



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Background Paper Series**



**Background Paper 2009:1(8)**

**A Profile of the Mpumalanga  
Province: Demographics,  
Poverty, Income, Inequality and  
Unemployment from 2000 till  
2007**

*Eisenburg  
February 2009*

# 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 of the PROVIDE Project.

## PROVIDE Contact Details



Private Bag X1  
Elsenburg, 7607  
South Africa



[provide@elsenburg.com](mailto:provide@elsenburg.com)



+27-21-8085212



+27-21-8085210

For the original project proposal and a more detailed description of the project, please visit [www.elsenburg.com/provide](http://www.elsenburg.com/provide)

# A Profile of the Mpumalanga Province: Demographics, Poverty, Income, Inequality and Unemployment from 2000 till 2007<sup>1</sup>

## Abstract

*Mpumalanga's agricultural sector is a dynamic and livelihood sustainable sector. Approximately 3.5% of Mpumalanga value added gross domestic product comes through agriculture and 2.3% of the population in Mpumalanga is working in this sector. There is thus a need for macro-economic research in order to investigate potential and current challenges and opportunities.*

*This paper examines several of these challenges namely demographic compositions, unemployment, income distribution, poverty and inequality. It will provide results from the Labour Force Surveys from 2000 until 2007 with a more in-depth look into 2007. Population and labour force statistics provide the foundation for further analysis. This paper indicates that unemployment is being dominated by the African individuals and that employment in Mpumalanga agricultural sector is on a decreasing trend. It shows further that income distribution is highly skewed which leads to high levels of poverty and inequality. Agricultural incomes are lowest across all races compared to non-agricultural incomes except for the White farmers/farm workers who earn more than their counterparts in other sectors. One of the principal concerns is that of inequality. It shows no improvement since 2000 with a high in-between race inequality and lower within race inequality in Mpumalanga agricultural sector.*

*Throughout the report Mpumalanga agricultural sector is compared to the non-agricultural sector, Mpumalanga overall and South Africa for a better understanding of Mpumalanga agricultural sector's position. This report indicates that Mpumalanga agricultural sector could benefit from intervention and support to correct the present state of decreasing employment, low income, and high poverty and inequality levels.*

---

<sup>1</sup> The main authors of this paper are Kabelo Scheepers, Mpumalanga Department of Agriculture and Land Administration, and Elné Jacobs and Cecilia Punt, Western Cape Department of Agriculture.

## Table of Contents

<b>1. Introduction</b> .....	<b>1</b>
<b>2. Measurement and challenges of dataset</b> .....	<b>1</b>
2.1. Labour Force Survey.....	1
2.2. Extent of data.....	2
2.3. Challenges .....	4
2.3.1. <i>Definitions of agricultural households</i> .....	4
2.3.2. <i>Income bands</i> .....	5
<b>3. Demographics</b> .....	<b>5</b>
3.1. Population statistics.....	5
3.2. South African and Mpumalanga labour force.....	13
3.3. Unemployment in South Africa and Mpumalanga.....	14
3.4. Work-force and employment in Mpumalanga agriculture.....	16
3.4.1. <i>Employment over time</i> .....	18
3.4.2. <i>Employment status</i> .....	19
3.5. Characteristics of Mpumalanga agricultural work-force .....	21
3.5.1. <i>Age structure</i> .....	21
3.5.2. <i>Location and occupation</i> .....	21
3.5.3. <i>Skills level</i> .....	23
<b>4. Income</b> .....	<b>27</b>
4.1. South Africa and Mpumalanga .....	27
4.2. Mpumalanga agricultural work-force.....	30
4.2.1. <i>Beneficiaries from agricultural activities</i> .....	33
<b>5. Poverty indices of Mpumalanga agriculture</b> .....	<b>36</b>
5.1. Theory.....	36
5.2. Poverty indicators from Labour Force Surveys.....	37
<b>6. Inequality within the Province</b> .....	<b>43</b>
6.1. Theory.....	43
6.2. Inequality measures from Labour Force Surveys .....	44
<b>7. Conclusion</b> .....	<b>47</b>
<b>8. References</b> .....	<b>48</b>

