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Livelihoods and the Farming Sector of the Mier Community in the Northern Cape Province

by

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Submitted in partial fulfilment of the requirements for the degree

M Inst Agrar Plant Production

in the

Department of Plant Production and Soil Science,
in cooperation with the
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Declaration

I declare that this is entirely my own work and has not previously been submitted for any qualification. Where material from other sources has been used, it has been referenced in full in the text.

Signed: 

Heleen P. Koster

Date: 25 April 2000

All names that have been used in the text, except references, are fictional.

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LIVELIHOODS AND THE FARMING SECTOR OF THE MIER COMMUNITY IN THE NORTHERN CAPE PROVINCE, SOUTH AFRICA

by

HELEEN KOSTER

DEGREE: M.Inst Agrar Plant Production

DEPARTMENTS: Plant Production and Soil Science; and
Agricultural Economics, Extension and Rural Development

SUPERVISOR: Professor N.F.G Rethman

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ABSTRACT

Being part of the semi-arid, southern Kalahari, the Mier area has a complex and sensitive ecosystem, with a low carrying capacity. Factors, such as population growth, uneconomical farm units and restricted communal areas, have resulted in serious degradation of the natural resource base. Due to their strong agricultural history, the Mier community is generally still perceived as being agriculturally inclined, which easily leads to an overall main objective, namely "to stabilising the Mier community in their agricultural environment". Development and assistance initiatives mostly focus on the natural resource base.

The majority of the Mier community, however, has undergone an evolutionary process which has changed their attitudes to agriculture. In order to determine the current role of agriculture, this study aims to identify the livelihood strategies of the Mier community in the dynamic sphere of conditions and trends, livelihood resources as well as institutional and organisational structures.

The main socio-economic results are as follows: (a) forty-two percent of the total economically active age (EAA) group is unemployed, with the highest rate under EAA persons younger than 30, i.e. 58%; (b) households diversify in one or more of the

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BESTAANSWYSES EN DIE BOERDERYSEKTOR VAN DIE MIER GEMEENSKAP IN DIE NOORD-KAAP PROVINSIE, SUID-AFRIKA

deur

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OPSOMMING

Aangesien die Mier gebied deel vorm van die suidelike Kalahari, het dit 'n baie komplekse en sensitiewe ekosisteem met 'n lae drakrag. Faktore, soos populasiegoei, onekonomiese plaasgroottes en beperkte kommunale weidings, het tot ernstige degradasie van die natuurlike hulpbron gelei. As gevolg van hul sterk verbintenis met veeboerdery in die verlede, word die gemeenskap steeds in die algemeen as nou-gebonde met dié sektor beskou, wat maklik lei tot 'n oorkoepelende doelwit, nl. om die Mier gemeenskap in hul veeboerdery-omgewing te stabiliseer.

Die meerderheid van die gemeenskap het egter 'n evolusionêre proses ondergaan waardeur hul ingesteldheid teenoor veeboerdery verander het. Ten einde die huidige rol van landbou te bepaal, het hierdie studie die bestaanswysestrategieë van die Mier gemeenskap geïdentifiseer in die dinamiese sfeer van omstandighede en tendense, bestaanswysehulpbronne, so wel as institusionele en organisatoriese strukture.

Die hoof sosio-ekonomiese resultate is soos volg: (a) Twee-en-veertig persent van die ekonomies aktiewe ouderdomsgroep (EAO groep) is werkloos, met die hoogste syfer onder die EAO persone jonger as 30, nl. 58%; (b) huishoudings diversifiseer in die volgende

bestaanswysestrategieë: (i) los werkies (49%), (ii) staatstoelaes (50%), (iii) veeboerdery (46%), (iv) permanente werk (28%), (v) migrasie (33%), (vi) vrugte-/groente-/weidingsproduksie vir eie gebruik (28%), (vii) hulp deur privaat skenkings (21%), en (viii) klein-skaalse handelsaktiwiteite; (c) huishoudings beskou die volgende as hul hoof bestaanswysestrategieë: staatstoelaes vir 43% van alle huishoudings, permanente werk vir 21%, los werkies vir 16% en veeboerdery vir slegs 10% van alle huishoudings.

Die volgende resultate van hierdie studie dui daarop dat die rol van veeboerdery aan die afneem is. (a) Vier-en-vyftig persent van die gemeenskap besit geen vee nie. (b) Slegs 39% van die volwassenes wat nie voltyds in veeboerdery betrokke is nie, is baie geïnteresseerd daarin, 19% is redelik geïnteresseerd en 42% is glad nie geïnteresserd nie. Slegs 4% van die graad 10-12 leerling is baie geïntereseerd, 42% is redelik geïnteresseerd, terwyl 54% glad nie belangstelling daavoor het nie. (c) Geen van die kommunale boere beskou hul vee as hul belangrikste bestaanswysestrategie nie. Vee speel vir hulle slegs 'n aanvullende rol deur die verskaffing van melk en soms vleis. (d) Vir elke 55 persone wat 'n tekort aan grond as die grootste probleem van die Mier gebied beskou, is daar 100 persone wat 'n gebrek aan werksgeleenthede as die grootste probleem sien.

Daar is tot die gevolgtrekking gekom dat die beeld van die Mier gemeenskap as 'n boeregemeenskap moet verander na 'n gemeenskap wat dringend opsoek is na alternatiewe bestaansgeleenthede. Ondersteuning deur landbouhulp sal net 'n beperkte deel van die gemeenskap bevoordeel en baie van die mees armste huishouding uitsluit.

Chapter 1

Motivation and Methodology of the Study

1.1 Motivation

1.1.1 Background Summary of the Mier Area

The Mier area forms part of the southern Kalahari Desert. It is situated between 20° and 20°40' E longitude and 26° and 26°40' S latitude (Van Rooyen, 1998). It forms part of the Gordonia district in the Northern Cape Province. In the past the area was called Development Region 17. The northern part of the Mier-area adjoins the southern border of the Kalahari Gemsbok National Park[1]. On the eastern and western sides, the area borders on Botswana and Namibia, respectively (Botha *et al.*, 1995). The nearest major town is Upington, 280km away from Rietfontein, the largest village in the Mier area. Figure 1 presents a map of the Mier area.

The total area is approximately 420 000 ha. Additional land has been assigned to the area through the RDP's (Reconstruction and Development Program) Land Redistribution Program. At the time of this study, the additional land had not, as yet, been transferred to, or used by, the community. The Mier area is reserved in trust for registered Coloured occupiers under the authority of the Minister of Agriculture and Land Affairs. The Mier Transitional Council (MTC) is the local government.

[1] The Kalahari Gemsbok National Park has recently been renamed as the Kgalagadi Transfontier Park. At the time of the study it was still called the Kalahari Gemsbok National Park and are, therefore, referred to as such through the rest of this document.

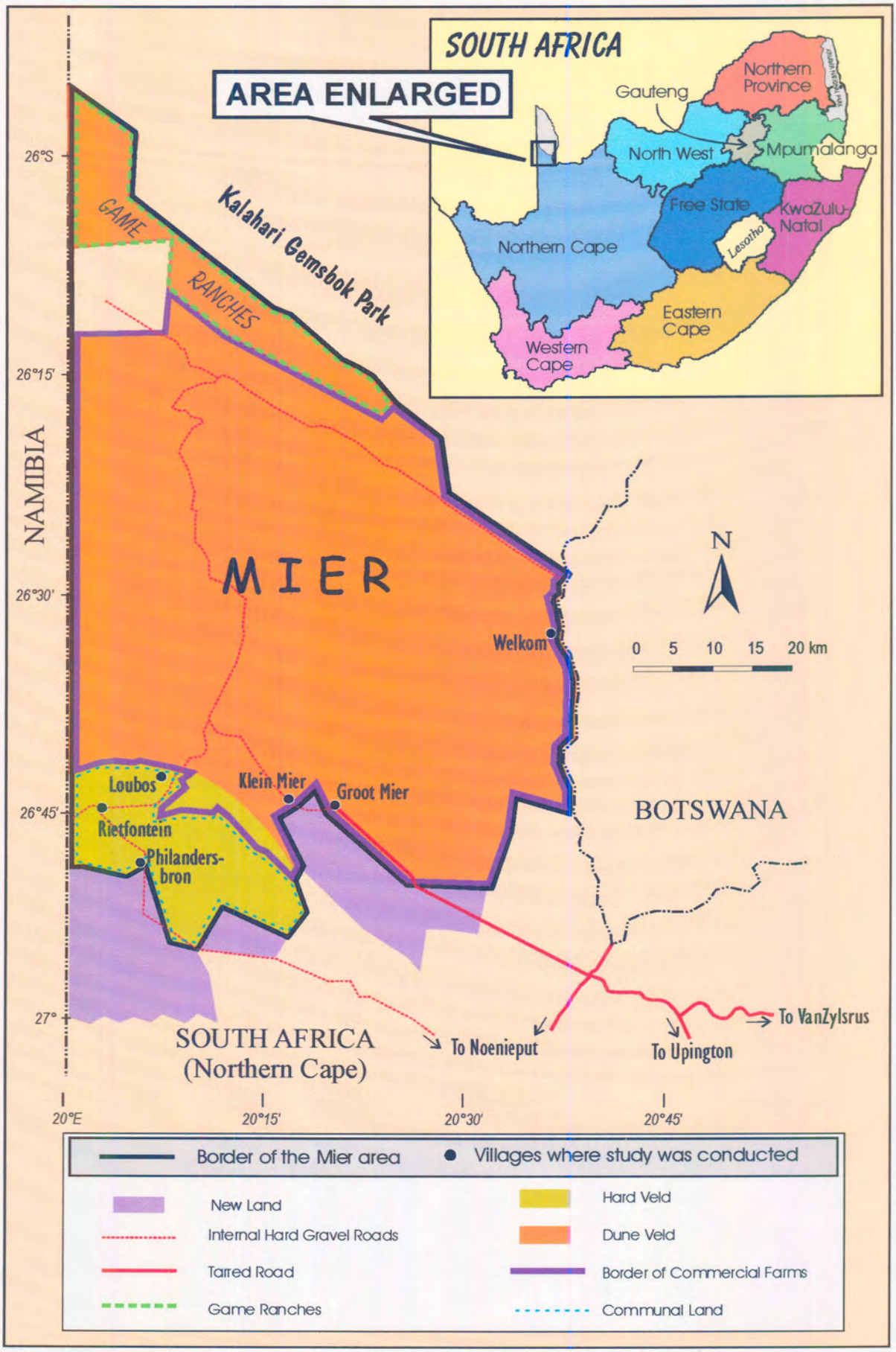

Figure 1. Location of the Mier area, Northern Cape Province, South Africa

Land usage can be divided into (i) villages, (ii) communal grazing areas, (iii) game ranches and (iv) commercial stock farming units used by individual land users. The community can, thus, be sub-divided into commercial farmers, communal farmers and villagers. As the majority of the community live in the various villages, there is no sharp distinction between communal farmers and villagers, except that the one group owns livestock and the other group does not.

Towns, villages and communal grazing areas occupy approximately 34 000 ha and the game ranches are in the order of 37 000 ha. The game ranches are also communally owned and the Mier Transitional Council (MTC) uses the financial returns from them as other local authorities use taxes. The remaining 349 000 ha consists of 125 fenced ranches, of which 114 are leased from the MTC and 11 are individually owned.

Mier is semi-desert and the area has limited natural resources. Primary productivity is extremely low and large areas are required for economically viable stock farming. The ideal farm size to support a household in this area is estimated at between 5 000 and 8 400 ha, depending on the condition of the resource base. The 125 stock ranches range in size from 1200 to 3500 ha. Individual ranches are, therefore, generally too small for commercial production and many have consequently been severely degraded. Communal grazing areas have also become desertified through overgrazing and the problem appears to be insoluble, without major interventions. Nevertheless, extensive livestock-agriculture is still generally regarded as the main economic activity.

The community consists of between 4000 and 5000 people, with numbers still increasing. The majority of the Mier area's inhabitants face high levels of poverty. The remoteness of the area, a lack of electricity and a limited water supply (both quantitatively and qualitatively) limits business opportunities. A study conducted in 1993 by Macroplan (1994) revealed that only 14.3% of the entire Mier area's population is economically active. Due to the weakening of South Africa's economy, resulting in higher unemployment numbers, it can be assumed that there has been no improvement in this

situation since 1993. During 1994, pension and welfare payments contributed a meaningful share of 12% to the income of the Mier area's population (Botha *et al.*, 1995).

In light of the increasing population and limited natural resources, there is great concern about the future of the Mier community. Agricultural prospects in this area are limited, by far insufficient to sustain the whole community. There are also indications that the Mier community is not as agriculturally inclined as is usually believed. Previous generations were totally dependent on livestock agriculture, but current indications are that a significant proportion of the population, especially the youth, is not at all interested in agriculture. Most literature concerning Mier, however, place high emphasis on the area's agriculture sector. The outside world, including policy makers and development organisations, therefore, generally perceive Mier as a farming community. This might lead to the main objective, explicit or implicit, to "stabilise the Mier community in their agricultural environment". Involvement in non-agricultural activities and migration are easily perceived as secondary activities. This implies that the crucial dynamics associated with rural development are overlooked (Ruben & Hebinck, 1998) and that the aspirations of a major part of Mier's population are being neglected.

South Africa's first democratically elected government places a strong emphasis on the alleviation of poverty through land restitution and redistribution. They believe that fostering and supporting small scale agriculture will be an effective mechanism for creating and enhancing livelihoods in rural areas. It has been found, however, that prospects for meaningful improvements in livelihoods, through these means, are poor. Evidence from other developing countries indicates that although farm sector growth often enhances non-farm employment growth in rural areas, it is not sufficient to resolve rural unemployment (Machethe *et al.*, 1997).

1.1.2 Why a Livelihood Study?

It is not the intention of this study to reject the provision of additional land to previous disadvantaged areas, such as Mier. On the contrary, any intervention that will enhance livelihood opportunities should be encouraged, even if it brings relief to only part of the community and even if this relief might only be temporary. In fact, agricultural planning and implementation will also benefit from such a livelihood study.

Livelihoods are a key aspect of multi-disciplinary research of rural communities. It forces the researcher to focus wider than farm and agriculture-related activities. It includes, besides agriculture and income, the social organisation surrounding social units on different levels, i.e. the household, community, village, etc. (Ruben & Hebinck, 1998).

The social context of a community is an important aspect of livelihoods (see chapter 2). Today it is widely recognised that agricultural planning and implementation should be regionalised and decentralised. The reason for this is, amongst other, to infuse it with an insight of the complex sociological dynamics, such as community differentiation and generational differences, which will, without doubt, shape the efficacy of programmes. Besides ecological and economic issues, greater account should be taken of issues such as diverse local aspirations, before the possibilities and pitfalls of agriculture can be fully understood at a regional level (Ellis, 1998).

It appears as if agriculture can not sustain the entire Mier community at present, and even less so in future. According to Dewar (1994), the populations of South Africa's small rural towns and villages, such as those in this study, are not going to shrink significantly. All indications suggest that the reverse can be expected, putting even more pressure on the communal land and other resources. The futures of these towns and villages need to be consciously created and reconstructed. This study, therefore, aims to shed light on all aspects of livelihoods and of all community groups in Mier.

It also aims to seize upon some of the useful and creative human potential available in many small communities, which often tend to be overlooked, and remain untapped, because there is no vehicle for getting the skills to where they are needed.

To draw more attention to the fact that the incomes and livelihood-supporting factors of households in Mier, as for most rural households, are derived from various sources, would enhance the chances of improving all these sources rather than developing a "main" source, such as agriculture, at the cost, or neglect, of others (Ardington & Lund, 1996).

A few basic socio-economic studies have been undertaken in the area during the past. The most recent publication at the time of this study was from 1995 (Botha et al., 1995). Although these are of great value with regard to basic demographic and socio-economic figures (formal employment, income, education, housing, available community services, infrastructure, etc.), they have tended to overlook the diversity of the community. Only villages are compared with each other, whereby it is implied that the residents are a homogenous group. Interest and future expectations, however, differ between current community groups, as well as between generations. This should not be ignored. Deeper aspects, such as livelihood strategies, coping mechanisms, vulnerability, etc. have not as yet been surveyed prior to this investigation.

Hence, it is important that policymakers understand household livelihood strategies, when designing local interventions and policies (Ellis, 1998). A livelihood study will offer policymakers, of various governmental departments, a handle on the changing profile of the dynamic socio-economic circumstances in the Mier rural area. It will also reveal intervention and assistance opportunities to development aid organisations. Several interventions will most probably be needed, because a single undifferentiated anti-poverty strategy is seldomly sufficient to break the poverty dynamic.

1.2 Objectives

The essence of this livelihood study is to explore the existing livelihood activities and related aspects of the communities of the six villages as well as of four pre-determined, mutually exclusive groups, i.e.

(i) households owning no livestock (group A);

(ii) households with livestock numbers of less than 10 (group B);

(iii) households with livestock numbers of 10 or more (group C); and

(iv) commercial Mier farmers (group D).

Special emphasis is placed on the role of agriculture.

The core elements of the study are:

1. To unfold the livelihood strategies in the community, as well as for the four community groups and five villages.
2. To determine the vulnerability of the community, the community groups and the villages. It was done by investigating how households, and individuals, within each community group and village cope with stress e.g. changes in livelihood activities, changes in divisions of labour, etc.
3. To determine the community's perspectives on the past and future, as well as on certain present issues. This is important to enhance bottom-up decision-making if any decisions are made that will influence livelihoods in the area.

Livelihood strategies and vulnerability are, however, shaped by various factors. It was, therefore, decided to base the structure of this document on Scoones's (1998) framework for analysing sustainable livelihoods. This framework unfolds livelihood strategies in the dynamic sphere of conditions and trends (history, politics, macro-economic conditions, climate, demography and social differentiation), livelihood resources (natural, economic, social and human capital) as well as institutional and organisational structures.

1.3 Methodology

During 1998, negotiations were held with a variety of the area's stakeholders. These included Mr. Marthinus Saunderson (Director of the Department of Agriculture of the Northern Cape Province), Mr. Koos Brink (head of the Agricultural Development Technicians of the Northern Cape Province's Department of Agriculture) and Mr. André van Rooyen (head of the Agricultural Research Council, Kimberley and full-time ecological researcher in the Mier area). The University of Sheffield, United Kingdom, played an important advisory role.

The plans and concepts were discussed with the Mier Transitional Council (MTC), which welcomed the initiative and gave permission and co-operation to continue with the project procedures. This was done on 20 November 1998, at Rietfontein, during a regular meeting of the Council.

It was realised that optimal stratification of a community is done through community participation techniques, e.g. through wealth-ranking methods. The time and financial resources for this project were unfortunately limited and did not allow for more sophisticated techniques. Several people, who are well informed about the community, were consulted. Furthermore, a major motivation for this study was to determine what the current relationship is between the community and livestock (i.e. how agriculturally inclined they are). It was, therefore, decided upon the above-mentioned division (group A, B, C and D). During January 1999, a thoroughly planned questionnaire was constructed, by consulting literature, rural appraisal experts and persons familiar with the community.

During the second week of February 1999, a pilot study was conducted in the Mier area. This was used to inform the community about the project during community meetings. To ensure that all important aspects have been covered in the questionnaire, semi-structured interviews were held with several randomly chosen households, just as foreseen for the main survey. Furthermore, unstructured interviews were held with key persons in the community, e.g. a pastor, headmaster of a school, a business man, a police officer, political

leader, a MTC member, etc. in order to find out what they perceived as the main bottle-necks regarding Mier's development and prosperity. They were also asked to evaluate the questionnaire critically. All households and persons consulted during the pilot study were excluded from the final sample groups. It is believe that interviews, with both households and key persons, revealed the most important aspects that had been overlooked in the questionnaire. It also ensured that the questionnaire was appropriate to, and understood by, the target population and that it would yield the desired information. Final alterations were made to the questionnaires. Appendix A. contains the questionnaire that was used in the main survey.

During April 1999, the actual interviews took place. All the chosen households were visited and questioned in an informal way. The interviews were semi-structured and guided by the questionnaire. We invited all members of the household present to attend and participate in the interview. For the sake of convenience, overall questions were addressed to the head of the household. If the head of the household was absent, the person with the highest authority in his/her absence was accepted as such. If a certain household seemed incapable of participating, e.g. if there were only children or retarded people at home, an appointment at another time; when the head of the household would be home, was made. In cases where households refused to respond, or if nobody was there, it was noted as such. If so, the nearest house on the left-hand side was visited.

As mentioned above, the principle unit of analysis were households, because they are the primary means through which individuals obtain access to resources (Baber, 1996). It is a difficult unit to define, as no international accepted definition of a household exists. The accepted definition, therefore, usually depends on the local situation. For the purposes of this study, a household was defined as a corporate unit living in one house (Wilk & Miller, 1997) and usually "eating from the same pot" (Grandin, 1988). It can be argued that by this definition migrants might be excluded, but due to the nature of semi-structured interviews, we did not encounter problems in this regard.

In light of time and financial limitations, the proportion of households sampled was initially chosen at 15% for the commercial farmers and each of the six villages, i.e. Rietfontein, Loubos, Philandersbron, Klein Mier, Groot Mier and Welkom. No information about the exact number of households per village existed. Hence, the best way to draw the sample was to make use of stand maps for each village and the commercial farms with all stands numbered, available at the MTC. To achieve a sample group of at least 15%, every sixth stand number was chosen, beginning at number five on the stand number list. Several stands, however, turned out to be unoccupied, although they have been allocated. The nearest house on the left hand side was then visited. The overestimation of the total number of households resulted in a larger sample group, i.e. approximately 21% of all households. It is estimated that the sample size per village varied between 16% and 25%.

Twenty three percent of the106 commercial farmers were interviewed. There was also no information available about the number of small-scale animal owners. The households in the villages were, therefore, randomly chosen and divided into group A, B or C after the survey, based on information from the questionnaire. Of these households group A comprised 62%, group B 26% and group C 12%.

A Microsoft Access database was created from all the information that was collected through the questionnaire. The database was used to compile frequency tables with comparisons between the villages, as well as between the different stratified groups. The main results, interpretations and possible conclusions were summarised in a discussion document.

A follow-up visit was held in August/September 1999. During this visit the discussion document was handed to several key persons in Mier (persons very familiar with the community, as well as to all members of Mier's executive committee). The results and conclusions were discussed with them in order to verify interpretations and conclusions.

Community meetings were held at all villages to present and discuss the results with them. The communities were informed about the meetings by notices, which were put up at shops and churches in all villages one week before the meetings were scheduled. This worked well for most villages. Unfortunately, this was not clear in Philandersbron, resulting in a late and poorly attended meeting. Hence, the meeting in Loubos, which was scheduled after the meeting in Philandersbron, also started later than scheduled, also resulting in a disappointing attendance. Nevertheless, all meetings had some lively discussions and yielded helpful information.

The presentations during the community meetings proceeded in an informal manner. Transparencies were used to display the data and results. The attendants were welcomed to interrupt at any stage if some aspects were unclear or if they had any questions or remarks. Several questions regarding possible conclusions or vagueness about why some of the results turned out as they did, were posed to the audience during the presentation. For example, the data analyses revealed the majority of male migrants find a job in the construction industry. The RDP housing project was launched in Mier not long after the South Africa's first democratic election in 1994. A possible conclusion might have been that through the housing project, many persons gained valuable experience in this regard, enhancing their chances for employment in the construction industry. Our conclusion turned out to be wrong. The community explained that one of the community members is well established in the construction industry and has various contacts with other building contractors. He organises construction jobs for many people.

After the presentation the attendants were asked to divide into groups of more or less 10 persons. Three questions were discussed mutually in these groups. One person per group wrote down all the answers. It was emphasised that a group did not need to write down one answer per question, various opinions could have been given. The three questions are presented in Appendix B.

Moreover, the main results were summarised and stated in as simple language as possible. This was printed and put up at community centres and shops, for all to read. A smaller

printed format was also handed out as pamphlets during the community meetings. Both pamphlets and notices have the project leader's postal address, phone number and fax number on it. All people were invited to contact her if they wanted more information. For example, during the community meetings it was explained that pupils applying for bursaries could make good use of, e.g. unemployment figures, to motivate their application. Some churches have correspondence with other churches overseas. The latter sometimes assists them with clothes, scholarships for school children, etc. Socio-economic data, as revealed by studies like these, may also play a vital role to motivate further, or new, assistance of this kind.

Copies of this dissertation will also be handed to the Mier Transitional Council, the Minister of Agriculture and Land Affairs, the Northern Cape Department of Agriculture, the ARC, the University of Pretoria and the University of Sheffield, UK and any other organisations who are interested. The Mier Transitional Council will be encouraged to hand copies to any organisations that have development prospects in the Mier area.

1.4 Outline

This dissertation is divided into eight chapters. The next chapter, chapter two, is based on a literature study. It defines the concept of a livelihood and its various aspects. Chapter three outlines the contexts, conditions and trends in which the livelihoods are imbedded. The first sections deals with factors that influence the livelihoods of the Mier community, namely the history of the area, politics, macro-economic conditions, climate, agro-ecology, demography and social differentiation. The last section describes how the community perceives some of the conditions that are generally perceived as major issues in the area, i.e. the different land use systems, as well as their perceptions on the area's past and future trends. The livelihood resources available to the community are the "capital" base from which different livelihood aspects are derived. In chapter four these resources are discussed. Chapter five outlines the institutions and organisations that are present in the area and that influence the livelihoods of the community. Chapter six focuses on the different income-generating activities in which the community participate. Besides income

generation, the extent to which households could cope with stresses and shocks is an important aspect of livelihoods. Chapter seven deals with the vulnerability of the Mier community. The main conclusions of the study are summarised in chapter eight and it also provides a brief summary of the profile of each group and village.

Chapter 2

Defining a Sustainable Livelihood

2.1 Introduction

Numerous definitions exist for what exactly is meant by the term "livelihood". Most, however, imply more or less the same concept.

One such a definition is given by Singh & Wanmali (1997): "*A livelihood system is a dynamic realm that integrates both the opportunities and assets available to a group of people for achieving their goals and aspirations, as well as interactions with, and exposure to, a range of beneficial or harmful ecological, social, economic and political perturbations that may help or hinder a group's capacity to make a living.*"

The Concise Oxford Dictionary (1990) defines a livelihood as a means of living or sustenance. In other words, the term livelihood encompasses all factors, aspects and interactions that form part of, or influence all means of a living of a specific community, group, household or person.

According to Scoones (1998), the sustainability of a livelihood depends on whether "*it can cope with, and recover from, stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.*"

Korten (1995) states that sustainable livelihoods are based on a web of functional interrelationships in which every member of the system is needed and participates. More specifically, it is an interaction between people, tangible assets and intangible assets (Chambers, 1995). This is illustrated by figure 2.

Tangible assets consist of resources and stores. Resources refer to land, livestock, water, trees, equipment such as tools and other domestic utensils. Stores implies food stocks, stores of value such jewellery, cash savings, credit schemes, etc. (Chambers, 1995).

Intangible assets are claims that can be made, as well as access to resources. Claims include pensions, disability and child allowances and all moral, material and other practical support. Access to resources refers to having the opportunity to use whatever resource, such as land, employment, information, services, technology, etc. (Chambers, 1995).

Livelihood capabilities depend on the local people, e.g. their education, past experiences and their willingness to use new technologies. These capabilities are usually very diverse within a community. For example, younger generations are often better academically educated than older generations, whereas the latter are more experienced concerning several local livelihood activities. Moreover, aspirations between community groups are also different. Some people would like to see their children as farmers, while others would like to see them as teachers, doctors, etc.

The fact that so many non-static role players, i.e. all the tangible and intangible resources, as well as people, are involved, explains why livelihoods are so dynamic. For instance, the way that a community deals with their circumstances is shaped by dynamic factors such as culture, aspirations, social pressure and many more. Tangible assets, such as land, change due to climatic factors such as droughts. Policy changes can alter intangible assets, such as government welfare claims. It is, therefore, important not to see figure 2 as a closed interacting system. All aspects are subjected to change from inside and outside the system.

To be sustainable a livelihood should be capable to respond to change (i.e. both internal and external dynamics) and to continually renew and develop adaptive strategies. The capacity of households and communities should be both reactive in responding to adverse changes in conditions, as well as proactive and dynamically adaptive.

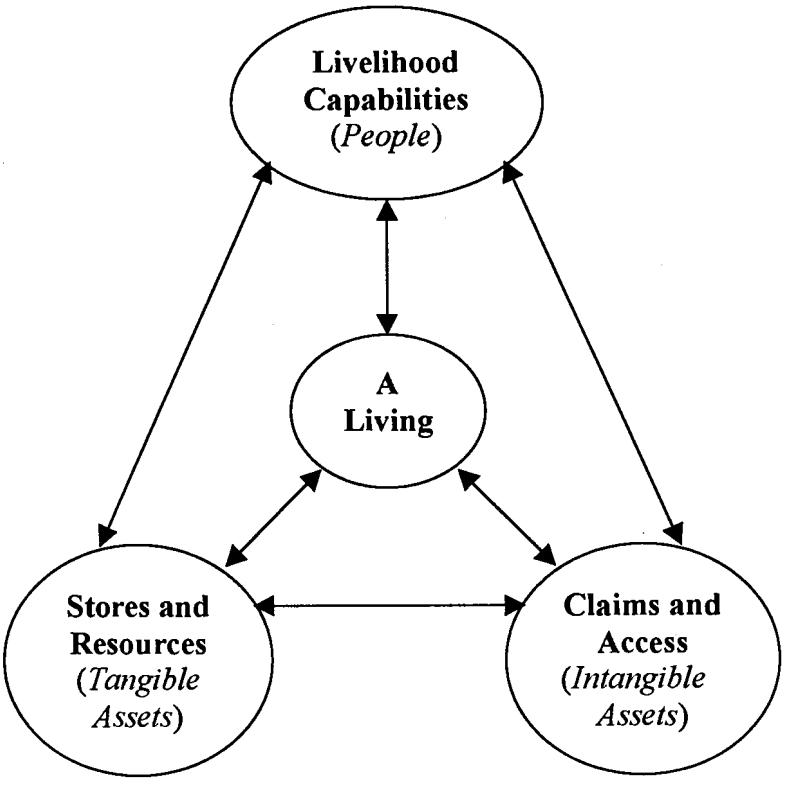

Figure 2. Components and flow in a livelihood (Chambers, 1995)

As the opportunities and options, which can support a livelihood, become more limited, sustainability is increasingly more undermined. This is the case for the majority of South Africa's poor who live in rural areas. With limited employment opportunities in the formal sector, many of them depend heavily on the natural resource base for their basic needs such as water, food, energy and housing. Their livelihood is, therefore, closely related to the well-being of the resource base. Overcrowding and poverty result in desperate strategies for survival. Long-term conservation of the natural resource base for their own welfare as well as for future generations become less important and it is substituted with short-term survival strategies, leading to a poverty-degradation cycle (Kirsten & Van Zyl, 1998). Poverty poses, therefore, one of the greatest threats for the environment.

The following three points, i.e. diversification, vulnerability and social context are also important aspects of livelihoods, which need to be dealt with in greater detail. Diversification is discussed in section 6.1 and vulnerability in section 7.1.

2.2 Social Context

For most rural households in developing countries, networks of social support complement livelihoods. The fact that rural livelihoods are - besides a diverse set of strategies to make a living- also set in a dynamic cultural repertoire, is often overlooked. The latter consists of codes of conduct, certain perceptions, social behaviour as well as relationships (e.g. kinship and gender). Livelihoods are embodied in all local activities and beyond. For example, wide-ranging interpersonal networks are often an important key to further employment and other opportunities. Having a personal connection with somebody of greater wealth might give a household a "back-up" in difficult times (Ellis, 1998). For example, it was found that several households depended on a certain commercial farmer in times of need.

For many rural households survival implies the co-operation of all household members. Even a substantial cash income, might not necessarily take away the need of other household members to collect fuel wood and fetch water. Household members contribute in different ways and their contributions vary at different stages of their life cycles (Ardington & Lund, 1996). In extremely vulnerable households, the death of a pensioner, unemployment, or drought can easily push them into poverty (May, 1996).

Households are, however, not always co-operating units. According to Breslin *et al.* (1997), the number of people managing all the different sources of income at the household level, as well as in the broader village, is of high importance. High levels of competition and conflict are not uncommon in marginalised villages. It is shaped by gender and generational dynamics, as well as by struggles over scarce resources.

Within the household these factors, therefore, also imply that the livelihood strategy, i.e. the bundle of activities, may benefit some members at the cost of others. It will, however, change over the household's life cycle as the household composition and power relationships change (May, 1996).

2.3 Conclusion

Development implies good change. Therefore, although income is important, poor people, as all other people, place a high priority on all aspects of life, e.g. health, security, justice, self-respect, access to goods and services at a reasonable price, socialising with family and friends, celebrations and ceremonies, spiritual experiences, love, etc. Thus, development is much more than economic growth and income.

In light of limitations experienced in the Mier area, i.e. lack of water, lack of energy, remoteness and harsh natural conditions, it makes sense to follow the philosophy of Chambers (1995). He stated that labour-intensive growth thinking must shift towards a sustainable livelihood-intensive standpoint. This concept provides a wider perspective on developing healthy sustainable societies than pure income-related approaches (Korten, 1995). Not in the sense that the development of a labour-intensive growth strategy must be neglected, but to complement it, especially while the latter solution seems hard to reach. A sustainable livelihood-intensity and a labour-intensity approach although not identical, are overlapping. Labour-intensity implies employment, a sustainable livelihood approach goes beyond employment, it involves all aspects of wellbeing and quality of life. Some examples are:

- *Natural resources* – sustainable management of the natural resource base;
- *Redistribution* – distribution of public livelihood resources must be fair;
- *Restrictions and hassle* - elimination of restraints on livelihood activities or opportunities;

- *Safety nets* – must be available for poor people in difficult times so that they do not lose their livelihood assets. For example, some poor are forced to sell their livelihood assets, e.g. livestock, in times of extreme hardship;
- *Health services* - a fit, strong body is a major asset for many poor, because they are mostly involved in physical work. Prevention of diseases, accessibility to effective and prompt treatment of sickness and accidents are, therefore, immensely important.

