the problems experienced in South African gold mining were the geological difficulties associated with mining the ore-bearing rock; this resulted in the employment of expensive and labour-intensive mining techniques. The result was that the South African gold mines were forced to find cost-reducing



strategies as a fixed gold price (in effect until the early 1970s) prevented the mines from increasing prices to compensate for the increased cost of mining.

According to Moodie and Ndatshe (1994), the South African gold-mining industry dealt with the restrictions in respect of a set gold price in three ways. Firstly, large mining houses insured substantial investments in order to ensure economies of scale. Secondly, the workforce was divided along racial lines and created a well-remunerated white supervisory force and a large force of cheap black labour (the two groups being kept separate by the colour bar). Thirdly, the Chamber of Mines was created partly for research and development but primarily to ensure low wages and a constant supply of labour.

Deep mining, which came to characterise South African gold mining, also required more unskilled labour. The cost of white workers in the form of British immigrant and semi-skilled and skilled Afrikaner workers was significantly higher (Demissie, 1998). Both groups were strongly associated with trade unions (affiliation to which was denied to black workers) and also possessed significant political power (Crush and Soutter, 1999).

Consequently, the mines decided to focus on the use of black workers. The wages paid to the workers were only sufficient for the needs of the workers, leaving their family in the rural areas to live off subsistence farming in the homelands<sup>9</sup>. According to Wilson (1972a), the wages were kept low by collusion between the Chamber of Mines and the apartheid government in order to ensure cost-effective mining as one of South Africa's primary sources of foreign exchange. The results were a wage for black workers, which in real terms were lower in 1972 than in 1910, and a highly flexible workforce that made gold mining profitable (Wilson, 1972a; Demissie, 1998).

The Chamber of Mines, having significant clout with the government of the day, was also in a position to advocate for the passing of laws that would enable the mines to continue their profitability through the exploitation of black labour (Demissie, 1998). Examples of such laws were: the Glen Grey Act (passed in 1894, which enforced

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<sup>9</sup> The term *homeland* refers to the independent states created by the government for black South Africans during Apartheid. Since the end of Apartheid these have returned to South African rule.

individual land tenure and thus tax systems that subsistence farmers could only pay by seeking paid employment); Laws 22 and 23 of 1895 (restricting Blacks' access to white areas unless specifically for employment purposes, and then only under specific conditions); the Native Labour Regulation Act of 1911 (which, among others required fingerprint identification and certificates for all migrant workers); and the Native Land Act 27 of 1913 (which reserved only 13% of the land for the exclusive use of Blacks – and subsequently forced black people into migrant labour) (Demissie, 1998).

The ideology that supported the maintenance of a cheap, mobile, black workforce was vigorously propagated by the Chamber of Mines and its members. According to Crush (1994), many claimed to “know the native mind” and professed that the immigrant workers disliked urban settlement and preferred compound life so that they were free to return to their homelands. However, the workers were never consulted as to their preferences.

The crux of the labour system rested on a separation of the worker from his family. The family remained at the rural home while some of the males worked at the mines to provide income (Demissie, 1998). The income thus earned was insufficient to maintain the family at the mine, though large amounts were often sent home in the form of remittances. This system was often controlled through agreements between the South African government and the governments of the migrant workers. The foreign governments assured a steady supply of cheap labour, the precondition being that the workers' pay needed to be paid into bank accounts in their home countries (Crush, 1995). This often led to the development of a dependence on mine income in the countries (or on a smaller scale, areas) supplying labour, and it moreover had far-reaching implications for retrenchment (see as examples Head (1995) and Coplan and Thoahlane (1995)).

The effects on the sending area were, however, not limited to the economic realm. The migrant system also led to the separation of families, the wife and children being left in the sending area. The homelands were marked by extreme gender and age ratios (consisting as they did largely of young children, women, and the elderly), overpopulation and lack of arable land due to apartheid policies on the location and size of the homeland areas (to the extent that some families could not subsist on the

land available to them), as well as a lack of services (Wilson, 1972b). The effects of the separation of the workers from their families are also noted in the case of the FIFO system (discussed in Chapter Two), although in this case there have historically been attempts to build measures into the system to ameliorate the negative consequences.

### **3.3 HOUSING MIGRANT LABOUR: THE COMPOUND**

Migrant labour led to the need for the provision of cheap, non-permanent housing for the African workers. The first large-scale solution was developed in 1885 at Kimberley by De Beers Consolidated Diamond Mine (Crush, 1994). As the first single-sex hostel, it was born from the need to control workers in a closed system in order to prevent the theft of diamonds from the mine. The workers slept in communal dormitories with central kitchens run by the mine company. The structure of the building was designed to aid the coercive systems of control. The building was constructed around a central courtyard, with wash rooms and kitchens often situated in the middle and the outer walls being high with little or no windows and with very few windows providing light. The only exit was a gate situated at one end next to the compound manager's office (Crush, 1994). This was later copied at the gold mine with no or minor adjustments, although here the gates were rarely locked (Crush, 1994). According to Moodie (1994), many of the security features of the compound were enforced by government as a means to maintain public order.

The management structure of the compound consisted of a white manager at the top (who could often speak one or more African language), who was expected to keep the workforce satisfied and productive. The manager was supported by several black representatives (called *izibonda*) and "policemen" (called *induna*) of the workers themselves who were empowered to send any offender to a mine lock-up (James, 1992a; Moodie 1994)

As noted, the hostels were designed to be a cheap, effective way of housing and managing a workforce. Consequently, the conditions at the hostels were not, by most standards, acceptable for human habitation. The rooms were large and overcrowded. Choosing to share a room with friends, people from home, or the same ethnic group

resulted in many sharing a room with workers from a different shift. The facilities were dark and often extremely cold or hot with many sharing insufficient ablution facilities that were poorly maintained. The diet was strictly controlled by management in order to ensure productive workers, and since alcohol was forbidden or controlled by management, beer was often illegally brewed in the rooms (James, 1992a; Moodie, 1994).

Although housing solutions within the FIFO system (discussed in Chapter Two) would also be spartan, the system of mining hostels system was an extreme and dehumanising solution based on authoritarian control and surveillance that sought to govern every aspect of hostel life in order to maximise compliance and productivity. Yet, the fact that the housing system was designed not to accommodate families limited the extent to which local resources, such as water, were utilised for housing in such areas.

#### **3.4 SETTLED LABOUR AS ALTERNATIVE TO MIGRANT LABOUR**

The system of migrant labour was not to the benefit of all employers. For example, farmers complained that they could not meet the relatively high wages paid by the gold mines and also that these high wages led to a shortage of workers for agriculture (Crush, 1993). The problem of farmers was rectified through the implementation of laws (like the Native Labour Regulations Act of 1911 and the Bantu Labour Regulations of 1965, both of which restricted recruiting operations by the mines in principally white farming areas) and later changes in the labour processes on farms (such as full time service in stead of labour migration) (Crush, 1993). Other forms of mining, notably coal mining, also struggled to meet the gold-mining industry's wages and also did not enjoy much of the protection of labour supply (Crush and Scouter, 1999). Workers often exercised the choice to avoid other mines and focus on working at the gold mines (Moodie, 1994). The result was an attempt by these alternate employers to give their workforce the opportunity to settle in the area, despite regulations preventing this. Offering workers the opportunity to settle was already part of the recruiting strategy of the coal mines before the rise of apartheid (Crush and Soutter, 1999). Attempts at settlement were however illegal during apartheid, and

mining activities for metals other than gold were at the time significantly fewer and of smaller scale and political influence (something that Crankshaw in 2002 noted to be rapidly changing). These alternatives were also not as well documented as the attempts of the gold-mining industry to which the chapter now turn.

### **3.4.1 Early attempts at settlement**

Gold-mining companies also experimented with settlement at various times of crisis (like a drop in profitability or a shortage of labour). However, for the most part, this was sporadic, and eventually they always returned to migrant workers (Jeeves and Crush, 1995). Jeeves and Crush (1995) identify three historical instances in which migrant labour was called in question: the period after the Anglo-Boer War, the politics of the Union during the 1920s, and Oppenheimer's Free State Experiment of the 1950s.

After the Anglo-Boer War, the mines experienced a shortage of cheap labour as not many black workers could be recruited at the low wages of the industry. This occurred at a time when there was mass opposition to the importation of Chinese labourers, discontent in the relationship between mines and the recruiting agencies of labour, and political impetus for a "Whites-only" labour policy. Attempts were made by the mines to secure labour through the provision of family housing and tolerance of the development of "locations" near the mines. Government and municipalities were opposed to these developments from the start, and with the Native Labour Regulations Act of 1911, these "tin-towns" became the responsibility of the mines and many were soon demolished. Various regulations which regulated urban conditions for Blacks, were later enacted in 1923, 1930, 1937 and 1945 (Jeeves and Crush, 1995).

During the 1920s, political tension between the Union of South Africa and Mozambique led to government efforts to curtail the employment of foreign workers to place pressure on the Mozambique government. This however led to drastic shortages of labour, and after the Mozambique Convention of 1928 had ended hostilities, migration resumed at large scale. According to Jeeves and Crush (1995) had Smuts or Hertzog succeeded in eliminating the Mozambique labourers during these disputes, this would have led to a drastic re-evaluation of black labour in South

Africa in the absence of cheap foreign labour and an increase in stabilisation to compensate for shortages.

With the rise of Anglo American Corporation, the Chairman, Ernest Oppenheimer, suggested that up to 10% of the regular black labour force of the new mines to be opened in the Free State Goldfields in the 1950s should be housed in family housing. The development of new mines (as opposed to the refurbishment of older mines) would make this financially viable. This happened at a time when the Chamber of Mines was vigorously defending migrant labour and stating that no more than 3% stabilisation would be required as “the workers do not want it”. Oppenheimer’s experiment did, however, not materialise, and a minimum of workers ended up being housed in family quarters, while further government intervention restricted family housing to 3% of the workforce by means of the “unwritten rule”. In 1952, regulations pegged the level of stabilisation allowed near mines by demanding that no more than 3% of the workforce be housed in family quarters. The development of family housing was further curtailed in the 1960s and 1970s by a reduction in the number of South African mineworkers (who would be eligible for permanent lodging) in the mining industry relative to foreign workers. The share of South African workers reached less than 10% in some mines, with less than 0.7% of the workforce residing in family housing. Mines did not oppose the “unwritten rule”, and later legislation pegged stabilisation at 3% until the refusal, in 1974, of a request from Harmony to stabilise above 1.25%. Even at that point, there was no organised opposition from the mines, and individual requests for higher rates of stabilisation remained the norm (Crush, Jeeves and Yudelman, 1991; Jeeves and Crush, 1995). The regulations were finally abandoned in 1986. Having often been used by mining companies to excuse them from having to provide housing (James, 1992a), the end of regulation created the opportunity to move away from migration.

### **3.4.2 Later developments towards settlement**

During the 1970s and 1980s the hostels became hotbeds of political action as mineworkers became increasingly unionised after the legal return of the unions. The hostels provided ideal breeding grounds for mobilisation as the workers were housed in tight quarters, where many could be convinced to join and others could be forced to participate in the action. In addition, unhappiness with the hostels, or more

specifically the quality of the hostels, was one of the major factors contributing to the strikes. The management of the mining companies came to realise this and started to steer away from hostels, especially to protect their investment in skills and training in more senior workers through stabilisation. Worker militancy was reduced by the promotion of class and social differentiation in respect of how mineworkers were housed. Furthermore, where hostels were kept, a series of density reductions and upgrades were often undertaken (Hunter, 1992; James 1992b; Laburn-Peart, 1992).

The strikes of the mid-1980s were also the first in a range of factors to precipitate major changes in mining, which were to continue throughout the 1990s. The changes included the way in which mining, mine labour, and mine housing were approached. Significant reductions in employment were the first consequences, with employment in goldmining steadily falling from a peak of 534 255 in 1986 to 221 848 in 1999; this was accompanied by a reduction in output (Chamber of Mines, 2000 cited in Crankshaw, 2002:65) and the simultaneous growth of other, non-gold, mining sectors in the South African mining sector (Crankshaw, 2002). The falling price of gold during the late 1980s necessitated changes in production to reduce the production costs and ensure profitability. The most significant changes for the mineworkers were the shift towards processes characterised by increased responsibility and productivity (Dansereau, 2006) – that saw the need for better educated (and better-remunerated) workers – and the move of the mining companies towards the ‘managerial’ model, divested of non-core operations such as the hostels (Crankshaw, 2002). This shift towards a more educated mineworker, in an operation that does not view housing provision as its core operation, would then point to an increased need for privatised housing.

As far as contemporary research on labour migration is concerned, the large body of research addressing the migrancy issues of the 1960s and 1970s has not been followed by similar research in the post-apartheid era. Posel (2003) speculates that this can largely be attributed to two factors: the pressing need to deal with international immigration issues after apartheid, as well as the ending, in the 1980s, of legal restrictions on black rural-to-urban (national) migration.

The general belief was that the demise of apartheid would see the majority (if not all) of black workers on the mines settling at the mine and bringing their families to settle in the area with them, thus effectively severing their ties with the rural areas where they had been forced to reside by government restriction (see as examples Beinart, (1980), Spiegel (1980), and Murray (1981)). This would have brought an end to circular migration. Attention was consequently shifted to what was viewed as the more important issue of dealing with policies and legislation regarding immigration and the social backlash of xenophobia (see as example Crush and Dodson (2006)).

However, the belief that circular migration was only a side effect of restricted settlement rights, set to disappear once restrictions were lifted, was already questioned by Wilson (1972b), well before any action was taken to remove said restrictions, and also by Mabin (1990) towards the end of apartheid. Wilson (1972b) and Mabin (1990) highlighted international instances where circular migration was employed and surmised that it was also a consequence of a social and economic setting that might change in time and lead to changing patterns of migration. Mabin (1990) went further by questioning the applicability of urbanisation models that assumed that the lack of urbanisation was largely due to the restriction of movement during apartheid. Crush and James (1991), writing at the end of apartheid, also emphasised the fact that, as a result of the issues of settlement and housing provision and -administration of the past, the 'depopulation of the compounds' would not be an automatic process.

The arguments of Wilson, Mabin, and Crush and James are supported by more recent research by Posel (2003) in which she questions whether circular migrancy is truly being replaced by permanent settlement. In fact, Posel (2003) argued that there had been an increase in circular migration between 1993 and 1999. Although different from the all-male migration so characteristic of circular migration to the mines, there was an increase in the number of households sampled who did have a member employed elsewhere. It has generally been suggested that the underlying motive for labour migration is the need to maintain a form of social security (Vaughn, 1997; James, 2001). This idea finds much support in the livelihoods approach outlined in Chapter Two.



From the above, it is apparent that any attempt simply to move towards a permanent settlement pattern at the mine may not be what all the labourers at the mine desire. Any form of housing provision would need to take into account the varying needs of workers, while at the same time having to supplant the housing approaches of the past. At this point, it is important to note that the international mining community is moving towards a system of migrancy by means of long-distance commuting/fly-in-fly-out (as was evident in the discussion on the consequences of commuting on family life in Chapter Two). However, in this case, workers choose this particular lifestyle of their own free will. Furthermore, in long-distance commuting, the work schedule is compressed, and the workers receive increased compensation for the altered lifestyle (Houghton, 1993).

Given the problems associated with hostels (and with the political agenda turned against hostels), mining companies have attempted to move away from hostels as the primary form of housing provision. The two sections that are to follow will look at mine management's attempts to develop alternatives to hostels as accommodation and then provide an overview of the national housing situation that has an influence on the provision of private housing to mineworkers.

### **3.5 MINE MANAGEMENT AND ALTERNATIVES TO COMPOUNDS**

From the previous sections, it is evident that the past housing solutions need to be reformed in order to move away from a system designed primarily to exploit workers.

One option for the provision of alternative housing is the conversion of hostels from single-sex dormitories into bachelor and family housing units. This has been attempted where the private sector had provided housing to mineworkers and also in the public-sector hostels (previously managed by the municipalities) to be found in many cities. A survey of the available literature reveals that there is very little literature on the conversion of private (or mine-managed) hostels. More literature does, however, exist on the conversion of public hostels (Thurman, 1997; Pienaar and Cloete, 2003; Pienaar and Cloete, 2005). The conversion of public hostels has proved to be problematic. Temporary problems are experienced in the public hostels when

their conversion into bachelor and family units necessitates the eviction of tenants for the duration of the conversion; it also causes permanent problems as the new complex cannot house the same number of residents. The tenants often cannot afford the rent of a converted hostel, seeing that the choice to live in a hostel in the first place is often associated with the inability to afford any of the alternatives. Existing systems of power and subletting are also upset, which leads to problems in respect of securing the cooperation of the tenants (Thurman, 1997).

The National Union of Mineworkers (NUM) initially demanded that migrancy and all hostels be abolished. In time, however, they realised that this would not be feasible as many workers required the tenure arrangement of accommodation supplied by the hostels because it suited their lifestyle. This led to a change in NUM policy (James, 1992a). NUM policy then settled on the responsibility of the mine to provide housing allowances that would cover a bond or rental payment on a decent house or a decent living wage, a range of tenure options that would make allowance for the variety of lifestyle choices of the union members, participation in choices made regarding housing provision and management, the democratisation of the housing options available, and the conversion of the old hostels into decent single or family quarters (Moorhead, 1995).

The mining companies themselves attempted to move away from providing housing for their employees. Steadily they moved towards a so-called “clean wage”, with the worker receiving the monetary value of the services previously provided to him by the mining company for housing, food, and transportation. Hostels would then be privatised and disassociated from the mine (Hunter, 1992; James, 1992b). This has since led to accusations by the NUM that it is a strategy by the mining companies to “wash their hands of responsibility for mineworkers” (NUM, 1990 cited in Crush 1992a:398). The “clean wage” is problematic in that it is not always sufficient for the housing needs of the worker in the private market and requires additional expenditure on food and transportation (previously covered by living in a hostel) (Hunter, 1992). Furthermore, a clean wage often places the worker in the national housing market.

Yet conversely, mining companies, in the Mining Charter (DME, 2002), have committed themselves to cooperating in formulating integrated development plans for

the mining communities, improving housing standards, upgrading/converting hostels, and promoting homeownership options (precisely what these commitments entail will be discussed in the next section). In the Social Contract for Rapid Housing Delivery, the mining sector (along and in cooperation with the South African government) further committed itself to these ideals, to the facilitation of the housing process, and to the facilitation of the use of subsidies (again see the next section) to increase housing access. The mining sector committed itself not only to furthering homeownership as a wealth-creation strategy but also to “other forms of tenure for all employees” and “rental stock for a rapidly growing, mobile (migrant) [population] ... [and in] locations close to employment opportunities” (Department of Housing (DoH), 2005:3, 9).

Several attempts have been made by gold-mining companies (notably Anglo and JCI) to provide privatised family housing units to their workers through subsidised mortgages and rents. This has however not met with as much success as the companies had hoped for. Reasons for this failure include the following:

- The companies overestimated the number of workers who would like to participate and also their ability to meet the payments.
- There was insufficient consultation with workers as to their needs and financial abilities; there was a lack of dissemination of information.
- There were insecurities pertaining to continued employment at the mines.
- There was unwillingness on the part of miners to sever their rural ties and to exchange living for life in what is viewed as the “expensive and violent city”.
- They were loath to give up the homes they owned or planned to build in the sending areas (Hunter 1992; James, 1992b; Laburn-Peart, 1992).

According to Hunter (1992) and James (1992b), the high cost of the direct provision of housing has led many companies to see themselves as “facilitators” rather than “providers” of housing. Accordingly, many companies now stick to negotiation and administration to smooth the development of housing options and the indirect provision of money (subsidisation) for decreasing the costs of building and buying houses. This movement then places the worker squarely in the private housing market.

The conversion of hostels to family or bachelor units is thus problematic and will probably be able to accommodate only a significantly smaller population than the hostel system. The provision of housing by the mine (directly or indirectly) has also led to problems, some of which have been discussed above. Further problems are also experienced as housing provision through subsidies and other indirect means melds provision by the mine with the private, national housing market.

### **3.6 STATE RESPONSES TO THE HOUSING ISSUE SINCE 1994**

The demand for mineworker housing should be seen in the context of a massive national housing deficit estimated at three million units in 2005 (Mohamed, 2007). This shortage resulted largely from the differential urbanisation espoused by the former apartheid government, which restricted Blacks to the former homelands and prevented their urbanisation through the restriction of available housing options in the cities (Goodlad, 1996).

The apartheid government provided various forms of housing assistance ranging from rental, through sale of government housing stock, to subsidies and tax breaks (Wessels, 1989). Most of these forms of assistance were, however, available to Whites. What little assistance was indeed provided to other groups was provided in a form that fitted neatly within apartheid ideology (Wessels, 1989; Goodlad, 1996). Wessels (1989:30-31) also criticised apartheid housing provision at the time as favouring only those who would have been able to supply for their own housing needs and doing so at the expense of those most in need of housing (i.e. those with the lowest income) as a result of the emphasis on creating a “stable middle-class to serve as a buffer between the privileged Whites and the poor Blacks”. A change of focus in housing policy – to benefit the poor – thus came as no surprise with the transition to democracy in 1994.

Before the national elections of 1994, the African National Congress (ANC) adopted the Reconstruction and Development Programme (RDP) (ANC, 1994). This document envisaged large-scale social action to improve the quality of life for all citizens drastically, focussing specifically on those who had been disadvantaged in the

past. The improvements envisaged included free education and basic health care; increased access to sanitation, electricity, and water reticulation; and an expansive housing programme – building more than one million houses in the first five years (ANC, 1994). The RDP was the election manifesto of the ANC and was to have a significant influence on the White Paper on Housing that the ANC adopted after the elections (see Goodlad (1996) for a discussion of the various influences exerted by the RDP).

Two divergent approaches were brought together in the 1994 White Paper on Housing (Rust, 2006). On the one hand, the government set itself a neo-liberal and fiscally conservative role (Narsiah, 2002; Pottie, 2003; Rust, 2006) while, on the other hand, housing provision for the lowest income bands was heavily subsidised by the state (Gilbert, 2003; Rust, 2006). As “enabler of markets”, government set goals of stabilising the entire residential housing market. The stabilisation of the housing market was largely attempted through the following: improving repayment rates after the payment protests of late apartheid; preventing redlining (the practice of financial institutions not extending bonds in problematic areas); generally ensuring the extension of credit to the low-income population in order to secure finance for housing; encouraging private contractors to take on the role of building the houses; the incremental realisation of housing; and encouraging homeownership as a strategy to create wealth (Rust, 2006).

The most prominent aspect of the White Paper on Housing has, however, always been the provision of housing subsidies aimed at the procurement and servicing of land with a rudimentary top-structure from the residuals (Rust, 2006) – a goal that is very socialist in nature. Many scholars have labelled the subsidies approach to the funding of the core housing units of the programme as ‘neo-liberal’ (see, as an example, Bond (2000)) due to general conceptions that a Marxist/Social Democratic approach would entail either state provision of housing or state-managed rental housing (or both). The subsidy was based on the income of the family in question, with higher subsidies being available for families earning less, aimed at helping the lower-income households to access housing.

The subsidies were initially largely accessed by private construction companies that acquired the land, prepared and serviced the area, and built rudimentary starter homes. This approach became problematic as building costs rose in the construction boom of the post-apartheid era, inflation eroded the subsidies (which was not being adjusted), and red tape became more restrictive. Consequently, private construction companies started to withdraw at the turn of the century and the rate of housing provision dropped (Rust, 2006). Meanwhile, households with an income of above the R3500 subsidy band increasingly experienced difficulties in acquiring housing as a result of the rising prices of housing and the fact that promised credit from major financial institutions failed to materialise (Rust, 2006). The group of households earning between R3500 and R7500 per month is described by Rust (2006:30) as a “gap(s) in the housing ladder” and is emphasised because of the key position this group occupies on the housing ladder. Focussing on this gap is important in that the majority of mineworkers earn more than R3500 a month; yet they still do not earn enough to access a bond from a credit provider (see Chapter Four).

As already mentioned, the White Paper emphasised the importance of ownership as a mechanism towards the creation of wealth. This emphasis on ownership stood in stark contrast to the silence on rental housing (Gilbert *et al.*, 1997; Watson and McCarthy, 1998) – despite the inclusion of institutional subsidy arrangements in the original White Paper. Two aspects of rental housing received limited attention in initial policy and/or practice, namely private rentals and the rental model for Social Housing. The emphasis on ownership and the South African government’s lack of interest in supporting the private, backyard rental sector can also be related to the view that most landlords in the private rental market are exploiting their tenants and providing substandard accommodation. The aforementioned perceptions persisted despite being successfully challenged by, amongst others, Gilbert *et al.* (1997). While the latter authors emphasised the strong culture of ownership present in South Africa, they also noted that not all households who had the capacity to own a house would do so. Some of the reasons for not requiring ownership relate to the location and type of housing that they would have access to. Another possible reason, discussed by Cooke (1996 cited in Thurman, 1997), relates to the wish on the part of many of the inhabitants of public hostels who were interviewed to maintain links with the rural areas.

