Background Paper Series

PROVIDE PROJECT

The Provincial Decision-making Enabling Project

Background Paper 2005:1(9)

A profile of the Limpopo province: Demographics, poverty, inequality and unemployment

Elsenburg
August 2005

PROVIDE PROJECT

The Provincial Decision-making Enabling Project

Overview

The Provincial Decision-Making Enabling (PROVIDE) Project aims to facilitate policy design by supplying policymakers with provincial and national level quantitative policy information. The project entails the development of a series of databases (in the format of Social Accounting Matrices) for use in Computable General Equilibrium models.

The National and Provincial Departments of Agriculture are the stakeholders and funders of the PROVIDE Project. The research team is located at Elsenburg in the Western Cape.

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For the original project proposal and a more detailed description of the project, please visit www.elsenburg.com/provide

A profile of the Limpopo province: Demographics, poverty, inequality and unemployment [1]

Abstract

This paper forms part of a series of papers that present profiles of South Africa's provinces, with a specific focus on key demographic statistics, poverty and inequality estimates, and estimates of unemployment. In this volume comparative statistics are presented for agricultural and non-agricultural households, as well as households from different racial groups, locations (metropolitan, urban and rural areas) and district municipalities of Limpopo. Most of the data presented are drawn from the Income and Expenditure Survey of 2000 and the Labour Force Survey of September 2000, while some comparative populations statistics are extracted from the National Census of 2001 (Statistics South Africa). The papers should be regarded as general guidelines to (agricultural) policymakers as to the current socio-economic situation in Limpopo, particularly with regards to poverty, inequality and unemployment.

[1] The main author of this paper is Kalie Pauw.

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1. Introduction

According to the National Census of 2001 Limpopo is home to 11.8% of South Africa's population. Measured by its total current income, Limpopo is ranked sixth of all the provinces in South Africa in terms of total income. In *per capita* income terms, however, the province is the poorest (SSA, 2003a).[2] As is the case with most of the other provinces in South Africa, Limpopo is marred by high poverty rates, inequalities in the distribution of income between various population subgroups, and unemployment. Poverty and unemployment in South Africa are often rural phenomena, and given that many of the rural inhabitants are linked to agricultural activities, the various Departments of Agriculture in South Africa have an important role to play in addressing the needs in rural areas. In this paper an overview of the demographics, poverty, inequality and unemployment in Limpopo is presented. A strong focus on agriculture and agricultural households is maintained throughout.

There are various sources of demographic data available in South Africa. In addition to the National Census of 2001 (SSA, 2003a), Statistics South Africa conducts a variety of regular surveys. Most suited to this type of study and fairly recent is the Income and Expenditure Survey of 2000 (IES 2000) (SSA, 2002a), which is a source of detailed income and expenditure statistics of households and household members. The twice-yearly Labour Force Survey (LFS) is an important source of employment and labour income data. In this paper we use the LFS September 2000 (LFS 2000:2) (SSA, 2002b) as this survey can be merged with the IES 2000. Although there are some concerns about the reliability of the IES and LFS datasets, whether merged or used separately, as well as the comparability of these with other datasets, one should attempt to work with it as it remains the most recent comprehensive source of household income, employment and expenditure information in South Africa. For a detailed description of the data, as well as data problems and data adjustments made to the version of the dataset used in this paper, refer to PROVIDE (2005a).

This paper is organised as follows. Section 2 presents a brief overview of the spatial distribution of households within the province, while also presenting some estimates of the number of people or households involved in agricultural activities. Section 3 focuses on poverty, inequality and unemployment in the province, while section 4 draws some general conclusions.

[2] These population figures and income estimates are based on the Census 2001. Statistics South Africa warns that the question simply asked about individual income without probing about informal income, income from profits, income in kind etc. As a result they believe this figure may be a misrepresentation of the true income. Comparative figures from the IES 2000 ranks Limpopo seventh in terms of total provincial income and also last in terms of *per capita* income.

2. Demographics

2.1. Spatial distribution of households

In 2000 Limpopo was home to 1.03 million households and a total of 5.56 million people (IES/LFS 2000). These estimates are slightly different from the Census 2001 estimates of 1.18 million households (5.27 million people, see Table 1). The discrepancy is partly explained by changes in the population size and structure between 2000 and 2001, but also points to the outdated IES/LFS 2000 sampling weights.[3] Compared to the Census 2001 data African and White people were slightly under-represented, while Asian and Coloured people were over-represented in the IES/LFS 2000.

Table 1: Racial composition of Limpopo

	IES/LFS 2000	*Population share*	*Census 2001*	*Population share*
African	5,403,705	97.1%	5,128,614	97.3%
Coloured	19,908	0.4%	10,162	0.2%
Asian/Indian	26,296	0.5%	8,585	0.2%
White	114,053	2.0%	126,276	2.4%
Total	*5,563,963*	*100.0%*	*5,273,637*	*100.0%*

Sources: IES/LFS 2000 and Census 2001.

Limpopo is divided into six district municipalities (see Figure 1), namely Bohlabela, Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg. These district municipalities were recently demarcated as directed by the Local Government Municipal Structures Act (1998). Bohlabela and Sekukhune are so-called 'transfrontier' district municipalities as they stretch across the provincial border with Mpumalanga. None of the municipal districts or cities in Limpopo has metropolitan status; hence all urban areas are either classified as small cities or towns.[4] Several of the former homelands fall within Limpopo's boundaries. This includes Venda (part of Vhembe), Gazankulu (parts of Bohlabela, Mopani and Vhembe) and Lebowa (parts of all district municipalities except Vhembe).[5]

[3] The IES 2000 sampling weights were based on 1996 population estimates.

[4] Officially the Demarcation Board declared Pretoria (Tshwane), Johannesburg, East Rand (Ekurhuleni), Durban (eThekwini), Cape Town and Port Elizabeth (Nelson Mandela) as metropolitan areas. However, in our definition of metropolitan areas we include the Vaal (Emfuleni), East London, Pietermaritzburg and Bloemfontein (which includes Botshabelo).

[5] See PROVIDE (2005b) for a more detailed discussion of geographical distinctions between households based on former homelands areas, metropolitan areas, and nodal areas for rural development programmes, all of which can be linked to municipal districts.

Figure 1: District municipalities in Limpopo

Source: Demarcation Board (www.demarcation.org.za).