## List of Figures

Figure 1: Mpumalanga districts map.....	4
Figure 2: Agricultural households in the Mpumalanga districts .....	9
Figure 3: Agricultural households over time.....	10
Figure 4: Household size by race for 2007 .....	11
Figure 5: Household size from 2000 till 2007 for the agricultural households .....	12
Figure 6: Unemployment rates for South Africa and Mpumalanga by population group.....	15
Figure 7: Unemployment rates for districts in Mpumalanga .....	16
Figure 8: Agricultural Employment figures from 2000 to 2007 .....	18
Figure 9: Work status for Mpumalanga work-force in 2007 .....	19
Figure 10: Work status over time.....	20
Figure 11: Age structure of agricultural and non-agricultural work-force in Mpumalanga.....	21
Figure 12: Skills level of the non-agricultural work-force of Mpumalanga .....	23
Figure 13: Skills level of the agricultural work-force of Mpumalanga.....	24
Figure 14: Highest education received for agricultural and non-agricultural workers .....	25
Figure 15: Skills level for African in the agricultural work-force .....	26
Figure 16: Skills level of the White agricultural work-force.....	27
Figure 17: Real mean monthly income from main source by race for 2007 .....	28
Figure 18: Mean monthly real household income per capita by race for 2007 .....	29
Figure 19: Monthly median income for individuals by race for 2007.....	30

Figure 20: Real monthly mean income for individuals working in agriculture from 2000 .....	31
Figure 21: Real mean household income per capita for all agricultural households since 2000 .....	32
Figure 22: Monthly median incomes of individuals in agriculture since 2000 .....	33
Figure 23: Number of all beneficiaries from 2000 till 2007 .....	35
Figure 24: Number of beneficiaries in agricultural households with more than 50% income share.....	36
Figure 25: Poverty rate for South Africa and shares of population groups .....	38
Figure 26: Poverty rate of Mpumalanga and shares of population groups .....	39
Figure 27: Poverty rate for agricultural households of Mpumalanga and shares of population groups.....	40
Figure 28: Poverty headcount by year for Mpumalanga agricultural households .....	41
Figure 29: Poverty gap by year for Mpumalanga agricultural households.....	42
Figure 30: The severity of poverty by year for Mpumalanga agricultural households.....	43
Figure 31: Lorenz curve for individuals in South Africa, Mpumalanga and Mpumalanga agricultural households in 2007 .....	45
Figure 32: Lorenz curve for Mpumalanga agricultural households by year .....	46
Figure 33: Gini coefficient for Mpumalanga agricultural households by year .....	47

### List of Tables

Table 1: Racial composition of South Africa and Mpumalanga in 2007.....	6
Table 2: Racial composition of districts in Mpumalanga in 2007 .....	7
Table 3: Racial composition of agricultural households and non-agricultural households in Mpumalanga 2007 .....	8
Table 4: Racial composition of agricultural households in the Mpumalanga districts .....	8
Table 5: Economic activity for agricultural households by population group in 2007 .....	13
Table 6: South African and Mpumalanga labour force in 2007 .....	14
Table 7: Unemployment numbers for South Africa and Mpumalanga by population group in 2007.....	14
Table 8: South African and Mpumalanga agricultural work-force .....	17
Table 9: Agricultural work-force of the Mpumalanga districts by gender in 2007 .....	17
Table 10: Location of Mpumalanga agricultural work-force.....	22
Table 11: Occupation of the agricultural work-force of Mpumalanga .....	22
Table 12: Number of beneficiaries in 2007 .....	34
Table 13 : Gini and Theil measures of inequality for 2007 .....	44

## **1. Introduction**

Mpumalanga is home to about 3.3 million individuals and about 75 000 are working in the agricultural sector (Statistics South Africa, 2007a). Therefore 2.3% of Mpumalanga's population is working in the agricultural sector, but it contributed 3.5% through value added for the economy in 2006 (Statistics South Africa, 2007b). This shows that the agricultural sector is an important sector in Mpumalanga and thorough analysis is needed to identify areas of need to better the sector.

