

THE EFFECT OF RURAL INEQUALITY ON FERTILITY,
MIGRATION, ENVIRONMENT AND THUS AGRICULTURAL
SUSTAINABILITY: A CASE STUDY IN THE ARID AND
SEMI-ARID AREAS IN THE NORTHERN PROVINCE OF
SOUTH AFRICA

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Working Paper 2003-07

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THE EFFECT OF RURAL INEQUALITY ON FERTILITY, MIGRATION, ENVIRONMENT AND THUS AGRICULTURAL SUSTAINABILITY: A CASE STUDY IN THE ARID AND SEMI-ARID AREAS IN THE NORTHERN PROVINCE OF SOUTH AFRICA: FINAL REPORT: 17 April 2002, amended 10 May

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1. INTRODUCTION

This chapter, which is in essence descriptive, reports the results of the survey of land and asset size, structure and distribution, and of some possibly related demographic and environmental circumstances, in Northern Province (NP) (recently renamed to Limpopo Province), South Africa. First, however, for readers to interpret these results and compare them with the other two country surveys in this study, we must explain the basic social indicators of the country (see Table 1), the unusual forms of inequality, poverty, asset ownership, rural and agricultural activity, and unemployment in South Africa.

Table 1: Social indicators for South Africa (1996/97/98)

Indicator	South Africa	Northern Province
Population (Census, 1996)	40.58 million	4.93 million
Population growth rate	2.08 %	2.31%
Urban population as % of total	53.70%	10.95%
Infant mortality rate	41	53
Total fertility rate	2.7	3.2
% of population < 15yrs	34.33%	42.75%
Life expectancy at birth	63	63
Non-urban economic active population as percentage of total economic active population	32.9%	82.8%
Total unemployment rate (<i>See footnote 3 on p3</i>)	33.8%	45.9%
Doctors per 10 000 population	2.9	1.5
Hospital beds per 1 000 population	4.0	3.1
Diseases ¹ :		
% of HIV infected women at antenatal clinics	22.8%	11.5%
TB cases per 100 000 population	-	286
Malaria cases per 100 000 population	22 950	4 814
Tuberculosis cases per 100 000 population	63 136	1 947
Typhoid cases per 100 000 population	425	98
Viral hepatitis cases per 100 000 population	1 042	109
Human Development Index	0.672	0.566
Gini coefficient (for income)	65	66
Infrastructure:		
% households with access to electricity	57.3%	36.2%
% households with access to piped water	79.8%	75.5%
% households with access to sanitation	82.5%	77.8%
% households with access to telephones	28.6%	7.4%

Source: DBSA Development Report 2000

In purchasing power parity dollars of 1993, South Africa has a mean income of \$7450 in 1996 (World Bank, 1998). This places the country well up the ranks of lower middle-income countries. Yet in 1998, 11.5 per cent of South Africans consumed less

¹ The lower figures for the Northern Province could perhaps be attributed to lower population density and possibly under reporting in remote areas.

than a dollar's worth per person per day of a standard 1993 consumption bundle, and 35.8 per cent consumed less than \$2/day (World Bank 2000/2001). Such significant incidence of abject poverty is usually found only in countries with much lower mean income per person. It is possible at South Africa's higher level due to extreme inequality - overall (in terms of income Gini coefficients), regional, ethnic, and rural-urban.²

Pervading this survey (this chapter) and relating it to the study as a whole, extreme inequality converts adequate *average* income in South Africa into pervasive rural poverty in mainly *African areas of rural Northern Province* via:

- low and unequal land and asset endowment;
- high local unemployment (worse in rural areas, NP, and among Africans);
- heavy reliance on migrancy and transfer incomes;
- high fertility, child/adult ratios and household size among low-income groups.

Poverty: Several estimates of levels of poverty using different poverty lines and databases have been done in South Africa. DBSA [2000] using census data and a poverty line of R800 household expenditure per month estimates that about 57 per cent of South Africans are living in poverty while around 78% of the population in the Northern Province are considered to be poor. In Table 2 we compare the poverty calculations of May (1998) with that of the DBSA. With a somewhat different poverty line of R352 per adult equivalent (AE) per month, May (1998) found that 50% of the South African population can be classified as poor while he estimates a poverty rate of 62% in the Northern Province. Table 3 further shows poverty incidence in the districts of the Northern Province.

Table 2: Comparative statistics on poverty measurements in South Africa

	May, J. 1998 (for 1995)		DBSA 2000 (for 1996)	
	Poverty line	% Poor	Poverty Line	% poor
South Africa	R352/AE/month		R800 per HH per month	
All		49.9%*		56.9%
Rural		70.9%		-
Urban		28.5%		-
Northern Province	R352/AE/month		R800 per HH per month	
All		61.9%		77.9%
Rural		-		-
Urban		-		-

Sources: DBSA, 2000 (pp176) and May, J. (1998) (pp)

* = the CSS (1995) estimates that 60.7% of Africans live in poverty according to the R352/AE poverty line

² The dimensions of inequality are related, e.g. the poorest ethnic group (African) is heavily over-represented in the poorest areas (e.g. the eastern Cape) and in rural regions.

Table 3: Poverty head count ratio for selected districts in the Northern Province (based on consumption expenditure of R800 per month per household at 1996 prices)

Magisterial District	Headcount ratio	Imputed mean household expenditure
Bochum*	44%	R1 306
Sekhukuneland*	42%	R1 399
Sekgosesse	41%	R1 423
Nebo	39%	R1 502
Mokerong*	36%	R1 648
Potgietersrus	32%	R3 358
Pietersburg	14%	R7 577
Seshego*	34%	R1 883

Source: Statistics South Africa, 2000. Measuring poverty in South Africa

** Districts where survey was undertaken*

Unemployment:

According to the results of the 1996 Census the South African population is estimated at 40,584 million with population growth slowing to about 2 percent per annum – down from 2.5% per annum during the 1980s. The high levels of unemployment in South Africa in general can partly explain the high poverty rates referred to above. The Census results indicate that total employment in the economy is 9 114 000, of which about 1 800 000 are informal job opportunities. About 33.8 percent of the economically active population is unemployed³ (and seeking work) numbering about 2 million work seekers. The rural unemployment rate for South Africa is 44.2% (Urban = 28.7%) and 50.5% for the Northern Province (23.7 % for urban areas). In South Africa youth unemployment makes up 48.5% of total unemployment (43.8% in the Northern Province). Growing youth unemployment is a major challenge, impacting on crime trends and threatening the integrity of family and community structures. The census confirms that the unemployment burden falls disproportionately on black men and women under the age of 35 and is particularly severe in rural areas. The employment challenge has been the focus of concerted deliberations of government, business, labour and community representatives.

³ *The DBSA (2000:193) used the following definition for unemployment: Persons 15 years of age and older who, during the reference week, were not in paid work or self-employment, were available for paid work or self-employment, took specific steps during the four weeks preceding the interview to find paid work or self-employment, or had the desire to work and were available to take up a suitable job if one was offered.*

Table 4: A profile of the population in the Northern Province

Characteristics	Northern Province
Population size	4.93 million
▪ Males (%)	45.5%
▪ Females (%)	54.5%
▪ Urban	10.9%
▪ Non-Urban	89.1%
▪ Urban Males	12.4%
▪ Non-Urban Males	87.6%
▪ Urban Females	11.4%
▪ Non-Urban Females	88.6%
Most Important Source of Income (%)	
▪ Wages	43.1%
▪ Pension	27.1%
▪ Remittances	21.5%
▪ Farming	2.2%
▪ Other	6.1%
Household Income in the Month prior to the survey (%) (1997 prices)	
▪ R1501 or More	10.1%
▪ R801-R1500	20.6%
▪ R401-R800	33.1%
▪ R400 or less	36.2%

Source: *Statistics South Africa. Population Census 1996;*
Statistics South Africa. Rural Survey 1997

2. THE STUDY AREA AND SAMPLE DESIGN

2.1 The Study Area

The Northern Province (Limpopo Province) was selected as the study area for the South African case study of this multi-country research programme. As indicated earlier this province is also one of the poorest provinces in South Africa. Selecting the households from this province for studying demographic behaviour posed a serious problem for the research team due to the racial composition of South Africa. We know that inequality is much more profound between race groups (due to the apartheid legacy) and that the wealthiest South Africans are mostly Whites, living outside the former "homelands" areas. For reasons of logistics, however, we decided to survey only such areas. This more focused approach would through careful interpretation allow us to answer the various research questions. Our findings will allow us to explore our main concern - the likely effect of enhancing the land or other assets of the rural poor upon their fertility, migration, and environmental management.

We shall be able to compare such behaviour among households in our survey with different amounts of land or other assets (or with different histories of change in the amount of assets), and among villages with different degrees of internal land and asset inequality. Sections 6 and 7 report the differences in, respectively, migration (6) and fertility (7), among households and villages currently endowed with different amounts of land or other assets. This permits (cautious and tentative) inferences about how such behaviour might change, if part of the large concentrations of assets (including

farmland), available elsewhere in Northern Province, were distributed to various groups in the villages surveyed.

The Northern Province is situated in the far northern part of South Africa. The Province is adjacent to the Northwest Province, Gauteng and Mpumalanga and shares borders with Botswana, Zimbabwe and Mozambique. The Northern Province covers 9,6 % of South Africa's total area, amounting to 116 824 km². The Northern Province consists of 6 administrative regions, i.e. Northern, Lowveld, Central, Southern, Western and Bushveld. (For a detailed description of each of the regions see Appendix

The objective of this study is to determine how rural households in **dry lands** of South Africa, with access to different amounts of productive assets, differ in their fertility and migration behaviour. The Lowveld region of the Northern Province includes some of the more fertile and productive areas of South Africa while the Bushveld region consists mainly of large-scale extensive farms occupied by white commercial farmers. It was therefore decided to exclude these two regions as well as the Northern Region (mainly sub-tropical and humid) from the study area. The other 3 regions (Central, Southern and Western) are generally classified as arid or semi-arid in terms of its rainfall and vegetation and therefore form the core focus of the study.

Of the estimated surface area of 12 million hectares, 67% (8 million ha) is utilised as agricultural land. Of these 8 million hectares of farmland, 10,6% (0.85 million ha) is utilised as arable land, 67,5% (5.4 million ha) as natural grazing, 18,8% (1.5 million ha) for nature conservation, 1,1% (0.088 million ha) for forestry and 2% (0.16 million ha) for other purposes. About 76% of arable land (0.61 million ha) is allocated to dryland cultivation of staple foods and vegetables forms the most important kind of cultivation occurring in the Northern Province. A detailed description of land utilisation per district is provided in Table 4.

As indicated above this study focussed on the Central, Southern and Western Administrative regions of the province. Villages from the following magisterial districts were selected: Western Region: Mokerong, (Consisting of Phalala, Mokerong and Zebediela locations or sub-districts); Southern Region: Sekhukhuneland (Praktiseer and Schoonoord as sub-districts); Central Region: Bochum and Seshego. This choice of survey areas was guided by the prevalence of arid and semi-arid lands (rainfall below) occupied by African households, a predominant small-scale farming sector and substantial poverty.

Table 4: Land utilisation per district in the Northern Province

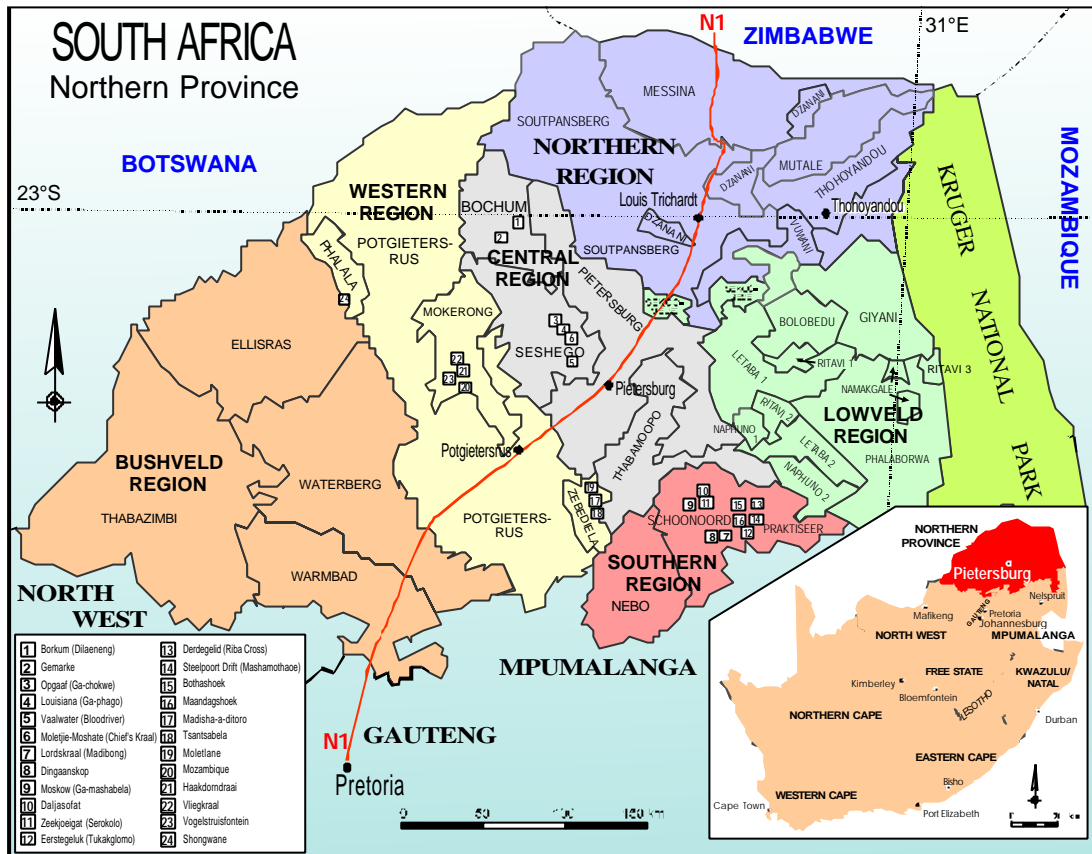
Magisterial District	Field crops	Orchards	Staple food crops for subsistence	Grazing	Forestry	Degraded
Bochum	-	-	28.3%	49.6%	2.2%	19.8%
Bolobedu	0.4%	1.7%	41.1%	48.9%	-	7.9%
Ellisras*	1.8%	-	-	93.7%	-	4.5%
Giyani	-	2.8%	30.9%	62.9%	-	3.5%
Hlanganani	-	0.4%	55.0%	33.4%	1.3%	9.9%
Letaba*	13.7%	15.5%	1.6%	48.7%	13.3%	7.2%
Malamulele	-	0.8%	31.8%	64.1%	-	3.2%
Mapulaneng	-	-	9.3%	38.0%	5.9%	46.8%
Messina*	1.5%	0.1%	-	97.6%	-	0.8%
Mhala	0.4%	1.4%	11.6%	48.9%	0.1%	37.7%
Mokerong (including Phalala and Zebediela)	0.1%	1.1%	25.5%	26.1%	0.1%	47.0%
Namakgale	2.2%	-	60.8%	16.5%	-	20.4%
Naphuno	1%	0.7%	5.9%	-	42.1%	45.7%
Nebo	0.4%	-	23.5%	25.9%	0.2%	50.1%
Phalaborwa*	1.2%	0.6%	0.8%	96.3%	-	1.1%
Pietersburg*	12.8%	-	0.1%	74.8%	4.2%	8.1%
Potgietersrus*	17.4%	0.3%	0.3%	76.0%	0.1%	6.0%
Ritavi	0.9%	3.8%	38.9%	44.5%	-	12.0%
Sekgosese	1.1%	0.4%	10.5%	47.4%	2.3%	38.4%
Sekhukhuleni (Praktiseer /Schoonoord)	0.5%	-	20.0%	66.3%	0.1%	13.0%
Seshego	1.4%	0.7%	29.8%	10.6%	-	57.5%
Soutpansberg*	2.7%	0.9%	0.4%	91.4%	2.2%	2.4%
Thabamopo	0.1%	-	2.7%	41.3%	0.3%	55.5%
Thabazimbi*	5.5%	-	0.1%	5.6%	91.2%	3.1%
Warmbad*	21.6%	-	0.1%	72.0%	-	6.3%
Waterberg*	21.8%	-	-	77.2%	0.1%	0.9%

Source: Department of Land Affairs, Pretoria

Districts where survey villages are located

* Districts were part of former "white" South Africa

MAP 1. THE DISTRICTS AND SITES IN THE STUDY AREA



2.2 Sample design

Having identified the survey area it was now necessary to design the sample frame. A total of 24 villages were randomly selected from the list of villages in the previously identified 4 magisterial districts (obtained from the list of villages surveyed during the 1996 census). Out of these villages 3 were selected where more households (a total of 75) within each village would be interviewed. As requested by the project leader these villages were more intensively surveyed to capture a different aspect of the survey in greater detail; i.e. one for migration, another for fertility and another with regard to agriculture and other economic activities. Borkum (Dilaeneng) in the district of Bochum is well known for having a high rate of migration of able-bodied men and women and was therefore selected to ensure that the survey capture sufficient migration information. Derdegelid in the Praktiseer area of the Sekhukhuneland district was intensively surveyed with regard to fertility and Shongwane in the Phalala area of the Mokerong district was surveyed for its economic activities because of the high prevalence of agriculture and other non-farm activities. This did not mean that the other parts of the questionnaire were not given the same attention.

A list of households in each village was obtained from the tribal office or the extension officer in the particular tribal ward. In the villages mentioned above 75 households were randomly selected from these lists and in the remaining 21 villages

between 15 and 18 households were randomly selected from each village. As far as possible, sampling was confined to villages where agriculture, including animal husbandry, is widely practised, but the sample did not exclude households that do not have agricultural assets. Appendix 1 contains the list of villages surveyed. Due to the small number of sampled households per village it was decided to group the villages in the different magisterial districts together in order to do meaningful analyses. Phalala and Mokerong were grouped together to form “Western” but Zebediela was kept separate since it is a different farming system and also some distance away from the other villages in the Western Administrative region. In Sekhukhuneland magisterial district villages around Schoonoord and Praktiseer respectively were grouped together due to their similar conditions. Some of the analyses will thus be done for 6 survey “regions”, i.e. Schoonoord, Praktiseer, Zebediela, Bochum, Western and Seshego.

A total of 585 households were interviewed in the 24 villages. These households represented a total of 4 338 persons or 5.16% of the total population in the 24 villages.

2.3 The Survey

Two structured questionnaires were administered on household and village samples, respectively. The household survey provided information on household characteristics, household income and assets, land, environmental issues, migration, fertility, contraception, autonomy of women in the household and their perceived value of children. The household head or his/her deputy responded to a major part of the questionnaire while women were interviewed separately for Sections 8 to 12 of the questionnaire.

Qualitative information about the villages was collected using a structured questionnaire covering all topics pertaining to population, infrastructure and resources in the villages. The first section of the questionnaire looked at institutional arrangements and the previous major events that were used to remind the respondents about the dates of major events with regard to their state of living. The second section looked at the physical resources like roads, electricity, telephones, schools, and the credit and financial institutions like cooperatives and banks, while the third and last section looked at the status of natural resources like rivers, lands, vegetation, etc.

For the village level survey we interviewed key informants in the village such as extension workers, teachers and principals, health workers, chiefs of the villages and indunas. Different representatives were interviewed with respect to the different components of the questionnaire. The agricultural extension officer for example was interviewed related to issues on the environment while health and community workers were interviewed with regard to health issues, etc.

3. A DEMOGRAPHIC PROFILE PER VILLAGE

3.1 Introduction

In this section we provide a descriptive overview of the households and villages included in our sampling frame. This is done through utilising a number of data

sources including the 1996 population census as well as the results from the village and household questionnaires.

The population from which the sample was taken totals 83 955 people equal to around 1.6% of the total population in the Northern Province. The population (according to the 1996 census) for each of the villages included in the survey is shown in Appendix 2. A total of 585 households totaling 4 332 persons were surveyed. More than 94% were single ethnic households, mainly of the BaPedi (Northern MoSotho) ethnic group. Likewise, most of them, 87.8%, were characterized by unique religious affiliations. The most common religious affiliations amongst the households are Zionist Christian Church (ZCC), 30.3%, Apostolic, 22.1% and Catholic, 10.1%.