Table 2 shows the number of people in each district municipality by racial group. Vhembe (21.6%) and Bohlabela (21.5%) are the largest in terms of population size, followed by Capricorn (18.6%), Mopani (14.4%), Sekhukhune (13.0%), and finally Waterberg (10.8%). About 97.1% of the population are classified as African. White people make up 2.0% of the population, while Coloured and Asian people make up 0.4% and 0.5% respectively.

Table 2: Population by district municipality and racial group

	African	*Coloured*	*Asian*	*White*	*Total*	*Percentages*
Bohlabela (tf)	1,166,385	7,250		21,989	1,195,624	21.5%
Capricon	993,007	3,874	15,897	23,656	1,036,435	18.6%
Mopani	797,024	5,437			802,460	14.4%
Sekhukhune (tf)	720,868	3,347			724,215	13.0%
Vhembe	1,178,018		8,634	15,238	1,201,890	21.6%
Waterberg	548,403		1,766	53,170	603,339	10.8%
Total	*5,403,705*	*19,908*	*26,297*	*114,053*	*5,563,963*	
Percentages	*97.1%*	*0.4%*	*0.5%*	*2.0%*		*100.0%*

Source: IES/LFS 2000

Table 3 shows the number of people in urban and rural areas. Most Asian and White people live in urban areas, while just over half of the Coloured people live in rural areas. By far the greatest majority of Africans live in rural areas. Since the province has a very large African population the overall urban-rural split is 86.8% versus 13.2%. Compared to the national average 63-37 urban-rural split Limpopo has a very large rural population.

Table 3: Population by urban/rural areas and racial group

	African	*Coloured*	*Asian*	*White*	*Total*	*Percentages*
Secondary/small towns	600,240	9,311	26,296	97,901	733,748	13.2%
Rural areas	4,803,465	10,597		16,153	4,830,215	86.8%
Total	*5,403,705*	*19,908*	*26,296*	*114,053*	*5,563,963*	

Source: IES/LFS 2000

2.2. Agricultural households

The IES 2000 is one of the only sources of information on home production for home consumption (HPHC) in South Africa, and reports specifically on the productive activities of small, non-commercial subsistence farmers. Respondents were asked to provide estimates of production levels (livestock and produce), as well as the value of goods consumed and sold (see PROVIDE, 2005a for a discussion). This is potentially an important information source to measure the contribution of informal agricultural activities to poor households' income. On the formal side, employment data, which is available in the IES/LFS 2000, can be used to link households to agriculture. Workers reported both the industry in which they were employed as well as their occupation code.

Statistics South Africa has no formal definition of agricultural households, and hence two definitions are used here, namely a broad definition and a strict definition. Both definitions use a combination of HPHC data and agricultural employment data. Under the broad definition any household that earns income from either formal employment in the agricultural industry or as a skilled agricultural worker, or from sales or consumption of home produce or livestock, is defined as an agricultural household.[6] Under the strict definition a household has to earn at least 50% of its household-level income from formal and/or informal agricultural activities. A further way to 'qualify' as an agricultural household is when the value of consumption of own produce and livestock is at least 50% of total annual food expenditure.

Approximately 535,320 households (51.9%) in Limpopo are involved in HPHC, significantly more than the national average of 19.3%. This figure includes 531,454 African households and 3,867 White households. In contrast to this only 107,717 households (10.4%) earn some share of their income from wages of household members working in agricultural-related industries. The majority of these (103,796) of these households are African, while 257 are Coloured and 3,664 are White households. Income differences between these households suggest that the White households are typically the owners or managers of farms, with incomes averaging R520,158. Coloured households report an income of R172,764, which is

[6] Note that consumption of own produce or livestock in economic terms can be regarded as an 'income' in the sense that the household 'buys' the goods from itself. If the household did not consume the goods it could have been sold in the market. This treatment of home-consumed production captures the notion of opportunity cost in economics.

relatively high compared to the rest of the country. However, this estimate is based on very few observations. African households typically supply farm labour, with an average household income of R11,620. When combining households in own production and agricultural employment, a total of 591,512 households (57.3%) in Limpopo can broadly be defined as agricultural households. Note that some of these households 'qualify' as agricultural households on both own production and employment accounts, which is why the figures do not add up. Under the strict definition 139,986 households (13.6%) are defined as agricultural households (see Table 4).

Table 4: Agricultural households by race (broad and strict definitions)

	Broad definition		*Strict definition*		
	Agricultural households (column percentages)	*Non-agricultural households (column percentages)*	*Agricultural households (column percentages)*	*Non-agricultural households (column percentages)*	*Total (column percentages)*
African	586,338	419,897	137,885	868,349	1,006,235
	(99.1%)	*(95.4%)*	*(98.5%)*	*(97.4%)*	*(97.5%)*
Coloured	257	1,229		1,486	1,486
	(0.0%)	*(0.3%)*	*(0.0%)*	*(0.2%)*	*(0.1%)*
Asian		2,170		2,170	2,170
	(0.0%)	*(0.5%)*	*(0.0%)*	*(0.2%)*	*(0.2%)*
White	4,917	16,811	2,101	19,627	21,728
	(0.8%)	*(3.8%)*	*(1.5%)*	*(2.2%)*	*(2.1%)*
Total	591,512	440,106	139,986	891,631	1,031,618
	(100.0%)	*(100.0%)*	*(100.0%)*	*(100.0%)*	*(100.0%)*
Row percentages	57.3%	42.7%	13.6%	86.4%	100.0%

Source: IES/LFS 2000

The average household size of agricultural households in Limpopo ranges from 4.1 (strict) to 5.0 (broad), compared to the provincial average of 4.5 members. This means that the provincial share of people living in broadly defined agricultural households will be larger than the share of households broadly defined as agricultural, and *vice versa* for strictly defined agricultural households. Table 5 shows that between 687,955 and 3.51 million people live in agricultural households, representing 12.4% and 63.0% of the provincial population respectively. About 162,861 people in Limpopo are classified as agricultural workers, loosely defined here as skilled agriculture workers and/or people working in the agricultural industry, either in an informal or formal capacity and reporting a positive wage or salary for the year 2000. This figure represents 14.6% of Limpopo's workforce.