Chapter 3

Contexts, Conditions and Trends

3.1 Introduction

As mentioned earlier, livelihoods are more than income-generating activities. The lives of people are embedded in a sphere of dynamic factors, which influence their livelihood choices and capabilities. Events that happened in the past, such as the implementation of certain policies, could have major consequences at present, affecting the capability of people to make a living. Friction in a community, e.g. resulting from political discord, may restrain some community groups to participate in certain livelihood strategies. What people produce, and when they sell it, are often determined by macro-economic conditions. Agricultural production processes and the potential for development depend on both the agricultural history, as well as natural conditions (climate, ecological processes, water quantity and quality, soil characteristics, etc.). Population growth determines the competition for livelihoods in the next few decades, while age composition of the community relates to dependency ratios. The existing demand for employment opportunities is reflected by unemployment figures. Moreover, people's livelihood choices are often strongly influenced by social factors. Social differentiation could cause that two persons, who are in exactly the same situation, make different livelihood choices, due to differences in aspirations, different, local roles for males and females, etc. It is, therefore, important to be aware of the interrelationships that are present between how people make a living and the context, conditions and trends in their community, in order to gain insight in their livelihoods. These factors should be considered when policies and programmes are planned for, or implemented in, a region or community, as they will shape the efficacy of these actions.

How outsiders, e.g. policy-makers, development officials, etc., perceive certain conditions in a community, is not necessarily how the local community, as well as different

community groups, perceive them. Outsiders generally perceive land tenure as a major issue in the Mier area as it plays an important role in the capability of people to make a livelihood from agriculture. In order to gain some insight in the perceptions of the community and community groups, their opinions on several aspects were asked. This is to enhance bottom-up decision-making if decisions, that will affect their livelihoods, are made.

3.2 History

3.2.1 Course of Events

During the first part of the nineteenth century, a group of so-called "coloured" people moved from the south-western Cape (Boland) northwards under the leadership of Dirk Vilander. In 1865, they settled in the area that is known today as the Mier area (Wildschut & Steyn, 1990 and Van Rooyen, 1998). The area that Vilander and his followers laid claim to, however, stretched from Rietfontein to the Bak River in Namakwaland, the Nossob River in the north and the Molopo River in the east. Due to an agreement between Britain and German imperialistsic governments in 1885, the border between German-West-Africa and the Cape Colony was determined. It divided Dirk Vilander's land in half. David Vilander (successor and son of Dirk Vilander) feared British annexation of the area if his people did not have title acts to the land.. He therefore divided the area in farms of 10 000 morgen each and handed out certificates of land ownership (Wildschut & Steyn, 1990). According to Arendse *et al.* (1996), 64 land title acts were handed out during 1888.

The British crown formally annexed the land and incorporated it into British Bechuanaland in 1891 (Wildschut & Steyn, 1990). Two years later, in 1893, a concession court had confirmed all 64 title acts. Eleven of these acts went to white farmers. The farms, Rietfontein and Schepkolk, where most of Vilander's descendants lived, were put in trust to the "Rynse Sendingsgenootskap" (Ryns' Missionary Society) (Wildschut & Steyn, 1990; Arendse *et al.*, 1996). British Bechuanaland became part of the Cape Colony in 1895 (Van Rooyen, 1998). During 1910, South Africa became a union.

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At the beginning of the 1900s, many of the original occupiers lost their land rights, allegedly by secrecy and betrayal (Van Rooyen, 1998). In 1930 the Coloured People Settlement Areas Act of the Cape (Proclamation 146 of 1930 in accordance with Law 3 of 1930) was implemented (Arendse *et al.*, 1996; Van Rooyen, 1998). According to this act, parts of the crown land were declared as, and reserved for, settlement areas for coloured people (Van Rooyen, 1998). Hence, it made provision for the erection of the Mier Coloured Settlement Area, which was constituted out of 25 listed farms. It is unknown what exactly happened to the other 39 out of the original 64 titles (Arendse *et al.*, 1996). According to Wildschut & Steyn (1990), some might have become part of the German-West -Africa of those days, British-Bechuanaland or the area south of the current Mier area or perhaps the Kalahari Gemsbok Park. Rietfontein and Schepkolk were also not included. Most of these 25 farms were not registered and were not in the possession of individuals. The settlements, which were designated for livestock farming, had to remain communal according to this act (Arendse *et al.*, 1996).

During the 1930s to the 1960s, land in Mier was not divided into camps and a system of communal farming continued (Arendse *et al.*, 1996). Despite the proclamation of 1930, it does not appear as if a stream of people immediately entered the area (Wildschut & Steyn, 1990). Although Rietfontein and Schepkolk did not form part of the proclaimed area, in practice, inhabitants of these areas continued to make use of the Kalahari dunes for seasonal grazing and hunting as they were used to (Arendse *et al.*, 1996). In 1934 and 1936 another two farms were included to the Mier Coloured Settlement Area (Wildschut & Steyn, 1990).

The preservation of the Coloured Areas Act of 1961 (Act No.31 of 1961) provided for (i) the proclamation and reservation of land for occupation and ownership by Coloured people and (ii) for areas that are reserved to vest in the Minister in trust for the registered coloured occupiers (Van Rooyen, 1998). Through this act the Mier Settlement Area fell under the Mission Stations and Communal Reserves Act (Cape) of 1909 (Act 29 of 1909) for the first time. In 1968, the farms Rietfontein and Schepkolk were formally included in the Mier

Coloured Settlement Area. From this time, the whole Mier Rural Area was administrated as one area under the Act on Rural Coloured Areas of 1963 (Arendse *et al.*, 1996).

During the 1960s and '70s, Philandersbron, Rietfontein, Schepkolk, Loubos and Groot Mier each had its own area of communal land where livestock could be held with the permission of the Mier Management Council (which is, since 1994, called the Mier Transitional Council). Loubos had irrigation land, consisting of 72 allotments. The rest of the Mier area was the so-called "outer communal land", which was, although not initially fenced, marked off as grazing strips during these years. Grazing rights were assigned and these strips were leased out according to foregoing regulations published in the Government Gazette of 15 September 1965 (Arendse *et al.*, 1996). Although illegitimate, many people to whom no grazing strips were granted, held their livestock on somebody else's grazing strip, usually in return for half of the livestock's yield per year, or sometimes the titleholder was paid in cash. Through the course of the 1970s, increasingly more grazing strips were fenced off, which increasingly hindered the movement of livestock through the area (Wildschut & Steyn, 1990).

During the late 1960s, 40 000 ha of Kalahari veld were reserved for game ranching on demand by community leaders. This piece of land stretches mostly along the northern border of the Mier area. Although large areas of this land were, and still are, desertified, its management with well-adapted game species, such as springbok and gemsbok, has yielded good earnings for the community during the last 20 years (Van Rooyen, 1998).

During 1979 the lease system, as it is today, was officially implemented, although the first written lease contract dates from 1976. Hereby, 125 farm units were leased to 105 selected farmers. According to the lease contract, the duration of one lease period is five years, whereafter the leasee has the option to lease for a further five years and had the first option to buy (Arendse *et al.*, 1996).

The Mier Rural Area Bill of 1990 brought about great changes. This act implied that the Minister for Agriculture and Land Affairs may sell any one or more farm units of the Mier

area to any registered occupier. The price depended on the purchase price, as determined by the Minister, as well as the survey costs and any other costs concerned. The Minister had to issue a deed of grant on conditions determined by the Minister, which had to be incorporated in every subsequent title deed of the farm unit (Mier Rural Area Bill, Act 46 of 1990).

Up to the present, 27 out of the 125 farm units have been sold. Selling prices were far beneath market price. The loan applications of another 33 farmers have also been approved and disbursed. They have not, however, received title acts as yet.

During 1996, the Minister for Agriculture and Land Affairs launched a survey regarding land tenure issues in the Mier area. The Mier Lease Committee, under the chairmanship of Adv. Norman Arendse, was established. On the basis of their findings, the Minister decided that those existing ownership titles should be respected. The Minister declared in a letter to the Mier community that he did not give his permission for selling of the farm units and that he is astonished that the Agricultural Credit Board continued with the process. Regarding the 33 farmers who have received loans, but no official ownership, he wrote that it is now a case between the farmers concerned and the Board (Letter from Mr. Derek Hanekom (Minister of Agriculture and Land Affairs) to the Mier community in reaction to the findings of Arendse's report).

The Mier Area Rural Bill of 1990 was repealed in 1998 and replaced with the Transformation of Certain Rural Areas Act (Act No. 94 from 1998). This act provides, amongst others, for the transfer of certain land to municipalities and certain other legal entities. At the time of this study, this process was still in progress in the Mier area.

3.2.2 The Evolution of Small Towns During Rural Development

In order to gain more insight in the problematic nature of the Mier area, one should compare the history of the Mier area's villages with the general international experience regarding the formation and development of rural towns.

3.2.2.1 The International Experience

According to international evidence, agricultural development proceeds more or less through the same stages over a long period of time. Initially, farming families are relatively self-sufficient in agricultural production and support processes. Over time, specialisation starts as a result of population growth, technology transfer and differences in skills and available resources. This leads to market creation and opportunities for trade. Specialisation results in increased productivity and higher incomes, which give rise to a demand for non-farm goods and services. Non-farm settlements develop to satisfy these demands, while certain services and activities, which were previously farm-related become concentrated here. As these settlements grow, more services and functions are provided to fulfil the demands of the population, thereby increasing the convenience in the rural area as well as providing additional markets. It results in a rise in overall rural income. Agro-industries, e.g. packaging and food processing often follow (Dewar, 1994).

It is clear that in the internationally accepted model, a close symbiosis between the small towns and the surrounding agricultural sector exists. These towns provide markets for agricultural in- and outputs as well as processing opportunities, while commercial and social services (health, education, religion, etc) rely heavily on the support of farm households for their existence. The local agricultural sector provides agricultural products to the town's population (Dewar, 1994).

In their study on rural household income, Leones & Feldman (1998) also support the hypothesis that non-farm activity expands in areas where advances in agricultural technology have led to an increasing farm income and, thus, to an increasing demand for non-farm goods and services.

This situation, however, is not uniform. What is important, is the dynamic interconnection between agriculture activity, the needs of the agricultural sector and the needs of the local population (Dewar, 1994).

3.2.2.2 The Mier Area's Villages

The model described above differs greatly from the situation found in the Mier area. The initial development path of the Mier area corresponds with the first phase of the international model in that the entire population that inhabited the area were farmers. The pattern was then distorted as no spontaneous process of diversification, specialisation and skill development in service provision occurred. As described above, the majority of the population was actually forced to withdraw from commercial livestock farming, due to legislation and a lack of land. Although good reasons might have existed for this legislation, those concerned were not ready for this step, as they had not yet specialised in, or learned, any other trade. No alternatives were provided, or created, to sustain their livelihoods. This part of the community had thus neither sufficient natural resources nor human capital, such as skills in service provision, to rely on to make an economically and environmentally sound living.

Escobal (1998) found through several studies in Peru that access to public goods and services is an important part of the link between the agricultural sector and its hinterland. The promotion of a symbiotic relationship between farm and non-farm activities could improve household welfare, food security and sustainable land use.

In the Mier area, even today, commercial services, which are provided to farmers, are limited to the KLK (a co-operative company), the two-monthly auction in Loubos and a few butcheries. Some commercial farmers remarked spontaneously that they would like to see an abattoir or a wider choice of inputs in the Mier area. It will greatly reduce their costs (e.g. fuel expenses, time, etc.) in comparison to visiting towns outside the area such as Askham and Upington. Some villagers suggest that meat-processing industries should be established in the Mier area. The lack of electricity, however, is a major constraint for any industry.

Due to the lack of services in Mier, such as banking facilities, persons who have bank accounts, e.g. commercial farmers and salaried persons (teachers, nurses, government officials, etc.), are compelled to do their financial business, such as salary withdrawal, in

Upington. In light of cheaper prices and a wider range of products and service providers, these people also do most of their shopping there.

The rest of the community, who seldom get the chance to visit Upington, do their shopping in the Mier area. An estimated 75% of all households in Rietfontein, Loubos and Philandersbron make use of a local shop called "The Pages" in Rietfontein, which is owned by people from outside the area. This implies that the income of most commercial farmers and salaried persons, as well as that of the rest of the community, flows out of the area. There is, thus, due to a lack of local service providers within the community, very limited private investment in the area, impeding local development.

Dewar (1994) calls the weakening relationship between villages and their agricultural hinterland a declining farm to non-farm multiplier. On the one hand, although these villages are suppliers of some commercial and social services to the farmers, the greater part of their business has been diverted to elsewhere, mainly larger towns and cities or livestock speculators passing through the Mier area. On the other hand, demand for animal products in the villages is constrained by a limited spending power.

3.3 Politics

During the last two decades the Mier community, being a coloured community, faced major political changes. Before 1983, they were subjected to the apartheid system and the concomitant implication regarding human rights. During 1983 a new parliamentary system was introduced, whereby the representative houses for Coloured people and Indians were included in parliament. During February 1990, Mr. Nelson Mandela, leader of the African National Congress (ANC), was released. This party, which had been underground since the 1950s was now able to launch their campaign for South Africa's first democratic election in 1994. Their victory implied major changes for all citizens of South Africa (Beinart, 1994).

In the Mier area, prior to and during the 1980s the entire Mier community were followers of the Labour Party under the leadership of Reverend Hendrikse. During the late 1980s the popularity of the National Party (NP) increased highly, resulting in almost the entire Mier community becoming supporters of the NP. It was under this government that some commercial farmers were able to buy their leaseland and where these transactions for others were halted. Before South Africa's first democratic election in 1994, support for African National Congress (ANC) increased rapidly so that competition between the New NP (NNP) and ANC became tight. The ANC won the 1994 election as well as the 1999 election in the Mier area, but the NP was also well supported. Table 1 presents the election results of the 1999 election. Support for other political parties was insignificant. It does not appear as if prevailing differentiated political support is related to characteristics such as ethnicity, religion or class, but depended rather on personal beliefs.

Table 1. The 1999 election results of the ANC and NNP in the Mier area

Party	**National results**	**Provincial results**
ANC	1054 votes (51.8%)	1058 votes (51.6%)
NNP	981 votes (48.2%)	994 votes (48.4%)

The community had to deal with rapid changes over the past two decades, including new policies, new rights, different attitudes of the distinct authorities, new values, etc. Changing political conditions are known to result in all kinds of uncertainties at grass-root level (Ruben & Hebinck, 1998). According to Warner & Jones (1998) conflicts easily arise from such perturbations. This, together with the national elections due in two months, resulted in serious tensions between the two parties during the main survey. These tensions are damaging one of the community's largest assets, i.e. their social fibre. Social fibre refers to a group or community's sense of solidarity and concern for each other. As will become clearer through the rest of the document, the people of Mier, and particularly the poor, rely heavily on one another, especially in difficult times. Several people spontaneously mentioned, however, that one's political convictions are often the key (or closed door) to personal progress, e.g. to be accepted for a job. Some of the local people are convinced that political discord is the largest problem prevailing in the Mier area. In

reaction to the question: "How do you see the future of Mier?", almost 10% of the households said that the unity of the community will play a crucial role (see table 14) in future prosperity, apparently more than job opportunities, electricity, land tenure, etc. Other people are convinced that the area's politicians are more concerned about their party winning the elections than about the well being of the area and its people.

It is unfortunate to see that the institutions (i.e. political parties) that have the power to enhance prosperity are often the cause of controversy. What must ensure equity is now the source of inequity. According to Korten (1995), equity between and among community groups in the access to and distribution of resources, such as job opportunities, is one of the key elements of sustainable livelihoods.

The close race between the ANC and NNP, implying a split in the community, could also have detrimental policy implications, as the success of policies depends, amongst others, on a political environment conducive to mobilise the energy and capability of the majority of rural people (Staatz & Eicher, 1990). Moreover, divisions within communities might have serious implications for certain development projects. If politics are such a strong force, as in the Mier community at the time of this survey, development projects can easily become political flavoured. This determines the affinity that certain community groups have for such projects and consequently their level of participation or resistance (Van Rooyen, 1998).

3.4 Macro-Economic Conditions

3.4.1 Mier Farmers and Price Incentives

The agricultural sector has faced some major macro-economic changes during the last few decades, such as increasing deregulation and market liberalisation from the mid-1980s. There has been a remarkable reduction in state intervention in agriculture. An important aspect thereof is the reduction in price controls in 1987, moving to more market-based

pricing systems (Townsend, 1998). Various agricultural control boards have been closed down, or the extent of their powers has been drastically reduced during the past decade. The fixed price regime today applies to only a limited number of agricultural commodities. Various marketing schemes had lost their statuary powers by January 1998 through the new Marketing Act of 1997, resulting in a virtually free market system in the marketing of agricultural products.

This more market-based economy implies that the agricultural sector will increasingly be responding to the level of effective demand, i.e. domestic demand plus export opportunities (Townsend, 1998) and it will direct the agricultural sector to become more internationally competitive (Vink, 1998).

Despite these major changes, the Mier area remains rather isolated from macro-economic dynamics. Due to the area's remoteness, farmers have limited access to information regarding meat prices, e.g. where and when to sell. It implies that many farmers' decision to sell livestock at any point in time, depends on their cash needs and is, therefore, weakly related to market signals. This corresponds with what Staatz & Eicher (1990) reported, i.e. that insufficient infrastructure and a lack of reliable information systems often lower market efficiency and reduce farmers' incentives to specialise for market production.

Table 2 gives an indication of what farmers received per sheep or lamb during the last five years. It is clear that there was a sharp fall in these prices during the last year.

Table 2. Average price per sheep/lamb carcass in the Gordonia district (Le Roux, 1999)

Year	Average price per carcass
1998/1999	R194.79
1997/1998	R219.87
1996/1997	R214.56
1995/1996	R175.64
1994/1995	R189.24

Although the most recent average price per carcass was recorded as R194.79, one of the interviewed commercial farmers said that the last time that he sold animals in Upington, he received only R130 per sheep. What upset him the most was that butcheries in Upington sold carcasses to the public at approximately R300 per carcass at that time. There are several farmers who are upset about the difference in price between what they receive per unit meat and what butcheries charge for the same unit meat.

Most of the commercial farmers in the Mier area lease their land. This implies that they have little incentive to invest in durable, but higher priced farm improvements and inputs. An interviewed farmer who leases his land, clearly stated that if he needs to replace broken or worn out water pipes, he chooses those at the lowest price, even though he knows that the more expensive ones are more durable and are, in fact cheaper in the long-run. The impact of changes in input prices, therefore, is also skewed through factors such as the prevailing land tenure system.

3.4.2 Government Subsidies

As a result of the *White Paper on Agricultural Policy* of 1984, agricultural policies in the period following 1984, were characterised by large government subsidies to farmers, usually in the form of drought aid and other disaster payments. For example, the drought relief package announced by the government in 1992, added up to R3.4 billion, consisting of R2.4 billion debt relief plus R1.0 billion drought relief. This approach of blanket debt relief had been very costly. In effect it has encouraged inefficiency and inequality in the commercial farming sector and added to the financial unsustainability of the agricultural sector of that period with many South African commercial farmers relying on financial aid to stay in the farming business (Vink *et al.*, 1998). The government, since 1994, has therefore, abolished this approach.

The reduction of subsidies and the implementation of a free-market approach imply that South African producers have to become more competitive, because there will no longer be protection for inefficient farming (Fényes & Meyer, 1996).

The commercial farmers of Mier previously also qualified for such drought subsidies. Several farmers have spontaneously mentioned that the withdrawal of the support is a serious set-back, especially with the prevailing drought.

3.4.3 Labour Issues

Due to the extensiveness of the area's agricultural sector, there is a limited demand for labour from all farmers. Most commercial farmers have one permanent livestock-keeper. Casual labour is used occasionally to dip and dose animals, to load them for the market purposes or to repair fences. Communal farmers who do not let their animals range freely, generally look after their animals themselves or make use of family labour. Farmers' relations with the labour market and the influence of labour legislation on their production processes, are, therefore, limited.

Labour legislation has had the greatest effect on government and other formal sector employees. Work conditions in the informal sector, such as domestic work, are agreed on between employer and employee. Due to the high demand for work, many people prefer to overlook labour legislation and grasp almost any income earning opportunity that comes their way.

Migrants are subjected most to increasing national unemployment trends in their search for work opportunities outside the Mier area, which are usually in urban areas and on more market-related farms. Here employment is more related to macro-economic conditions than is the case in the Mier area. Fifty-seven percent of the migrants interviewed feel that there is a decline in work opportunities outside the Mier area.

3.4.4 The Exchange Rate and Inflation

Two other major factors that have become more important due to the liberalisation process, are the exchange rate of the rand and inflation. Depreciation of the rand will raise the costs

of imported products as well as agricultural inputs, such as implements, machinery, dips and sprays, etc. (Fényes & Meyer, 1996), but will strengthen export incentives. Inflation has a direct impact on interest rates (cost of credit) and the costs of inputs.

Inflation affects, of course, the entire community through increases in consumer prices. Figure 3 presents the consumer price inflation in South Africa during the last six decades. The majority of the community, however, purchases mainly basic foodstuffs, such as flour, sugar and coffee, as home-baked bread and coffee are the staple foods of most. Only a limited proportion of the community purchases more expensive and luxury consumer goods and/or owns cars or pick-ups, i.e. those who are permanently employed in the formal sector and most commercial farmers. Inflation, and the sharp increase in the fuel price during 1999, has had a major affect on them.

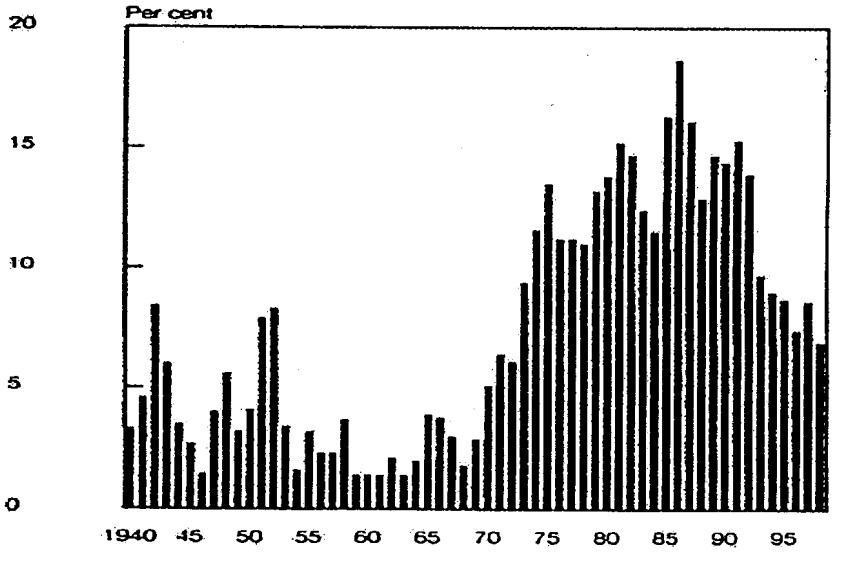

Figure 3. Consumer price inflation in South Africa (Casteleijn, 1999)

No formal credit institution existed in the Mier area during the time of the survey and informal arrangements (excluding emergency loans between friends and family) seemed to be limited. Increases and fluctuations in interest rates did not really affect most people of the Mier area. Teachers and other higher income persons experienced difficulties in obtaining home loans. Bank officials argue that resale of larger, more luxury houses would be troublesome in the Mier area. It is understandable in the light of the overall low

expenditure power and because of the lack of higher income earning opportunities which discouraged an inflow of professional people and businessmen. Interest rates, therefore, influence mainly agricultural loans, which are mostly made at the Land Bank (see also section 4.3.2.3).

3.5 Climate

3.5.1 Introduction

The Mier area is located at the southwestern margin of the vast Southern African Kalahari Basin (Krämer, 1985). The climate is typical that of a semi-desert: dry, very hot, with minimal summer rainfall (Botha *et al.*, 1995).

3.5.2 Temperature

The Mier area experiences extreme temperature fluctuations, as can be expected from the semi-desert conditions. There is a significant variation between day and night temperatures. The average maximum and minimum temperature during summer months are 36 °C and 20 °C, respectively. During winter, these are 20 °C and 0 °C, respectively (Krämer, 1985). (Botha *et al.*, 1995) also refer to the extremely high temperatures that are experienced from time to time during summer. Table 3 presents the highest maximum and lowest minimum temperatures recorded at a few weather stations near the Mier area.

Table 3. Extreme temperature variations in the Mier area (Botha *et al.*, 1995)

Weather Station	**Highest max. temp.**	**Lowest min. temp.**
Mata Mata	42°C	-9.6°C
Twee Rivieren	43.4°C	-10.3°C
Nossob	42.7°C	-9.9°C

3.5.3 Rainfall

Rainfall is very erratic and varies between 150 mm and 300 mm per year. Most rain falls in summer and autumn (Botha *et al.*, 1995). According to Van Rooyen (1998), rain falls predominantly during summer between January and April when ambient temperatures and evaporative water losses are high. The median rainfall at Rietfontein is 146 mm per year (measured over 80 years) with a coefficient of variation of 54.5%.

3.5.4 Evaporation

Data on this parameter is very limited. Evaporation at Twee Rivieren and for the Kalahari Gemsbok Park had a mean value of 2 739 mm/a for 23 years, stretching from 1961 to 1983. During this time the highest value found was 3 371 mm and the lowest 1 864 mm (Krämer, 1985). No data concerning evapotranspiration is available.

3.5.5 Humidity

The average annual relative humidity at 08:00 varies between 50% and 60% and at 14:00 between 25% and 30%. The highest values are obtained during June with lowest during October. During rain showers humidity is normally between 50% and 60%.

3.5.6 Prevailing Winds

Most prevailing winds blow from the northwest. During August and September, when flora is the driest, they blow the strongest and with the highest frequency. During this time, unstabilised sand is subjected to wind erosion (Botha *et al.*, 1995).

These winds bear a lot of sand, are warm, unpleasant and dry. However, they do play an important role in the distribution of seeds, which matured during the autumn and winter. As a result of the northwestern winds, dunes are mainly situated in a northwesterly direction. Winds, which blow over the northwestern dunes, may shift their crests and

thereby partially or totally cover plants on the upper parts of the dunes with sand (Botha *et al.*, 1995).

Southern winds are also quite common. They supply cool air during summer months and may cause extreme cold during winter months. Extremes usually do not last longer than three days, however (Botha *et al.*, 1995).

3.6 Agro-Ecology

The following will give the reader some insight of the constraints and limitations of the Mier area's agricultural sector, as well as the complexities regarding management that farmers have to face in order to maintain a sustainable natural resource base. It is important to understand that difficulties regarding livestock farming in the Mier area are more than just a lack of water, extreme temperatures and a lack of land, but that this sector is subjected to a complex and sensitive ecosystem.

3.6.1 Topography

This area is mainly an undulating, monotonous and arid surface, covered by sand and a few pans. The altitude varies between 900 and 1200 m above sea level. The northern part of the Mier area is dune veld, while the southern part, where the main settlements are found, is so-called hard veld (Botha *et al.*, 1995). The latter is virtually flat (Krämer, 1985).

3.6.2 Soils

3.6.2.1 Dune Veld

The greatest part of the Mier area consists of dune veld, which consists almost entirely of nutrient-poor aoelian sand (Van Rooyen, 1998). Quartz (1000 QUARTZ), the mineral most resistant to chemical and physical weathering, comprises 90% of the dune composition (Brink, 1998). It remains unchanged after being released from the mother

rock. No clay minerals are formed and few nutrients are set free through mineralisation, resulting in a soil which has a very low fertility and that lacks micro-elements (Krämer, 1985).

Clay particles retain macro- and microelements, and protect soil against leaching and wind erosion. Hence, the amount of clay particles, together with the amount of humus, present in the soil determines the amount of nutritious elements and compounds that the soil can retain (Brink, 1998).

The sand of the Mier area has some unique characteristics. Due to the relatively small size of the sand particles, water does not leach to lower soil strata, but remains in the dunes. There are also limited capillary and run-off losses. Dunes therefore act as water reservoirs for some time after rain showers. Water is readily available to plants between 50mm to 500mm from the soil surface (Brink, 1998).

3.6.2.2 Hard Veld

The hard veld is constituted of a rocky soil (Acocks, 1988). More information about the soils of the hard veld is very limited. The Department of Agriculture of the Northern Cape plans to start with research in this regard by the end of 1999 or the beginning of 2000.

3.6.3 Vegetation

3.6.3.1 Introduction

Van Rooyen (1998) describes the Mier area as shrubby Kalahari Dune Bushveld. Acocks (1988) refers to the vegetation of the Mier area as Kalahari Thornveld and sub-divides it into (i) Kalahari Thornveld Proper (Western Form) and (ii) Vryburg Shrub Bushveld. Appendix C presents more detail regarding species related to the Mier area.

The typical western form of the Kalahari Thornveld, of which the dune veld of the Mier area forms part, is an extremely open savanna. The veld is extremely vulnerable to grazing pressure due to the spotty tuftiness of the grass and the looseness of the practically bottomless sand (Acocks, 1988).

Vryburg Shrub Bushveld is a veld type that occurs on rocky soil, as found in the hard veld in the southern part of the Mier area. Vegetation in this area should be a mixed grassveld with shrubs and sometimes small trees (Acocks, 1988). At the time of this study, this area was seriously disturbed and the vegetation cover degraded due to factors such as heavy grazing and fire (Van Rooyen, 1998).

The content of sections 3.6.3 and 3.6.4 on vegetation and ecology-related issues, is mainly based on information derived from lectures and discussions held during a three-day field excursion in the Mier area, as well as from the accompanying document (Brink, 1998), except when otherwise stated. The Department of Agriculture, in co-operation with the Agricultural Research Council (ARC), presents the excursion on a regular base. These excursions are also open for Mier farmers at a nominal fee or even free of charge. The findings are based on years of research in the area, especially that of André van Rooyen (ARC).

3.6.3.2 Annual Versus Perennial Grasses

Both annual and perennial grasses form natural components of Kalahari veld. Maintaining a sound balance between perennial and annual grasses should be an essential part of every farmer's ecosystem management in this area. Perennial grasses play an integral role in sustainability of the ecosystem and are of higher nutritional value than annual grasses. They should thus be encouraged. Annual grasses form approximately 15% of good Kalahari veld, but their frequency usually increases as the veld becomes more degraded, because they establish more readily and quicker than perennial grasses. Annual grass seedlings can thus easily outperform perennial seedlings. Young annual grasses can not, however, compete with a stand of mature perennial grasses.

An annual grass system, with a high yield, can easily be established. It is, however, a very risky system. It lacks continuity and is very difficult to maintain. The annuals are unable to compete with the bush component and, hence, can not control bush encroachment, such as *Rhigozum trichotomum* (see following sub-section). Annual grasses do not, therefore, guarantee sustainability.

Perennial grasses are usually more nutritious than annual grasses due to a higher proportion of leaf. A well-established perennial grass stand also plays a crucial role in controlling the bush component, as woody seedlings cannot compete with mature perennial grasses. Several perennial species do not grow in the interdunes only, but on dunes as well, contributing to dune stabilisation.

Annual grasses, however, are not totally undesirable. They are advantageous in that they are a source of organic matter to the soil and that they form nutritious foggage after certain acids have been volatilised and ADFs (Acid Detergent Fibre) and NDFs (Neutral Detergent Fibre) have been broken down by the sun's UV rays. This might be of great value in drier seasons.

3.6.3.3 Rhigozum trichotomum Invasion

Rhigozum trichotomum is the most remarkable problem plant in the Mier area. The invasion of this shrub throughout the Mier area is of such great concern, that it necessitates special attention.

R. trichotomum is an indigenous, rigid, woody shrub, which flourishes on the sandy soils of Mier, as well as on the hard veld (Brink, 1998). It is unpalatable, although pods and flowers can be grazed. It is very drought resistant as it sheds its leaves when severe water scarcity sets in in order to lower its water requirements. As soon as water becomes available, it sprouts again. A well-developed root system, consisting of deep as well as shallow roots, enables it to respond to small amounts of water (Moore, 1989).

It has a high encroaching potential, because new plants are formed from the shallow horizontal roots. After some time, new plants become independent from the mother plant (Moore, 1989).

R. trichotomum is a serious problem plant in this area, displacing more valuable plants and often forming impenetrable thickets in the interdunes. Their role in the prevention of wind erosion is limited as they do not grow on dunes, where wind erosion is the most severe (Brink, 1998).

3.6.4 Interaction Between the Different Ecological Components in the Dune Veld

As mentioned above, the sandy soils of the dune veld consist almost entirely of quartz particles, which are of sedimentary origin. Sedimentary formations are known for having extremely low levels of minerals and clay, in contrast to igneous rocks. It is believed that the Kalahari dunes have the lowest phosphate (P) level in the world. Due to the sparse vegetation, the organic matter content of the dunes is almost non-existent. Clay and humus (the more decayed component of organic matter) form charged exchange complexes in soils, which provides nutrients to plants (Brink, 1998).

Organic matter has a vital influence on the physical and chemical properties of soil. *Physical properties* of soil refer to its structure, colour, water-uptake ability, susceptibility to water run-off and erosion, drainage and tendency to surface-sealing.
Chemical properties of soil relate to the availability of nutrients to plants, e.g. the tempo at which various nutrient elements release from minerals, the solubility of plant nutrients in ground water, the oxygen and carbon dioxide content of soils, etc. (Brink, 1998).

Insufficient water is not the primary problem in the dune veld. This is the lack of humus and clay, with the result that vegetation struggles to establish and survive on these dunes. The sand particles are of such size that the dunes capture water. Hence, these dunes act as water reservoirs after rain showers and moist sand is found within 150 mm of the surface.