The following discussion and tables highlight the age and sex distribution of the households interviewed. This is occasionally compared with the data from the 1996 census. The striking feature of the age composition of members of the household is the large number of children in these communities (See Table 5). In the survey we found 36% of the surveyed population to be below the age of 15 while the census data reflect that 42.2% of the population in the Northern Province are below the age of 15. The proportion of children below 15 does not differ much across the survey regions/villages but Table 6 illustrates that Praktiseer has a much higher figure of 43% of the population below 15 years of age. This confirms our initial choice of Derdegelid in the Praktiseer area to be surveyed for its perceived high fertility and large number of children.

Table 5: Age distribution of population

Age intervals	Survey results	Northern Province #	Sampled villages #
	Frequency (%)	Frequency (%)	Frequency (%)
0-4	490 (11.3)	646 903 (13.1)	11 268 (13.4)
5-14	1065 (24.6)	1 433 241 (29.1)	25 601 (30.5)
15-65	2585 (59.7)	2 529 788 (51.3)	41418 (49.3)
>65	152 (3.5)	257 219 (5.2)	4 593 (5.5)
No answer	40 (0.9)	63 488 (1.3)	1 075 (1.3)
Total	4332	4 930 639	83 955 (100)

= Census Data, 1996. Statistics South Africa

Of the total number of people surveyed 52.2% are female, while 47.8% are male. These results confirm the perception that, generally there are more females in the rural areas than males, even when the non-resident members of communities are considered. The 1996 census results for the villages surveyed reflect an almost similar distribution (44,95% = male; 55,05% = female).

Table 6: Age intervals of household members by survey “region”

Age intervals	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western
0-4	75 (10.8)	43 (9.9)	90 (12.2)	126 (13.8)	41 (10.1)	115 (10.0)
5-14	178 (25.7)	96 (22.2)	166 (22.5)	268 (29.3)	105 (25.8)	251 (21.9)
15-65	407 (58.8)	253 (58.4)	451 (61.1)	499 (54.6)	242 (59.5)	733 (63.8)
> 65	31 (4.6)	16 (3.7)	27 (3.7)	16 (1.8)	16 (3.9)	47 (4.1)
No answer	1 (0.1)	25 (5.8)	4 (0.5)	5 (0.5)	3 (0.7)	2 (0.2)
Total	692 (100)	433 (100)	738 (100)	914 (100)	407 (100)	1 148 (100)

Percentages in brackets

Another striking feature of the communities surveyed is the few people considered to be married or living together (See Table 7). Only about 20% of the household members interviewed were in some form of marriage or communion. This is a rather strange result but we could find no explanation for this other than the possibility that some women or men did not want to reveal the fact that they are living together.

Table 7: Marital status of members of households

Marital status	Males		Females	
	Number	%	Number	%
Children < 15	836	40.4	826	36.5
Single	758	36.6	788	34.8
Civil marriage	205	9.9	206	9.1
Customary marriage	166	8.0	161	7.1
Divorced	4	.2	17	.8
Separated	14	.7	18	.8
Widowed not married	9	.4	162	7.2
Living together/in process to marry	61	2.9	65	2.9
Civil and customary	3	.1	3	.1
No answer	14	.7	16	.7
Total	2070	100	2262	100

Source: Household survey results

The household structure in the various villages is well illustrated by Tables 8 and 9. The average household size is 7.4 (std.= 3.02) but it differs across income groups and villages as illustrated in the Tables below.

Table 8: Household structure across income groups and regions (clusters of villages)

Income group	Average Household Size	Child Adult Ratio	Average # of Migrants
Poorest 25% of households	9.01	0.85	1
2 nd poorest group	7.84	0.76	1.03
2 nd richest group	7.13	0.63	1.2
Richest 25% of households	5.88	0.56	0.88
Total	7.4	0.78	0.96
Regions:			
Bochum (n = 93)	7.5	0.73	0.7
Praktiseer (n = 142)	7.1	0.95	0.6
Schoonoord (n = 85)	7.5	0.67	1.25
Seshego (n = 67)	6.4	0.60	0.7
Western (n = 55)	7.5	0.72	1.3
Zebediela (n= 143)	8.1	0.56	1.3

Table 9: Household structure per village

Village	Average Household size	Child Adult Ratio	Average # of Migrants per household
Borchum (Dilaeneng)	7.1	0.68	1
Gemarke	8.6	0.24	1
Ga-Chokwe (Opgaaf)	7.0	0.34	0
Ga-Phoga (Louisiana)	6.2	0.69	1
Vaalwater (Bloodriver)	6.0	0.71	0
Mukhomi Chief's Kraal	6.1	0.26	0
Madibong (Lordskraal)	8.0	0.46	2
Dingaanskop (Mohlaletsi)	7.6	0.18	1
Ga-Mashabela (Moskow)	7.5	0.57	1
Daljasofat (Ga-Nkwana)	7.5	0.95	1
Zeekoeigat (Serokolo)	7.1	0.50	0
Tukakgomo (Eerstegeluk)	5.6	1.17	1
Riba Cross (Derdeglid)	7.5	1.21	1
Steelpoort (Ga-Malekana)	6.0	1.25	1
Bothashoek	7.8	0.70	1
Maandagshoek (Boschoff Hospital)	7.1	1.40	1
Madisa-a-ditlovo (Magatle)	6.6	1.72	1
Tsantsabela (Elandskraal)	6.9	0.81	1
Moletlane (Zebediela)	9.2	1.24	2
Mozambique (Mapela)	9.0	0.84	1
Haakdoorndraai (Ga-Matlala)	8.6	1.85	2
Vliegkraal	7.5	0.24	1
Vogelstruisfontein (Skrikfontein/Nyakelang)	8.7	0.73	2
Ga-Shongwane	7.6	0.92	1
Total	7.4	0.72	1

It was worth testing the relationship between household size and child adult ratio and a number of other variables in an exploratory fashion. The results from these regressions show a negative and significant relationship between per capital land ownership and household size as well as a similar relationship between child-adult ratio and household size.

Education status or levels could also influence household behaviour with regard to migration and fertility. This will be tested later but Table 10 provides a profile of the education status of the households.

Table 10: Education – highest school standard passed by resident members of households (%)

Education level	% of sample population (older than 15 years)
No schooling at all	9.8%
Primary school	33.3%
Secondary school	53.8%
Diploma	1.96%
Degree	0.44%
Other	0.65%

Unemployment according to the narrow definition is fairly high in the communities surveyed. The unemployment statistics per village according to the 1996 census are provided in Appendix 4 while occupation and income distribution statistics per village

for 1996 are reflected in Appendices 5 and 6 respectively. Only 5.7% of the population in the villages are employed in the formal sector. This is confirmed by the household survey results, which show that 3.9% of household members in some occupation in the formal sector (Table 11).

Table 11: Main vocational status of household members

Vocational status	Total	Percentage
Baby pre-school or crèche	478	13.79%
Scholar/student attending	1295	37.35%
Retired – not working	228	6.58%
Labour disabled not seeking work	46	1.33%
Housewife unpaid work	234	6.75%
Unemployed seeking work	723	20.85%
Unemployed not seeking work	72	2.08%
Employed – mainly informal	82	2.37%
Employed – formal	141	4.07%
Self-employed formal sector	8	0.23%
Self-employed informal sector	129	3.72%
Unemployed – self-employed	2	0.06%
Employed formal and self-employed	4	0.12%
Retired and self-employed	3	0.09%
No answer	22	0.63%

Source: Survey results

4. INFRASTRUCTURE AND RESOURCE BASE PROFILE OF THE VILLAGES

The villages surveyed are largely rural, isolated, and remote with low levels of development. Despite being deprived of access to basic infrastructure (good roads, electricity, water) most villages have experienced some improvement during the past 5 years through targeted government investment in rural infrastructure. The extent of these investments will be evident from the results reported in this section.

4.1 Infrastructure

Infrastructural services such as communications, power, transportation, provision of water and sanitation are central to both the activities of households and a nation's economic activity. In order to ensure that growth is consistent with poverty alleviation, infrastructure development needs to be extended to all sectors of the population. The different infrastructure components have different effects on improving quality of life and reducing poverty: access to reliable energy, clean water and sanitation helps reduce mortality and morbidity and saves time for productive tasks; transport enhances access to goods, services and employment; communications allows access to services and information on economic activities. Redress of imbalances in infrastructural services has been taking place over the last decade through considerable investment by government. The results from the village level survey provide a good indication of the current access of rural communities to basic infrastructure.

Water supply and sanitation

The results from the village level questionnaire show that households in the villages make use of a variety of water sources, which vary from domestic connections to a standpipe and tap in the village served by a borehole. A total of 18 villages (with an estimated total population size of more than 73 000) depend on boreholes for domestic water, households in three villages have to use the adjacent river for drinking water. In terms of water delivery systems 22 villages reported stand-pipes and taps which are installed at the corner of every street, or just randomly throughout the village, in which case six to ten households will share one tap. In the past, the provincial government used to provide free diesel for the water pump, but since 1994 these services were terminated and now every household has to contribute some money for diesel and maintenance.

Village spokespersons were interviewed on the quality of drinking water available for the village community. For 12 of the villages the water from the community stand-pipes was considered to be always clean while 10 villages indicated this not to be the case. The individual households provided a different view when they were asked about the quality of the water. Their response was as follows:

Water is <u>always</u> clean	29%
Water is <u>usually</u> clean	29%
Water is <u>seldom</u> clean	21%
Water is <u>never</u> clean	21%

The individual households also had mixed responses about the adequacy of the water supply. A total of 312 households (53.8%) complained that the water was sometimes not available and not enough for all their needs.

Most households did not have access to ground water for irrigation purposes. Only 22% of households have access to a borehole, which they can use, for irrigating crops.

Electricity

Estimates from the village representatives (in the village level survey) suggest that, on average, 42% of households within their villages have a domestic electricity connection. However, this average does not illustrate an accurate picture, as 6 of the 24 villages (namely Daljasofat, Gemarke, Opgaaf, Louisiana, Dingaanskop and Moskow) are still without electricity. On the other hand, 9 of the villages reported that 80% or more of the households do have domestic connections.

According to the household survey, 62,7% of the households (in the 18 villages with electricity) has a domestic connection. Of those households, 25,8% has a poor connection, while 74,2% have a good or reliable connection. In the other six villages, residents purchase petrol to fuel generators, or charge car batteries in order to power television and hi-fi systems. It is estimated that 37% of households within those villages with connections do not have access to a domestic electricity connection and make use of other energy sources as described above.

Table 12 below illustrates the discussion above more clearly: Households within two of the villages with an electrical connection – did not respond to the question.

Table 12: Households’ access to electricity (*results from the individual household responses*)

Villages with access	Households with access (%)	Good connection (%)	Bad connection (%)
Borkum (Dilaeneng)	98.6	98.6	0.0
Vaalwater (Bloodriver)	100.0	100.0	0.0
Mukhomi Chief’s Kraal	100.0	94.1	5.9
Madibong (Lordskraal)	70.6	64.7	5.9
Dingaanskop (Mohlaletsi)	5.9	0.0	5.9
Riba Cross (Derdegelid)	74.3	71.4	2.9
Steelpoort (Ga-Malekana)	58.8	58.8	0.0
Bothashoek	100.0	100.0	0.0
Maandagshoek (Boschoff Hospital)	75.0	75.0	0.0
Madisa-a-ditoro (Magatle)	100.0	100.0	0.0
Tsantsabela (Elandskraal)	100.0	100.0	0.0
Moletlane (Zebediela)	94.4	94.4	0.0
Mozambique (Mapela)	100.0	5.9	94.1
Vliegkraal	23.5	23.5	0.0
Vogelstruisfontein (Nyakelang)	5.9	5.9	0.0
Ga-Shongwane	100.0	5.3	94.7

Road, transport and communications infrastructure

The majority (76%) of the villages are not served by a tar road, with households having to travel an average distance of six kilometres to reach one. In addition the villages are on average around 97 kilometres away from the nearest railway station, and 8.4 kilometres from the nearest bus stop. (Detailed results are presented in Table 13a and 13b below). Most villages are however well served by mini-bus taxis operated by independent entrepreneurs. The taxis connect the villages with bus stations and major market towns. Rail transport is not a common way of travel in the rural areas of South Africa – mini-bus taxis and busses are the main form of travel.

As a result of bad or badly eroded gravel roads, transport services are relatively poor. For instance a bus travels at intervals of one to two hours between eight and three-o’ clock, and at intervals of thirty minutes in the morning and in the evening (4 – 7 am; 4 –10 p.m.). While the taxis are available throughout the day, most rural people in these villages cannot afford the costs. Due to this inaccessibility problem, the communities are using postal services at the schools to either send or receive their mail from relatives, who stay or work in urban areas. Some shop owners lend their telephones to reliable customers at some cheap charge, or at least receive the messages on their behalf.

Table 13a: Distances from villages to bus stop and railway station

Village name	Distance to nearest Railway station (km)	Distance to nearest bus station (km)
Borchum (Dilaeneng)	97	0
Gemarkte	112	0
Opgaaf (Ga-Chokwe)	55	0
Louisiana (Ga-Phago)	60	0
Vaalwater (Bloodriver)	21	0
Moletjie-moshate (Mukhomi Chief’s Kraal)	38	0
Madibong (Lordskraal)	97	67
Dingaanskop (Mohlaletsi)	94	12
Ga-Mashabela (Moskow)	94	12
Ga-Nkwana (Daljasofat)	89	15
Zeekoiegat (Serokolo)	n/a	0
Tukakgomo (Eerstegeluk)	7	7
Riba Cross (Derdegelid)	15	0
Steelpoort (Ga-Malekana)	6	6
Bothashoek	10	4
Maandagshoek (Boschoff Hospital)	27	0
Madisa-a-ditoro (Magatle)	13	11
Tsantsabela (Elandskraal)	78	0
Moletlane (Zebediela)	5	3
Mozambique (Mapela)	68	20
Haakdoordraai (Ga-Matlala)	68	8
Vliegkraal	60	0
Vogelstruisfontein (Nyakelang)	68	20
Ga-Shongwane	150	0

The data in Table 13a was obtained from the village level questionnaires, which is largely based on guestimates from the village spokesperson and/or observations. Recently we acquired a product called “SA Explorer” released by the Municipal Demarcation Board. It is a GIS based system based on the 1996 census, which allows you, amongst other things, to physically measure the distance between villages and a range of infrastructure variables. The results of the application of this database are summarised in Table 13b. It provides the distances to schools and rivers in addition to the distances to a main road and railway line.

Table 13b: Distances from villages to main infrastructure variables as measured by SA Explorer GIS database. (Distances in km)

Village	River	School	Main Road	Railway
Dilaeneng	1.24	0.07	17.16	61.09
Gemarke	3.92	0.80	28.89	70.55
Ga-Chokwe	3.80	1.37	4.82	22.15
Vaalwater	2.84	1.81	1.92	2.64
Madibong	7.30	1.06	23.36	37.14
Mohlaletsi	1.10	0.45	22.48	46.35
Ga-Mashabela	3.59	0.99	8.42	38.64
Ga-Nkwana	1.23	1.35	15.25	54.24
Serokolo	0.65	0.82	13.78	27.32
Tukagomo	2.23	1.01	3.82	8.16
Riba's Cross	11.03	1.21	12.68	29.71
Ga-Malekana	1.75	0.63	2.32	28.35
Bothashoek	8.34	1.17	3.12	27.86
Boschoff Hospital	1.30	0.45	8.48	20.22
Magatle	0.78	0.85	14.66	16.36
Elandskraal	1.31	0.28	27.74	34.74
Moletlane	4.96	0.84	2.16	2.98
Mapela	3.24	1.00	4.18	21.80
Ga-Matlala	1.08	0.23	30.77	60.18
Vliegkraal	4.68	0.29	13.42	41.78
Skrikfontein	2.48	2.48	26.02	42.97
Mean Distance:	3.28	0.91	13.59	33.10

From the household survey it was found that 97% of the household members in the communities surveyed, work or study within 20 kilometres from their home (83% within the same village).

Financial services

When asked about access to financial services 18 of the village spokespersons indicated that the households in their villages have access to a commercial bank branches although only two of the villages surveyed have branches located in the same village. Most households would be within a bus or taxi ride from the nearest bank branch. In surveying the different financial institutions we found that almost half the villages could claim access to at least 3 different commercial banks. The following table reflects the presence of the different financial institutions in the survey areas.

Only 12 of the villages have access to financial services provided by agricultural co-operatives – the two main co-operatives namely Eastern Transvaal Coop (OTK) and Northern Transvaal Coop (NTK). Many of the villages will however also have a small-scale farmer co-operative close by but many of them are dysfunctional. In 16 of the villages moneylenders were active providing cash loans to households.

Table 14: The presence of financial institutions in the survey area

Financial institution	Number of villages with access to branch
ABSA	13
Standard Bank	21
FNB	11
Nedbank	5
Saambou (Building society)	4
Land Bank	9
Agricultural Co-operative	12

Post office

Only 4 villages have post offices located within the specific village. Most villagers resident in the villages without a post office have to use a bus and/or a taxi to get to the post office. The post offices, which were built after 1994, are mostly built in a village in which the chief resides.

Police

Only one of the villages surveyed had a police station located within the village. However the majority of village respondents were of the opinion that their village has seen some police presence over time.

4.2 Human Development

This section focuses on the village profiles in terms of their access to government services important for improved quality of life and human development namely education and health. Sectors such as education and health are often perceived to have greater potential to ‘solve’ poverty than they actually possess: without economic opportunities, in particular, higher levels of education and better health will not end poverty or inequality. Nevertheless, the services provided by these sectors can contribute to the alleviation of poverty by increasing poor people’s well being and productivity, and equity demands that the poor have greater access to education, training, health care, and protection.

Education

The villages seem to be fairly well endowed in terms of educational resources. There is a primary school located within each of the 24 villages, while 19 villages have a secondary school as well. Senior Secondary schools are located in 21 of the villages surveyed.

Health

Almost half (49%) of the households in the villages surveyed have migrant workers. Respondents indicated that the migrant labours are responsible for bringing along diseases like HIV-AIDS, diseases related to the respiratory tract and Asthma. The analysis reveals that 25% of the villages reported motor vehicle accidents as a major concern to the residents. Five villages have reported sexually transmitted diseases, including HIV-AIDS. Other villages report cases of strokes, head and feet sores, Pellagra, Kwashiorkor and diseases of the respiratory tract that also occur sporadically on the fourth, fifth and sixth month of the year.

In terms of access to health facilities it was determined that 11 villages have a medical clinic while 22 villages are within reach of such a facility.

4.3 Resource base

It is commonly observed that the villages in the surveyed area are not well endowed with natural resources. Each village spokesperson gave his/her view on the condition of the vegetation in the immediate area of the village. Their responses are summarised in Table 15 below. The household survey reflects that most households (85%) collect firewood from the forest/grazing land. Only 14% of households indicated they never collect firewood. So the grazing/forest lands surrounding the villages are important resources for energy and grazing. On average it is perceived that 1 600 ha of forestland is encroached while 9 000 ha of grazing land face the same threat.

Table 15: Perceptions of village spokespersons on condition of village resource base (# of villages).

Type of land	# of villages with access	Density of vegetation			Main use
		Thin	Medium	Rich	
Forest land ⁴	23	9	13	1	Fuel wood and fencing
Communal Grazing land	23	8	13	2	Grazing/thatch grass
Government land	8	3	0	5	Grazing and fuel wood

The community spokespersons were also asked about the major environmental problems – such as soil erosion and salinity. Their responses were as follows (Table 16):

⁴ Forestland in the context of the Northern Province is perhaps not the correct description and refers rather to African Savanna with bushes, which are often used for fuel wood.

Table 16: Major environmental problems in villages surveyed

Environmental problem	# of villages reporting problem	% of village land affected now		Comparison of problem with 5 years ago (#)		
		Average	Range	More	Same	Less
Soil erosion due to wind	23	19.0%	3 – 50%	16	2	5
Soil erosion due to water	24	30.2%	2 – 75%	18	3	3
Soil sickness	11	36.0%	5 - 90%	8	0	3
Water logging	16	9.9%	2 - 45%	5	4	7
Salinity	10	9.5%	2 – 30%	4	6	0
Toxity	4	5.5%	1 – 10%	0	4	0
Mining and quarrying	5	20%	1 – 45%	1	3	1

High level of deforestation (21 villages indicated this to be taking place) and overgrazing (23 villages indicating this to be a problem) has left the land without any cover, with subsequent high level of soil erosion, impermeable layers, dongas, and a high degree of stoniness. The responses listed here reflect this state of affairs. The extent of deforestation is also reflected by the responses of the individual households with 80% indicating that the trees or shrubs for firewood within walking distance from the village is relatively scarce. Most households (83%) now have to walk much further to get firewood than 5 years ago. The invasion of thorn acacia in areas of overgrazed land does not seem to be a problem probably due to the fact that these species also make good firewood. The invasion by sharp hard grasses also does not seem to be a problem.