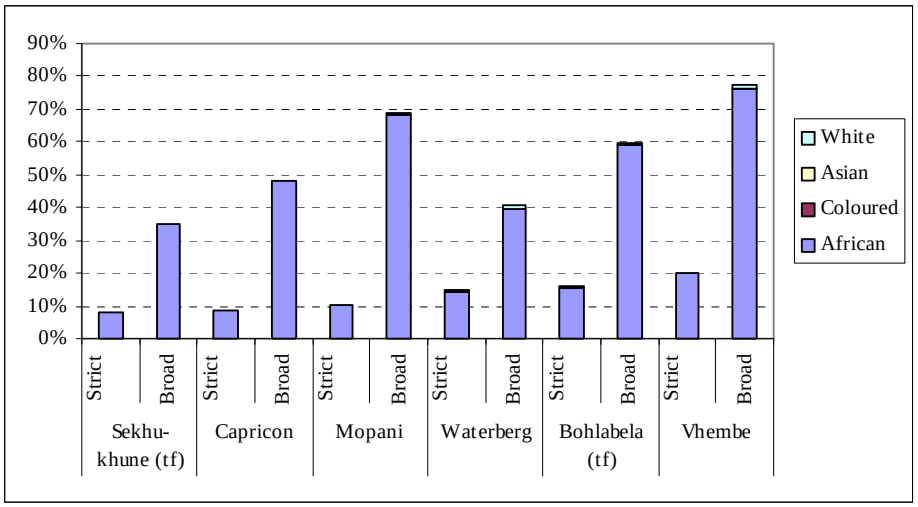
Table 5: Agricultural population by race (broad and strict definitions)

	Population living in agricultural households (broad)	*Percentages*	*Population living in agricultural households (strict)*	*Percentages*	*Population defined as agricultural workers*	*Percentages*
African	3,474,023	*(99.1%)*	675,244	*(98.2%)*	156,279	*(96.0%)*
Coloured	11,375	*(0.3%)*	5,938	*(0.9%)*	626	*(0.4%)*
Asian	-	*(0.0%)*	-	*(0.0%)*	-	*(0.0%)*
White	21,099	*(0.6%)*	6,773	*(1.0%)*	5,956	*(3.7%)*
Total	*3,506,496*	*(100.0%)*	*687,955*	*(100.0%)*	*162,861*	*(100.0%)*

Source: IES/LFS 2000.

Figure 2 shows, for each region, the proportion of households that are strictly or broadly defined as agricultural households. In this figure municipal districts are ranked from lowest to highest strict agricultural household share. The figure also provides a racial breakdown of agricultural households. By far the majority of agricultural households are African (compare Table 4). On average Vhembe has the largest share of agricultural households (20.2% - 77.3%). What is interesting to note is the large gap between the strict and expanded definitions, which suggests that for many broadly defined agricultural households agricultural activities do not represent an important source of income.

Figure 2: Agricultural household shares by region and race



Source: IES/LFS 2000

3. Poverty, inequality and unemployment

In 2003 Limpopo contributed approximately 6.5% to the National GDP, while 11.8% of the South African population live in this province (SSA, 2003a, 2003b). [7] This implies that the *per capita* GDP in Limpopo is expected to be less than the national average. According to the

[7] Other provinces: Western Cape (14.5%), Eastern Cape (8.1%), Northern Cape (2.4%), Free State (5.5%), KwaZulu-Natal (16.5%), North West (6.5%), Gauteng (33.0%), and Mpumalanga (7.0%).

IES/LFS 2000 estimate Limpopo *per capita* income, which is only an approximation of the *per capita* GDP, was R6,497 in 2000, almost half of the national average of R12,411.

Table 6 shows the average household incomes (not *per capita*) by various subgroups in Limpopo. Although some of these averages are based on very few observations, which often lead to large standard errors and unreliable estimates, the table gives a general idea of how income is distributed between household groups in the province. The average household in Limpopo earned R27,703 in 2000 (not shown in the table). White agricultural households in general earn more than their non-agricultural counterparts, but the same is not true of African agricultural households. Note that in all the figures and tables that follow agricultural households are defined according to the strict definition. On average agricultural household reported an income of R20,883 compared to R28,773 for non-agricultural households. African agricultural households earned R14,186 in 2000 and are far worse off than their White counterparts, who reportedly earned R460,357. Note that these figures are household-level income figures that are potentially made up of income earned by multiple household members. As such it is not necessarily a reflection of wages of agricultural and non-agricultural workers.

Table 6: Average household incomes in Limpopo

	Agricultural households					Non-agricultural households				
	African	Coloured	Asian	White	Total	African	Coloured	Asian	White	Total
Bohlabela (tf)	14,944			288,517	19,050	22,926			164,209	25,503
Capricon	19,345				19,345	30,361	10,440	165,730	142,126	33,708
Mopani	18,619				18,619	33,558	172,764			33,837
Sekhukhune (tf)	18,690				18,690	17,874	11,261			17,821
Vhembe	9,620			661,468	20,772	21,688		75,052	140,802	23,623
Waterberg	13,654			363,703	28,764	26,490		10,800	182,420	41,013
Provincial average	*14,186*			*460,357*	*20,883*	*25,402*	*39,057*	*128,149*	*166,168*	*28,773*
National average	*15,014*	*24,250*	*132,816*	*282,151*	*26,612*	*29,777*	*57,284*	*88,642*	*166,100*	*49,990*

3.1. Poverty and agriculture

Table 6 shows that Coloured and African agricultural households are generally worse off than their non-agricultural counterparts in terms of income levels. Agricultural households often reside in rural areas and are far removed from more lucrative employment opportunities in urban areas. As a result the National Department of Agriculture places strong emphasis on rural poverty reduction. Various strategies are proposed in the official policy documentation (see Department of Agriculture, 1998). Central to these strategies are (1) an improvement in rural infrastructure, with the aim of giving rural or resource-poor farmers better access to markets, transport, water and electricity, and (2) employment opportunities within agriculture for the poor. The latter can be interpreted either as the creation of employment opportunities within the commercial farming sector by encouraging commercial farmers to increase

employment levels or the creation of new business opportunities for small farmers through a process of land restitution.

Various absolute and relative poverty lines are used in South Africa. In recent years the 40th percentile cut-off point of adult equivalent per capita income has become quite a popular poverty line.[8] This was equal to R5,057 per annum in 2000 (IES/LFS 2000). This relates to a poverty headcount ratio (defined as the proportion of the population living below the poverty line) for South Africa of 49.8% (IES/LFS 2000).[9] The 20th percentile cut-off of adult equivalent income (R2,717 per annum) is sometimes used as the 'ultra-poverty line'. About 28.2% of the South African population lives below this poverty line.