Despite the initial absence and lack of importance in respect of Social Housing (the second form of rental housing that was initially ignored), this form of housing re-emerged in importance with the announcement of the Comprehensive Plan for the Development of Sustainable Human Settlements, also known as Breaking New Ground (BNG) in 2004 (DoH, 2004). BNG aimed to address the shortcomings of the original White Paper (discussed in the two preceding paragraphs). The official statement was that “the fundamentals of the policy remain relevant and sound” and that BNG should only be seen as a refinement of the existing policy (DoH, 2004:7). However, Tomlinson (2006) has argued that BNG does indeed include thoroughgoing changes from quantity, supply-driven, green-field developments to quality, demand-driven, in-situ upgrades, whilst also acknowledging the need for Government to shoulder some of the risk in private-sector lending.

Changes brought about by BNG included, amongst others collapsing the four subsidy bands in the original policy to two, thereby making it easier for low-income families to access subsidies; introducing subsidy arrangements for households earning between R3500 and R7500; adjusting of subsidies to keep up with inflation; providing larger, more flexible subsidies for social housing; increasing funding for the upgrading of public hostels; and renewing the focus on the upgrading of informal settlements (Tomlinson, 2006).

In addition to these changes, BNG also envisaged the rise of social housing as a form of rental-housing provision. *Social housing* generally (but not exclusively) entails the mobilisation of subsidies by accredited non-profit organisations to provide rental units. Cloete, Venter, and Marais (in press) have argued, that since the inception of BNG, Social Housing has enjoyed significantly more commitment from government (as evidenced by the institutionalisation of social housing policies) and funding from international agencies (particularly from the Netherlands). However, social housing, as envisaged by BNG, largely remains a tool for racial integration and the reinvigoration of urban areas. Furthermore, social housing is dependent on the identification of restructuring zones – a process to identify areas where the urban structure would benefit from additional access to government subsidies, especially among those earning between R1500 and R7500. The emphasis on urban areas is seen in BNG when it is said that social housing “may make a strong contribution to

urban renewal and integration” (DoH, 2004:14). Although the establishment of restructuring zones has previously been used in the mining area of Rustenburg (Ashira Consulting, 2007), the use of restructuring zones for mining areas remains almost entirely underutilised despite the capacity of the policies to accommodate this (Cloete, Venter, and Marais, in press).

Against the above background, it can be concluded that South African housing policy has emphasised ownership at the expense of other forms of tenure – specifically rental housing. In the process, not many incentives were available for the development of the private-rental market, while social housing was initially slow to get out of the blocks. However, the rise of social housing is focused mainly on larger urban areas within the framework of urban reconstruction. Considering the need for housing in arid areas, where long-term livelihoods are limited and where migrancy is in many cases a means of sustaining household livelihoods (see Chapter Two), the absence of rental-housing policies and programmes to address specifically the housing needs of mineworkers in arid regions seems to be a major shortcoming. Consequently, many mining areas are still characterised by the extremes of hostel accommodation and privately-financed housing developments.

### **3.7 CONCLUSION**

This chapter considered the development of circular migration from the sanctioned form of labour in South African gold mines during apartheid into one of the most common forms of labour in mines today. This development was in part due to the restrictions of the housing provision for mineworkers during apartheid and persisted despite sustained opposition to the continued use of circular migration towards the end and after apartheid. The continued development of migrancy was set against the various means by which companies ensured that gold-mining remained a profitable enterprise. Alternatives to the exploitive housing solutions employed have been discussed against the wider realities of the changing emphasis on the position of housing provision in the mining sector and of housing provision in post-apartheid South Africa.



The result of the developments discussed above has been that there is a growing trend towards privatised and ownership-driven housing solutions against the backdrop of a lack of rental units and problematic housing delivery by government, especially for the income groups in which the majority of mineworkers are situated. Many of these developments are being energised by the legitimate need to reform past housing efforts and to encourage economic development and settlement. Many mineworkers may, however, not prefer to settle at the mine permanently (for a variety of reasons, some of which are related to diversified livelihoods) but probably do wish for better accommodation while they are staying at the mine. These workers are forced into the private market along with those who may wish to settle, while hostels are seeing reduced capacity to house them and the housing market is unable to cope with provision. Yet the theories thus far discussed take scant account of the possibility of mine closure.

Most of the research discussed above focuses on the *status quo* in the gold mines (a field of the mining sector that is largely situated in highly urbanised areas and one which has seen significant reductions in employment in recent years) and on the need for housing reform given South Africa's history of denial to Blacks of the right to ownership. This occurs while research on other mining subsectors, which have recently seen increased employment, are scarce and very little research is dedicated to housing development in resource-dependent communities. However, as was noted in Chapter Two, the closure of a mine and the significant contraction of the small-town economy are highly likely, if not inevitable. This creates difficulties because private ownership will leave locals vulnerable to the boom-bust cycles of mining towns. For an overview of the chapter's arguments in the context of the central concepts, see Table 3.1 below.

**Table 3.1: Summary of key views of apartheid and post-apartheid paradigms**

<b>Central concepts</b>	<b>South African pre-1994</b>	<b>South African post-1994</b>
<b>Approach</b>	Top-down: apartheid ideologies promoted by the state; cooperation of companies while profitable	Top-down: mistakes of the past need to be addressed in a universal fashion through development
<b>Government/private sector/community</b>	Government-mandated ideologies delivered by private sector; limited community involvement	Government-defined/-supported ideals based on community participation and delivered by private sector
<b>Resource management</b>	All resources available for exploitation by private sector and state; preference given to Whites	Resources to be used for development of community and country; basic levels of provision a right
<b>Settlement</b>	Settlement racially determined and driven by mining companies without considering the future of settlement	Settlement in area and private ownership of housing solutions promoted; socially and economically sustainable human settlements
<b>Sustainability</b>	Profitability of resource-extraction justifies new settlement for white employees, while black employees migrate or settle informally; the consequences of ownership are however unaccounted	Existing, sustainable settlements should be chosen wherever possible; all partners should consider the diversification and the future of settlement; the consequences of ownership are however unaccounted
<b>Migrancy</b>	Process that allows cheap labour and prevents settlement of Blacks in white urban area; held in place by legislation	Tool that exploited workers in inhumane conditions; to be abandoned and replaced with settlement or at least more humane housing solutions
<b>Infrastructure development/ service delivery</b>	Extensive provision by private sector for Whites, yet limited for Blacks	A basic right; needs to occur at a basic level and manner enjoyed elsewhere
<b>Housing solutions/tenure</b>	Formal housing for Whites; hostels or informal settlement for Blacks	Ownership to encourage settlement and wealth creation
<b>Family cohabitation</b>	Promoted for Whites and not supported for Blacks	Effect of separation in past visible; family housing encouraged.

Using the key aspects addressed in Table 2.2 and Table 3.1 as backdrop, the next two chapters turn to a discussion of the results of the survey. Chapter Four will discuss the current state of labour migration and some of the determinants of why some workers will choose to settle in the area while others will opt to continue with labour migrancy. Chapter Five will then turn to possible housing solutions and the effects of such solutions on the workers.

## **CHAPTER FOUR: MIGRANCY TRENDS AND PREFERENCES IN KATHU**

### **4.1 INTRODUCTION**

As indicated in the literature (Chapter Two and Chapter Three), labour migration is a common form of livelihood diversification. This is even more frequently the case in arid regions where the potential for livelihood diversification is that much more restricted. The little research that indeed currently addresses this issue suggests that circular migration is still a prominent feature of the labour landscape in South Africa in general and of mining operations in particular (Posel, 2003; Marais and Venter, 2006a). At the same time, much of this research has been conducted in environments that are of significant scale, are closely linked to the political core of the country, and where economic diversification has been easier. Chapter Two has also indicated that permanent settlement in arid regions linked to mining is not always an appropriate approach and, moreover, that some countries deliberately avoid this practice.

This chapter investigates the current state of labour migrancy, the future expectations in respect of migrancy, the influence of demographic/socio-economic factors in respect of the first two aspects, and the socio-economic implications of aridness in respect of circular migration in Kathu. Three questions guide the chapter: First, considering the history of forced migrancy in the mining environment, do mineworkers prefer formal settlement or a continued process of migrancy? Second, which demographic/socio-economic attributes have influenced these responses to migrancy? Third, do the mineworkers who do settle understand the reality of boom-bust cycles and the risks attached to formal settlement in the mining towns of the South African arid regions?

Three key arguments are advanced in this chapter: The first argument is that labour migration still appears to be a prominent feature of the labour landscape in the Kathu mine and continues, in significant part, because of the preference of the mineworkers. Secondly, while various respondent profiles are evident depending on the sample and the desire to settle permanently (alluding to minor influences in the decision to settle or the ability to settle), the clearest relationship (present in both samples) suggests that

those with access to alternative livelihoods elsewhere prefer not to settle. Third, and related to the second argument, is that the preference not to settle is directly linked to migrancy as a form of diversifying livelihoods and of reducing potential shocks. On the other hand, the preference to settle largely reflects the preference for better housing conditions while ignoring the risks (boom-bust cycles/closure of the mine) attached to settling in such areas.

This chapter comprises two sections: The first section investigates the phenomena of migrancy and settlement by looking at the patterns of and preference for mobility amongst the two populations (hostel and housing populations). This section will thus establish the nature of the patterns regarding migrancy and settlement. The second section highlights some socio-economic features of the two sampled populations, i.e. the residents of the housing scheme and the residents of the hostel. This analysis could shed some light on the influence the profiles of the individuals bring to bear on the choice for migrancy or the choice for settlement. Both sections will highlight the considerable differences that characterise the two populations, as well as attempt to isolate patterns that cut across these two groups, while also indicating some commonalities among those who prefer to reside in the area permanently and those who prefer not to do so.

## **4.2 MIGRATION AND SETTLEMENT**

Given that labour migration generally appears still to play a prominent role in South Africa, this section will attempt to answer the question as to the extent and nature of labour migration in Kathu, covering the places of origin of the respondents and their sentiments regarding settling in Kathu. These questions were obviously asked against the background of forced migration under apartheid, the poor living conditions in mining hostels in the past, and the limits of economic diversification in mining towns in arid regions. Questions posed to the respondents attempted to determine:

- where the respondents originally came from;
- or how long they have been staying in the area;
- why they were staying in the area;
- whether they would prefer that their spouse/children join them in Kathu; and

- whether they wished to reside in Kathu permanently.

The responses to the above questions give some ideas as to the patterns of mobility and stability of the respondents.

#### 4.2.1 Place of origin

The classification of the origin of the respondents according to their province of origin (providing an idea of the spatial distribution of the labour-sending areas) is complicated by the fact that a large sending area was demarcated as part of the Northern Cape Province; said area was formerly part of North West Province. While almost 75% of both samples are currently classified as coming from the Northern Cape, the previous classification system saw more than 50% of hostel respondents as coming from North West (see Table 4.1 below). This reclassified area is a part of the former homeland of Bophuthatswana, and is important due to the history of labour migration between the former homeland areas and the rest of South Africa during apartheid (the area has historically been a major labour-sending area of the mine (Nel and Van Wyk, 2007)). Also, large shares of both populations still hail from North West, with 15.3% of the housing sample and 20.0% of the hostel residents having indicated it as their area of origin.

*Table 4.1: Place of origin for respondents in the hostel and housing scheme in Kathu, 2007*

Province	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
<b>Northern Cape</b>	152	74.9	204	74.2	356	74.5
<i>Formerly North West</i>	<i>11</i>	<i>5.4</i>	<i>86</i>	<i>31.3</i>	<i>97</i>	<i>20.3</i>
<b>North West</b>	31	15.3	55	20.0	86	18.0
<b>Western Cape</b>	4	2.0	3	1.1	7	1.5
<b>Another country</b>	6	3.0	1	0.4	7	1.5
<b>Free State</b>	3	1.5	3	1.1	6	1.3
<b>Gauteng</b>	5	2.5	1	0.4	6	1.3
<b>KwaZulu-Natal</b>	2	1.0	3	1.1	5	1.0
<b>Limpopo</b>	0	0.0	5	1.8	5	1.0
<b>Total</b>	203	100.0	275	100.0	478	100.0

Both the residents of the housing scheme and the hostel dwellers most frequently cited Kuruman as their place of origin (12.1% and 25.0%, respectively), a larger town some 60km from Kathu. Kathu itself had 4.9% of the respondents among the housing residents, and 2.0% of hostel dwellers indicated it as their area of origin. One can

probably ascribe the lack of former Kathu residents among hostel dwellers to the fact that individuals from Kathu are more likely to find alternative accommodation with family living in Kathu. Other frequent places of origin among residents of the housing scheme were Upington (6.8%) and Postmasburg (4.9%), both of which are in the Northern Cape. Among hostel dwellers, one also find frequent mention of Taung (6.5%) and Vryburg (3.4%), in North West. When comparing the locations discussed above with the rainfall distribution in Figure 1.1 (Chapter One), it soon becomes apparent that the majority of the sending areas are themselves in arid regions and that they are sending labour to an arid (and in some cases even more arid) location. These arid sending regions will, according to the literature (see Chapter Two), have difficulty in diversifying livelihoods and this has resulted in labour migration to Kathu.

When these results were compared with those of the historical sending areas for the gold mines, a few differences could be noted. Gold mines have historically had difficulty in recruiting labour from areas other than the former homelands and the foreign labour-sending areas (Crush and James, 1991; Marais and Venter, 2006a<sup>10</sup>). Among the respondents from Kathu, however, there were no foreigners, and nearly 50% of the hostel population and 80% of the housing scheme's residents indicated provinces of origin that had either no or very limited homelands. Many originated from areas in the Northern Cape, a province that before the demarcation of the New South Africa contained no homeland areas. This indicates that these individuals came from small towns or farms (probably with insecure tenure arrangements compared to communal rights elsewhere). Those whose response indicated that they probably came from homelands in the former North-West demarcated zone also came from an area generally within 120km from the mine – a very short trip in comparison with labour migration patterns elsewhere. The Kathu mine thus employs a high share of regional labour that entails taking only short trips between home and work for migrants. This reduces the severe separation between family and worker and makes circular migration more attractive because there is less impact on the household than

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<sup>10</sup> Marais and Venter, in their study on a Free State Gold mine, found that 42.8% of the employees were not originally from South Africa; that a further 26.5% came from the Eastern Cape (especially the old Transkei and Ciskei areas); and that only 9.6% of the employees were residents of the Free State itself. This information was drawn directly from the database of said study and was not reflected in the published article.

in other migrancy situations. Later sections will reflect on the influence that the respondents' areas of origin had on their desire to settle elsewhere.

#### 4.2.2 Number of years in Kathu

Respondents were asked for how long they have been staying in Kathu (see Figure 4.1 below) as this would provide some insight into the temporal dimension of migration. The average duration of stay in Kathu for the residents of the housing scheme was 5.2 years, while the average duration of stay for the hostel residents was 14.2 years. Marais and Venter (2006a)<sup>11</sup> found in their study that the average duration of stay for a worker in a gold mine was 11.6 years. This is significantly longer than the figure for residents of the housing scheme but noticeably shorter than the duration of residence for the hostel dwellers. The average duration of stay for all three should be seen in the context of the deliberate attempts by mining houses to create career miners in order to retain skills (Crush and James, 1991; Crush, 1992b), while the role of the far more stringent labour legislation since 1994 could also not be ignored.

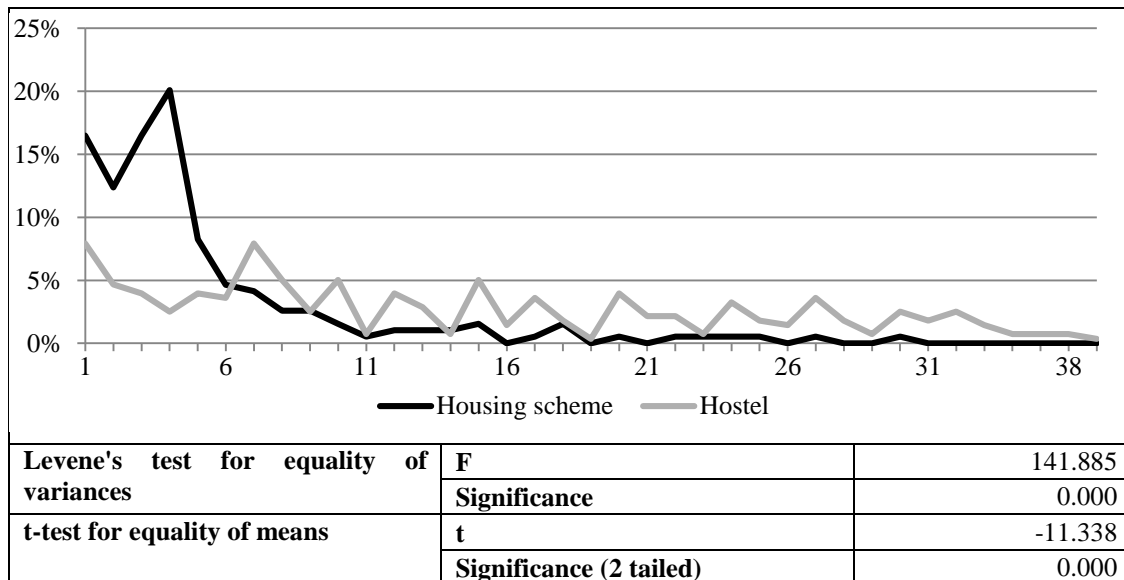


Figure 4.1: Length of stay for housing and hostel residents in Kathu, 2007

Upon closer inspection, 82.5% of the residents living in the housing scheme indicated that they have been staying in the area for seven years or less, with 20.0% indicating that they have been living there for exactly four years. In comparison, only 34.5% of hostel residents indicated that they have been living in the area for seven years or less,

<sup>11</sup> This information was drawn directly from the database of Marais and Venter and was not reflected in the published article.

with the majority having been associated with the area for a long time. Levene’s test for equality of variances indicates that equal variances cannot be assumed; however, after compensating for this, the difference is still statistically significant at the 99% confidence level. This means that there is a statistically significant difference between the average length of stay for hostel residents and the average length of stay for residents living in the housing scheme.

These figures suggest that the majority of the residents of the hostel population will have worked for the mine long before the recent boom, while the majority of the housing residents only joined the mine during its recent development. It would appear that more recent arrivals – associated with the most recent boom cycle (2002 to 2008) – were more likely to have accessed housing than were those who have already been living in the hostel. It could thus be asked whether this was a case of relative accessibility (with newer arrivals finding it easier to access housing) or relative affordability (with some individuals being unwilling to pay the significantly higher amounts for a house).

#### 4.2.3 Reasons for staying in Kathu

Respondents were asked why they were staying in their current location. The results are summarised in Table 4.2 below.

**Table 4.2: Reasons for staying in the current location for respondents in the hostel and housing scheme in Kathu, 2007**

Reasons for staying	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
Close to work opportunities	174	86.1	274	97.2	448	92.8
Family living here	20	9.9	2	0.7	22	4.6
Nowhere else to go	8	4.0	6	2.1	14	2.9
<b>Total</b>	202	100.0	282	100.0	483	100.0
<b>Pearson Chi-square</b>	<b>Value</b>				19.884	
	<b>Asymptotic significance (2-sided)</b>				0.000	

The responses of residents – both those in the housing scheme and those living in hostels – were largely related to proximity to the mine (86.1% and 97.2% respectively). Residents of the housing scheme were, however, more likely to indicate the fact that family resided in the area as a reason (9.9% of responses vs. only



0.7% of responses for the hostel residents). The difference between the two samples was statistically significant at the 99% confidence interval.

The respondents were also given the opportunity to raise other reasons, not mentioned in Table 4.2 above, in an open question. Four responses from among the residents of the housing scheme and two responses from among the hostel residents were related to the proximity of facilities (most notably schooling), and one resident of the housing scheme indicated that it was because he liked Kathu.

Thus, for both groups, their continued settlement in Kathu is contingent on their continued employment in Kathu, with employment being their main reason for staying there. Any major shifts in the level of employment will most likely see large-scale departures from the Kathu area. Given the international experience (see Chapter Two), this is probably only to be expected in a remote mining town where the mine is the only employer at scale and where the town was originally established to serve this employer. Very few ties are thus experienced beyond the relationship with the employer. The increased association with family/friends among the residents can probably be ascribed either to increased settlement associated with owning a house or to the fact that those with stronger associations are more likely to access housing. It can also be noted that the residents of the housing scheme were nearly twice as likely as residents of the hostel to indicate that they had nowhere else to go. Given this potential for high mobility, the risk associated with large-scale settlement should not be ignored.

#### **4.2.4 Preference for partner/children to join them in Kathu**

Two of the upcoming sections will focus on the presence of partners and children among the respondents and on their living arrangements with such family members. This section will focus on the questions posed to respondents not residing with their families as to whether they would prefer their families to join them in Kathu. This also gives some indication of the intent towards settlement as the family is then no longer kept at the place of origin but near the mine.

As will be reflected later in this chapter in Table 4.4 and Table 4.5, only 23.0% of residents of the housing scheme indicated that their partners did not reside with them,

and 33.5% indicated that their children did not reside with them, thereby ruling out meaningful statistical analysis of the divergence of responses. However, there appears to be a large divergence between the responses of the residents of the housing scheme and those of the hostel residents. The residents of the housing scheme were more likely to indicate that, if this were not already the case, they would have preferred their partners to join them permanently in the area (78.6% vs. 32.2%). As was the trend in the case of the partner, when respondents were asked whether they would wish their children to join them, the residents of the housing scheme were more likely to have indicated that, if it were not already the case, they would have preferred their children to join them permanently in the area (82.1% vs. 35.9%).

The trend outlined in the above two paragraphs supports the findings of the literature: a significant percentage of respondents still appear to have an aversion to bringing their families to reside near the mine. This can probably be attributed to their perceptions regarding the mining area (such as that it is dangerous), that they themselves do not wish to reside there permanently, that they have probably made some form of investment in settling their spouse and/or children in their sending area, or that the continued settlement of the family in the sending area is necessary to protect some claims there. The possibility that access to family-friendly housing solutions may encourage workers to bring their families to join them in the area should, however, not be ignored.

#### **4.2.5 Preference for settlement**

Given that black individuals did not have a choice as to where they could settle during apartheid (see Chapter Three) and that those in power often purported to know where they wanted to stay, it becomes important to ascertain *residents'* preference in terms of settlement in order to surmise future patterns of mobility. Respondents were asked whether they would like to reside in the area permanently. While most of the residents of the housing scheme (79.9%) wanted to reside in the area permanently, only a minority of the hostel residents (45.0%) wished to do so. The difference between the two samples was statistically significant at the 99% confidence interval (Pearson Chi-square: 56.292; significance: 0.000). It is nevertheless important to note that, despite having invested in private housing, 20.1% of the housing residents sampled did not want to reside in Kathu permanently. As will be seen later in Chapter Five, these

individuals mostly rented their housing. Yet, given the lack of private rental accommodation elsewhere, it would not be surprising if some renting were to occur despite the active attempts of the housing providers to avoid this. The figures for both samples reflect high levels of mobility.

#### **4.2.6 Synthesis**

From the previous five sections, it can thus be seen that labour migration remains a common phenomenon among the labourers at the mine under investigation. As would be expected, the largest absolute numbers and also the major share of labour migrants were residing in the hostel. The majority of hostel residents did not wish to reside in the area permanently, nor did they wish their families to join them in Kathu despite years of association with the mine. At the same time, however, there is evidence of people wishing to settle permanently. The residents of the housing scheme were significantly more willing to reside in the area permanently and moreover wanted their families to join them in the area, were this not already the case. However, given that these individuals had invested in private housing in the area, there is still a significant share of individuals who did not wish to reside permanently.

The relevant literature allows a strong case to be made for two arguments opposing settlement. First, given the dearth of opportunities for livelihood diversification in arid regions, the wisdom of permanently moving away from one possible livelihood towards another, which is at risk of discontinuing, should be seriously questioned. Second, the environmental impact of supporting a family in a free-standing house over against a situation where only the individual lives in a smaller unit should be investigated in an environment where the provision of services occurs at such high cost. During the recent developments in Kathu, the upgrading of sanitation and electrical reticulation has already been necessitated and existing water provision is now starting to reach its limits (Botha, 2007).

What then influences individuals to decide whether to settle or not to settle when there are no legal restrictions to their doing so? Since the preference for settlement is one of the less complicated instruments for ascertaining the future mobility of individuals – in that it gives an indication of the respondents' intentions – it will be used in the

rest of this chapter to compare and contrast the demographic/socio-economic profiles of those who would prefer to settle permanently and those who would not.

### **4.3 THE INFLUENCE OF THE DEMOGRAPHIC/SOCIO-ECONOMIC PROFILE ON MIGRATION/SETTLEMENT DECISIONS**

This section will focus on the socio-economic profile of the two sampled populations. This will be done by focussing specifically on the distinguishing features of the two populations and the relationship of these features with the desire to remain in the area permanently. The discussion will include variables such as:

- where respondents hail from;
- respondents' ages;
- the level of education and other training received;
- their marital status and living arrangements with their partners;
- their dependants and their living arrangements with their children; and
- their household income.

#### **4.3.1 Area of origin**

The provinces from which the respondents came were summarised in Table 4.1 in Section 4.2.1. When all the provinces of origin are cross-tabulated with *preference for settlement*, the high number of empty/low population cells precludes statistical calculation. However, when the provinces used are restricted to North West and Northern Cape (with a separate column for the former North-West area), which had the highest number of respondents, a statistically significant (at the 99% confidence interval) relationship emerges for the hostel sample. This indicates that respondents in the hostel who hailed from the Northern Cape (excluding former North West) and from North West show a greater preference for remaining in Kathu (55.0% and 55.1% respectively indicating that they would prefer to settle permanently) than do respondents from the homelands in the former North-West area (30.1%, indicating a preference to settle). This is an important finding as it points to a specific geographic area of origin that continues to draw the respondents to return, probably due to, as the literature suggests, family ties, cultural needs, some form of security or investment made in the area.