Most villagers have abandoned crop farming, and those that still cultivate for subsistence during summer, do so on small pieces of irrigated land next to rivers, streams and fountains. Only 42% of the households surveyed usually cultivate any cropland. The abandoned cropping lands have given rise to increased grazing lands, hence a higher degree of stock farming, but there is no longer enough grass for the stock, such that some farmers hire grazing lands from the adjacent white commercial farmers.

No conclusive opinion could be obtained from the households about the quality of their arable land. According to them the loss of topsoil in their crop fields has not been a major problem and has in fact stayed the same or has become less of a problem over the last 5 years. Thirty percent of farmers consider the arable soil poor and 60% are of the opinion that the soil's humus quality stayed the same over the last 5 years. The individual households' assessment on the quality of the soil and terrain resource base, reflected in Table 17, gives a slightly different picture at an aggregate level. The results differ in the analysis done per village – reported in Appendix 7. Here we see that only in 8 villages did households indicate that the characteristics of poor soil are a normal occurrence. The “seldom” response was more dominant in most of the villages.

Table 17: Household responses on soil characteristics (See Appendix 7 for differences between villages)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	17	64	18
Patches of pebbles	17	71	10
Gravelly patches	29	51	18
Sandy soil with little clay	47	41	11
Salty soil patches where nothing grows	3	40	49

The sandy soil and gravelly patches seem to be occurring more often than the other problems. The households' response about whether these problems have increased over the last five years is very indifferent and no real conclusion can be made from this.

The depletion of underground water was also reported as a serious problem with 20 of the villages reporting that groundwater has been depleted. In 15 of the villages depletion of groundwater resources was considered more than 5 years ago. In most of the districts surveyed, mining activity has also put pressure on underground water resources. At the time of the survey the Phalala River near Ga-Shongwane village was dry, and people were digging holes in the river to get water, while some were using buckets to draw water from the dug wells. Daljasofat, in the Schoonoord district, had the same problem, but by the time of survey the Reconstruction and Development Project contractor was busy installing some water infrastructure in the village.

The general shortage in the availability of domestic water resulted in the emergence of informal water markets. Residents, who have tractors, fetch water at nearby rivers and sell to local people at rates of R6 per drum of 200 litres. Those households that have drilled their own boreholes also sell water at rates of twenty-five cents, per twenty-five-litre container.

Surface and ground water is also considered to be highly polluted with 16 of the village respondents indicating this to be a problem but it was generally considered that the problem is the same or less than 5 years ago.

5. HOUSEHOLD INCOME AND ASSETS⁵

5.1 Introduction

This section provides a profile of household income and asset holding. Although this study has a particular focus on asset ownership and land holding per household and per capita and also the distribution of assets across households we will however spend some time in the next few sections discussing the various income sources of the households surveyed.

⁵ For the remainder of the analysis we work with 584 households since one household was removed from the sample frame due to inconsistent and poor responses with regard to income, assets and fertility.

5.2 Contributions from resident household members earning wages and pensions

Almost half (48%) of the households received a contribution from resident household members who are earning a salary or wage. Many of these residents work on mines or farms located close to the different villages. The mean contribution received by each of these recipient households is R17 222 (std = 314 663.95) per annum. There are a number of respondents who reported annual salaries of R336 000, which is partly responsible for the high standard deviation. In most (200 of the 281 or 71%) of these households only one member made cash contributions to the household to cover household expenses⁶.

Table 18: Details of cash income contributions to households by residents

	Wages	Pensions	Pensions and Wages
Number of households reporting income from source	281 (48%)	220 (37%)	75 (13%)
# of households where only 1 member made a contribution	200		
Mean annual contribution	R17 222	R7 701	R15 324
Standard Deviation	R314 663,95	R336,95	

Note: These are only cash contributions. Excludes other non-cash income such as own consumption of agricultural produce and those portions of wage or pension income that were not added to the household pool.

Contributions to the household also emerged from resident pensioners. In this case 220 (37%) households received contributions from the pensioners – in most cases their total monthly amount of R550. The average annual contribution of pensions per household was R7 701 (std 336.95). There are 75 of the households who received contributions from wage earnings as well as from pensions. Taking the two sources of income flows into consideration a total of 73% households received a contribution from either a resident wage earner or pensioner amounting to annual average of R15324. This equates to an average of R203.50 per person per month or roughly \$100 (purchasing parity dollars) per person per month (\$3/day). It should be emphasised that this is only **cash contributions** and excludes other non-cash income such as own consumption of agricultural produce and those proportions of the wage or pension income that were not added to the household's income pool.

5.3 Other sources of household income

Besides the contribution from the resident pensioners and wage employees the households also earn income from other sources such as renting out equipment and accommodation and selling agricultural produce and livestock. Income from agricultural activities is very limited as the table below clearly illustrates. Only 17% of households earned an income through the sales of crops and/or livestock. This again confirms the limited contribution of agriculture to cash income of these households. It is however not surprising given the harsh circumstances and poor

⁶ The survey also shows that there are 62 households (22%) receiving contributions from 2 wage earning household members while 12 households have 3 contributing members, 2 households have 4 and one household is privileged to have 5 members contributing part of their cash income to the household.

support services under which they try to farm. One would, however, expect that household income would be supplemented by own consumption of staple foods. However surprisingly we found that almost 58% of the households interviewed in the 24 villages did not grow any crops including staple food. Only 5 households indicated that they have grown enough food staple crops with a surplus for sale. Some 38% of households managed to grow food crops to satisfy only part of their household staple food needs while the remaining 3% were not that successful. From previous surveys (Makhura, 2001 (based on 1997 data); Kirsten, 1994; 2000) it was determined that poor households in these rural areas consume one 80kg bag of maize meal per month for a household size of 7 AE's. In 2000 prices this cost R140 in retail terms. Subsistence needs for typical household of 7 AE is 14 bags of raw maize - given milling extraction rate of 85%. Using the adult equivalent figures of those households who indicated that they produce grain for subsistence purposes the extent of subsistence income was calculated. Households were asked in the interviews how much of their normal cereal consumption was provided by subsistence output. The answers were as follows and for each a different factor was allocated to be multiplied by the total consumption requirement.

More than enough	=	100%
More than half	=	75%
Less than half but more than a quarter	=	37%
A quarter or a bit less	=	20%
None and no staples grown	=	0%

This was then used to estimate the annual imputed income from staple food production (See Table 19 below).

Table 19: Other sources of household income

Source	% of households (n = 584*)	Mean/year/hh#	Std
Crop sales	16.4%	R930	1706.33
Renting out oxen, plough and equipment	3.1%	R3417	2995.38
Sales of manure, compost	0.7%	R146	63.1
Sales of livestock	16.6%	R3423	4433.0
Sales of livestock products	0.7%	R290	197.65
Renting out accommodation	0%	-	-
Subsistence production	34.2%	R 532	364.54
Total Agricultural Income	39.2%	R2 566	4252.83

* One household's income and asset statistics were omitted because it was not usable

Mean of those households earning income from source

5.4 Remittances from migrant members

Another important source of household income is remittances from non-resident migrant workers of the households. Details of household migration are discussed later but it is important here to discuss the income contribution of these household members to total household income. A total of 232 households (40%) reported migrant members in the household contributing on average R5 970 per year. Sixty households reported 2 migrant workers and 23 had 3 migrants within the household. Many of the migrant workers also brought home goods ranging from R200 to as much as R20 000 in value per annum. Taking the in-kind contribution into consideration

total migrant remittances is on average valued to be R14 156 per annum per household. Mean cash remittances is R11 475 and the mean annual value of goods brought by migrant workers are R2 983.

Table 20: Details of migrants' contributions to household income

# of households with income contribution from migrants	232 (40%)
Mean contribution (annual)	R5 970
# of households with 2 migrant workers	60 (10%)
# of households with 3 migrant workers	23 (4%)
Value of goods brought home by migrant workers (annual)	R200 – R20 000
Mean total migrant remittances (including 'in-kind' contributions)	R14 156
Mean cash remittances (annual)	R11 475
Mean annual value of goods	R2 983
Mean per capita total remittances (annual)	R2 145
Range of mean per capita total remittances	R38 – R19 000
% of hh which receive < R2200 per resident per annum (remitt.)	70%

5.5 Total household income

Table 21 below provides a summary of all the sources of household income. Means for the different categories are calculated across recipient households only and not for all households and as a result totals will not add up. Agriculture (including subsistence production) is contributing 7.5% to total household income while local wage income (47%) is by far the dominant source of income. The other noteworthy trend – although still very aggregate is the more important role of locally generated income through wages, pension and agriculture (not taking into account own consumption of food crops) play vis-à-vis the earnings from the migrants (See Table 22b and 23)

Table 21a: Summary of sources of household income (Rand per annum; N = 584)

	Remittances	Value of goods brought by migrants	Agricultural income	Value of subsistence production	Contribution by resident members	Contribution by pensioners	Total household income
N	231	217	229	200	280	220	527 ⁷
Mean*	11 475.06	2 983.01	2 566.40	532.66	17 289.35	7 701.38	19 753.95
Median	8 500.00	2 000.00	1 100.00	378.10	10 200.00	6 240.00	14 338.70
Std. Dev.	11 094.44	2 979.85	4 254.83	364.54	31 427.68	3 336.95	26 351.63
Minimum	200.00	74.00	108.00	88.06	840.00	1 320.00	340.43
Maximum	73 600.00	26 000.00	30 441.00	22227.61	34 5600.00	21 264.00	345 600.00
1 st quartile	4 800.00	1 275.00	485.00	274.28	4 800.00	6000.00	7 274.84
2 nd quartile	8 500.00	2 000.00	1 100.00	378.10	10 200.00	6240.00	14 338.75
3 rd quartile	13 900.00	3 800.00	4 275.00	691.08	18 000.00	8160.00	24 000.00

* Mean for households receiving income from source. Mean total income will thus not add-up

⁷ For only 527 households usable income data were recorded

Table 22a: Annual household income per survey region

Income Averages	Region						Grand Total
	Bochum	Praktiseer	Schoonoord	Seshego	Western	Zebediela	
Agricultural income	1,423	1,685	944	4,675	4,847	1,250	3,322
Value of subsistence income	-	410.06	449.81	611.98	575.09	271.91	532.66
Contributions by residents	15,870	17,078	21,745	17,432	16,343	19,463	17,289
Contributions by migrants	8,181	21,408	19,092	7,881	12,265	11,195	14,156
Pensions	7,887	7,294	7,897	7,777	7,448	8,539	7,701
Mean annual Household income	13,282	20,648	20,750	15,988	25,004	15,490	21,133
Household income per capita	1,769.81	2,265.24	2,193.93	2,288.82	2,590.16	1,401.74	2,203.06
Household income per AE	2,926.80	4,820.13	4,222.46	3,875.35	4,508.26	3,062.51	4,129.69
Agric income per capita	176.61	299.09	133.57	283.93	759.52	125.00	487.54
Agric income per AE	257.05	422.76	197.44	376.48	1000.84	203.87	653.13

Table 22b: Number of households reporting income from source in Table 22a

	Region						Total
	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	
Cash remittances	24 (25.8%)	20 (29.8%)	39 (38.2%)	41 (32.8%)	23 (42.6%)	84 (58.7%)	231
Remittances in kind	22 (23.6%)	16 (23.8%)	35 (34.3%)	40 (32.0%)	22 (40.7%)	82 (57.3%)	217
Agricultural income*	24 (25.8%)	19 (28.4%)	54 (63.5%)	25 (17.6%)	2 (3.7%)	124 (86.7%)	248
Salary and wage income	31 (33.3%)	26 (38.8%)	38 (37.2%)	73 (58.4%)	11 (20.4%)	101 (70.6%)	280
Pension contributions	43 (46.2%)	22 (32.8%)	39 (38.2%)	36 (28.8%)	19 (35.2%)	61 (42.6%)	220
# of households reporting income	78 (83.9%)	53 (79.1%)	92 (90.2%)	117 (93.6%)	41 (75.9%)	141 (98.6%)	522

* Includes value of subsistence production

Table 23: Percentage contribution of income categories to total household income per person

	All	Poor	Nonpoor
# of observations	513	163	350
Mean household income	R19 504	R6 272	R25 933
Income shares (%):			
Local wage earnings	39.1	29.7	40.2
Pensions	17.8	42.8	14.8
Farm income	4.3	7.6	3.9
Migrant remittances	38.8	19.9	41.1

5.6 Income inequality

Although this study focuses on the effect of asset inequality on household demographic decisions it is however important to also obtain a sense of income inequality amongst the households surveyed. When total household income is considered we estimate that 10% of the households earn a cumulative 30% of the total household income. In absolute terms we estimated that 90% earn less than R36 000 per annum or \$17 142 (\$1 = R2.1 - ppp rate (World Bank, 1998)).

Table 24: Number of households in survey regions below international poverty lines (per capita household income)

Survey Region	# of households below \$1/day (ppp)	# of households below \$2/day
Bochum	31 (33.3%)	53 (57.0%)
Seshego	20 (15.5%)	35 (52.2%)
Schoonoord	24 (28.2%)	41 (48.2%)
Praktiseer	25 (17.6%)	52 (36.6%)
Zebediela	20 (37.0%)	30 (55.5%)
Western	14 (9.8%)	50 (35.0%)
Total	134 (23%)	261 (44.7%)⁸

The Gini coefficient for annual household income is 0.46. However, it is probably more appropriate to consider the total household income per person – the average income per person per annum is R3 090 (std = 4240). The Lorenz curve in Figure 2 illustrates the distribution of income per resident member of the household. A Gini coefficient of 0.48 is estimated. 50% of the cumulative income per person is earned in 81% of the households while 19% of the households capture the other 50%. This illustrates some inequality between individuals across the study area. To obtain a more disaggregate picture of income inequality the same analyses were done in each of the six survey regions. The results of the Gini coefficient for each of the regions are presented in Table 25 below. It is surprising that the Gini coefficient for income per person is higher than the Gini coefficient for total household income. This is despite the fact that the calculation procedure was correctly applied to rank reorder all households after income per person has been done. This could possibly be as a result of the extremely high incomes of the richest households and the fact that their households are also smaller. In addition the rest of the middle to poor households face very similar situations with more or less the same number of members contributing to the household and that household sizes are also more or less the same.

Table 25: Gini coefficients for annual household income and income per person

Region	Total household income	Income per person
Bochum	0.36	0.42
Seshego	0.45	0.49
Praktiseer	0.39	0.44
Western	0.47	0.47
Zebediela	0.44	0.42
Schoonoord	0.55	0.54
Total sample	0.46	0.48

⁸ The World Development Report for 2000/01 quote a figure for South Africa indicating that 35% of South Africa's population live below \$2/day.

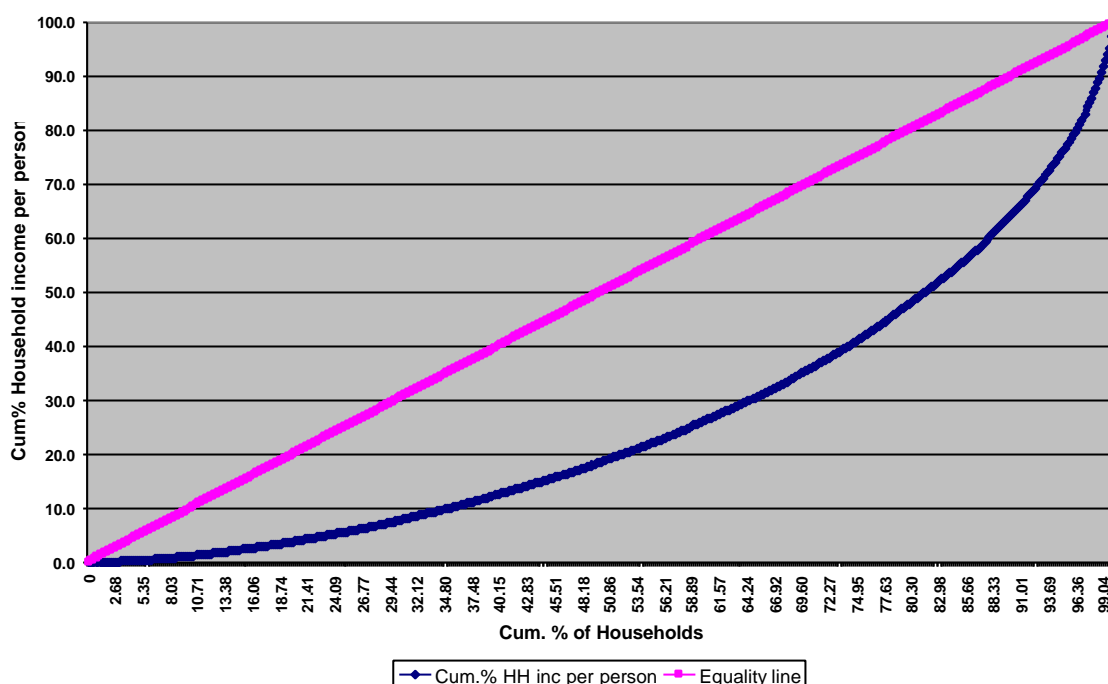


Figure 2: Lorenz curve for total annual household income per person

5.7 Household asset base

5.7.1 Agricultural land and assets

In reviewing household assets we first turn to agricultural assets. Due to the nature of the land tenure system in the survey area it is only possible to determine the size of the plots of arable land allocated to individual households. The area of grazing land could also not be estimated and valued. From the earlier discussion it was expected that access to arable land will be limited and this is confirmed by the fact that 55.3% of the households in the survey own/occupy⁹ a piece of arable farm land which include a kitchen garden and/or main field plot. Table 26 highlights some differences between the households with access to arable land and those without.

Table 26: Characteristics of households with access to arable land

	Households with land (n = 323)	Households without land (n = 261)
Mean household income p.a.	R20 552	R18 656
Mean income per person p.a.	R3 048	R3 146
Mean household size	7.6	7.1
Mean child/adult ratio	0.63	0.82
Mean # of migrants	1.1	0.8
Mean # of live child births	3.1	2.9
# of children living away from home	1.5	1.8

⁹ Although the concept of “own” and “ownership” is used in this study there are no cases where household have freehold tenure. All land is tribal land and households have usufruct rights usually granted by a “Permission To Occupy” granted by the traditional leader. Ownership in the context of this study therefore refers to occupation on tribal land.

Of the 323 “land owning” households (containing 2 469 people – 57%) 210 have a small plot commonly referred to as a kitchen garden or vegetable garden. For a substantial number (51) of households these gardens are located within the perimeters of their homestead and occupy only a few square meters. Apart from the kitchen garden most households only have one additional main field where staple food crops are grown – only 54 households have access to a second field.

After converting all arable land sizes to hectares we calculated the total land ownership of each household. Households in the study area with land own on average 2.3 hectares – 51% own less than two hectares. Median size is 1.66 ha and maximum reported land size 10 hectares. Land ownership per person is an important indicator in the context of this study. The mean land ownership per person is 0.35ha with 80% of the households occupying less than 0.5ha per resident. An indication of the distribution of land ownership is provided in Figure 3 below.