This paper investigates Mpumalanga's agricultural sector by analysing the Labour Force Surveys conducted by Statistics South Africa. These surveys are conducted biannually, and since 2000 done in March and September. The focus of this paper is to analyse trends through years (2000 till 2007) and to take a deeper look at the 2007 data. Like all datasets, the Labour Force Surveys have some restrictions, and these are discussed in the next section together with the measurement issues confronted throughout the study.

Section 3 examines the population statistics of South Africa and Mpumalanga, together with the labour force profiles for South Africa, Mpumalanga and Mpumalanga agricultural sector. Unemployment then will be discussed as well as employment statistics of Mpumalanga's agricultural sector. The premises of this section are demographic analyses. Section 4 analyses the income profiles of the agricultural sector. Poverty indices are next investigated, and the Foster-Greer-Thorbecke class of indices was used. This is explained in this section together with the results for the agricultural sector. Section 6 takes a closer look at inequality within the province by using the Gini, Theil and Lorenz curve analysis. Throughout the paper the results of Mpumalanga agricultural households are compared with Mpumalanga and South Africa data. Lastly conclusions are drawn from the provided information.

## **2. Measurement and challenges of dataset**

### **2.1. Labour Force Survey**

The Labour Force Surveys are conducted by Statistics South Africa biannually (March and September). For this paper, two datasets were used. Both datasets were obtained from Mr. Derek Yu from the University of Stellenbosch. This was done to have consistency between the two datasets. The first dataset is the 2007 March Labour Force Survey and it was used for more in-depth analysis such as location of work activity or analysis on district level. The second dataset is a merged dataset of all the Labour Force Surveys from 2000 until 2007. This was used for over-time analysis. This dataset only includes the working population (15 – 65 years),

but does have the information regarding the rest of the household for household level analysis. Adjustments were also made with the consumer price index (CPI) of wages for individuals as well as households to have reliable comparisons across time. The CPI adjusted wages to the basis year of 2000.

## 2.2. Extent of data

Respondents had to answer six sections in the most recent survey. The first section asks demographic information, section two about activities the past seven days, section three unemployment and non-economic activities, section four the main work activities the past seven days, section five about job creation and public works programmes and the last section (six) about agricultural activities. The surveys did change with time, but no major change occurs, and the demographic and employment sections remained relatively unchanged. In the Labour Force Survey of March 2007 there are 109 551 observations, whilst the Labour Force Survey from 2000 until 2007 contains between 23 000 and 70 000 observations depending on the period (period refers to when the survey was done, i.e. March 2000 or September 2005).

Weights were calculated by Statistics South Africa, and were used throughout the analysis to scale data from sample to population level<sup>2</sup>. It needs to be mentioned that the Indian population is the minority in South Africa and thus data for this sub-group might be problematic due to low observation numbers. Measurement errors do occur, and thus the reader must be careful when quoting figures for the Indian population.

In a number of cases, respondents did not provide any answers to certain questions. One of these problematic questions are that of income where respondents are averse to give their personal income information. If no answer was given for income, it was classified as a dot income (“.”). The statistical programme used for economic analysis (STATA) does not consider dot incomes as entries, and thus will disregard it when calculating mean or median income. But calculating household incomes, dot incomes are read as zero, thus a household with 2 individuals, one earning R100 and the other one did not respond, will have a household earning of R100. This means all household and per capita calculations are distorted and biased towards zero income. Poverty and inequality calculations are affected the most, due to calculation surrounding the rates (see respective sections for calculations of different rates). Poverty and inequality rates for certain subgroups might be exaggerated due to non response. This is especially troublesome when non response occur just within a specific subgroup. If the non response is according to the population composition the rates will be inflated accordingly, but if it is a skew distribution, all rates are inflated but one group more than the other.