Other variables associated with the area of origin of the respondents, to be further discussed in Chapter Five, will also be discussed here to investigate the relationship they have with a preference to remain in the area permanently. A statistically significant relationship in respect of the hostel population was found between a preference for settlement and an indication that, would they be laid off (or the mine closed down), they would not have an alternative place to stay (Pearson Chi-square, 18.072; significance, 0.000; significant at the 99% confidence interval). While those who indicated that they would have an alternative place to stay generally indicated lower preference for settlement (37.4%), the respondents who indicated that they would not have an alternative also indicated a greater preference for settlement (67.1%). This observation points to some form of capital having been invested by some individuals in other areas to which they would prefer continued access in problematic times. It means that they would thus not settle elsewhere.

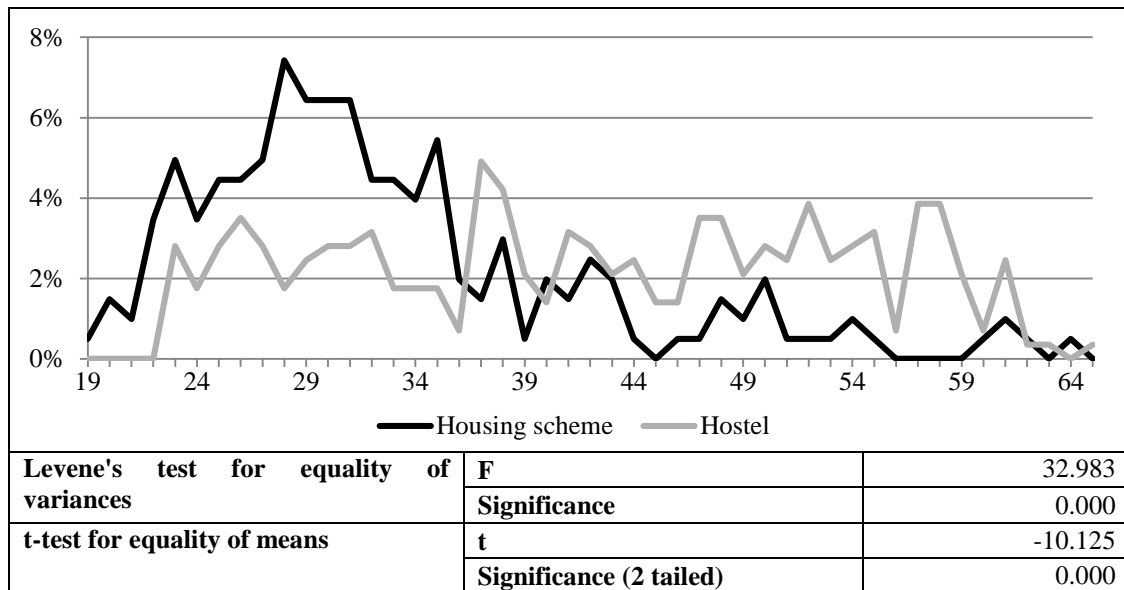
The hypothesis regarding links to existing capital (as explained in the livelihoods paradigm in Chapter Two) in the area of origin is further strengthened when one looks at the relationship between having access to a/another home in the area of origin and giving an indication of not having a preference for settlement (the relationship is statistically significant at the 99% confidence interval for both samples). Of those individuals who did indeed have access to a/another house in their area of origin, 60.0% in the housing sample and 34.7% in the hostel sample indicated a preference for settlement. In comparison, of those individuals who did not have access to a/another house in their area of origin, 86.8% of the housing sample and 82.1% of the hostel sample indicated a preference for settlement.

The geographic area of origin of the respondents and their access to resources in these areas are thus an important factor in deciding who would be likely to abandon circular migration in favour of permanent settlement. This fits with the idea of diversified livelihoods as respondents are unlikely to abandon a viable form of livelihood (capital in the area of origin) that is not exclusive of another form of livelihood (employment at the mine by means of labour migration).

### 4.3.2 Age

It was widely assumed that circular labour migration would cease after the lifting of restrictions (see for example, Beinart (1980), Spiegel (1980), and Murray (1981)). Yet this did not happen. Can it still spontaneously end as one generation passes into another, with youths becoming employed elsewhere and finding less attachment and security in the sending areas? One way of assessing this is by looking at the age distribution of the respondents and then comparing the distribution with the desire to settle in the area. Looking at Figure 4.2 gives an indication of just how widely ages vary between the two samples. The average age differs by almost ten years, with the average age for those in the housing scheme at 32.8 years, while the average for those in the hostels was 42.2 years. The difference in composition between the hostel proper and Skoonplaas (the married quarters associated with the hostel) is also notable, with the residents of Skoonplaas having an average age of 46.2 years.

Historically, there have been shifts in the ages of labour migrants in the gold mines as the conceptions of mines in respect of labour have changed. Wilson (1972a: 182-183), using labour statistics from 1960, argues that during the early period, when the mines were looking for cheap labour, the average age of black (mostly migrant) mineworkers was significantly lower than that of their white colleagues (more educated, and in advanced positions reserved for them by the colour-bar), lying at 27 years for Blacks compared to 35 years for Whites. More recently, as higher skill levels and career mining started to dominate hiring practices in the industry, the average age of miners started to increase as can be seen from the research of Marais and Venter (2006a:57). They found that the average age of the mineworkers in their sample was 40.4 years. The ages of respondents in Kathu are summarised in Figure 4.2 below.



*Figure 4.2: Age of respondents in the hostel and housing scheme in Kathu, 2007*

Closer scrutiny of the age distribution reveals that, in the case of the housing scheme, the low average is brought about by the concentration of dwellers (53.5% of the respondents) in the age group of between 25 and 34 years. When this section is enlarged, 80.2% of respondents are accounted for in the age group of between 20 and 39 years of age. In the case of the hostels, one finds a much more even distribution, with no five-year age grouping between 25 and 59 years receiving less than 10% of the respondents. This age group together constitute 91.2% of the respondents. Levene's test for equality of variances indicates that equal variances cannot be assumed. However, taking this into account still leaves the test for equality of means as statistically significant at the 99% confidence level. This means that there is a statistically significant difference between the average age for hostel dwellers and the average age for respondents in the housing scheme. Given the difference in age between the two samples and the difference in preference to remain permanently in the area, a casual inspection may appear to suggest that the two are related. The relationship is, however, not all that simple:

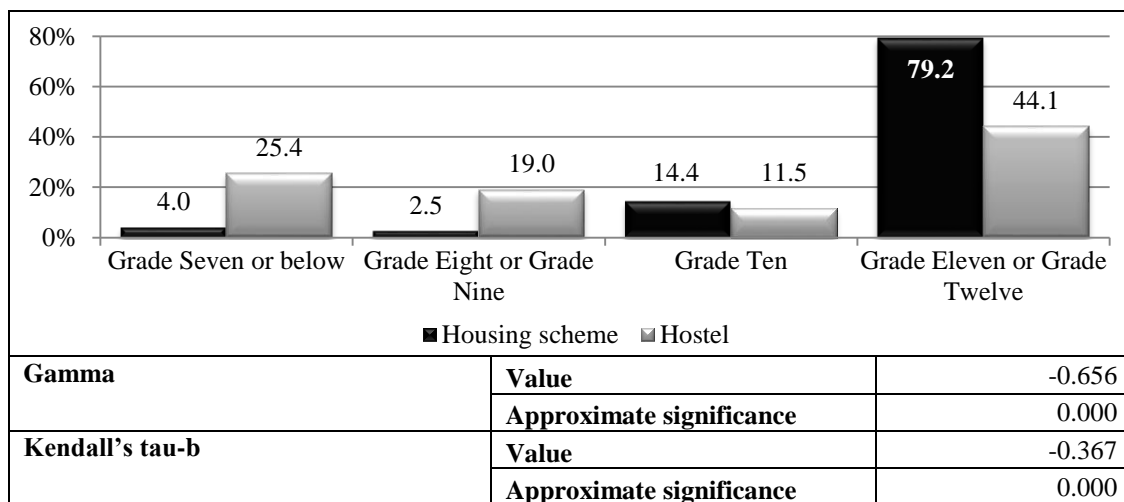
When comparing the age of respondents with the number of years they have been in the area, it can be noted that while – as would be expected – there is a relationship for the hostel residents between age and length of stay (Kendall's tau-b: 0.539; significance, 0.000; significant at the 99% confidence interval), no such relationship exist for the housing population. This reinforces the finding that the association

between the residents of the housing scheme and the mine is a short one. Most residents of the housing scheme have joined during the recent development of the mine and are being absorbed into a changed approach of mining companies to the workforce, changed labour legislation, and changed housing arrangements (see Chapter 3).

Also, while age influences several aspects of the socio-economic profile of the respondents (such as education, marital status, and the presence and number of dependants, as will be seen in later sections), statistical testing suggests that it has no part to play in the respondents' preference for settlement as no statistically significant relationship emerges between the two factors for either of the two samples. The culture of labour migration is not associated with a specific generation and continues to be quite common across all age groups. It can thus be assumed that the same factors tie older migrant workers as well as younger workers to their area of origin.

### 4.3.3 Education and training

Scrutiny of education and training gives insight into the employability and earning power of the respondents. At this point, it is also important to be mindful of the historical trend towards career mining discussed earlier. It can be suggested that the more educated individuals, who are therefore more employable, would be more likely to give up their area of origin for the mines. From Figure 4.3, it can be seen that there is a difference in terms of the schooling of the two groups.



*Figure 4.3: Highest school grade passed for respondents in the hostel and housing scheme in Kathu, 2007*



While 79.2% of residents of the housing scheme have passed Grade Eleven or Grade Twelve, among hostel residents this figure is considerably lower, at only 44.1%. The respondents from the hostel were more likely to have passed only Grade Seven or below (25.4% vs. 4.0%) and Grade Eight or Grade Nine (19.0% vs. 2.5%). Both the Gamma and Kendall's tau-b tests reveal that there is a difference in the level of education between the two samples, indicating that the housing respondents are more likely to have achieved a higher level of education. The difference in the highest school grade passed is significant at the 99% confidence level. Given the differences in education and preference for settlement, a casual inspection may suggest that there is a relationship between the two. Once again, the relationship is not that straightforward and the differences between the two groups concerning age and the length of association with the mine influence the data.

It should be noted that both these samples show exceptionally high levels of education when compared with the sample of Marais and Venter (2006a) from a gold mine where only 14.2% of the population had completed Grade Eleven or Grade Twelve. This could indicate either a difference in the hiring practices of the two mines or a difference in the labour-supplying population. Kathu is located in an area where it could have less competition from other employers looking to hire from the same profile.

When age is cross-tabulated with education, a statistically significant negative relationship (at 99% confidence interval) emerges for both samples. For the housing sample, this relationship is mild (Kendall's tau-b: -0.285; significance, 0.000), while for the hostel it is relatively strong (Kendall's tau-b: -0.519; significance, 0.000). This means that, for both samples (though more pronounced for the hostel sample), the younger respondents were more likely than the older respondents to indicate having passed a higher grade. This is to be expected in that it is a common phenomenon that levels of education increase over time across the developing world, but also because South Africa is still addressing the apartheid legacy in education. Given the differing age compositions of the two samples, age would then be a major contributor to the significant difference in education between the two groups. Yet age per se is no indication of the ability to stabilise. A later section will deal with the

relationship between education and income, which would then also have an influence on the respondents' ability to afford private housing.

When respondents were asked whether they had received any training, a distinction was made between formal and informal training. Most residents in the housing scheme (67.0%) indicated that they had previously received some form of formal training, while most hostel residents had not (70.0%). The difference in training between the two groups is significant at the 99% confidence level (Pearson Chi-square: 65.124; significance: 0.000; significant at the 99% confidence interval).

Once again, when age is cross-tabulated with formal training, statistically significant relationships emerge for both samples (at 99% for the hostel sample though only 90% for the housing sample). For both samples, the older respondents were slightly more likely than the younger respondents to indicate having received some formal training. This can possibly be explained by the fact that older individuals may have had more time to access formal training. The relationship complicates the explanation of the difference in formal training between the two groupings as the distribution of age and that of formal training suggest opposing relations.

As the relationship between age and training is not strong and cannot explain the distribution of formal training, it can only be assumed that some other social phenomenon has led to the distribution of formal training. It can be speculated that, as the general mineworker population needs to be better trained to deal with the changes in mining and because recent arrivals were more likely to be housed in the housing scheme, the difference in access to housing for the two samples could explain the differing distribution in respect of training. This receives some confirmation in that there is a relationship between formal training and the duration of stay in Kathu (statistically significant at the 99% confidence interval) for the hostel sample (the short durations of stay for the housing population excludes the possibility of a similar calculation for that particular sample). The average duration of stay for those with formal training is 11.08 years, and for those without formal training, it is 15.49 years.

When asked whether they did receive any informal training, most of the respondents in both groups indicated that they did not (53.3% of the housing sample and 64.6% of

the hostel sample). The residents of the housing scheme were, however, more likely to have received some form of informal training. The difference in training between the two groups is significant at the 95% confidence level (Pearson Chi-square: 6.082; significance: 0.014).

Age proved to be less significant in determining who had received informal training. It shows a statistically significant relationship that is significant only at the 90% confidence interval for the housing sample indicating a lower average age for those who had received informal training (31.33 vs. 33.70 years). At the same time, there was no such relationship for the hostel sample. The housing scheme, however, showed a statistically significant relationship (at the 95% confidence interval) between duration of stay in Kathu and receiving informal training. This is to be expected in that those individuals who had had longer associations with the mine were more likely to have received some training from the mine. No such relationship, however, exists for the hostel sample.

While there appears to be virtually no relationship between education and training and the preference for stability, there does appear to be a relationship between formal training and the preference for settlement for the housing sample. This is statistically significant (though only at the 90% confidence level). Of those who had received formal training, 83.6% preferred settlement compared to 73.4% of those who had not received formal training. It is possible that the training that these individuals received may have been specific to the mines and thus limiting their employment opportunities elsewhere, which led them to seek stability at the mine. The general conclusion is, however, that education and training have very little effect on the desire to remain in the area permanently.

#### **4.3.4 Marital status**

One of the major impacts of labour migration mentioned in the literature is the effect of migration on the domestic life of a migrant. The question arises whether family conditions would have an impact on the decision of workers to settle with their families near their place of employment (see chapter Three). Table 4.3 reveals that respondents from the hostel sample were more likely than respondents from the housing sample to be married (64.9% vs. 56.1%) or widowed/divorced (5.0% vs.

1.5%). Respondents of the housing sample, in contrast, were more likely to indicate that they were single (28.8% vs. 23.4%) or cohabiting (13.7% vs. 6.7%). The difference in marital status is significant at the 99% confidence interval.

**Table 4.3: Marital status of respondents in the hostel and housing scheme in Kathu, 2007**

Marital status	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
<b>Married</b>	115	56.1	183	64.9	298	61.2
<b>Single/never married</b>	59	28.8	66	23.4	125	25.7
<b>Widowed/divorced</b>	3	1.5	14	5.0	17	3.5
<b>Cohabiting</b>	28	13.7	19	6.7	47	9.7
<b>Total</b>	205	100.0	282	100.0	487	100.0
<b>Pearson Chi-square</b>	<b>Value</b>				12.898	
	<b>Asymptotic Significance (2-sided)</b>				0.005	

The difference in age is once again possibly the largest determinant of this pattern as there is a statistically significant (at the 99% confidence interval) relationship between age and marital status for the hostel sample. Just as Figure 4.2 indicated that the hostel population had a proportionally older population, the married and divorced categories were largely populated by older respondents.

Respondents who indicated that they were married or cohabiting were also asked what their residential arrangement with their partner was (see Table 4.4 below). Distinctions were made between those living in the area (Kathu, Dingleton, or the township of Sesheng) or in the same housing unit, either on a permanent or a temporary basis, or living in another area on a permanent basis. Statistically significant (at the 99% confidence level) differences between the residential arrangements of the residents of the housing scheme and the hostel residents were found. As was to be expected, residents of the housing scheme were significantly more likely to have their partner living with them in the same housing unit (77.0% vs. 19.9%), while they were significantly less likely to have their partner living elsewhere on a permanent basis (8.6% vs. 62.3%).

**Table 4.4: Residential arrangement with partner for respondents in the hostel and housing scheme in Kathu, 2007**

Residential arrangement with partner	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
Reside with partner in this area on a permanent basis	17	12.2	23	12.0	40	12.1
Reside with partner in this area on a temporary basis	3	2.2	11	5.8	14	4.2
Partner lives in another area on a permanent basis	12	8.6	119	62.3	131	39.7
Lives with partner in the same housing unit	107	77.0	38	19.9	145	43.9
<b>Total</b>	139	100.0	191	100.0	330	100.0
<b>Pearson Chi-square</b>	<b>Value</b>				120.501	
	<b>Asymptotic Significance (2-sided)</b>				0.000	

Judging by Table 4.3 and Table 4.4, the effects of the hostel system appear to become clear: despite being more likely to be married, residents of the hostel were most likely not to be sharing a housing unit with their spouses. This is to be expected, as (with the exception of the married quarters at Skoonplaas) there is no space for a partner or children officially to join the worker in the hostel. Of the 38 hostel residents who had indicated that their partner was living with them in the same housing unit, only seventeen were from the married quarters (Skoonplaas) where a partner could officially reside. This confirms anecdotal evidence from the interviews (Nel and Van Wyk, 2007) that there is some unauthorised family-habitation in the hostels, where residents wish to have their families living with them despite being unable to find or afford family housing. It should, however, be borne in mind that the residents of the hostel were the least likely to indicate a preference for stability and/or a preference for their partner to join them in Kathu.

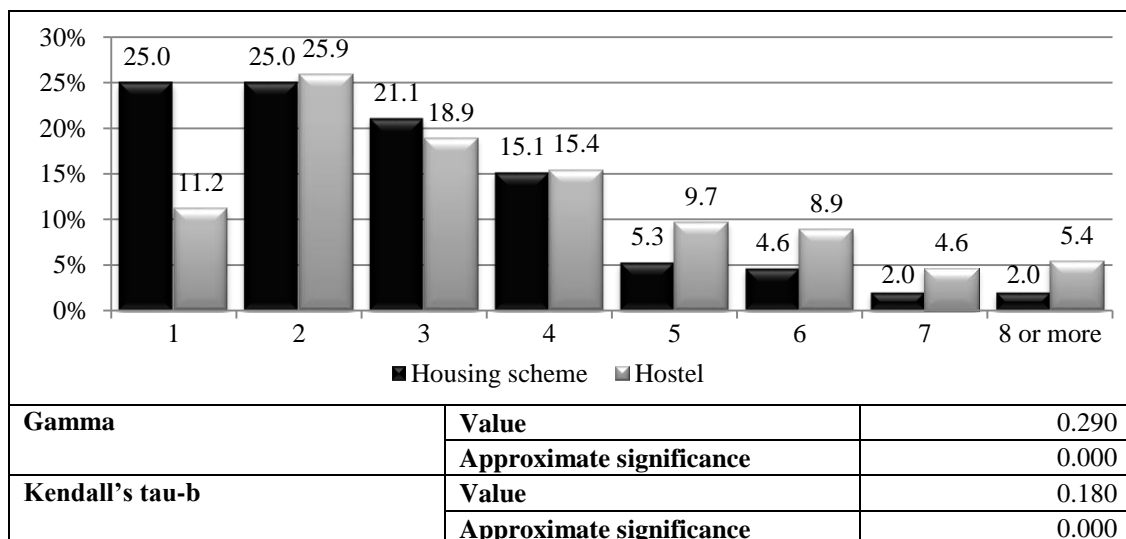
When marital status and the preference for stability is cross-tabulated, a statistically significant (though only at the 90% confidence interval) relationship emerges for the hostel population. Those respondents who were married or cohabiting showed slightly higher levels of preference for settlement (49.1% and 52.6% respectively preferred settlement) than those who were single or divorced/widowed (with 34.4% and 23.1% respectively preferring settlement). The presence of a partner thus have a mild influence on the respondents to settle and have their partner join them near their

place of employment, while the absence of these links would lead to an individual being significantly less likely to want to settle.

### 4.3.5 Dependants

The effects of hostel life can also be seen when one takes into account the living arrangements of respondents with their dependants. Residents of the housing scheme were less likely than hostel residents to indicate that they had any dependants (77.1% vs. 92.6%). Residents of the housing scheme also indicated fewer dependants (see Figure 4.4). The difference in the presence of dependants is statistically significant at the 99% confidence level (Pearson Chi-square: 14.705; significance: 0.000).

As with many of the previous socio-economic indicators, the difference in age is probably the largest determinant of this pattern as, for both samples, there are statistically significant (at the 95% and 99% confidence interval for the housing sample and hostel sample, respectively) relationships between age and whether respondents had any dependants. The smaller share of respondents in the housing scheme sample who had dependants could then, at least in part, be influenced by the age distributions of the two samples. Figure 4.4 below now turns to the number of dependants.



**Figure 4.4:** Number of dependants (if any) for respondents in the hostel and housing scheme in Kathu, 2007

The results reflected in Figure 4.4 above reveal that 71.1% of the residents of the housing scheme reported having three or fewer dependants, while 71.4% of hostel

residents reported having four or fewer dependants. The result is an average of 2.8 dependants for the residents of the housing scheme and an average of 3.6 dependants for the hostel residents. Both the Gamma and Kendall's tau-b tests reveal that there is a statistically significant (at the 99% confidence level) difference between the average number of dependants for hostel dwellers and the average number of dependants for those in the housing scheme.

It is likely that the difference in age also influenced this statistic. There was a weak positive relationship (Kendall's tau-b value of 0.317 for the housing sample and 0.235 for the hostel sample, both significant at the 99% confidence interval) between age and number of dependants, indicating that older respondents were more likely to have indicated more dependants. A weak (-0.188), statistically significant (at the 99% confidence interval), negative relationship was also found for the hostel sample between education and number of dependants. This indicates that respondents with a higher level of education were slightly more likely to indicate fewer dependants.

Respondents who indicated that they had dependants were asked what their residential arrangements with their child dependants were. Twelve residents of the housing scheme (compared to none of the hostel residents) indicated that, although they had dependants, none of these were children. Four hostel residents (compared to none of the residents of the housing scheme) indicated that their arrangement was some arrangement other than the ones specified in Table 4.5 below without specifying *what* this arrangement was. These sixteen cases were excluded from Table 4.5 and also from the subsequent discussion.

**Table 4.5: Residential arrangement with dependants (children) for respondents in the hostel and housing scheme in Kathu, 2007**

Residential arrangement with dependants (children)	Housing scheme		Hostel		Total		
	n	%	n	%	n	%	
Reside with respondent in this area on a permanent basis	17	12.1	30	12.9	47	12.6	
Reside with respondent in this area on a temporary basis	8	5.7	6	2.6	14	3.8	
Live in another area on a permanent basis	22	15.7	146	62.9	168	45.2	
Live with respondent in the same housing unit	93	66.4	50	21.6	143	38.4	
<b>Total</b>	140	100.0	232	100.0	372	100.0	
<b>Pearson Chi-square</b>		<b>Value</b>				111.370	
		<b>Asymptotic Significance (2-sided)</b>				0.000	

A pattern similar to that for the residential arrangements with the partner, in Table 4.4, is seen in Table 4.5 for the residential arrangement with the children – using the same categories of living arrangements. Most of the residents of the housing scheme (66.4%) had their children living with them in their houses while most of the hostel residents (62.9%) had their children living elsewhere on a permanent basis (the difference between the samples regarding living arrangements is statistically significant at the 99% confidence interval). This is probably largely due to the lack of family housing for those in the hostels. However, of the 50 cases in the hostel where respondents indicated that their children were living with them in the same housing unit, 26 were resident at Skoonplaas. This once again indicates some level of unauthorised family habitation in the hostels. It shows that at least some of the residents of the hostel would have preferred to have their families with them – irrespective of the circumstances – and would do whatever was required to have them near.

While there was no relationship between the presence of dependants and the desire to reside permanently in the area, a weak relationship that is statistically significant (at the 99% confidence interval) was found for the hostel population between higher numbers of dependants and the preference not to stay. The average number of children for individuals who wanted to settle in the area was 3.11 compared to 3.8 for those who did not want to settle. This could indicate that it is easier to support a larger family where there are connections with the sending area. However, since



these two questions did not distinguish between dependants who were children, adults, or elderly, another interpretation is possible: higher numbers of dependants may also indicate elderly family members who do not wish to leave the sending area, and who would tie the respondent to that area.

The presence of family could then have conflicting influences on the desire for stability *without* a partner, on the one hand, and the presence of large numbers of dependants who increase the association with the sending area, on the other.

#### 4.3.6 Household income

Respondents were also asked to state their total household income (for both themselves and their spouses). The results are summarised in Figure 4.5 below.