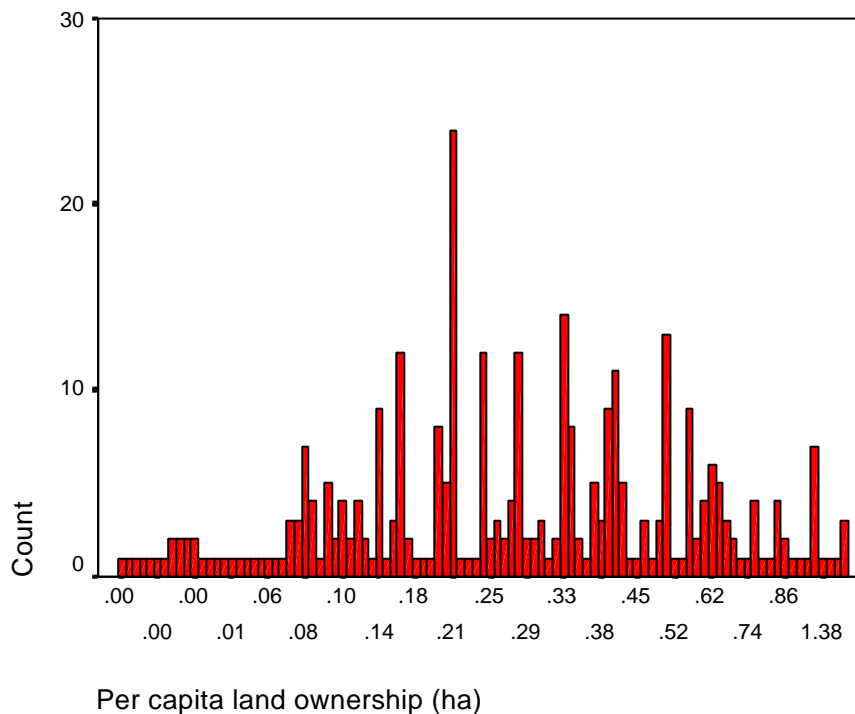


Figure 3: Distribution of land per resident person

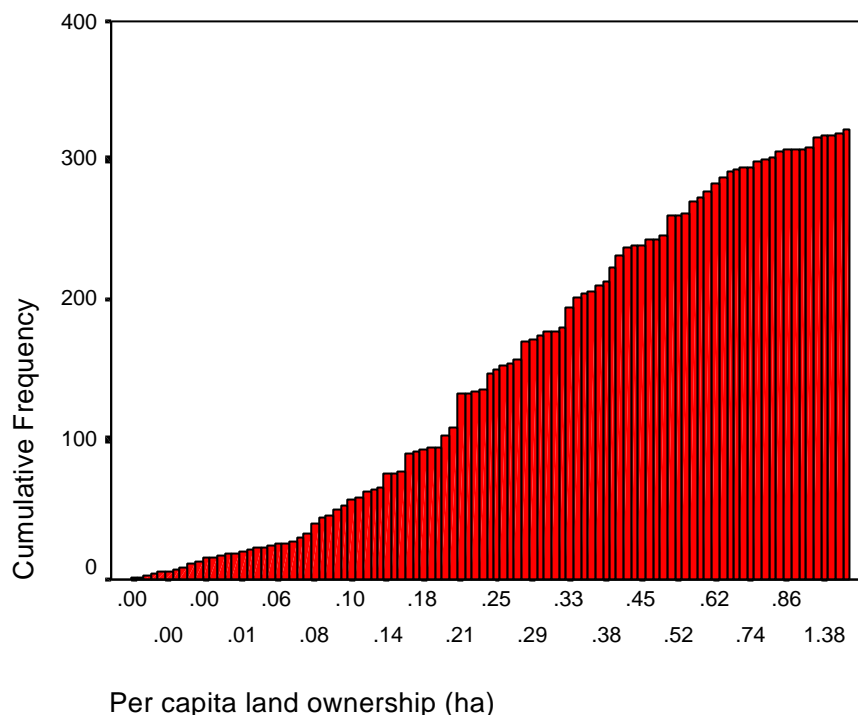


Figure 4: Cumulative distribution of land per resident person

Households cultivating less than 500 m² (0.05ha) could however be considered to be landless resulting in landowning households to number only 306. This is taken into consideration in the following discussions and tables. The number of land owning households as well as the average land ownership per region differs slightly between the different villages and survey regions. This is illustrated in Table 27 below. Table 26 compares among other things three key variables that determine land access, i.e. % of households with land; mean land ownership per adult equivalent and the distribution of land among these households (Gini coefficient). From the data in Table 26 it is evident that there are only few households with access to arable land each having very little land per adult equivalent. In some regions such as the villages in the Western and Schoonoord regions access to land is high with moderate Gini coefficients and land per adult equivalent. In general there is not much difference between the clusters of villages, and land quality is more or less the same although one could argue that land quality in Praktiseer and Schoonoord is somewhat better.

Table 27: Average size of arable land per region (ha)

Region	% of households with access to land ¹⁰	Mean land size (ha)	Mean HH size	Land ownership per person (ha)	Land per AE (ha)	Gini Coefficient (Land per AE)
Bochum (93)	46.2% (43)	2.89	7.21	0.55	0.61	0.63
Praktiseer (142)	16.2% (23)	2.67	7.17	0.46	0.38	0.36
Schoonoord (85)	75.3% (64)	3.31	7.95	0.47	0.46	0.30
Seshego (67)	50.7% (34)	1.79	6.79	0.26	0.28	0.46
Western (143)	88.1% (126)	2.21	8.03	0.31	0.30	0.30
Zebediela (54)	29.6% (16)	1.07	7.94	0.17	0.12	0.26
TOTAL	52.4% (306)	2.46	7.69	0.38	0.37	0.46

¹⁰ Households with less than 0.05ha were considered to be landless

Tables 28 and 29 provide further data on the distribution of households' access to arable land (in total and per person) and relate that to important household indicators and household income sources. Several explanations could be provided for the relationship between migrant wages and landholding illustrated in Table 28 and Figure 5. This will be the topic for further analyses. It could be that in the second leg of the inverted U relationship, migrants interpret the larger land size of the family as requiring less support and/or their wages were less.

Table 28: Distribution of land ownership per household

Land size category (ha)	# of HH in category (frequency)	Percentage in category (%)	Cumulative percentage (%)	Average size in category (ha)	Share of remittances in HH income (%)	Share of agr. Income in HH income (%)
< 0.5	22	6.79	6.79	0.02	9.12	0.60
0.5 – 1	68	21.30	28.09	0.80	22.93	6.58
1.01 – 2	94	29.01	57.10	1.73	30.18	11.09
2.01 – 3	54	16.67	73.77	2.80	30.55	7.55
3.01 – 4	55	16.97	90.74	3.58	34.47	3.54
4.01 – 8	24	7.41	98.15	5.33	6.44	10.40
> 8	6	1.85	100	9.97	3.01	1.25
Total	323	100		2.33	25.64	4.99

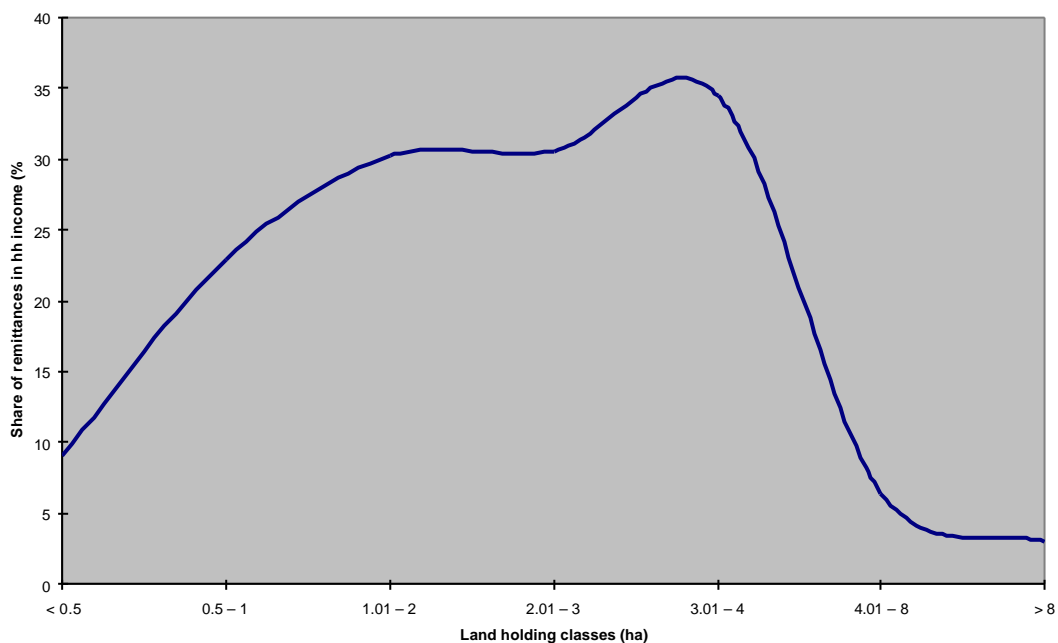


Figure 5: Share of remittances as % of household income for different land classes

Table 29: Distribution of land ownership per resident person

Per capita land size category (ha)	No. of HH in category (frequency)	Percentage in category (%)	Cumulative percentage (%)	Average number of migrants per HH	Average number of children per HH
< 0.1	50	15.47	15.43	0.92	2.36
0.1 – 0.2	58	17.95	33.64	1.02	2.00
0.21 – 0.3	66	20.43	54.01	0.97	2.33
0.31 – 0.4	48	14.86	68.83	1.31	2.76
0.41 – 0.6	55	17.02	85.80	1.24	2.02
0.61 – 1	40	12.38	98.15	1.10	2.13
> 1	6	1.85	100.00	0.33	1.67
Total	323	100		1.07	2.24

Table 30: Correlation between land holding (per household and per person) and farm assets, non-farm assets, total cash receipts

	Farm Assets	Non-farm assets	Total HH income	# of migrants per household	HH Income per person	# of children per household
Total land size per household	0.285** (0.001)	0.078 (0.187)	0.137* (0.021)	-0.082 (0.151)	0.072 (0.230)	-0.095 (0.098)
Land holding per person	0.145 (0.104)	-0.001 (0.982)	0.040 (0.507)	-0.092 (0.110)	0.219** (0.000)	-0.076 (0.188)

Significance in parentheses (99%***; 95%**; 90%*)

In terms of the hypothesis stated earlier one of the most important analyses to be done here is to determine the inequality in land ownership. The inequality of land per resident person is illustrated by the Lorenz curve in Figure 6 and the Gini coefficient of 0.46. (The Gini coefficient for total land ownership is 0.39.) Since there could be differences between regions (clusters of villages) we also analysed equality in land ownership per region. The results are reported in Table 31. It seems that the villages in the Praktiseer and Western clusters have the least inequality but in Bochum and Seshego land ownership is fairly unequal.

Table 31: Gini coefficients for total land ownership and land per person

Region	Total Land size	Land per person	Land per AE
Bochum	0.62	0.69	0.31
Praktiseer	0.38	0.36	0.37
Schoonoord	0.23	0.30	0.34
Seshego	0.48	0.46	0.27
Western	0.24	0.31	0.29
Zebediela	0.30	0.36	0.10
Total sample	0.39	0.46	0.41

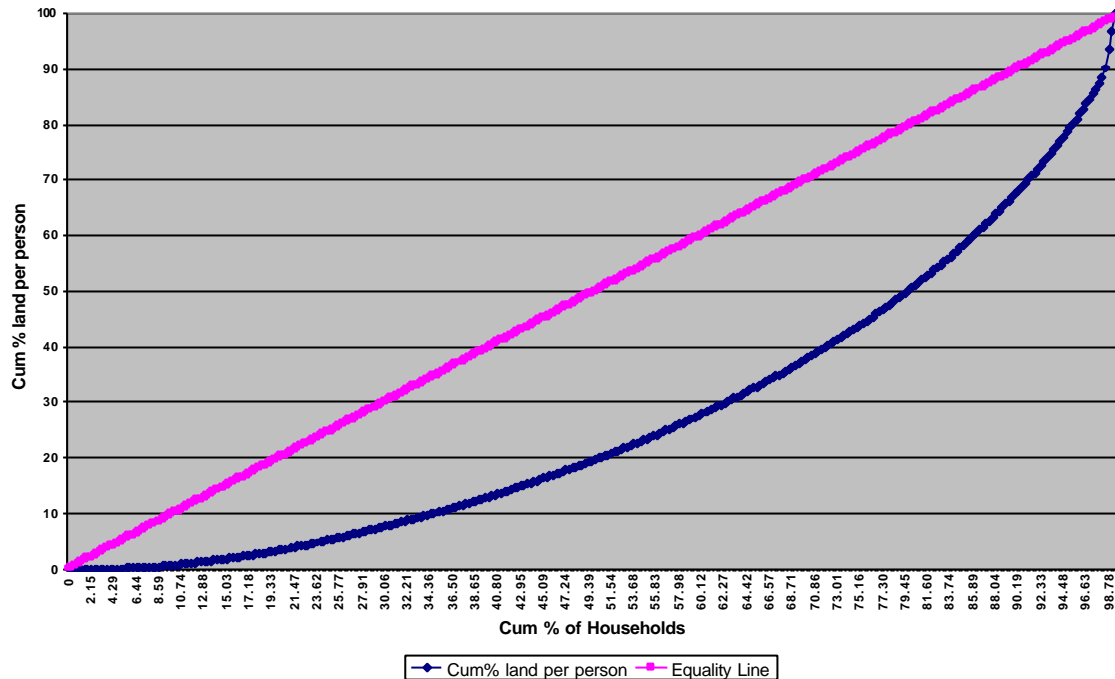


Figure 6: Lorenz curve for household land holding per resident person

Table 32 provides an assessment of other agricultural assets owned by the sampled households. The figures here confirm again that these households are not fully involved in agricultural activity. Apart from a few outliers most of the findings are in line with expectations and previous surveys in the region (See previous surveys amongst rural communities of the Northern Province by the University of the North and University of Pretoria since 1994).

Another important asset to many rural communities in this province is livestock. Due to the nature and purpose of livestock ownership estimating a value for livestock assets is always difficult and was therefore not included in the questionnaire. The table below nevertheless gives a good assessment of the livestock herd amongst the communities sampled and can effectively be used in later analysis as some proxy for asset base or wealth status. However to enable wealth calculations we used some representative prices for different livestock types obtained from the region¹¹. The results (Table 33) are again in line with the general overview of the survey area and the findings from earlier survey work.

¹¹ The ranges of values for livestock were as follows: Cattle: R900 to R2250 depending on region and animal; Goats: R180 to R350 and chickens R20 –R30

Table 32: Ownership and value of other agricultural assets

Farm Asset	# of households	Mean value*	Std
Motor vehicle/bakkies	17 (2.9%)	R21 666.00	14 969.81
Motorbike	0	-	-
Tractor	23 (3.9%)	R29 195.00	20 310.15
Trailer/cart	27 (4.6%)	R662.50	287.85
Shop/workshop	2 (0.3%)	R90 666.00	65 736.84
Sewing machine	14 (2.4)	R323.07	203.73
Hammermill	0	-	-
Plough	21 (3.6%)	R868.50	1568.62
Ridger	5 (0.85%)	R380.00	192.35
Harrower	7 (1.2)	R885.71	1381.33
Weeder	0	-	-
Generator	3 (0.5)	R15899.50	19 941.18
Other	113 (19%)	R49.67	135.11

* Mean value calculated for households owning a particular asset

Table 33: Livestock ownership

	# of households	Mean herd size	Minimum	Maximum	Std. Deviation
Calves	64 (11%)	5.6	1.00	33.00	5.5187
Heifers, tollies	13 (2.2%)	2.7	1.00	10.00	2.3588
Cows (>3yrs)	74 (12.6%)	18.2	1.00	150.00	24.5905
Oxen (>3 yrs)	16 (2.3%)	4.7	1.00	12.00	3.7327
Bulls (>3 yrs)	44 (7.5%)	3.6	1.00	12.00	2.9112
Donkeys	31 (5.3%)	4.9	1.00	21.00	4.4717
Goats	133 (22.7%)	9.8	1.00	30.00	6.7287
Sheep	27 (4.6%)	12.7	2.00	42.00	10.2237
Pigs	10 (1.7%)	2.8	1.00	11.00	3.0478
Chickens	148 (25.3%)	18.2	1.00	1000.00	81.8040
Other*	37 (6.3%)				

* Includes: geese, chicks, doves, dogs and cats

5.7.2 Other household assets

To obtain an indication of the value of households' other non-farm assets we also asked respondents to value their house/dwelling. This is an unusual question given the nature of tenure arrangements in these villages. Despite this reality response rates were quite high with 574 (98%) of the households responding. Most (80%) estimates are below R50 000 with the mean value at R37 802 (std 40 442.31).

Questions on ownership and value of other household assets such as furniture, cars and bicycles were also asked. The results are summarised in Table 34 below. Values are reasonably consistent and can provide a good basis for estimates on total asset value.

5.7.3 Total asset base

Having estimated agricultural and household assets, knowing the land size and ownership of livestock we could now provide a reasonable assessment of the households' endowment status. The summarised results are provided in Table 35 below.

Table 34: Ownership of other household assets

	Phone	Toilet	Hi-Fi set	Radio	TV	Dining Room Suite	Living Room suite	Electric Stove	Gas stove	Bicycles	Car
N	25*	478	228	387	287	239	188	127	100	158	76
Mean value	854.42	379.35	1 376.75	149.02	1 331.13	2 299.04	2 657.65	1 607.88	299.96	341.03	25 105.41
Median	799	300	900	64.5	1000	1500	1800	1349.5	120	275	15000
Mode	699	300	600	50	300	1500	2000	120	120	200	10000
Std.	805.81	295.40	1 359.55	363.78	1 131.02	2 832.07	3 415.63	1 497.30	417.53	321.20	31 338.87
Minimum	20	40	80	10	80	80	400	80	40	10	900
Maximum	3 999	2 000	9 000	6 000	7 000	30 000	30 000	6 000	2 500	2 500	150 000

* 17 households owning a cell phone

Table 35: Summary of household asset base

	Value of dwelling	Land size	Total value of all other assets	Value of all livestock	Value of all assets per person*
N	573	324	546	573	573
Mean	R37 802.43	2.33 ha	R9 793.13	R7 700.32	R9 009.69
Median	R30 000.00	1.66 ha	R3 073.50	-	R5 710.00
Skewness	5.962	1.74	6.76	7.314	5.965
Minimum	R500.00	.0002 ha	R7.00	R0	R93.33
Maximum	R500 000.00	10.00 ha	R313 147.00	R351 870	R169 198.50
Percentiles: 25	R15 000.00	1.00 ha	R899.50	0	R3 113.25
50	R30 000.00	1.66 ha	R3 073.50	0	R5 710.00
75	R50 000.00	3.32 ha	R7 608.75	R2 800	R10 286.83

* Including land and livestock

When the distribution of wealth is analysed we again see that there are a few rich people in these communities with extraordinary wealth in comparison to the other households. In the case of all the movable assets – the results show that 80% of the households own less than R10 000 worth of assets. The 6 richest households (1%) own 25% of the total value of movable household assets of the sample while the poorest 25% of households barely own 2% of the total asset base– again emphasising the inequality – also reflected in a Gini coefficient of 0.75. When values for land, dwellings and livestock are included to estimate total wealth the picture is a bit different. Here the mean value of total assets (or wealth) is R56 500 per household or R9 000 per capita with 70% of the households with total wealth holding less than R64 000. The extent of inequality in total asset ownership per resident person is also well illustrated by the Gini coefficients for the different regions. It seems from these estimates that total asset (wealth) ownership is clearly much more equal than movable assets of the households.