---

<sup>2</sup> See Metadata in Labour Force Survey reports. Available online at [www.statssa.org.za](http://www.statssa.org.za)



These inflated rates are difficult to pinpoint, because non response is unpredictable. Non response can be any value, and there are different ways of dealing with this. One response is to regard all non response as zero, another is to use hot deck imputation methods. Schoier (2008) states that this method uses respondents that fully completed the questionnaire to match with respondents that have missing values, and then impute their values into the non response values. This preserves the distribution of item values and there are different methods to obtain the 'donor value'. One way is to filter through certain variables (example race, sex etc.) for both donor and receiver, and when these variables match the rest of the donor information will be imputed into the receiver's missing values.

For South Africa in 2007, 62.68% of respondents did not provide information regarding income. If a sub sample of all respondents that are living in a household under the poverty line is taken, 83% did not provide income information. This becomes problematic especially in cases where the sample size is very small as the case with the White and Indian population. If only 17% (100% - 83%) of income information for those living under the poverty line is available, a small sample size will have negative impacts on poverty. For example, in Mpumalanga there are 60 entries for White individuals living under the poverty line. On an average only 17% of that information is available, leaving only 10 entries. In reality, there are only 1 entry left which is too small to make any significant derivation. In Mpumalanga, 2 479 entries were made in the African population group living under the poverty line. In reality 84% did not respond, leaving 401 entries. Although 401 entries is still a small sample size, a better analysis can be done. This trend of small White, Indian and Coloured samples continues throughout all provinces, where the African population have a bigger sample size to do better analysis with.

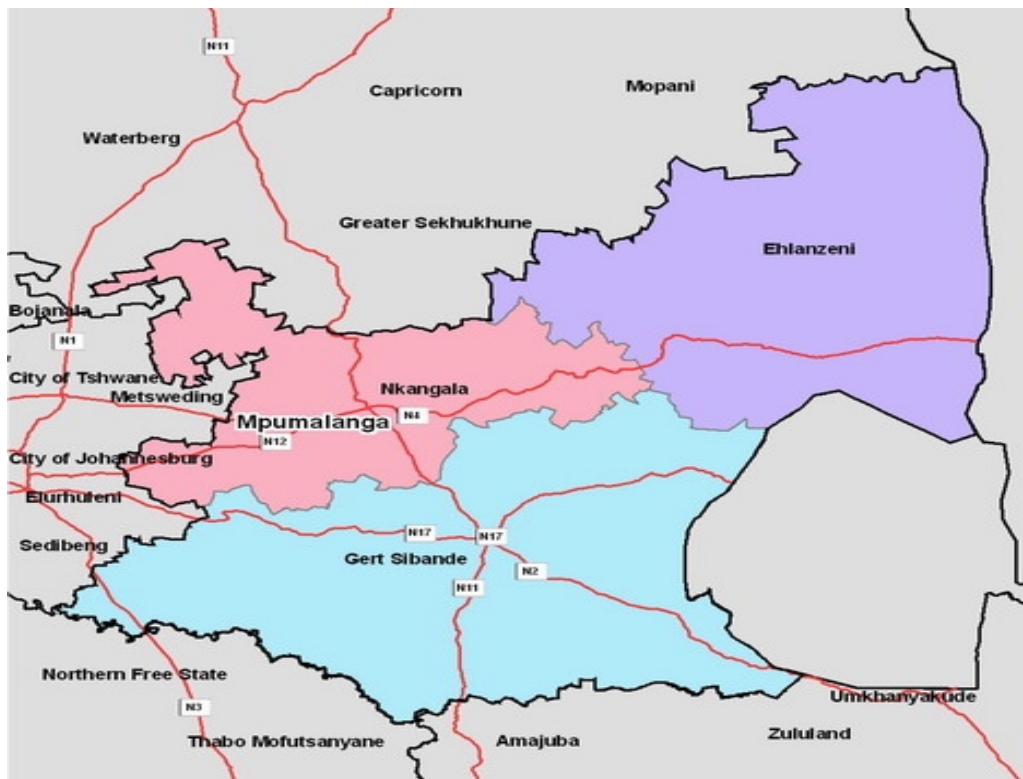
For the purpose of this paper, non-response was disregarded in income profiles, but treated as a zero in household income calculations. In the poverty profiles, per adult equivalent household income is used and thus missing values are also treated as zero.