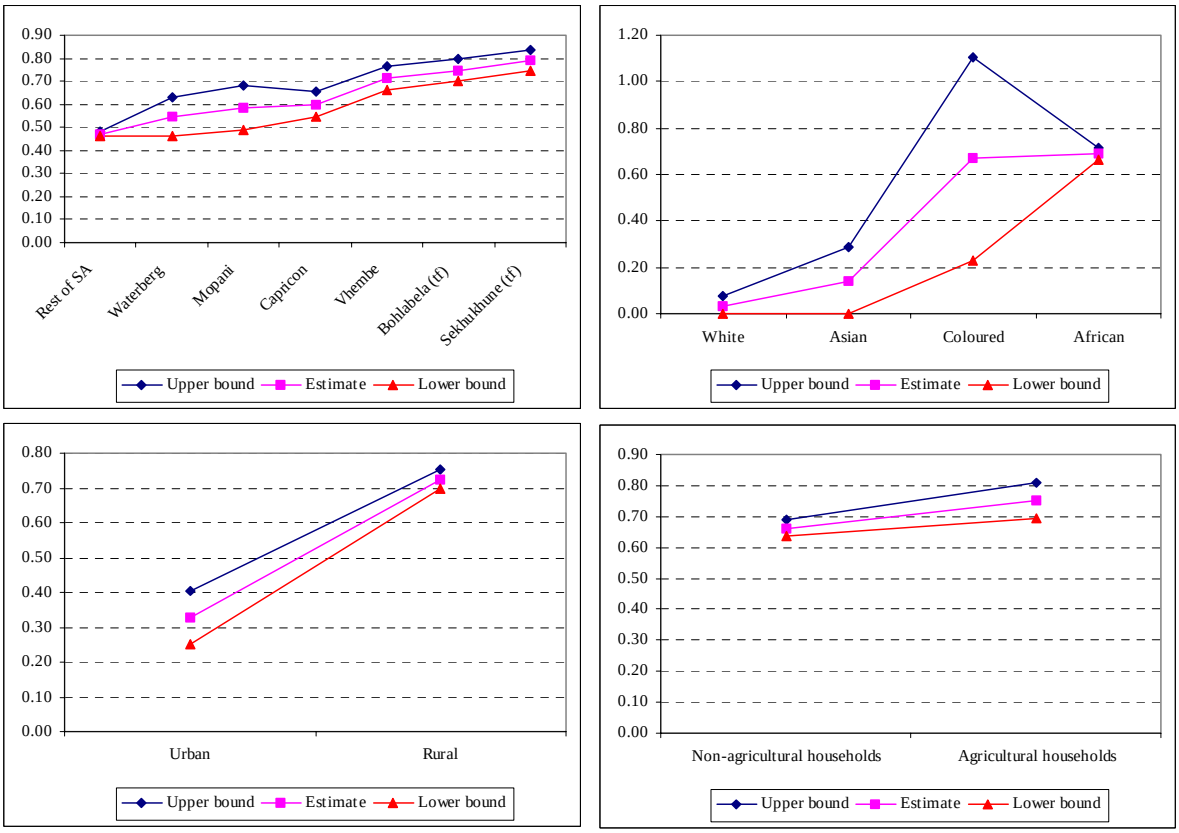
These same national poverty lines are used for the provincial analysis as this allows for comparisons of poverty across provinces. Limpopo poverty rate of 67.3% is significantly higher than the national average, while the ultra-poverty rate is a staggering 39.9%. Figure 3 compares poverty rates for various population subgroups (race, municipality, location and agricultural/non-agricultural households). The subgroups are ranked from lowest to highest poverty rates for easy comparison. The upper and lower bands on the graph represent the 95% confidence intervals.

The poverty rate estimates in all the district municipalities in Limpopo are above the national average poverty rate. Waterberg has the lowest estimated poverty rate (54.8%). The poverty rates increase systematically for the other regions, reaching highs of 74.8% in Bohlabela and 79.1% in Sekhukhune. Poverty rates vary greatly between racial groups. There is virtually no poverty among White people, and rises to about 14.2% for Asian people. In sharp contrast about 66.7% of Coloured people are classified as poor. The confidence interval around this interval is very wide due to the limited number of observations. An estimated 68.9% of Africans live in poverty. Poverty is also more pronounced in rural areas, where 72.5% of people live in poverty, compared to 32.8% in urban areas. Finally, a comparison of agricultural and non-agricultural households reveals that a larger proportion of agricultural people are poor (75.3% compared to 66.1%). Some interesting comparisons between poverty and unemployment rates are drawn later in the paper (see section 3.3).

[8] The adult equivalent household size variable, *E*, is calculated as $E = (A + \alpha K)^{\theta}$, with *A* the number of adults per household and *K* the number of children under the age of 10. In this paper the parameters α and θ are set equal to 0.5 and 0.9 respectively (following May *et al.*, 1995 and others).

[9] The poverty headcount ratio is usually calculated using the Foster-Greer-Thorbecke class of decomposable poverty measures (see PROVIDE, 2003 for a discussion). Poverty measures were also calculated to determine the depth and severity of poverty, but we do not report on these in this paper.

Figure 3: Poverty rates by population subgroups

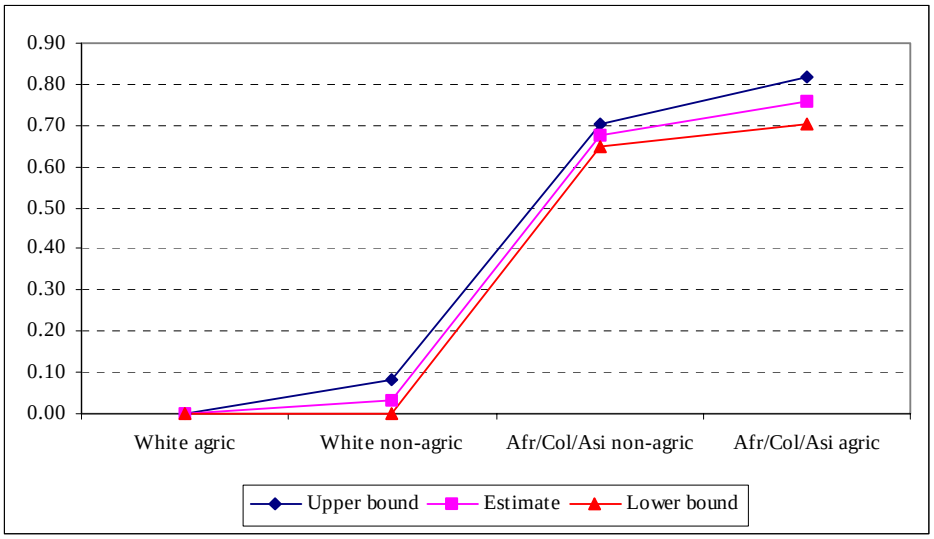


Source: IES/LFS 2000

Note: The poverty headcount ratios show the proportion of *people* living in poverty and not the proportion of *households*.