The deficiency in humus and clay is an important aspect of a complex of interrelated factors. Soil micro-organisms, such as bacteria, fungus and protozoa, obtain their energy and other nutrients from dead plant material. Low organic matter implies, therefore, low micro-biotic activity. This hinders essential symbiotic and mutualistic interrelationships in soils. The most significant one in the dune veld of the Mier area is the symbiotic association between mycorrhiza and plant roots. Mycorrhiza is a fungus that lives on plant roots from which it derives a part of its nourishment, which it is unable to produce or absorb from elsewhere. The host benefits from a significantly improved P-uptake. It is thus of vital importance in this area.

Mycorrhiza activity has been seriously impeded due to a lack of vegetation and is no longer found on several dunes. Hence, control of less desirable plants, e.g. *R. trichotomum*, should be done with great discretion. Even though they are of minimal value as pasture, they are still a source of organic matter and they capture elements like C, H, O and N (which should otherwise have been left unutilised). Thus, if these plants are removed, care should be taken that superior plants immediately replace them, otherwise elimination of one problem creates other problems.

Wind velocity is the highest on the crest of dunes. As a result, finer particles, i.e. the most nutritious fraction of the soil, are removed and transferred by the wind. Grasses and other vegetation, which are dense near the ground surface, capture these moving, fine particles. They accumulate at the root zone of the plants where they form an important source of nutrients. If vegetal cover is poor, these nutrients are often lost.

One of the most severe consequences of degrading vegetation is that the seed bank also shrinks. Differently stated, reducing the numbers of a specific plant species will result in a reduction of available seed of that species. The proportion of perennial grass seeds, which germinates, is estimated at only 2-6%. It makes the replacement of favourable species by *R. trichotomum* an even bigger threat, because natural re-establishment of favourable species is impossible without available seed, even if *R. trichotomum* is successfully controlled.

Vegetation also controls sand movement, caused by the wind. Moving sand hinders seedling establishment. The latter is, therefore, strongly related to the extent and density of the ground cover.

Several techniques have been developed to stabilise dunes in the Mier area by members of the ARC (Agricultural Research Council). For example, branches from *R. trichotomum* can be packed in several ways so that they temper the wind's speed and prevent vertical sand movement. This is to prevent seedlings being buried by moving sand. Areas between such branches can be ideal seed catchments. If, however, no satisfactory seed bank of wanted species exists, all these efforts would be useless.

Seed formation is an indication of a plant's ability to build up reserves. If it becomes dormant before seeds have formed, it is an indication that reserves were sub-optimal. Thus, to assure multiplication of plants that are dependant on seed for the specie's survival, these plants should get the chance to build up sufficient reserves to support seed formation. This is jeopardised by management systems where camps are utilised for six weeks, followed up by six weeks of rest. In order to optimise seed formation, a camp should rather be rested for one full growing season.

The effect of different management strategies used by different farmers can often be clearly seen by the borderline effect on the boundary of two farms. This is illustrated in figure 4.

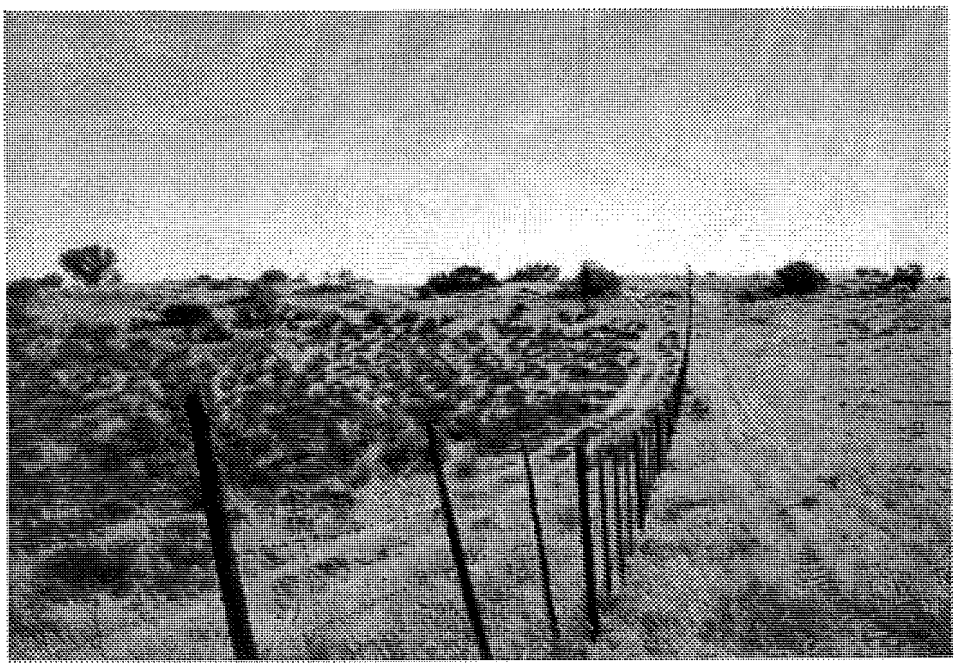

Figure 4. The boundary effect as result of different farm management practices

3.6.5 Water

Due to the high evaporation rates and high temperatures, surface water is almost non-existent. The few dams and pans that capture water can only be exploited as animal drinking points for short periods, after good rain (Botha *et al.*, 1995). As previously suggested, the southern Kalahari is very sensitive to overuse by herbivores. Until some decades ago, the area was kept largely uninhabited due to the absence of surface water. Development of modern water extraction techniques, such as boreholes, and the laying on of water pipelines, such as the Kalahari East Pipeline, has lead to higher animal numbers in the southern Kalahari, which has resulted in degradation (Van Rooyen, 1998).

Poor water quality makes livestock farming difficult, if not impossible, in the northern part of the Mier area, because of high levels of nitrates and fluorides as well as a high level of electrical conductivity (see section 4.2.1.2 for more detail). Only game can utilise water of such quality. Section 4.2.1 gives a more detailed discussion on water in the Mier area.

3.7 Demography[1]

3.7.1 Population Figures

According to the Impak survey, the population size number of the total Mier area was 4 741 during January 1999. According to Botha *et al.* (1995), the population size was 4 278 in 1993. In other words, there was a population growth of 463 persons over a period of six years, i.e. a growth rate of 1.7% per year.

Table 4 presents the population numbers and sex ratios per village as found by Impak as well as the sex ratios per village found by this study.

Table 4. Population numbers and sex ratios, per village, 1999 (Impak unpubl.)

Place	No. of persons	% of total population	Impak data		This study	
			Male	Female	Male	Female
Groot Mier	257	5.4%	54.1%	45.9%	41.5%	58.5%
Klein Mier	447	9.4%	49.5%	50.5%	46.4%	53.6%
Loubos	641	13.5%	48.4%	51.6%	45.5%	54.5%
Philandersbron	664	14.0%	46.4%	53.6%	45.8%	54.2%
Rietfontein	1969	41.5%	47.9%	52.1%	50.9%	49.1%
Welkom	605	12.8%	53.9%	46.1%	56.0%	44.0%
Other[1]	158	3.3%	49.3%	50.7%	46.9%	53.1%
Total	4741	100%	49.02%	50.98%	51.09%	48.91%

[1]Includes persons living in hamlets such as Vetrivier, Skepkolk and Drie Boom as well as commercial farmers living on their farms.

[1] This section relies to a great extent on unpublished data provided by Impak Consulting Engineers. They launched a brief socio-economic survey in the Mier area at the beginning of 1999 to acquire information, mainly for own use.

3.7.2 Immigration and Emigration

There is a strong flow of people in and out of the Mier area. According to this study's sample group, 51.6% of persons 18 years and older, are born in Mier and 48.3% are born outside Mier. It is, therefore, clear that there was substantial emigration to the Mier area in the past.

Moreover, many people, who are born and bred in Mier, leave the area, but return after some time. Some meet their spouses there, but eventually settle in the Mier area.

It is especially after school that many people leave the area. There is a sharp drop between the age categories 10-19 years and 20-29 years, i.e. 24.5% versus 14.9%, respectively. It was confirmed during the meeting held with the grade 10, 11 and 12 pupils during the follow-up visit. Ninety-nine percent of them want to leave the Mier area after they have finished school, of which 41% plan to leave the area temporarily and return after some time and 59% would like to make a living permanently outside the Mier area.

3.7.3 Age Distribution

Figure 5 presents the age distribution in the Mier area based on this study's sample group. According to the sample group, 50.7% of the population is younger than 20 years. This corresponds closely with the data of Impak. Impak found that persons in the age group 0-20 years constituted 50.4% of the total population. As populations consisting mostly of children and young adults are likely to have higher birth rates than ageing populations (Elkan, 1995), it can be expected that this will be the case in the Mier area. Elderly people, i.e. those 60 years and older, formed 8.3% of the sample group. Impak found that the aged (61 years and older) comprised 8.1% of the total population.

The elderly and some children make a substantial contribution to household income through government allowances, i.e. pensions and child allowances. It would thus be wrong, in these circumstances, to perceive children and aged people as dependants.

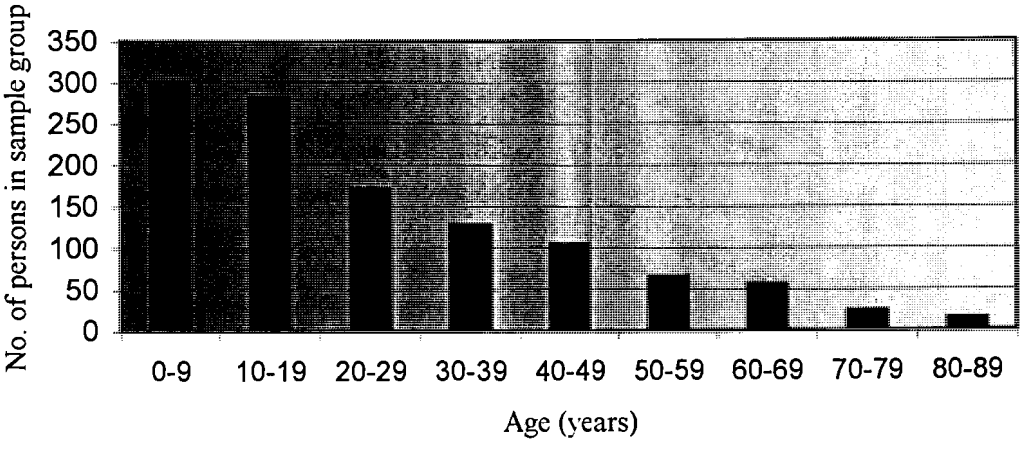

Figure 5. Number of persons per age category in the sample group

3.7.3.1 Age Distribution per Group

Households owning ten and more livestock animals (group C), have the highest number of elderly people (60 years and older), i.e. 12.7%, versus the sample group's average of 8.3% (see table 5). This might support the suggestion that the older generations are much more inclined to livestock farming than the younger generations, as discussed in section 3.8.1.

Table 5. Age distribution per group

Age (years)	**A**	**B**	**C**	**D**	**Average**
0-19	49.2%	52.7%	46.0%	51.4%	50.7%
20-59	41.3%	40.5%	41.3%	42.5%	41.0%
60+	8.8%	6.5%	12.7%	6.2%	8.3%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.

3.7.3.2 Age Distribution per Village

It seems as if Philandersbron has the highest percentage of elderly people, as 13.0% of the sample group's population of this village is 60 years and older, whereas the average is 8.0% (see table 6). It explains why this village has the highest percentage of households receiving government allowances, i.e. 62% (see section 6.5.4).

Welkom has the lowest percentage of elderly people, i.e. 5.6%, but contains the highest percentage of people younger than 20 years, i.e. 59.2% (average is 50.7%). It appears, thus, as if the highest birth rates for all villages could be expected in Welkom for at least the following two decades as present young people and children would most probably start families during the next 10 to 20 years (Elkan, 1995).

Table 6. Age distribution per village

Age (years)	**Groot & Klein Mier**	**Loubos**	**Philanders-bron**	**Rietfontein**	**Welkom**
0-19	55.0%	47.9%	49.2%	48.0%	59.2%
20-59	38.2%	47.2%	37.9%	43.0%	35.2%
60+	6.3%	4.9%	13.0%	9.1%	5.5%

3.7.4 Household Information

The average number of persons per household is 5.7 (table 7). The largest number is found in Groot and Klein Mier, i.e. 7.4 and the lowest number in Philandersbron, i.e. 5.21. The reason for this outcome probably lies in housing shortage, which is considerably higher in Groot and Klein Mier than in Philandersbron. According to Impak, the community of Philandersbron indicated that they need 44 stands and 41 houses for a population of 670 persons, while in Groot and Klein Mier need 70 stands and 82 houses for a population of 704 persons.

Table 7. Average number of persons per household

Village/Group	Ave. No. of persons per household
Groot&Klein Mier	7.4
Loubos	5.6
Philandersbron	5.2
Rietfontein	5.6
Welkom	6.3
A	5.4
B	6.4
C	5.7
D	6.1
Sample Group	5.7

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

3.7.5 Economically Active Age Group (EAA)

According to Chambers (1995), the number of livelihood opportunities needed depends on the proportion of the population available for work.

A significant proportion of Mier's children leaves school at the age of 16 years, hoping to become economically active. They compete in the labour market and thus cannot be ignored during the calculation of potential economically active group. Regarding the elderly, woman from the age of 60 years and older and males from 65 years and older, qualify for a government pension and are, therefore, seldomly economically active.

The economically active age group is, therefore, calculated by adding together all persons who are 16 to 59 years old, plus the males who are 60 to 64 years of age, minus all persons in these categories who are disabled or still at school. The economically active age group of the sample group is thus calculated at 484 persons, i.e. 42.1% of the total sample group population. Likewise, these calculations can be done for each group and village, as presented table 8.

There are 30 persons in the sample group who have been formally declared as disabled who should otherwise have been part of the economically active age group. In other words, according to this study, 5.84% of the potential economically active age group is disabled.

Table 8. Economically active age group per village and per group

Village /Group	No. of EAA persons	Total No. of persons	% EAA of the sample group
Kl.& Gr. Mier	75	191	39.3%
Loubos	72	145	49.7%
Philandersbron	75	177	42.4%
Rietfontein	192	481	39.9%
Welkom	54	125	43.2%
A	245	585	41.9%
B	120	294	40.8%
C	48	126	38.1%
D	71	146	48.6%
Mier Total	484	1151	42.1%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.

3.7.6 Unemployment

Unemployment is one the severest factors that effects the quality of life for both the individual and the community. It is a serious problem in Southern Africa and especially in rural areas (Van Zyl & Vink, 1988), such as the Mier area. According to Captain Fredericks (Head of the South African Police in the Mier area) there is a clear decrease in assaults and livestock theft in the Mier area when more employment opportunities become available.

In accordance with the widely-accepted international practice, Statistics South Africa defines the unemployed as "*those people within the economically active population who: (a) did not work during the seven days prior to the interview; (b) want to work and are available to start work within a week of the interview; and*

(c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview."

This definition is called the official definition of unemployment (Orkin, 1998).

Statistics South Africa acknowledge that the official definition is, however, inappropriate "*in situations where the conventional means of seeking work are of limited relevance, where the labour market is unorganised or of limited scope, and where labour absorption is at the time inadequate'* and that in these circumstances the expanded definition should be applied (Orkin, 1998). As the situation in the Mier area closely relates to this description, the expanded definition of unemployment is used to calculate the unemployment figure for Mier.

What distinguishes the expanded from the official definition of unemployment is that the former includes discouraged job-seekers. They are work-seekers who have stopped looking for work for the following reasons (i) they have lost hope to find work, (ii) there is a lack of jobs in the area in which they live, and (iii) they do not have money for transport to look for work. In a situation where unemployed people know that there are very limited, if any, employment opportunities, they may argue that the financial and other costs of work-seeking are not worthwhile, even if they do prefer to work (Orkin, 1998).

According to table 10, 42.4% of the sample group's economically active age group is unemployed using the expanded definition. Unemployment figures in the Mier area are the highest for people younger than 30 years, i.e. 57.8%, and the lowest for the age category 40-49 year, i.e. 24.7%. The high unemployment rate of the youth is alarming. As a community leader said, they do not learn the habit of getting up early, working hard from eight to five, five days a week and the longer they have this kind of freedom, the harder it might be do adapt to a fixed routine.

According to the World Bank (1995), 21.0% of the EAA coloured people in South Africa, are not working but would like to work, whereas this percentage is 29.9% of South Africa's total EAA population.

Table 9. Unemployment figures per age category

Age (years)	% of unemployment per age category
16-19	65.9%
20-29	55.8%
30-39	33.9%
40-49	24.7%
50-59	26.3%
60-64[1]	37.5%

[1] Males only

3.7.6.1 Unemployment per Group

Commercial farmer households have a much lower rate of unemployment than villagers have (see table 10). Possible explanations for this include the fact that certain commercial farmers are prosperous enough to send their children for further education, which is beyond reach of most villagers. It may also be that children of many commercial farmers, who stay on their land, prefer to leave the parental home, rather than to face the loneliness and boredom of farm life. In the villages more social interaction exist and children are, therefore, less "socially forced" to leave their parent house.

Table 10. Unemployment figures per EAA group per group

Group	% of unemployment per group
A	46.5%
B	45.8%
C	41.7%
D	22.5%
Total	42.4%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

3.7.6.2 Unemployment per Village

Unemployment figures per village are presented in table 11. Philandersbron has by far the highest unemployment figure, i.e. 57.3%. According to Mr. Bot, a community leader in

the village, it is not surprising as Philandersbron had always been the "mongoose" of the Mier area, meaning that it was always inferior in comparison with the other villages.

During the community meetings some persons in the audience reasoned that Philandersbron has almost no commercial farmers, while Rietfontein and Loubos have more places that have potential to provide employment, e.g. high school, more businesses (Rietfontein) and auction facilities (Loubos). All villages, except Philandersbron, have a substantial number of commercial farmers.

Table 11. Unemployment figures per EAA group per village

Village	**% of unemployment per village**
Gr.&Kl. Mier	38.7%
Loubos	45.8%
Philandersbron	57.3%
Rietfontein	40.6%
Welkom	35.2%

3.8 Social Differentiation

3.8.1 Generation Differentiation

In many communities values, attitudes and aims in life differ between younger and older people. Burgess & Isaacs (1998) found during the process of transferring fruit production technology to rural communities that older men place considerable weight on agriculture, while younger people and women are far more sceptical about agriculture's importance and that they actually feared the implications of agricultural initiatives in terms of their own position and prospects in the community.

In light of this study, interest in livestock farming is a major issue. All adults in the economically active age group who are not involved full-time in farming were asked: "Are you interested to become more involved in agriculture?" Only 39% are very interested (see

figure 6). Although it has not been formally recorded, it should be noted that in several cases where husbands said that they were interested in farming, their wives replied that they were also interested as they would follow their husbands.

During the meeting held with the high school pupils (grade 10 to 12) the same question was asked to them. From figure 7 it is clear that only 4% of the pupils are really interested in farming.

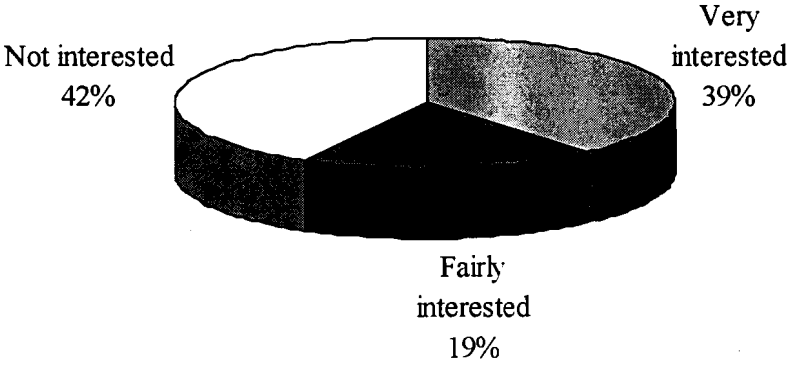

Figure 6. Interest in farming of adults not permanently involved in farming

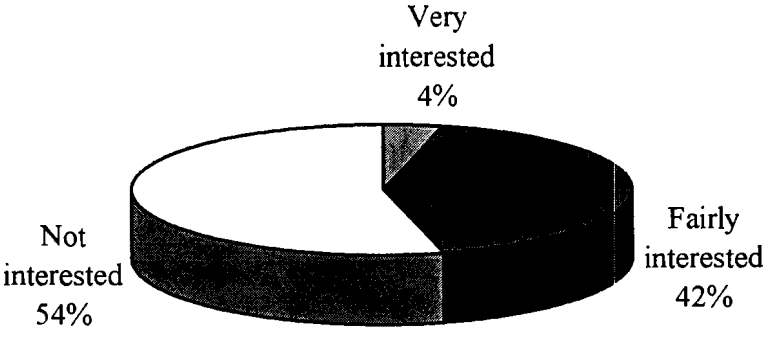

Figure 7. Interest in farming of grade 10-12 pupils

The limited interest of the Mier area's youth in farming can be ascribed to two main factors:

- most grow up in the villages and are not in direct contact with farming, but they do witness the hardship of the farming business in the area; and
- unlike most of the parents, they receive schooling and many complete grade 12. This creates an awareness of the greater world and raises expectations to achieve more in life than being dependent on agriculture, especially under the harsh conditions of the Mier area.

During one of the community meetings, a community leader remarked that, generally speaking, people interested in livestock farming are found in the age group of 35 years and older, while people younger than 35 years seek livelihood opportunities elsewhere. The community agreed with this statement.

According to Breslin *et al.* (1997), it is not unusual to find that younger people and even women, are more sceptical about the importance of agriculture. Their experience has been that many young people would only resort to agriculture when absolutely destitute. Elders, however, often bemoaned the limited value that youngsters place on agriculture. Nevertheless, only a limited number of parents in the sample group had farming in mind as the first choice for their children's future. The households were asked: "Knowing your child(ren)'s abilities, what type of work would you like him/her/them to do one day?". Only 19.3% the 150 households with school children hope that at least one of their children would become a farmer one day.

3.8.2 Gender Differentiation

Although women are well represented in the area's councils, forums, political parties, etc., in most households women are submissive to their husbands and the husbands are usually the head of the household (i.e. patriarchal households). Division of labour is based mainly on gender.

In 87.1% of the households, task division is traditional, i.e. housework (washing, cooking and house cleaning) is done by the female members. Men are usually responsible for the garden, fetching food and repairs in and around the house. Generally speaking, it appeared as if females are more willing to do "male tasks", than males doing "female tasks".

In 5% households, a housemaid is in charge of the household. It is usually in cases where the household`s adults consisted of males only or in case of elderly persons. These housemaids are either paid for their services, or they are family members or friends who are doing it out of goodwill.

Nine percent of the households are non-traditional. They include households where males do the household work, e.g. where the household consists of males only and households where the wife is employed and the husband unemployed. In some households males are co-responsible for housework, even though females are present.

Children are often set to do certain tasks, e.g. some girls sweep the house on a regular basis, while some boys help to fetch wood.

Moreover, certain income generating activities are also associated with gender, e.g. only men are involved in construction activities and fencing, while only women work as domestic assistants.

3.8.3 Status Differentiation

Although no formal wealth-ranking survey was done, it was sensed that commercial farmers; people with tertiary education, such as policemen, teachers and nurses; some businessmen; and Mier Transitional Council members are regarded to be part of a higher social class than the rest of the community. This is also confirmed by the results of the questionnaire. In response to the question where parents were asked to express their hope for their children's future, 51% indicated teaching, 31% nursing and 28% employment in the police force for at least one of their children.

3.8.4 Political Differentiation

Politics caused great dissension in the Mier community at the time of the survey. Several interviews and conversations with key persons revealed that politics have caused great dynamics in the community. A person's political conviction may be his/her key to a job. See section 3.3 for more detail on politics.

3.8.5 Religious Differentiation

Almost the entire community is Christian. Religious differentiation is rather based on church denominations, of which the main denominations are the Lutheran church, the United Reformed Churches of South Africa, the Congregational church and the Christian Congregation. According to a local spokesperson, good relations exist between the denominations and there are no signs of rivalry.

3.9 Current Community Perceptions

3.9.1 Introduction

This section unfolds the perceptions of the community and the community groups regarding the past and future, as well as on certain present issues. As mentioned earlier, this is to enhance bottom-up decision-making if decisions, that will affect their livelihoods, are made, as outsiders often do not perceive certain conditions the same as the local community does. The current land use system is a result of the past and there are many debates concerning this point. It is known that land tenure could have a major impact on people's livelihoods. It is also important to know, when programmes and interventions are planned, what are the trends in the community's perception of the past and their expectations of the future. If people are hoping for the creation of off-farm employment opportunities, but development officials keep focussing on improving livelihood opportunities in the farming industry, it may jeopardise the efficacy of such programmes.

All questions asked in this regard were open-ended. All answer categories that are referred to in the rest of section 3.9 were created afterwards, based on the answers to these questions.

It is, therefore, important to understand the statistics of the categories in light of the question that was asked. For example, participating households were asked: How do you see the future of the Mier area? Twelve percent mentioned employment opportunities. This does not imply that only 12% of the Mier area's inhabitants are concerned about employment opportunities. If the respondents were asked directly to give their ideas regarding employment opportunities in the Mier area, this figure would surely have looked different. It should rather be seen that in 12% of the households interviewed, employment opportunities is one of the first things that came to mind when asked about the area's future prosperity.

3.9.2 Farm Sector Changes

The respondents were asked: "Do you think there were any changes in the Mier area's agricultural sector since you have known the area, and, if so, motivate." The main results are summarised in table 12.

Table 12. Opinions about the status of the farm sector

Progress opinion	**% of 201 hh**
Worsened	44.3%
Same	28.9%
Improved	11.0%
Don't know	8.0%
It improved for some people	8.0%
Other	11.0%

The largest group of respondents feels that the agricultural sector has worsened. They are mainly households from group D and group C, with 66.7% and 63.6% households holding

this point of view, respectively, while this figure for group A and B is only 37.6% and 39.1%, respectively. The main motivations are rangeland degradation (29% of all households interviewed) due to drought (27%) and overgrazing (2%).

The second largest group is those households which feel that the Mier area's agricultural sector has remained the same. It mainly households owning none or only few livestock animals, i.e. group B with 46% and group A with 28%. Group C and D scored only 14% and 13% in this regard.

Eleven percent of the households interviewed feel that there are improvements in the agricultural sector. Most of them (4% of all households interviewed) ascribed it to the new land that had recently been bought for the Mier community and while the rest referred to developments that had taken place in the agricultural sector such as the provision of dams, watering points, roads, camps, credit, etc. There are no significant differences between the different groups regarding farm sector improvements.

Eight percent of all households interviewed said that they did not know what to answer to this question. All these households owned no livestock (group A) at the time of the survey.

Another 8% of the sample group reason that things have only improved for some farmers. Four percent of all households interviewed clearly attribute it to the land tenure system, which benefit only some people. They also said that it is still the same farmers that are leasing.

It is thus clear that awareness of changes in the agricultural sector is more or less correlated to people's involvement in this sector. Such changes do not really affect households that own no, or only a few, animals.

3.9.3 Future Prospects

Table 13 gives a summary of how the households feel about the future of the Mier area. Thirty-six percent of all households hope that certain things will realise in order to assure a bright future for the Mier area. The five main factors that are hoped for are (in descending order): employment opportunities, electricity; the realisation of government promises, unity in the society and that the drought will come to an end.

Table 13. Attitudes regarding the future prosperity of Mier

Attitude	**% of 201 hh**
Depends on the realisation of certain conditions	36.3%
Positive	31.3%
Negative	21.4%
Don't know	8.5%
Mier will remain the same	3.5%

Thirty-one percent of the sample group's members are positive about the future. Most of them motivated their optimism by referring to all the progress that has already been made, whether it is (in descending order) progress in development (houses, roads, access to household water, etc.); overall progress, and an increase in work opportunities.

Twenty-one percent of the households interviewed are negative about the future. The main reasons are (in descending order) the lack of work opportunities, the prevailing drought and a lack of unity in the community.

The motivations of the respondents, whether optimistic or pessimistic, overlap. Table 14 reflects the factors mentioned by the respondents, irrespective of their attitude. It is interesting to note that employment opportunities, i.e. 12% of all households interviewed, are regarded as a much higher priority than land issues, i.e. 3% referred to land hunger and 3% to private land ownership. Note that the number of "land hunger" respondents could not simply be added to the number of "private land ownership" respondents, because some households might have mentioned both.

Table 14. Most important factors regarding the future of Mier

Aspect	% of 201 hh
There is progress	21.4%
Employment opportunities	11.9%
Government assistance	11.4%
Mier community unity	9.5%
Electricity	8.0%
Expansion of Mier (more houses)	5.5%
There is land hunger	3.0%
Private farm ownership	2.5%
Tar road	2.0%
New land	1.5%
People of Mier must stand up	1.5%

3.9.4 Households' Opinions About the Communal Land

The households were asked what they thought about the communal land system around some villages in the Mier area, and whether they would like to see changes to it. Table 15 gives a summary of the main answer categories, table 16 presents the four main answer categories per group and table 17 presents it on a village basis. Note that Klein and Groot Mier, as well as Welkom had no official communal land at the time of the survey. Loubos had only a very small area of communal land.

Table 15. Overall opinions and bottle-neck problems concerning the communal land

Opinion/Bottle-neck Problem	% of 201 hh
Management must improve	38.8%
Did not know what to answer/No comment	22.9%
Communal land is good	15.4%
Resource base too small	13.9%
Want communal land near their village	9.0%
Theft must be controlled	6.0%
Other	5.5%

Table 16. Opinions and bottle-neck problems regarding the communal land, per group

Group	Total hh per group	Management must improve (% of hh[1])	Do not know/No comment (% of hh[1])	Communal land is good (% of hh[1])	Resource base too small (% of hh[1])
A	109	40.4%	23.9%	15.6%	15.6%
B	46	30.4%	26.1%	19.6%	6.5%
C	22	45.5%	18.2%	4.5%	22.7%
D	24	41.7%	16.7%	16.7%	12.5%
Total	201	38.8%	22.9%	15.4%	13.9%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.
[1]Percentage of total households per group

Thirty-nine percent of all households interviewed feel that management must improve, meaning that, amongst others, a camp system should be implemented (25% of all households interviewed), and animals must be kept out of the villages (14%).

The supporters of a camp system, however, differ about exactly what kind of camp system should be implemented. Nine percent of al participating households suggest a "one man, one camp" system. Some have a few camps in mind between which animals could rotate from time to time. Others did not specify.

Table 17. Opinion and bottle-neck problems regarding the communal land, per village

Village	Total hh per village	Management must improve (% of hh[1])	Do not know/ No comment (% of hh[1])	Resource base too small (% of hh[1])	Communal land is good (% of hh[1])
Gr&Kl Mier [2]	29	10.34%	24.14%	3.45%	20.69%
Loubos[2]	26	42.31%	30.77%	7.69%	19.23%
Phl.bron	34	41.18%	32.35%	0%	8.82%
Rietfntn	86	47.67%	15.12%	24.42%	10.47%
Welkom[2]	20	35.00%	30.00%	10.00%	30.00%

[1] Percentage of total households per village
[2] No official, or very small, communal land

Many people are tired of straying livestock in the villages. No fences existed between the villages and the communal land at the time of this study. Due to the degraded state of the

communal land, many animals searched for something to eat in the streets and between the houses. Several of them have died as a result of eating plastic bags that littered the roads. If these animals get the opportunity, they rush into home gardens for a few green bites, causing a lot of damage, much to the frustration of the residents.

It is interesting to note that group C has the highest percentage of respondents who feel that management is lacking in the communal system, i.e. 46%, while group B has the lowest percentage in this regard, i.e. 30%. A possible explanation might be that, in general, members of group C are more "serious" farmers and are, therefore, more serious about sound management practises to support their developing "farming" business. In contrast, many members of group B are perhaps not determined to start a farming business and keep a few livestock animals just for the fun of it and to supplement their household requirements.

The second largest opinion category included those who preferred not to comment on the communal land. It is notable that it is especially households of group B which gave this reply, i.e. 27%, while they are the main users of the communal land. A possible explanation may be that they realise that the communal land is almost exhausted, making it a sensitive point, they may fear to admit it, because this could enhance animal number restrictions or other regulatory changes that would be to their own disadvantage. On the other hand, many might have found it hard to make positive remarks due to the overgrazed state of the communal land.

Nevertheless, group B still has the highest percentage of households with positive remarks regarding the communal land. It is interesting to note that the respondents from villages who did not have official communal land or only a very small one (Klein and Groot Mier, Loubos and Welkom), are much more positive about the system than those from villages with surrounding communal land (see table 17).

Households that perceive the resource base as too small include both those who feel that the communal area is too small or that there is a lack of edible vegetation for livestock. It

is not surprising to see that households owning ten or more livestock animals (group C) scored the highest in this regard, i.e. 23% of the households interviewed. They need sufficient pasture to preserve one of their most important livelihood resources, i.e. their livestock.

3.9.5 Households' Opinions About the Commercial Land

The households' opinion about the commercial farm system was asked and if they would like to see any changes to it. Table 18 presents the main opinions or what is believed to be the bottle-neck problem. A comparison between the different groups is presented in table 19. There are no remarkable differences between the various villages.

Table 18. Overall opinions and bottle-neck problems concerning the commercial land

Opinion/Bottle-neck problem	**% of 201 hh**
Land tenure issues	30.9%
Do not know what to answer/No comment	29.9%
Positive remarks	16.9%
System good for those who lease	14.4%
Management must improve	6.5%
Commercial farmers must help villagers	3.0%
Other	1.5%

Table 19. Opinions and bottle-neck problems of the commercial farms, per group

Group	**Tot hh per group**	**Land issues** (% of hh[1])	**Do not know/No comment** (% of hh[1])	**Positive remarks** (% of hh[1])	**System good for leasers** (% of hh[1])
A	109	22.9%	35.8%	15.6%	19.3%
B	46	23.9%	30.4%	21.7%	15.2%
C	22	45.5%	18.2%	13.6%	4.6%
D	24	66.7%	12.5%	16.7%	0%
Total	201	30.9%	29.9%	16.9%	14.4%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.
[1]Percentage of total households per group

Thirty-one percent of all households interviewed commented on the land tenure issues. Different households, however, referred to different aspects concerning this point as presented in table 20.