This paper focuses on agricultural households in Mpumalanga, but does compare certain statistics with the non-agricultural households in Mpumalanga and South Africa. South Africa is a diverse country and therefore social parameters i.e. income, poverty and unemployment are often compared across population groups. Population groups are classified according to the classification system used by Statistics South Africa in the Labour Force Surveys. Demographic analysis was also done according to gender, industry, occupation or skills level.

District level analysis was also done as mentioned earlier, and for clarity the following figure presents Mpumalanga and its districts. There are three districts within the Province namely

Ehlanzeni, Nkangala, and Gert Sibande. Mpumalanga also includes small areas of three cross border districts, namely Metsweding (with Gauteng), Sekhukhune (with Limpopo) and the former Bohlabela (with Limpopo). Bohlabela is still incorporated in the Labour Force Surveys as a cross border district, but this cross border district has been split and the part of the former Bohlabela that fell in the boundaries of Mpumalanga is now called Bushbackridge and is part of Ehlanzeni District Municipality. Figure 1 reflects this:

**Figure 1: Mpumalanga districts map**



Source: Demarcation Board ([www.demarcation.org.za](http://www.demarcation.org.za))

### 2.3. Challenges

#### 2.3.1. *Definitions of agricultural households*

Agricultural households are defined as households whose main income (more than 50%) is derived from employment in the agricultural industry, or income from an occupation classified as a skilled agricultural worker, regardless the industry. In addition a household is also defined as an agricultural household if the household is involved in agricultural activities that entail the production of food crops and/or keeping of animals and that these activities provide the household with its main food source or income source. Households that rely on agricultural activities for food supply or (non-salary) income are classified as subsistence farmers for purposes of this report. Information about subsistence farming was derived from the questions in section six of the Labour Force Survey where respondents were asked to indicate the aim of

their involvement in agricultural activities as one of the following: a) as main source of food for the household, b) as main source of income/earning a living, c) as extra source of income, d) as extra source of food for the household, or e) as a leisure activity of hobby. Since there is no indication of the value of production by these households, households were classified as agricultural households if they selected either a) or b) in the questionnaire. Both datasets, i.e. the dataset for 2007 and the dataset for 2000 till 2007, contain information on employment in the agricultural industry, or income from an occupation classified as a skilled agricultural worker, regardless the industry. However information on subsistence farming as defined above, was only available in the dataset for 2007; hence workers involved in subsistence farming, but not employment in agriculture, are not included in the numbers presented in this report when looking at trends over the 2000 till 2007 period.

Non response with regard to income for individuals employed in the agricultural sector was treated as stated in section 2.1, and thus not regarded in the definition of agricultural households. Only the labour force was considered (thus individuals between 15 and 65) for analysis to gain information about employees, but all members of a household were included in household analysis.

### 2.3.2. *Income bands*

Respondents were asked their respective incomes, and two different answers were accepted. Respondents could either state the specific value, or report it in income bands. These specific values and income bands were in Rand terms and either weekly, monthly or annual. It must be kept in mind that the earnings reported are from the main source of income (thus labour income), therefore social grants, remittances and in-kind transfers are not taken into account. In order to attain a value for the income bands, the interval regression method was used. This method consists of a generalised Tobit model where-after pseudo-maximum likelihood measures are estimated. The assumption is made that earnings follow a lognormal distribution. Interval-coded information is incorporated into the likelihood function to obtain the specific values for each income band. For more information, see Daniels and Rospabé (2005) and Von Fintel (2006).

## 3. **Demographics**

### 3.1. Population statistics

In order to do social analysis, racial compositions are needed on national, provincial and district level for the population. The population will also be looked at in terms of households as defined in section 2.2.1. Table 1 offers the number of people residing in South Africa and Mpumalanga by race, together with their shares of the population in 2007.