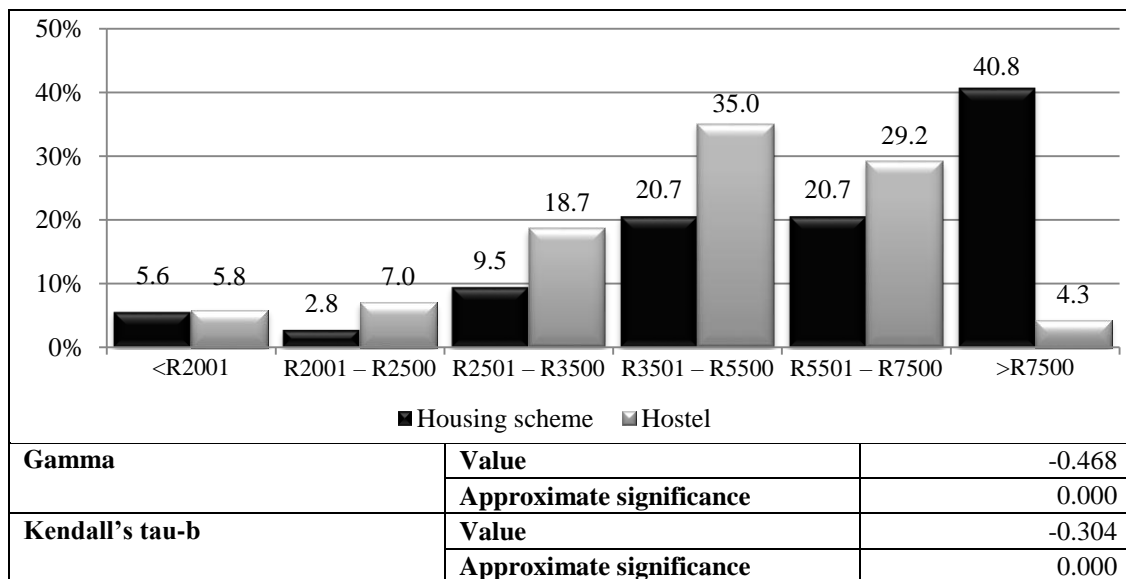


Figure 4.5: Household income for respondents in the hostels and the housing scheme in Kathu, 2007

The residents of the housing scheme, on average, indicated higher salaries than the residents of the hostel system. While 40.8% of the residents of the housing scheme indicated that they were earning a household income of more than R7500, only 4.3% of the residents of the hostel scheme fell in this category. Furthermore, 82.1% of residents in the housing scheme earned more than R3500, while only 63.5% of hostel residents were in the same category. The differences between the household income reported by the two samples were statistically significant at the 99% confidence level.

There was virtually no relationship between income and age, while education, on the other hand, showed weak (Kendall's tau-b value of 0.190 for the housing sample and 0.163 for the hostel sample) but statistically significant (at the 99% confidence interval) relationships with income. This indicates that the more educated respondents were earning more. This relationship further confirms the move towards a more stable, educated, and productive workforce in mining in general, with the better-educated workers receiving the same salaries as those workers who have more experience but less education. However, in respect of training, there was no relationship, or a very weak and contradictory relationship with income. It showed neither formal nor informal training to be a determining factor regarding the value that the company places on the individual employee.

A very weak relationship (Kendall's tau-b: 0.118), which was only statistically significant at the 95% confidence interval, was found, for the hostel population, between income and the preference to remain permanently in the area. This gives an indication of a marginally stronger preference among those receiving a lower salary to remain in the area permanently. Two possible interpretations present themselves: respondents earning a smaller household income may be more dependent on their income at the mine to sustain their families; or, those reporting higher household income may have their household income supplemented with income from livelihoods in their area of origin, which they are consequently unwilling to give up.

#### **4.3.7 Synthesis**

The survey showed that, in comparison with the hostel residents, the residents of the housing scheme were generally more likely to have come from the Northern Cape and less likely to have come from North-West Province. They are also more likely to be younger and to have been living in the area for a shorter time. They are less likely to be married, less likely to have dependants and have fewer dependants. They are better educated and trained and are earning more. The differing demographic/socio-economic profile of the samples can be considered a consequence of a combination of factors that include the ages of the different populations (with age influencing several demographic factors), the effects of past policies (whether those of the apartheid government or the mine), as well as – to a lesser extent – the differing levels of commitment to reside permanently in Kathu.

Generally, no hard-and-fast rules could be discerned from the data regarding the characteristics of the individuals who indicated a preference for stability as most of the relationships were relatively weak despite their actually being statistically significant (see Table 4.6 below). Some general patterns could, however, be discerned, even if they showed some variation between the two samples. This possibly indicates that a desire for settlement did not necessarily translate into investment in housing. Although these demographic/socio-economic variables exerted some influence, they were not the deciding factors. The general, detected patterns indicating an increased preference for settlement included:

- formal training (housing population);
- marital status (hostel population);
- fewer dependants (hostel population);
- lower household income (hostel population);
- former homelands as area of origin (hostel population);
- no alternative place to stay (hostel population); and
- lack of access to a house in their area of origin (both populations).

Of the patterns listed above, the only relationship both statistically significant and present in both populations was the relationship with the desire to continue with migratory labour and the one with the presence of a/another house in the respondents' area of origin. When this is further combined with similar relationships with having an alternative place to stay and with having a residence in the former homelands, it becomes clear that the current situation in the homelands is one of the strongest ties to the migratory lifestyle. This also provides insight into the links with diversified livelihoods alluded to in the literature, with homelands encompassing a variety of forms of capital (as discussed in the livelihoods approach). Those individuals who had investments (whether of a capital or personal nature) in their areas of origin, and hence an alternative livelihood, were less likely to have indicated a preference to settle. Conversely, those who did not have such alternatives were more likely to have indicated the desire to settle.

**Table 4.6: Cross-tabulation of preference for settlement with other variables**

Preference for settlement cross-tabulated with:	Housing scheme				Hostel			
	t-score	Kendall's tau-b	Pearson Chi-square	Significance	t-score	Kendall's tau-b	Pearson Chi-square	Significance
Place of origin (All) (Northern Cape, North West)			20.203 2.604	0.005 <sup>§</sup> 0.727			18.805 12.434	0.016 <sup>§</sup> 0.002**
Age	-0.249			0.803	-0.095			0.924
Education		-0.099		0.205		0.023		0.702
Formal training			2.772	0.072*			0.290	0.487
Informal training			1.037	0.203			0.415	0.305
Marital status			1.638	0.651			6.792	0.079*
Any dependants			0.041	0.516			0.431	0.337
Number of dependants		-0.065		0.434		0.171		0.002**
Household income		-0.014		0.849		0.118		0.050*
Alternative place to stay <sup>#</sup>			0.021	0.517			18.072	0.000**
House in area of origin <sup>#</sup>			16.603	0.000**			39.958	0.000**

<sup>#</sup> See Chapter Five for more details on these variables

<sup>§</sup> Discounted away to empty cells

\* Significant at the 90% confidence interval

\*\* Significant at the 99% confidence interval

#### 4.4 CONCLUSION

The empirical data revealed that migrancy remains the preference of a significant share of the population, especially among the hostel residents. Generally, no universal patterns were found in the demographic/socio-economic data to indicate clear influences regarding who would prefer to settle, except, that is, for the absence of a/another home in the area of origin. If this is joined with the significant relationships in the data from the hostel population, one could confidently suggest that the major influence is the presence or the absence of alternative livelihoods in the area of origin. Effectively, both having an alternative livelihood *and* circular migration are coping mechanisms to reduce the shocks of mining cycles and also the effects of the limited possibilities of livelihood diversification.

Conversely, given South Africa's history of forced migration and the denial – in respect of black citizens – of the right to settle or the lack of support for those black citizens who do decide to settle, the best policy is generally considered to be one of encouraging the settlement of individuals in areas of economic potential. However, when considering the above data, it could be questioned whether encouraging

permanent settlement in the area is always the best option. Given that a large share (if not the majority) of workers prefer not to reside permanently and that they often have access to a wider range of other forms of livelihood if they did not settle permanently (which, as was discussed in Chapter Two, is problematic in arid regions), it is clear that settlement should perhaps not be all that actively encouraged.

The fact that lower levels of settlement were found amongst people with alternative livelihoods is important for a number of reasons:

- It suggests that migrant labour is not only a result of political restrictions (something which has been proven by looking at international examples of ongoing migration – see Wilson (1972b) and Mabin, (1990)).
- It confirms the need expressed in the DDP and in the livelihoods approach that multiple livelihoods are important means of absorbing shocks.
- It suggests that, given the opportunity, lower-income people have the ability to make decisions in a way that may reduce their risks (as suggested by the DDP). Yet such decisions have clear socio-economic implications for the household.
- The fact that approximately 50% of the respondents in the hostel sample prefer migration places less pressure on the mining settlement of Kathu in terms of water provision and infrastructure development and moreover reduces the risks related to boom-bust cycles or mine closure.

The relevant issues discussed in this chapter are summarised below in Table 4.7, where they are reflected against the concepts discussed in previous chapters. Cells marked as being not applicable (N/A) are more appropriately addressed by the questions asked in Chapter Five and will be dealt with there.

**Table 4.7: Summary of key concepts discussed in this chapter**

<b>Central concepts</b>	<b>Continued circular migration</b>	<b>Settling permanently</b>
<b>Approach</b>	N/A	N/A
<b>Government/private sector/community</b>	N/A	N/A
<b>Resource management</b>	N/A	N/A
<b>Settlement</b>	Less than half of the hostel residents would prefer to settle; residents prefer to engage only in employment at mine while maintaining household elsewhere	Significant levels of settlement among housing residents with most bringing their families to stay; more than 20% would prefer not to settle in the area
<b>Sustainability</b>	Families mostly absent; reduced pressure on immediate resources; alternative livelihoods ongoing in area of origin; presence of alternative livelihoods a good indicator of migrancy	Bringing families to settle is placing pressure on immediate resources; other livelihoods often lacking; those with limited livelihoods seem more likely to be dependent on their livelihoods at the mine and to settle there
<b>Migrancy</b>	Appears to be the preference of more than half of hostel residents and 20.0% of housing residents; short distances from place of origin; many of hostel residents reported years of migrancy	Around 20% of housing residents will not settle despite investment in private housing, this indicating a desire to continue with migrancy
<b>Infrastructure development/service delivery</b>	Minimal increases in infrastructure required – only those involved in mining are accommodated	Significant increases in infrastructure are required and ongoing as families join the employed population in the area
<b>Housing solutions/tenure</b>	N/A	N/A
<b>Family cohabitation</b>	Families are generally left in area of origin	Families are generally brought to settle near mine

If the migration of workers is set to continue alongside settlement, one could well ask what form of housing would be most appropriate for the workers. Chapter Five turns to this question.

## **CHAPTER FIVE: AN EVALUATION OF HOUSING-PROVISION OPTIONS IN KATHU**

### **5.1 INTRODUCTION**

The previous chapter discussed the factors playing a role in migrancy and stabilisation as these are reflected in the two surveys in Kathu. Divergent patterns were found between the two populations sampled in terms of many socio-economic indicators as well as their preference for stabilisation. High levels of mobility were noted among both samples though the hostel sample displayed the highest levels of mobility. The socio-economic attribute which related to the highest indication of an unwillingness to settle in Kathu was found in alternative livelihoods (a/another house) in other areas. These high patterns of mobility echoed the patterns displayed by mineworkers elsewhere in South Africa (see Chapter Three).

Given the possible housing solutions (discussed in Chapter Three) and also the current policy direction in Kathu (see Chapter One), the following questions then arise: What form of housing does one provide for such a diverse and mobile population? What form of housing provision would the mineworkers in the area prefer? Do the current forms of housing provision suit the realities of the mineworkers' livelihoods? What can households afford? And probably more importantly: What are the implications of various options for arid areas and the characteristics of these areas as expressed in Chapter Two? Chapter Five will attempt to address these questions by looking at both the preferences of the respondents against the background of their ability to afford such preferences and the respondents' evaluations of their current housing solutions. The key argument is that respondents' preferences are not always in line with their immediate needs close to the mine, their stated ability to afford such solutions, and the long-term problems associated with mining settlements (as suggested in the literature).

This chapter consists of three sections. The first section considers what the respondents prefer in terms of housing and specifically addresses issues like location, tenure, size, and type of unit. The next section focuses on issues regarding income,

expenditure, and affordability with an eye to determining what respondents can afford. The final section scrutinises the options available in terms of housing, given respondents' needs and abilities, and the effects that such options will have on the future of the respondents.

## **5.2 BASIC HOUSING PREFERENCES**

This section summarises the housing preferences of respondents in respect of specifically location, tenure, size, and type.

### **5.2.1 Location of housing unit**

The literature discussed in Chapter Three and the findings in Chapter Four have suggested that mineworkers generally prefer two divergent settlement patterns: to settle in their areas of origin and then engage in circular migration to their place of employment or, alternatively, to commit to housing in the mining area. The choice not to settle in the area is due to prevailing views on the mining area and/or the existence of other forms of capital (in alignment with the Livelihoods Paradigm discussed in Chapter Two) in the area of origin (see Chapter Three). Furthermore, in Chapter Four, Section 4.2.5, it was indicated that 55.0% of hostel residents indicated that they did not wish to reside in Kathu permanently. This is supported by the fact that 57.8% of the hostel residents indicated that they would prefer to make an investment in housing in their area of origin. Only 33.9% indicated that they would prefer to invest in housing in Kathu, while 8.4% indicated an area close to – but not in – Kathu. A significant percentage of the hostel residents are likely at some point to be returning to their area of origin where their partner and children reside, and they would probably prefer to invest in their housing in that area.

The influence of the area of origin is illustrated in the fact that 66.3% of the hostel residents who indicated that they had access to a house in their area of origin also indicated that they would prefer to invest in their area of origin. In contrast, 28.3% of those who did not have access to a house in their area of origin wanted to invest in housing there. It also becomes clear at this point that 17.4% of the hostel respondents indicated that they were amenable to investing in housing in two areas, as they had



access to a home in their area of origin (to which they were planning to return) *in addition to* a house in the area close to the mine (26.2% of the respondents in the housing scheme also have access to a home in their area of origin).

The housing respondents (who already had a home near the mine) were asked whether the location of their house was appropriate to their needs. Just over 80% (80.2%) of residents in the housing scheme indicated that the location of their house was appropriate to their needs. Interestingly enough, there was no correlation between the desire to remain in Kathu permanently and the evaluation of the appropriateness of the location. The above would then reflect an evaluation of the immediate needs of homeowners and not their long-term needs. Those who indicated that it was not appropriate were further asked where they would have preferred their house to have been located. The results are summarised in Table 5.1 below.

**Table 5.1: Preference of other locations for housing scheme residents in Kathu, 2007**

Preference for location	Housing scheme	
	n	%
In the area close to the mine	10	34.5
In the respondents' area of origin	6	20.7
Elsewhere in the Northern Cape	5	17.2
Closer to the centre of Kathu	4	13.8
Elsewhere	4	13.8
<b>Total</b>	29	100.0

Of those who indicated that the location of their house was not appropriate to their needs, 34.5% indicated, without specifying an alternative, that they would have preferred a location close to the mine though not in Kathu itself. A list of alternatives would probably include Kuruman, Postmasburg, the local township of Sesheng, and Dingleton (which, though located on another side of the quarry relatively close to activities is currently being considered for depopulation). This list of alternatives is supported by the category "Elsewhere in the Northern Cape" (at 17.2%), which prominently features the towns of Kuruman and Postmasburg. These locations close to, but not in, Kathu become important when one takes into consideration that 10.0% of the hostel residents and 7.5% of housing residents indicated that they would prefer to settle in areas close to the mine, though not in Kathu.

Furthermore, 20.7% indicated that they would have preferred to invest in their area of origin, while the “Elsewhere” category (with four responses) was dominated by the Free State. Four respondents also indicated that they would have preferred a location closer to the centre of Kathu or one of the older houses in Kathu. This is, however out of the hands of the housing providers, Matlapeng and Laketshona, as all these houses are private owned and all the open areas cannot be developed because of the presence of the stands of protected Kameeldoring trees.

Most hostel residents would then require some form of temporary housing in the area as they would prefer to invest in housing elsewhere, while most of the residents of the housing scheme find the location of their current housing (in Kathu) satisfactory. However, while the company providing housing is focussing on the development of housing options with mortgage bonds, there is a severe shortage of rental units in the immediate environment of Kathu, with many workers commuting from nearby towns. The hostel is also being upgraded and will be providing rental housing to a significantly smaller group than currently. A share of both populations indicated that an area close to Kathu would be/have been more appropriate. This is encouraging, as the use of areas close by (Kuruman or Postmasburg) can then be encouraged, and this would provide housing in towns that are more likely to be sustainable in the absence of the mine (though the respondents would still be dependent on the mine for employment).

### **5.2.2 Tenure preference**

The dominance of home ownership as the tenure of preference in South Africa (Gilbert *et al.*, 1997) was affirmed when housing and hostel respondents were asked what tenure status they would prefer when making an investment in their housing situation in the area close to the mine. Ownership remained the most-preferred tenure option even among those who continue to migrate between their areas of origin and their place of employment (with 78.5% of hostel residents indicating ownership as their preferred tenure option). One does, however, find interest in rental housing amongst 16.6% of respondents, while the rent-to-own option remained relatively low (4.9%). Although such preference is understandable against the background of the apartheid history of housing where ownership was not always available, it does indeed increase the risk for the mineworker in Kathu.

Statistically significant (though only at the 90% confidence interval) weak relationships were found when demographic factors were compared with tenure preference (the rent-to-own option was excluded because of its relative unpopularity and because such exclusion makes statistical manipulation easier). Households with lower income (Kendall's tau-b value: 0.102; significance: 0.099) or fewer dependants (Kendall's tau-b value: 0.105; significance: 0.064) were somewhat more likely to indicate that they would prefer to rent. When the living arrangements with the partner and children (see Chapter Four) are recoded to indicate only "living in the area/same unit permanently" or not, statistically significant relationships emerge in cross-tabulation with the tenure preference. Respondents whose partners were not residing in the area permanently were most likely to indicate that they would prefer to rent the unit in which they would be staying (22.4% indicated rental as preference). In contrast, respondents whose partners were residing there permanently were least likely to indicate that they would prefer to rent (6.9% indicated rental as preference) (Pearson Chi-square value: 7.948; significance: 0.019; significant at the 95% confidence level). Furthermore, respondents who indicated that their children were not residing in the area permanently were most likely to, indicate, that they would have preferred to rent the unit in which they would be staying (21.2% indicated rental as preference). In contrast, respondents whose children were residing there permanently were least likely to indicate a preference for rental tenure (8.3% indicated rental as preference) (Pearson Chi-square value: 5.894; significance: 0.053; significant at the 90% confidence level). However, the preference to have the partner and/or children join them in the area had little to no (and not any statistically significant) influence on tenure preference.

A stronger relationship was found between demographic features and the desire to remain in the area permanently. Those who indicated that they would prefer not to reside permanently were more likely to have indicated that they would prefer to rent (24.1%) than were those who indicated that they would prefer to reside in the area permanently (7.8%) (Pearson Chi square value: 12.721; significance: 0.002; significant at the 99% confidence interval). It is, however, puzzling that 75.9% of respondents who indicated that they did not want to reside in the area permanently still wanted to own the dwelling unit they stayed in near the mine. Once again, this trend should probably be viewed against the historical insecurity in respect of tenure

under apartheid rather than against an understanding of the implications of ownership in an arid location such as Kathu.

From the above, it would seem that the choice for the rental option was then more likely to be associated with those who did not need a large unit (because of having fewer dependants) and were less likely to be able to afford a bond (because of earning a lower salary). Also, the relationships between tenure preference and living arrangements indicate that current living arrangements have a stronger influence on the tenure preference of the hostel residents than does the preferred living arrangements. Those working in Kathu, who did not want to reside in the area permanently, were significantly more likely to wish to rent. The implication here is that those who want their families near them would engage in whatever steps necessary to have them with them. It is, however, puzzling that, despite not wanting to remain in the area permanently and moreover preferring to invest in housing elsewhere, most respondents nevertheless indicated that they would prefer to own the unit they would be living in near the mine.

As housing residents had already invested in housing in the area, they were asked whether their current tenure was appropriate to their needs. A distinction was made between three types of tenure, namely rent, ownership, and rent-to-own. The rent-to-own option involves an instalment sales agreement and differs from ownership in the sense that transfer is only taken five to eight years after occupation. This form of tenure is usually more appropriate in three cases. Firstly, it assists households with a poor credit record to improve their record over a period of time. Secondly, it is marginally cheaper as households need not pay the initial transfer cost. Thirdly, it reduces the risk of boom-bust cycles or mine closure during the first five to eight years in that, should the mineworkers lose their jobs, there would be no obligation to pay a mortgage bond.

The rent-to-own option was the most frequently cited tenure option, with 50.0% of the respondents indicating that they were currently renting-to-own. Furthermore, 27.5% of respondents owned the unit while 22.5% were renting the unit. These are quite high shares of rent-to-own and rental considering the culture of ownership and the fact that the companies providing and facilitating housing are actively attempting to

move towards outright ownership. Generally, the duration of the rental arrangements are restricted and the rent-to-own option is only encouraged where outright mortgages can not be secured immediately (Nel and Van Wyk, 2007).

While the statistically significant relationship between the tenure option and the number of dependants seen with the hostel sample was repeated (Kendall's tau-b<sup>12</sup> value, 0.145; significance, 0.046; significant at the 95% confidence), the relationship to income situation was reversed. While among the hostel sample, lower income would suggest a preference for renting, the weak relationship in the housing sample suggested that lower income would point to more permanent forms of tenure like rent-to-own or ownership (Kendall's tau-b value, -0.123; significance, 0.075; significant at the 90% confidence interval). When the residential arrangements that were recoded to indicate only "living in the area/same unit permanently or not" are used again, statistically significant relationships emerge in cross-tabulation with the current tenure arrangement. Respondents whose partners were not residing in the area permanently were more likely to indicate that they were renting the unit in which they were staying (45.5% were renting) than were those respondents whose partners were residing there permanently (16.9% were renting) (Pearson Chi-square value: 9.513; significance: 0.009; significant at the 99% confidence level). Furthermore, respondents who indicated that their children were not residing in the area permanently were more likely to indicate that they were renting the unit in which they were staying (38.7% were renting) than those respondents whose children were residing there permanently (17.5% were renting) (Pearson Chi-square value: 7.807; significance: 0.020; significant at the 95% confidence level).

A stronger relationship with the desire to remain in the area permanently was also found among the respondents of the housing sample. Those who indicated that they would not prefer to reside permanently were more likely to have indicated that they would prefer to rent (43.2% versus 16.8%) than were those who indicated that they would prefer to reside in the area permanently (Pearson Chi square value: 14.446; significance: 0.001; significant at the 99% confidence level). Although the share of

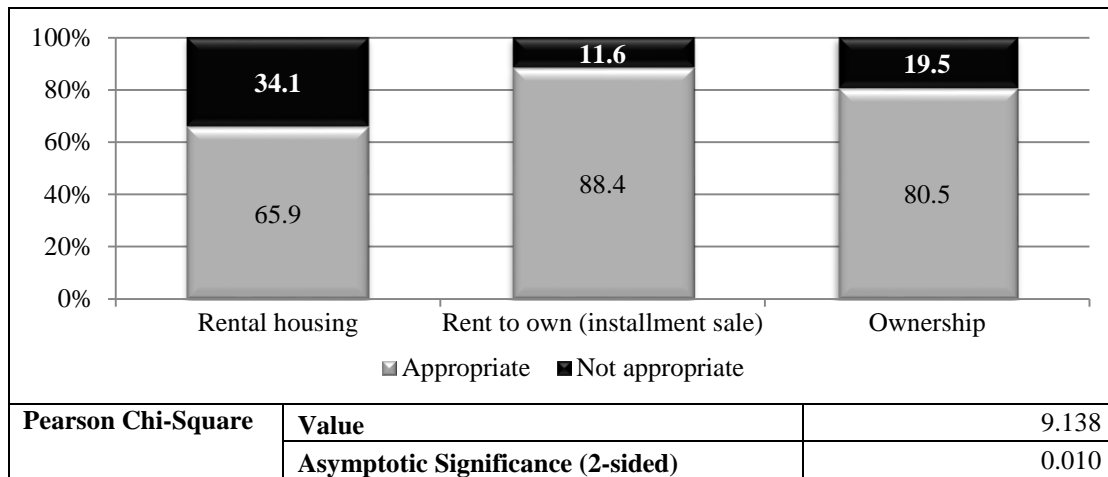
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<sup>12</sup> Kendall's tau-b was used here as the tenure options presented three categories instead of two, as was the case in the cross-tabulation for the hostel population. By arranging the tenure options in order of permanence – renting, renting to own and finally ownership – the variable can be justified as ordinal and Kendall's tau-b used.

those who did not want to reside in the area in which they were renting was significantly higher among the residents of the housing scheme than was the preference for rental among the hostel residents, it was nevertheless very low when one considers the transient nature of mineworker settlement.