Table 36: Gini coefficients for total assets and assets per person (n = 573)

Region	Total wealth per household	Total wealth per person	Wealth per AE
Bochum	0.32	0.31	0.32
Praktiseer	0.52	0.53	0.53
Schoonoord	0.53	0.54	0.54
Seshego	0.52	0.56	0.56
Western	0.46	0.51	0.48
Zebediela	0.27	0.39	0.35
Total sample	0.47	0.52	0.49

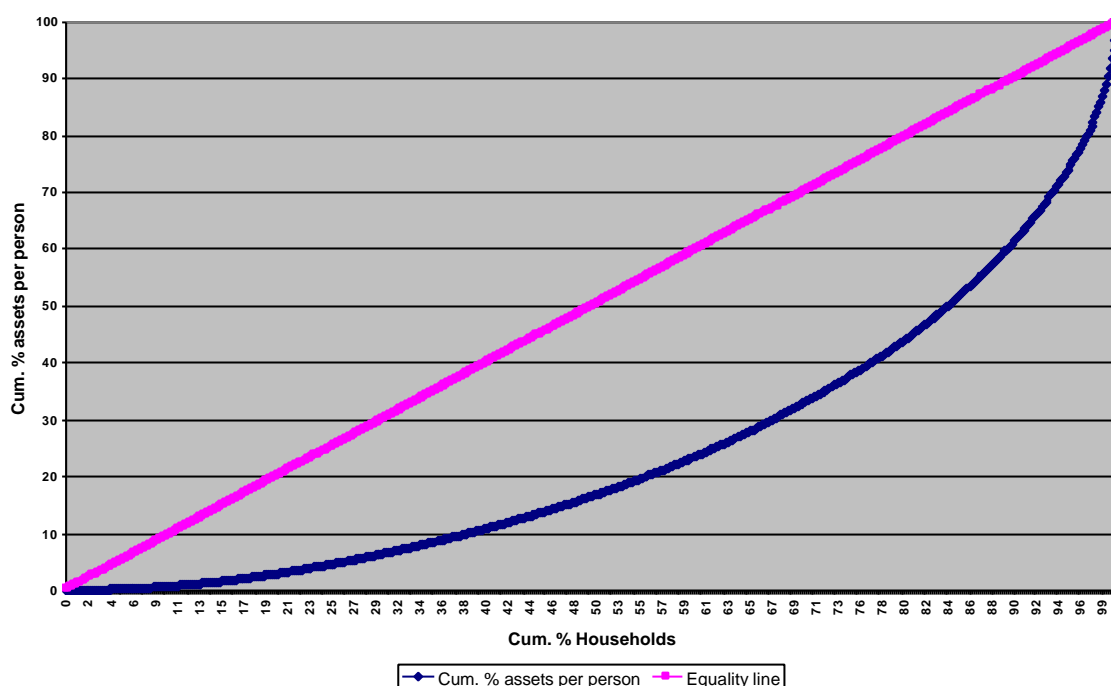


Figure 7: Lorenz curve for total wealth per resident person

5.8 The relationship between income and assets and other household characteristics

As a first indication of the likely relationships between key variables a correlation analysis was performed. The results summarised in Table 37 could provide useful proxies for further analysis. Some of the interesting results are the positive and significant correlation between the level of household income, especially wages and salaries and the household asset base. Contributions by pensioners do not contribute to the household asset base and one would therefore expect households depending on pension income to be less wealthy than others. Land size is also correlated to household income but not as strongly as salaries and wages. Area of land has a positive correlation with household size and number of children. Most of the intuitive relationships are confirmed by this analysis but the causal relationships between the different variables need to be determined in later analysis.

Table 37: Correlation matrix between landholding, income, assets and household size (Pearson correlation coefficients)

	Total value of household assets	Total household income	Household size	# of children
Salaries and wages of resident members	0.329*** (.000)	0.959*** (.000)	-0.002 (0.972)	0.044 (.461)
Pensions	-0.015 (.832)	0.163* (.015)	0.061 (.371)	0.018 (.789)
Migrant income	-0.049 (.462)	0.618*** (.000)	-0.062 (.343)	-0.093 (.157)
Land size	0.132** (.020)	0.143* (.013)	0.215*** (.000)	0.161* (.004)

Significance indicated in parentheses. (***) 99%; **95%; *90%

6. MIGRATION

Non-residents – normally living at home or supporting the household and in regular contact with it but currently living, working and studying away from home - make-up only 12.5% (or 543) of the total population covered in the survey. A total of 291 households (50%) reported non-residents with the majority of the migrant households being from the villages in the Western and Zebediela regions. The distribution of migrants per region is indicated in Table 38.

Table 38: Number of migrants per region

Region	% of households with migrant	# of migrants	% of sampled population
Bochum (n= 93)	40.8%	65	8.9%
Praktiseer (n = 137)	42.3%	86	20.3%
Schoonoord (n = 84)	57.1%	104	15.9%
Seshego (n = 62)	40.3%	42	3.7%
Western (n = 143)	65.0%	186	45.7%
Zebediela (n = 54)	61.1%	68	5.9%
Grand Total	51.0%	551	13%

The number of non-residents is evenly spread between the income groups with only the 3rd income quartile showing a somewhat larger proportion of non-residents than the other 3 income groups (Table 39). This effect is probably due to the aggregation of sub-regions. Another interesting fact is that 62% of all non-residents in the sample originated from households with access to arable land. The region contributing most to this statistic is the villages in the Zebediela region, which was earlier reported as the region with the lowest arable land size per person of 0.17 ha (Table 27). Puzzling, however is the high number of migrants from Schoonoord despite the fact that it is the region of villages, which recorded the highest mean land size per household and second highest land per person figure. The area is however known for its extremely risky and variable agricultural conditions contributing probably to an increased dependence on migration income.

Table 39: Number of migrants per income group, land class and region

Income group (Income per AE)	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	Total
Poorest 25%	38	16	40	12	28	17	151(27.4%)
Quartile 2	15	8	20	28	20	43	134(24.3%)
Quartile 3	9	13	12	28	14	79	155(28.1%)
Wealthiest 25%	3	5	32	18	6	47	111 (20.1%)
<u>Land class</u>							
HH with arable land	30	29	87	18	19	161	344 (62.4%)
No arable land	35	13	17	68	49	25	207 (37.5%)

Table 40 below illustrates that the majority of non-residents moved away from home to find a job somewhere else with the first period of migration taking place between the ages of 15 and 30 (mean of 23). The other reasons for migration that were provided by the respondents included seeking for a job opportunity; staying with a family member who has a job in the city and some times work and education were combined.

Table 40: Reasons for migration

Reasons for migration		Age when members first migrated	
Reason	% of non-residents	Age	% of non-residents
Work	34.2%	< 15	4.9%
Education	12.5%	15-30	84.1%
Mix (work & other)	40.3%	31-50	7.0%
Other	12.5%	> 50	0.6%

Over the period 1991 to 1995, the majority of the non-residents were involved in long term - type migration. However the percentage decreased from 80.8% in 1995 to 61.6% in 1999, with an average of 72.9% over the 5 years. The second most common type of migration was school attendance, the percentage of which increased over the years from 17.9% in 1995 to 34.1% in 1999. The third type of migration was the occasional activities that do not occur each year. The percentage is more or less the same over the 5-year period at 4.1%.

The majority of migrants (40.4%) found employment in the industrial and mining sector while a further 29% were employed in the tertiary sector. Only 3% were employed in agriculture – probably as labourers on nearby commercial farms. It is however assumed that many residents could work on nearby farms as well. The civil service absorbed a further 3% while 17% of migrants were not employed but were either seeking work or involved in education.

The period of the most recent migration of non-residents was fairly long. The majority (47%) of non-residents were away from home for 10-11 months while 7-8 month non-residency was also common. Responses about periods of absence during the previous years were very weak since most indicated periods of 10-11 months for all migrants. However, this could be a true fact since most non-residents do stay away from home for 10 months and return only for the long summer holidays and the Easter break.

While being away from home 95% of the non-residents kept contact through visits or by sending remittances. The non-residents also did not lose (96%) their right to use of the household assets, including land.

Migrancy usually has an effect on family labour and allocation of tasks. In this respect the questionnaire asked respondents about the replacement labour and the people taking over the household tasks from the non-resident.

Table 41: Effect of migrancy on family labour

HH having enough people to take over tasks? (n = 530)		Who took over migrant's tasks? (n = 530)	
Answer	% of non-residents	Answer	% of non-residents
Yes, all the time	47.7%	Head's wife	7.9%
Yes, usually	8.3%	Son/daughter	21.8%
Usually not	8.9%	Grand child	5.8%
Hardly ever	31.7%	Nobody	32.6%
		Head's wife and children	5.2%
		Various	8.1%

The value of remittances and goods sent or brought to the household by the migrants were discussed earlier. Virtually all of the cash remittances received by the household were used for food related expenditure. But it is basically used to acquire all the basic needs such as food, clothing and education - illustrated by the table below. The amount sent or brought home by the non-residents was almost the same as in previous years (49%), 25% of the respondents said it was more and 25.5% said the migrants brought less than the preceding year. It is important to note that remittances free up other household income, which can be used to buy food items. So there seems to be some fungibility issues which the survey failed to pick up.

Table 42: Use of cash remittances

Use of remittances	% of households (n = 238)
Food	67.6%
Food clothes and education	14.3%
Food, clothes	10.9%
Improvements to house	1.3%
Food and education	5.8%

The main beneficiaries of remittances, in most cases was indicated as the whole family, 70.6%, the head of the household, 15.9%, the head's partner, 8.0% and 15.8% indicated other beneficiaries (sister, mother, child, wife brother and wife and children). In return for the financial support to their households non-residents received support from their household members. On average 58.4% of the households with non-residents rendered support to their non-resident. The majority of households were of the opinion that migrancy improves the financial position of the household. Only 12.6% of households viewed migrancy in a negative light arguing that it made the household worse off.

The majority (78.6%) of non-residents made the decision themselves to migrate on the first occasion, while 16.7% were influenced by their parents, husband/wife or partner or they took the decision together with them. 76.9% of 281 non-residents migrated for work while 11.7% migrated to attend school. The above is consistent with the response given by heads of households.

The majority, 76.7% of the migrants, do not intend to settle permanently elsewhere other than home, while 38.8% would only settle back home after retirement, 32.3% after a few years and only 8.3% wanted to settle back home as soon as possible.

7. FERTILITY

This section of the report is devoted to information about fertility and contraceptive histories of women in the households, the value they attach to their children and autonomy of women in the household. The women surveyed included the wife/partner of the head of the household (or the head herself, if she is a woman), aged 15-60 years, plus at most two other women aged 15-50 years (selected at random, if more than two eligible women were present in the same household). The first sub-section presents the women characteristics and information regarding their marital status. The second, third and fourth sub-sections deal with women's fertility histories, benefits of having children and contraception and reproductive health, respectively. The last sub-section deals with the women's work and working conditions and decision-making in their households.

7.1 Women's characteristics

Out of the 584 households, 705 women from 532 households who met the specified criteria to be interviewed were selected for more detail interviews on fertility behaviour. Only 625 of them could specify their age on their last birthday. The mean age among the 625 women was 33.1 years, while the mode was 23 years with 71.2% of the women being younger than 40 years. Women older than 50 years formed a small proportion (8.8%) of all the women surveyed.

The distribution of women based on some socio-demographic characteristics is summarised in Tables 43 and 44. Although 705 women were interviewed, only 645 supplied sufficient data for use in this analysis. Some women did not respond to all the questions while in other cases not all characteristics were relevant to all women.

Marital status

Table 43 reflects the general perception that the majority of women (40.9%) are single. The proportion of single women differs across the 6 regions with Bochum recording the highest proportion of single women (67%). Seshego is second with 49.3% with western in the third place with 38.4%. Single women are not so common in Praktiseer (27%) and Zebediela (29%). It is worth noting that young women, still going to school, fall pregnant, have their babies and continue with their studies. This phenomenon is common among young women and explains the large proportion of single women, mostly still living with their parents. A further reason for the large number of single women could be ascribed to poverty and the fact that prospective husbands (or their families) do not have the "labolla" in the form of cattle to pay for the bride to be. Another explanation could be that women might be living together with their partners but were not prepared to reveal that and thus preferred to indicate their status as single. A small proportion (9.5%) of the women however did reveal that they were living with their partners, may be in the process of getting married.

The number of divorced women was generally low. The highest percentage of divorced women was among the women with only primary education. The majority (64.7%) of the married women respondents live with their husbands; while for 34.0%

of them, the husbands/partners are staying elsewhere. Of the latter group 44.1% of the women meet their husbands about once a month, while 32.4% meet with their partners once per week.

Polygamy is not as common in rural Northern Province as one might expect. Only 11.6% of women who were married at the time of the survey said their husbands had more than one wife; that is, those with one additional wife (10.7%) and two additional wives (0.9%). However, the majority (74.7%) seemed to enjoy monogamous marriages. (13.7% did not respond to this question).

Table 43: Marital status of women (between 15 – 60 yrs)

Marital status	Total	Percentage
Civil marriage	119	18.4
Customary marriage	81	12.6
Living together	56	8.7
Single	264	40.9
Divorced	12	1.9
Separated	15	2.3
Widowed not remarried	39	6.0
Civil and customary marriage	3	0.5
No answer	56	8.7
Total	645	100

The majority of women (60.9%) have obtained at least a secondary education (Table 44). Most of the women in this education category are either single (the majority) or they are in civil marriages.

Table 44: Women by age, education (years completed) and marital status

Age	No schooling at all	Pre school £ 3 years	Primary school ≈ 4 - 7 yrs	O. Secondary ≈ 8 -10 yrs	H. Secondary ≈ 11-12 yrs	Diploma ≈ 13-14 yrs	Degree £ 15 yrs	Other	No answer	Total respondents
15-19	-	-	3	38	23	1	-	-	-	65 (10.1)
20-24	2	-	8	25	66	1	1	1	2	106 (16.4)
25-29	2	1	8	36	38	7	-	-	10	102 (15.8)
30-34	2	2	14	28	29	9	1	1	12	98 (15.2)
35-39	6	5	16	17	10	2	-	-	18	74 (11.5)
40-44	9	3	19	13	6	-	-	1	14	65 (10.1)
45-49	12	2	12	3	3	-	-	-	13	45 (7.0)
50-54	7	2	7	3	2	-	-	-	11	32 (5.0)
55-60	5	3	8	3	3	-	-	-	13	35 (5.4)
No answer	1	-	-	2	-	-	-	-	20	23 (3.6)
Total n (%)	46 (7.1)	18 (2.8)	95(14.7)	168 (26.0)	180 (27.9)	20(3.1)	2 (0.3)	3 (0.5)	113 (17.5)	645 (100%)
Marital status										
Civil marriage	11	6	29	26	28	4	1	-	15	119 (18.4)
Customary marriage	16	6	18	13	14	6	-	-	8	81 (12.6)
Civil & Customary	1	-	1	-	1	-	-	-	-	3 (0.5)
Living together	4	2	7	23	15	2	-	-	3	56 (8.7)
Single	5	3	23	97	114	8	1	3	11	264 (40.9)
Divorced	1	-	5	3	2	-	-	-	1	12 (1.9)
Separated	1	-	5	2	3	-	-	-	4	15 (2.3)
Widowed not remarried	7	1	8	1	3	-	-	-	19	39 (6.0)
No answer	-	-	-	3	-	-	-	-	52	56 (8.7)
Total	46 (7.1)	18 (3.2)	95 (14.7)	168(26.0)	178 (31.5)	20 (3.1)	2 (0.3)	3 (0.5)	113 (17.5)	645 (100%)

7.2 Child births and mortality

In total women in the sample gave birth to a few more boys (894) than girls (891). Among all the live births recorded the proportion of the offsprings who died was 3.3%. Due to a poor response on the age at which children died, it was not easy to disaggregate mortality into neonatal, prenatal and other deaths as a proportion of live births.

At an individual woman level, the total number of live children a woman ever gave birth to varied considerably. The highest number of live children was 11 indicated by 2 women (0.4%) in Praktiseer. The mean number of children is 2.4 while only 2 women (0.4%) reported never to have had live children.

Praktiseer had the highest proportion of child mortalities (17.1%) followed by Schoonoord (8.9%) and Western (5.6%). Zebediela had the lowest proportion of women (48.5%) that gave birth to their last child in a public hospital, compared to 66.7% in Schoonoord. In total 59.8% of all women gave birth to their last child in a public hospital. Praktiseer had the highest proportion of women (27.9%), whom gave birth to their last children at home. Intuitively, the lack of proper medical facilities could explain the high mortality rates. The results also show that the proportion of child mortalities increase with more births per woman. Most of the children who were alive were still living with their mothers (parent(s)), in the sense that they still belonged to the same households as their parent(s). This could be due to the generally high unemployment rate and lack of livelihood opportunities elsewhere in the rural areas.

7.2.1 Estimates of total fertility rate (TFR) or Children ever born (CEB)

Women who have passed the childbearing age of 45 numbered 124 in total. About 55% of these women belonged to the two lowest per capita total asset classes (R0-200 & 201-500). Tables 45 and 46 provide an indication of the TFR of the women above the age of 45. With the majority of the women in the lower asset classes it is not surprising that the majority (54.9%) of children ever born is also found here.

Table 45: Estimates of children ever born (CEB) per hundred women per capita total assets

Per capita total assets (Rands)	Age groups at ten year intervals			All
	46-55	56-65	> 65	
0-200	300	275	313	297
201-500	222	250	733	318
501-800	345	400	200	330
801-1100	440	150	267	351
1101-2000	183	600	100	252
2001-4000	250	400	100	254
> 4000	400	320	200	348
All	247	252	277	253
Sample size	77	25	22	124

Table 46: Historical fertility rate per asset class

Asset class (per capita total asset value)	# of women in class	# of children ever born	# of children born in the last 7 years to women over the age of 45
0 – 200	45	38 (37.3)	28 (34.6)
201 – 500	23	18 (17.6)	19 (23.5)
501 – 800	16	13 (12.7)	8 (9.9)
801 – 1100	12	10 (9.8)	7 (8.6)
1101 – 2000	11	8 (7.8)	5 (6.2)
2001 – 4000	6	5 (4.9)	5 (6.2)
>4000	11	10 (9.8)	9 (11.1)
TOTAL	124	102 (100)	81 (100)

7.2.2 Age specific fertility rates (ASFR)

Table 47 provides a summary of the age specific fertility rates (ASFR) for women in four age categories (16-25, 26-35, 36-45 and over 45 years) by per capita total asset classes and the six survey regions. The ASFR is taken to mean the number of children born during the last seven years for women in a specific age category. A total of 645 women responded to questions related to fertility: 192 in the 16-25 years age group, 189 in the 26-35 age group, 140 in the 36-45 age group and 124 in the age group over 45 years.

Using the aggregated figures for the six sub- regions of Bochum, Seshego, Schoonord, Praktiseer, Zebediela and Western, the number of children born per 100 women during the last seven years, in each age group, seems to increase to 100 children per 100 women in the 36 – 45 age group. It then declines back to around 65 children per 100 women There also seems to be no clear relationship between the ASFR and the per capita total asset classes.

The relationship between ASFR and assets was also analyzed using the least squares method. ASFR was the dependent variable regressed against the following explanatory variables: age of women, education of women, land size of household, square of per capita land, holding, per capita farm assets and per capita total assets. Instead of using the child mortality rate, the number of children that are alive was used as an opposite explanatory variable. The results of the analysis are presented in Appendix 9. Most of the regression estimates were not statistically significant but for land size, per capita farm assets and per capita total assets and age of the women, the negative sign of the regression coefficient, indicating the inverse relationship is worth noting.