**Table 1: Racial composition of South Africa and Mpumalanga in 2007**

Population Group	South Africa		Mpumalanga	
	Number	Share %	Number	Share %
<b>African</b>	37,887,594	79.42	3,007,186	91.92
<b>Coloured</b>	4,223,511	8.85	19,793	0.60
<b>White</b>	1,168,672	2.45	5,736	0.18
<b>Indian</b>	4,348,366	9.11	233,918	7.15
<b>Other</b>	8,764	0.17	4,863	0.15
<b>Total</b>	47,706,907	100	3,271,496	

Source: Own calculation from Labour Force Survey 2007

It is shown that the African population group is the majority group in South Africa (79.42%). In Mpumalanga, the African community dominates with a share of 91.92%. The total population of South Africa is 47.7 million, while Mpumalanga has 3.3 million residents.

Investigating the racial composition of the six districts (three cross border and three within border), the following information is obtained for 2007. Table 2 indicates that not only does Nkangala Municipal District have the largest share of people in Mpumalanga, but also the largest share of the African population group resides in Nkangala District Municipality. The three cross border districts (Metsweding, Sekhukhune and Bojalela) is home to 10.73% of the residents of Mpumalanga.

**Table 2: Racial composition of districts in Mpumalanga in 2007**

District	Population Group					
	African	Coloured	Indian	White	Total	Share (%)
<b>Metsweding</b>	48,474				48,474	1.48
<b>Share (%)</b>	1.61					
<b>Sekhukhune</b>	288,342			6,858	295,201	9.02
<b>Share (%)</b>	9.59			2.93		
<b>Bohlabela</b>	7,565				7,565	0.23
<b>Share (%)</b>	0.25					
<b>Gert Sibande</b>	752,362	11,365	5,736	69,823	839,286	25.65
<b>Share (%)</b>	25.02	57.42		29.85		
<b>Nkangala</b>	1,005,619	4,925		98,452	1,108,996	33.90
<b>Share (%)</b>	33.44	24.88		42.09		
<b>Ehlanzeni</b>	904,822	3,503		58,784	971,973	29.71
<b>Share (%)</b>	30.09	17.70		25.13		
<b>Total</b>	3,007,185	19,793	5,736	233,918	3,271,496	100

Source: Own calculation from Labour Force Survey 2007

The racial composition of the agricultural and non-agricultural households (as defined in section 2.2.1) in Mpumalanga in 2007 is given in Table 3. A household is defined in a specific population group according to the household head's race. The household head is classified as person number one that completes the questionnaire, thus it is not necessarily the household head that complete the questionnaire under the title 'person number one', but the assumption is made that the household head is more likely to complete the questionnaire first. Unfortunately mixed households are not acknowledged, and will be classified according to the household head's race.

**Table 3: Racial composition of agricultural households and non-agricultural households in Mpumalanga 2007**

Population Group	Agricultural		Non-Agricultural		Total	
	Number	Share (%)	Number	Share (%)	Number	Share (%)
<b>African</b>	46,951	85.22	765,021	90.26	811,972	89.95
<b>Coloured</b>	322	0.58	6,532	0.77	6,854	0.76
<b>White</b>	7,823	14.20	73,629	8.69	81,452	9.02
<b>Indian</b>		0	1,567	0.18	1,567	0.17
<b>Total</b>	55,097*	100	847,559	100	902,656	100

Source: Own calculation from Labour Force Survey 2007

\*See Table 5 for detailed breakdown

The agriculture sector is dominated by African households, similar to the trend in the non-agriculture sector. Taking a closer look at the agricultural Mpumalanga district composition, the following table is obtained:

**Table 4: Racial composition of agricultural households in the Mpumalanga districts**

District	Population Group		Total*	Share (%)
	African	White		
<b>Metsweding</b>	331	0	331	0.60
<b>Share (%)</b>	0.70			
<b>Sekhukhune</b>	3,550	940	4,490	8.15
<b>Share (%)</b>	7.56	12.02		
<b>Bohlabela</b>	384	0	384	0.70
<b>Share (%)</b>	0.82		0.70	
<b>Gert Sibande</b>	11,305	2,944	14,249	25.86
<b>Share (%)</b>	24.08	37.63		
<b>Nkangala</b>	8,303	3,081	11,706	21.25
<b>Share (%)</b>	17.68	39.38		
<b>Ehlanzeni</b>	23,078	858	23,936	43.44
<b>Share (%)</b>	49.15	10.97		
<b>Total</b>	46,951	7,823	55,097	