The presence or absence of the family is therefore an indicator of the dedication of the respondent to remain in the area. Those respondents whose family members were absent were more likely to have transient (rental) tenure arrangements. As with the hostel population, the relationships between tenure preference and living arrangements indicate that current living arrangements have a stronger influence on the tenure preference of the hostel residents than the preferred living arrangements (as no relationship was found with the preference for the family to join them). Also, similar to the hostel population, the above suggests that the choice for renting was more likely to be associated with those who did not need a large unit (having fewer dependants). The preference of the higher-income categories among the housing residents to rent is, however, harder to explain because it is the exact opposite of the current situation in respect of the hostel population. The most likely explanation appears to be that the lower earners struggle to find employment and prefer to settle where employment then appears to be forthcoming (the mine) as they are more dependent on this income. It can further be speculated that the area of origin struggles to supply the needs of these individuals hence they are more willing to abandon it.

In Figure 5.1, the current tenure status of the residents of the housing scheme is cross-tabulated with the response they returned regarding the appropriateness to their needs of said tenure status.



**Figure 5.1: The appropriateness of the current tenure status of respondents in the housing scheme in Kathu, 2007**

When considering the rating of the three tenure options (Figure 5.1) it becomes clear that the rent-to-own option was regarded as the most appropriate by 88.4% of respondents with the ownership option close on its heels (80.5%). The rental option received the lowest (yet still relatively high) evaluation of appropriateness (65.9%). The relatively lower levels of satisfaction related to the rental option and the high levels of satisfaction related to the ownership option are also the trend in South Africa in general. The high evaluation of the appropriateness of the rent-to-own option is, however, an unknown phenomenon and could probably be ascribed to the tenants' relative familiarity with the option. It could also relate to the options that this arrangement gives them in terms of the restrictions of their current financial status (as explained earlier in Section 5.2.2).

When those respondents who indicated that their tenure status was not appropriate to their needs at the time of the survey were asked what tenure status they would have preferred, 66.7% indicated that they would have preferred ownership, 25.9% indicated that they would have preferred the rent-to-own option, and only 7.4% indicated that they would have preferred the rental option.

Generally, the same demographic factors (with the exception of income) and preference to settle in the area permanently influenced tenure preference/arrangements in both samples. The conclusion then is that, given the option of rental tenure, those individuals in the hostel who did not want to reside in the area permanently or did not feel the need to settle with their families would be

more likely to engage in rental tenure arrangements, even whilst the preference for the rental option was lower among the hostel population. This has serious implications given the lack of rental units in the area, as more rental units would probably encourage more individuals to maintain their multiple livelihoods (which are not all tied to the mine). Those who owned property elsewhere were also less likely to express a desire to own the property where they resided near the mine indicating that the ownership of a home, even if situated elsewhere, satisfies their desire for ownership or restrains their ability to buy property elsewhere.

Given the high degree of uncertainty regarding ownership in resource-driven small towns in arid areas, the dominance of ownership-related tenure among the sample population cannot be accepted at face value. The possibility of more individuals engaging in rental tenure if the option is more readily available at an affordable rate should also be investigated further. Considering the massive drive for social rental housing (though not necessarily delivery) in the main urban areas of South Africa, as evidenced through policy and legislation formulation like BNG (DoH, 2004) and the Social Housing Act of 2008 (Republic of South Africa, 2008), it is also strange that the government's rental drive has not at all been directed at single-resource towns (especially in arid areas).

### **5.2.3 Size and type of housing unit**

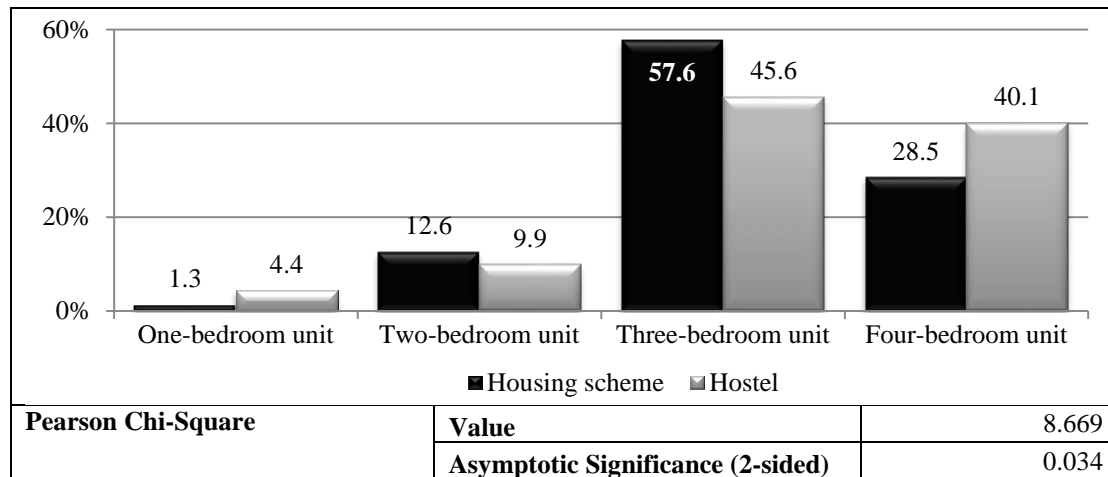
In South Africa, the size of low-income housing units has had a contentious history. While politicians and some members of civil-society movements have been articulating the need for larger, more defined units, “technocrats” and the private-sector providers have been engaged in trying to keep units small in order to reduce costs and improve delivery (Marais, 2003, 2007; Tomlinson, 1999). This emphasis on size has persisted despite the fact that research has indicated that there is a minimal relationship between housing satisfaction and size (Tomlinson, 1999). In the area of providing housing for mineworkers similar opposing forces have been at play. The NUM has been advocating for larger family units or even family housing (see Chapter Three). In contrast, mines, with a few exceptions (see Chapter Three), have attempted to keep to bachelor units or other smaller solutions in order to keep costs down. While units provided through the government's housing subsidies and mines have been reliant on the current decision pertaining to the prevailing trends mentioned



above, the private sector has largely allowed market forces to determine the size and type of units supplied.

Respondents were asked for their preference in terms of the size of the unit. Respondents who indicated that they would prefer to rent were only asked what the size of the rental unit should be, while those who indicated that they would prefer to own or to rent to own, were also asked to state their preference in terms of unit type. Although relatively few respondents preferred the rental option, and were requested to answer this question, the general trend was towards larger units with more bedrooms. In fact, in both samples, in excess of 75% of the respondents indicated that they wanted a three-bedroom unit (80.8% of resident of the housing scheme and 77.8% of hostel residents). The three-bedroom units were followed in popularity by the two-bedroom units (the latter significantly less popular at 19.2% of housing residents and 11.1% of hostel residents) with one-bedroom and bachelor units tailing (both being absent as options among the housing residents and being chosen by 8.3% and 2.8%, respectively, of the hostel residents).

The preference for three-bedroom units displayed in respect of the size of the rental units is repeated in Figure 5.2 for the ownership/rent-to-own options. This is however, with a slight variation after the addition of the four-bedroom option. Although the general preference is still towards the larger units, there is less demand for a four-bedroom unit than for a three-bedroom unit (in this case there is not a *trend* towards larger units, only a *difference* in preference). Residents of the housing scheme were more likely than the hostel residents to indicate a preference for a three-bedroom unit (57.6% versus 45.6%) and less likely than the hostel residents to indicate a preference for a four-bedroom unit (28.5% versus 40.1%). The difference between the two samples is statistically significant at the 95% confidence interval.



**Figure 5.2: Preference regarding size of unit to own or to rent to own among residents of the hostel and housing scheme in Kathu, 2007**

The higher preference for three-bedroom units and the lower preference for four-bedroom units among the residents of the housing scheme (compared to the case of the residents of the hostel) probably relate to the smaller number of dependants that they have relative to the hostel residents (2.8 versus 3.8, see Figure 4.4 in Chapter 4). Only a relatively weak (0.304) statistically significant (at the 99% confidence interval) relationship could be discovered between the number of dependants and the preference for the size of the housing sample, and none could be found for the hostel sample. Furthermore, no statistically significant relationship between respondents' preference in respect of the size of the housing unit and residential arrangements with their partners or children were found. This implies that respondents did not indicate a preference for a smaller unit if their family was not living in the area and they did not want their family to join them (despite the relationship between living arrangements and tenure preference). There was also no relationship between household income and preference for housing size. This presents a quandary in that respondents were generally not basing their decision regarding the size of the housing unit on either housing needs or financial constraints. This could lead to difficulties, should supply and demand of housing size be dictated by market forces. The buyers may not be able to afford what they want, or may want what they cannot justify by their needs. At the same time, the trend of "wishing" for larger housing units is not strange and is moreover a common phenomenon in studies on the housing market (see Marais, Crofton, Letsapa and Venter (2002) and Marais, Crofton and Venter (2003) as example).

There was very little difference in respect of the type of housing unit preferred by respondents, with both groups showing a clear preference for a house (66.2% of the housing sample and 69.2% of the hostel sample) over other unit types. The only significant difference was that the residents of the housing scheme were more likely to indicate a preference for a townhouse than were the hostel residents (23.8% versus 14.6%). In contrast, flats were marginally more of a preferred choice among the hostel residents than among the housing residents (14.6% versus 9.9%). Three responses were reported in the “Other” category, which indicates a preference for traditional houses among the hostel residents. These responses are also not strange considering the respondents’ exposure to the types of housing units available in Kathu or at their areas of origin.

As with the size of the housing units, no relationship could be established between preference for housing type and the residential arrangements with partners and children, or the preference for family to join the respondent in the area, or household income. This indicates that housing needs also appears to play no part in the choice of housing type.

In summary, both samples generally preferred ownership over rental, three- and four-bedroom units over smaller units, and houses over flats and townhouses. Housing residents, however, were significantly more receptive to the rent-to-own option, more readily preferred three-bedroom over four-bedroom units, and were more in favour of townhouses. This preference by housing owners could probably be related to the fact that these respondents had been confronted with the financial realities related to different housing options. Generally, no relationship was found between various demographic indicators of housing need and affordability, on the one hand, and the various housing options, on the other. This indicates that housing stress or financial constraints appear not to have played a role in the preferences and that, at least, some of the respondents were not realistic in their housing expectations. The above is then problematic in that, although respondents might be unwilling to reside in the area permanently, they would still prefer to own a larger unit – a significantly more expensive housing option. In practice, this means that they expose themselves not only to the risks of boom-bust cycles and mine closure, but also to an inability to diversify their livelihoods in an arid location such as Kathu. The costs to the

immediate, arid environment can also not be discounted as the town is currently drawing large volumes of groundwater and the local pipeline is reaching its limits in sustaining such larger units and their surrounding yards (Botha, 2007). The following question arises from the above results: Can respondents afford what they want, both financially and as part of their livelihoods?

### **5.3 WHAT CAN RESPONDENTS AFFORD?**

The previous section considered the preference that the respondents had in respect of their housing situation. It was found that the respondents generally preferred to own larger houses, not smaller townhouses or flats. The aim of this section is to look at the financial situation of the respondents to see how viable their preferences were.

#### **5.3.1 Eligibility for government housing subsidy**

Nationally, most municipalities are managing long waiting lists of households eligible for subsidies. These households are unable to make use of the opportunities due to the slow delivery of affordable housing units. It was found in Figure 4.5 (see Chapter Four) that 31.5% of the hostel residents and 17.9% of the housing population earned below R3500 per household per month. This would put them in line for a government subsidy. Furthermore, 64.2% of the hostel population and 41.4% of the housing population earned between R3500 and R7500 per household per month. This would allow them access to deposit assistance under the new BNG implementation strategy. However, very few of these eligible individuals have accessed such funds. Only 9.9% of the respondents in the housing sample and 2.9% from the hostel sample indicated that they had previously accessed a housing subsidy. Furthermore, only 6.0% of respondents in the housing sample and 4.7% of respondents in the hostel sample indicated that their dependants or family members had accessed a housing subsidy.

The conclusion is thus that, though many of the respondents would qualify for housing assistance, very few appear to be aware of this. This can in part be related to the fact that BNG is a relatively new development and that few people are aware of it and its implications. Government housing subsidies are decidedly better known, but even these are still underutilised in the samples. Most of this is complicated by the

fact that there are no major government projects for housing provision in Kathu and that subsidies are not being accessed for housing provision by the provisioning company. Improved attempts to make mineworkers aware of their eligibility and of the means by which they could access these subsidies, together with better cooperation between government and the private housing providers could significantly increase the numbers of individuals who access government housing subsidies to improve their housing situation either at the mine or in their area of origin.

### **5.3.2 Current housing related expenditure**

The current levels of expenditure related to housing give some indication of respondents' awareness regarding expenditure related to housing and how prepared they are to meet such expenditure.

Almost all of the respondents, in both samples, indicated that they were at the time paying for their accommodation on a monthly basis. As expected, almost all housing residents indicated that they were paying for water and electricity, as well as rates and taxes. While information regarding rental/mortgage payments appears to have presented little difficulty, information regarding water and electricity and rates and taxes was both confusing and conflicting. For water and electricity, the reported figures ranged between R100 and R2400, and for rates and taxes between R15 and R3500 (all indicated as monthly contributions). In order to reduce the sensitivity of the mean to these extreme outliers, the interquartile mean (IQM) has been included in Table 5.2 below. The IQM removes the smallest 25% and largest 25% of cases from the calculation of the mean, thereby effectively eliminating the outliers.

**Table 5.2: Current housing-related expenditures of respondents in the hostel and housing scheme in Kathu, 2007**

<b>Housing Unit</b>						
<b>Sample</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>IQM</b>
<b>Housing scheme</b>	181	110	3500	1902.32	674.93	1964.19
<b>Hostel</b>	279	50	800	140.35	86.23	105.58
<b>Levene's test for equality of variances</b>			<b>t-test for equality of means</b>			
<b>F</b>	<b>Sig.</b>		<b>t</b>		<b>Sig.</b>	
279	0.000		50.873		0.000	
<b>Water and Electricity</b>						
<b>Sample</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>IQM</b>
<b>Housing scheme</b>	199	100	2400	466.00	281.70	418.74
<b>Rates and Taxes</b>						
<b>Sample</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>IQM</b>
<b>Housing scheme</b>	150	15	3500	475.45	526.15	362.91
<b>Housing in area of origin</b>						
<b>Sample</b>	<b>n</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Standard Deviation</b>	
<b>Housing scheme</b>	18	100	3000	1399.80	942.77	
<b>Hostel</b>	57	30	5000	1070.58	1071.57	
<b>Levene's test for equality of variances</b>			<b>t-test for equality of means</b>			
<b>F</b>	<b>Sig.</b>		<b>t</b>		<b>Sig.</b>	
0.625	0.432		0.096		0.924	

As a result of the cost of a mortgage or renting of a formal housing unit, the average amount spent directly on the housing unit was much higher for the housing population (paying on average R1964.19 (IQM)) than it was for the hostel population (paying on average only R105.58 (IQM)). Also, while the residents of the housing scheme indicated paying more for water and electricity (R418.74 (IQM)) and rates and taxes (R362.91 (IQM)), residents of the hostel had their expenditure subsidised by the mine. The significant effects of a few outliers can be seen in the difference between the mean and the IQM (the difference is R163.24 in the case of rates and taxes for the housing population).

A slightly different but related expenditure was associated with payments for a house in the respondents' area of origin. Although access to housing in the area of origin was quite common among both samples (see Section 5.4.2), only 33.3% of residents of the housing scheme and 24.8% of the hostel residents indicated that they were paying for such accommodation. The average payment was around half the cost of

the average housing option in Kathu (R942.77 and R1071.57 versus R1902.32). Because of the small number of respondents indicating payment for housing in their area of origin, the IQM for this payment was not included in Table 5.2.

From the above it becomes clear that the residents of the housing scheme had multiple expenses related to housing, water and electricity, and rates and taxes, while the hostel population, generally, were paying a significantly smaller amount for their housing, while other expenditures were subsidised by the mine. This may indicate that many individuals from the hostel population have had little if any exposure to housing-related expenditure. The significant expenses in respect of water and electricity incurred by the households interviewed should also be noted, especially when compared with the probably significantly reduced water usage in the hostels. These differences are important when bearing in mind the arid location. Around 19.1% of the hostel residents did have current expenses on a home in their area of origin. While this does indicate some exposure to home-ownership expenditure, it also indicates that they are financially tied elsewhere. The lack of awareness of housing-related expenditure among hostel residents (as evidenced by current expenditure patterns) could prove to be problematic when the time comes for residents of the hostel to decide whether to assume the responsibility of a housing payment and when they start planning their finances around such payment. This does not, however, present an insurmountable barrier to homeownership. Some homeowner education and financial guidance from professionals may be necessary before these individuals make long-term decisions regarding housing.

### **5.3.3 Disposable income**

Respondents were given a list of possible items of expenditure and asked what, if any, their expenditure on these items was (excluding debt repayments). When the total of said expenditure is subtracted from the household income (using the middle value of the household income category and the upper limit of R7500 as was reflected in Figure 4.5), the difference can be considered to be the disposable income. In order to make a meaningful comparison between the two groups, a second difference was also calculated, which excluded all housing-related expenditure (rent, mortgage, water and electricity, and rates and taxes), effectively removing the effect of the difference in current housing expenditure. Some distortion was seen from the effects of outliers;

accordingly, the IQM was also calculated. The results are summarised in Table 5.3 below.

**Table 5.3: Disposable income of respondents of the hostel and housing scheme in Kathu, 2007**

Disposable income						
Sample	n	Minimum	Maximum	Mean	Standard deviation	IQM
Housing scheme	179	-17283.50	4784.00	-782.56	3474.61	-378.40
Hostel	257	-10720.00	6200.50	1166.09	3128.95	1550.10
Levene's test for equality of variances			t-test for equality of means			
F	Sig.		t		Sig.	
0.007	0.935		-6.112		0.000	
Disposable income before housing expenditure						
Sample	n	Minimum	Maximum	Mean	Standard deviation	IQM
Housing scheme	179	-14783.50	6500.50	1724.66	3141.20	2073.99
Hostel	257	-9875.50	6833.00	1800.90	2874.73	2115.88
Levene's test for equality of variances			t-test for equality of means			
F	Sig.		t		Sig.	
0.051	0.822		-0.262		0.793	

According to Table 5.3, the residents of the housing scheme are living near the edge of their affordability with an average disposable income of –R378.40 (IQM). The median disposable income was –R225, indicating that more than half of the residents was living above their means. This average disposable income of the residents of the housing scheme could be higher than calculated in Table 5.3, as 40.8% of the residents had indicated that they earn more than R7500 (Figure 4.5). Since the income for those earning more than R7500 was taken as being R7500, this could seriously reduce the calculated disposable income. Furthermore, there is a general tendency to overestimate expenses and underestimate incomes in surveys (see Marais, Crofton, Letsapa, and Venter (2002) and Marais, Crofton, and Venter (2003)), which, if factored in, could probably significantly change the above picture.

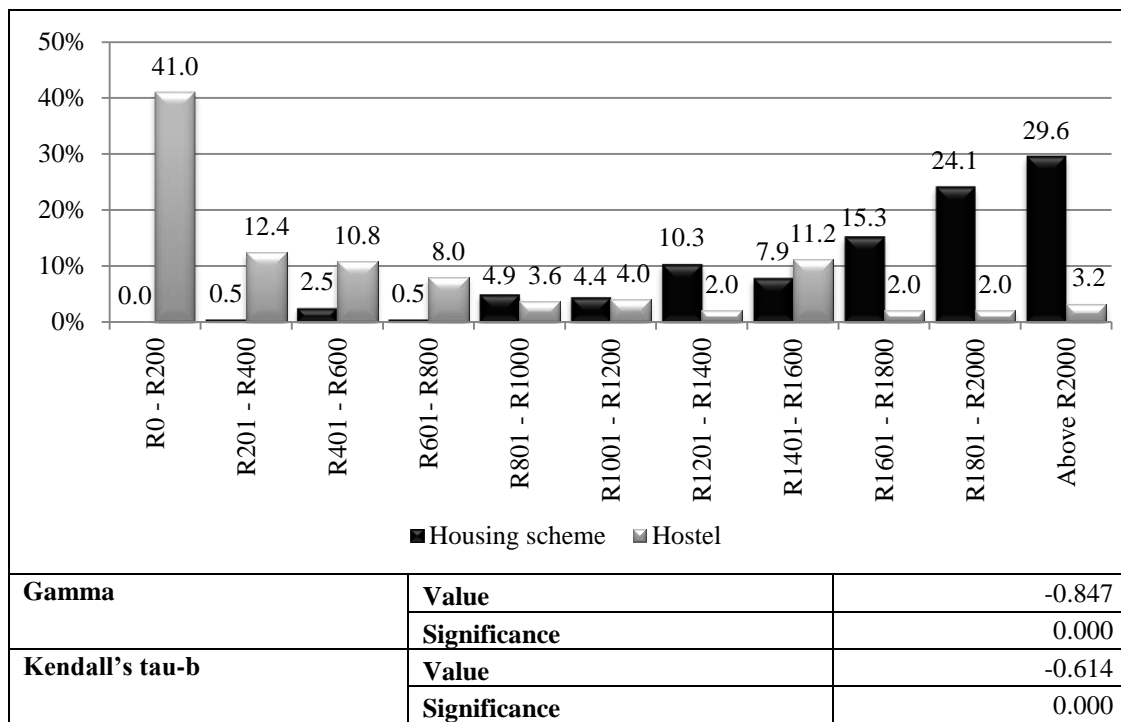
The hostel residents exhibited a very high level of disposable income by indicating an average amount of R1550.10 (IQM) that is not spent on recurring monthly expenses (the next section will, however, show that these surplus funds are not being saved). The difference between the two groups is statistically significant at the 99% confidence interval. When housing-related expenditure is removed from the equation, it is seen that there is indeed little difference between the spending habits of the two



groups (R2073.99 (IQM) versus R2115.88 (IQM)) with no statistically significant difference emerging. This means that – were the hostel residents also to access housing – their financial situation would likely be similar to that exhibited by the current residents of the housing scheme. Judging by the data in Table 5.3, affordability would then not appear to be a major issue.

### 5.3.4 Stated affordability

It is interesting to note the difference between the two samples (see Figure 5.3) in respect of what the respondents *themselves* indicated they were able to pay for a housing unit. In fact, there was a statistically significant (at the 99% confidence interval) difference between the two samples. This implies that respondents from the housing scheme indicated that they were able to afford significantly higher amounts.



**Figure 5.3:** Amount respondents in the hostel and housing scheme in Kathu indicated they are able to spend on housing, 2007

Considering the hostel residents, 41.0% indicated that they were unable to pay more than R200, and 72.2% indicated being unable to pay more than R800. In comparison, 87.2% of the housing residents indicated that they were able to pay more than R1200, and 29.6% indicated that they would be able to pay more than R2000. In reality, R1200 would give the respondents access to a one-bedroom house, for which 20.4%

of the hostel residents would then be able to qualify. It is interesting to note these differences in stated affordability while the previously discussed data indicated that there is in fact very little difference between the two groups regarding ability to afford housing. This difference between affordability and respondents' self-assessment in this respect is also not new to the housing environment and has been indicated in other market studies (see Marais, Crofton, Letsapa, and Venter (2002)).

The significant differences between the two populations can be described by two (divergent) possible scenarios. Either the difference in their willingness to pay larger amounts for housing is what separates those who engage in a private-housing solution and those who do not or the respondents from the housing sample have adjusted their perceptions of what constitutes an affordable housing option based on their experience with their own housing.

A scrutiny of cross-tabulations of the above – with several indicators of the desire for settlement – reveals some relationships for the hostel population. However, a statistical testing of these relationships becomes problematic because of the presence of a number of empty cells. The desire to remain in the area, to have their wife and children join them in the area (if not already there), and not having access to a house in their area of origin appeared to have led to hostel respondents indicating higher levels of affordability. The conclusion consequently is that, if the hostel respondents had a desire to reside in the area and they were not expending on housing in their area of origin, they were more willing to spend larger amounts on housing in the area. This bodes well for the provision of private housing in Kathu for those who desire to remain there permanently in that such individuals are willing to spend more on housing in the area.

#### **5.4 HOUSING-PROVISION OPTIONS**

Section 5.2.2 highlighted the fact that the majority of respondents in both samples preferred ownership, and in addition, residents of the housing community who had a rent-to-own arrangement were indeed happy with said arrangement. The question then arises: Is home ownership the best/most appropriate tenure arrangement? To

answer this question, the levels of satisfaction amongst respondents are investigated in relation to the two housing solutions represented in the data as well as the parallel option of housing in their area of origin. For all three of the housing solutions, respondents were asked to rate their satisfaction with the housing option in question on a three-point scale: “Happy”, “Satisfied”, or “Unhappy”. Respondents were further asked to justify the rating they gave.

#### 5.4.1 Hostel accommodation

The hostel accommodation in Kathu is owned and managed by Kumba and is restricted for use by their own employees only (though some illegal tenants from the ranks of the contractors are admittedly present). Accommodation consists of blocks of multi-storey, one-room accommodation linked by means of open walkways. Next to the hostel are located fifty units of the married quarters, Skoonplaas. Hostel residents pay around R100 for their accommodation but pay no further costs related to water, electricity, rates, or taxes.

The hostel residents were somewhat polarised in their evaluation of the hostel accommodation. Overall, 47.9% of the respondents indicated that they were happy with the accommodation, while 36.8% indicated that they were unhappy (the other 15.3% indicated being satisfied). The reasons for being “happy” are outlined in Table 5.4 below.