Section 3.2 explores the distribution of income in Limpopo. The inequality that exists in Limpopo, and particularly between racial groups within agriculture, is reflected in the poverty rates shown in Figure 4. Virtually none of the White agricultural and non-agricultural population is poor compared to 67.5% of the Coloured/African/Asian non-agricultural population. However, even more disadvantaged is the African agricultural population with a poverty rate of 76.1%.

Figure 4: Poverty rates by race and agricultural/non-agricultural population

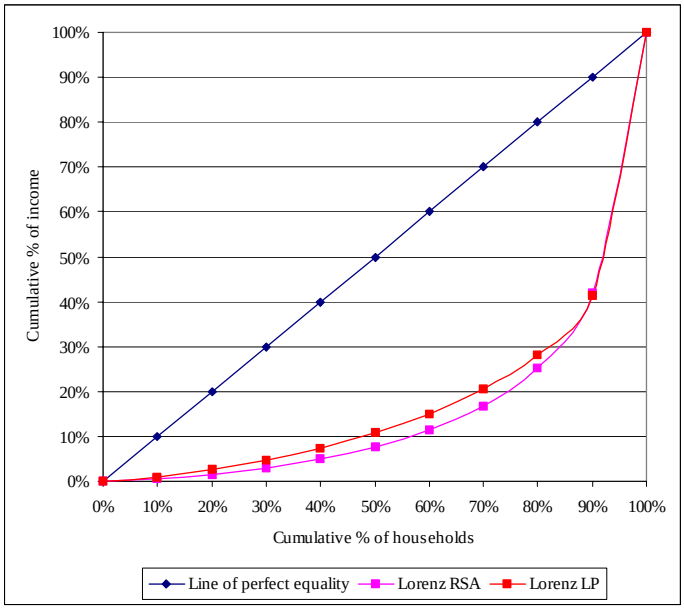


Source: IES/LFS 2000

3.2. Inequality in the distribution of income

Although income levels in Limpopo are fairly low, policymakers are also interested in how the income is distributed among the population. Various income distribution or inequality measures exist in the literature (see PROVIDE, 2003 for an overview). One approach to measuring inequality is using Lorenz curves. A Lorenz curve plots the cumulative share of households against the cumulative share of income that accrues to those households. In a society where income is perfectly distributed the Lorenz curve is a straight line. When the income distribution is unequal, the Lorenz curve will lie below the 'line of perfect equality'. Figure 5 shows that Limpopo Lorenz curve is always above the South African Lorenz curve, which suggests that income is distributed more equally in this province than in the rest of the country.

Figure 5: Lorenz curves for Limpopo and South Africa



Source: IES/LFS 2000

The Gini coefficient is perhaps the best known inequality measure and can be derived from the Lorenz curve (see PROVIDE, 2003). Mathematically the Gini coefficient varies between zero and one, although in reality values usually range between 0.20 and 0.30 for countries with a low degree of inequality and between 0.50 and 0.70 for countries with highly unequal income distributions. Table 7 shows the Gini coefficients for various groups of countries. Clearly South Africa's Gini coefficient, estimated at about 0.69 (IES/LFS 2000), is very high.

Table 7: Trends in income distribution – 1960 and 1980

Group of Countries	*Gini coefficient: 1960*	*Gini coefficient: 1980*
All non-communist developing countries	0.544	0.602
Low-income countries	0.407	0.450
Middle-income, non-oil-exporting countries	0.603	0.569
Oil-exporting countries	0.575	0.612
Gini coefficient: South Africa (1995)*	0.64	
Gini coefficient: South Africa (2000)*	0.70	

Source: Adelman (1986) cited in Todaro (1997).

Note (*): Author's calculations based on IES 1995 and IES/LFS 2000. Unfortunately not much can be read into the apparent increase in inequality since the data sources are not necessarily comparable.

As expected Limpopo's Gini coefficient of 0.67 (IES/LFS 2000) is lower than the national Gini coefficient. A useful decomposition technique can be used to identify the sources of inequality. From the IES/LFS 2000 a number of household income sources can be identified, namely income from labour (*inclab*), gross operating surplus (*incgos*), and transfers from households (*inctrans*), corporations (*inccorp*) and government (*incgov*). Total household

income (*totinc*) is thus defined as *totinc* = *inclab* + *incgos* + *inctrans* + *inccorp* + *incgov*. McDonald *et al*. (1999) show how the Gini coefficient can be decomposed into elements measuring the inequality in the distribution of these income components. Consider the following equation:

$$G = \sum_{k=1}^{K} \left\{ \left[\frac{\text{cov}(y_k, F(y))}{\text{cov}(y_k, F(y_k))} \right] \left[\frac{2\,\text{cov}(y_k, F(y_k))}{\mu_k} \right] \left[\frac{\mu_k}{\mu} \right] \right\} = \sum_{k=1}^{K} R_k G_k S_k$$

The index *k* represents the income sources. S_k is the share of the k^{th} income source in total income, G_k is the Gini coefficient measuring the inequality in the distribution of income component *k* and R_k is the Gini correlation of income from source *k* with total income (see Leibbrandt *et al.*, 2001). The larger the product of these three components, the greater the contribution of income source *k* to total inequality as measured by *G*. S_k and G_k are always positive and less than one, while R_k can fall anywhere in the range [-1,1] since it shows how income from source *k* is correlated with total income.

Table 8 decomposes the Gini coefficient of Limpopo. It also gives decompositions for subgroups by race and agricultural households. A clear pattern that emerges for all the subgroups is a very high correlation between the overall Gini and the Gini within income component *inclab*. Furthermore, *inclab* typically accounts for about 60% to 70% of total income of the various sub-groups evaluated here. Consequently, it is not surprising to note that most of the inequality is driven by inequalities in the distribution of labour income. As far as agricultural households are concerned the picture looks slightly different, with inequality in the distribution of *incgos* playing a relatively important role compared to the rest of the sub-groups evaluated (the same can also be said of inequality among the White population). Income from gross operating surplus can be interpreted as returns to physical and human capital, and, in an agricultural context, the returns to land owned by the agricultural household.