Table 47: Number of children born per hundred women over the past seven years

Age group	PC Tot asset class Rands	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	Total
16-25	0-200	45 (22)	23 (13)	85 (13)	150 (4)	55 (11)	31 (13)	53 (76)
	201-500	40 (10)	0 (2)	67 (3)	100 (4)	20 (5)	60 (10)	50 (34)
	501-800	60 (5)	150 (4)	133 (3)	100 (1)	0 (1)	83 (6)	95 (20)
	801-1100	33 (3)	150 (4)	100 (1)	200 (1)	100 (2)	67 (6)	94 (17)
	1101-2000	67 (6)	0 (1)	133 (3)	67 (3)	25 (4)	0 (3)	55 (20)
	2001-4000	33 (6)	0 (0)	0 (0)	0 (1)	33 (3)	25 (4)	29 (14)
	>4000	50 (4)	0 (0)	25 (4)	0 (0)	0(0)	100 (3)	55 (11)
	All	46 (56)	63 (24)	85 (27)	107 (14)	42 (26)	51 (45)	59 (192)
26-35	0-200	107 (14)	67 (9)	75 (16)	86 (14)	75 (8)	36 (11)	76 (72)
	201-500	114 (7)	167 (3)	150 (6)	75 (8)	100 (2)	70 (10)	103 (36)
	501-800	150 (4)	200 (1)	33 (3)	71 (7)	33 (3)	50 (4)	77(22)
	801-1100	0 (0)	0 (1)	200 (2)	133 (3)	0 (0)	100 (2)	125 (8)
	1101-2000	100 (2)	0 (0)	100 (3)	100 (11)	33 (3)	100 (3)	91 (22)
	2001-4000	100 (1)	0 (0)	0 (1)	50 (4)	200 (1)	14 (7)	43 (14)
	>4000	0 (1)	33 (3)	0 (2)	75 (4)	0 (1)	50 (4)	40 (15)
	All	110 (29)	82 (17)	88 (33)	84 (51)	67 (18)	51 (41)	80 (189)
36-45	0-200	160 (10)	50 (6)	60 (10)	100 (15)	33 (3)	57 (7)	88 (51)
	201-500	167 (3)	0 (2)	200 (1)	67 (9)	100 (1)	33 (9)	68 (25)
	501-800	0 (0)	67 (3)	50 (2)	100 (3)	0 (2)	0 (4)	43 (14)
	801-1100	0 (0)	0 (0)	0 (2)	75 (4)	0 (1)	167 (6)	31 (13)
	1101-2000	33 (3)	0 (1)	100 (2)	40 (5)	75 (4)	75 (4)	58 (19)
	2001-4000	200 (1)	0 (0)	67 (3)	0 (1)	50 (2)	100 (1)	75 (8)
	>4000	140 (5)	0 (1)	0 (0)	75 (4)	0 (0)	0 (0)	100 (10)
	All	141 (22)	38 (13)	65 (20)	78 (41)	46 (13)	39 (31)	71 (140)
> 45	0-200	167 (6)	300 (10)	83 (12)	120 (5)	50 (4)	75 (8)	62 (45)
	201-500	0 (0)	60 (5)	33 (3)	100 (5)	150 (2)	88 (8)	83 (23)
	501-800	0 (0)	50 (4)	100 (1)	50 (2)	0 (1)	50 (8)	50 (16)
	801-1100	0 (0)	0 (2)	0 (0)	0 (0)	0 (1)	78 (9)	58 (12)
	1101-200	0 (0)	100 (1)	0 (2)	50 (4)	100 (1)	33 (3)	45 (11)
	2001-4000	0 (0)	200 (1)	100 (2)	0 (0)	50 (2)	0 (1)	83 (6)
	>4000	0 (0)	100 (2)	0 (1)	300 (1)	0 (0)	57 (7)	82 (11)
	All	167 (6)	52 (25)	67 (21)	100 (17)	64 (11)	66 (44)	65 (124)

Note: Figures in parenthesis indicate number of women

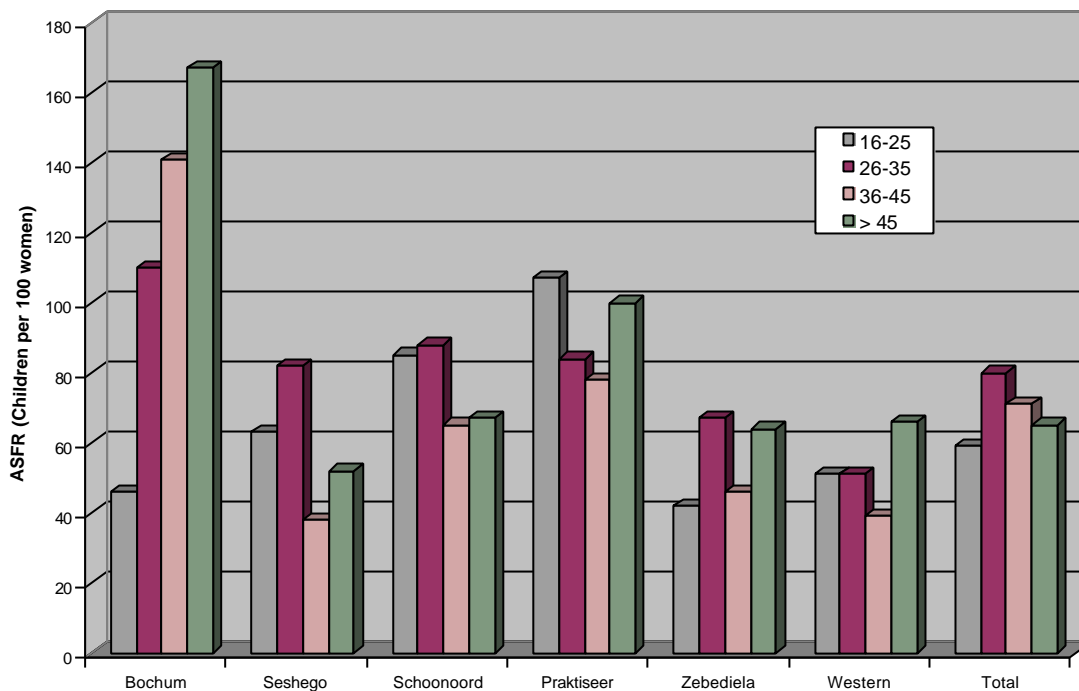


Figure 9: ASFR for all women per region

7.3 Benefits of children.

In most of Sub-Saharan Africa, children are expected to start helping their parents at an early age. While girls are expected to help their mothers with household chores (including water and firewood fetching, cooking, cleaning and baby minding), boys are expected to perform manly tasks with their fathers and/or brothers, such as taking care of the livestock in the veld, construction of household structures, etc. The roles played by children, therefore, depend on the sex of the children and they change over time, as they grow older. Table 48 indicates the type of help mothers get from their children over the age of 6 years. The help to fathers (*per se*) is not included, but implied, since both male and female perform some tasks.

Table 48: Type of help from children more than 6 years old

Type of help	% of children
No help	25.1%
Work	65.6%
Financial	4.4%
Work and financial	4.9%

Regardless of the type of help, 72.3% of the parents considered their assistance as valuable. Further analysis may reveal that those children who were considered not to render any valuable assistance may either have been too young or, at the time of the survey were attending school.

Most (67.4%) mothers felt that their children’s financial help was valuable to very valuable while 32.6% felt that financial help from children was not very valuable. The “in kind help”

was, therefore considered to be more substantial and more valuable from the mothers' perspective.

Anticipated future help from children expected by the mothers

The majority (50.5%) of mothers expect their children's help to increase in future. Only 5.7% of the mothers expect help from their children to diminish. However, under certain circumstances mothers expect the help from their children to diminish substantially in future when the children are under the following situations:

- (i) Move away from home (18.39%)
- (ii) Get married (55.57%)
- (iii) Set up new home (20.86%)

The various potential sources of income for the mothers during old age were diverse and varied, and are summarised in Table 48 below. Three most important potential sources of income indicated by the women were pension and social security (97.1%), assistance from children (96.8%), income from own savings (76.8%) and assistance from other family members.

A total of 622 women would expect to live with their children at old age. While 52.4 % of the women expected to live with their sons, 27.1% expect to live with their daughters and 16.5% would live with either their sons or their daughters. Only 2% of the women did not expect to live with their children at old age.

The response regarding whom the women would live with at old age when they become widowed was very low and inconclusive. Very few women had other options in addition to living with a son, daughter or either one of the two.

Table 49: Expectation of sources of income at old age (%)

Potential source of income	Yes	No	Don't know & No answer	n
Income from farmland worked by self or other (FL)	200 (31.0)	375(58.1)	70 (10.8)	645
Income from house rent (HR)	116 (18.0)	462 (71.6)	67 (10.4)	645
Income from business (B)	375 (58.1)	218 (33.8)	52 (8.1)	645
Income from savings (S)	458 (71.0)	126 (19.5)	61 (9.5)	645
Income from pension and social security P&SS)	588 (91.2)	11 (1.7)	46 (7.1)	645
Assistance from children ©	583 (90.4)	13 (2.0)	49 (7.6)	645
Assistance from other family members (OF)	460 (71.3)	116 (18.0)	69 (10.7)	645
Assistance from friends (F)	100 (15.5)	450 (69.8)	95 (14.7)	645
Income from renting farmland (RF)	157 (24.3)	421 (65.3)	67 (10.4)	645
Income from hired farm or other work (HF)	153 (23.7)	422 (65.4)	70 (10.9)	645
Expect income from other sources (O)	341 (52.9)	246 (38.1)	58 (9.0)	645

At the time of the survey, an average of 13.7% of the first women respondents was involved in either formal or informal self-employment.

7.5 Gender roles and expectations

The average age at which daughters should start to offer useful help at home, land or work was given as 21.6 years. For the boys, it was slightly higher, at 22.8 years. This difference is in line with common practice and expectations in rural households. Girls are expected to mature early and to take up serious responsibilities earlier than boys do. The average age given above is rather unrealistically high, especially for physical help around homes. There is a possibility that the women may have mistaken “useful help” to mean financial, which tends to materialise when their offspring are slightly older.

Contrary to expectations, most women are of the opinion that both girls and boys should attain above secondary education.

7.6 Contraception and Reproductive Health

Women worldwide have been trying to take control of their own lives, in terms of when to get married, when to have children, how many children to have and how to space the birth of their children. Such decisions give women freedom of choice and the convenience that they need to lead a full productive life.

In this study it was found that 51.3% of all the women interviewed regarding reproductive health have tried to stop or avoid getting pregnant by using some birth control method. The devices used by the women (47% of total) who have tried to delay or avoid pregnancy at any one time by regions, are presented in Tables 50 and 51. It is clear that injections (most common method under black women in South Africa) and the pill are the most popular contraceptive methods.

Table 50: Women users and non users of devices /methods to prevent pregnancy

Device/Method	Users as % of all women (n = 645)	As % of all users (n = 303)
Pill	22.6	48.2
IUD	0.9	2.0
Injections	21.2	44.9
Implants	0.1	0.0
Diaphragm	0.1	0.3
Condom	0.5	1.0
Fem sterilisation	0.5	1.0
Other	0.8	1.6
No answer	0.3	1.0
Total	47.0	100
Not Using	53.0	
Total (N = 645)	100	

Most women (46.4%) started using contraceptives to avoid pregnancy before they had any children; 23.9% after they had 1 child, 13.7% after they had 2 children, and 10.2% after 3 children. As the number of children increased fewer women indicated use of contraceptives. Only 1 woman reported to have started using contraceptives when she already had 6 children. This could be because of the age groups, most likely, since older women did not know about contraceptives early in their lives. Further analysis indicated that the use of the pill increased with education but decreased with age. Injections and pills were also popular among single and widowed women and those who were living together with partners (not married).

The correlation between female education and contraceptive use is not significant. The mean number of years of education for women having used contraceptives is 8.6 years while that of women who never used contraceptives is 8.4 years. Clearly no meaningful difference. Education of women however has a major influence on the continued education of children.

It can be noted from the tables below that the lowest proportion of women ever using contraceptives or other devices for pregnancy prevention was recorded in Seshego, Bochum and Zebediela. Women in the survey regions, which are closer to towns or in a peri-urban setting, such as the Western Zebediela and Bochum seem to prefer the pill to other methods / devices. This could be because they have easier access to service providers at reasonable distances. Women in more remote places are more inclined to opt for methods that have long lasting effect like the injections. Nevertheless, most women are skeptical about sterilization, because it is irreversible and so final.

Table 51: Contraceptive use per region

Region	No	Yes	Total # of live births	N
Bochum	66.1%	33.9%	159	114
Praktiseer	28.9%	71.1%	425	122
Schoonoord	39.4%	60.6%	199	102
Seshego	71.7%	28.3%	122	78
Western	42.9%	57.1%	315	161
Zebediela	60.3%	39.7%	138	68

Table 52: Devices / Methods ever used by women to delay or avoid pregnancy (as percentage of all women using contraceptives) (n =303)

Method	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	Total (%)
Pill	36.8	35.3	48.3	46.9	26.1	63.1	48.2
IUD	5.3			1.2	4.3	2.4	2.0
Injections	57.9	64.7	46.6	48.2	65.2	26.2	45.2
Implants							
Diaphragm			1.7				0.3
Condom				3.7			1.0
Female Sterilization			1.7			2.4	1.0
Withdrawal							
Rhythm							
Other			1.7			4.8	1.7
No Answer					4.3	1.2	0.6
Total (N = 303)	12.5	5.6	19.8	26.7	7.6	27.7	100

Table 53: Women currently using contraception by land holding size

Land size	No. women Using	% of users
Landless (or no response on land)	94	42.9
< 0.5 ha	3	1.4
0.5 – 1 ha	22	10.0
1 – 2 ha	41	18.7
2 – 3 ha	14	6.4
3 – 4 ha	34	15.5
4 – 6 ha	9	4.1
6 – 8 ha	1	0.5
> 8 ha	1	0.5
Total users	219	100
No response on contraceptives	426	
Total	264	

The distribution of women who were using contraceptives at the time of the survey, is concentrated among the landless (perhaps those households living in the more structured and semi-urban type villages where most are employed in formal jobs) and between 1 and 2ha and 3.0 – 4ha land size holding (Table 53).

7.7 Pregnancy and child bearing

When pregnant with the last child women had medical check ups done by different service providers, as summarized in Table 54 below. The trained nurse/mid wife was the most popular service provider, followed by the medical doctor. The more remote the place is the more reliant it is on service providers other than the medical doctor, who is usually based at the district hospital. Traditional doctors and traditional birth attendants still have a significant share of the market, especially in more remote areas (Table 55).

Table 54: Medical check up when pregnant with the last child

Type of medical	# of women	(%)
Medical doctor	144	22.3
Trained nurse/midwife	281	43.6
Traditional doctor	11	1.7
Traditional birth attendant	35	5.4
No one	23	3.6
Traditional Doctor & TBA	14	2.2
MD & TN/MW	2	0.3
TN & TD	3	0.5
No response	132	20.3
Total	645	100

Key: MD – Medical doctor; TN/MW – Trained nurse/midwife ; TD – Traditional doctor; TBA – Traditional birth attendant

Table 55: Three most popular service providers by region

Regions	1 st popular (%)	2 nd popular (%)	3 rd popular (%)
Bochum	61.8 - MD	19.7 – No-one	18.4 – TN/MW
Seshego	65.0 – MD	18.3 – TN/MW	8.3 – TBA
Schoonoord	79.1 – TN/MW	11.0 – TBA	6.6 - MD
Praktiseer	80.9 –TN/MW	10.0 -MD	3.6 - TD & 3.6 – No one
Zebediela	66.7 – TN/MW	24.4 – TBA	6.7 – TN/MW
Western	69.7 –TN/MW	8.3 - MD	5.3 - TBA

Key: MD – Medical doctor; TN/MW – Trained nurse/midwife; TD – Traditional doctor; TBA – Traditional birth attendant

The majority of women (65.3%) gave birth to their last children in either a public/private hospital or a clinic. This is a good sign from the point of view of reducing delivery complications that usually arise among women delivering at home. It also signifies a good network of primary health care facilities and services in these areas. However, a significant number of women 14.0% delivered their babies at home.

While giving birth to their last baby the women were assisted by different service providers, but the majority, 54.5% were helped by trained nurses / midwife, 28.0% by medical doctors and 6.8% by traditional birth attendants. Other sources of assistance included neighbours and other women friends (0.6%), mothers and other relatives (0.9%) and different combinations of the list above.

7.8 Woman's work and conditions

Rural women have always carried out what can be termed 'income generating activities' (IGA) to complement their other sources of livelihood. IGAs include all economic activities that women usually carry out to generate cash income. Farming activities such as poultry, piggery and vegetable production are included. Others include sewing, baking, social services, such as hair dressing etc. Other women take up jobs, either occasionally or on regular basis, and yet others have full time or part time occupations that bring in some income.

Only 28.1% of all women interviewed were involved in cash earning endeavours at the time of the survey, but a further 25.9% of them had been involved with such work in the last twelve months.

The amount of time women spent on the various jobs for cash income varied. Most of them had jobs, in addition to their housework (56.4%), work throughout the year (for 12 months), while others worked for only one month during the year of the survey. Likewise, the average number of days per week worked varied from one to seven days, almost 85.5% of the working women work for at least five days a week and for at least eight hours a day. Over 64% of those women do the work away from their homes.

The main incentive for jobs and IGA the women do is to get cash money and over 94% of them earn cash for the work they do. The amount they make varies depending on the location and the type of work they do. Table 56 provides a summary of the monthly income women make from additional work.

Table 56: Income of women from additional work per month (Rand)

Region	Minimum	Maximum	Mean	N
Bochum	140	1800	661.43	7
Seshego	42	3750	882.22	18
Schoonoord	83	4500	798.50	20
Praktiseer	110	3900	646.30	30
Zebediela	150	3000	873.50	8
Western	25	2500	528.80	80
Total	25	4500	645.16	163

In the sub-regions, which are close to towns or peri-urban areas, there are more opportunities for marketing products and services than in more remote areas, where markets are thin and people are poorer.

7.9 Decision making in the household

There are perceptions regarding who should make certain decisions in a household. The results of the survey support some perceptions but disprove others. The perceptions and opinions expressed here could have a significant influence on fertility behaviour of households and need to be taken into account in later analyses. The following are some of the opinions from the women:

1. Out of 479 women who responded to a question regarding what a woman should do if she disagrees with her partner 39% of the women said women should speak up while another 39% said women should keep quiet.
2. 44.8% of women prefer a man who listens and accepts her opinion
3. Women generally think their point of view carries less weight than that of their partners (57%).
4. Decisions about the use of money in the house are taken jointly in 29.8% of the cases, in 18.8% the woman decides while in 16.5% of the cases the male partner decide.

A correlation analysis was done between household decision making variables and the education of the woman. The results show a positive correlation (0.145 significant at the 0.05 level) between the education of women and the decisions on family planning methods. However, education had low positive influence on the weight of the woman's point of view in the home. Total assets owned by household had negligible correlation with all household decision making variables.

Table 57:

Opinions of women who are or have been married or living together (not single) regarding various decisions taken in their households; how decisions are divided between the main wife and her male partner (percent in brackets) (N=479)

	Whether to have another child	Whether a child should continue with education	What to arrange for a child's marriage plans	Whether to use a particular family planning method	Whether to visit friends or relatives	Changing the pattern of hh spending	Taking a new loan
Man only	17 (3.5)	26 (5.4)	14 (2.9)	5 (1.0)	18 (3.9)	19 (4.0)	89 (18.6)
Mainly man but also woman	106 (22.1)	136 (28.4)	164 (34.2)	58 (12.1)	81 (16.9)	83 (17.3)	117 (24.4)
Woman only	54 (11.3)	15 (3.2)	12 (2.5)	73 (15.2)	37 (7.7)	63 (13.2)	23 (4.8)
Mainly woman but also man	111 (23.2)	75 (15.7)	50 (10.4)	121 (25.3)	154 (32.2)	131 (27.3)	36 (7.5)
About 50-50	102 (21.3)	134 (28)	144 (30.1)	104 (21.7)	100 (20.9)	94 (19.6)	124 (25.9)
Other: Child him/herself	- -	6 (1.3)	7 (1.5)	- -	- -	- -	- -
No one	1 (0.2)	- -	1 (0.2)	26 (5.4)	- -	2 (0.4)	3 (0.6)
Don't know and/or no answer	88 (18.3)	87 (18.2)	87 (18.2)	92 (19.2)	89 (18.6)	87 (18.2)	89 (18.6)

8. Concluding comments

This report provided a descriptive overview of the main results of the survey that took place during 1999/2000 among 585 households in 24 villages in the Northern Province. The report presented results on the demographic, infrastructure and resource base aspects of the villages surveyed. However, the major part of the report reviewed the findings in terms of the key variables necessary to test the hypothesis for this study, These aspects include household income and asset base, migration behaviour and fertility behaviour of women. The report provides a useful base for the more analytical aspects of the research project

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APPENDICES

Appendix 1: Regions of the Northern Province

The Northern Region consists mainly of districts of the former Venda homeland (which include Dzanani, Malamulele, Mutale, Thohoyandou and Vuwani), some patches of the former Gazankulu homeland (mainly Malamulele area), former Lebowa (most of the Bochum area), and also former RSA areas such as Messina and Soutpansberg. The region has predominantly good agricultural land due to relatively high rainfall.

The Lowveld region comprises mainly of the former Gazankulu districts (such as Giyani, Hlanganani, Lulekani and Ritavi), some districts of the former Lebowa (mainly Naphuno, Bolobedu, Namakgale and Sekgosese), as well as the areas of the former RSA (Letaba and Phalaborwa). The lowveld areas of the region are dominated mainly by horticultural production.

The Central region comprises predominantly the former Lebowa districts of Mankweng, Sekgosese, Seshego, and Bochum) and the Pietersburg districts of the former RSA. Pietersburg is the capital city of the Province. Although the northern areas of the central region are livestock producing areas, by contrast Mankweng district, lying south east of Pietersburg, is a predominantly maize producing area.