*Table 5.4: Hostel respondents’ reasons for being happy with the accommodation in which they were staying in Kathu, 2007*

Reasons for being happy	Hostel	
	n	%
Location close to the mine	43	38.7
Have accommodation	22	19.8
Generally happy	16	14.4
Immediate social environment	13	11.7
Safety and security	4	3.6
Meets needs/comfortable	4	3.6
Size	4	3.6
Positive - owned by Kumba	3	2.7
Immediate physical environment	1	0.9
Affordability/costs	1	0.9
<b>Total</b>	<b>111</b>	<b>100.0</b>

When hostel respondents were asked to give reasons for being happy with the accommodation, the main reason related to its location close to the mine (38.7%).

This was closely followed by the fact that they do have accommodation (19.8%), while positive relations with fellow residents also came up among the hostel population (11.7%)

The main reasons given for being unhappy with the accommodation were social reasons related to noise and the pressure of living in the crowded hostel (23.9%) (see Table 5.5 below).

**Table 5.5: Hostel respondents' reasons for being unhappy with the accommodation in which they were staying in Kathu, 2007**

Reasons for being unhappy	Hostel	
	n	%
Immediate social environment	26	23.9
Expansion needed/overcrowding	22	20.2
Safety and security	11	10.1
Want own room in hostel	9	8.3
Immediate physical environment	8	7.3
Family and accommodation	8	7.3
Want house	6	5.5
Not meeting needs/uncomfortable	5	4.6
General	4	3.7
No privacy	4	3.7
Quality/features/finishes	3	2.8
No choice/alternative	1	0.9
Dependence	1	0.9
Location	1	0.9
<b>Total</b>	109	100.0

Two more related reasons were also raised, with 20.2% of the reasons given covering the overcrowding of the hostels, and a further 8.3% indicating that they would prefer to have their own rooms. Safety and security also came up (while, as will be seen in Table 5.6, this was a positive aspect among the housing population) with 10.1% of responses dwelling on the issue of crime in the hostels.

The satisfied respondents gave a mixed bag of positive and negative reasons that have already been reflected in Table 5.4 and Table 5.5, and the reasons will thus not be discussed here.

From Table 5.4 and Table 5.5 it can be seen that many of the hostel residents were happy with their accommodation, citing the fact that they had accommodation and that the hostel was close to their place of employment. Those who were unhappy

largely related their unhappiness to the overcrowding of the hostels. In fact, the first four reasons of those who were unhappy, cited in Table 5.5, related their unhappiness directly or indirectly to the overcrowding (62.5% of responses).

When considering hostel accommodation, the following conclusions reached thus far should be borne in mind:

- Not all of the respondents indicated that they would like to reside in the area permanently. Many indicated that they planned to return to their area of origin on being laid off or retiring and did not want their families to join them in the area (see Chapter Four).
- If investment in housing were to materialise, many hostel residents indicated that they would prefer that it should take place in their area of origin (see Section 5.2.1). Many respondents also indicated that they already had access to a housing unit in their area of origin (see Section 5.4.2).
- Perceptions of affordability appear to have been an issue, with many respondents having indicated that they would not be able to afford the costs associated with a private housing arrangement (see Section 5.3.4).
- A large share of the hostel population appears to have been happy or at least satisfied with the hostels as a housing option. This share can likely be increased quite significantly by addressing the symptoms of overcrowding, which appears to have been residents' major reason for unhappiness.

Despite having indicated an ideal of owning a large house, many respondents were quite happy with hostel accommodation in the Kathu area and would likely continue making use of the accommodation provided, especially if the accommodation is to be improved. Given the limitations of the immediate town to support these individuals, it should perhaps be asked whether a more humane migration solution should not be preferred over a permanent housing solution. For some then at least, the hostel is likely to remain the housing option of choice or the only tenable option for the foreseeable future. The next section turns to a discussion of the housing situation in the area of origin if circular migration is going to remain a social phenomenon.

#### 5.4.2 Housing in area of origin

Respondents were asked a range of questions regarding the housing to which they had access in their area of origin. As already noted, 26.2% of the residents of the housing scheme and 79.9% of the hostel residents indicated that they have access to housing in their area of origin (the difference is statistically significant at the 99% confidence interval; Pearson Chi-square: 141.432; significance 0.000). This gives a strong indication that there are ties with the sending areas among both populations. This holds especially among the hostel population, which, as has already been indicated, is one of the clearest relationships with a desire not to remain in Kathu permanently.

There were differences in respect of the level of satisfaction experienced by the two groups, with 75.3% of hostel residents being happy with their area of origin, while only 46.0% of residents of the housing scheme provided a similar response. Furthermore, 40.0% of the housing residents and 12.8% of the hostel residents indicated that they were satisfied with their area of origin (indicating satisfaction in excess of 80% for both samples) while the rest were unhappy. Generally, these levels of satisfaction were higher than satisfaction for either of the mine-provided housing options.

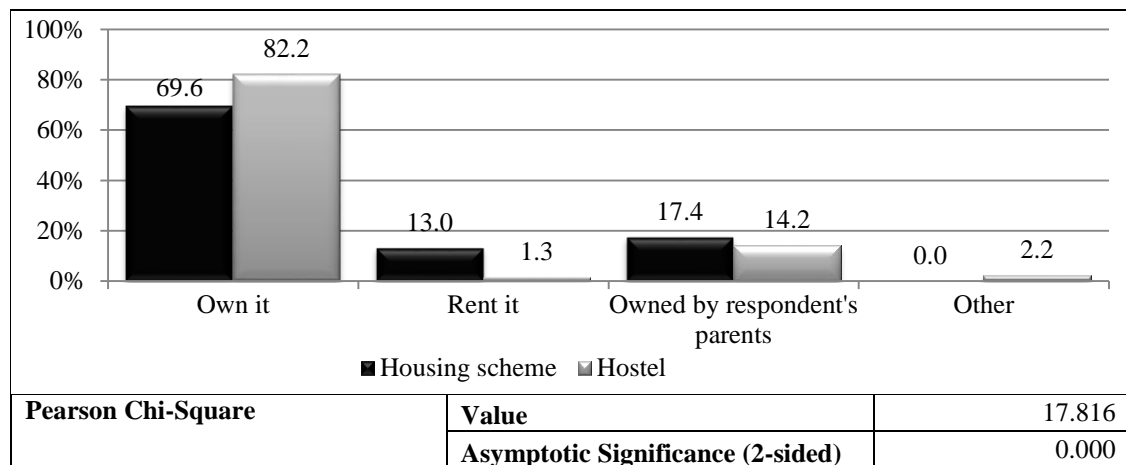
Table 5.6 below summarises their reasons for being happy with their current housing situation in their area of origin.

*Table 5.6: Reasons for being happy with their housing in their area of origin among respondents in the hostel and housing scheme in Kathu, 2007*

Reasons for being happy	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
Personal or family connection	10	52.6	80	59.7	90	58.8
Pleasant place to life	5	26.3	7	5.2	12	7.8
Owns property	1	5.3	9	6.7	10	6.5
General	0	0.0	9	6.7	9	5.9
Safety and Security	1	5.3	7	5.2	8	5.2
Good location	0	0.0	6	4.5	6	3.9
Farming activities	1	5.3	4	3.0	5	3.3
Other	1	5.3	3	2.2	4	2.6
...but, requires infrastructure	0	0.0	3	2.2	3	2.0
Meets needs	0	0.0	2	1.5	2	1.3
Business there	0	0.0	2	1.5	2	1.3
Financial reasons	0	0.0	2	1.5	2	1.3
<b>Total</b>	<b>19</b>	<b>100.0</b>	<b>134</b>	<b>100.0</b>	<b>153</b>	<b>100.0</b>

The largest share of those who indicated that they were happy with the housing in their area of origin cited a personal or family connection as reason for their happiness (52.6% for residents of the housing scheme and 59.7% for hostel residents), irrespective of their current housing situation near the mine. Another reason, which accounted for 26.3% of reasons cited among residents of the housing scheme but which did not score higher than average among hostel residents (it only scored 5.2%), was that it was a pleasant place to live. This latter response could possibly indicate that some shift had occurred in the way residents of the housing scheme conceptualised/approached rural life, in that they viewed it as a pleasant diversion from city-life rather than a permanent home. Amongst the other reasons cited by the hostel population for being happy were also some responses giving an indication of the capital that respondents have invested in the area; 6.7% indicated that they own the property, 3.0% indicated related farming activities, and 1.5% cited financial reasons.

Given respondents' satisfaction with and attachment to their individual areas of origin, one needs to determine the nature of their housing situation in these areas. Figure 5.4 and Table 5.7 address this issue by respectively looking at the tenure status and type of unit that the respondents had.



**Figure 5.4: Tenure status of housing unit in area of origin for respondents in the hostel and housing scheme in Kathu, 2007**

Figure 5.4 reflects that, for both samples, the majority of the respondents indicated that they owned the other house in the area of origin (69.6% for the residents of the housing scheme and 82.2% for the hostel residents). A share of both samples also

indicated that their parents owned the unit (17.4% of the housing sample and 14.2% of the hostel sample). It is interesting to note that a sizeable share of the residents of the housing scheme also rented another house in their area of origin (13.0%). The respondents from the hostel sample, who indicated having some other form of tenure, did not indicate what it consisted of. The results generally indicate very stable forms of tenure in the areas of origin.

**Table 5.7: Type of housing unit in area of origin for respondents in the hostel and housing scheme in Kathu, 2007**

Type of housing unit	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
<b>Formal house in rural area</b>	12	31.6	129	57.6	141	53.8
<b>Traditional home</b>	7	18.4	41	18.3	48	18.3
<b>House on separate stand (urban area)</b>	4	10.5	34	15.2	38	14.5
<b>Formal unit in backyard e.g. garage</b>	7	18.4	18	8.0	25	9.5
<b>Informal settlement / backyard shack</b>	5	13.2	1	0.4	6	2.3
<b>On a commercial farm</b>	2	5.3	0	0.0	2	0.8
<b>Private flat</b>	0	0.0	1	0.4	1	0.4
<b>Other</b>	1	2.6	0	0.0	1	0.4
<b>Total</b>	38	100.0	224	100.0	262	100.0

The most common type of housing among respondents was a formal house in the rural area (31.6% of residents of the housing scheme and 57.6% of hostel residents), while in second place and with significantly fewer responses were traditional houses (18.4% of residents of the housing scheme and 18.3% of hostel residents). Among residents of the housing scheme, the traditional home was tied for second place with a formal unit in a backyard (also 18.4%). It is interesting to note that 80.8% of hostel residents who responded to this question indicated that they had some type of formal unit in their area of origin (see Table 5.7).

Given that respondents were generally happy with their housing in the area of origin, that they felt a personal connection with the area, and that, in most cases, there was stable tenure in a formal unit, it is not surprising that respondents were less willing to give this up for a possible uncertain future in the mining area.



### 5.4.3 Private housing

As discussed in Chapter One, the private housing that features in the study has been built by Matlapeng Housing Company with Laketshona aiding potential residents among the mines employees in securing a mortgage or managing the rental or rent-to-own arrangement. The infrastructure of the housing development has been subsidised by Kumba to reduce the cost of the house for their employees. After the fieldwork was conducted, the mine also instituted a subsidy system to aid their employees in paying their mortgages.

The majority of residents of the housing scheme indicated that they were either satisfied (35.5%) or happy (45.8%) with the area in which they were at the time of the survey residing in Kathu. Respondents were further asked to give a reason for this response (See Table 5.8 below). Note that respondents could indicate more than one reason.

*Table 5.8: Housing scheme respondents' reasons for being happy with the area in which they were staying in Kathu, 2007*

Reasons for being happy	Housing scheme	
	n	%
Location	25	31.6
Immediate social/economic environment	20	25.3
Safety and security	11	13.9
Have accommodation	6	7.6
Meets needs/comfortable	4	5.1
Immediate physical environment	4	5.1
Generally happy	3	3.8
Employment	3	3.8
Independence/freedom	2	2.5
Affordability/costs	1	1.3
<b>Total</b>	<b>79</b>	<b>100.0</b>

The most frequently cited reason for being happy was the proximity to the mine and other amenities (31.6%), followed by the social environment (“[This place is] quiet and we respect each other”) (25.3%). These two reasons were also the most frequently cited reasons for being satisfied with the area. Safety and security also achieved a relatively high score (13.9%), with people indicating that crime was very low in the area.

Table 5.9 reflects the reasons for unhappiness among residents.

*Table 5.9: Housing scheme respondents' reasons for being unhappy with the area in which they were staying in Kathu, 2007*

Reasons for being unhappy	Housing scheme	
	n	%
Immediate social/economic environment	12	24.5
Size of the housing unit	10	20.4
Immediate physical environment	9	18.4
Quality/features/finishes	6	12.2
Affordability/costs	5	10.2
No privacy	3	6.1
Location	2	4.1
Sales/rental options	2	4.1
<b>Total</b>	49	100.0

The most frequently cited reasons for being unhappy related to the social environment (mostly racism) (24.5%). These were closely followed by the size of the units (20.4%) (see Table 5.9 above). At 18.4% the immediate physical environment was the third most frequent reason cited for being unhappy with the area. The main problem with the physical environment was that it had untarred/gravel roads. This has, however, been rectified subsequent to the fieldwork.

Given the physical environment and its restrictions, it would also be appropriate at this point to look at the ability of the housing units supplied to satisfy the needs of the respondents in terms of their immediate environment. Respondents in the housing scheme were asked to rate their satisfaction with various aspects of their particular unit – from design aspects like size, to finishes. Overall, the two lowest ratings were given to the temperature of the house in summer and winter respectively. Visual inspection indicated that few of the houses were oriented to maximise exposure to the sun (i.e. north facing). The general experience then is that the temperature swings of an arid environment were not borne in mind when building the houses.

#### **5.4.4 The future of current housing solutions**

Residents' current satisfaction with the housing occupied by them should be weighed against the future of this housing option, especially when taking into account that the mine may indeed in future close or be scaled down. Respondents were asked whether, if the mine was ever closed down or they were laid off, they would have an alternative place to stay. Generally, responses were optimistic, with 73.5% of respondents indicating that they would indeed have an alternative place to stay (irrespective of whether they were from the housing scheme or hostel system).

When asked where this alternative was situated, 46.9% of the residents of the housing scheme indicated that they had bought the house and hence would have a place to stay or that they would remain in Kathu. In contrast, while the majority of the hostel residents indicated that they would be returning to their place of origin. These responses were recoded according to the available data on these individuals' place of origin and added to the cases where respondents specifically indicated the alternative place. The results are reflected in Table 5.10 below.

**Table 5.10: Province of alternative place of residence for respondents in the hostel and housing scheme in Kathu, 2007**

Province	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
<b>Northern Cape</b>	112	86.2	151	77.4	263	80.9
<i>Former North West</i>	8	6.2	85	43.6	93	28.6
<b>North West</b>	6	4.6	31	15.9	37	11.4
<b>Gauteng</b>	6	4.6	1	0.5	7	2.2
<b>Western Cape</b>	5	3.8	2	1.0	7	2.2
<b>KwaZulu-Natal</b>	0	0.0	4	2.1	4	1.2
<b>Free State</b>	1	0.8	2	1.0	3	0.9
<b>Limpopo</b>	0	0.0	2	1.0	2	0.6
<b>Another country</b>	0	0.0	2	1.0	2	0.6
<b>Total</b>	130	100.0	195	100.0	325	100.0

Most of the residents of the housing scheme (86.2%) indicated that they would be staying in the Northern Cape, with 6.2% indicating an area formerly part of the North West. After Kathu as the first choice for those in the housing scheme, Kuruman was the second most common choice in the Northern Cape – with eighteen respondents of the housing scheme (13.8%) indicating it as their alternative. Of the hostel residents, most (43.6%) indicated that their alternative residence was in the former North West, while 33.8% indicated other areas in the Northern Cape. Here Kuruman was also a popular alternative, with 29 respondents (14.9%) indicating it as their alternative residence.

Although respondents from the hostel sample are likely to be returning to areas with very little hope of employment, they will be returning to networks in which they have most probably been storing some form of social capital. The respondents of the housing scheme who choose to leave the area (just over half of those who answered this section) will possibly have to sell their home in a market with a reduced capacity to sell it. Those who choose to stay will on the other hand quite likely be remaining

in an environment that has a significantly reduced capacity to employ them and will probably also struggle to meet a mortgage payment on a house, considering that the price was set during an economic boom. Those individuals who were still part of the rent-to-own scheme will have no such financial responsibilities.

Respondents were also asked whether, if the mine was ever closed down or they themselves were laid off, they would have an alternative source of livelihood. In this case, the respondents were not as optimistic as was the case with an alternative place to stay. In both groups, the majority indicated that they would not have an alternative source of income. The residents of the housing scheme were however more likely than the hostel residents to indicate that they would have an alternative source of income (33.5% of residents of the housing scheme versus 15.4% of hostel residents). The difference was statistically significant at the 99% confidence interval (Pearson Chi-square: 20.706; significance: 0.000).

A third of the hostel respondents and close to a third (29.4%) of respondents from the housing scheme who indicated that they did have an alternative source of livelihood indicated that they had some marketable skill (drivers and mechanics being some of the most frequent responses) (see Table 5.11 below). Residents of the housing scheme were twice as likely as the hostel residents (41.2% versus 19.4%) to indicate that they had a business to fall back on. This could be due to the difference in schooling between the two groups. Another factor could be the level of stability, with residents of the housing scheme having both more stability and being more likely to invest in a business in the area. These two most prominent coping strategies do, however, have an important common drawback: both require the continued existence of the mine for them to be practised in Kathu (see Seidman (1993)).

**Table 5.11: Source of alternative livelihood for respondents in the hostel and housing scheme in Kathu, 2007**

Alternative source of livelihood	Housing scheme		Hostel		Total	
	n	%	n	%	n	%
<b>Has a marketable skill</b>	15	29.4	12	33.3	27	31.0
<b>Owns own business</b>	21	41.2	7	19.4	28	32.2
<b>Will farm</b>	7	13.7	7	19.4	14	16.1
<b>Will draw pension</b>	5	9.8	8	22.2	13	14.9
<b>Going home</b>	1	2.0	2	5.6	3	3.4
<b>Will find another job</b>	1	2.0	0	0.0	1	1.1
<b>Investments</b>	1	2.0	0	0.0	1	1.1
<b>Total</b>	51	100.0	36	100.0	87	100.0

Other coping strategies are associated with pension and farming. The difference in age between the two groups is reflected in the fact that a larger share of the hostel residents than the residents of the housing scheme (22.2% versus 9.8%) indicated that they would be at an age to draw a pension if the mine were to close down. The closer connection of hostel residents to the rural areas means that they are slightly more likely than the residents of the housing scheme to resort to farming as an alternative source of livelihood (19.4% versus 13.7%). These two strategies are significantly more independent of the mine. It is interesting to note the absence, from the above data, of social networks, while research has shown the extensive use of social capital, like family, in South Africa and then especially in the former homelands areas (see Chapter Three).

The above data suggests that ownership of a house at the mine ties mineworkers to the area irrespective of whether the area has the long-term capacity to employ them or not. Residents of the hostel indicated that they will be returning to their area of origin and, although these areas have less capacity to provide employment, much of the evidence already presented here points to the fact that social capital is stored in these areas, which might not be the case in the area close to the mine. Although residents of the housing scheme had more confidence in their employability should the mine close down, many of their survival strategies are dependent on the continued existence of the mine.

## 5.5 CONCLUSION

The effects of the continuation of circular migration and the desire of many respondents eventually wanting to return to their areas of origin have a strong influence on the effectiveness of any given housing option.

While housing residents were quite satisfied with the location of their housing in Kathu, the majority of the hostel residents indicated that they would have preferred to be able to invest in housing in their area of origin. Both populations also suggested that some of the respondents would participate in housing development in areas close to the mine, but not in Kathu. In general, the respondents in both samples veered towards ownership of a larger (rather than smaller) house.

Hostel dwellers were paying significantly smaller amounts for accommodation at the hostel, while water and electricity and rates and taxes were being covered by the mining company. With the exception of current housing expenditure, however, the expenditure, debt, and savings patterns of the two samples were very similar, thereby indicating that there is perhaps a greater opportunity for hostel dwellers to participate in private housing provision. Some homeowner education will, however, be necessary, and the hostel population will need to be more willing to pay larger amounts for housing.

A large share of the residents of the hostel system indicated that they were indeed happy with their hostel accommodation, especially because it was located close to the mine. Those who were unhappy generally indicated the symptoms of overcrowding as the problem. Given, also, the numbers of hostel dwellers who indicated that they would prefer to reside in the area permanently, the data suggests that, for the foreseeable future at least, hostels will remain a prominent part of the housing landscape.

A significant number of respondents from both the housing and hostel samples indicated that they had access to housing in their area of origin and that they were happy with such housing. The main reasons given for their happiness or satisfaction was that they had some kind of personal or family connection with the area, and a few

of the respondents highlighted the capital they had invested in the area. The housing units in the area were mostly indicated as formal in nature and of secure tenure. Given the housing situation in the area and the respondents' preference to return to the area, housing in the area of origin will thus remain part of the housing landscape.

Only 18.7% of the residents of the housing scheme indicated that they were unhappy with the area in which they were staying at the time. The rest indicated that they were either satisfied or happy. The second most frequent reason given for being unhappy was the state of the roads, which has been addressed since the fieldwork was done. Given the general desire for ownership among respondents, the share of respondents who wish to reside in the area permanently (despite the general trend to the opposite), and the fact that it appears as if housing is indeed within the affordability range of hostel residents, it appears that the private housing option should increase in popularity over time.

The sustainability of this ownership-driven, private-housing solution should be critically examined especially in cases where economic diversification beyond mining activities may be restricted by an arid location. While the continued use of hostels could be seen as a failure to normalise the housing situation of hostel dwellers, the obverse could also hold, namely that the continued use of migrancy and hostels is protecting mineworkers from a possible turn in the boom-bust cycle. The lack of alternatives becomes especially worrying if one looks at the share of housing residents who plan on staying in the home if the mine were to close or scale down and the large share of both populations without an alternative livelihood strategy not indirectly linked to the mine. It should also be asked whether restricting housing to those willing to own, or on their way to owning, is a good practice, given respondents' propensity to continue keeping their homes in their area of origin. This could stretch the finances of those wishing to maintain their first homes or force them to invest in two medium-sized units rather than one larger unit for ownership and family settlement and another, smaller unit rented for housing the migrant labourer near the mine.

The concepts discussed above are summarised in Table 5.12 below before Chapter Six turns to the conclusions and recommendations.

**Table 5.12: Summary of key concepts discussed in this chapter**

<b>Central concepts</b>	<b>Hostel</b>	<b>Family housing in sending area</b>	<b>Family housing near mine</b>
<b>Approach</b>	Top-down: private sector supplies within budget according to perceived needs at reduced fees; mine continues to manage the stock	Grass-roots: family builds/pays according to own needs and abilities	Top-down: private sector supplies within budget and with the aid of subsidisation by the mine according to perceived needs; units then sold.
<b>Government/private sector/community</b>	Private-sector provision; no government housing subsidy employed	Community provision where and as needed; limited public-sector involvement	Private-sector provision; no government housing provision employed
<b>Resource management</b>	Little need for increases in resource provision; few families; small units to maintain	Resource use concentrated in other areas	Ongoing large-scale investment needed to cope with pressure of growing population and housing provision
<b>Settlement</b>	Limited settlement at mine	Settlement of family in area of origin; migration of workers	Large-scale settlement near mine; yet some for settlement in nearby sustainable communities
<b>Sustainability</b>	Families mostly absent; reduced pressure on immediate resources; alternative livelihoods ongoing	More sustainable livelihoods in the face of the boom-bust-cycle	Bringing families to settle thereby placing pressure on immediate resources; most livelihoods tied to the mines
<b>Migrancy</b>	Continuation, with possible modification; appears to be preference of some workers	Continuation, with possible modification; appears to be preference of some workers	Despite settlement some migrancy still ongoing, though significantly less and of different nature
<b>Infrastructure development/service delivery</b>	Upgrading of hostels ongoing; yet places little pressure on immediate infrastructure	Little change to current levels	Significant investment already engaged with more long-term projects on the way
<b>Housing solutions/tenure</b>	Rental from mining stock; upgrading to improve quality	Ownership/rental, of any type; generally formal and owned	Favouring larger formal houses on stand for mortgage, limited rental
<b>Family cohabitation</b>	Limited, generally not beyond ability of stock to absorb	In sending area or (where possible) work area	Family housing supplied though not always used



## **CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS**

### **6.1 INTRODUCTION**

Chapter One has set the scene in respect of issues facing housing provision for mineworker in arid regions. In the two subsequent chapters these issues were expanded upon by looking at the national and international literature addressing said issues. Chapter Two more specifically reflected on the growing awareness of the restrictions caused by an arid location. It indicated the effect that such restrictions have on both residents' livelihoods and the sustainability of mining settlements. Specific mention was further made of the alternatives to permanent settlement as practised internationally. In Chapter Three, the focus returned to the specific case of South Africa by reflecting on the past inequities regarding forced labour migration and the restrictions on Blacks' right to settle. Next, the chapter focussed on efforts by mine managements and national government to normalise the status quo with specific reference to attempts to normalise labour migration and housing for mineworkers.