Table 20. Aspects regarding land tenure issues that were mentioned

Land tenure issue	**% of 201 hh**
Private ownership should be possible	12.4%
One man one farm	9.0%
There should be land for all	5.5%
Farmers that lease seldom change	2.0%
Farms are too small	1.5%
Villagers that want to lease land	1.5%
Farmers should be able to choose: ownership or lease	1.0%
Other	1.0%
Total households commenting on land tenure issues	30.9%

It is notable that, regarding the households that appeared to have no comment on the communal system, there is a correlation between the number of animals owned and the concern about land issues and a negative correlation between the number of animals owned and the number of "do not know" answers per group (see table 19). It may indicate that households with no or few livestock animals are not interested in commercial farming in that the commercial farm system and the associated land tenure issues do not relate to their lives and consequently they do not have an opinion on this facet.

Households that are positive about the commercial farming system, motivate their optimism by arguing that it is simply a good system and/or that it is a good source of income for the MTC.

Most respondents who feel that the system is good for the leasee gave the impression during the interviews that issues related to commercial farms do not really affect them. Some said this out of bitterness, but they were in the minority. This is confirmed by the fact that most households with this opinion own no livestock (see table 19).

3.9.6 Contributions Made by the Commercial Farming Sector to the Mier Area

The households' opinion about the major contribution of the farming sector to the Mier area was also asked. On average, 61% regard it as the provision of meat, 19% believe agriculture contributes nothing, while 15% regard employment opportunities as agriculture's major contribution. There are little differences between group A, B and C in response to this question. The commercial farmers (group D), however, are very different. Twenty-nine percent of group D households regard employment as a major contribution and only 8% feel that the commercial farmers contribute nothing to the Mier area.

Twelve percent of all households, and 6% of the EAA group, benefited from income derived from doing farm work in Mier during April 1997 and April 1999. This includes both commercial and communal farming activities. Note that only four of these persons are permanently involved, while the other 24 persons are only occasionally involved. It seems thus as if the agricultural sector does not play a significant role in employment creation.

3.9.7 Households' Opinions About the Game Ranch System

In order to obtain the complete picture of what the community thought of the prevailing land use systems that are being used in the Mier area, the participating households were asked their opinion about the game ranch system used along the northern border of the area. Table 21 presents the main opinions expressed.

Table 21. Opinions regarding the game ranch system in Mier

Opinion	**% of 201 hh**
Do not know what to answer	42.3%
Positive remarks	33.8%
Change is needed	27.4%
Other	0.5%

Various households, i.e. 42%, have no comment concerning the game ranches, especially from group A (see table 23). During the follow-up visit's community meetings several reasons for this were found. The main reason is that the community does not know enough about the game ranches. Many said that they have never been there, but that they are aware of the game ranches' existence and that they have heard of the contribution that they make to the income of the council resulting in lowered community taxes. They do not know, however, although the game ranches are communally owned, how much income derived from them is per year, or what they would have paid for taxes if the game ranches did not exist. The community in Welkom suggested that a large public notice should be put up with a simple description of how the income derived from the game ranches affects their tax payments.

The commercial farmers appeared to be much more informed about the game ranches than the rest of the community (see table 22). This is most probably because the commercial farmers are much more in contact with the farmers union and extension officers who know a lot about the game ranches, and because many of them are situated nearer to the game farms than most villagers.

Positive remarks mostly refer to the contribution that the game ranches make to the MTC's income, the conservation of game and the supply of game meat in the area (see table 22).

Households that believe that some form of change is necessary are not necessarily negative about the system. Several people suggested some form of intensification or expansion because it is such a successful system. Most households in this category, however, feel that the game prices are too high for the community. These prices have already been lowered, e.g. a community member pays R600 for a gemsbok, whereas a person from outside the area is charged R1300 for the same animal. Nevertheless, the price for community members is still unaffordable for most of them and only the better-off households benefit from the system. During some of the community meetings, where this point was raised, some attendants remarked that the price could not be further reduced, because it would result in too many local people buying game meet, leaving nothing for

outside buyers. The more external sales, the higher the income to the MTC and the more the local population's taxes could be reduced. These attendees suggested, therefore, that internal sales should be limited in order to have more external sales, from which the entire community benefits. Many of those present agreed with this statement.

Table 22. Opinions and their motivations regarding the game ranch system in Mier

Opinion	Motivation	% of 201
Positive remarks	Can stay as it is	19.9%
	Income for council	13.4%
	Game conservation	4.0%
	Supply game meat in the Mier area	1.5%
	Other	0.5%
Change is needed	Lower game meat price for the community	8.5%
	System must be expanded	6.5%
	Must be more accessible for the community	6.0%
	Other	6.0%
	No farmers may be allowed in game areas	2.5%
	Area must be enlarged	1.5%

Table 23. Opinions regarding the game ranch system in Mier, per group

Group	Tot hh per group	Do not know (% of hh[1])	Positive remarks (% of hh[1])	Change is needed (% of hh[1])
A	109	51.4%	23.9%	26.6%
B	46	32.6%	41.3%	28.3%
C	22	45.5%	31.8%	27.3%
D	24	16.7%	66.7%	29.2%
Total	201	42.3%	33.8%	27.4%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.
[1]Percentage of total households per group

3.10 Conclusions

The Mier community has not undergone the normal evolutionary process through which people from a traditional farming community leave the farming business because they developed other skills, which enables them to provide services. Here, a lack of land and

legislation diverted many households away from farming, which had the following two main results:

1. these households did not learn the skill of service provision, or any other, from which they could make an economically and ecologically sound living; and
2. due to a lack of service provision in the area, a great deal of the area's spending power (from commercial farmers and salaried persons) is diverted to Upington and other towns outside the Mier area, resulting that much of the money generated in Mier, flows out of the area.

It results in an unsound economy in the area. It is confirmed by the high unemployment figure of 42% of the EAA group. Moreover, unemployment figures are the highest for persons younger than 30, i.e. 58%. Livelihood opportunities should, therefore, be urgently created.

Livelihood creation in the agricultural sector should be considered with care, for two main reason:

1. there is a decline in interest regarding agriculture, especially concerning the youth; and
2. the southern Kalahari has a very sensitive and complex ecosystem with a low carrying capacity.

Even though new land has been assigned to the area, the benefits of this step may be cancelled out in course of time due to population growth, which is calculated at 1.7% per year. Moreover, perceptions of the different community groups indicate that issues regarding the agricultural sector are of much more concern for those who are seriously involved in the sector. They are, however, in the minority, i.e. 22.9% (group C + D).

Currently, it seems as if political friction influences livelihood opportunities significantly as many households remark that political convictions are often the key to a position, while it also damages the community's solidarity and concern for each other.

Although women are well represented in the area's councils, forums, political parties, etc., labour division on household level and in some income-generating activities is related to gender.

Chapter 4

Livelihood Resources

4.1 Introduction

The different livelihood opportunities depend on the material and social, tangible and intangible assets available to the community. These resources may be seen as the "capital" base from which different livelihood aspects are derived (Scoones, 1998). In this chapter the most significant forms of capital in the Mier area are discussed, i.e. natural, financial and economic, human and social capital.

4.2 Natural Capital

This section relates closely to section 3.6, where natural aspects related to agriculture are discussed such as water, soils, the interaction between different ecological components and the farmer, etc. It was clear that these tangible assets of the Mier community were subjected to various complexities.

4.2.1 Water

Although water supply to vegetation is not as limited as is often believed, because dunes act as water reservoirs, water supply to humans and animals is often a problem. Both water quantity and quality are limited. Most of the following information in this section is derived from the findings of Krämer (1985), unless otherwise stated.

4.2.1.1 Water Sources

Although the Mier area forms part of the lower Molopo River sub-drainage area, the area lacks surface drainage. The area's entire rainfall is accumulated within the area. Here it evaporates, transpires and infiltrates into the sand. Only when conditions are favourable, a

small fraction of rainfall infiltrates to the ground water table. The overall volume of rainwater either evaporates (average of 2 739 mm/a), or is retained in the sandcover shortly after it has rained. After heavy thunderstorms some water flows in the streets between dunes.

In the hard veld, i.e. Rietfontein area, where there are no dunes, limited surface drainage exists. Numerous pans collect episodic run-off water.

There is some underground flow of water from the northwest (upper course of the Aoub River) towards Rietfontein and Hakskeenpan. Some recharge from river water along the Nossob River course also seems to occur.

The Mier community and their livestock are, therefore, dependent on ground water. It is constituted of drainage water and fossil water. The latter can be perceived as a non-renewable resource. In light of the low average rainfall figures, water supply is extremely limited.

Most water for human consumption was pumped from boreholes near the villages at the time of the study. This water came from a clayish sandstone layer, a formation that does not release water readily. Water from deeper layers is of very low quality, unsuitable for human and animal consumption. Rainwater infiltration is of cardinal importance for availability of borehole water (Verster, 1999).

4.2.1.2 Ground Water Quality

The ground water quality of the Mier area is poor, especially with respect to electrical conductivity (EC), nitrate and fluoride content (Krämer, 1985).

The maximum limit of EC for humans is 300 mS/m, for livestock 1 077 mS/m, for non-pregnant/non-lactating cows and sheep 1 540 mS/m, and for wildlife 2 500 mS/m. The latter uses this water as a sort of lick whereby they obtain minerals.

Along the border with the national Kalahari Gemsbok Park in the north, as well as along the Nossob River course, values higher than 2 000 mS/m are not unusual. Thus, it is not generally suitable for livestock watering.

In the Mier area the only water acceptable for human use, in this regard, is found mainly in the Rietfontein area and along a north-west stretching paleo valley, which crosses some commercial farms.

With respect to nitrates, the World Health Organisation recommends 45 mg/l as the limit for human consumption. The concentration of the ion increases gradually from south to north in the Mier area. In the south, values of less than 45 mg/l are found, while in the north 250 mg/l is not unusual. These high values in the north are due to chemical and physical soil processes when rainwater is available. Values higher than these are ascribed to pollution by animal waste.

Special attention should be given to fluoride concentrations. According to the World Health Organisation, the maximum limit of fluoride for humans in water is 1.5 mg/l, while 3.0 mg/l is the critical limit. Water exceeding this maximum value will cause damage to human health.

Several places In the Mier area (i.e. more than 70 boreholes) have a fluoride concentration higher than 3.0 mg/l. The problem seems to be the most severe at the northern border of the area, adjacent to the National Kalahari Gemsbok Park. Here, values as high as 52.6 mg/l have been observed. The origin of these high fluoride concentrations is unknown (Krämer, 1985).

It is clear that the poor water quality makes livestock farming difficult, if not impossible, in the northern part of the Mier area. Only game can utilise water of such quality. Many commercial farmers fetch water for household consumption in Rietfontein.

4.2.2 Land

At the time of this survey, the total Mier area comprised approximately 420 000 ha. New land has recently been assigned to the Mier community through the government's RDP (Reconstruction and Development Programme), whereby land from white farmers was bought to add to the Mier area. Figure 1, p.2, illustrates the location of the new land. The greater part of this land will be used to enlarge the communal land areas. Unfortunately, according to Mr Brink (agricultural development technician of the Department of Agriculture, responsible for the Mier area) the new land is in a very degraded condition and a rehabilitation programme should first be launched before livestock could enter the area.

According to the results of this study, it appears as if only a limited part of the Mier community would benefit from the new land. Of the villagers (commercial farmers excluded), only 38% own livestock. None of the communal farmers interviewed regard livestock farming as their main livelihood activity. Their livestock has only a supplementary role, i.e. for the provision of milk and sometimes meat.

Indications are strong that there is a decline in interest in farming (see section 3.8.1). If no alternative livelihood opportunities exist, the "fairly interested" group will be pushed into livestock farming in order to make a living (see figure 6 and 7). This implies more pressure on the land, which will be to the detriment of all communal land users.

As mentioned earlier, the benefits of the new land that has been assigned to the area may be cancelled out in course of time due to population growth, which is calculated at 1.7% per year and the community could expect the same problems after a period of time.

4.2.3 Ecotourism

It appears as if the ecotourism potential for further livelihood creation in the Mier area is under-utilised. Currently, only a few people are involved in ecotourism related activities in the area. Being part of the southern Kalahari, the Mier area offers splendid and "unspoilt" scenery. Especially the dune veld is very scenic with its endless red dunes, its vast blue sky and its fascinating plants. Air pollution is very limited and together with the lack of electrical lights, stars at night are innumerable.

The most beautiful time of the year for this area is just after the first rains, when annual plants are flowering, i.e. usually March and April (Botha *et al.*, 1995). Appendix C gives a list of the vegetation in the Mier area. A wide range of interesting plant species occur in the area and although not of high feeding value for livestock, several of these plants have medicinal value which has been utilised for as long as humans have occupied the area. Today there are still people of the older generations who possess this indigenous knowledge, but they are becoming fewer. There are persons who have treasures of knowledge about the life cycles, values and other characteristics of all kinds of less familiar plants, by having spent most of their childhood in the field.

Even though the Mier area has been subjected to livestock agriculture for more than a century, a relatively wide variety of wildlife still exists in the area. Antelope species include gemsbok, springbok, eland, steenbok and klipspringer. Smaller animals like tortoises and spring-hare are also found. Predators are limited to jackals (Botha *et al.*, 1995). The Kalahari has approximately 260 bird species (Botha *et al.*, 1995), including the secretary-bird, greater kestrel, pale chanting goshawk, gabar goshawk, kori bustard and the sociable weaver.

Currently, there are very few tourists that visit the Mier area. Most rush through to the Kalahari Gemsbok Park. The fact that the Mier area lies adjacent to the main road to the Park is an advantage that is under-used.

Ecotourism activities already existing in the area, have proved to be very successful and are well supported by people from all over the country. The game ranches are communally owned and the MTC uses the financial returns from hunting as other authorities use taxes. Even though large areas are desertified, these ranches have yielded significant returns to the community during the last 20 years (Van Rooyen, 1998), whereby their tax and service payments were remarkably reduced.

Over the last few years, a local entrepreneur has initiated a guided four-wheel drive trail through the Mier area, called Kalahari 4X4. He co-operates with the MTC. This venture has also proved to yield good profits for the community (Van Rooyen, 1998).

There is definitive great potential for creation of more livelihood opportunities through eco-tourism. Adventurous holidays are very popular nowadays and Mier has certainly great possibilities in this regard, such as through scouting activities, camping, hiking trails, horse trials, etc. There are enough skills in the community that can deliver products for a home-industry aimed at tourists (see section 4.4, last paragraph). Most urban children will enjoy donkey-car rides, while nature lovers will indulge in guided field excursions.

Eco-tourism requires, however, substantial and well-planned marketing. Moreover, as tourists want value for their money, people dealing with them should be well trained in this regard. Marketing and training are two important points that offer great scope for support and intervention initiatives. Finally, many local people do not realise the eco-tourism potential of their area. Workshops that will make people aware of, and motivate them for, the possibilities will also be appropriate.

4.2.4 Minerals and Diamonds

Some of the local people were strongly convinced that there is an abundance of minerals in the Mier area that, with the correct technical know-how, could be mined, whereby employment for many people could be provided. A spokesman of the MTC, however, denied these assumptions and said that there had been investigations. The latter revealed

that only low quantities of minerals exist and that exploitation will not be economically viable.

In the past, diamonds had been mined at Rietfontein. Due to the high quantities of water needed during the mining operations, mining was stopped. De Beers also seem uninterested in further exploitation, as only industrial diamonds occur in the area, making exploitation even less cost effective.

4.3 Economical/Financial Capital

Economical or financial capital refers to the community's/household's capital base. It includes, amongst others, cash, credit/debt, savings and any other economic assets, which are essential to become involved in any livelihood strategy (Scoones, 1998).

4.3.1 The Mier Area's Financial Capital Resources

4.3.1.1 The Government

Appendix F presents projects sponsored by governmental organisation during the last few years.

4.3.1.2 Tax and Service Payments

Tax and service payments per stand are significantly reduced thanks to the income from the game ranches. The following tariffs are applicable for every occupied stand: R30 p.a. for sanitation, R20 p.a. for refuse removal and the site rate is R40 p.a.

4.3.1.3 Rent Payment from Lease Farmers

The original idea of the commercial farm lease system was that rent payments to the Mier council should be used to benefit the community. At the time of this study, however, this was not a steady income for the council. The prolonged wait for transfer of land ownership of several farmers as well as the dispute about the land tenure system had made many of the farmers unwilling to pay their rent.

4.3.2 Financial Services and the Mier Area

4.3.2.1 A Lack of Formal Financial Institutions

According to the Strauss commission's report, financial services are defined as savings, transmission facilities and credit (including emergency loans) (Kirsten, 1998). Formal financial services in the Mier area are limited to the savings facility at the Post Office at Rietfontein. Transmission and formal credit transactions have to be done in Upington as no commercial bank exists in Mier.

Commercial banks, as with most private sector organisations, are driven by market opportunities. They are only willing to become involved in areas where profitability is high and where there is a demand for large loans and deposits, rather than areas with a huge number of small loans and deposits (Carnegie *et al.*, 1998). The spatial dispersion of rural clients adds to transaction and information costs and the covariance of risk in areas dependent on agriculture also increases the risk and cost of financial intermediation (Kirsten, 1998). Most commercial banks, therefore, are hesitant to move into developing areas, such as Mier (Carnegie *et al.*, 1998).

As discussed in section 3.2.2.2, the absence of a commercial bank is one of the main reasons why a significant part of money generated in Mier leaves the area as salaried persons are compelled to do their financial business, such as salary withdrawal, in Upington. In light of cheaper prices and a wider range of products and service providers, these people also do most of their shopping there.

4.3.2.2 Shop Accounts

The shop in Rietfontein, called "The Pages" has several advantages. It is somewhat cheaper than most other shops in Mier and on the days when government allowances are disbursed, free transport is offered from Philandersbron and Loubos to this shop and back. It is also possible to cash cheques here.

The main reason for its popularity is that it has an account facility, which is an integral part of many households' livelihoods. Various households live one month behind their income, meaning that if their government allowance is disbursed, almost all the money is directly used to repay their shop debt. Soon afterwards they start with a new account.

The shop account is also the most important strategy in times of food shortage. Sixty-four percent of all households interviewed make use of the shop account facility when they run out of food and money. There were also several households who are so deeply indebted at the shop that no further credit is granted, forcing them to apply other strategies to overcome their shortage, such as asking family or friends for help.

4.3.2.3 The Land Bank

Since the last few years of transformation in South Africa, the Land Bank has made loans available to both commercial and communal farmers without requiring collateral. Because of the high risk factor, especially for those without security, relatively high interest rates (ca. 29% during September 1999) are charged. This, together with the severely degraded state of the communal land, resulted in a very limited number of communal farmers taking up such loans.

Many commercial farmers, however, were clients of the Land Bank (LB). During 1999 alone, twelve loans were contracted with people from the Mier area, mostly with commercial farmers. Information about the number of loans contracted during previous years is unfortunately not available (Barnard, 1999).

The Land Bank makes use of field officials with whom loans could be contracted. A Land Bank field official visits Rietfontein from time to time. Loans can, therefore, be contracted in Rietfontein. Loan repayments, however, need to be made in Upington.

Repayment terms depend on the specific loan contract. For borrowers with no other income than farming, frequency of repayments is usually at least once a year with the payments being substantial amounts. These clients, therefore, need to have good

repayment abilities. If a farmer has another source of income, e.g. he is a teacher with a monthly salary, such person stands a better chance to qualify for a loan. Repayment terms are then usually to repay half of the yearly repayment on a monthly basis, while the other half must be paid once a year (Barnard, 1999).

Unfortunately, the drought of 1998-1999 in the Mier area forced several farmers to buy livestock feed at high cost, together with their loan repayment responsibility. Farmers who could not afford livestock feed, were forced to sell their animals in a bad condition. These people ran into severe financial troubles. Therefore, these loans which are aimed to assist poor people to acquire assets aimed at raising their incomes, resulted in many farmers being worse off than before.

There are, however, also several farmers who refuse to take out a loan. They prefer a lower income with less risk of debt and dependence. These findings correspond with the conclusions that Chambers (1995) made, i.e. that there are often trade-offs between security and income, especially for poor people.

4.3.2.4 Other Credit Sources

Loans for any purposes other than agriculture, e.g. entrepreneurial activities, need to be contracted and repaid in Upington. It implies that transaction costs are augmented by transport cost, mostly to such an extent that these loans are not worthwhile. According to several conversations with local people, no, or at least very limited, informal credit arrangements for production purposes exists in the Mier area. Informal loans are mostly limited to emergency loans between friends and family.

In light of the declining interest in farming in the Mier area, credit availability should follow the same trend by becoming more locally available for non-farming income generating purposes at reasonable costs.

4.3.3 Cost of Living

The cost of living is another important factor determining the financial capital available to a household. Throughout the Third World, the poor spend between 50 and 80 percent of their income on food (Mellor, 1990). Consumer prices are very high in the Mier area due to the area's remoteness and the absence of major trading stores. Moreover, shop owners have high maintenance costs. At the time of this study, the tar road to Groot Mier was not yet completed and the long distances that had to be travelled by gravel roads increased vehicle maintenance costs. The absence of electricity forces shop-owners to make use of alternative energy sources, such as diesel generators and gas, which are more costly, to run their fridges, lights, etc. The result is that foodstuff is much more expensive in the Mier area than in the cities and other towns. Table 24 presents a comparison of prices during 1999 between a local shop in the Mier area and franchise supermarket found in cities and larger towns.

Table 24. Prices of groceries in the Mier area and a Pick 'n Pay supermarket

Product	**Price at local Mier shop**	**Price at Pick 'n Pay**
2.5 kg White sugar	R12.09	R8.99
2.5 kg Maize meal	R7.37	R5.99
2.5kg Flour	R10.37	R8.99
12 Eggs	R6.30	R5.49
1l Long life milk	R4.85	R3.39
Cake of soap	R2.40	R1.79
Pack of 6 candles	R3.00	R2.79

Several of the households also complain that whereas in larger towns and cities there are often special offers, this is not the case in the Mier area.

The costs of taxes and services are, however, relatively low as mentioned in section 4.3.1.2. School costs are R30 p.a. per child. Some local people argued that these low costs attract poor people from outside to settle in the Mier area.

4.4 Human Capital

Human capital is the skills, knowledge, ability to work, good health and physical capability, which are needed to utilise the different available livelihood opportunities (Scoones, 1998). In other words, human capital of a household/individual determines to large extent its livelihood capabilities.

The Mier area is relatively well equipped with the basic social services to support human capital. Every village has a nursery school and a primary school and Rietfontein has a high school, as well as hostel facilities to accommodate pupils from other villages and farms. Literacy classes are available for adults who can not read or write, or who want to improve their skills in this regard. There are, however, community members who complain that the school curriculum, especially that of the high school, is irrelevant for people living in the Mier area. They want to know why their children have to learn about Shakespeare or master complicated mathematical calculations that they would never use again, rather than learning useful local skills, such as welding, car repairing, entrepreneurial abilities, craftsmanship, etc. These skills would be of more benefit to earn a livelihood after school.

Table 25. Education levels in the Mier area (Macroplan, 1993)
(Expressed in number of persons per educational category)

Place	Pre-school	SubA-Std 2	Std 3-Std 5	Std 6-Std 8	Std 9-Std 10	College/ Technikon	Universi-ty	Un-schooled
Rietfontein	277	374	388	285	117	8	37	228
Loubos	87	82	119	76	24	1	13	49
Philandersbr.	85	141	114	48	11	0	0	81
Klein Mier	61	72	90	49	17	0	4	28
Groot Mier	51	62	65	24	4	0	0	28
Welkom	47	56	55	42	22	0	1	17
Commercial Farms	81	142	129	111	39	4	0	91

The level of education in the Mier area, during 1993, is presented in table 25. According to the sample group, more or less two thirds of the youth finish high school. People who have completed college, technikon and university courses are usually nurses, teachers and pastors.

According to a local pastor, the "brain-drain" phenomena is a major problem in the Mier area. Many people who have completed tertiary education have accepted work outside the Mier area, e.g. in cities where salaries are higher. He also said that the Mier community is in general relatively uninformed as no library exists in the area, while televisions and radios are only the privilege of those who can afford them.

Rietfontein, Philandersbron, Klein Mier and Welkom each have their own clinic. The community of Loubos and Groot Mier make use of the clinics in Rietfontein and Groot Mier, respectively. A medical doctor visits the area twice a month. An appointment costs R80 for persons with a medical fund, but is free of charge for outpatients.

Various kinds of skills are found in the community, including fencing, knitting, dressmaking, furniture-making, making of tin products, leather works, curio making, etc. Several people know how to make traditional foods such as ashcakes (bread baked in a fire) and other could tell you exactly what plants in the field are edible and when, and which ones have medicinal properties. Some of the local projects, such as those initiated by churches, make it an explicit goal not only to provide the participants with a temporary income, but also to teach them skills. Many skills, however, remain untapped, as there is no available market for them. Markets are hampered by a lack of spending power and long distances.

4.5 Social Capital

Scoones (1998) refers to social capital as all social resources, such as networks, social claims, social relations, affiliations and associations, on which people can rely or can make use of in order to sustain their livelihood. Social capital is much more than just the number

and kinds of institutions (both formal and informal) that underpin a society. It is the glue that holds them together. It therefore also includes the norms by which the majority of the community lives. It shapes the quality and quantity of the community's social interactions. Social cohesion is of utmost importance for societies to prosper economically and for development to be sustainable (World Bank, 1999).

The Mier community's norms are mostly shaped by their Christian beliefs and political convictions. It seems as if the latter has become increasingly more important in the last decade.

One of the greatest resources that the Mier community has, is its so-called social fibre. This intangible asset is presumably because the area is, to a great extent, isolated and most people are in more or less the same situation of poverty and vulnerability. People have an understanding for one another's situation, whereas in other places, e.g. cities, poor people are often rejected or treated as inferior, therefore being the outcasts of society. It is, therefore, concluded that the Mier area is a safe environment for poor people in the sense that they are accepted.

Thus, besides government allowances, the most significant safety net in Mier is the community itself. People rely to a great extent on each other for consumption-smoothing and unforeseen tragedies. Respondents were asked how they handle a large unforeseen expenditure, e.g. if a part of their house burns down. Fourty-seven percent of the households will turn to family or friends for help as their first option and 5% as their second option. Table 26 presents the percentage of households that are dependent on some form of social capital in times of unforeseen difficulties. It is interesting to note that only 8% of the commercial farmers will ask friends or family for assistance as their first option and 4% as their second option, even though most commercial farmers are living in the villages.

Table 26. Dependence on social relationships in times of large unforeseen difficulties

Strategy	**As first option** (% of total hh)	**As second option** (% of total hh)
Ask friends +/ family for help	47%	5%
Use any lender available	6%	-
Ask church for help	5%	4%
Ask employer for help	3%	-
Don't know	1%	-
Total	62%	9%

Respondents were also asked what they did when they run out of food. As mentioned earlier, the majority made use of the local shop's account facility (see section 4.3.2.2). Nevertheless, 25% of all households will ask friends or family for help as their first option and 16% as their second option. The households that borrow and lend foodstuff to and fro is, however, much higher. It is part of their way of living, not only in times when food stocks are depleted, but also to maintain a certain standard of consumption, e.g. when they still have food to eat, but perhaps no sugar or coffee. They even have their own local word for this phenomena, pronounced as "owe". For example, they would say: "Please "owe" me some coffee" meaning "Please lend me some coffee".

Hence, besides being consumption-smoothing for the receiver, there is often a sense of reciprocity. In the case where the two parties are more or less from the same wealth group, the supporter may argue that by helping someone else, gives him/her somebody to turn to when difficulties crop up. If the lender is from a higher wealth, lending gives him/her the "right" to ask for unpaid favours afterwards.

According to Breslin *et al.* (1997), however, networks of kinship and residence might also contain some disadvantages. For many households in any community, there is a shrinking in the range of family, friends and neighbours on whom they can appeal for support, especially if the needy household is unable to meet the reciprocal obligations that asking for help implies. Moreover, most households in the villages of the Mier area had the same monthly income cycle, implying that during the last week or more before government

pensions were paid, most households experienced difficulties and were unable to support others.

Several households turned to a certain commercial farmer or, in the case of the people of Philandersbron, Klein Mier and Groot Mier and even Loubos, to Attie Avenant when they needed to borrow money. Attie Avenant was the owner of a farm adjacent to the Mier area at the time of our survey. He owned a shop and a bottle store, situated on the border of the Mier area, which served these three villages. His land, however, has now been sold to the government in order to add it to the Mier area. His function as shopkeeper will be taken over by local village shops, but there is concern about the replacement of his security function for many people. The personal nature of these transactions allow for more negotiations regarding repayment, than is the case with more formal institutions such as banks (Koning, 1997).

It is important that the community's social fibre is preserved, especially in times when livelihood alternatives seem hard to find. Not in the sense of dependency, but rather that of caring for one another. Many households will collapse without mutual help. At the time of the study, political friction presented the greatest threat to the community's unity.

4.6 Conclusions

Although natural and human capital receives much attention through programmes and interventions, the most needy segment of the community relies strongly on social capital, especially in times of crisis. It is, therefore, important that social capital should be preserved with the same dedication as, for example, the natural resource base. The intangible asset could easily be damaged by factors such as political friction.

Although the natural capital offers limited opportunities for agriculture, it offers potential for livelihood creation through ecotourism, which will, if planned and managed correctly, exert much less pressure on this resource. Currently this is hindered by many of the local

people who are not aware of this potential, as well as a lack of marketing and trained people in this regard.

The financial resources of households are significantly subsidised through income from the game ranches, resulting in lower taxes. Shop prices, however, are higher than in most supermarkets elsewhere, resulting in higher household expenditures on foodstuff and other commodities.

Although the basic opportunities to develop human capital are relatively well in place in Mier, improvement in the accessibility to information is needed, e.g. through a library.

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Chapter 5

Institutions and Organisations

5.1 Introduction

Rural households are not isolated agents. They interact dynamically with the structural, political and cultural environment in which they are imbedded (Marsh & Appendi, 1998). It enables them to combine livelihood resources and assets to form various livelihood strategies. The structures and processes that bind all these resources and strategies together, are institutions and organisations (Scoones, 1998). Local institutions and organisations are vital in the provision and maintenance of rural goods and services to fulfil the functions of government and markets (Marsh & Appendi, 1998).

Scoones (1998) defines institutions as "regularised practices (or patterns of behaviour) structured by rules and norms of society which have persistent and widespread use". They are not bounded social systems and can be formal or informal. They are the rules of the game, which are often subjected to multiple interpretations by different actors. Hence, they are shaped by, and respond to, relations of unequal power and authority (Marsh & Appendi, 1998). As institutions often determine who have access to what resources, they can be seen as intangible assets for whoever benefits from them (Chambers, 1995).

Organisations can be defined as a body of persons working together in a structured way to achieve a certain purpose (Lawson, 1989). If institutions are "the rules of the game" then organisations are "the players" (Scoones, 1998).

In a given social context, impacts of policy reforms on rural households and community groups are mediated by the local institutions, such as kinship networks, reciprocity arrangements, producer and marketing groups, communal resource management, etc. They act as a filter for policy reforms (Marsh & Appendi, 1998).

Moreover, the nature of the interactions between households with the wide range of formal and informal institutions (Marsh & Appendi, 1998) may determine if they have access to certain resources. For example, in the Mier area, the farmers union was associated with commercial farmers who would like to buy their lease-land. Those who wanted to continue leasing their land preferred not to interact with the Farmers' Union, missing out on the benefits of the union such as collective action for loan mediation. They fear that they might lose access to land if private ownership should be implemented as many of them can not afford to buy their land.

5.2 Institutions of the Mier Area

Most of the institutions that influence livelihoods in the Mier area, have been described elsewhere in this document. They include the land use system; Christian beliefs; role division based on gender; and mutual help.

The Reconstruction and Development Programme (RDP) is also an institution which has been introduced as a long-term programme, which centres around people. It aims to revise the imbalances of apartheid and to empower people and communities to become self-reliant, thereby enabling them to take control of their own lives and development (African National Congress, 1994)

The RDP's housing project has had a major impact in the Mier area. Hereby, houses are subsidised with R15 000 for the poor. This is enough to build a small basic house. The results of this project are clearly visible, as many houses in the Mier area are RDP houses or "Mandela houses" as the local people call them. According to a local spokesman of the council, approximately 316 houses had been built in the Mier area by October 1999.

Besides the provision of houses, the project also created temporary job opportunities for several men. Local building contractors tender for building contracts. Those who are

awarded contracts, employ local people for the building process. The project also creates a market for bricks and brick-making, which has become another income-earning opportunity. At the time of the survey, the housing project had ended but it was presumed that it would start again.

5.3 Internal Organisations of the Mier Area

5.3.1 Mier Transitional Council (MTC)

The MTC is the Mier area's local authority and can be seen as the area's government. It is constituted out of ten members of whom six are ANC and four NP members. The community chooses these members democratically.

It is responsible for service provision to the community and administers the area's finances. Potential projects and programmes that are to be launched in the Mier area first need the approval of the council. Organisations that do investigations in the area or who plan to launch projects or programmes in the area first need to discuss their results with the council before steps, if any, are taken.

5.3.2 Local Development Forums (LDF)

These forums, which are in every Mier village, are established to identify community projects and to see that they are launched. For example, at the time of this study the high school pupils of Rietfontein participated in a project that aimed at upgrading the town's fountain in order to become a tourist attraction once the tar road is extended to Rietfontein. The LDF of Rietfontein organised and co-ordinated it. The project was part of an environmental related inter-school competition.

5.3.3 Mier Resident Union (MRU)

The MRUs of each village play an advisory role at the MTC to enhance the well-being and development of the community. It strives for better and equal service provision to the community and identifies potential temporary job opportunities in this regard. For example, in Rietfontein undertakings such as upgrading of the graveyard, cleaning of streets and management of pest animals were instigated by the MRU, resulting in temporary job opportunities for a few unemployed persons. They were paid by the MTC. Phillips *et al.* (1995) also recommend these kinds of short term, labour-intensive public works to mitigate unemployment.