These results suggest that inequalities within agricultural households are driven to a large extent by inequalities in the distribution of wages, but inequalities in the ownership of capital stock and land also play a part. It is also clear from previous tables in this discussion that the main source of inequality is inequality between White agricultural farm owners and landless African agricultural households that supply labour services. Land reform programmes may therefore be very successful at improving incomes of poor agricultural households.[10]

[10] The difference between *inclab* and *incgos* in an agricultural context is problematic. Simkins (2003) notes large changes in the levels of *incgos* and *inclab* between IES 1995 and IES 2000 (*incgos* fell significantly, while *inclab* increased), an indication that *incgos* is possibly underreported due to confusion that may exist among respondents as to whether income earned from self-employment in agriculture should be reported as income from labour or income from GOS.

Table 8: Gini decomposition by race and agriculture in Limpopo

	All households			
	Rk	*Gk*	*Sk*	*RkGkSk*
inclab	0.94	0.82	0.66	0.50
incgos	0.86	0.97	0.10	0.08
inctrans	0.23	0.78	0.09	0.02
inccorp	0.86	0.99	0.04	0.04
incgov	0.33	0.75	0.11	0.03
				0.67

	African/Coloured/Asian households				White households			
	Rk	*Gk*	*Sk*	*RkGkSk*	*Rk*	*Gk*	*Sk*	*RkGkSk*
inclab	0.92	0.80	0.65	0.48	0.90	0.51	0.70	0.32
incgos	0.78	0.95	0.07	0.05	0.97	0.93	0.20	0.18
inctrans	0.25	0.78	0.11	0.02	-0.03	0.90	0.01	-0.00
inccorp	0.82	0.99	0.04	0.03	0.56	0.94	0.06	0.03
incgov	0.32	0.73	0.13	0.03	0.23	0.93	0.03	0.01
				0.61				0.54

	Agricultural households				Non-agricultural households			
	Rk	*Gk*	*Sk*	*RkGkSk*	*Rk*	*Gk*	*Sk*	*RkGkSk*
inclab	0.94	0.76	0.59	0.42	0.94	0.82	0.66	0.51
incgos	0.95	0.98	0.24	0.22	0.82	0.96	0.08	0.06
inctrans	0.28	0.84	0.04	0.01	0.22	0.77	0.10	0.02
inccorp	0.90	0.99	0.03	0.02	0.85	0.99	0.05	0.04
incgov	0.40	0.76	0.10	0.03	0.32	0.75	0.11	0.03
				0.71				0.66

Source: Author's calculations, IES/LFS 2000

The Gini coefficients suggest that inequality among agricultural households (0.71, with a confidence interval of [0.61, 0.80]) is probably higher than inequality among non-agricultural households (0.66, with a confidence interval of [0.65, 0.66]). However, since the confidence intervals overlap this statement can be challenged. An alternative measure of inequality, the Theil index, is very different from other inequality measures. It is derived from the notion of entropy in information theory (see PROVIDE, 2003). The Theil inequality measure for agricultural households is 1.75 [1.08, 2.24] compared to 0.97 [0.94, 1.01] for non-agricultural households. These estimates confirm the previous result and the confidence intervals do not overlap.

These findings raise some interesting questions. Cleary income inequality among agricultural households is a concern. Land restitution has been placed at the top of the government's agenda to correct inequalities in South Africa. Although similar economic empowerment processes are in place in non-agricultural sectors, the process of agricultural land restitution has been highly politicised. The question is will more equality among agricultural households necessarily impact on the overall inequality in Limpopo? This question can be answered by decomposing the Theil inequality measure into a measure of inequality within a population subgroup and a measure of inequality between population

subgroups. The Theil inequality measure (*T*) for Limpopo population as a whole is 0.81. This figure can be decomposed as follows (see Leibbrandt *et al.*, 2001):

$$T = T_B + \sum_{i=1}^{n} q_i T_i$$

The component T_B is the between-group contribution and is calculated in the same way as *T* but assumes that all incomes within a group are equal. T_i is the Theil inequality measure within the i^{th} group, while q_i is the weight attached to each within-group inequality measure. The weight can either be the proportion of income accruing to the i^{th} group or the proportion of the population falling within that group. Table 9 shows the results of a Theil decomposition using income and population weights with agricultural- and non-agricultural households as subgroups.[11] The between-group component contributes nothing to overall inequality. Inequality among agricultural households contributes 0.18 (17.1%) or 0.22 (20.3%) to overall inequality, while non-agricultural households contribute 0.87 (82.9%) or 0.85 (79.7%) to overall inequality in Limpopo, depending on the weights used. These results suggest that a correction of inequalities within agriculture will do little to reduce inequality in the province as a whole as agricultural inequalities 'only' contribute about one fifth to overall inequalities.

Table 9: Theil decomposition – agricultural and non-agricultural households

Income weights	q_i	T_i	$\sum_{i=1}^{n} q_i T_i$	T_B	$T = T_B + \sum_{i=1}^{n} q_i T_i$
Agricultural households	0.10	1.75	0.18		
Non-agricultural households	0.90	0.97	0.87		
Sum			*1.05*	*0.00*	*1.05*
Population weights					
Agricultural households	0.12	1.75	0.22		
Non-agricultural households	0.88	0.97	0.85		
Sum			*1.07*	*0.00*	*1.07*

Source: Author's calculations, IES/LFS 2000

Note: The different decomposition techniques do not necessarily lead to the same overall Theil index.

3.3. Employment levels and unemployment

There are approximately 1.12 million workers in Limpopo (IES/LFS 2000).[12] Statistics South Africa distinguishes between eleven main occupation groups in their surveys. These include (1) legislators, senior officials and managers; (2) professionals; (3) technical and associate

[11] The income weight for agricultural households is the total income to agricultural households expressed as a share of total income of all households in the province. The population weight for agricultural households is expressed as the share of the population living in agricultural households (see Table 2 and Table 5).