The Southern Region comprises areas of the former Lebowa districts Sekhukhune, Nebo, and Thabamooopo. This region, located south of Pietersburg is mainly arable with relatively low livestock production.

The Western region mainly comprises the former Lebowa districts of Mokerong (which include the areas of Zebediela and Phalala), as well as the former RSA areas of Potgietersrus, Ellisras, and Waterberg. The region is relatively dry, although farmers focus on maize production in Mahwelereng, and livestock in the Phalala area.

The Bushveld region is an area further west in the Province, with the major towns Naboomspruit, Nylstroom, Warmbaths and Thabazimbi. It comprises predominantly the former RSA areas and is well known for large cattle and game farms.

The province can also be divided into several topographic zones. In the east there is a flat to gently undulating Lowveld plain, at an altitude of 300 to 600 m, bounded in the west by the northern Drakensberg escarpment and Soutpansberg, with steep slopes and peaks up to 2 000m above sea level. The almost level Springbok flats in the south lie at an altitude of 900 m, while the Waterberg and Blouberg to the north, with undulating to very steep terrain, reach 2 000 m. The north-west zone is a flat to undulating plain, which slopes down to the north and west, at 800 to 1 000 m.

Black and red fertile clay soils occur on the Springbok flats, with reddish-brown sandy loam soils to the north and west. The mountains have deeper, highly leached red soils in the wetter areas, with exposed rock where the climate gets drier. Reddish-brown, gravelly soils, which have low fertility, predominate in the Lowveld, with the best agricultural soils being alluvial soils next to most of the rivers. The Province is generally characterised by limited high potential agricultural soil. Most of the high potential land is owned and farmed by white commercial farmers.

Rainfall patterns vary substantially across the province. In the hot and dry parts of the Lowveld region there is no frost and the average rainfall is less than 500 mm per annum. The mountains are cooler and wetter, with rainfall of 1500 mm or more in places. To the west, the rainfall varies from 600 mm on the Springbok flats to less than 400 mm on the Botswana border, where it can be extremely hot in summer. Dryland cultivation can only be practised on the Springbok flats and on the eastern escarpment and its foothills.

The major rivers are the Limpopo in the north, and the Olifants and Letaba further south, all of which drain eastward. The Limpopo only flows strongly occasionally, while the Olifants and Letaba are heavily utilised for irrigation, especially east of the escarpment. Most parts of the province are very dry. Drought is an ever-present threat in the north, and a growing population places considerable pressure on the existing resources especially in the Letaba catchment area.

Appendix 2: List of villages surveyed

Region / sub- region*	Service center	Ward or Village	Village/Community CODE
Central			
Bochum (2)	Bochum	Ext. ward 7:	
		<u>Borkum (Dilaeneng)=75</u>	C001
		<u>Gemarke=17</u>	C002
Seshego (4)	Roodeput	Ext. ward 1:	
		<u>Opgaaf (Ga-Chokwe)=17</u>	C003
		Ext. ward 3:	
		<u>Louisiana (Ga-Phago)=17</u>	C004
	Moletjie	Ward 1:	
		<u>Vaalwater (Bloodriver)=18</u>	C005
		Ward 6:	
		<u>Moletjie-Moshate (Chief's Kraal)=17</u>	C006
Southern			
Schoonoord (6)	Schoonoord	Lordskraal:	
		<u>Lordskraal (Madibong)=17</u>	C007
		Paradys:	
		<u>Dingaanskop (Mohlaetsi)=17</u>	C008
	Strydkraal	Hoeraroep:	
		<u>Moskow (Ga-Mashabela)=17</u>	C009
	B.B.Kloof	B.B. Kloof:	
		<u>Daljasofat (Ga-Nkwana)=17</u>	C010
		Juglust:	
		<u>Zeekoeigat (Serokolo)=17</u>	C011
	Steelpoortdrift	Degoedeverwachting:	
		<u>Eerstegeluk (Tukagomo)=17</u>	C012
Praktiseer (4)	Derdegelid	<u>Derdegelid (Riba Cross)=75</u>	C013
		<u>Steelpoort Drift (Ga-Malekana)=17</u>	C014
		<u>Bothashoek=17</u>	C015
		<u>Maandagshoek=16</u>	C016

Western#			
Zebediela (3)		Madisha-a-ditoro (Magatle)=18	C017
		Tsantsabela (Elandskraal)=18	C018
		Moletlane=17	C019
Mokerong (4)	Bakenberg Planning Unit	<u>Mozambique (Separane)=18</u>	C020
		<u>Haakdoorndraai (Ga-Matlala)=17</u>	C021
		<u>Vliegkraal=17</u>	C022
		<u>Vogelstruisfontein=17</u>	C023
Phalala (1)	Beauty Planning Unit	<u>Ga-Shongwane=75</u>	C024
TOTAL			24 Villages

* Number of villages from each sub-region is indicated in brackets

Since Zebediela has a totally different setting and also far away from the other villages in the Western Region it was decided to keep the villages in Zebediela separate for the purpose of analysis.

Note: Local names of villages are given in brackets where applicable.

Appendix 3:

Total population by village (1996)

Village	Frequency				
	Total population (inc. children)		Total	Children (<15)	Children as % of total
	Male	Female			
Borkum (Dilaeneng)	1947	2355	4302	1973	45.9
Gemarke	1182	1395	2577	1107	43.0
Opgaaf (Ga-Chokwe)	1482	1806	3288	302	9.2
Louisiana (Ga-Phago)	929	1087	2016	910	45.1
Vaalwater (Bloodriver)	237	202	439	75	17.1
Mukhomi Chief's Kraal	1599	2072	3671	1773	48.3
Lordskraal (Madibong)	3304	4046	4350	3189	43.4
Dingaanskop (Mohlaetsi)	4448	5516	9964	4154	41.7
Moskow (Ga-Mashabela)	1480	2017	3497	1594	45.6
Daljasofat (Ga- Nkwana)	2516	3235	5751	2294	39.9
Zeekoeigat (Serokolo)	1707	2150	3855	1689	43.8
Eerstegeluk (Tukakgomo)	1757	2029	3786	1571	41.5
Derdeglid (Riba Cross)	5079	6114	11193	5126	45.8
Ga-Malekana (Steelpoort)	1807	2217	4024	1847	45.9
Bothashoek	275	377	652	337	51.7
Maandagshoek (Boschoff Hospital)	313	337	650	196	30.2
Madisa-a-ditlovo (Magatle)	1515	1943	3458	1504	43.5
Tsantsabela (Elandskraal)	1795	2088	3883	1699	43.8
Moletlane (Zebediela)	745	796	1541	481	31.2
Mozambique (Mapela)	454	516	970	454	46.8
Haakdoordraai (Ga-Matlala)	138	160	298	140	47.0
Vliegkraal	400	484	884	395	44.7
Vogelstruisfontein (Skrikfontein)	668	762	1430	738	51.6
Ga-Shongwane	1959	2503	4462	2103	47.1
Total	37734	46207	83941	35651	42.5

Source: Statistics South Africa, Census 1996 data

**Appendix 4:
Unemployment statistics of population in villages sampled (1996)**

Villages	Frequency										Total
	Employed	Unemployed, looking for work	Not working - not looking for work	Not working - housewife/h ome-maker	Not working - scholar/full- time student	Not working - pensioner/ retired person	Not working - disabled person	Not working - not wishing to work	Not working - none of the above	Unspecified	
Borkum (Dilaeneng)	435	432	70	124	893	191	19	11	113	2	2290
Gemarke	214	169	63	72	313	142	7	18	17	11	1026
Opgaaf (Ga-Chokwe)	233	339	41	184	504	293	18	30	124	0	1766
Louisiana (Ga-Phago)	70	125	70	167	411	92	32	8	127	4	1106
Vaalwater (Bloodriver)	200	7	0	49	26	55	4	4	8	7	360
Mukhomi Chief's Kraal	135	456	114	83	634	333	31	25	87	0	1898
Lordskraal (Madibong)	213	1135	59	457	1484	621	29	43	121	0	4162
Dingaanskop	239	986	131	917	2312	615	61	45	467	41	5814
Moskow (Ga-Mashabela)	107	412	80	186	764	225	8	15	93	14	1904
Daljasofat	190	782	59	349	1351	549	30	10	137	0	3457
Zeekoeigat (Serokolo)	402	518	13	74	653	335	17	32	118	6	2168
Eerstegeluk (Tukakgomo)	352	659	49	248	561	159	16	11	160	0	2215
Derdegelid (Riba Cross)	799	1655	115	530	1777	535	50	82	516	6	6065
Ga-Malekana (Steelpoort)	105	510	176	288	586	260	38	22	193	0	2178
Bothashoek	11	108	1	39	174	71	1	6	49	3	463
Maandagshoek (Boschoff Hospital)	23	68	12	66	102	23	1	3	0	0	298
Madisa-a-ditlovo (Magatle)	218	334	65	113	599	359	16	28	117	1	1850
Tsantsabela (Elandskraal)	171	666	111	100	749	238	27	23	90	7	2182
Moletlane (Zebediela)	396	56	26	45	253	97	3	1	160	20	1057
Mozambique (Mapela)	21	122	19	61	159	59	0	2	70	4	517
Haakdoorndraai (Ga-Matlala)	14	18	9	36	65	11	3	2	4	0	162
Vliegkraal	56	141	0	17	170	66	7	12	17	0	486
Vogelstruisfontein (Skrikfontein)	44	85	34	61	271	93	9	45	50	0	692
Ga-Shongwane	272	596	44	138	684	287	21	69	235	7	2353
Total	4920	10379	1361	4404	15495	5709	448	547	3073	133	46469

Source : StatsSA, Census 1996

Appendix: 5
Occupation of population in sampled villages (1996)

Villages	Frequency										
	Legislators, senior officials and managers	Profes	Technicians and associate pros	Clerks	Service workers, shop and market sales workers	Skilled agricultural and fishery workers	Craft and related trades workers	Plant and machine operators and assembler	Elementary occupations	Occupation NEC or unspecified	Total
Borkum (Dilaeneng)	8	37	9	12	50	11	77	43	139	49	435
Gemarke	2	97	5	7	8	8	32	5	41	12	217
Opgaaf (Ga-Chokwe)	1	15	4	9	19	16	48	19	72	28	231
Louisiana (Ga-Phago)	0	14	4	5	1	4	7	1	17	17	70
Vaalwater (Bloodriver)	10	15	9	15	35	20	15	5	42	34	200
Mukhomi Chief's Kraal	11	31	3	6	18	4	20	10	22	14	139
Lordskraal (Madibong)	2	43	8	2	15	2	39	26	53	21	211
Dingaanskop (Mohlaletsi)	8	102	13	1	19	2	24	7	26	33	235
Moskow (Ga-Mashabela)	6	26	6	4	3	3	11	3	30	17	109
Daljasofat (Ga- Nkwana)	2	95	11	5	24	1	18	5	20	7	188
Zeekoeigat (Serokolo)	6	73	14	13	46	20	73	25	99	32	401
Eerstegeluk (Tukagomo)	1	13	0	11	27	24	76	64	99	36	351
Derdeglid (Riba Cross)	14	68	15	33	84	17	219	127	153	71	801
Ga-Malekana (Steelpoort)	0	2	0	0	1	0	2	4	4	1	14
Bothashoek	0	7	0	0	0	0	0	3	1	0	11
Maandagshoek (Boschoff Hospital)	0	6	0	0	0	0	1	3	4	12	26
Madisa-a-ditlovo (Magatle)	6	68	2	12	24	6	33	9	38	19	217
Tsantsabela (Elandskraal)	6	30	7	14	17	8	17	19	38	15	171
Moletlane (Zebediela)	4	21	9	15	38	45	32	16	100	117	397
Mozambique (Mapela)	0	3	7	0	3	0	3	2	3	4	25
Haakdoorndraai (Ga-Matlala)	0	7	0	0	1	0	3	0	4	4	19
Vliegkraal	0	10	3	1	4	3	9	3	18	9	60
Vogelstruisfontein (Skrikfontein)	3	15	0	3	4	2	3	0	4	19	53
Ga-Shongwane	6	48	8	15	23	11	38	26	84	14	273
Total	96	846	137	183	464	207	800	425	1111	585	4854

Source: StatsSA, Census, 1996

Appendix 6

Distribution of monthly income per person per village (1996)

Villages	Frequencies %											
	R0-R500		R501 – R1000		R1001 – R1500		> R1500		Unspecified		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Borkum (Dilaeneng)	3313	77.8	93	2.2	120	2.8	126	3.0	605	14.2	4257	100
Gemarke	1714	89.7	25	1.3	25	1.3	111	5.8	35	1.8	1910	100
Opgaaf (Ga-Chokwe)	3036	92.4	88	2.7	46	1.4	29	0.9	88	2.7	3287	100
Louisiana (Ga-Phago)	1592	79.1	20	1.0	100	5.0	49	2.4	251	12.5	2012	100
Vaalwater (Bloodriver)	223	51.6	29	6.7	24	5.6	82	19.0	74	17.1	432	100
Mukhomi Chief's Kraal	3494	95.3	56	1.5	38	1.0	39	1.1	41	1.1	3668	100
Lordskraal (Madibong)	6476	88.1	105	1.4	73	1.0	93	1.3	607	8.3	7354	100
Dingaanskop (Mohlaletsi)	9437	94.7	62	0.6	59	0.6	129	1.3	281	2.8	9968	100
Moskow (Ga-Mashabela)	2406	68.8	35	1.0	22	0.6	33	0.9	1001	28.6	3497	100
Daljasofat (Ga- Nkwana)	5428	94.4	74	1.3	68	1.2	143	2.5	36	0.6	5749	100
Zeekoeigat (Serokolo)	3414	88.5	67	1.7	53	1.4	117	3.0	208	5.4	3859	100
Eerstegeluk (Tukakgomo)	2995	79.1	80	2.1	74	2.0	111	2.9	525	13.9	3785	100
Derdeglid (Riba Cross)	9545	85.3	257	2.3	161	1.4	149	1.3	1080	9.6	11192	100
Ga-Malekana (Steelpoort)	437	96.3	6	1.3	1	0.2	7	1.5	3	0.7	454	100
Bothashoek	767	93.9	4	0.5	5	0.6	9	1.1	32	3.9	817	100
Maandagshoek (Boschoff Hospital)	461	92.6	3	0.6	7	1.4	15	3.0	12	2.4	498	100
Madisa-a-ditlovo (Magatle)	2586	77.2	48	1.4	38	1.1	106	3.2	572	17.1	3350	100
Tsantsabela (Elandskraal)	3632	93.6	73	1.9	35	0.9	78	2.0	61	1.6	3879	100
Moetlane (Zebediela)	656	42.6	288	18.7	21	1.4	71	4.6	503	32.7	1539	100
Mozambique (Mapela)	904	92.4	4	0.4	6	0.6	14	1.4	50	5.1	978	100
Haakdoorndraai (Ga-Matlala)	274	90.4	6	2.0	2	0.7	12	4.0	9	3.0	303	100
Vliegkraal	845	95.9	9	1.0	7	0.8	19	2.2	1	0.1	881	100
Vogelstruisfontein (Skrikfontein)	877	61.4	36	2.5	34	2.4	49	3.4	433	30.3	1429	100
Ga-Shongwane	4197	94.2	50	1.1	62	1.4	98	2.2	50	1.1	4457	100
Total	68709	86.4	1518	1.9	1081	1.4	1689	2.1	6558	8.2	79555	100

Source: StatsSA, Census, 1996

Appendix 7: Household responses per village on soil characteristics

C001: Borkum (Dilaeneng)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	4	80	15
Patches of pebbles	2	94	4
Gravely patches	0	87	13
Sandy soil with little clay	62	29	9
Salty soil patches where nothing grows	0	4	96

C002: Gemarke

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	50	50
Patches of pebbles	0	100	0
Gravely patches	0	63	37
Sandy soil with little clay	88	12	0
Salty soil patches where nothing grows	0	29	71

C003: Opgaaf (Ga-Chokwe)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	73	27
Patches of pebbles	9	64	27
Gravely patches	20	50	30
Sandy soil with little clay	46	36	18
Salty soil patches where nothing grows	9	36	55

C004: Louisiana (Ga-Phago)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	42	58
Patches of pebbles	0	75	25
Gravely patches	8	50	42
Sandy soil with little clay	17	66	17
Salty soil patches where nothing grows	8	25	67

C005: Vaalwater (Bloodriver)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	0	100
Patches of pebbles	0	100	0
Gravely patches	0	40	60
Sandy soil with little clay	0	40	60
Salty soil patches where nothing grows	0	0	100

C006: Mukhomi Chief's Kraal

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	67	33	0
Patches of pebbles	17	66	17
Gravely patches	33	50	17
Sandy soil with little clay	66	17	17
Salty soil patches where nothing grows	0	33	67

C007: Madibong (Lordskraal)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	27	64	9
Patches of pebbles	0	91	9
Gravelly patches	55	36	9
Sandy soil with little clay	46	54	0
Salty soil patches where nothing grows	0	46	54

C008: Mohlaletsi (Dingaanskop)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	100	0
Patches of pebbles	0	100	0
Gravelly patches	0	100	0
Sandy soil with little clay	0	100	0
Salty soil patches where nothing grows	0	100	0

C009: Ga-Mashabela (Moskow)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	14	86	0
Patches of pebbles	0	71	29
Gravelly patches	0	100	0
Sandy soil with little clay	71	29	0
Salty soil patches where nothing grows	62	38	0

C010: Ga-Nkwana (Daljasofat)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	13	87	0
Patches of pebbles	19	81	0
Gravelly patches	56	44	0
Sandy soil with little clay	38	50	12
Salty soil patches where nothing grows	0	50	50

C011: Zeekoeigat (Serokolo)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	100	0	0
Patches of pebbles	7	93	0
Gravelly patches	100	0	0
Sandy soil with little clay	7	7	86
Salty soil patches where nothing grows	7	93	0

C012: Tukakgomo (Eerstegeluk)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	100	0
Patches of pebbles	0	100	0
Gravelly patches	0	100	0
Sandy soil with little clay	33	67	0
Salty soil patches where nothing grows	0	100	0

C013: Riba Cross (Derdegelid)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	75	25
Patches of pebbles	0	75	25
Gravelly patches	38	50	12
Sandy soil with little clay	0	100	0
Salty soil patches where nothing grows	0	0	100

C014: Steelpoort (Ga-Malekana)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	100	0	0
Patches of pebbles	0	100	0
Gravelly patches	0	0	100
Sandy soil with little clay	100	0	0
Salty soil patches where nothing grows	0	0	100

C015: Bothashoek

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	100	0
Patches of pebbles	0	100	0
Gravelly patches	0	89	11
Sandy soil with little clay	0	100	0
Salty soil patches where nothing grows	0	100	0

C016: Maandagshoek (Boschoff Hospital)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	100	0
Patches of pebbles	0	100	0
Gravelly patches	0	0	100
Sandy soil with little clay	0	100	0
Salty soil patches where nothing grows	0	100	0

C017: Madisa-a-ditoto (Magatle)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	34	66
Patches of pebbles	11	44	45
Gravelly patches	0	44	56
Sandy soil with little clay	100	0	0
Salty soil patches where nothing grows	0	0	100

C018: Tsantsabela (Elandskraal)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	100	0
Patches of pebbles	0	100	0
Gravelly patches	0	0	100
Sandy soil with little clay	0	100	0
Salty soil patches where nothing grows	0	0	100

C019: Moletlane (Zebediela)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	0	43	57
Patches of pebbles	0	43	57
Gravelly patches	0	43	57
Sandy soil with little clay	100	0	0
Salty soil patches where nothing grows	0	0	100

C020: Mozambique (Mapela)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	12	76	12
Patches of pebbles	53	41	6
Gravelly patches	47	47	6
Sandy soil with little clay	59	41	0
Salty soil patches where nothing grows	0	59	41

C021: Haakdoorndraai (Ga-Matlala)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	30	60	10
Patches of pebbles	20	50	30
Gravelly patches	50	20	30
Sandy soil with little clay	50	20	30
Salty soil patches where nothing grows	0	0	100

C022: Vliegkraal

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	8	23	69
Patches of pebbles	8	54	38
Gravelly patches	0	30	70
Sandy soil with little clay	39	23	38
Salty soil patches where nothing grows	0	60	40

C023: Vogelstruisfontein (Skrikfontein/Nyakelang)