5.3.4 Farmer Union (FU)

The FU serves the commercial farmers. They gather on a monthly base. It enables collective action and has a liaison function with organisations such as the Department of Agriculture, the Red Meat Board, the Land Bank, etc. Representatives of the Department attend these meetings frequently in order to maintain good communication with the farmers. They organise field excursions in co-operation with the FU to enhance the farmers' insight in the area's ecology, whereby they could improve their management practices.

5.3.5 Other Interest Groups

Organisations that serve certain interest groups, include the different church denominations, the "bastervolkorganisasie" and some youth organisations. Youth organisations are mostly church and political party orientated.

5.4 External Organisations Active in the Mier Area

5.4.1 The Department of Agriculture of the Northern Cape Province

This Department aims to establish a sustainable agricultural sector in the area. Its main tasks include assisting farmers with farm planning (such as where to locate water points, how many camps, etc.), extension and to a lesser extent, monitoring of animal systems and range condition. Before South Africa's first democratic government, i.e. before 1994, the Department also provided financial assistance to farmers to realise farm plans. Under the new government farmers make use of the Land Bank for financial assistance. The Department also makes carrying capacity recommendations for the game ranches to the MTC in co-operation with the ARC.

Approximately 12 years ago the Department started with a range reclamation programme in the Mier area. In later years the ARC joined in this task. In order to share their research results with the farmers, field excursions are organised in co-operation with the FU. Mier farmers (commercial and communal) have to pay only a nominal admittance fee. During the excursions, ecological and farming related issues are interactively discussed with, and demonstrated to the farmers. It plans to extend assistance and research to the communal land, in order to make recommendations for a rehabilitation programme.

5.4.2 The Agricultural Research Council (ARC)

The ARC is involved in research done in the game ranches under the leadership of Mr. André van Rooyen. Sections 3.6.3 and 3.6.4 are mostly the result of their research. They have also developed rehabilitation strategies for degraded dunes, such as brushpacking where wild pomegranate cuttings are packed on the dunes to stabilise sand movement and enhance seedling establishment. Some of the local people, who are involved in these brushpacking activities, found temporary brushpacking work on other farms outside the Mier area.

They act as consultants for the construction of management plans, especially for the land use planning of the new land. How the new land will affect the livelihoods of the community is, therefore, to a great extent in their hands. Agricultural land use planning is done in co-operation with the Department of Agriculture.

5.4.4 Public Works

Well-planned public works programmes are a good option for governments and large funding companies to deal with the problem of high unemployment in communities and at the same time create/rehabilitate usable, productive assets (Breslin *et al.*, 1997).

Even though targeting poverty is often not an explicit objective of several public works programmes, they are likely to draw more poor than non-poor people as they usually imply relatively low wages, hard physical work and are of temporary nature. For the poor, these opportunities offer better wages and sometimes better employment conditions, compared with other casual wage employment (Teklu & Asefa, 1997).

Besides the government's RDP programme, which also falls under public works (see section 5.2), the following two organisations have also introduced public works in the Mier area, which have been of great value for the creation of temporary jobs.

5.4.4.1 Department of Water Affairs and Forestry

As invader plant species often increase pressure on ground water resources and as the limited quantity of ground water is a major problem in the area, the Department of Water Affairs and Forestry started a *Prosopis* spp management project under their "Work for Water" programme. Local people are employed for periods mostly varying between two to three months. The project ran from November 1997 until March 1998 and from November

1998 until March 1999. It is presumed that it would start again in Loubos some time during 2000.

5.4.4.2 LandCare

LandCare is an initiative of the National Department of Agriculture, funded by the Poverty Relief Fund of the National government, with funds donated by foreign countries. It has three main goals (Van Rooyen, 1999), i.e. (i) to raise an awareness of degradation and land care under local communities; (ii) to transfer existing knowledge, in this respect, to local communities; and (iii) employment creation.

A LandCare programme started in the Mier area at the beginning of 1999 under the supervision of Mr. André van Rooyen (ARC). The goals are to manage threethorn (*Rhigozum trichotomum*) invasion and to stabilise degraded dunes by making use of local labour. Brushpacking techniques developed by the ARC are used.

Until the beginning of 2000, 40 commercial farmers were assisted with wild pomegranate management and dune stabilisation. Almost R1 million has been paid out in salaries for local participants. It was expected that it wouldl run until the end of 2000, but will be extended if more funds are endowed to the programme.

5.5 Conclusion

The MTC, being the local authority, is the most influential organisation in the Mier area. All planned programmes and intervention for the area first need the approval of the Council before they could be implemented. Organisations from outside the area, i.e. the Department of Water Affairs and LandCare, as well as the RDP play an important role in temporary job creation through public works.

Chapter 6

Livelihood Strategies

6.1 Introduction

Diversification is a core element of the concept of livelihood. For most of the poor, to make a living implies involvement in various activities and sources of food, income and security (Chambers, 1995). People diversify for a variety of reasons at different times and in specific places. Sometimes the main motivation is survival, at other times it is to save and accumulate resources or to improve their standards of living. The reasons why households diversify change from time to time. It is, therefore, normally difficult to ascribe the reasons for diversification of a community to single factors (Ellis, 1998).

Broadly speaking, however, diversification has three general functions: (i) income generation; (ii) vulnerability reduction; and (iii) quality of life improvement. In other words, it is an attempt to generate an adequate and sustainable livelihood that is resilient to shock (May, 1996).

Moreover, households try to overcome uncertainties such as degrading resources, droughts, changing life cycles and kinship networks, etc. These uncertainties are often the result of changing political, economic and social-cultural contexts, which, at present, are especially the case in South Africa (Ruben & Hebinck, 1998).

Cross *et al.* (1996) found that many rural households in Kwazulu-Natal, which have become increasingly more involved in cash-earning off-farm activities, continue to rely on the natural resource base as their survival strategy, in an economic situation where both cash and natural resource base are at risk. Neither, alone, provides all that is required to sustain their living. Hence, the sustainability and resilience of different livelihood activities differ. Employment in the secondary labour market is vulnerable to economic conditions, whereas agricultural

activities are vulnerable to climatic conditions (May, 1996). Diversification, therefore, is an important strategy in a world full of uncertainties.

It is important to emphasise that diversification is not merely the involvement in different monetary income generating activities, but it refers to a bundle of strategies as well as coping mechanisms. Income generation can be divided into cash or in non-cash income. Non-cash income, as well as expenditure saving activities, reduces money spent by a household. Expenditure saving is an important component of many rural households' livelihood strategies (May, 1996). Moreover, there are many strategies that do not directly generate income, but which rather safeguard livelihood assets (Chambers, 1995).

Diversification usually entails a remarkable amount of variation between gender and age. Different members in the household may, therefore, be involved in different income earning activities (May, 1996). Ellis (1998) also stated that causes and effects of diversification are often different for men and women as the roles, which society has defined for each, may constrain the activities they become involved in.

This section outlines the income-generating activities in which the households of Mier participate, as well as the characteristics of the participants, such as gender, age and involvement per community group and village. There are also clear differences between the different income-generating activities regarding the percentage of income that is set aside for household use. Income, in the context of this chapter, encompasses both monetary income, income in goods or expenditure saving. Note that the following findings are based on the sample group, except when otherwise stated. They are, therefore, estimations of the actual figures.

6.2 Permanent Work

Permanent work refers to all full-time positions in both the formal and informal sector. It generally implies a stabile monthly income. For most of the Mier economically active age group, employment, in the sense of having a job, a work place, an employer and receiving a

wage, was more a dream than a reality. Many indicated that they seek employment, especially permanent employment. One of their biggest expenses was their children's education in the hope that they will at least find a stable and profitable job.

According to the sample group, 14.5% of the Mier community's EAA (economically active age) group are full-time employed. These numbers exclude commercial farmers, because they are not chosen randomly. They are discussed in section 6.8.2.1.1. The ratio between male and female permanent employees is exactly 50:50%. Only 28.4% of the households appear to have a member or members who participate in permanent employment.

The age distribution of permanent employees is illustrated in appendix D. The average percentage of income, which permanent workers make available for household use is presented in appendix E.

6.2.1 Permanent Workers per Village and per Group

There are more significant differences between the villages than between the different groups as can be seen in table 27 and 28, respectively. Rietfontein has the highest number of permanent workers of all villages as it is the main village of the Mier area. Unlike the other villages, Rietfontein has a high school, the highest concentration of businesses and services, as well as the Mier Transitional Council offices that offer permanent employment opportunities for some people.

None of the groups are remarkably outstanding with respect to the number of permanent employees. The percentages of the EAA group for each group can be seen in table 28. It must be noted that a third of group D's permanent employees (three out of the nine) are in fact sons of commercial farmers who are working full-time for their fathers until the latter retire. Farms are then usually transferred to the son.

Table 27. Permanent employment, per village

Village	Total No. of EAA persons	% persons permanent employed
Gr. & Kl. Mier	75	9.3%
Loubos	72	12.5%
Philandersbron	75	4.0%
Rietfontein	192	23.4%
Welkom	54	7.4%

EAA = Economically active age

Table 28. Persons who had a permanent position, per group

Group	Total No. of EAA persons	% persons permanent employed
A	245	16.3%
B	120	10.8%
C	48	16.7%
D	71	12.7%
Total	484	14.5%

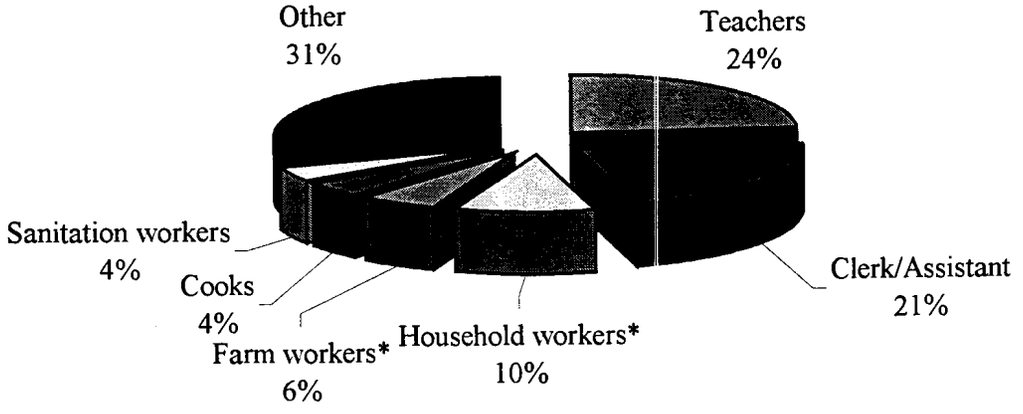
Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.
EAA = Economically active age

6.2.2 Permanent Occupations

The formal sector comprises 75.7% and informal sector 24.3% of all permanent positions counted. Females are less involved in the formal sector than males as the formal : informal ratio is 80:20% for males and 71:29% for females.

For the purpose of this study, household and farm work is regarded as part of the informal sector. It is doubted if the full time household and farm workers in the Mier area appear in official records as they do not pay government taxes. Salaries paid to these workers are relatively low and they do not receive benefits such as pension, medical aid, etc that are usually associated with the formal sector. Moreover, as discussed in section 3.4.3, formal legislation has little impact on the relationship and agreements between employer and employee.

Figure 8 presents the main permanent positions that were recorded. Teachers include both primary and high school, as well as nursery school, teachers. Primary and high school teachers earn salaries of between R50 000 and R140 000 per annum, depending on qualifications and experience. Persons who occupied some sort of clerical or assistants position, are mostly employed by government departments, the MTC and Mier businesses.



* Only those who are employed full-time for five or more days per week

Figure 8. Main permanent occupation types

If a household has a member or members who participate in permanent employment, this does not necessarily imply that they do not face income-poverty. Low salaries are frequently found, especially in the informal sector. A caretaker, although permanently employed, earns approximately R300 per month. Some of the full time employed domestic household workers earn only R200 per month. It is, however, not a case of exploitation, but one of demand and supply, where labour supply is abundant, and employers are often unable to pay more.

6.2.3 Work Places

Figure 9 presents the main work places where people are employed permanently. Most people with permanent positions work at schools and hostels. Occupations include teachers,

cooks and cleaners. People working for the MTC include only those people who are directly working for the Council, such as members of the MTC, sanitation workers, clerks and cleaners and not of other governmental departments which are also located in the same building.

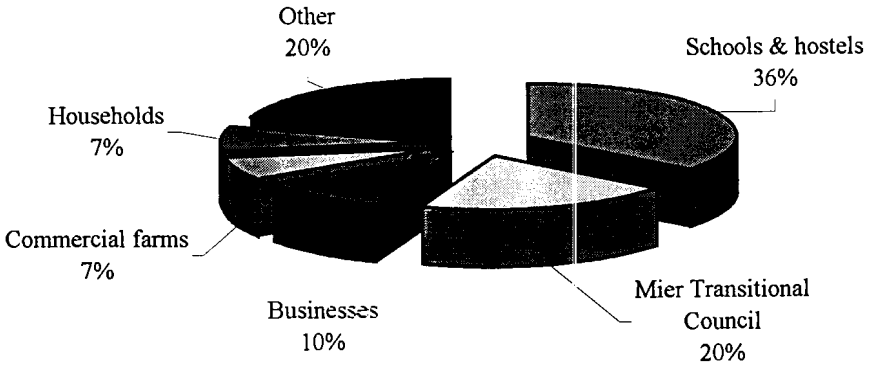


Figure 9. Locations of permanent work in Mier

6.3 Migration

In the context of this study, migrants include all persons who left the Mier area temporarily to seek employment elsewhere during the two years prior to April 1999, when the interviews were held. Nineteen percent of the EAA group did so, while 33% of the households had migrant members.

It is interesting to note that there are more migrants than small-scale livestock owners (commercial farmers excluded), i.e. 90 migrants vs. 68 livestock owners (group B + C). This corresponds with the argument of Zulu (1996) that rural inhabitants know that there is relatively more certainty in remittance from migration than there is in subsistence farming, especially in light of the severely degraded condition of the natural resources.

6.3.1 Reasons for Migration

The migrants or, in their absence, fellow household members, were asked why they left Mier. According to 7% of the migrants, it is the only way they could work in the field in which they are interested, while 3% earn higher salaries outside the Mier area. Eighty-six percent migrate because there is no work in Mier. Three percent have other reasons, including that another source of income is needed to stabilise farm income. For the majority, therefore, migrancy is an adaptive strategy, i.e. they modify their normal way of doing in response to economic or environmental shocks or stresses. This corresponds with the statement of Larson & Mundlak (1997), i.e. migration sprouts mostly from the "desire to improve economic conditions".

6.3.2 Migrant Profile

According to Ardington & Lund (1996) and De Haan (1998), migrants are not an average cross-section of the economically active age group. They are predominantly male and usually better educated than their peers who do not migrate. The migrants of the Mier area are no exception. The ratio between male and female is 77:23%. Practically all migrant-related surveys show that the proportion of males vary between 70 and 85% (De Haan, 1998).

The highest concentration of migrants is from the age category of 21-25 years (see appendix D). They are mostly persons who have just left school, but who could not find employment in the Mier area. Most of the older generation did not complete their schooling, while some did not attend school at all, because they grew up on farms far away from any formal educational institution. Unfortunately, migration of better qualified men and woman who are able-bodied, deprives rural areas of human physical and operating forces (Zulu, 1996).

Larson & Mundlak (1997) also state that the age of the migrant is important and that there is a higher propensity for younger persons to migrate than older persons. Younger people usually have less family members to support, and leaving the home area is, therefore, less

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risky and costly for them. Mo[illegible]electricity, the Mier area does not have all the attractions of city life, such as bioscopes and other entertainment facilities. Many young people, therefore, may perceive the world out there to be full of adventures that need to be experienced.

6.3.3 The Cost of Migration

The cost of migration is strongly related to the distance to where the new work opportunities are. The remoteness of the Mier area is, therefore, a hindrance for migration. Several respondents hesitate to leave the Mier area, because work opportunities elsewhere are also scarce.

It may also happen that an employer, e.g. a farmer from outside Mier, visits the area to search for workers. Some employers even advertise temporary jobs in Mier, noting when workers will be picked up. These employers usually do not charge transport costs, significantly reducing the costs for the migrant workers.

Besides the direct cost of travelling and accommodation, other costs, such as acquiring information about possible distant work opportunities, change from regional language and culture, less moral support from friends and family, make migration an expensive and difficult undertaking (Larson & Mundlak, 1997).

This is especially true for the people of Mier. Due to the area's remoteness, the community is isolated from the rest of the world. This creates a kind of psychological security with a strong sense of compassion, mutual help and unity. Afrikaans is the only language spoken. One of the older respondents explicitly said that the world outside Mier only hurt people and that he could see who had left the area for some time and who had not.

Without doubt, there would have been more migrants if the Mier area were less remote and isolated, especially in light of the prevailing drought and the limited agricultural

opportunities. Unfavourable agro-ecological conditions are known to favour migration (Ruben & Hebinck, 1998).

6.3.4 Income to Rural Household

Due to higher costs related to migration, the average percentage of income earned by a migrant that is contributed to the rural household is much lower than that of other employed people, who are living at home (see appendix D), especially if the employer does not provide, or compensate for, transport and housing.

The nature of the relationship between the migrant and the rural household is also an important factor in this regard. For example, husbands are mostly more committed than sons or daughters, single parents more than adults without children, etc. It often happens that sons or daughters do not make regular transfers to the rural household, but provide substantial support in times of need (Baber, 1996).

6.3.5 Do Migrants Prefer to Live in the Mier Area?

Migrants were asked that, if they left the area with the idea that, if they were offered a permanent job outside Mier, they would accept it and move, or whether they were determined to return to Mier. Fourteen percent of the migrants will move. Another 14% are prepared to move, or they will consider the offer seriously, but they prefer to stay in Mier. Seventy-two percent, however, do not want to leave Mier.

The bottom line motivation of 98% of respondents who are determined to stay in Mier is that they are rooted in Mier. Their motivations vary between that they grew-up in Mier, all their family and friends are there, they have received a government house in the area, they have to look after their parents, their children are at school in Mier, etc.

Eighty percent of the migrants, who will move if they find a permanent job elsewhere, reason that there is no work in the Mier area. Twenty percent of those who will consider the offer

seriously, but who prefer to stay in Mier, ascribe it to the lack of work in the area, while 70% feel that they are rooted in Mier.

Persons, who leave Mier to earn an income elsewhere, often face intermittent or poorly paid work. They are then forced to spend considerable amounts of time away from the household, with minimal family contact. This leads to relationships and commitments outside the rural households (Baber, 1996). For example, several of the male migrants interviewed have a child elsewhere, which is the product of one of these relationships. Hence, he has obligations to the rural household as well as to the child.

6.3.6 Migrants per Group

Table 29 presents the percentage of migrants per EAA group for each group. The youngest migrant was 15 years old, and the oldest was 66 years, at the time of the survey. Only these two migrants did not from part of the EAA group.

Table 29 Migrants per group

Group	Total No. EAA persons	% of migrants per group
A	245	20.0%
B	120	16.7%
C	48	22.9%
D	71	11.3%(14.1%[1])
Total	484	18.2% (18.6%[1])

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.
EAA = Economically active age
[1] Includes migrants who are not of economically active age

Despite the prevailing drought and the fact that many commercial farmers have stated that no profit is made by their farming business, they still have the lowest percentage of migrants.

6.3.7 Migrants per Village

Table 30 presents the percentage of migrants per EAA group per village. Most migrants come from Philandersbron and Loubos. Regarding Philandersbron, it can be attributed to Mr Bot, who lives in Philandersbron. As a building contractor in and outside the Mier area, he has various contacts with other contractors through which he arranges work for several people. Although these people are from all over the Mier area, most are from Philandersbron. The reason why there are so many migrants from Loubos is not clear.

Table 30. Migrants per village

Village	Total No. EAA persons	% of migrants per village
Gr. & Kl. Mier	75	12.0%(13.3%[1])
Loubos	72	23.6%
Philandersbron	75	25.3%
Rietfontein	192	17.7%(18.2%[1])
Welkom	54	14.8%

EAA = Economically active age
[1] Includes migrants who are not of economically active age

6.3.8 Migrant Employment Types

The main migrant employment types are presented in figure 10. The building trade, the most popular employment type, is, as mentioned above, mainly due to Mr. Bot. Only males are involved in the building industry. Farm work, the second largest migrant employment type, includes any type of agriculture-related work outside the Mier area, such as livestock farming, cotton and grape harvesting, etc.

Fencing is an art with which many of the older men grew up. This experience is valuable as it opens-up highly needed work opportunities. Most road workers started working in the Mier area, but as the construction of the road progressed to beyond the boundaries of the Mier area, they followed the contractors.

The payment that some migrants receive is often piteous. A woman told, for instance, that she was paid 40c for every kilogram cotton that she picked. For a week's hard work, she earned R25. She did this for two months, leaving her children in Mier. Although housing and food were provided for that period, she had to make provision for transport. Fortunately, she managed to hike most of the way, which was more than 300 km.

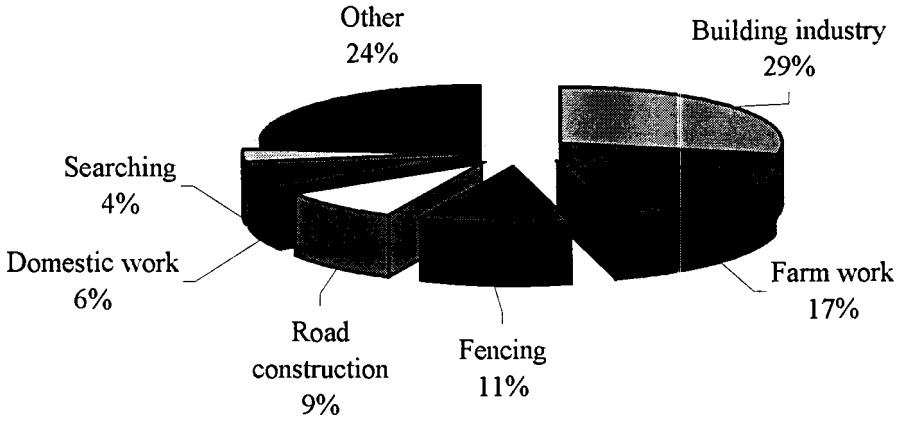

Figure 10. Main migrant occupation types

Four percent of all migrants counted (over the two years before the study) were still searching for work according to their fellow household members at the time of the survey.

6.4 Casual Labour

Casual labour, in the context of this study, includes all temporary jobs in which people were involved, during the two years prior to, and at the time of the interviews (i.e. April 1997 until April 1999).

There were 161 persons involved in casual labour (piece jobs) during April 1997 to April 1999, but only 151 were part of the EAA group. Therefore, 31.2% of the EAA group, accepted casual labour during this period. Their age distribution can be seen in appendix D.

Various casual labourers are involved in more than one piece job, stressing that not only do households derive their income from various sources, but also individuals. The male to female ratio is 63:37%.

Forty nine percent of the households have at least one member who was involved in casual labour during April 1997 to April 1999. The percentage of income that casual labourers make available for household consumption, is illustrated in appendix E. It is notable the percentage is much higher than that from migrants.

6.4.1 Casual Labour Types

Figure 11 presents the casual labour activities in which people were involved during the two years prior to the study. The area's internal demand includes mostly construction-related activities, domestic work and farm work.

- The demand for construction workers is strongly related to the RDP housing project. Periods that people are involved in construction are very variable.
- Domestic work includes mostly household work, but also includes gardening. Only women do housework, while only men do gardening as an income-generating activity.
- Farm work is done by men only, and refers to work done mostly for commercial farmers, but also for communal farmers. It includes slaughtering of animals, helping farmers to dip and dose animals or to load them to be transported. These jobs seldom last for more than three days at a time and most do this on an occasional basis. It appears, therefore, due to the extensive nature of the farming business in the Mier area, that this sector is not a large provider of employment.
- Fencing is done by men only, mainly on the nearby farms, but also around houses in the villages.

External projects contribute a significant part. They include *Prosopis* spp. management from the Department of Water Affairs and Forestry (section 5.4.4.1); and the LandCare project (5.4.4.2). Both men and women participate in *Prosopis* spp. management, while only men are involved in the LandCare project.

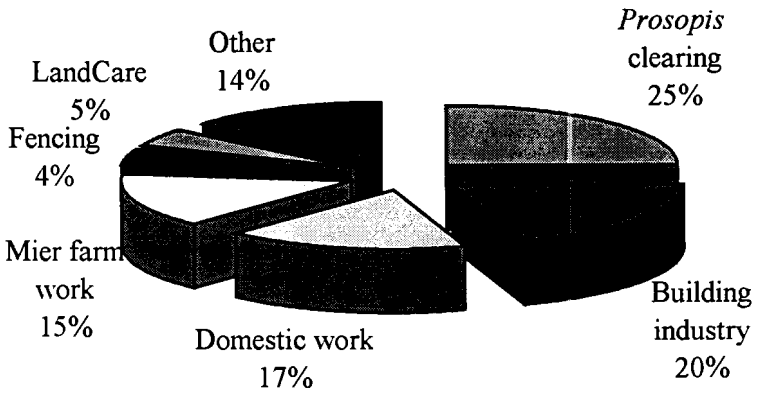

Figure 11. Casual labour types

It is clear that besides the public works (*Prosopis* clearing, LandCare project, road works, etc.) most casual labour occurs in the informal sector as these activities are unregistered and the earnings do not enter official statistics (Preston-Whyte, 1991). Although most informal casual labourers would rather prefer formal, permanent employment, the informal sector generates income and stimulates entrepreneurial development. All income increases the spending power of the households concerned, whereby opportunities for others to indulge in informal-sector activities are increased (Kirsten, 1991).

6.4.2 Casual Labourers per Group

Table 31 presents the number of casual labourers, per group. Group B, which has the highest percentage of casual labourers, has the highest unemployment figure (see section 3.7.6.1), which explains why they are so eager to get involved in any kind of income-generating activity. Group D contains the lowest percentage of casual labourers. There are various reasons for this: most commercial farmers are less desperate for additional income than the majority of the community; external project representatives usually give preference to the most needy households when they employ people; some farmers live on their farms and are, therefore, far from most casual labour opportunities.

Table 31. Casual labourers, per group

Group	Total No. EAA persons	% of casual labourers per group
A	245	33.5% (34.7%[1])
B	120	44.2% (48.3%[1])
C	48	20.8% (22.9%[1])
D	71	8.5% (9.9%[1])
Total	484	31.2% (33.3%[1])

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.
EAA = Economically active age
[1] Includes casual labourers who are not of economically active age

6.4.3 Casual Labourers per Village

Table 32 presents the casual labourers per village. Welkom has the highest percentage in this regard. It can mainly be attributed to *Prosopis* spp management as 33.33% of the EAA group from Welkom participated in this programme some time between April 1997 and April 1999.

Table 32. Casual labours, per village

Village	Total No. EAA persons	% of casual labourers per village
Gr. & Kl. Mier	75	30.7% (32.0%[1])
Loubos	72	47.2% (50.0%[1])
Philandersbron	75	36.0% (40.0%[1])
Rietfontein	192	18.2% (22.4%[1])
Welkom	54	50.0% (51.9%[1])

EAA = Economically active age
[1] Includes casual labourers who are not of economically age

6.5 Micro-enterprises

All trading activities, in the context of this study, are regarded as micro-enterprises, including all people who sell something from time to time, even if it is on a very limited scale. It does

not include livestock sales. A few important factors severely hinder micro-enterprise opportunities in Mier. Firstly, villages in Mier, except for Welkom, are remote, with few outsiders passing through. Provision of goods and services are, therefore, limited mostly to the local population. Secondly, the expenditure power in Mier is extremely low. As explained earlier in section 3.2.2.2, most people from the higher income group, e.g. teachers and nurses, who earn a substantial monthly salary, do most of their shopping in Upington. Thirdly, the lack of electricity and water hinders several initiatives.

Eleven percent of the households benefit from trading activities, while only 4.3% of the EAA group are involved in such operations. Four elderly persons of the sample group also trade goods from time to time. None, or very few commercial farmers seem to be active in these kind of trading activities. Rietfontein appears to have slightly more micro-enterprises than the other villages, with 6.3% of the EAA group, the highest of all villages.

Many of these activities are sporadic in nature and yield variable returns. It includes dressmaking, production of cookies and ice-lollies, selling sweets and cigarettes, etc. What people sell, or offer, depend mainly on what they have access to. For example, some people who can afford to visit Upington, buy goods there at relatively cheap prices in order to re-sell them in Mier at a profit. Some people who have access to energy (e.g. gas or a generator) and appliances (e.g. a freezer or a stove) make cookies or ice-lollies. Some have a video machine and a television set whereby video shows are offered. It should be noted, however, that, due to the low spending power in the Mier area, these products and offers will not sell if prices are too high. The profit margin of many of these transactions is, therefore, low. Moreover, some women who make and sell clothes struggle to collect outstanding debt from their clients. It discourages them from continuing with this activity.

Nineteen kilograms of gas cost R93 at the time of the main survey (April 1999). If it is used for a freezer only, it lasts 28 days. Mary makes ice-lollies during summertime, which she sells from her home. The income that she earns is just enough to cover the costs of the plastic bags, gas and fruit syrup. Nevertheless, now she is able to run her freezer, which would otherwise not have been possible.

Rebecca buys packages of tobacco at her village's local store at R1.88 a packet. She divides them into six smaller packages, which she sells in her neighbourhood for 50c each.

Johanna from Welkom gathers all kinds of seeds, ostrich eggshells, bone, etc. from which she makes necklaces. These are sold to tourists who are on their way to the Kalahari Gemsbok Park.

In extremely poor households, children are sometimes sent to look for empty aerosol cans as well as bones in and around the village. Large quantities of both of these goods are tradable for cash. Seven kilograms of aerosol cans are refundable for R11 and an animal feed bag (holds 50 kg of animal feed) full of bones, also delivers a return of R11.

Betty and her family are always looking out for bones and aerosol cans. It normally takes them one month to gather seven kilograms of cans and 2 months to fill one animal feed bag with bones.

6.6 Private Transfers

Sixty-four households received private transfers from outside the household between April 1997 and April 1999. It is, however, hard to distinguish between presents, i.e. when the gift is a luxury which is not really necessary, or real support, i.e. a contribution that forms an essential part of a household's livelihood. One could, therefore, not say that every household who receives support from outside is needy.

Moreover, during the course of the survey, it was noticed that the field workers and the community had different perceptions of support. Lending out foodstuff such as sugar, flour, coffee, etc. is the order of the day. It is a way of living. For example, the community perceive it as normal, rather than support, when adult children receive food from their

parents, or *vice versa*, if the former has no income. Many people, therefore, did not note this when they were asked if they received some form of support. Their livelihoods, however, would have been much less smooth without these arrangements.

For this reason, the support section will focus on financial support. It includes voluntary transfers made by family and friends who are not part of the household as well as compulsory transfers, e.g. a father who supports his child if he is not married to the mother and is not part of the household. It excludes transfers made by migrants. Twenty-one percent of the households received financial support during the two years prior to when the survey was being conducted. Most of these transfers, i.e. 52.4%, are made on a monthly basis. The rest occur on an irregular base, e.g. in times of financial crises, or when the donor received a bonus, etc. Most financial support is received from outside Mier, i.e. 85.4%.

There is no notable difference between the four groups concerning the percentage of households receiving financial support. Percentages vary between 19.6% and 25% of the households per group. There are, however, remarkable differences regarding financial support received in the different villages, i.e. Rietfontein 30.2%, Klein and Groot Mier 24.1%, Philandersbron 17.7%, Loubos 7.7% and Welkom 0%. No explanation has been found for this.

The Lutheran Church has an arrangement with the Lutheran church in Germany, whereby the latter sponsors school and school associated fees of one child per selected family. Families are selected by a local committee on the basis of need. Six households (3%) out of the total sample group receive such a scholarship.

6.7 Government Welfare and Other Allowances

6.7.1 Government Allowances

South Africa differs from most less developed countries in that it has a well functioning social pension system that has a high coverage amongst the elderly, the disabled and

children from unprivileged homes in rural areas. Claiming these rights from the state in the form of grants is of crucial importance to household incomes (Carter & May, 1997).

According to Ardington & Lund (1996), the elderly make a contribution to household income, through state pensions, that is out of proportion to the percentage of society that they constitute. Moreover, these pensions are often higher than the mean per capita income of the local community.

In light of the huge contribution that government allowances (elderly pensions and child allowances) make to the income of many Mier households, it is hard to calculate dependency ratios on the basis of people who are not part of the economically active age group.

Government welfare allowances have some characteristics, which make them much more than just a safety net in the narrowest sense of the word. They provide livelihoods for those who would not benefit from livelihood creation programmes based on labour (Ardington & Lund, 1996). They are generally a reliable source of income and are sometimes consumed by up to three generations within a single household. Moreover, being directed to the poorest households, they are a source of income growth and reduce inequality. Increases in wage incomes have usually a much greater effect on welfare than government allowances for the households concerned, but they also tend to enlarge income inequality (Haddad & Zeller, 1997). They are critical safety nets for many of the most vulnerable people, e.g. the elderly with their declining capacity to earn a living wage. It provides them with security and enhances their position and authority within the household and the broader community (Breslin *et al.*, (1997).

Government allowances also play an important indirect role in the creation of livelihoods by enhancing local economic activities. In light of increasing the spending power of households, markets for goods and services are created. For example, due to this income some people might find a haircut affordable, which would otherwise have been impossible, thereby creating a market for entrepreneurial hairdressers.

6.7.2 Allowances and the Mier Community

Fifty percent of the 201 households interviewed, and 15.03% of all 1151 participants receive some form of allowance (see table 33). Note that 15.03% is calculated of the total population, while in the sections above, total number of people are calculated per total persons of economically active age. The government sponsors 98.3% of the allowances paid out to members of the sample group. According to the socio-economic survey of Botha *et al.* (1995), the percentage of people who received a government pension or welfare allowance during 1993 was 10.6%. It, therefore, seems as if there was an increase of approximately 4% in government welfare support in the Mier area during the six years from 1993 to 1999.