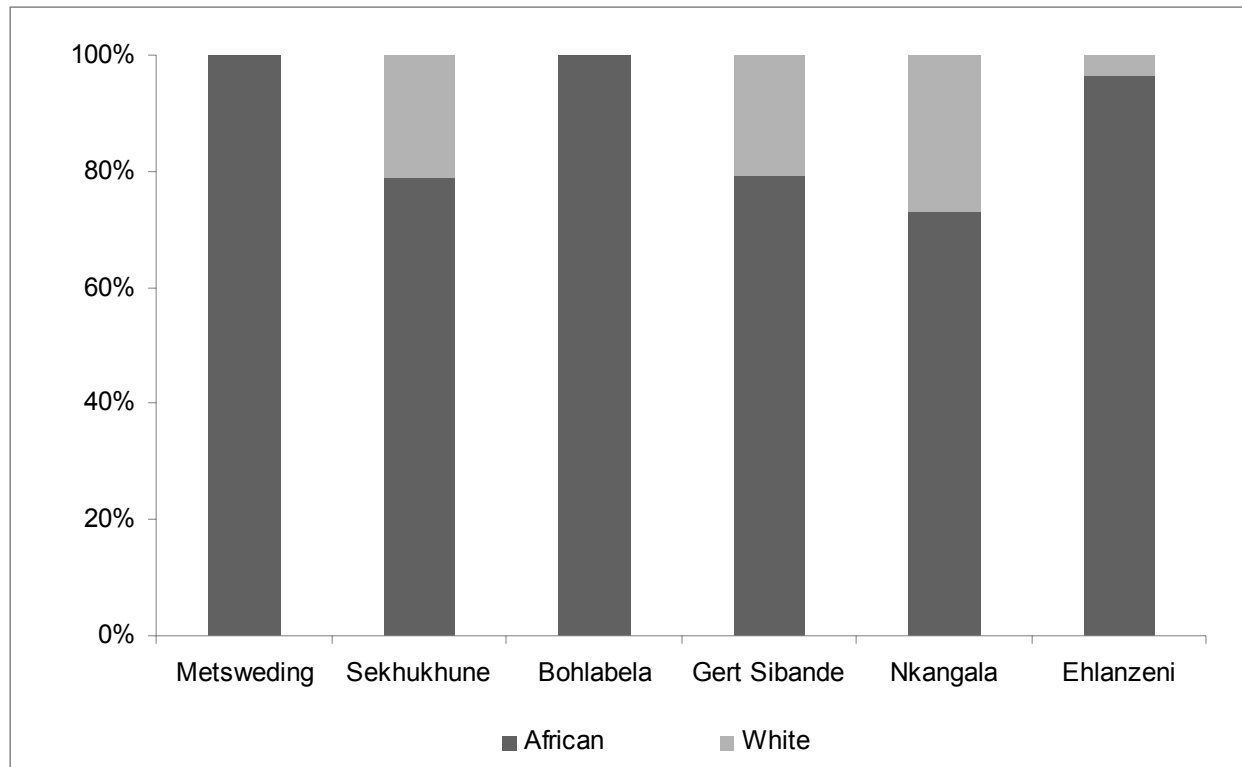
\*The Indian and Coloured population group has been left out due to insignificant low numbers.