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	8	84	8
Patches of pebbles	50	50	0
Gravelly patches	58	34	8
Sandy soil with little clay	50	42	8
Salty soil patches where nothing grows	0	0	100

C024: Ga-Shongwane

Soil characteristics	How often is aspect observed (% of respondents)		
	Often	Seldom	Never
Outcrops of bare rock	24	66	10
Patches of pebbles	45	51	4
Gravelly patches	58	39	3
Sandy soil with little clay	60	39	1
Salty soil patches where nothing grows	5	43	52

Appendix 8: Soil characteristics per village

C001: Borchum (Dilaeneng)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
85	15	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
85	4	11	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
4	11	85	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
73	20	7	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	100	0	

C002: Gemarke

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
50	50	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
100	0	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
100	0	0	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	0	100	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	0	100	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	100	0	

C003: Ga -Chokwe

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	90	10	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	40	60	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
10	10	60	20
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
20	60	20	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
20	0	80	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
10	90	0

C004: Ga-Phoga (Louisiana)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
8	67	25	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
17	8	75	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
8	0	17	75
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
8	67	25	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
9	33	58	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
25	67	8	

C005: Vaalwater (Bloodriver)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
43	57	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
43	0	57	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	14	72	14
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
14	57	29	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
57	14	29	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
14	86	0	

C006: Mukhomi Chief's Kraal

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
67	17	16	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
17	83	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	50	50	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	50	50	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
17	33	50	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
0	83	17

C007: Madibong (Lordskraal)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
55	9	36	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
82	18	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	100	0	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
82	9	9	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
82	18	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
91	0	9	

C008: Dingaanskop (Mohlatletsi)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	0	100	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	13	87	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	0	100
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	87	13	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	69	31	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	75	25	

C009: Ga-Mashabela (Moskow)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
14	14	72	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
43	57	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	71	29	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
43	0	57	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
14	86	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
29	0	71

C010: Ga-Nkwana (Daljasofat)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
6	63	31	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
13	31	56	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
6	13	75	6
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
25	62	13	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
13	50	37	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
12	69	19	

C011: Zeekoeigat (Serokolo)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
7	93	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
7	79	14	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	7	93	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
7	14	79	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
7	79	14	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
7	7	86	

C012: Tukakgomo (Eerstegeluk)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	0	100	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	0	100	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	0	100	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	40	60	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
0	60	40

C013: Riba Cross (Derdeglid)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	60	40	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	60	40	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	60	40	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
20	80	0	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	60	40	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	60	40	

C014: Ga-Malekana (Steelpoort)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	0	100	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	0	100	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
100	0	0	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
100	0	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	100	0	

C015: Bothashoek

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	0	100	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	100	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
100	0	0	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
100	0	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
0	0	100

C016: Maandagshoek (Boschoff Hospital)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	100	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	0	100	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	100	0	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	0	100	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	100	0	

C017: Madisa-a-ditlovo (Magatle)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
11	89	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
11	0	89	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
11	0	89	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
33	22	55	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	22	78	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	66	34	

C018: Tsantsabela (Elandskraal)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
50	50	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
50	0	50	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	0	100	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
0	50	50	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
50	0	50	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
0	100	0

C019: Moletlane (Zebediela)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	100	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	0	100	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
14	0	86	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
42	29	29	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	29	71	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
0	57	43	

C020: Mozambique (Mapela)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	56	44	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
6	94	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
12	65	23	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
29	65	6	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
0	82	18	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
12	82	6	

C021: Haakdoorndraai (Ga-Matlala)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	100	0	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	80	20	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	40	20	40
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
80	0	20	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
20	60	20	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
40	60	0

C022: Vliegkraal

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	75	25	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
0	100	0	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
0	11	67	22
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
67	11	22	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
40	60	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
56	33	11	

C023: Vogelstruisfontein (Skrikfontein/Nyakelang)

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
0	64	36	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
13	75	12	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
9	55	36	0
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
50	50	0	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
40	60	0	
Amount and quality of humus compared to 5 years ago (% of respondents)			
Worse	No change	Better	
63	37	0	

C024: Ga-Shongwane

Characteristics of topsoil (% of respondents)			
Sparse and thin	Deep and ample	In between	Other
13	67	20	0
Topsoil compare to 5 years ago (% of respondents)			
Shallower	Little change	Deeper	
19	74	7	
Existence of topsoil loss due to erosion (% of respondents)			
Always	Usually	Seldom	Never
8	24	62	6
Topsoil loss compared to 5 years ago (% of respondents)			
Worse	Much the same	Less serious	
47	42	11	
Humus conditions where crops planted (% of respondents)			
Poor	Typical	Rich	
30	56	14	
Amount and quality of humus compared to 5 years ago (% of respondents)			

Worse	No change	Better
33	47	20

Appendix 9: Marital status of household members by region

Marital status	Bochum		Seshego		Schoonoord	
	Males	Females	Males	Females	Males	Females
Children <= 15	145 (42.5)	133 (37.9)	87 (41.2)	64 (28.8)	133 (38.7)	141 (35.8)
Single	135 (39.6)	129 (36.8)	72 (34.1)	91 (41.0)	136 (39.5)	136 (34.5)
Civil marriage	30 (8.8)	28 (8.0)	23 (10.9)	21 (9.5)	25 (7.3)	27 (6.9)
Customary marriage	25 (7.3)	25 (7.1)	17 (8.1)	17 (7.7)	36 (10.5)	34 (8.6)
Divorced	1 (0.3)	0 (0.0)	1 (0.5)	0 (0.0)	1 (0.3)	7 (1.8)
Seperated	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.5)
Widowed, not remarried	0 (0.0)	33 (9.4)	1 (0.5)	21 (9.5)	1 (0.3)	25 (6.3)
Living together/in process to marry	4 (1.2)	3 (0.9)	7 (3.3)	7 (3.2)	10 (2.9)	19 (4.8)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	1 (0.3)	0 (0.0)	3 (1.4)	1 (0.5)	2 (0.6)	3 (0.8)
Total	341 (100)	351 (100)	211 (100)	222 (100)	344 (100)	394 (100)

Marital status	Praktiseer		Zebediela		Western	
	Males	Females	Males	Females	Males	Females
Children <= 15	178 (45.4)	235 (45.0)	84 (41.4)	70 (34.3)	209 (36.2)	183 (32.1)
Single	115 (29.3)	146 (28.0)	76 (37.4)	81 (39.7)	223 (38.6)	204 (35.8)
Civil marriage	45 (11.5)	45 (8.6)	20 (9.9)	20 (9.8)	62 (10.7)	65 (11.4)
Customary marriage	30 (7.7)	31 (5.9)	18 (8.9)	17 (8.3)	40 (6.9)	37 (6.5)
Divorced	1 (0.3)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	9 (1.6)
Seperated	0 (0.0)	8 (1.5)	0 (0.0)	1 (0.5)	14 (2.4)	7 (1.2)
Widowed, not remarried	1 (0.3)	30 (5.7)	0 (0.0)	12 (5.9)	6 (1.0)	42 (7.4)
Living together/in process to marry	22 (5.6)	25 (4.8)	5 (2.5)	2 (1.0)	13 (2.2)	10 (1.8)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (0.5)	3 (0.5)
No answer	0 (0.0)	1 (0.2)	0 (0.0)	1 (0.5)	8 (1.4)	10 (1.8)
Total	392 (100)	522 (100)	203 (100)	204 (100)	578 (100)	570 (100)

Table: Marital status by village

Marital status	Dilaeneng		Gemarke		Opgaaf		Louisiana	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	115 (42.6)	102 (38.2)	30 (42.3)	31 (36.9)	24 (45.3)	23 (33.3)	17 (35.4)	17 (29.8)
Single	105 (38.9)	94 (35.2)	30 (42.3)	35 (41.7)	19 (25.8)	31 (44.9)	24 (50.0)	23 (40.4)
Civil marriage	21 (7.8)	19 (7.1)	9 (12.7)	9 (10.7)	4 (7.5)	4 (5.8)	3 (6.3)	3 (5.3)
Customary marriage	23 (8.5)	23 (8.6)	2 (2.8)	2 (2.4)	3 (5.7)	3 (4.3)	3 (6.3)	3 (5.3)
Divorced	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Seperated	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Widowed, not remarried	0 (0.0)	26 (9.7)	0 (0.0)	7 (8.3)	0 (0.0)	5 (7.2)	1 (2.1)	11 (19.3)
Living together/in process to marry	4 (1.5)	3 (1.1)	0 (0.0)	0 (0.0)	2 (3.8)	2 (2.9)	0 (0.0)	0 (0.0)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.9)	1 (1.4)	0 (0.0)	0 (0.0)
Total	270 (100)	267 (100)	71 (100)	84 (100)	53 (100)	69 (100)	48 (100)	57 (100)

Marital status	Vaalwater		Chief's Kraal		Madibong		Dingaanskop	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	23 (44.2)	14 (27.5)	23 (39.7)	10 (22.2)	21 (33.9)	23 (31.1)	23 (32.9)	20 (33.3)
Single	13 (25.0)	19 (37.3)	16 (27.6)	18 (40.0)	30 (48.4)	27 (36.5)	31 (44.3)	22 (36.7)
Civil marriage	3 (5.8)	3 (5.9)	13 (22.4)	11 (24.4)	3 (4.8)	3 (4.1)	3 (4.3)	3 (5.0)
Customary marriage	6 (11.5)	6 (11.8)	5 (8.6)	5 (11.1)	4 (6.5)	4 (5.4)	12 (17.1)	10 (16.7)
Divorced	0 (0.0)	0 (0.0)	1 (1.7)	0 (0.0)	0 (0.0)	2 (2.7)	0 (0.0)	0 (0.0)
Seperated	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Widowed, not remarried	0 (0.0)	4 (7.8)	0 (0.0)	1 (2.2)	0 (0.0)	9 (12.2)	0 (0.0)	3 (5.0)
Living together/in process to marry	5 (9.6)	5 (9.8)	0 (0.0)	0 (0.0)	4 (6.5)	6 (8.1)	1 (1.4)	2 (3.3)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	2 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	52 (100)	51 (100)	58 (100)	45 (100)	62 (100)	74 (100)	70 (100)	60 (100)

Marital status	Moskow		Daljasofat		Zeekoeigat		Eerstegeluk	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	32 (43.8)	21 (38.2)	29 (46.0)	14 (21.5)	17 (38.6)	35 (46.1)	11 (34.4)	28 (43.8)
Single	27 (37.0)	9 (16.4)	21 (33.3)	33 (50.8)	18 (40.9)	26 (34.2)	9 (28.1)	19 (29.7)
Civil marriage	4 (5.5)	5 (9.1)	5 (7.9)	6 (9.2)	6 (13.6)	6 (7.9)	4 (12.5)	4 (6.3)
Customary marriage	8 (11.0)	8 (14.5)	5 (7.9)	5 (7.7)	1 (2.3)	1 (1.3)	6 (18.8)	6 (9.4)
Divorced	0 (0.0)	4 (7.3)	0 (0.0)	0 (0.0)	1 (2.3)	0 (0.0)	0 (0.0)	1 (1.6)
Seperated	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (3.1)
Widowed, not remarried	0 (0.0)	4 (7.3)	1 (1.6)	4 (6.2)	0 (0.0)	4 (5.3)	0 (0.0)	1 (1.6)
Living together/in process to marry	2 (2.7)	4 (7.3)	0 (0.0)	0 (0.0)	1 (2.3)	4 (5.3)	2 (6.3)	3 (4.7)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	0 (0.0)	0 (0.0)	2 (3.2)	3 (4.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	73 (100)	55 (100)	63 (100)	65 (100)	44 (100)	76 (100)	32 (100)	64 (100)

Marital status	Derdeglid		Steelpoort		Bothashoek		Maandagshoek	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	117 (47.4)	145 (45.5)	20 (45.5)	26 (44.8)	21 (36.8)	36 (47.4)	20 (45.5)	28 (40.6)
Single	70 (28.3)	85 (26.6)	8 (18.2)	14 (24.1)	23 (40.4)	22 (28.9)	14 (31.8)	25 (36.2)
Civil marriage	29 (11.7)	29 (9.1)	4 (9.1)	4 (6.9)	6 (10.5)	6 (7.9)	6 (13.6)	6 (8.7)
Customary marriage	14 (5.7)	16 (5.0)	11 (25.0)	10 (17.2)	1 (1.8)	1 (1.3)	4 (9.1)	4 (5.8)
Divorced	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	1 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)
Seperated	0 (0.0)	4 (1.3)	0 (0.0)	1 (1.7)	0 (0.0)	2 (2.6)	0 (0.0)	1 (1.4)
Widowed, not remarried	0 (0.0)	19 (6.0)	0 (0.0)	1 (1.7)	1 (1.8)	6 (7.9)	0 (0.0)	4 (5.8)
Living together/in process to marry	17 (6.9)	19 (6.0)	1 (2.3)	2 (3.4)	4 (7.0)	3 (3.9)	0 (0.0)	1 (1.4)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	247 (100)	319 (100)	44 (100)	58 (100)	57 (100)	76 (100)	44 (100)	69 (100)

Marital status	Magatle		Elandskraal		Moletlane		Mapela	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	22 (34.4)	18 (33.3)	30 (50.0)	20 (31.3)	32 (40.5)	32 (37.2)	32 (43.2)	28 (35.0)
Single	26 (40.6)	17 (31.5)	19 (31.7)	28 (43.8)	31 (39.2)	36 (41.9)	30 (40.5)	33 (41.3)
Civil marriage	10 (15.6)	10 (18.5)	6 (10.0)	6 (9.4)	4 (5.1)	4 (4.7)	9 (12.2)	11 (13.8)
Customary marriage	6 (9.4)	5 (9.3)	5 (8.3)	5 (7.8)	7 (8.9)	7 (8.1)	1 (1.4)	0 (0.0)
Divorced	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)
Seperated	0 (0.0)	1 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Widowed, not remarried	0 (0.0)	2 (3.7)	0 (0.0)	5 (7.8)	0 (0.0)	5 (5.8)	0 (2.7)	5 (6.3)
Living together/in process to marry	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (6.3)	2 (2.3)	0 (0.0)	2 (2.5)
Civil and customary	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
No answer	0 (0.0)	1 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	64 (100)	54 (100)	60 (100)	64 (100)	79 (100)	86 (100)	74 (100)	80 (100)

Marital status	Haakdoorndraai		Vliegkraal		Skrikfontein		Ga-Shongwane	
	Males	Females	Males	Females	Males	Females	Males	Females
Children <= 15	26 (35.1)	26 (36.1)	24 (41.4)	18 (25.7)	30 (41.1)	25 (33.3)	97 (32.4)	86 (31.5)
Single	34 (45.9)	26 (36.1)	22 (37.9)	26 (37.1)	27 (37.0)	30 (40.0)	110 (36.8)	89 (32.6)
Civil marriage	5 (6.8)	6 (8.3)	4 (6.9)	5 (7.1)	10 (13.7)	8 (10.7)	34 (11.4)	35 (12.8)
Customary marriage	9 (12.2)	7 (9.7)	5 (8.6)	5 (7.1)	4 (5.5)	3 (4.0)	21 (7.0)	22 (8.1)
Divorced	0 (0.0)	1 (1.4)	0 (0.0)	4 (5.7)	0 (0.0)	3 (4.0)	0 (0.0)	0 (0.0)
Seperated	0 (0.0)	2 (2.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	14 (4.7)	5 (1.8)
Widowed, not remarried	0 (0.0)	4 (5.6)	0 (0.0)	9 (12.9)	1 (1.4)	5 (6.7)	3 (1.0)	19 (7.0)
Living together/in process to marry	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13 (4.3)	8 (2.9)
Civil and customary	0 (0.0)	0 (0.0)	2 (3.4)	2 (2.9)	1 (1.4)	1 (1.3)	0 (0.0)	0 (0.0)
No answer	0 (0.0)	0 (0.0)	1 (1.7)	1 (1.4)	0 (0.0)	0 (0.0)	7 (2.3)	9 (3.3)
Total	74 (100)	72 (100)	58 (100)	70 (100)	73 (100)	75 (100)	299 (100)	273 (100)

Appendix 10: ASFR – asset relationships among different age groups

Dependent Variable: ASFR1 (16-25)

Included observations: 29

Variable	Coeff	Std. Error	t-Statistic	Prob.
AGEW1	0.032100	0.028531	1.125072	0.2739
AGEW2	0.000802	0.001450	0.553395	0.5861
EDUCW1	0.116433	0.371686	0.313256	0.7573
EDUCW2	-0.731761	0.570178	-1.283390	0.2140
CHILDALIVE	-0.008272	0.057055	-0.144990	0.8862
LANDSIZEC	-0.082431	0.195743	-0.421120	0.6782
PCTASSETS	3.63E-05	9.26E-05	0.391753	0.6994
SPCLAND	-0.523428	0.593383	-0.882109	0.3882
C	2.030489	1.815547	1.118389	0.2767
R-squared	0.263645	Mean dependent var		1.068966
Adjusted R-squared	-0.030897	S.D. dependent var		0.961065

REGRESSION AGE

Dependent Variable: ASFR1 (16-25)

Included observations: 80

Variable	Coeff	Std. Error	t-Statistic	Prob.
AGEW1	0.003145	0.013708	0.229429	0.8192
CEB	0.115829	0.085184	1.359742	0.1782
CHILDALIVE	-0.032889	0.060037	-0.547805	0.5855
EDUCW1	-0.088245	0.218806	-0.403304	0.6879
LANDSIZEC	-0.044593	0.063614	-0.701000	0.4856
PCFASSETS	-0.000172	0.000163	-1.058720	0.2933
PCTASSETS	-4.67E-06	7.27E-05	-0.064273	0.9489
SPCLAND	0.004591	0.002384	1.926032	0.0581
C	1.038981	0.924320	1.124049	0.2648
R-squared	0.155655	Mean dependent var		0.987500
Adjusted R-squared	0.060518	S.D. dependent var		0.920838

Dependent Variable: ASFR2 (26-35)

Included observations: 18

Variable	Coeff	Std. Error	t-Statistic	Prob.
AGEW2	-0.009292	0.046644	-0.199200	0.8465
CEB	0.513905	0.223324	2.301165	0.0469
CHILDALIVE	-0.179616	0.181574	-0.989212	0.3484
EDUCW2	0.610979	0.522505	1.169326	0.2723
LANDSIZEC	-0.159687	0.327238	-0.487983	0.6372
PCFASSETS	0.000979	0.002120	0.461913	0.6551
PCTASSETS	-0.000128	0.000390	-0.328430	0.7501
SPCLAND	-0.376695	0.891850	-0.422375	0.6827
C	-0.404113	1.851678	-0.218241	0.8321
R-squared	0.814730	Mean dependent var		1.444444
Adjusted R-squared	0.650046	S.D. dependent var		1.423427

Dependent Variable: ASFR3 (36-45)

Included observations: 90

Variable	Coeff	Std. Error	t-Statistic	Prob.
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CEB	0.190101	0.073793	2.576147	0.0118
CHILDALIVE	-0.006889	0.051571	-0.133581	0.8941
LANDSIZEC	-0.037973	0.070231	-0.540693	0.5902
PCFASSETS	8.73E-06	7.48E-05	0.116675	0.9074
PCTASSETS	-1.94E-06	6.01E-05	-0.032374	0.9743
SPCLAND	-0.011048	0.041894	-0.263701	0.7927
C	0.353721	0.292909	1.207615	0.2306
R-squared	0.208404	Mean dependent var		0.777778
Adjusted R-squared	0.151180	S.D. dependent var		1.014255

Dependent Variable: ASFR1 (>45)

Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGEW1	0.032100	0.028531	1.125072	0.2739
AGEW2	0.000802	0.001450	0.553395	0.5861
EDUCW1	0.116433	0.371686	0.313256	0.7573
EDUCW2	-0.731761	0.570178	-1.283390	0.2140
CHILDALIVE	-0.008272	0.057055	-0.144990	0.8862
LANDSIZEC	-0.082431	0.195743	-0.421120	0.6782
PCTASSETS	3.63E-05	9.26E-05	0.391753	0.6994
SPCLAND	-0.523428	0.593383	-0.882109	0.3882
C	2.030489	1.815547	1.118389	0.2767
R-squared	0.263645	Mean dependent var		1.068966
Adjusted R-squared	-0.030897	S.D. dependent var		0.961065