Government allowances are constituted out of the following:

- *Old age pensions.* Females from 60 years and males from 65 years and older who conform to the government's requirements, qualify. A state pension allowance was normally R470 per month per person at the time of the survey.
- *Disability grants.* Persons who are certified by a medical doctor as unable to enter the labour market, come in consideration for disability grants. It was normally R470.00 per month during 1999. The percentage of disabled people per EAA group is 6.19%.
- *Child allowances.* Single parents, foster-children and for children younger than seven years in households with a monthly income less than R800 benefit from child allowances. They were R100 per month per child between 0-6 years, R340 per month per foster-child and R470 per month for single parents at the time of the survey.

Forty-three percent of the sample group's households consider some sort of government allowance as their main source of income. Such government allowances, besides forming a substantial part of their overall income, are regular and reliable. This percentage is extremely high, as "only" 29% of the poorest 20% of South Africa's population reckon social pension as their main source of income (World Bank, 1995).

Table 33. Persons receiving allowances

Allowance type	Total No. of receivers	% of total receivers	% of total sample population[1]
State child allowance	65	37.6%	5.7%
State disability allowance	30	17.3%	2.6%
State elderly pensions	75	43.4%	6.5%
Other (non-government)	3	1.7%	0.3%
Total	173	100%	15.03%

[1]From a population of 1151 persons

According to Ardington & Lund (1996) the high levels of government allowances in rural areas are an important contribution for many households. These incomes are often used as capital for further livelihood creation. Data from this study confirm this statement by comparing the percentages of income that are made available for household consumption from the main income sources. Government allowances are 100% available for household use for 95.4% of the government-supported households. This figure for permanent employment and casual labour is 77.1% and 73.8%, respectively (see appendix E). Ardington & Lund (1996) also state that government allowances are used for general household support, education, health care and other expenditures.

6.7.3 Government Allowances per Group

Table 34 represents the number of persons receiving a government allowance, per group. Section 3.7.3.1 revealed that group C has the highest percentage of persons from 60 years and older. This partially explains why group C has the highest percentage of people receiving a government allowance. The three persons mentioned above who received a non-governmental allowance all belong to group A. There are thus 86 persons in total in group A who receive an allowance, i.e. 14.7%.

Table 34. Persons receiving a government allowance, per group

Group	Total No. of persons	% receivers per group
A	585	14.2%
B	294	16.0%
C	126	22.2%
D	146	8.2%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

6.7.4 Government Allowances per Village

Table 35 represents the number of persons receiving a government allowance, per village. The reason why Loubos has remarkably fewer government allowance receivers than the rest of the villages, is unknown.

Table 35. Persons receiving a government allowance, per village

Village	Total No. persons	% receivers per village
Gr. & Kl. Mier	191	12.6%
Loubos	145	6.2%
Philandersbron	177	17.0%
Rietfontein	481	17.9%
Welkom	125	13.6%

6.8 Agriculture

It is well-known that subsistence agriculture is a major source for food security for many poor people in rural areas. In the Mier area, this basic strategy is severely hampered by the area's low water quantity and quality, as well as the semi-desert conditions.

6.8.1 Crop Production

6.8.1.1 Garden Production

Twenty-eight percent of the households cultivate vegetables, fruit or animal feed in their home gardens. Table 36 presents the kind of crops that are planted.

Table 36. Crop types grown in home gardens

Crop type	No. of households	% of total crops produced
Fig	40	28.2%
Vineyard	27	19.0%
Lucerne	11	7.8%
Watermelon	9	6.3%
Pumpkin	8	5.6%
Melon	8	5.6%
Maize	8	5.6%
Orange	8	5.6%
Pomegranate	6	4.2%
Tomato	4	2.8%
Peach	3	2.1%
Other	10	7.0%
Total	142	100%

In thirteen percent of the cases of own production, crop plants are used for animal feed. Lucerne is used as animal feed only, while maize is used for both household consumption and animal feed. Several households feed their animals plant residues left over after the harvest, especially those of annual crops.

All crops are planted mainly for own use. None of the households interviewed cultivate crops for the purpose of selling them, as surpluses are rather exceptional. If they occur, it is usually given away or conserved.

The major, general constraint in this regard is water. Water is a scarce and expensive item in the Mier area and various households experience difficulties in affording water for household consumption alone. During the community meetings the attendants confirmed that garden crop production was restricted to those who could afford it.

Input expenses for own production are further increased by the necessity to fence off any piece of land that is to be cultivated. Straying animals make vegetable gardens impossible without strong fencing.

It should be emphasised again that where many poor people elsewhere manage to achieve food security through own, small-scale food production, this is out of reach for the poorest of the Mier community. Several of the households indicated that they would like to plant food crops, but they can not afford it.

There is a remarkable difference in the number of households planting food crops between villages (see table 37). During the community meetings the people of Groot and Klein Mier said that, besides a lack of water, they have problems with drift-sand, saline water and poor soil nutrient status. Moreover, the community of Groot and Klein Mier still need to fetch their water from central taps, making home vegetable gardens even more labour intensive. Welkom experiences serious water problems. Water supply is unreliable, even for household consumption. At the time of the survey, all water taps were dry and people were using water from buckets and containers in which water was stored for times like these. It was said that incidents like these were not uncommon.

Table 37. Households planting food crops, per village

Village	Total No. of hh	% of total hh per village
Gr. & Kl. Mier	29	6.9%
Loubos	26	26.9%
Philandersbron	34	38.2%
Rietfontein	86	38.4%
Welkom	20	0%

It also seems, however, as if interest in farming plays a remarkable role as households that own no livestock (group A) have the lowest proportion of households planting food crops (see table 38).

Table 38. Households planting food crops, per group

Group	Total No. of hh	% of hh per group
A	109	22.9%
B	46	34.8%
C	22	36.4%
D	24	33.3%
Total	201	28.4%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

6.8.1.2 Loubos's Irrigation Lands

In the vicinity of Loubos, arable land exists, which was once irrigated from a dam nearby. Several respondents told of large watermelons, melons, pumpkins and thriving wheat, which were grown here several years ago. Many households expressed the hope that these lands could be used again.

Several reasons are suggested why the cultivation of these lands stopped. Some said that livestock ruined the plantings, causing serious frictions between animal owners and crop producers. Other people are upset because some commercial farmers received allotments instead of landless households. There are also persons who argued that the largest hindrance was the severely silted up dam.

According to Brink (1999), the main reason why the irrigation lands could not be used, is simply a lack of water. Due to the drought of 1998 and 1999 in Mier and the surrounding area, there was almost no water supply to the dam.

6.8.2 Animal Production

6.8.2.1 Livestock Owners

The percentage of livestock owners of the sample group is 45.8%. Most households that do not have access to a commercial farm do not own livestock, i.e. 109 out of 177 households (group A + B + C) or 62.6%.

Table 39 presents places where animal owners keep their livestock. Thirty percent of the households who do not have private access to commercial land keep their animals elsewhere than the communal land, i.e. on somebody else's Mier commercial farm, urban feedlot (feed animals in yard) or outside the Mier area. This is an example of households indulging in certain strategies to secure a resource, i.e. their livestock, by side-stepping the problems of the communal land, such as a lack of feed, theft, etc.

Table 39. Places where households keep their livestock

Place	**No. of households**	**% of households [1]**
Communal land	48	24%
Own Mier commercial farm	24	12%
Somebody else's Mier commercial farm	14	7%
Urban feedlot	5	2.5%
Outside Mier	1	0.5%
Total	92	46%

[1] Sample group = 201 household

6.8.2.1.1 Commercial Farmers

Livestock market outlets for Mier commercial farmers are restricted to the following: Upington, Loubos' bimonthly auction, livestock agents passing through the area and local buyers. The popularity of each outlet is presented in table 40.

Table 40. Market outlets of Mier commercial farmers.

Outlet	**No. of commercial farmers using outlet**	**% of 24 commercial farmers**
Loubos auction	16	66.7%
Upington	9	37.5%
Local people	9	37.5%
Agent	4	16.7%

The high percentage of farmers who are selling livestock at the auction in Loubos, to local people and to agents passing through the Mier area indicates that there is a strong demand for

local marketing opportunities. The market to local people, however, is restricted due to their low spending power, while agents usually have certain farmers whom they visit and trade with. Driving to Upington and back implies high fuel and wear costs, making the deal much less profitable.

Agricultural intensification is usually one of the first points considered in rural upliftment programmes, especially if the community is known as a farming community. There are, however, several factors that hindered the Mier area's commercial farmers to intensify:

1. Being a semi-desert, the natural resource base of the Mier area does not allow intensive livestock agriculture. As stated previously, intensification through the development of modern water extraction techniques and establishment of long distance water pipelines has already been to the detriment of the ecosystem. Before these water points existed, a lack of water had discouraged many herdsmen from entering the area. After the water points were installed, animal numbers in the area have increased, which has resulted in severe degradation in some areas (Van Rooyen, 1998).
2. The leasehold system discourages farmers to make long-term farm investments, because such investments would probably not be to their own advantage. The lease contract has, however, a regulation that provides for the payment of farm investments if the contract should be discontinued. Still, most lease farmers do not indulge in substantial investments.
3. Farms are not of economically viable size. They range between 1200 and 3500 ha (Van Rooyen, 1998), while the economically viable size is around 6000 ha (Brink, 1999). It implies that most farmers seldom make large enough profits to cover both their household expenses and farm investments.

Besides the development of water points in the area and the detrimental effects of it, a lack of water points remains a problem as most farms have only one water point, while a few farms have none. The latter have to transport water to their farms. A lack of water points results in over-utilisation of the rangeland around the existing points and under-utilisation of areas far from water. If a farmer has access to more than one water point, it enables him/her to close

and open some of them strategically, whereby animals are forced to move to other areas where water is available.

Farms that are located in the northern parts of the Mier area, struggle with severely saline water (see section 4.2.1.2). This implies that it is difficult to bring new animals from outside the Mier area to their farms as they easily die from the water. Animals born in the area are adapted to the water and they seldom experience problems in this regard. This could lead to inbreeding and therefore, a restricted pool of variability.

According to Jones & Karp (1986), inbreeding often results in immediate fitness, but at the expense of long term flexibility. If the parents are well adapted to their environment, e.g. in this case to saline water, all their progeny will also be well adapted, resulting in immediate fitness. A restricted pool of variability, however, causes a lack of long term flexibility and if the environment changes, none of the offspring might be viable in those circumstances, e.g. in case of a disease outbreak.

6.8.2.1.2 Communal Farmers

Households that keep animals on the communal land, form 24% of all households (see table 39), or 27% of all non-commercial farmer households. Communal farmers mostly buy their livestock from commercial farmers in the area. Animals are seldom resold. They are usually used for household consumption, i.e. usually for milk and occasionally for meat.

The major problem that communal farmers face, is a shortage of animal feed. The communal land is severely degraded and large areas are desertified (see figure 12). Most households can not afford to buy maize or other animal feed.

Even though the degraded state of the communal land has discouraged households from keeping animals, a loss of interest in farming is also a major contributing factor. It is negatively correlated with age as younger people strive for other livelihoods than farming (see section 3.8.1).

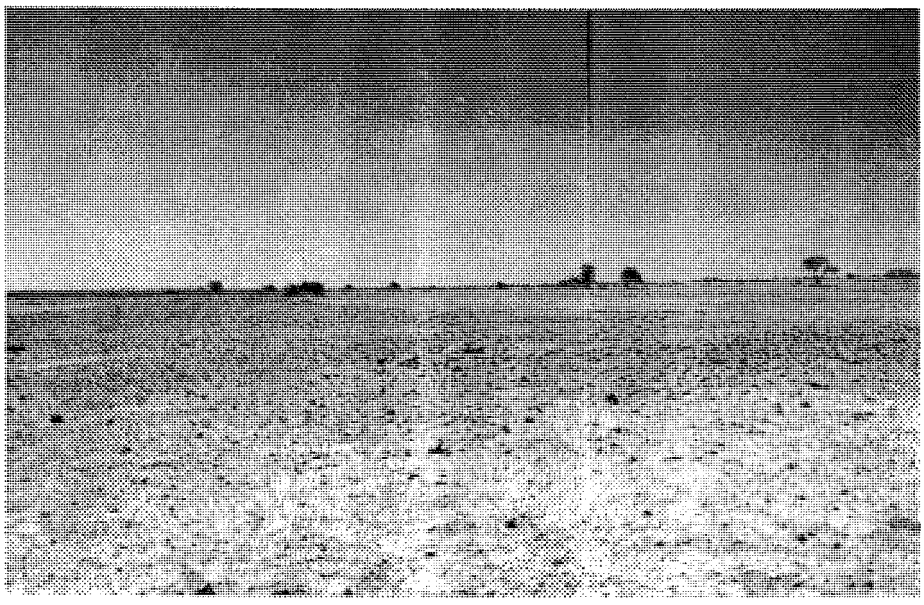

Figure 12. Desertified communal land adjacent to Rietfontein

Another problem for both commercial and communal farmers in the Mier area is stock theft. Eleven percent of the households referred to this issue without being directly asked about it. According to the police captain of the Mier area, livestock theft is the most frequent crime of the area.

6.8.2.1.3 Livestock held on Somebody Else's Mier Commercial Farm

Twenty-one percent of livestock owners with no access to private land, keep their animals on somebody else's Mier commercial farm, increasing pressure on these land units, which are already not of economically viable size.

Some of these animal owners are livestock keepers for commercial farmers. Their remuneration is animals and/or the permission to keep animals on the commercial farmer's land. Others include family members or close friends of the commercial farmer concerned. It may be that some livestock owners lease land from commercial farmers, but as this is illegal, none of the interviewed households admitted that they were involved in such a transaction.

6.8.2.1.4 Other

People that keep livestock in their backyard (urban feedlot), usually feed them with household food left-overs, pasture crops planted in their gardens and animal feed bought at the Co-operative. Most households, however, cannot afford all these inputs as household left-overs seldom exist, water to irrigate pasture crops is too expensive and buying animal feed is beyond their means. One of the interviewed households has a family member who owns land outside the Mier area, where they keep their livestock.

6.8.2.2. Domestic Livestock of the Mier Area

Table 41 represents the animals that are kept in the Mier area as well as the number of owners per animal and per group.

Boer goats are the most popular animals that are kept by non-commercial farmers in the Mier area (group B and C). These animals are known for their hardiness and opportunistic browsing nature. They utilise all vegetation strata that are in their reach, e.g. they will stand up against stems of shrubs and trees to acquire as much as possible of the vegetation. In times of food scarcity they will eat almost anything, even cardboard (see figure 13). Goats sometimes die from eating plastic bags.

They are mainly kept for own use, mostly for milk and occasionally for meat. Non-commercial farmers, having only a few animals, are usually very reluctant to slaughter them. Due to the degraded state of the communal land, fertility rates are expected to be low, implying that numbers of offspring do not increase rapidly. It is, therefore, not easy to maintain animal numbers. Slaughtering an animal implies giving up a large part of the resource base.

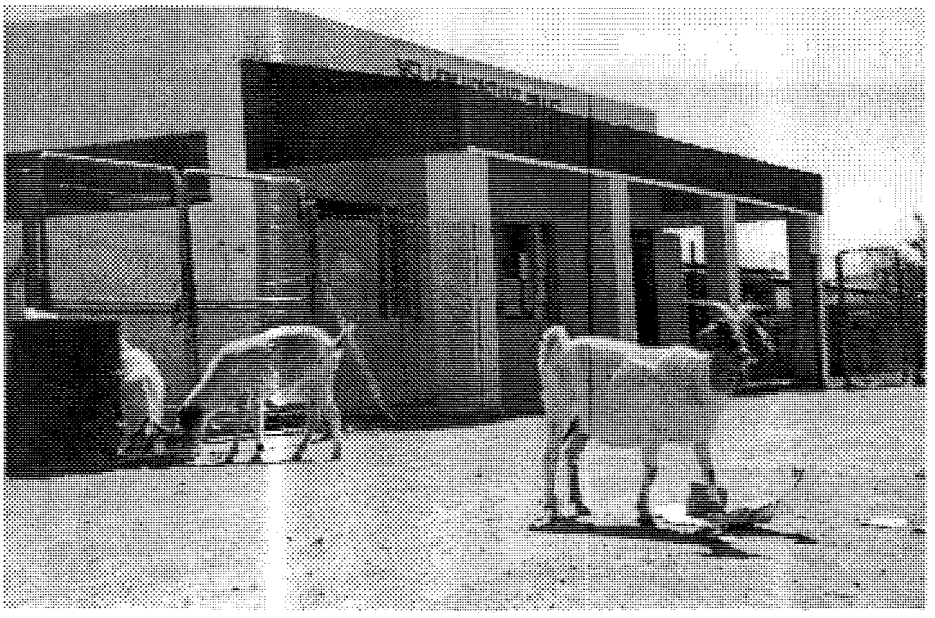

Figure 13. Boer goats eating cardboard

Unfortunately, being aggressive browsers, goats also cause significant damage to fences, gardens, etc., thereby being a nuisance not only to their owners, but also to other community members.

Table 41. Number of animal owners, per animal and per group

Animals	**Group A** % of owners	**Group B** % of owners	**Group C** % of owners	**Group D** % of owners	**Total** % of owners
Boer goats	-	63.0%	81.8%	75.0%	32.3%
Sheep	-	19.6%	54.6%	95.8%	21.9%
Cattle	-	2.2%	-	66.7%	8.5%
Donkeys	-	34.8%	36.4%	37.5%	16.4%
Mules	-	2.17%	-	12.5%	2.0%
Horses	-	13.0%	13.6%	50.0%	10.5%
Chickens	14.7%	19.6%	13.6%	50.0%	19.9%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.

Table 42 represents animal number statistics for commercial farmers (group D) as calculated from data collected during the interviews. Note that these figures are presented merely to give the reader an indication of animal numbers held by commercial farmers, the variation in

each animal group as well as the ratio between groups, rather than being hard statistics of the commercial farmers' livestock numbers. It is that great variation exists in the number of animals held by commercial farmers, but that most commercial farmers specialise in *sheep* farming (see also table 41).

Table 42. Average number and standard deviation of animals held by commercial farmers

Animal	Average No. of animals	Standard deviation
Sheep	205.6	148.8
Goats	37.6	34.4
Cattle	14	11.4

Prior to the 1970s, farmers had all kinds of sheep, mostly Karakul and Black Sheep. After the Karakul fur market collapsed due to animal anti-cruelty actions, most farmers changed to Dorper Sheep, which is still the most common sheep breed in the Mier area.

Cattle are mostly kept by commercial farmers (see table 41). Cattle numbers per farmer, however, are relatively low, as the highest number of cattle found per commercial farmer is forty.

Horses are used for transport. On commercial farms, the farmers use them to check fences and water points, thereby saving fuel and wear costs of pick-ups.

Donkey carts are common in the Mier area and are used by, and equally popular in, all four survey groups. They are usually used to fetch wood as well as for transport purposes, e.g. from village to village. There even is a household that offers taxi services with their donkey cart for the people of Klein Mier to Rietfontein and other places, and back.

Chickens are popular as their feeding requirements are far less than those of livestock, while their eggs and meat are valuable sources of protein.

6.9 Main Sources of Income

During the interviews, the people were asked to list their sources of income/livelihood strategies in order of importance. Table 43 presents the most important source(s) of income/livelihood strategies as indicated by the households.

Government allowances form by far the most important source of income. This stresses the lack of economic activity and the high rate of dependency in the Mier area.

Livestock farming is generally believed as being the most important economic activity in Mier. It rates, however, only as the fourth most important source of income in the area and is the dominant livelihood strategy for only 9.3% of all households. It is, therefore, wrong to assume that the people of Mier is a farming community.

Table 43. Dominant sources of income/livelihood strategies

Most important source of income	**No. of hh**	**% of hh**
Government allowance	87	42.4%
Permanent work	43	21.0%
Casual labour	32	15.6%
Livestock	19	9.3%
Migrants	11	5.4%
Private support	11	5.4%
Private sector allowance	2	1.0%
Total	205[1]	100%

[1] Some households have more than one dominant source of income

The lower importance of migrancy is not unusual. Ruben & Hebinck (1998) also found that in many communities local non-farm income proved to be far more important than remittances derived through migration. The reason is that only a limited part of the migrant's income is usually sent home (see appendix E).

6.10 Conclusion

Although the Mier community is usually seen as being agriculturally inclined, the results of this study revealed the opposite. The following stresses this point:

- None of the communal land users regard livestock farming as their main livelihood strategy, there is always another source(s) of income that is more important. There are only two livestock owners who are not commercial farmers who consider their livestock as their main livelihood strategy, but they keep their animals either outside Mier or on somebody else's commercial farm.
- The commercial farmer households (group D) comprise approximately 12-15% of all households in the area (Botha *et al.*, 1995). Only 71% of all commercial farmers interviewed, regard their livestock as their main source of income. The other 29% have other more important sources of income.
- Agriculture is the fourth dominant source of income in the area and only 9.3% of all households consider it as their most important livelihood strategy.

The decline in the importance of agriculture in the Mier area is no exception. Ruben & Hebinck (1998) refer to this tendency as *de-agrarianisation*, implying that there is a change in social identity, which is the result of shifts in occupation, as well as a diversification of income to non-agricultural rural activities. According to Leones & Feldman (1998) non-farm income in rural areas of developing countries is of cardinal importance, because most increases in rural income and employment are occurring outside agriculture.

Chapter 7

Vulnerability

7.1 Introduction

Vulnerability relates to the inability of a livelihood to cope with, and recover from, shocks and stresses (Scoones, 1998). It is negatively correlated to the sustainability of a livelihood as well as to assets and resources (natural, financial, social, etc.), because they act as buffers in times of crisis (Sporton, 1998). A higher diversity and number of resources implies a greater chance of overcoming a certain calamity. For example, if a prolonged drought should damage the natural resource base, but one of the household members has a permanent occupation with a monthly salary, the well-being of the household would not be at risk. Different types of shocks and stresses result in different responses, such as repartitioning, avoidance, resistance and tolerance (Scoones, 1998).

Vulnerability is, therefore, not a lack or a want, as is the case with income-poverty. It is constituted out of an external and an internal side. The external side refers to exposure, which implies the extent to which they can deal with external risks and shocks, without undermining the resource base. The internal side relates to defencelessness, i.e. a lack of means to cope without damage. There are many kinds of damage, e.g. becoming socially dependent, physically weaker, economically impoverished, humiliated, etc. (Chambers, 1995). According to Sporton (1998), defencelessness is also often due to inequalities in control over assets. Policy interventions and attempts should, therefore, redress the balance by supporting policies which empower the most vulnerable groups.

In order to obtain an idea of the vulnerability of the Mier area's households, they were questioned about their precautionary measures, if any; food shortage coping mechanisms; and how they overcome large unforeseen expenditures.

7.2 Precautionary Measures

There are numerous kinds of assurances and insurances available today. Whether a person/household buys a certain policy or not, depends on his/her preferences, priorities and income level. Moreover, preferences and priorities vary over time, while some persons/households are more willing to deal with risks than others, no matter what their income levels are. It does not, therefore, mean those households that have no formal assurances and/or insurances can not afford it, neither does it mean that they are not interested as they might be restricted by low income. One should, thus, be cautious to draw conclusions from households' involvement in precautionary measures.

Only two formal precautionary measures are available in the Mier area, i.e. funeral assurance and the savings facility at the Post Office. Others, such as life assurance, fire and theft insurance, etc. need to be contracted in Upington.

The households were asked if they took any formal precautionary measures. Sixty percent of the households have at least one form of formal precaution for different kinds of misfortune. Table 44 presents the precautionary measure types. The high overall involvement can be attributed mainly to a high membership number of funeral policies. Several other households, however, said that they were, or wanted to be members, but that they could not afford the monthly payment. Funeral society payments can be done locally.

Table 44. Precautionary measure types

Precautionary measure	**% of total hh[1]**
Funeral assurance	50.8%
Savings	17.9%
House insurance	4.5%
Life assurance	2.5%
Medical scheme	2.5%
Pension/Annuity	2.0%
Other	9.5%
No precaution	39.8%

[1]Total households = 201

The fact that group D scored the highest (see table 45), is probably because they have more possessions, such as cars and better houses, than most of the community, which several of them have insured. Group C has the highest number of elderly people. It can, therefore, be expected that they will have a higher membership percentage at the funeral society, as elderly persons are nearing the end of their lives.

Table 45. Households taking formal precautionary measures, per group

Group	Total No. of hh	% of hh taking precautionary measures per group
A	109	56.0%
B	46	54.4%
C	22	77.3%
D	24	75.0%
Total	201	60.2%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

Table 46 presents the households taking precautionary measures per village. Groot and Klein Mier have the smallest percentage of households taking precaution, possibly because several of these households relied on Attie Avenant as an informal precautionary measure against unforeseen events, such as death in the family (see section 4.5).

Table 46. Households taking precautionary measures, per village

Village	Total No. of hh per village	% of hh taking precautionary measures per village
Gr. & Kl. Mier	29	48.3%
Loubos	26	61.5%
Philandersbron	34	55.9%
Rietfontein	86	65.1%
Welkom	20	65.0%

The second largest precautionary measure, i.e. monetary savings, shows a remarkable difference between households with no or a few animals (group A and B) and those with many animals (group C and D) as can be seen from table 47. According to the participants of the community meetings, this difference is because animal owners "save" in their

livestock. Furthermore, due to the prevailing drought, many farmers needed to buy livestock feed, leaving them without money for saving investments.

Table 47. Households with monetary savings, per group

Group	No. of total hh	% of hh for each group
A	109	21.1%
B	46	19.6%
C	22	9.1%
D	24	8.3%
Total	201	17.9%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

7.3 Short Term Food Security Strategies

According to Mellor (1990), throughout the Third World, the poor spend between 50 and 80 percent of their income on food, making them very vulnerable to increases in food prices.

Households were asked: "What do you do if you run out of food and you have no money to buy new stocks?" This was done in order to obtain an idea of how they handle these kinds of shocks, as one of the most fundamental motivations for a sustainable livelihood is to ensure constant food security.

Table 48 presents the average frequency of food shortages experienced by households. Most households face food shortage once a month. Shortages are normally during the days prior to payday. This might be an indication of poor financial planning, but the fact that there are so many low-income households, however, indicates that it is more than just that. It is notable, however, that the idea behind the question is not to give a clear measure of food shortage in Mier area, but it is rather part of a discussion on how and how often they deal with this problem. It is still interesting to compare the groups and villages with each other in this regard.

Table 48. Frequency of food shortage

Times per year	% of total hh[1]
12x	57.7%
Seldom happens	17.4%
24x	12.9%

[1]Total households = 201

The commercial farmers contain the highest percentage of households which seldom suffer a lack of food (see table 49). This strongly indicates that they are, on average, better off than the other groups with respect to food security. Group B and C contain the greatest number of households that experience food shortage difficulties. Group B has the smallest percentage of households which seldomly run out of food, and scored the second highest percentage for households which experienced difficulties once a month, while group C has the highest percentage of household with food shortages once a month.

Table 49. Main food shortage frequencies, per group

Group	Total No. of hh per group	12x p.a.	24x p.a.	Seldom happens
		% of households per group		
A	109	55.1%	14.8%	17.3%
B	46	67.4%	13.0%	6.5%
C	22	72.7%	9.1%	18.2%
D	24	37.5%	8.3%	37.5%
Total	201	57.7%	12.4%	17.4%

Group A = households owning no livestock; Group B = households with livestock numbers of 10 and less; Group C = households with livestock numbers more than 10; and Group D = commercial Mier farmers.

The food shortage frequencies per village are presented in table 50. The households of Philandersbron struggle the most to maintain food sufficiency. They have the highest percentage of households that deal with food deficits once a month and very few households seldom experience problems in this regard.

Table 50. Main food shortage frequencies, per village

Village	Total No. of hh per village	12x p.a.	24x p.a.	Seldom happens
		% of households per village		
Gr. & Kl. Mier	29	51.7%	17.2%	13.8%
Loubos	26	53.9%	15.4%	15.4%
Philandersbron	34	73.5%	14.7%	2.9%
Rietfontein	86	57.0%	11.6%	22.1%
Welkom	20	55.0%	10.0%	15.0%

Strategies that are used to overcome a lack of food and money are presented in table 51. The most common one is to run up debt. Most households make use of the shop account facility if they ran out of food. The result is that various households are living one month behind, i.e. when they receive their payment (e.g. government allowances) almost all their money is directly used to repay their shop account. Soon afterwards they run out of money, starting a new account.

Table 51. Strategies to overcome food shortages

Strategy	% of total hh[1]
Use shop account	63.7%
Ask family and/or friends for help	25.4%
Sell something	3.5%
Remain hungry	3.0%
Never happens	1.5%
Other	3.0%
Total	100%

[1]Total households = 201

The shop account repayments of several of those who will ask for assistance from friends and family are so far behind that the shop keeper does not allow more credit. In total, 25.4% of the households rely on friends and family if they run out of food. Some do so because they do not want to get caught in the "one month behind" trap. Indications are strong, however, that assistance from relatives is much higher than just over 25%. Borrowing and lending of foodstuff is a common phenomenon (see section 4.5). It is not only done when food stocks are totally depleted, but also as a form of consumption-smoothing.

Sixty-one percent of the households change their diets in times when food and money are scarce, mostly to starch or, for those whose diets already mainly consist of starch, to inferior starch, e.g. from bread to stampmealies, etc. Thirty-six percent of the households seldom change their diets. It is known of at least 8% of all households that their diets are so inferior that they can hardly change to something more inferior during more difficult times, in other words, even bread is a luxury for them.

At least 23% of the households maintain a stable superior diet of meat, starch and vegetables, the latter depending on availability. A third of these households (32.61%) are from group D, while the rest are mostly households containing a member employed in the formal sector, such as a teachers, nurse, etc.

7.4 Large Unexpected Crisis

The respondents were asked what they would do if a large, unforeseen calamity struck them, such as a fire burning down half of their dwelling. The results are presented in table 52. Although different types of shocks and stresses result in different types of responses, this question might lead to some insight in the ability of households to overcome such events. The different villages show no remarkable differences in this regard.

Most households will ask family and friends for assistance, including money, labour, foodstuff, housing, etc. It is also clear from conversations with local people that if a crisis strikes a needy household, fellow community members help as far as they can, even if it is with just some foodstuff. Some people feel that in such times, political convictions are overseen, while others believe that political differences are harming this safety net.

Table 52. Strategies to overcome an unexpected crisis

Strategy	% of total hh
Ask family +/ friends for help	47.3%
Borrow money:	22.9%
▪ from bank	13.9%
▪ from any lender available	6.0%
▪ from employer	3.0%
Sell livestock	8.0%
Use savings	7.0%
Ask church for help	5.0%
Sell belongings	4.0%
Policy will pay	2.5%
Other	2.0%
Household don't know	1.5%

[1]Total households = 201

Table 53. The main strategies to overcome an unexpected crisis, per group

Group	Tot. No. of hh per group	Solution	% of hh per group
A	109	Family+/friends	53.2%
		Borrow money	27.5%
B	46	Family+/friends	54.4%
		Borrow money	10.9%
C	22	Family+/friends	45.5%
		Borrow money	18.2%
D	24	Sell livestock	54.2%
		Sell something	12.5%
		Borrow money	12.5%

Group A = households owning no livestock;
Group B = households with livestock numbers of 10 and less;
Group C = households with livestock numbers more than 10; and
Group D = commercial Mier farmers.

Assistance from friends and family is the main solution for group A, B and C (see table 53), but it is much less remarkable in group D. It indicates that the commercial farmers are much less socially dependent.

Twenty-three percent of the households will borrow money to overcome a tragedy. They, as well as those who would borrow money from friends and family, were asked how they plan to repay their debt afterwards. The answer categories are presented in table 54. Most

will rely on their greatest asset: their bodies, by doing extra work, i.e. 41.8% of all households (casual labour + extra work for employer). Nineteen percent will repay their debts from their usual income. It is, however, sometimes doubted if the household concerned will be able to do so, as they already struggle to make ends meet.

Table 54. Repayment strategies for debt caused by an unexpected expenditure

Strategy	**% of total hh[1]**
Do extra casual labour	39.8%
Repay with installments from usual income	18.9%
Negotiate with lender over repayment terms	14.9%
Friends +/family do not need to be repaid	8.0%
Sell livestock	3.0%
Do extra work for employer	2.0%
Don't know	2.0%
Family +/ friends must help	0.5%
Will work outside Mier	0.5%

[1]Total households = 201 households

Negotiating with the lender about repayment terms (14.93% of all households) does not only refer to money, but also repayment by means of labour. For example, Attie Avenant let some people do jobs for him if it became clear after some time that they were unable to repay him. This would probably be the same case with other informal lenders.

Eight percent of the households do not think it is necessary to repay friends and family. They argue that it is their duty to help, while others believe that their friends and/or family will understand that they can not repay.

Six animal owners (five from group D and one from group C) prefer to make debt first and to repay later, by selling animals. This allows them to bargain for a better price by waiting until the market is more favourable, or when their animals are in better condition, rather than to sell directly when money is needed. Moreover, 13 of the commercial farmers will sell livestock as soon as possible after the crises, implying that at least 75.0% ((13+5)/24 × 100%) of the commercial farmers use their livestock as security.

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It is interesting to see how [illegible] esource base. For example, only 4.4% and 4.6% of group B and C, respectively, will sell their livestock if a crisis sets in. In light of the fact that animals are often perceived as the main form of security in developing communities, this might seem surprising. By further questioning, however, it became clear that these people would sell their livestock only as the very last option after all other attempts have failed. As some explicitly said: "If I sell my livestock, I have nothing". Most commercial farmers also said: "I will sell *some* of my livestock", in other words, they will not give up their entire animal resource base.

According to Chambers (1995), it is common to find that people, especially poor people, will apply all kinds of strategies in order to preserve their resources or assets, even to the their own disadvantage in the short term. It is, therefore, wrong to assume that poor people normally take a short-term view.

Moreover, 17.9% of all participating households indicated that they have monetary savings (see table 44). Only 7% of all households, however, indicated that they would use their savings if an unforeseen expenditure arises.