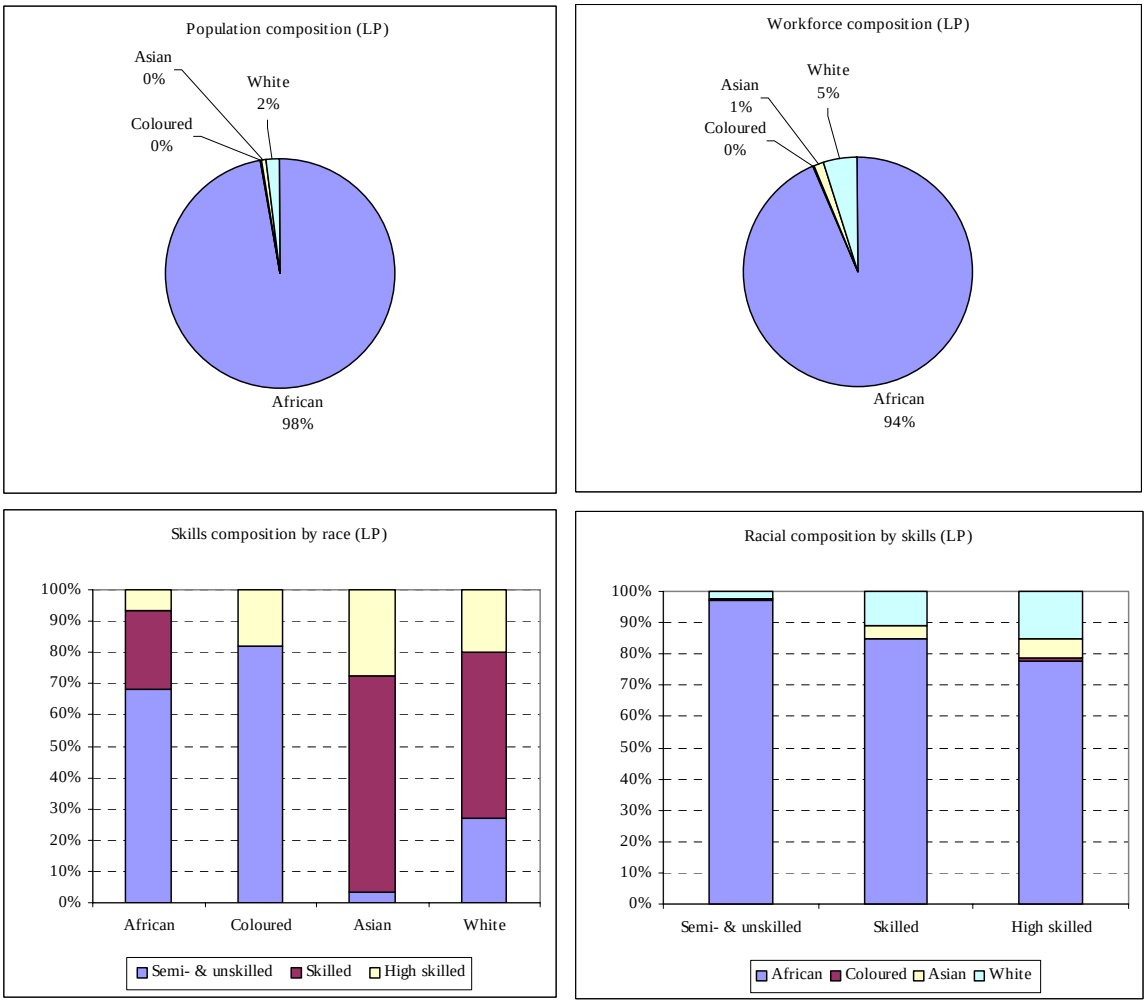
[12] 'Workers' are defined here as those people that report a positive wage for 2000. People who were unemployed at the time of the survey but who have earned some income during the previous year will therefore be captured here as workers. In the unemployment figures reported later the *current* status of workers is reported, irrespective of income earned. Employment figures reported here are therefore higher than the official employment figures.

professionals; (4) clerks; (5) service workers and shop and market sales workers; (6) skilled agricultural and fishery workers; (7) craft and related trades workers; (8) plant and machine operators and assemblers; (9) elementary occupations; (10) domestic workers; and (11) not adequately or elsewhere defined, unspecified.

For simplification purposes the occupation groups are aggregated into various skill groups, namely high skilled (1 – 2), skilled (3 – 5), and semi- and unskilled (6 – 10).[13] Figure 6 explores the racial composition of the workforce by race and skill and compares these figures with the provincial racial composition. The overall racial distribution of the workforce is fairly similar to the racial composition of the province, although African workers are slightly underrepresented. The picture becomes clearer when disaggregating further by skill. African workers are typically found in the lower-skilled occupation groups, while White workers are more concentrated around the skilled and high-skilled occupations. The limited number of Asian and Coloured workers in Limpopo make sit difficult to draw conclusions about their skills distribution. Clearly much still needs to be done in Limpopo to bring the racial composition of the workforce more in line with the provincial-level population composition at all skills levels.

[13] Unspecified workers (code 11) are not included in a specific skill category since the highly dispersed average wage data suggests that these factors may in reality be distributed across the range of skill categories.