Chapter Four and Chapter Five reflected on migration and housing issues as is evidenced by data collected in the surveys. Chapter Four looked at the continuation of migrancy in the two populations sampled. It was seen that, while the majority of the hostel population choose not to settle, a smaller, yet significant, share of the residents of the housing scheme also chooses to continue to migrate. A few demographic indicators revealed minor relationships with the desire to settle for either one sample or the other. However, only access to a house in their area of origin seems to reflect a clear relationship, for both samples, with the desire to continue with migrancy. This is supported by other findings regarding links with the area of origin. Chapter Five reflected on the diverse needs of the respondents and asked whether the housing solutions presented were indeed appropriate. It was seen that respondents generally wanted more than they could afford – given what they were actually willing (and sometimes able) to pay. They also did not scale down their demands based on their immediate needs (given their settlement and cohabitation choices), and the long-term sustainability of their choices could hardly be assured. Furthermore, it was seen that homes in their areas of origin elicited higher rates of satisfaction than either of the

mine-provided options, while dissatisfaction with the hostels was largely associated with the effects of overcrowding. Finally, it was noted that the use of rental accommodation and housing provision in more sustainable settlements nearby were underutilised as options for providing housing.

This chapter will draw together the concepts discussed in the preceding chapters with a view to drawing some unified conclusions and recommendations to address mineworker housing in arid regions.

## **6.2 MAIN FINDINGS**

The nine central concepts addressed in Table 2.2, Table 3.1, Table 4.7, and Table 5.12 have been grouped into four broad areas against which the main findings of this study are reflected below. These four areas are:

- provisioning approach and role combinations (adding together the concepts of approach and government/private sector/community);
- resource management, environmental sustainability, infrastructure and service delivery (adding together the concepts of resource management, sustainability and infrastructure development/service delivery);
- settlement, migrancy and economic/social sustainability (adding together the concepts of settlement, migrancy and sustainability); and
- housing solutions, tenure and family housing (adding together the concepts of housing solutions/tenure and family cohabitation).

### **6.2.1 Provisioning approach and role combinations: the need for state *and* individual agency**

Three main findings should be mentioned in this respect:

- There is an over-emphasis on the private sector for providing housing for mineworkers in South Africa.
- There is a lack of government involvement in housing provision specifically in Kathu, but also more generally in mining towns. This lack of government involvement leads to reduced housing options for mineworkers.

- The lack of an appropriate rental housing approach in mining towns inhibits decisions in which alternative livelihoods and migrancy could go hand in hand.

While the South African national governments (both pre- and post-1994) and international mining companies have always favoured top-down solutions (see Chapter Three), the DDP favours a grass-roots, bottom-up approach (see Chapter Two). The latter approach is favoured in the DDP because of the ability of individuals to adjust their livelihoods relatively quickly to adapt to the changing situation in arid regions. In contrast, while formal top-down approaches have delayed feedback and often applied solutions that may not be appropriate to arid regions. In the samples, one sees that many respondents continue with labour migration as that is what works for their particular livelihood (i.e. a micro-level adaptation suitable to the constraints of the local environment) (see Chapter Four). This personal choice of diversified livelihoods may be beneficial for future development. The choices of individuals are, however, constrained by the options available to them, and individual choice may not mirror the goals of government (i.e. ending migrancy, promoting ownership).

There has been acrimonious debate in South Africa as to the ideal government/private sector mix in housing provision with some holding that the continued favouring of provision by the private sector is the only affordable way, while others maintain that government should be doing more (see Chapter Three). In the case of mineworker housing, the continued involvement of the mining companies in housing provision is probably inevitable given past exploitation and continued profits derived from the labour of the mineworker. The heavy emphasis on the mining company by government and societal initiatives to provide private housing or maintain rental stock, however, goes against the narrowing focus in mining towards core operations. Hence one sees a tendency towards subsidised, ownership-driven solutions that are only facilitated, and not *provided*, by the mining company. While this approach is quite successful at providing large quantities of housing at a price more affordable to the average mineworker, it does not provide for alternative tenure types – an area in which government policies could play a role (see Chapter Five).

### **6.2.2 Resource management, environmental sustainability, infrastructure, and service delivery: limits of arid locations**

Three main findings are relevant to this area:

- Both ownership of formal, family housing on a stand and infrastructure provision are promoted by government against the background of the past lack of provision.
- The emphasis on provision of housing and services is in conflict with the limitations enacted by Kathu's arid location.
- The provision of family housing places more stress on the immediate environment than do current migratory patterns.

During apartheid, resources were often ring-fenced for the exclusive/near exclusive benefits of Whites (see Chapter Three). In subsequent years, great emphasis has been placed on redistributing the benefits of resources for the benefit of the entire community through tax-and-spend initiatives coupled with the role-out of infrastructure to gain access to resources. Both approaches to resource-use are, however, based on (relatively) large-scale access to a commodified resource. Such approaches were developed in less arid regions and (as will be seen in the section on infrastructure development/service delivery) do not take into account the limitations presented by the immediate environment (see Chapter Two).

In an interview with representatives of the local municipality, it was mentioned that the town faces severe limitations to its growth resulting from limitations on current infrastructure and the resource limits of the immediate environment (see Chapter One and Chapter Five) (though not in terms of the resources extracted from the mine). It should also be borne in mind that the development of infrastructure and the provision of services in arid regions come at significant cost. While electrical, sanitation, and road infrastructure were already being upgraded in Kathu around the time of the survey (with sanitation already strained before major expansions), the town has also more recently started to exceed the ability of the immediate groundwater reserves to supply its water needs. Also there is little hope of increased supply from the pipeline from the Orange River. Increased use of family housing (with stand and garden) will place increasing pressure on the limited water capacity (see Chapter Five). Furthermore, municipalities are understandably unwilling to spend large sums of

money on infrastructure when the future ability of the municipality to recoup the costs of such outlay cannot reasonably be guaranteed (see Chapter Two).

### **6.2.3 Settlement, migrancy, and economic/social sustainability: the goals of the state vs. the goals of the individual**

Three main findings should be noted in this respect:

- While there is a strong trend towards settlement, a significant number of mineworkers in Kathu prefer to continue with current patterns of labour migration.
- The choice to continue with migratory patterns is related to the presence of alternative livelihoods held in the area of origin.
- The choice to settle is not always a sustainable one as it is often related to the absence of alternative livelihood strategies elsewhere.

South Africa has a history of restricting Blacks from settling in the ‘white’ urban areas (see Chapter Three). Against this background, active mediation is required to correct the imbalances of historic settlement and ownership patterns. While settlement may be appropriate in areas where it can reasonably be expected that the community may diversify beyond its original activities of resource extraction, the Mining Charter rightfully notes that existing communities should be favoured over the creation of new communities. Supporting this is the fact that international mining companies are avoiding the creation of new towns because of the costs involved (see Chapter Two).

As noted before, mining activities can raise economic activities in a small town beyond their sustainable limits (Chapter Two). This can have lasting effects on the future of all involved. Where multiple livelihoods are practised, the earnings from the (mostly unsustainable) mining activities can be used to enhance livelihoods in areas where livelihoods are more sustainable. When these alternative livelihoods are, however, abandoned in favour of permanent settlement near the mine, settling at the mine becomes unsustainable in terms of livelihoods (see Chapter Five). Building housing for mineworkers in nearby settlements that are sustainable on their own may decrease dependence on the mine and thus increase the odds of recovery. Preventing unsustainable settlement through the provision of rental units may also reduce the

effects of mine closure on the immediate community and for the mineworkers involved. So, while government policies promote issues of sustainable development, the emphasis on ownership in respect of housing solutions is subverting these selfsame principles of sustainability.

While labour migrancy in South Africa has a history of exploitation (see Chapter Three), this does not appear to be the case in all the international examples (see Chapter Two). A redrafted form of labour migrancy that takes account of the workers' needs and their ability to afford such needs may provide mineworkers and their families with flexible livelihoods that could prove resilient towards the fluctuating cycles experienced in mining areas and arid regions. Given that many respondents prefer to continue with migrancy (see Chapter Four) and maintain a home in their area of origin (see Chapter Five), migration may in all likelihood for some time continue to be part of labour patterns. The effective and humane utilisation of labour migrancy is, however, being curtailed by the lack of decent and affordable rental units in areas close to the mine (see Chapter One, Chapter Three, and Chapter Five).

#### **6.2.4 Housing solutions, tenure, and family housing: choice and consequences**

Four main findings have been identified in respect of this broad area:

- Ownership is the preferred form of tenure for the mineworkers interviewed, especially among those who prefer to settle near the mine permanently.
- Respondents generally indicated a preference for larger units on a separate stand but were not always willing to pay the associated price.
- A significant share of those who preferred to settle also preferred that their family join them near the mine.
- Both ownership and the presence of the family could have negative long-term consequences for the family in the event of closure. This is due to the restricting effect that the two choices have on livelihoods.

South Africans generally prefer ownership over rental and have had very little exposure to the system of renting to own (see Chapter Three and Chapter Five). This preference for ownership is being fuelled by government promises of homes for all.

What needs to be borne in mind, however, is that many of the respondents already have secure tenure regarding a home in their area of origin before starting employment at the mine (or have secured tenure through the wages earned at the mine). The lack of alternative tenure may force said individuals into buying a second home which they may be unable to afford (see Chapter Five). In addition, because a large share of the respondents indicated that they do not wish to reside near the mine permanently, ownership-driven access to housing may not be an appropriate solution to their needs (see Chapter Four). The ability of the individual to choose rental tenure is severely constrained in an environment where so few rental options are available.

The effects of separation on families are well documented (Chapter Two and Chapter Three). Given South Africa's history of migration and family separation, it is important to weigh the costs and benefits of encouraging family cohabitation. While the old forms of migrancy place significant stress on the rest of the family to cope with the pressure created by the absence of the worker (who is often the head of the household), housing the entire family in one place can create other forms of stress, some of which can be as/more debilitating. First, the entire family would need to be uprooted from the previous location. Thus often leads to the end of social investments made in the area of origin and to unemployment for the spouse. The family would then need to settle in the area and start to diversify their livelihood in another (often little-known) area characterised by the flux of residents. If the mineworkers were to lose their jobs at this point, not only would the primary income be lost, but families would be left without recourse to alternative livelihoods held elsewhere (see Chapter Five). If losing the job was due to major reductions in activity for the mine or complete closure, such families would be living in a location where employment opportunities would be severely reduced and the local labour market probably oversaturated.

### **6.3 RECOMMENDATIONS**

The following recommendations are made against the background of the above findings:

### **6.3.1 Increased involvement by the state could enhance the choices of individuals**

Two main recommendations are made in this respect:

- Increase the role-out of rental subsidies to eligible individuals/institutions in mining areas.
- Re-evaluate the role of social housing with a view to providing rental housing to mineworkers.

The increased use of government housing subsidies can significantly improve affordability for mineworkers on the lower margins of income. Specifically, the use of social housing should be further investigated for its ability to help mineworkers maintain their migratory lifestyle if they so choose and to avoid costly settlement in areas that may entail immense cost for the individual. Neither of these two solutions would go against government's own current policies on housing provision. While the increased use of housing subsidies can be promoted at the local municipal level, a re-evaluation of social housing for mineworker accommodation would need to happen at the national level.

### **6.3.2 Reduce infrastructure commitments in arid regions**

Two more recommendations should be made:

- Encourage alternative settlement patterns in arid regions.
- Investigate alternative systems of infrastructure and service provision in arid regions.

Arid regions have limited resources, limited capacity to sustain large populations and infrastructure, and developments come and are sustained at a premium. Against this background, it is perhaps advisable to actively restrict the quantity of family housing that is provided at the mine. Instead, smaller units without gardens and specifically designed for an arid climate should be employed.

### **6.3.3 The individual as measure of development success**

Two more recommendations are made in this respect:



- The choices of individuals should be facilitated by increasing their range of housing options, such as the inclusion of rental housing in provisioning approaches.
- Look at current production decisions at the mine to improve the benefits and reduce the costs of migrancy.

While government policy favours settlement, individuals favour migrancy. This is in part due to the beneficial effects of diversified livelihoods. Embracing and facilitating/maximising the benefits of migration will, in the long run, have beneficial effects for the individual families concerned. In order to do this, increased consideration should be given to alternative tenure systems – private rental and social housing for example – that would facilitate alternative housing options. The modification of migration through careful consideration of the effects of production decisions (such as the adjustment of work schedules, as seen in the international examples in Chapter Two) could mitigate the negative effects of migrancy and facilitate the use of multiple livelihoods.

#### **6.3.4 Choice and consequences**

The following recommendations are made in respect of choice and consequences:

- A greater variety of housing options should be provided to mineworkers so that they may choose one that is most compatible with their preference and livelihood.
- There should be more education for mineworkers regarding the possible consequences of ownership and settlement choices for their livelihoods.

While many individuals may choose ownership in a cultural and policy milieu that actively promotes ownership, the consequences of such ties should be questioned. Not only should the range of housing options be expanded to include more rental options, but workers should be informed of the possible implications of their choices to their lifestyle. Homeowner education should include a section on the realities of mining towns and the likelihood of diversification – an area that mining companies tend to gloss over.

Table 6.1 reflects the above recommendations against the main findings and central concepts of the study.

**Table 6.1: Main findings and recommendations reflected against the central concepts of the study**

Central concepts	Main findings	Recommendations
Approach	<ul style="list-style-type: none"> <li>• There is an over-emphasis on the private sector for providing housing for mineworkers in South Africa.</li> <li>• There is a lack of government involvement in housing provision specifically in Kathu, but also more generally in mining towns. This lack of government involvement leads to reduced housing options for mineworkers.</li> <li>• The lack of an appropriate rental housing approach in mining towns inhibits decisions in which alternative livelihoods and migrancy could go hand in hand.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase the role-out of rental subsidies to eligible individuals/institutions in mining areas.</li> <li>• Re-evaluate the role of social housing with a view to providing rental housing to mineworkers.</li> </ul>
Government/private sector/community		
Resource management	<ul style="list-style-type: none"> <li>• Both ownership of formal, family housing on a stand and infrastructure provision are promoted by government against the background of the past lack of provision.</li> <li>• The emphasis on provision of housing and services is in conflict with the limitations enacted by Kathu's arid location.</li> <li>• The provision of family housing places more stress on the immediate environment than do current migratory patterns.</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage alternative settlement patterns in arid regions.</li> <li>• Investigate alternative systems of infrastructure and service provision in arid regions.</li> </ul>
Infrastructure development/service delivery		
Sustainability	<ul style="list-style-type: none"> <li>• While there is a strong trend towards settlement, a significant number of mineworkers in Kathu prefer to continue with current patterns of labour migration.</li> <li>• The choice to continue with migratory patterns is related to the presence of alternative livelihoods held in the area of origin.</li> <li>• The choice to settle is not always a sustainable one as it is often related to the absence of alternative livelihood strategies elsewhere.</li> </ul>	<ul style="list-style-type: none"> <li>• The choices of individuals should be facilitated by increasing their range of housing options, such as the inclusion of rental housing in provisioning approaches.</li> <li>• Look at current production decisions at the mine to improve the benefits and reduce the costs of migrancy.</li> </ul>
Settlement		
Migrancy		
Housing solutions/tenure	<ul style="list-style-type: none"> <li>• Ownership is the preferred form of tenure for the mineworkers interviewed, especially among those who prefer to settle near the mine permanently.</li> <li>• Respondents generally indicated a preference for larger units on a separate stand but were not always willing to pay the associated price</li> <li>• A significant share of those who preferred to settle also preferred that their family join them near the mine.</li> <li>• Both ownership and the presence of the family could have negative long-term consequences for the family in the event of closure. This is due to the restricting effect that the two choices have on livelihoods.</li> </ul>	<ul style="list-style-type: none"> <li>• A greater variety of housing options should be provided to mineworkers so that they may choose one that is most compatible with their preference and livelihood.</li> <li>• There should be more education for mineworkers regarding the possible consequences of ownership and settlement choices for their livelihoods.</li> </ul>
Family cohabitation		

#### **6.4 FURTHER AREAS OF RESEARCH**

From the findings and recommendations of this study several areas can be identified that would benefit from continued research:

- The temporal dimension of migration can certainly benefit from increased research attention. During apartheid, migration was largely enforced by apartheid laws and did not occur at a natural level. Post-apartheid, the current level of labour migrancy still appears to be high compared with the ideal levels envisaged by government. It would be invaluable if continued research were able to investigate whether migration is continuing to decrease or has stabilised at what can be considered a natural level.
- Against the background of the literature (see Chapter Two and Chapter Three), this study largely made use of the connection of mineworkers to areas of origin and their access to housing in the areas of origin as a proxy for the existence of alternative livelihoods. Detailed investigation of what these alternative forms of capital are, how they are accumulated, and how and when they are accessed would give significant insight into the reasons for continued labour migrancy and how the benefits of this pattern can be facilitated/maximised for mineworkers who choose to continue employing the pattern.
- A more comprehensive investigation of all housing options available in Kathu (including private/backyard rentals, Sesheng, etc.) would give a fuller picture of the current housing situation in Kathu. A survey of this nature would either affirm the patterns identified among the two samples employed in this study or could potentially reveal other settlement patterns existing among the mineworkers who have accessed other housing options.

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## ANNEXURE A: QUESTIONNAIRE USED FOR RESIDENTS OF THE HOUSING SCHEME

**Pre-amble:**

***All fieldworker instructions are in italics***

*Please fill in the following before starting the interview*

<i>Fieldworker name:</i>	
<i>Fieldworker supervisor:</i>	
<i>Date:</i>	
<i>Housing scheme:</i>	

*This paragraph should be read as an introduction.*

Hello, my name is ..... (*fieldworker name*) and we are doing a survey to find out more about your housing situation and needs. We are trying to find out what people need and what they are prepared to pay for housing. **HOWEVER WE ARE NOT EMPLOYED BY KUMBA AND THIS IS ONLY MARKET RESEARCH AND NO INDICATION THAT KUMBA WILL PROVIDE ANY HOUSING TO YOU.**

We would like to interview you if you have the time. Will you please answer the following questions to the best of your ability and as honestly as possible. All the information will remain confidential and anonymous and you do not need to answer any questions that you are not comfortable with. The more information you provide, the better it will serve to advise and inform the housing project the area.

Thank you for your participation and assistance.

*Please note the following before starting the interview with the respondent*

*Tick (✓) the applicable blocks*

A. Gender:    Male    

1
---

    Female    

2
---

B. Contact number:

- *In the questionnaire tick the applicable blocks or fill in information where necessary*
- *Be careful when filling in the table questions*
- *If you encounter any problems call your supervisor*

*Q-number*

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*For office use only*

**A. PROFILE OF THE RESIDENT**

I would like to ask some questions about yourself.

1. What is your age (in years)?



2. Do you have a valid South African ID document or passport?

Yes  1 No  2

3. Where are you originally from (Province or country)?



4. What is your highest school grade passed?

Standard 5 and below (Grade 7)	1	Standard 6 - 7 (Grade 8 & 9)	2	Standard 8 (Grade 10)	3	Standard 9 - 10 (Grade 11 & 12)	4
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5. Do you have any formal after school training?

Yes  1 No  2

6. Do you have any informal training?

Yes  1 No  2

7. How long have you been staying in the area (years)? (Kathu)



8. Why are you staying in your current location?

Close to work opportunities	1	Family living here	2	Nowhere else to go	3
-----------------------------	---	--------------------	---	--------------------	---

Other reason please specify:



9. Do you want to reside in the area permanently? (if yes go to A10)

Yes  1 No  2

9.1 If no, which area do you regard as your permanent home (indicate area and province or country)?



9.2 How would you describe the area you indicated as your permanent home: Mostly urban or mostly rural?

Urban  1 Rural  2

10. Where would you like to retire (indicate area and province or country)?



11. Have you ever received a government housing subsidy?

Yes  1 No  2

12. Do you own any property or housing (besides current housing scheme house, if applicable)?

Yes  1 No  2

13. What is your current marital status?

Married	1	Single / Never married	2	Widowed/ divorced	3	Living together	4
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13.2 If married/living together, is your spouse/partner working?

Yes  1 No  2

13.3 Does your spouse/partner work in the Kathu area?

Yes  1 No  2



14. If the mine closed down or you were layed of:

14.1 Would you have an alternative place to stay?  
If yes please specify the place:

Yes  No

14.2 Would you have an alternative source of income or livelihood? If yes please specify the source:

Yes  No

**B. INFORMATION ON THE RESIDENTS FAMILY AND DEPENDENTS**

I would like to ask you about your immediate family or dependents

1. Do you have any dependents? (persons for whom you are financially responsible) (If no go to B4)

Yes  No

If YES, please specify how many (number):



2. Have any of your dependents/family ever received a government housing subsidy?

Yes  No

3. Do any of your dependents/ family own any property or housing?

Yes  No

4. If you are married/have a partner, what is your residential arrangement with your partner / wife / husband?

Reside with me in this areas on a permanent basis	1	Reside with me in this area on a temporary basis	2
Live in another area on a permanent basis	3	Lives with me in the same housing unit	4

4.1. If your partner is not residing permanently with you, would you prefer her/him to join you permanently in this area

Yes  No

5. What is your residential arrangement with your other dependents? (children)

Reside with me in this areas on a permanent basis	1	Reside with me in this area on a temporary basis	2	Live in another area on a permanent basis	3
Lives with me in the same housing unit	4	Do not have children	5	Other	6

5.1 If your children are not residing permanently with you, would you prefer them to join you permanently in this area

Yes  No

**C. THE NEED AND DEMAND FOR HOUSING**

I would like to ask you about the type of housing that should be provided

1. Is the current location of your house (in Kathu) appropriate to meet your needs?

Yes  No

1.1 If not, where would you have preferred: In the area close to the mine (not in Kathu)

In my area of origin

Other (explain):

**2. What is the tenure status of this housing unit**

Rent it	1	Own it	2	Rent to own (installment sale)	3
---------	---	--------	---	--------------------------------	---

**2.1 Is your current tenure status appropriate to your needs?**

Yes  1 No  2

**2.2 If not, what type of housing would you have preferred in the area?**

Rental housing (go to C3)	1	Owning a house (go to C4)	2	Renting with the aim of owning later (go to C3)	3
------------------------------	---	------------------------------	---	--	---

**3.1 How much rent do you think should be charged for the following per month and are you willing to pay this amount?**

Type	Amount	Willing to pay this amount?	
Bachelor/ one room only	R	Yes (1)	No (2)
1-bedroom unit	R	Yes (1)	No (2)
2-bedroom unit	R	Yes (1)	No (2)
3-bedroom unit	R	Yes (1)	No (2)

**3.2 If you had the choice, what form of housing would you choose to rent in the area?**

1-bedroom unit  1 2-bedroom unit  2 3-bedroom unit  3 Bachelor / one room  4

**4. What type of housing would you prefer to own/rent to own: (only to be completed by those indicating they want to own or rent to own)**

1-bedroom flat	1	2 bedroom flat	2	3 bedroom flat	3		
1 bedroom town house	4	2 bedroom town house	5	3 bedroom townhouse	6	4 or more bedroom townhouse	7
1 bedroom house	8	2 bedroom house	9	3 bedroom house	10	4 bedroom house	11
Other	12						

**5. Did you want space for a garden at your house?**

Yes  1 No  2

**6. Do you currently receive visitors often?**

Yes  1 No  2

**7. Did you want space for working/trading at your home?**

Yes  1 No  2

**8. Did you want specific space where children can play?**

Yes  1 No  2

**9. Did you want space for cultural/traditional activities?**

Yes  1 No  2

**10. How much are you able to pay per month for housing?**

R0 – R200	1	R201 – R400	2
R401 – R600	3	R601 – R800	4
R801- R1000	5	R1001 – R1200	6
R1201 – R1400	7	R1401- R1600	8
R1601 – R 1800	9	R1801 – R2000	10
Above R2000	11		

**D. AFFORDABILITY OF THE RESIDENT**

I need to ask you about your income and expenses to determine what kind of housing product you will be able to afford.

1. Are you currently paying for the housing unit where you are staying? Yes  1 No  2

If YES, how much per month (Rand)? R  How often?

2. Are you currently paying for any municipal services (water, electricity)? Yes  1 No  2

If YES, how much (Rand)? R  How often?

3. Are you currently paying monthly rates and taxes (water, electricity)? Yes  1 No  2 Do not own  3

If YES, how much (Rand)? R  How often?

4. What is your and your spouse's estimated monthly and/or weekly income? (indicate by ticking the applicable block)

Income	Weekly (✓)	Monthly (✓)
R 1500 - R2000		<input type="checkbox"/> 1
R 2001 – R2500		<input type="checkbox"/> 2
R 2501 – R 3500		<input type="checkbox"/> 3
R 3501 – R5500		<input type="checkbox"/> 4
R5501 – R7500		<input type="checkbox"/> 5
R7501 – R10 000		<input type="checkbox"/> 6

5. Do you receive any government financial help / support? Yes  1 No  2

If YES, what type of financial help / support?

Pension  1 Disability  2 Foster grant  3 Child maintenance  4 Other government grants  5

6. Do you currently receive any financial help from your family? Yes  1 No  2

If YES, how much (Rand)? R  How often?

Grid of empty boxes for data entry, arranged in a pattern of 1x1, 1x2, and 1x3 cells.

**7.1 Do you currently have any debt?**

Yes

1

No

2

**7.2 Do you currently have any savings?**

Yes

1

No

2

If YES, what type of credit or what type of savings?