7.5 Pooling Resources

Household clustering is a commonly used strategy in the Mier area to overcome vulnerability, especially in households where unemployment figures and income uncertainty are high. This strategy was not directly investigated, but it became evident through the course of the survey. The following are a few examples:

- Some families take their elderly parent(s)/grandparent(s) in to look after them, while their pension(s) are made available for household consumption. Household members of economically active age are usually still involved in casual labour, but the household is hereby assured of a reliable monthly income;

- Single parents also tend to move in with family, whereby there is usually someone at home to look after their children, enabling them to work outside the house, while their income goes to the benefit of the entire household;
- In many households, adult children do not leave home after school or they return to their parental home if they are unemployed. Some households consist of brothers and sisters only. Each household member contributes to the total household income as each of them earn money. If there are more household members, the chance is better that there will be someone who earns an income or who could organise food. The main breadwinner(s), therefore, vary from time to time.

Some households do not cluster in the sense that they live under one roof, but they eat together, food being provided by either or both of them, depending on each household's ability.

7.6 Sources of Income

The sources of income, as well as the diversity of sources of income, play an important role in ameliorating vulnerability. Different kinds of income have different levels of risk related to them, e.g. the risk of farming is, amongst others, highly related to climatic conditions; the risk of old age pensions is highly related to the health of the pensioner, etc. Other income sources, such as unschooled casual labour, are inherently unstable, as demand for casual labourers is generally very limited relative to the supply, making it a very risky business.

An important function of diversification, besides income generation, is to reduce vulnerability (May, 1996). The greater the diversity of income sources, the better the chance that some income sources will endure if the others fail, especially if all sources are subjected to a high risk factor. Some occupations have such a small risk related to them, that it reduces the necessity to diversify. For instance, due to the remoteness of the Mier area it is not always easy to find high school teachers and pastors to work in the area.

These persons can be relatively sure that they will not easily lose their jobs, as long as the demand for them remains high. Due to the low risk of these professions, the households concerned, could not be regarded as being very vulnerable because they rely on only one source of income.

Twenty-four percent of all households receive their income from unreliable income sources only, such as casual labour and migrancy, supplemented by support from friends and family. Most casual jobs are temporary in nature and are usually not well paid, while the percentage of the income, earned by migrants, available for household consumption is usually low.

Tragedy in one family sometimes has a chain reaction. Elisabeth had a full-time domestic job in a household of which the income came from two pensioners. One pensioner died, whereby the household's income was divided in half. This made Elizabeth's services unaffordable, leaving her without income.

Twenty percent of the households live from government allowances only. Just over half of these households (11.4%) have only one member who receive an allowance, while the rest (8.5%) receive more than one, e.g. two pensioners, or a pensioner and children qualifying for government assistance. Although government allowances are a stable monthly income, it does not imply that households dependent on them alone are not vulnerable. They are, in fact, at the most, medium-term income securities as elderly people are near the end of their lives, while small children grow up, and as soon as they turn seven, their parents/guardians no longer qualify for government assistance. An allowance is intended to provide a basic livelihood for one elderly or disabled person, or to assist parents in the health and feeding costs of a young child and not to sustain a household. Households dependent on one government allowance are, therefore, very vulnerable.

Moreover, pensioners are very vulnerable to the demands and pressure of relatives and neighbours. The elderly are usually unable to distance themselves, or to protect their

pensions, from the demands of others. They are a clearly identifiable group and the people in the village know who receive pensions, how much they receive and when they receive it (Breslin *et al.*, 1997).

Forty-two percent of the commercial farmers (group D) have their livestock as their only source of income. These households are very vulnerable to adverse ecological and climatic conditions as well as policies regarding the farming sector of the Mier area. The other 58% have other sources of income as well. For example, some farmers, or their wives, are teachers, some also have another business and several receive government pensions. Many said that during times of drought, no profits are made from their farming businesses. Money that is received from animal sales has to be directly ploughed back into the farms, such as buying livestock feed and other nutrition supplements. It can be assumed that those commercial farmers without any other sources of income, experienced severe hardship during the drought of 1998 and 1999, despite having a relatively large animal resource base in comparison with most of the community.

No farmers from group C or B are dependent on their livestock only, emphasising that access to private land is necessary if one wants to make a living from farming in the Mier area.

7.7 Conclusion

Most households in the Mier area rely strongly on kinship networks to overcome their vulnerability. The most vulnerable households include mainly those who are dependent on unreliable sources of income only (24%) and government allowances only (20%). Although commercial farmers are generally better off and less dependent on kinship networks than most of the community, those who derive their livelihoods from farming alone are very vulnerable. This is especially the case in light of the area's harsh agro-ecological conditions and because the farms are not of economically viable size.

Chapter 8

Summary and Conclusions

8.1 Overall Summary and Conclusions

This study aims to identify the livelihood strategies of the Mier community in the dynamic sphere of conditions and trends, livelihood resources as well as institutional and organisational structures.

The main socio-economic results are as follows:

- Forty-two percent of the total economically active age (EAA) group is unemployed, with the highest rate under EAA persons younger than 30, i.e. 58%.
- Households diversify in one or more of the following livelihood sustaining activities: (i) government allowances (50%); (ii) casual labour (49%); (iii) livestock agriculture (46%); (iv) permanent work (28%); (v) migrancy (33%); (vi) fruit/vegetable/pasture production for own consumption (28%); (vii) support through private transfers (21%); and (viii) small scale trading activities (11%).
- The main sources of income are government allowances for 43% of all households, permanent work for 21%, casual labour for 16% and livestock for only 10% of all households.

Being part of the semi-arid, southern Kalahari, the Mier area has a complex and sensitive ecosystem, with a low carrying capacity. Factors, such as population growth, uneconomical farm units and restricted communal areas, have resulted in serious degradation of the natural resource base. Due to its strong agricultural history, the Mier community is generally still perceived as being agriculturally inclined. Development and assistance initiatives, therefore, mostly focus on the natural resource base. The high

unemployment rate together with the high reliance on government allowances indicate, however, that the Mier area has a very unsound economic base.

The image of the Mier community as being a farming community should change to a community looking urgently for alternative livelihood opportunities. Apart from the limited capacity of the natural resource base, a reliance on agriculture alone makes the community very vulnerable to erratic climatic conditions.

Generally speaking, the government of today, as well as other aid organisation, should take care not to see the provision of additional land as a "quick-fix" method to injustices of the past. Evidence from this study has shown that rural communities do not necessarily see their future in agriculture, even though they have been totally dependent on agriculture in the past. The Mier community is one such a community of which the majority has undergone an evolutionary process, which has changed their attitudes to agriculture.

- Fifty-four percent of the community do not own livestock.
- Although land hunger exists, there is a clear decline in interest in farming. Only 39% of the adults who are not involved in agriculture full time, are very interested in farming, 19% are fairly interested and 42% are not interested. More significantly, only 4% of the grade 10-12 pupils are very interested, 42% fairly interested and 54% not interested in agriculture.
- Land hunger is not necessarily the result of a wish to farm, but is also due to a lack of alternative livelihoods. The latter implies that the "fairly interested" group mentioned above is forced into agricultural pursuits, placing more pressure on the limited resource base.
- None of the communal farmers regard their livestock as their main livelihood strategy. For them, livestock mainly play a supplementary role by supplying milk and sometimes meat.
- For every 55 persons who perceive a lack of land as the major problem of the Mier area, 100 persons regard the lack of employment opportunities as the major problem.

The role of agriculture in the future will, to a great extent, depend on how the current situation is handled by the government (local and provincial) and other development organisations. If support and aid keep focussing on the agricultural sector, there will remain a substantial proportion of the community arguing that the only prospect to make a living lies in the agricultural sector. With every new agricultural intervention, such as the acquisition of new land, speculations of a different land tenure system, etc. will motivate people not to give up their hopes about agriculture, thereby increasing the pressure on the natural resource base. If, however, additional livelihood opportunities are created, many people, especially those of the "fairly interested" group, will divert their expectations to these opportunities. Competition for land will reduce, whereby those who are really interested in farming and keeping livestock will stand a better chance to maintain a sustainable natural resource base.

It is important that the different government departments and other organisations active in the area communicate with each other on a regular base, in order to prioritise funding to the area, to co-ordinate activities and to assure a holistic approach

It is suggested that, in the light of the limitations of the Mier area, solution-thinking should not be in the direction of creating a single large industry, but rather on a wide range of smaller livelihood opportunities that are based on the different forms of livelihood capital. This will be more feasible and will reduce the vulnerability of the community as a whole. It will also give households the opportunity to diversify and thereby reduce their vulnerability.

There is definitive great potential for creation of more livelihood opportunities through eco-tourism. Such activities that are already existing in the area have proven to be very successful. Adventurous holidays are very popular nowadays and Mier has certainly great possibilities in this regard. There is also great scope for diversification within eco-tourism as the opportunities within this sector are multifold. The community should, however, be made aware of the possibilities in this regard, while marketing of the area and training on the various levels of eco-tourism should also be promoted.

Moreover, creation of livelihood opportunities should be wider than the creation of income-earning opportunities alone, but should aim to improve any aspect related to the well-being and quality of life, i.e. by preserving existing, and by creating new, safety nets for the poor; a fair distribution of livelihood resources; preserving existing resources, etc.

The community's social fibre, i.e. social capital, is one of the most important factors that contribute to the existence of the community. It should not be neglected as mutual trust and understanding could form the foundation of various livelihood-supporting initiatives. Currently it is especially political friction that poses a great threat to this precious asset.

8.2 A Profile of Each Group and Village

The following provides a brief discussion of each group and village. It focuses mostly on those aspects where the group or village concerned differs remarkably from the other groups/villages or if it deviates far from the average. Keep in mind that all findings discussed below are based on the sample group and are, therefore, estimations.

8.2.1 The Groups

8.2.1.1 Group A - Households Owning no Livestock

Households owning no livestock comprise 62% of all households that are not commercial farmers and 54% of the total community. This group is the most heterogeneous group of all, as it embraces both some households from the highest income classes, such as teachers and pastors, as well as some of the poorest households which, interested or not, cannot afford livestock. It has the highest unemployment rate for all groups, i.e. 47% of the EAA group, against an average of 42%. The most important sources of income are presented in figure 14.

Agricultural aid will have very little, if any, effect on group A. There is, however, no easy solution for the poorest segment of this group. It is important that more attention should be drawn to, and that more discussion about, these people and their situation should take place as they easily pass unnoticed, especially for outsiders (government and other aid organisations). Literature of the past concerning Mier give little attention to them and improvement in livelihood opportunities remain focussing mainly on the natural resource base (which is currently mostly associated with agriculture). It is hoped that this document would improve this situation.

Priority should be given to the poorest households when employment opportunities become available, e.g. in the case of public works. It is believed that this is already the case, but that political convictions are sometimes enjoying higher priority.

This group is less involved in crop production (i.e. fruit and vegetables for own use) than any other group, i.e. 23% of the households, while the average of all households interviewed is 28%. This is probably due to a combination of the following two reasons: (i) The poorest households in this group cannot afford water to irrigate crops (as they could also not afford livestock), and (ii) a large part of this group is not interested in agriculture related practises.

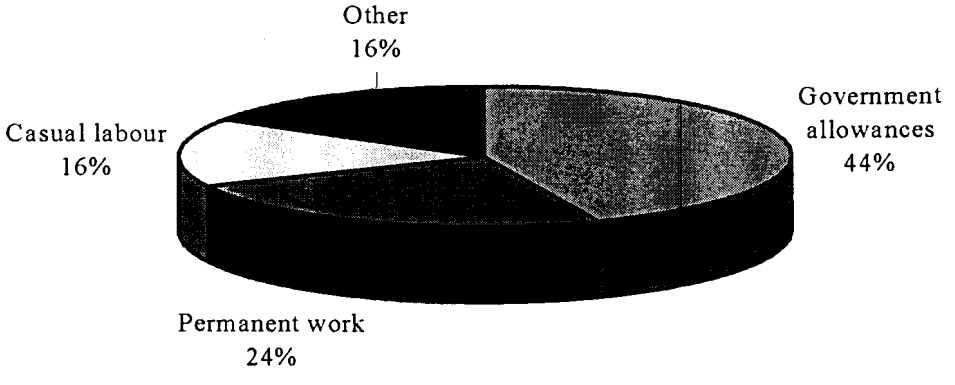

Figure 14. Main sources of income of households in group A

This group has the highest percentage of households that have no opinion regarding the commercial farm system, i.e. 36%, compared to the average of 29%. This may be a reflection of the limited impact that this system has on most of the members of group A. Either they are not interested in farming, or leasing a farm is totally beyond their means. This is confirmed by their attitude towards land issues. Only 23% of group A referred to land issues when their opinions were asked about the commercial farm system, while the average is 31% for all households interviewed.

Regarding opinions about the game ranch system, this group again has the highest number of no comments, i.e. 51% versus an average of 42%. During the interviews, many of these "no comment" respondents reasoned their answer by saying that they had never been there and they had no idea what is going on there.

8.2.1.2 Group B - Households Owning Less Than 10 Animals

The main sources of income of group B are presented in figure 15. Note that none of them regard their livestock as their main livelihood strategy. It is important that it become a known fact that agricultural aid will have little effect on the livelihoods of these people. Their livestock do not reduce their vulnerability or dependency rates as livestock is mainly used for own use through milk and sometimes meat. As group A, they would benefit more from livelihood creation other than agricultural aid.

Generally speaking, this group as a whole seems to be the most vulnerable, i.e. besides the poorest households of group A. Owning less than ten animals implies that their livestock is not a huge asset to fall back on in difficult times. Moreover, these households have a high dependency on temporary income and only a few persons have permanent work.

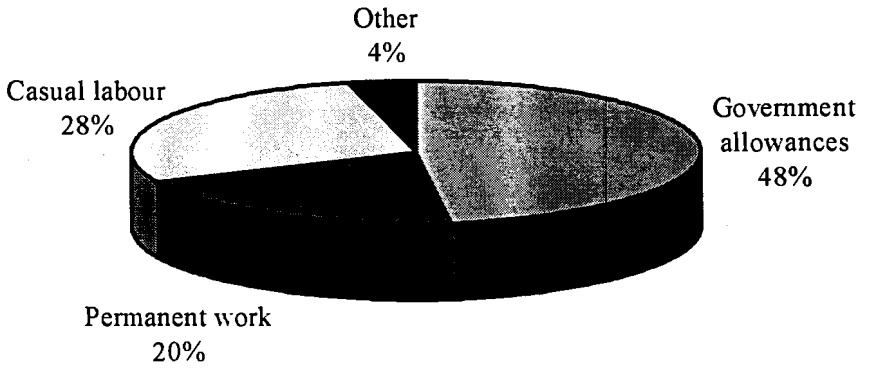

Figure 15. Main sources of income of households in group B

It has the lowest percentage of people with permanent work, i.e. 11%, (average is 15%) and the highest percentage of casual labourers, i.e. 44% (average is 31%). Interesting to note, persons from the EAA group from this group seem to be remarkably more involved in casual farm work than group C, i.e. 7% versus 2%, with an overall average of 5%.

Only seventeen percent of this group's households employ people from time to time, being the lowest of all groups. The average was 32%.

The members of this group do not appear to be very positive about the future of the Mier area, as only 9% of the households perceive the future of Mier as positive, while the average percentage of optimistic households is 31%.

Thirty-nine percent of all households interviewed argue that the management of communal land should improve. From group B, only 30% have this opinion. Interestingly, group B contains most users of the communal land, but also has the highest number of households that seem not to have an opinion regarding the communal land system. Twenty-six percent of group B have "no comment", whereas the average is 23%. A possible explanation may be the following: On the one hand, they know that the communal land is almost exhausted,

making it a sensitive point. They may fear to admit this, because this could enhance animal number restrictions or other regulatory changes that will be to their own disadvantage. On the other hand, many may find it hard to make positive comments due to the degraded condition of this resource. Nevertheless, this group still has the highest percentage of households with positive remarks regarding the communal land (i.e. 20% versus an average of 15%), as well as for the prevailing commercial farm system (i.e. 21% versus an average of 17%).

8.2.1.3 Group C - Households Owning 10 Animals or More

It is believed that this group will benefit from agricultural aid. They, together with the commercial farmers, constitute, however, only 23% of the community and most of them do not form part of the most needy segment of the community.

On the one hand, group C seems to be better off than groups A and B, as for several sources of income it contains the highest percentage of households, while on the other hand, it has the highest percentage for some unfavourable indicators.

This group has the highest number of permanently employed people of the EAA group, i.e. 17%, although only slightly ahead of group A with 16%. The average percentage of permanently employed persons is 15%. It might be due to this stabile, generally higher income than most other households that these households could afford relatively high numbers of livestock. It also has, however, the highest percentage of households that run out of food each month, i.e. 73% versus an average of 58%.

The highest percentage of migrants as well government allowances are also found in this group. Twenty-three percent of the EAA group migrated for employment reasons during the two years prior to when the interviews were held, versus an average of 18% of all persons of economically active age. Twenty-two percent of *all* persons in the group receive a government allowance, whereas the average is 15%. This could be partially

attributed to the high percentage of elderly (people who are 60 years and older) in this group, i.e. 12.7%, versus the sample group average of 8.3%.

This group, therefore, also has the highest percentage of households that regard government allowances as their main source of income, i.e. 64%, against an average of 43%. The main sources of income are presented in figure 16.

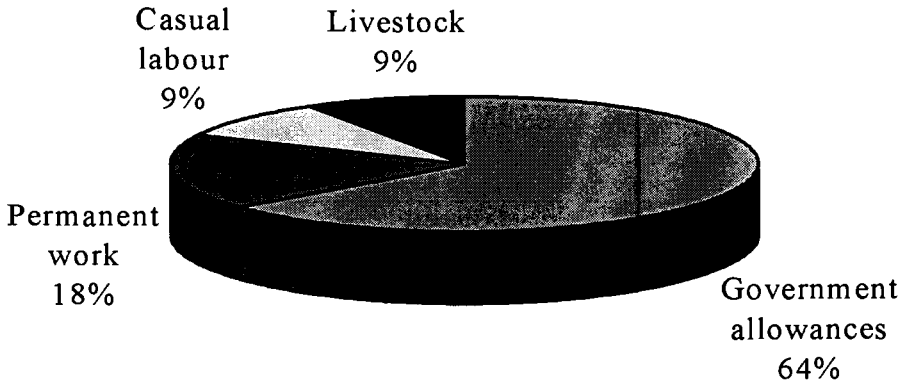

Figure 16. Main income sources of households in group C

If the commercial farmers (group D) are excluded, this group has the highest percentage of households that employ people from time to time, i.e. 41% of the households versus an average of 32% of all households. Seventy-seven percent of all tasks for which group C households employ people, is for household work, which may be seen as a luxury or a charitable action.

It also has the highest number of households that take formal precaution, i.e. 77%, while the average is 60%. Funeral assurance comprises by far the greater part, which can again be ascribed to the high percentage of elderly people. Seventy-three percent of households in this group have funeral assurance versus an average of 51% for all households.

The savings rate of this group is, however, below average (9% versus an average of 18% for all households). During the community meetings some of the attendants explained that

these people "save in their livestock" and that, in light of the prevailing drought, many of them needed to buy animal feed. The latter is a considerable expense, which made it difficult to save. All surplus money was, therefore, invested in livestock.

It was not surprising to find that group C has the highest percentage of households that argue that the communal land is too small, i.e. 23%, while the average is 14%.

8.2.1.4 Group D - Commercial Farmers

Despite their own problematic issues regarding land tenure, farm sizes, the prevailing drought, remoteness from markets, etc., commercial farmers appear to be much better off than the rest of the Mier community. The main sources of income of commercial farmers are presented in figure 17.

It does not appear as if their relatively well-being significantly improve the situation of the rest of community, except for supplying meat to those who can afford it, providing occasional casual labour for a limited number of people and being someone to turn to for some households that run into trouble. Most of their income flow out of the area as service provision in the area is limited. If, in some way, local service provision to commercial farmers could improve, both the commercial farmer and the community will benefit from it as it will strengthen the local economy and farmers could do their business locally.

This group contains the lowest percentage of migrants (11% versus an average of 18% of the EAA group) and casual labourers (9% versus an average of 31% of the EAA group). It seems as if members of commercial farm households do not work as casual farm workers in Mier. The lowest percentage of people receiving a government allowance per total group population is also found here, i.e. 8% versus an average of 15%. Only 23% of the EAA group are unemployed, in comparison to the average of 42%.

Seventy-nine percent of the households employ people occasionally or permanently, while the average number of employers in the sample group is 32%. Ninety-five percent of all jobs comprise of farm work.

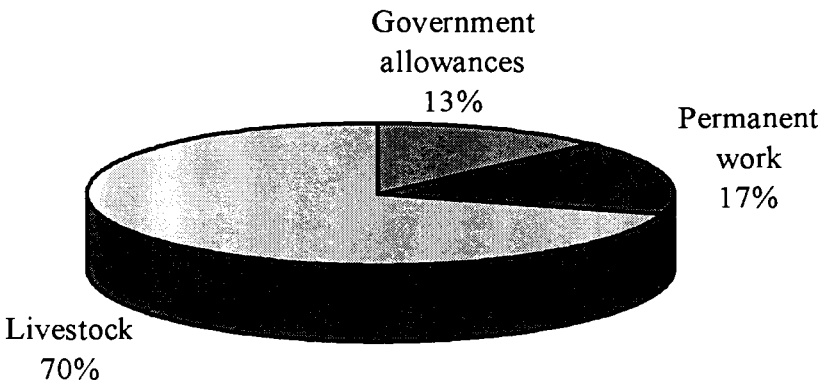

Figure 17. Main sources of income of households in group D

Seventy-five percent of the households in this group take formal precautionary measures, against an average of 60%. Nevertheless, this group's savings rate is the lowest for all groups, i.e. 8% versus an average of 18%. As in group C, commercial farmers appear also to "save" in their livestock.

While on average 53% of households from group A, B and C will turn to friends and family for help if a huge unforeseen expenditure shows up, only 8% of group D will do so. Fifty-four percent will sell some livestock, 13% will turn to the bank and another 13% will sell something (these respondents did not specify what, thus, it might also be livestock). Thirty-eight percent of this group's households never or seldom run out of food, in contrast to an average of 17% for all households interviewed.

The highest percentage of explicitly pessimistic households regarding the future of the Mier area is in this group, i.e. 33% versus an average of 21%. This pessimism is most

probably due to the prevailing drought and the uncertainty regarding land issues. This is confirmed by their opinions concerning the prospects of the farming industry in Mier. According to 75% (against an average of 54%) of the commercial farm households, it depends on whether there will be an increase in rainfall, while 29% said it depends on land issues (against an average of 14%).

Commercial farm households are more aware of the employment opportunities that they make available to the community, than the community itself. Twenty-nine percent of group D households regard employment as one of the greatest contributions that commercial farmers make to the community, while on average only 13% of non-commercial farm households have this opinion.

Land issues seem to be much more important to commercial farmers than to the rest of the community. The respondents were asked what they thought of the prevailing commercial farm system. Sixty-seven percent of the group D households referred to land issues in some way, while only 33% of all households interviewed referred to this issue.

Group D has the highest percentage of households that have positive remarks regarding the game ranch system, i.e. 67% versus an average of 34%. Commercial farmers are most probably better informed about the game ranches than the rest of the community due to their contact with extension officers, the farmers union and because many are closer situated to the game ranches.

8.2.2 The Villages

8.2.2.1 Groot and Klein Mier

Groot and Klein Mier are situated close to each other and are the two smallest villages of the Mier area (excluding the few hamlets). In both villages, and especially in Groot Mier, houses are widely scattered. It is only recently that a tar road has been extended to Groot Mier. This road was still under construction during the period when interviews were held.

Both these villages have a primary school, a nursery school and shops selling mainly groceries. Only Klein Mier has a clinic of which the residents of Groot Mier also make use.

These two villages do not have official communal land. Commercial farmers excluded, however, they have the highest number of animal owners, i.e. 55% while the average is 38% of all households which are not commercial farmers. New land adjacent to the two villages will be made available as communal land in the future (Mouton, 1999). Twenty-one percent of the households are positive about a communal land system, which is much higher than the average of 15% for the whole area.

Being located adjacent to several commercial farms, it is not surprising to find that these two villages have the highest percentage of EAA persons who are involved in casual farm work, i.e. 11%, while the average is 5%. They have the lowest percentage of migrants, i.e. 12% versus the average of 31%.

Figure 18 represents the main sources of income in these two villages. The high importance of livestock in these villages can, to a great extent, be ascribe to the high number of commercial farmers living in these villages.

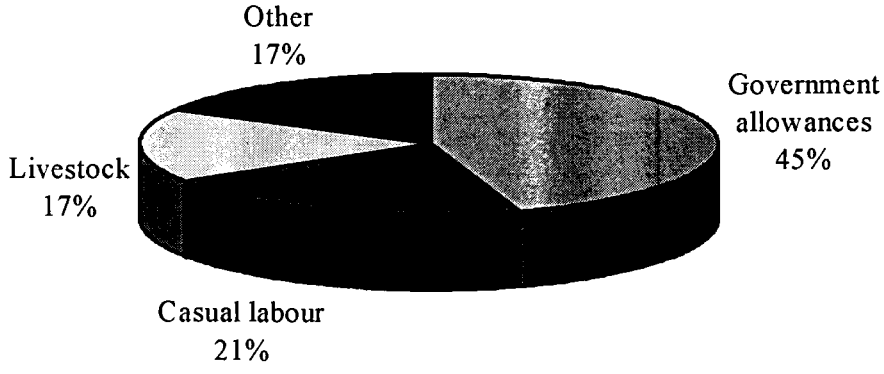

Figure 18. Main sources of income of households in Groot & Klein Mier

Both villages struggle with sand-bearing winds, saline water and extremely inferior sandy soils. These were the reasons given during the community meetings for the low use of crop production (fruits and vegetables for own use). Only 7% of the households plant something for own consumption, whereas the average of the Mier area is 28%.

8.2.2.2 Loubos

It has a primary school, nursery school and a few shops selling mostly groceries. What is distinct about this village is that it has livestock auction facilities, where auctions are held on a bimonthly base. These auctions attract farmers from the greater Gordonia district. The facilities include a community hall and camps where animals could be held and loaded. It does not have a clinic, however, and the residents have to make use of the clinic in Rietfontein, 15 km from Loubos. Figure 19 presents its main sources of income.

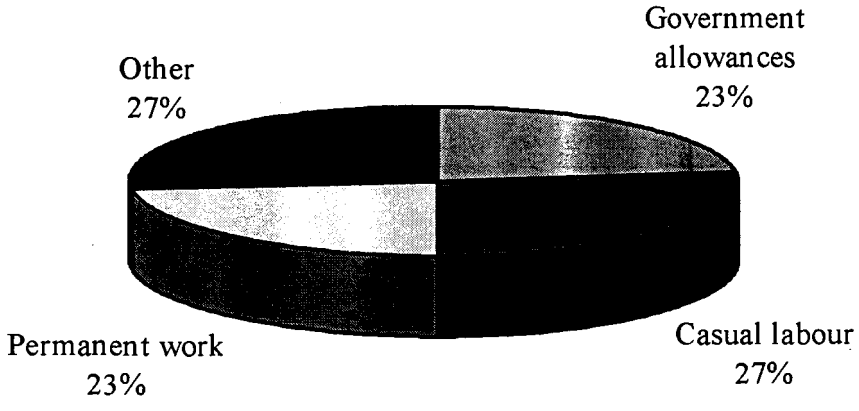

Figure 19. Main sources of income of the households in Loubos

It is partially surrounded by communal land. According to Brink (1999), however, the communal land available to the community is very limited. Loubos has the lowest number of livestock owners, commercial farmers excluded, i.e. 29%, whereas the average is 38%.

Households owning more than ten livestock animals seem to be very limited in this village as no members of group C are found in the sample group.

It has a high percentage of casual labourers, i.e. 47% versus an average of 31% of the EAA group, while the lowest number of government allowance receivers is found here, i.e. 6% of all persons versus an average of 15%. Thirty-nine percent of the households employ other people for various periods of time, i.e. 39% versus an average of 32%, which is the highest of all villages.

8.2.2.3 Philandersbron

Philandersbron has the following assets: a primary school, a nursery school, a clinic and a few shops, selling mostly groceries. At first sight, this village seems very neat and well maintained. According to the results of this study, however, it appears to be left behind in comparison to the other villages. A community leader confirmed this by saying that "Philandersbron has always been the mongoose of the area". The main sources of income can be seen in figure 20.

It has, for example, by far the highest unemployment rate, i.e. 57% of the EAA group, whereas the mean is 42%. Only 4% of the EAA group is permanently employed, the lowest of all villages, while the average is 15%. It also has the lowest percentage of households that employ other people, i.e. 15%, while the average is 32%.

Twenty-five percent of the EAA group migrated out of the area for employment reasons during the two years prior to the survey, versus an average of 18%. It indicates that the hardship of unemployment forces these persons to leave the area temporarily.

Seventy-four percent of the households experience food shortages every month, which is the highest percentage of all villages. On average, 57% of all households interviewed experience this.

During the community meeting in Philandersbron some people argued that they are disadvantaged, because there is only one commercial farmer in Philandersbron, while all the other villages have several commercial farmers. Most commercial farmers are seen as influential people who can do much for the well-being of a village.

Thanks to the investment from the El Nino Fund, this village does not have major water problems. It, together with Rietfontein, has the highest percentage of households that grow vegetables and fruit for own use, i.e. 38% versus an average of 28 %.

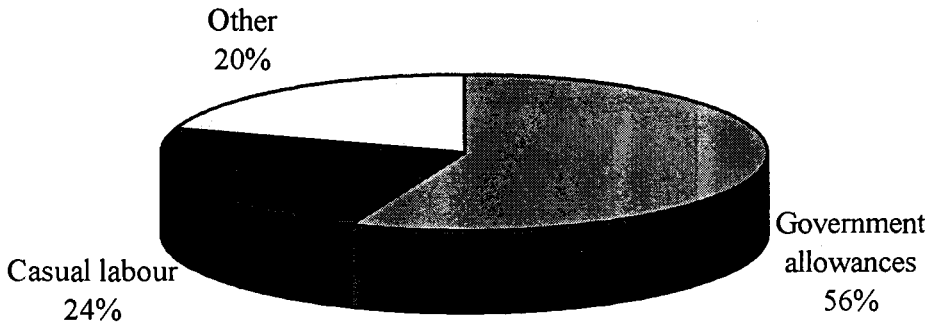

Figure 20. Main sources of income of households in Philandersbron

8.2.2.4 Rietfontein

Rietfontein is the main village of the Mier area, hence it has more businesses and facilities than any other village in the area. These include the council offices, a full time operating clinic, the police station, a post office, a high school, sport facilities (including a rugby and athletics field), a community hall, a co-operative, a butchery, and the area's sanitation and road work headquarters. As with other villages, it also has a primary school, nursery schools and a few shops, selling mostly groceries. The largest unit of communal land is also found adjacent to Rietfontein. The main sources of income of households in Rietfontein are presented in figure 21.

It is, therefore, not strange that Rietfontein has the most permanent employers, i.e. 23% versus an average of 15%. The unemployment figure is, however, just slightly beneath the average, i.e. 41% of the EAA group versus the average of 42%.

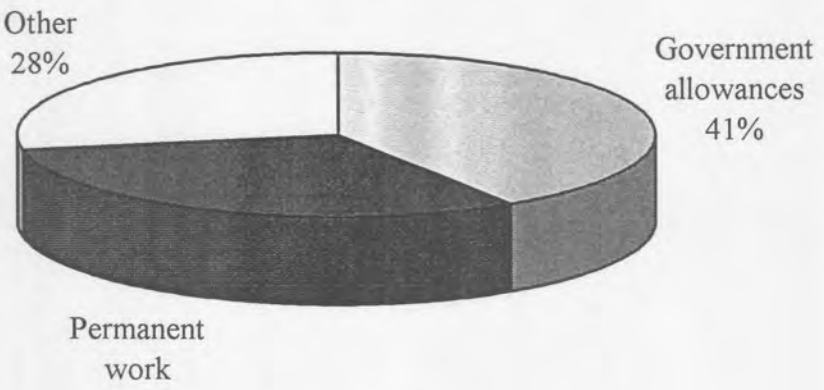

Figure 21. Main sources of income of households in Rietfontein

The percentage of casual labourers, i.e. 21% of the EAA group, is well beneath the average of 34%. Likewise, casual farm workers are also the lowest of all villages, i.e. 2% versus 5%. No reason is found for this.

Dependency ratios seem high as the highest percentage of persons receiving a government allowance as well as the highest percentage of households receiving financial support are found here. Eighteen percent of all this group's persons receive government allowances, whereas the average is 15% of all persons. Thirty percent of the households receive financial support from friends and family (at varying frequencies), versus an average of 21% for all households.

Settlement in the Mier area was mainly due to the fresh water well in Rietfontein. Although it is shrinking, this village does not struggle with water problems such as Welkom as well as Groot and Klein Mier. It, therefore, has the highest percentage of households that grow fruit and vegetables for own use, i.e. 38% versus an average of 28%.

This village has the highest percentage of households which complain about a lack of management concerning the communal land, i.e. 48%, while the average is 39% for all households. Also, it has the highest percentage of households that feel the communal land is too small, i.e. 24% versus an average of 10%. It is notable that many households of villages with communal land have complaints about the system, while villages without communal land are very optimistic, hoping that communal land would be made available to them. It is not, however, that the former prefer to be without communal land, they are just frustrated with the lack of pasture.

8.2.2.5 Welkom

This village has a primary school, a nursery school, a clinic and some shops selling mostly groceries. The main sources of income are presented in figure 22. It has the lowest unemployment rate, i.e. 35% versus an average of 42%.

The advantage of being situated next to the main road leading to Kalahari Gemsbok Park, seems to be under-utilised. No curious or refreshment shops for bypassing tourists exists. The percentage of migrants, i.e. 15% of the EAA group, is also surprisingly lower than the average of 18%. One would expect that with the Park situated only 10 km away, that several of its residents would migrate between the village and the Park. Also, one would expect that being more accessible and passed by more foreigners than the other villages, obtaining a lift to larger cities and towns, or information of where work is available, would be easier and therefore the rate of migrancy higher.