Figure 6: Racial representation in the workforce of Limpopo



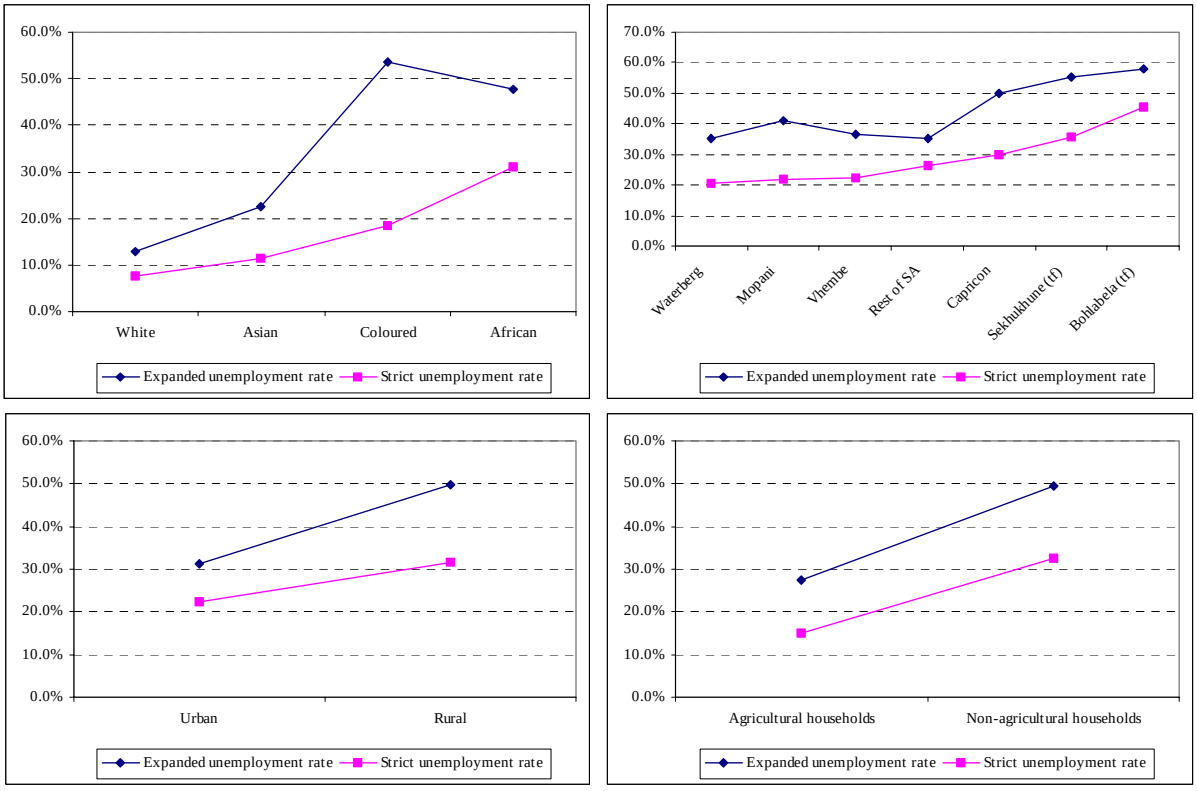
Source: IES/LFS 2000

Statistics South Africa uses the following definition of unemployment as its strict (official) definition. The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. The expanded unemployment rate excludes criterion (c). Limpopo has a population of about 5.56 million people of which approximately 931,275 people are employed (see footnote 12). Under the strict (expanded) definition about 4.24 million (3.83 million) people are not economically active, which implies that 392,567 (799,554) people are unemployed. This translates to an unemployment rate of 29.7% (46.2%), which is significantly higher than the national rate of 26.4% (36.3%) for 2000.[14]

[14] The official (expanded) LFS March and September 2003 (SSA, 2004) unemployment figures are 31.2% and 28.2% for South Africa respectively.

In Figure 7 the unemployment rates (official and expanded) are compared for different population subgroups. Between 7.6% and 13.0% of White workers are unemployed, wnhile the unemployment rate for Asian workers is between 11.3% and 22.5%. The strict unemployment rate for Coloured workers is slightly higher (18.6%), while the expanded rate is much higher at 53.6%. This large gap between the strict and expanded rates is indicative of the large numbers of discouraged jobseekers among Coloured. The unemployment rate for African workers is also very high (30.9% and 47.6%). A comparison of the municipal areas shows that unemployment rates follow a similar pattern to the poverty rates shown previously in Figure 3, with Waterberg and Mopani at the lower end and Sekhukhune and Bohlabela at the upper end of unemployment scale. Unemployment is higher and the gap between the strict and expanded rates is wider is rural areas, which suggests that much of the long-term unemployment is located in rural areas where job opportunities are limited. Finally, unemployment is lower among agricultural households than non-agricultural households, mainly because family members would rather participate in the household's farming activities than do nothing.

Figure 7: Unemployment rates by population subgroups

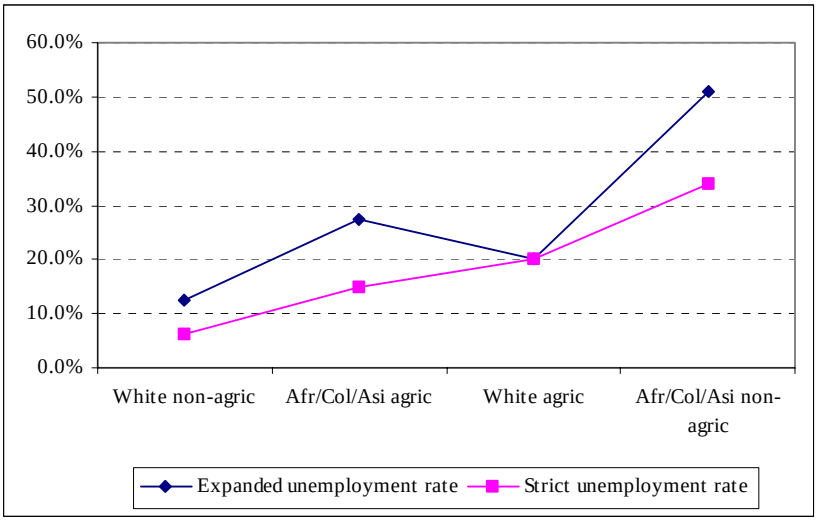


Source: IES/LFS 2000

A comparison of unemployment rates by race (Asian/Coloured/African and White) show a very interesting result, namely that White agricultural households have a higher

unemployment rate than African agricultural households under the strict definition. However, under the expanded definition unemployment is higher among African agricultural households. Clearly, however, most of the unemployment in Limpopo appears to be driven by unemployment among African/Coloured/Asian non-agricultural workers. An interesting comparison can be made between Figure 8 and Figure 4. The latter shows that poverty is highest among Coloured/African agricultural households, yet unemployment is lower than among their non-agricultural counterparts. One possible explanation for this is inaccurate accounting by agricultural households of the value of goods and services (such as food, clothing and housing) received in kind from employers, which leads to an overestimation of poverty rates. However, this does not take away the fact that agricultural wages are often very low compared to non-agricultural wages. This may explain higher employment levels among agricultural households, but often these people can be classified as the 'working poor'.

Figure 8: Unemployment rates by race and agricultural/non-agricultural population



Source: IES/LFS 2000

4. Conclusions

Limpopo is a relatively large province in terms of population size and shares its border with Botswana, Zimbabwe and Mozambique. The majority of its inhabitants reside in rural areas (86.8%), and as such many households partake in agricultural activities. Broadly speaking 63.0% of people live in what can be defined as agricultural households. However, under the strict definition only 12.4% of people live in agricultural households. This suggests that for many of these agricultural households agricultural activities do not present an important source of income for the household.

The people of Limpopo are very disadvantaged in terms of their *per capita* incomes, with African, rural and agricultural households, especially in the Bohlabela and Sekhukhune regions being worse off in terms of poverty rates. However, the income distribution is not as skewed as in the rest of South Africa. The analysis here revealed that income inequality among agricultural households appears to be more skewed than inequality among non-agricultural households. Wages drive most of the inequality among agricultural households, while, to a lesser extent, inequality in the distribution of land contributes to agricultural inequality as well. Inequalities among agricultural households contribute about one fifth to overall inequality, and as such a correction of agricultural inequalities will improve overall inequality in the province to a limited extent.

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