Type of debt	✓	Repayment per month (Rand)?	Type of savings	✓	Current amount saved
Hire purchase	1	R	Savings account	1	R
Credit card	2	R	Stokvel	2	R
Loan	3	R	Saving scheme at bank or financial institution	3	R
Clothing account	4	R	Housing institution	4	R
Other:	5	R	Other:	5	R
	6			6	

**8. What are your estimated weekly expenses on the following (excluding debt):** (fill in expenses not specifically listed)

Expenses	Weekly	Monthly
Rent / mortgage bond or other fees for house	R	R
Water	R	R
Electricity	R	R
Food (mealie meal, vegetables, milk, meat, poultry etc)	R	R
Transportation	R	R
Liquor / Alcohol	R	R
Clothing	R	R
Shoes	R	R
Shoe repair	R	R
Dry cleaning	R	R
Cigarettes	R	R
Household items	R	R
Lotto / gambling	R	R
Telephone	R	R
Gardening	R	R
Animal feeding	R	R

Other expenses	Weekly	Monthly
Church	R	R
Burial society	R	R
Union	R	R
Social activities	R	R
Stokvel	R	R
Cash for household	R	R
Furniture	R	R
Appliances	R	R
Cash send to family elsewhere	R	R
Amount for savings in bank or financial institution	R	R
School fees (books, uniforms, transport)	R	R
Municipal taxes	R	R
Newspapers	R	R
Maintenance on house	R	R
Car maintenance	R	R
	R	R

**E. CURRENT HOUSING SITUATION AT THE MINE**

Some general questions with regards to your current housing situation at the mine

1. How do you feel about staying in the area where you are staying now?

Unhappy

Satisfied

Happy

Why do you feel this way?

\_\_\_\_\_

\_\_\_\_\_

2. How many bedrooms in your current house?

\_\_\_\_\_

3. How satisfied are you with the following in your house?

	Not satisfied at all	Somewhat dissatisfied	Satisfied	Very satisfied
1.Roof condition	1	2	3	4
2.Floor covering	1	2	3	4
3.Walls	1	2	3	4
4.Damp conditions when it rains	1	2	3	4
5.Storm water drainage after rain	1	2	3	4
6.Natural light	1	2	3	4
7.Number of rooms	1	2	3	4
8.Number of windows	1	2	3	4
9.Temperature in summer	1	2	3	4
10.Temperature in winter	1	2	3	4
11.Ventilation of the house	1	2	3	4
12.Size of the house	1	2	3	4
13.Plot / stand size	1	2	3	4
14.House location in Kathu	1	2	3	4
15.Privacy in the house	1	2	3	4
16.Safety	1	2	3	4

4. Would you like to change anything in the area to improve your situation?

Yes

No

If YES, please specify what:

\_\_\_\_\_

\_\_\_\_\_

**F. CURRENT HOUSING IN AREA OF ORIGIN**

(This section only to be completed if you and/or your spouse also have another home elsewhere and if spouse / partner is residing in such a home)

1. How do you feel about your housing situation in that area?

Unhappy

Satisfied

Happy

Why do you feel this way?

\_\_\_\_\_

\_\_\_\_\_

**2. What is the tenure status of that housing unit**

Own it	1	Rent it	2	Do not know	3
It is owned by my parents	4	Other	5		

**3. How much do you spend per month for that accommodation? R**

**4. Explain the nature of your current housing unit in that area**

House on separate stand	1	Informal settlement / backyard shack	3	Formal unit in backyard e.g. garage	5
Private flat	2	On a commercial farm	4	Formal house in rural area	6
Traditional home	7	Other			

**5. How many bedrooms in that house?**



**6. Explain your current access to sanitation at your current housing unit in that area:**

None	1	Waterborne in house	3	VIP system	5
Bucket	2	Waterborne outside house	4	Other	6

**7. Explain your current access to water at your current housing unit in that area:**

In house	1	On stand	2	Public tap	3
----------	---	----------	---	------------	---

**8. Would you like to change anything in that area to improve your situation?**

Yes

No



If YES, please specify what:

\_\_\_\_\_

\_\_\_\_\_

## ANNEXURE B: QUESTIONNAIRE USED FOR RESIDENTS OF THE HOSTEL

**Pre-amble:**

***All fieldworker instructions are in italics***

*Please fill in the following before starting the interview*

<i>Fieldworker name:</i>	
<i>Fieldworker supervisor:</i>	
<i>Date:</i>	
<i>Hostel name:</i>	

*This paragraph should be read as an introduction.*

Hello, my name is ..... (*fieldworker name*) and we are doing a survey to find out more about your housing situation and needs. We are trying to find out what people need and what they are prepared to pay for housing. **HOWEVER WE ARE NOT EMPLOYED BY KUMBA AND THIS IS ONLY MARKET RESEARCH AND NO INDICATION THAT KUMBA WILL PROVIDE ANY HOUSING TO YOU.**

We would like to interview you if you have the time. Will you please answer the following questions to the best of your ability and as honestly as possible. All the information will remain confidential and anonymous and you do not need to answer any questions that you are not comfortable with. The more information you provide, the better it will serve to advise and inform the housing project the area.

Thank you for your participation and assistance.

*Please note the following before starting the interview with the respondent*

*Tick (✓) the applicable blocks*

A. Gender: Male	1	Female	2
B. Contact Number			

- *In the questionnaire tick the applicable blocks or fill in information where necessary*
- *Be careful when filling in the table questions*
- *If you encounter any problems call your supervisor*

*Q-number*

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*For office use only*

**A. PROFILE OF THE RESIDENT**

I would like to ask some questions about yourself.

1. What is your age (in years)?

2. Do you have a valid South African ID document or passport? Yes  1 No  2

3. Where are you originally from (Province or country) \_\_\_\_\_

4. What is your highest school grade passed?  
 Standard 5 and below (Grade 7)  1 Standard 6 - 7 (Grade 8 & 9)  2 Standard 8 (Grade 10)  3 Standard 9 - 10 (Grade 11 & 12)  4

5. Do you have any formal after school training? Yes  1 No  2

6. Do you have any informal training? Yes  1 No  2

7. How long have you been staying in the area (years)? (current location)

8. Why are you staying in your current location?  
 Close to work opportunities  1 Family living here  2 Nowhere else to go  3   
 Other reason please specify: \_\_\_\_\_

9. Do you want to reside in the area permanently? (if yes go to A10) Yes  1 No  2

9.1 If no, which area do you regard as your permanent home (indicate area and province or country) \_\_\_\_\_

9.2 How would you describe the area you indicated as your permanent home: Mostly urban or mostly rural? Urban  1 Rural  2

10 Where would you like to retire (indicate area and province or country)? \_\_\_\_\_

11. Have you ever received a government housing subsidy? Yes  1 No  2

12. Do you own any property or housing? Yes  1 No  2

13. What is your current marital status?  

Married	1	Single / Never married	2	Widowed/ divorced	3	Living together	4
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13.2 If married/living together is your spouse/partner working? Yes  1 No  2

13.3 Does your spouse/partner work in the Kathu area? Yes  1 No  2

14. If the mine closed down or you were laid of:



14.1 Would you have an alternative place to stay?

If yes please specify the place:

Yes  1 No  2


14.2 Would you have an alternative source of income or livelihood?

If yes please specify the source:

Yes  1 No  2


**B. INFORMATION ON THE RESIDENTS FAMILY AND DEPENDENTS**

I would like to ask you about your immediate family or dependents

1. Do you have any dependents? (persons for whom you are financially responsible) (If no go to B4)

Yes  1 No  2


If YES, please specify how many (number):

2. Have any of your dependents/family ever received a government housing subsidy?

Yes  1 No  2

3. Do any of your dependents/ family own any property or housing?

Yes  1 No  2

4. If you are married/have a partner, what is your residential arrangement with your partner / wife / husband?

Reside with me in this areas (close to the mine or on the mine premises) on a permanent basis	1	Reside with me in this area (close to the mine or on the mine premises) on a temporary basis	2
Live in another area on a permanent basis	3	Lives with me in the same housing unit	4

4.1. If your partner is not residing permanently with you, would you prefer her/him to join you permanently in this area

Yes  1 No  2

5. What is your residential arrangement with your other dependents? (children)

Reside with me in this areas (close to the mine or on the mine premises) on a permanent basis	1	Reside with me in this area (close to the mine or on the mine premises) on a temporary basis	2	Live in another area on a permanent basis	3
Lives with me in the same housing unit	4	Do not have children	5	Other	6

5.1 If your children are not residing permanently with you, would you prefer them to join you permanently in this area

Yes  1 No  2

**C. THE NEED AND DEMAND FOR HOUSING**

I would like to ask you about the type of housing that should be provided

1. Where would you like to make an investment in your own housing situation (construct a house/ buy property) if you access a loan, have extra money to invest or access a government subsidy?

In the area close to Kathu	1	In my area of origin	2	In Kathu	3
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Other (explain):

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2. What type of housing would you be interested in the area?

Rental housing (go to C3.1)	1	Owning a house (go to C4)	2	Renting with the aim of owning later (Complete C3.1, C3.2 and C4)	3
--------------------------------	---	------------------------------	---	--	---

**3.1 How much rent do you think should be charged for the following per month and are you willing to pay this amount**

Type	Amount	Willing to pay this amount?	
Bachelor/ one room only	R	Yes (1)	No (2)
1-bedroom unit	R	Yes (1)	No (2)
2-bedroom unit	R	Yes (1)	No (2)
3-bedroom unit	R	Yes (1)	No (2)


**3.2 If you had the choice, what form of housing would you choose to rent in the area?**

1-bedroom unit  2-bedroom unit  3-bedroom unit  Bachelor / one room

**4. If you want to own property, what type of housing would you like to own: (only to be completed by those indicating they want to own or rent to own)**

1-bedroom flat	1	2 bedroom flat	2	3 bedroom flat	3		
1 bedroom town house	4	2 bedroom town house	5	3 bedroom townhouse	6	4 or more bedroom townhouse	7
1 bedroom house	8	2 bedroom house	9	3 bedroom house	10	4 bedroom house	11
Other (specify)	12						

**5. Should space be allowed for a garden at the housing unit?**

Yes	<input type="text" value="1"/>	No	<input type="text" value="2"/>
Yes	<input type="text" value="1"/>	No	<input type="text" value="2"/>
Yes	<input type="text" value="1"/>	No	<input type="text" value="2"/>
Yes	<input type="text" value="1"/>	No	<input type="text" value="2"/>
Yes	<input type="text" value="1"/>	No	<input type="text" value="2"/>


**6. Do you currently receive visitors often?**

**7. Should space be allowed for working/trading at your home?**

**8. Should specific space be provided where children can play?**

**9. Should space be provided for cultural/traditional activities?**

**10. How much will you be able to pay per month for housing?**

R0 – R200	1	R201 – R400	2
R401 – R600	3	R601 – R800	4
R801- R1000	5	R1001 – R1200	6
R1201 – R1400	7	R1401- R1600	8
R1601 – R 1800	9	R1801 – R2000	10
Above R2000	11		

**D. AFFORDABILITY OF THE RESIDENT**

I need to ask you about your income and expenses to determine what kind of housing product you will be able to afford.

1. Are you currently paying for the housing unit where you are staying? Yes  1 No  2

If YES, how much per month (Rand)? R  How often?


2. Are you currently paying for any municipal services (water, electricity)? Yes  1 No  2

If YES, how much (Rand)? R  How often?


3. If you own a house do you pay your monthly rates and taxes (water, electricity)? Yes  1 No  2 Do not own  3

If YES, how much (Rand)? R  How often?


4. What is your and your spouse's estimated monthly and/or weekly income? (indicate by ticking the applicable block)

Income	Weekly (✓)	Monthly (✓)
R 1500 - R2000		<input type="checkbox"/> 1
R 2001 – R2500		<input type="checkbox"/> 2
R 2501 – R 3500		<input type="checkbox"/> 3
R 3501 – R5500		<input type="checkbox"/> 4
R5501 – R7500		<input type="checkbox"/> 5
R7501 – R10 000		<input type="checkbox"/> 6

5. Do you receive any government financial help / support? Yes  1 No  2

If YES, what type of financial help / support?

Pension	<input type="checkbox"/> 1	Disability	<input type="checkbox"/> 2	Foster grant	<input type="checkbox"/> 3	Child maintenance	<input type="checkbox"/> 4	Other government grants	<input type="checkbox"/> 5
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6. Do you currently receive any financial help from your family? Yes  1 No  2

If YES, how much (Rand)? R  How often?


**7.1 Do you currently have any debt?**

Yes

1

No

2

**7.2 Do you currently have any savings?**

Yes

1

No

2

If YES, what type of credit or what type of savings?

Type of debt	✓	Repayment per month (Rand)?	Type of savings	✓	Current amount saved
Hire purchase	1	R	Savings account	1	R
Credit card	2	R	Stokvel	2	R
Loan	3	R	Saving scheme at bank or financial institution	3	R
Clothing account	4	R	Housing institution	4	R
Other:	5	R	Other:	5	R
	6			6	

**8. What are your estimated weekly expenses on the following (excluding debt):** (fill in expenses not specifically listed)

Expenses	Weekly	Monthly
Rent / mortgage bond or other fees for house	R	R
Water	R	R
Electricity	R	R
Food (mealie meal, vegetables, milk, meat, poultry etc)	R	R
Transportation	R	R
Liquor / Alcohol	R	R
Clothing	R	R
Shoes	R	R
Shoe repair	R	R
Dry cleaning	R	R
Cigarettes	R	R
Household items	R	R
Lotto / gambling	R	R
Telephone	R	R
Gardening	R	R
Animal feeding	R	R

Other expenses	Weekly	Monthly
Church	R	R
Burial society	R	R
Union	R	R
Social activities	R	R
Stokvel	R	R
Cash for household	R	R
Furniture	R	R
Appliances	R	R
Cash send to family elsewhere	R	R
Amount for savings in bank or financial institution	R	R
School fees (books, uniforms, transport)	R	R
Municipal taxes	R	R
Newspapers	R	R
Maintenance on house	R	R
Car maintenance	R	R
	R	R

**E. CURRENT HOUSING SITUATION AT THE MINE**

**Some general questions with regards to your current housing situation at the mine**

**1. How do you feel about staying in the area where you are staying now?** (on or near the mine)

Unhappy	1	Satisfied	2	Happy	3
---------	---	-----------	---	-------	---

Why do you feel this way? \_\_\_\_\_

\_\_\_\_\_

**2. How much do you spend per month for that accommodation?** R \_\_\_\_\_

**3. Explain your current access to sanitation at the place where you are staying:**

None	1	Waterborne in house	3	VIP system	5
Bucket	2	Waterborne outside house	4	Other	6

**4. Explain your current access to water at the place where you are staying:**

In house	1	On stand	2	Public tap	3
----------	---	----------	---	------------	---

**5. Would you like to change anything in the area to improve your situation?** Yes  1 No  2

If YES, please specify what: \_\_\_\_\_

\_\_\_\_\_

**F. CURRENT HOUSING IN AREA OF ORIGIN**

(This section only to be completed if you and/or your spouse also have another home elsewhere and if spouse / partner is residing in such a home)

**1. How do you feel about your housing situation in that area?**

Unhappy	1	Satisfied	2	Happy	3
---------	---	-----------	---	-------	---

Why do you feel this way? \_\_\_\_\_

\_\_\_\_\_

**2. What is the tenure status of that housing unit**

Own it	1	Rent it	2	Do not know	3
It is owned by my parents	4	Other	5		

**3. How much do you spend per month for that accommodation?** R \_\_\_\_\_

**4. Explain the nature of your current housing unit in that area**

House on separate stand	1	Informal settlement / backyard shack	3	Formal unit in backyard e.g. garage	5
Private flat	2	On a commercial farm	4	Formal house in rural area	6
Traditional home	7	Other (specify)	8		

**5. How many bedrooms in that house?**

**6. Explain your current access to sanitation at your current housing unit in that area:**

None	1	Waterborne in house	3	VIP system	5
Bucket	2	Waterborne outside house	4	Other	6

**7. Explain your current access to water at your current housing unit in that area:**

In house	1	On stand	2	Public tap	3
----------	---	----------	---	------------	---

**8. Would you like to change anything in that area to improve your situation?** Yes  1 No  2

If YES, please specify what:

\_\_\_\_\_

**G. HOUSING CONDITIONS OF PARTNER / CHILDREN VISITING**

(Only to be completed if the partner / wife of respondent is not staying with the respondent in or near the mining area)

**1. If your partner and or children visit you near the mine where you work do they stay?**

Stay in the visiting quarters for wives at the hostel	1	Stay with you in your non-mine owned accommodation	2	Stay separately from you on non-mine owned accommodation	3
Stay with you in other mined owned accommodation	4	Partner never visit	5	No partner	6

**2. If your partner / children visit you near the mine what type of accommodation do they stay in?**

Rent a place	1	Stay somewhere rent-free	1	Stay with me	1
--------------	---	--------------------------	---	--------------	---

**3. If they rent a place or share with family give an indication of the nature of this housing?**

House on separate stand	1	Informal settlement	2	Formal unit in backyard e.g. garage	3
Private flat	4	Domestics quarters	5	Informal backyard shack	6
Other	7				

**4. How often they do they visit**

Weekly	1	Monthly	2	Quarterly	3	Every six months	4	Once a year	5
--------	---	---------	---	-----------	---	------------------	---	-------------	---

**5. How long do they stay?**

0-10 days at a time	1	11 – 30 days at a time	2	More than 30 days	3
---------------------	---	------------------------	---	-------------------	---

## **SUMMARY**

**Title:**               **Housing options for mineworkers in arid and semi-arid regions: the case of Kathu**

**Candidate:**       **JS Cloete**

**Supervisor:**     **Prof JGL Marais**

**Co-supervisor:**  **Dr SZ Matebesi**

This dissertation entitled “Housing options for mineworkers in arid and semi-arid regions: the case of Kathu” was conducted against the background of a dearth of research into the provision of housing options for mineworkers in post-1994 South Africa. Furthermore, it was conducted against the background of the influence that arid locations may bring to bear on housing provision. The dissertation calls in question the applicability of current mineworker housing provision, given the realities of being located in an arid mining town.

The dissertation initially reviews the international literature regarding development in arid regions and the effects that such arid locations have on the livelihoods of the residents. It is suggested that the residents of mining towns engage in multiple forms of livelihood because of the danger associated with dependence on a single livelihood. The cycles of development and stagnation of resource-dependent towns, which affect livelihoods, are discussed, as is an alternative to settlement.

These international perspectives are followed by an investigation of the relevant South African literature to illustrate the effects of past social and economic developments on the historical provision of housing in South African mining towns. The discussion then moves on to more recent attempts by both the mining companies and national government to address the consequences of past injustices. The housing options available to mineworkers are illustrated by reflecting on the formulation and implementation of policies both by mining companies and government.

Through reflection on two surveys conducted in Kathu (one among residents of a mining hostel and another among residents of a private housing scheme), it is shown that a significant number of mineworkers prefer not to settle permanently near the mine and would

prefer to continue with circular migration between the mine and their areas of origin. While several factors have – for either sample – had an influence on the preference to settle permanently, only the presence of a/another home in their areas of origin indicated a statistically significant relationship for both samples. This gives an indication of both the existence of ties with the areas of origin and of the existence of access to multiple livelihoods.

The data from the surveys further reflect the respondents' preferences in terms of housing and their evident ability to afford such preferences. It is shown that while respondents' choices are not always a reflection of their housing needs, most would not have problems in respect of affordability. While most respondents indicated that they would prefer to own, the long-term effects of settlement are questioned by reflecting on respondents' lack of alternative livelihoods. Generally, respondents expressed high levels of satisfaction both regarding the housing scheme and the housing in their areas of origin. Addressing the overcrowding of the hostel should significantly increase the satisfaction of living in them.

Against this background, the dissertation proposes that: the roll-out of rental subsidies be increased to those eligible in mining areas; the role of social housing be re-evaluated with a view to providing rental housing to mineworkers; alternative settlement patterns be encouraged in arid regions; alternative systems of infrastructure and service provision in arid regions be investigated; the choices of individuals be facilitated by increasing their range of housing options; current production decisions at the mine be taken into account to improve the benefits and reduce the costs of migrancy; a greater variety of housing options be provided to mineworkers so that they may choose one that is most compatible with their preference and livelihood; and that more education be provided to mineworkers regarding the possible consequences of both ownership and settlement choices for their livelihoods.

**Key words:** housing, mineworkers, arid regions, Kathu, mining hostels, mining towns, livelihoods, labour migration, family housing



## **OPSOMMING**

**Titel:** Behuisingsopsies vir mynwerkers in ariede en semi-ariede streke: die geval van Kathu

**Kandidaat:** JS Cloete

**Studieleier:** Prof. JGL Marais

**Medestudieleier:** Dr. SZ Matebesi

Hierdie verhandeling getiteld “Behuisingsopsies vir mynwerkers in ariede en semi-ariede streke: die geval van Kathu” is uitgevoer teen die agtergrond van ‘n gebrek aan navorsing rakende die voorsiening van behuisingsopsies vir mynwerkers in post-1994 Suid-Afrika. Verder is dit uitgevoer teen die agtergrond van die moontlike invloed van ariede liggings op behuisingsvoorsiening. Die verhandeling bevraagteken die toepaslikheid van huidige mynwerkerbehuisingsvoorsiening, gegewe die realiteite van ‘n ligging in ‘n ariede myndorp.

Die verhandeling begin deur ‘n oorsig te gee van internasionale literatuur rakende ontwikkeling in ariede streke en die effek van sulke ariede liggings op die lewensonderhoud van die inwoners. Dit word gestel dat inwoners van myndorpe betrokke raak by verskillende vorme van bestaanswyse as gevolg van die gevaar verbonde aan die afhanklikheid van ‘n enkele bestaanswyse. Die siklusse van ontwikkeling en stagnering van hulpbronaafhanklike dorpe wat bestaanswyse beïnvloed, word bespreek, asook ‘n alternatief tot vestiging.

Hierdie internasionale perspektiewe word opgevolg deur ‘n verkenning van die relevante Suid-Afrikaanse literatuur ten einde die effek van historiese sosiale en ekonomiese ontwikkelinge op die historiese voorsiening van behuising in Suid-Afrikaanse myndorpe te illustreer. Die bespreking beweeg voorts na meer onlangse pogings van sowel die mynmaatskappye as die nasionale regering om die gevolge van die onbillikhede van die verlede aan te spreek. Die behuisingsopsies tot die mynwerkers se beskikking word geïllustreer deur te reflekteer oor die formulering en implementering van beleide deur mynmaatskappye en ook die regering.

By wyse van refleksie oor die twee opnames wat in Kathu uitgevoer is (een onder inwoners van die mynhostel en ‘n ander onder inwoners van ‘n privaatbehuisingskema) word daar

aangetoon dat 'n betekenisvolle segment van die mynwerkers verkies om nie permanent in die omgewing van die myn te vestig nie en eerder sal verkies om voort te gaan met sirkulêre migrasie tussen die myn en hul areas van oorsprong. Terwyl verskeie faktore 'n invloed gehad het op die voorkeur om permanent te vestig, skyn slegs die teenwoordigheid van 'n huis/nog 'n huis in hulle areas van oorsprong vir beide steekproewe 'n statisties beduidende verwantskap te toon. Dit gee 'n aanduiding van die bestaan van bande met die areas van oorsprong, asook van die verskeie bestaanswyses waartoe respondente toegang het.

Verder reflekteer die data van die opnames ook die respondente se behuisingsvoorkeure en hulle klaarblyklike vermoë om hulle voorkeur te bekostig. Daar word aangetoon dat terwyl respondente se keuses nie altyd hul behuisingsbehoefte weerspieël nie, die meeste nie probleme in terme van bekostigbaarheid sal ondervind nie. Terwyl die meeste respondente aangedui het dat hulle sou verkies om eienaars te wees, word die langtermyn gevolge van vestiging bevestig deur te besin oor die respondente se tekort aan beskikbare alternatiewe bestaanswyses. Oor die algemeen het respondente hoë tevredenheidsvlakke aangedui ten opsigte van die behuisingskema en die behuising in hul areas van oorsprong. Verder behoort die aanspreek van die oorbewoningskwessie in die hostel tevredenheid aldaar ook beduidend te verbeter.

Teen hierdie agtergrond, stel die verhandeling voor dat: die beskikbaarstelling van huursubsidies na geskiktes in myngebiede verhoog word; die rol van sosiale behuising herevalueer word met die doel om huurbehuising aan mynwerkers te voorsien; alternatiewe vestigingspatrone aangemoedig word in ariede streke; alternatiewe infrastruktuur- en diensverskaffingstelsels in ariede streke ondersoek word; die keuses van individue gefasiliteer word deur die beskikbare behuisingsopsies te vergroot; huidige produksiebesluite in ag geneem word om die voordele te verbeter en om die kostes van migrasie te verminder; 'n groter verskeidenheid behuisingsopsies aan mynwerkers verskaf word sodat hulle dié een kan kies wat die beste in lyn is met hul voorkeure en bestaanswyse; en dat meer opvoeding aan mynwerkers verskaf word aangaande die moontlike gevolge van eienaarskap en vestigingskeuses op hul bestaanswyses.

**Trefwoorde:** behuising, mynwerkers, ariede streke, Kathu, hostelle, myndorpe, bestaanswyses, arbeidsmigrasie, gesinsbehuising