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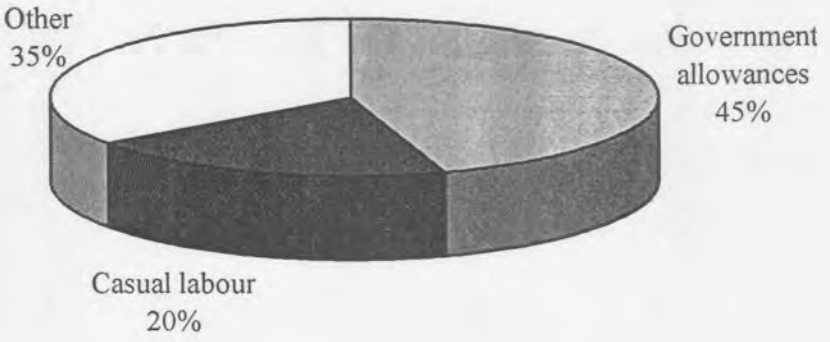

Figure 22. Main sources of income of households in Welkom

It has the highest percentage of casual workers, i.e. 52% of the EAA, versus an average of 34%. The main casual work is participation in the *Prosopis* spp. management project. Why this percentage is so much higher than the average is not exactly clear.

Although this village had no official communal land at the time of the survey, 35% of the non-commercial farmer households owned livestock. According to a community leader of the village, two commercial farms, which were still leased during April 1999, had been identified and will be set aside as communal land for Welkom. It seems as if the community has high expectations as the highest percentage of households with only positive remarks concerning the communal land is found here, i.e. 30% versus an average of 15%.

None of the households grow anything for own consumption. As mentioned earlier, Welkom struggles with a water problem. As a result, water for household consumption is often not available and the residents have to make provision in water-cans. This seems to be the largest problem that keep households from raising fruits and vegetables.

8.2.3 Conclusion

It is clear that the Mier community is a heterogeneous group of people with different aspirations and capabilities. As much of the aid and assistance to the community, that are based on the agricultural resource base, exclude most of the most needy households, it is recommended that a few representatives of the Mier community, representatives of the government and any other stakeholders, actively construct their ideas about these people into plans and strategies. Ideas from the community should also be welcomed. The most feasible plans can then be laid before the community, for example during public community meetings and/or pamphlets. The final plan of action should be chosen through community elections.

Each village also has its own advantages and challenges that the residents concerned need to deal with. This should not be seen as an obstacle for possible interventions and assistance. As solution-thinking should rather be in the direction of numerous smaller livelihood opportunities, rather than one large industry, community differentiation actually opens up more possibilities.

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APPENDICES

Appendix A

Livelihoods of the Mier community: Questionnaire

Date of interview (DD/MM/YY)_____

Name of village/farm_____

Name of interviewer_____

Household's number_____

A. General

1. a. Looking at the last two months, who are all part of your household (hh), i.e. who are all the people that live and usually eat here? Tell more about everyone (SEE TABLE).

b. Who of them are not present now?

Category of occupant	Name	Sex (M/V)	Age	Econ. status* (code)	Place of birth	Present ✓/✗
Head of hh. (hhh)						
Spouse						
Children 1						
2						
3						
4						
5						
6						
7						
8						
Parents of hhh or spouse 1						
2						
3						
4						
Grand children 1						
2						
3						
4						
5						
6						
7						
Other family members 1						
2						
3						
Other 1						
2						

CODES:

Preschool = VS
Primary school = LS
High school = HS
Student = S
Unemployed (forced) = Wlg
Unemployed (voluntary) = Wlv
House wife = HV
Work for someone/company = Wib
Own business = EB
Pensioner/Disabled = P

2. If the head of the household is absent, who is in charge and takes decisions? (GIVE NAME AND CODE)

B. Objective 1.

The following applies to the household's livelihood. In other words, these questions should indicate what activities the people of Mier do in order to survive, as well as the importance of each activity in relation to the rest.

3. Monetary income creation

3.1. a. Who of you works for money on a permanent basis?
(ASK EVERYONE WORKING FOR MONEY:)

b. Where do you work and what type of work do you usually do?

c. Approximately what part of this income goes to the benefit of the household? (ASK IN TERMS OF EVERYTHING, THREE QUARTERS, HALF, A QUARTER OR NOTHING)

e. What happens to the rest (if applicable)?

NAME	WHERE	TYPE OF WORK	PART (%) TO HH					REST
			100	75	50	25	0	

3.2 a. Referring to the last two years only, which of the household members sometimes work outside Mier to earn money?
(IF NOBODY DOES, GO TO QUESTION 3.3
IF THERE IS A HOUSE MEMBER CURRENTLY WORKING OUTSIDE MIER, LET ANOTHER ADULT HOUSEHOLD MEMBER ANSWER ON HIS/HER BEHALF.)

b. Tell more about it by means of the following: (SEE TABLE)

NAME &CODE of migrant			
i. MARK WHAT IS APPLICABLE:			
Migrant answers self	**Currently working outside Mier**	**Currently in Mier, absent for interview**	
ii. WHAT WAS YOUR LAST JOB OUTSIDE MIER? / WHAT IS HIS/HER JOB OUTSIDE MIER?			
iii. WHY DID YOU/HE/SHE DECIDE TO DO THIS PARTICULAR JOB?			
iv. HOW LONG DID IT TAKE YOU/HIM/HER TO FIND THIS JOB?			
v. DO YOU WORK OUTSIDE MIER WITH THE IDEA THAT IF YOU FIND A PERMANENT JOB, YOU WILL STAY, OR ARE YOU DETERMINED TO RETURN TO MIER?			
vi. WHY?			
vii. WHAT PART OF THIS INCOME BENEFITS THE HOUSEHOLD (HH)?			
75%	**50%**	**25%**	**0%**
viii WHAT ABOUT THE REST?			
ix DO YOU THINK THAT THESE TYPE OF WORK OPPORTUNITIES ARE INCREASING OR DECREASING?			

3.3 a. Who of you have conducted any other temporary or irregular activities during the last two years to earn income? (For example, bake Christmas cakes, needlecraft, woodcraft, sell things that you have bought somewhere else for a profit, odd jobs, etc.).

(IF NOT APPLICABLE, GO TO QUESTION 3.4)

b When, and for what period of time did you do this?

c. Approximately what part of this income benefits the household?

d. What happens to the rest (if applicable)?

CODE & NAME	SOURCE OF INCOME	CONNECTED TO CERTAIN PERIOD?	PART (%) TO HH					REST?
			100	75	50	25	0	

3.4 a. Who of you rent out something to earn an income? (For example, rent accommodation, machines, transport, etc.)

(IF NOT APPLICABLE, GO TO QUESTION 4)

b. What is being rented or hired out?

c. To whom is it rented out?

d. Approximately what part of this income benefits the household?

e. What happens to the rest (if applicable)?

CODE & NAME	WHAT IS RENTED OUT?	TO WHOM?	PART (%) TO HH					REST?
			100	75	50	25	0	

4. Support from elsewhere

4.1 a. Did you receive support, in terms of money or goods, from friends or family during the last two years?

YES		GO TO QUESTION 4.1b
NO		GO TO QUESTION 4.2

b. If so, is it:

i. on a regularly basis? Describe.
(Monthly/annually/quarterly/certain seasons, etc.)

_____

ii. per occasion (school fees for children, a family member died and you received support to cover burial costs, etc.)

_____

iii. Did it come from people living inside or outside Mier?

_____

_____

_____

4.2 a. Have you made use of church funds or welfare support during the last two years?

YES		GO TO 4.2b
NO		GO TO 4.3

b. If so, how many times?

_____

4.3. a. Who of you receive any other income, e.g. pension, governmental disbursements or grants, insurance payments, etc.?
(IF NOT APPLICABLE, GO TO QUESTION 4.4)

b. If so, what is the source of income?
c. How regularly do you receive it?
d. Approximately what part of your income benefits the household?
e. What happens to the rest (if applicable)?

CODE & NAME	SOURCE OF INCOME	TIME INTERVAL	PART (%) TO HH					REST?
			100	75	50	25	0	

5. Barter

a. Do you make use of barter with other people? (For example, swap school clothes for curtains, vegetables for meat, a bicycle for a goat). This also includes favours/services in return for something else (e.g. the children get a lift to or from school in return for something, or one of you look after somebody else's children in return for another favour or goods, etc.)

YES		GO TO QUESTION 5b
NO		GO TO QUESTION 6

b. Describe it by means of the following: (SEE TABLE)

CODE & NAME	WHAT IS BEING SWAPPED?	HOW REGULARLY?	FIXED AGREEMENT?

6. Farming

6.1 a. Who of you owns animals?

(ASK EVERYBODY THAT OWNS ANIMALS THE FOLLOWING:)

b. What type of animals do you have?

(ASK FOR EACH TYPE OF ANIMAL:)

c. Approximately, how many _____-(TYPE OF ANIMAL) do you own?

d. Where do they eat?

e. Who looks after them?

(IF THE OWNER DOES NOT LOOK AFTER HIS/HER OWN ANIMALS:)

f. Why does _____ (CARETAKER'S NAME) look after them?

g. What are these animals used for? (E.g. to slaughter, milk, hides, eggs, transport, to sell them, etc).

h. Where do you sell them or their products (if applicable)?

i. Do you think these animals have enough to eat? Motivate.

j. What are the main problems with keeping these animals?

k. What measures do you take to mitigate these problems?

l. Other remarks. (E.g., animals are looked after by a non-household member for compensation)

a. Owner's code/name			
b. Type of animals			
c. No. of animals			
d. Where do they eat?			
e. Caretaker's name/code			
f. Why this Caretaker?			
g. What are animals used for?			
h. Where are they or their products sold?			
i. Do animals have enough to eat? Motivate.			
j. Main problems			
k. How are problems mitigated?			
l. Remarks			

6.2. a. Who of you are sometimes involved with other farmers' activities?
(IF NOBODY IS INVOLVED, GO TO QUESTION 7)

b. Tell more about these activities by means of the following:

(CODE & NAME:)
i. Where:
ii. How far do you have to travel?
iii. Type of activity:
iv. (ONLY IF RESPONDENT ANSWERED THAT HE/SHE LOOKS AFTER ANIMALS. IF NOT APPLICABLE GO TO v.) Do you think these animals have enough to eat? Motivate.
v. Time of the year:
vi. How regularly within this period? (Eg. Every day, 3 times a week, every second week, etc)
vii. Why do you do it?

(CODE & NAME:)
i. Where:
ii. How far do you have to travel?
iii. Type of activity:
iv. (ONLY IF RESPONDENT ANSWERED THAT HE/SHE LOOKS AFTER ANIMALS. IF NOT APPLICABLE GO TO v.) Do you think these animals have enough to eat? Motivate.
v. Time of the year:
vi. How regularly within this period? (Eg. Every day, 3 times a week, every second week, etc)
vii. Why do you do it?

7. Own production

a. .Do you produce anything in your yard? (NAME EXAMPLES MENTIONED UNDER, IF NOT APPLICABLE, GO TO QUESTION 8)

USE	SPECIFY	OWN USE/ SELL/SWOP	TIME OF THE YEAR
Vegetables/planted pastures			
Keep animals/poultry there			
Fruit trees			
Other			

8. Task division

a. What are each household member's chores in and around the house?

A = House cleaning
B = Fetch fire wood
C = Clothing (wash, iron, repair, knitting)
D = Preparing food
E = Repair-work in and around the house
F = Feeding and care of animals
G = Household shopping
I = Maintenance of the garden
J = Other (SPECIFY)

Name the four most important only

b. Approximately how many hours per day does these chores keep each person busy? (IF DAYS DIFFER REMARKABLY, NOTE IT, E.G. IN THE CASE OF FETCHING FIRE WOOD, WHICH IS NOT NECESSARY EVERY DAY, BUT 2X PER WEEK FOR HALF A DAY. WRITE DOWN THE TIME BUSY DURING AN ORDINARY DAY PLUS B: 2x pw, 6h)

Name or Code	Chores (ONLY CODES, EXCEPT J)	Time

9. Hired labour

(IF NOT APPLICABLE, GO TO QUESTION 10)

a. Do you sometimes make use of hired labour?

YES		GO TO QUESTION 9b
NO		GO TO QUESTION 10

b If yes, give more information about the following:

For what type of work:			
How many persons:			
For how long:			

c. Do you always employ the same people?

_____

d. Are these people from Mier? If not from where are they?

_____

e. Why do you employ people from that area.?

_____

_____

f. Do you pay them with money or goods (eg, livestock, milk, etc)?

_____

_____

_____

10. Calendar

10.1 (FIRST READ THROUGH ALL THE QUESTIONS BEFORE COMPLETING THE TABLE)

a. If one looks to the course of a year in general, which are the better and which are the more difficult months for your household? (E.g. January is difficult, because school fees have to be paid, December is a good month, because there is a high demand for labour on grape farms, etc.)

b. What do you do to overcome the more difficult months?

c. What is characteristic of certain months? (E.g.., March and April form the rainy season, etc.)

MONTH	ADVANTAGES	DISADVANTAGES	OVERCOMING STRATEGIES	CHARACTERISTICS
JAN				
FEB				
MARCH				
APR				
MAY				
JUNE				
JULY				
AUG				
SEPT				
OCT				

NOV				
DEC				

10.2 a. Which month is the most difficult?

_____

b. Why is this month the most difficult?

_____

_____

_____

11. a. We have now looked at your livelihoods. Is there anything else that you feel is important for us to know, which has not been covered by the questionnaire? If so, describe it.

_____

_____

_____

_____

b. Of all these activities, sources of income, and agreements we have just spoken of, name the five most important ones. (IF PEOPLE SEEM TO HESITATE, NAME (OR READ OUT) THE DIFFERENT COMPONENTS AS OBTAINED FROM THE PREVIOUS QUESTIONS)

c. Order these five by their degree of importance, starting with the most important one. If two or more activities are of equal importance, please say so (EG. MARK AS FOLLOW: CATTLE AND WAGE WORK EQUAL MOST IMPORTANT (1); MIGRANT REMITTANCE NEXT MOST IMPORTANT (3)).

Five most important livelihood components	**Measure of importance (1=Most important 5=Least important)**

C. Objective 2

The following is about times when unforeseen expenditures arise, e.g. illness, funeral costs due to a sudden death in the family, fire, etc.

12 Precaution

a. Do you make any formal provision for such crises? (E.g. savings, policies, insurance, assurance, etc.)

YES		GO TO QUESTION 12b
NO		GO TO QUESTION 13.

b. If so, specify.

_____
_____
_____
_____
_____

13. Dealing with crises

a. What do you do if you run out of food and you have no money to buy new stocks?

Solution	**Order ()**
Borrow food from family or friends	
Use the shops' account facility	
Look for food in the veld	
Go hungry until money arrives	
Sell something to get money	
Other:	

b. How often does it occur that you run out of food stocks without money to buy food?

_____
_____

c. In times when money is scarce, do you eat other types of food than when money is available? Explain.

_____
_____
_____
_____

d. What would you do if a large unexpected expenditure occurs (e.g. if you house burns down, you are robbed of almost everything you possess, etc.)

Solution	Order (1=first option)
Use savings	
Sell possessions	
Borrow money for what is needed:	
- Family or friends	
- Church	
- Credit supplier (bank, "Cash Wise, money lender in Mier, etc.) (SPECIFY)	_____
- Whatever is available at that stage	
Other:	

b. How will you go about repaying your debt? (e.g. a member of the household goes to Upington to try and earn an extra income, or one of you starts to do paid odd jobs that he/she would not normally do, in order to earn something to repay the debt, etc.)

_____
_____
_____
_____

D. Objective 3

The following questions deal with your vision of Mier and its farming sector.

14. During the time that you have known this area, do you think that the farming sector has changed at all? Why is this?

_____
_____
_____
_____

15. How do you see the future of Mier?

_____
_____
_____
_____

16. What prospects are there for farming on Mier?

17. What, according to you, is the main contribution made by the farming sector in this area?

18. a. What do you think of the communal system used in the villages of Mier? Would you like to see any changes to it? Motivate.

b. What do you think of the commercial/lease farm system used in Mier? Would you like to see any changes to it? Motivate.

c. What do you think of the game ranching system used in Mier? Would you like to see any changes to it? Motivate.

ASK EVERY ADULT WHO IS PART OF THE LABOUR FORCE AND NOT INVOLVED IN FARMING

19. a. Would you like to become more involved with farming activities? Motivate.
b. What would you like to do most of all to make a living?

Code & Name			
YES		**NO**	
I am a farmer at heart		Farming does not interest me	
Only for additional income		Health reasons	
Other reasons:		Other reasons:	
Preference:			

Code & Name			
YES		**NO**	
I am a farmer at heart		Farming does not interest me	
Only for additional income		Health reasons	
Other reasons:		Other reasons:	
Preference:			

Code & Name			
YES		**NO**	
I am a farmer at heart		Farming does not interest me	
Only for additional income		Health reasons	
Other reasons:		Other reasons:	
Preference:			

Code & Name			
YES		**NO**	
I am a farmer at heart		Farming does not interest me	
Only for additional income		Health reasons	
Other reasons:		Other reasons:	
Preference:			

ONLY FOR THOSE WITHOUT LIVESTOCK.
IF NOT APPLICABLE, GO TO SECTION E:

20 a. Would you like to own livestock?

YES		GO TO QUESTION20b
NO		GO TO QUESTION 20c

b. If yes, why don't you have livestock? (e.g. don't have somebody to look after them, I don't see chance for livestock on the communal areas, I can't afford livestock, etc)

_____
_____
_____

c. If not, why?

_____
_____
_____

E. General

ASK ALL PERSONS WITH CHILDREN OF SCHOOL GOING AGE:

21. Knowing your child(ren)'s abilities, what type of work would you like him/her/them to do one day?

CODE&NAME (parent)	**Occupation / Type of training/education**

_____

22. What kind of prospects, besides livestock farming, are there for youngsters in Mier?

_____
_____
_____

23. Where do you do most of your shopping?

_____

Appendix B

The following questions were given to the community for group discussions during the follow-up visit's community meetings.

Question 1

Which of the following two is the major problem experienced in the Mier area:

(a) a lack of employment opportunities, or

(b) a lack of land?

Question 2

Do you think that there are people outside the Mier area who would move to the area, if more work opportunities become available in Mier?

(This is in light of that the majority of people, who grew up in Mier, are very inclined to the area. Many are, however, forced to work outside the area.)

Question 3

Do you think that the people of Mier would buy more livestock if they earn a higher income?

Appendix C

The Vegetation of the Mier Area

1. Grasses and Herbaceous Plants

According to Acocks (1988), grasses of the western form of the Kalahari Thornveld (of which the dune veld forms part) are tufted, entirely of the "white" type. *Stipagrostis uniplumis* is prominent, while *Aristida* spp. and *Eragrostis* ssp. are also abundant. Grasses and herbaceous plants that are important in valleys and on dunes include *Centropodia glauca*, *Crotalaria virgultalis*, *Monechma incanum* and *Stipagrostis namaquensis*. After good rains *Schmidtia kalahariensis* is usually abundant in trampled areas.

Regarding the Vryburg Shrub Bushveld (of which the hard veld forms part), *Themeda triandra* and *Cymbopogon plurinodus* are the most prominent grasses in this area under normal conditions. *Aristida diffusa* subsp. *burkei*, *Chrysopogon serrulatus*, *Digitaria eriantha*, *Eragrostis lehmannia*, *Eustachys paspaloides*, *Heteropogon contortus* and *Stipagrostis uniplumis* var. should also be abundant. Excessive overgrazing degrades it to *Aristida diffusa* subsp. *burkei*, *Eragrostis lehmannia*, *A. congesta* subsp. *congesta*, *A. congesta* subsp.*barcicollis* and *Enneapogon desvauxii*.

According to Brink (1998), grasses can be divided into four catagories: (a) desirable; (b) moderately desirable; (c) less desirable; and (d) undesirable.

(a) Desirable

Anthephora argentea
Centropodia glauca
Schmidtia pappophoroides
Stipagrostis amabilis
Stipagrostis ciliata
Stipagrostis obtusa
Stipagrostis uniplumis
Monechma incanum
Plinthus sericeus
Plinthus karooicus

(b) Moderately Desirable

Eragrostis lehmaniana

(c) Less Desirable

Aristida meridionalis *Monechma australus*

Brachiaria glomerata

(d) Undesirable

Schmidtia kalahariensis *Aristida congesta*

Aristida stipitata

2. Woody Component

The Kalahari Thornveld is dominated by *Acacia erioloba* and *Acacia haematoxylon*. Along rivers and near ranges of hills and mountains, *Boscia albitrunca*, *Grewia flava*, *Lycium hirsutum* and *Rhigozum trichotomum* are also often common (Acocks, 1988). Venter & Venter (1996) regard *Acacia mellifera*, *Grewia flava* and *Ziziphus mucronata* also as trees found in the Mier area.

More valuable woody, shrub-like plants found in the Mier area are *Tarchonantus camphoratus*, *Pentzia incata* and *Tetragonia calycina*. *Cullen obtusifolia* and *Lebeckia spinescens* are legumes that appear here, and are valuable protein sources for browsers (Le Roux *et al.*, 1994).

Potential poisonous plants include *Gnidia polycephala* and *Geigeria ornitiva*. The latter causes vomiting sickness, but animals recover quickly if they are moved to a "clean" camp (Le Roux *et al.*, 1994).

With respect to palatability, animals usually find the following shrubs unacceptable: *Aptosimum spinescens*, *Aptosimum procumbens* var. *procumbens* and *Barleria rigida*. Under pressure *Aptosimum marlothii* and *Pentzia lanata* will be grazed by animals (Le Roux *et al.*, 1994).

Appendix D

Age distribution of the members within each main income generating activity

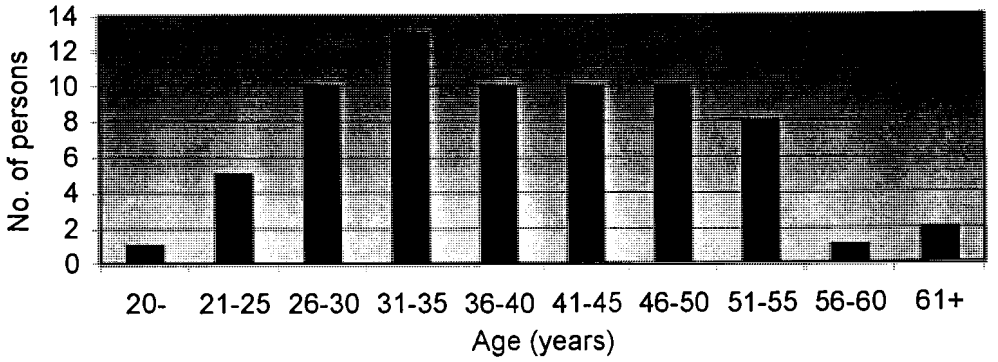

Figure 23. Age distribution of permanent employees

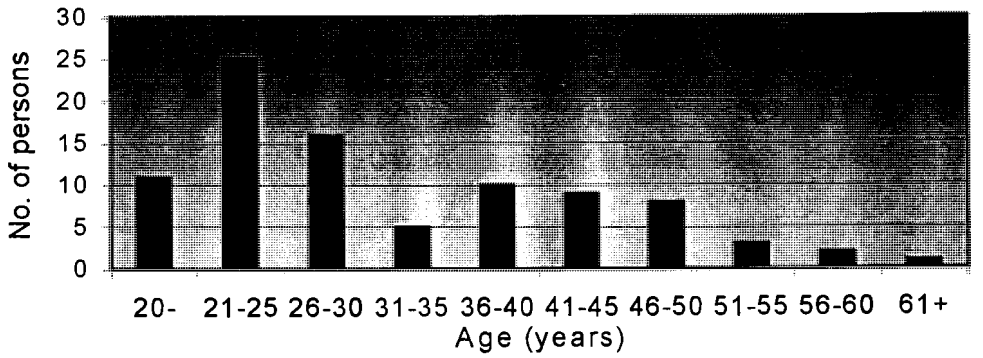

Figure 24. Age distribution of migrants

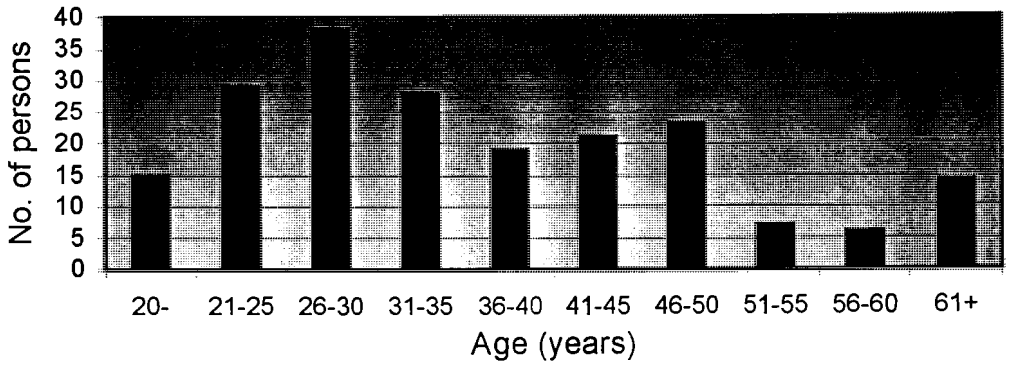

Figure 25. Age distribution of casual labourers

Appendix E

Percentage of income, from the main sources of income, remitted to the household

According to Ardington & Lund (1996) several income-related surveys attribute the full wage of an employed person who lives at home, while only the remittance percentage of a migrant's wage to the household concerned is taken into account. The following is a clear comparison of income to household from the main income sources. It is clear that government allowances are mostly perceived as common good in a household.

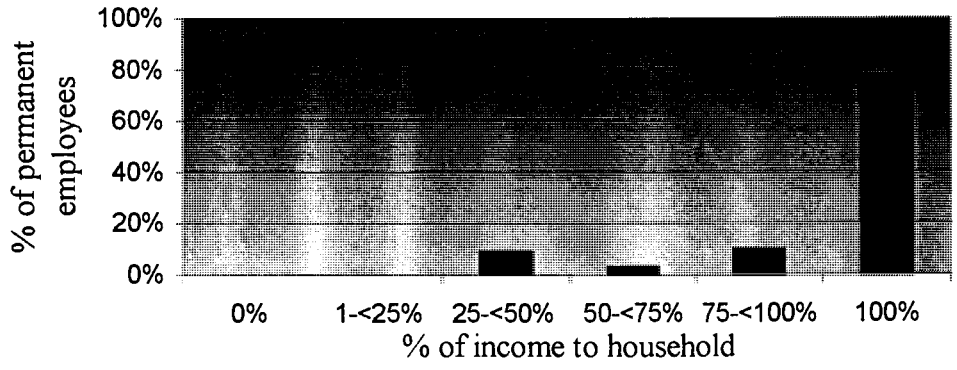

Figure 26. Income to household from permanent employees

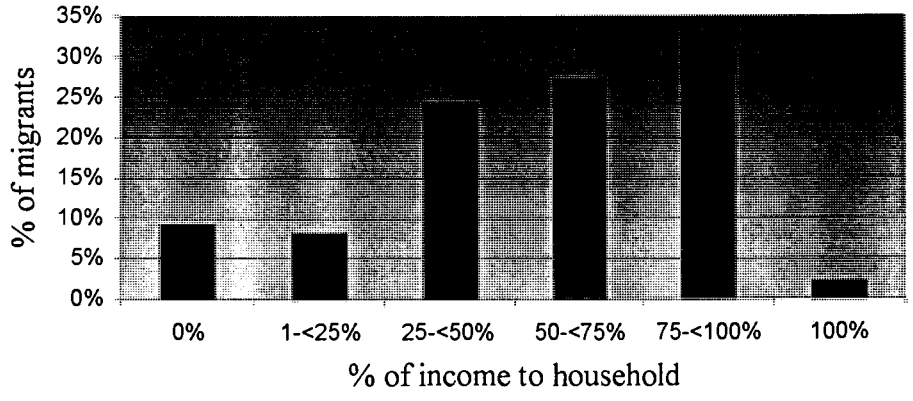

Figure 27. Income to household from migrants

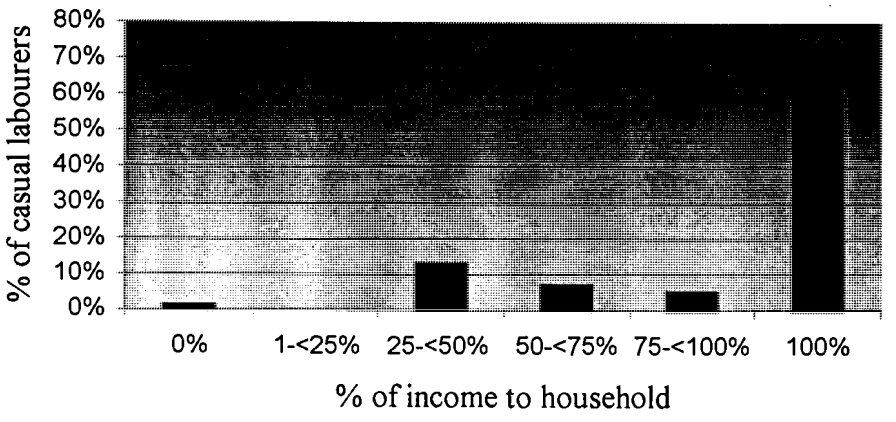

Figure 28. Income to household from casual labourers

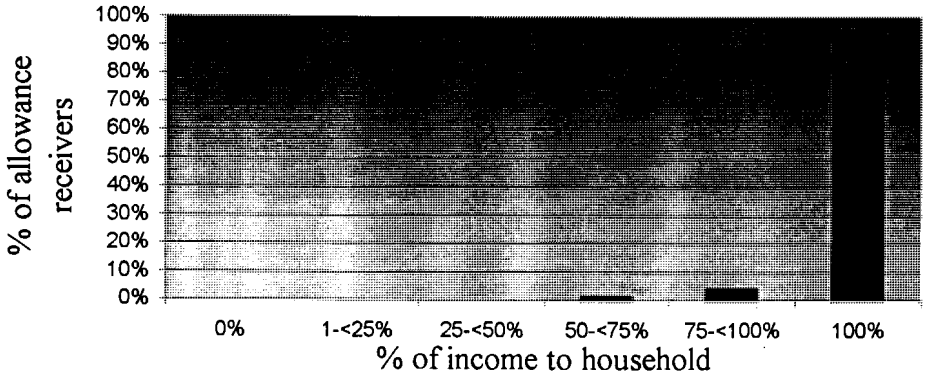

Figure 29. Income to household from allowance receivers

Appendix F

Table 55. Government expenditure in the Mier area from 1994/1995 to 1999/2000 (Personal communication -Northern Cape Provincial Government representative) (All amounts are expressed in ZAR)

Program	Locality	Project title	Funding institution	Total amount allocated	1994 / 1995	1995 / 1996	1996 / 1997	Disbursed 1997/98	Budgeted 1997/98	1998 / 1999	1999 / 2000	Project status
RDP 4	Kameelduin	Water RDP 4	WA	65000					65000			Implementing
RDP 4	Kameelduin	Water RDP 4	WA								92000	Implementing
RDP 4	Kameelduin	Water RDP 4	WA								31960	Implementing
RDP 2	Groot Mier	Water RDP 2	WA					5000			25000	Implementing
LG & H	Groot Mier	Mapping, planning & surveying							39000			
DC	Kameelduin	Sewerage replace 23 pits DC	Benede Oranje DC				36000					
DC	Kameelduin	Water DC	Benede Oranje DC				20000					
DC	Planning/Surveying DC		Benede Oranje DC				20000					
Housing	Klein Mier	Housing Klein Mier							165000			Under construction
LG & H	Loubos	Reservoir	LG & H				300000					
Housing	Loubos	Housing Loubos							220000			Under construction
Land Reform	Mier	Tenure/Redistribution Phase 2	Land Affairs						2500000	1500000		Business plan
WFW	Mier	Tree removal	WA	635250					635250			
DC	Mier	Power generator infrastr. DC	Benede Oranje DC						14000			
LG & H	Mier	Upgrading of roads	LG & H				250000					
DC	Mier	High mast lighting DC	Benede Oranje				180000					
El Nino	Mier	El Nino Water	WA						387616			
El Nino	Mier	El Nino Water	WA							736641		
LG & H	Mier	Additional boreholes	LG & H				300000					
LG & H	Mier	Borehole equipment	LG & H				10000					
LG & H	Mier	Water supply	LG & H				200000					
Housing	Mier	Housing Philandersbron							946000			60 new struct/Balance in construction
Housing	Mier	Housing Welkom							99000			Waiting for contractor to start
Survey & Plan	Mier	Mapping, planning and surveying	Dept LG & H						39000			
IDT School build	Mier	Schools admin, ablutions, sewerage, prof lees IDT	IDT					1771585	1771585			Completed April 1997
RDP	Mier	Welkom Handwork Centre (leather, wooden items) RDP	RDP	137000			137000					Rezoning of land being finalised
087AZAM	Mier	Job Centre	Kagiso Trust					0	30000			Complete 50%
DC	Mier	Rondawel DC	Benede Oranje DC		30000	40000	50000					
LG & H	Philandersbrn	Community Hall	LG & H				200000					

Program	Locality	Project title	Funding institution	Total amount allocated	1994 / 1995	1995 / 1996	1996 / 1997	Disbursed 1997/98	Budgeted 1997/98	1998 / 1999	1999 / 2000	Project status
Transport	Rietfontein	Roads Mier/Rietfontein Doeanesta New Construction	NC Roads Dept	15000000						15000000		
Treasury	Rietfontein	Basic Sport Fascility	Sports						350000			Implementation
RDP	Rietfontein	Kabouter Creche for deep-rural children RDP	RDP	55800					55800			

Abbreviations

DC = District Council

IDT = Independent development trust

LG & H = Local Government and Housing

RDP = Reconstruction and Development Programme

WFW = Work for Water

WA = Water Affairs