Source: Own calculation from Labour Force Survey 2007

Table 4 indicates that there are around 55 000 households who receives more than 50% of the household income from work in agriculture, with Ehlanzeni district having the biggest share

and Metsweding the smallest share. Compiling a stacked column chart for comparing race compositions, the results are as follows:

**Figure 2: Agricultural households in the Mpumalanga districts**



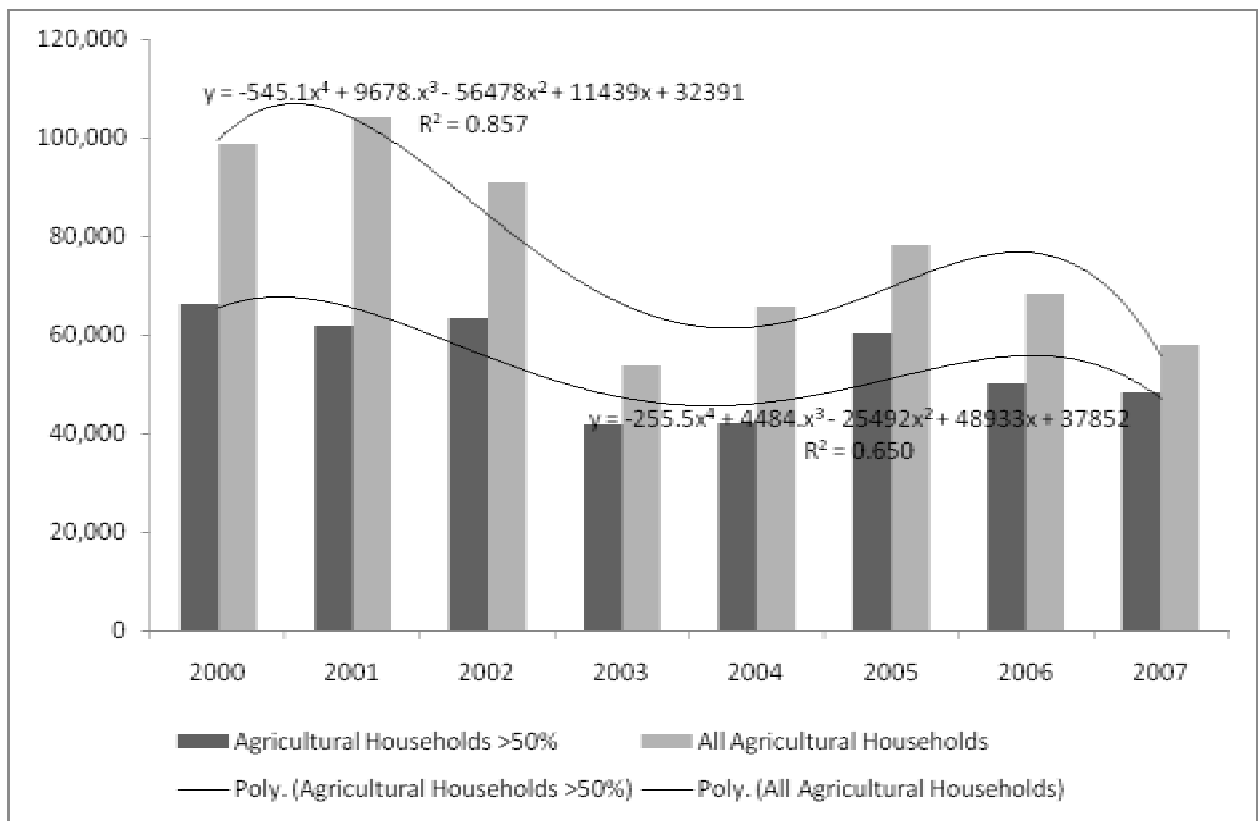
Source: Own calculation from Labour Force Survey 2007

Figure 2 clearly indicates that African households are more dominant in all the districts in Mpumalanga. There are White agricultural households in the cross border district of Sekhukhune, but not in Metsweding and Bohlabela, and the Whites are in the minority in the Gert Sibande, Nkangala and Ehlanzeni districts.

Looking at the change in agricultural households since 2000, Figure 3 indicates the change in both a) all households with a member/ members working in agriculture and b) households whose agricultural income is more than 50% of household income. Since 2001 both series are declining, with a modest increase in 2003 to 2005, ending with the number of all agricultural households at 57 930 and the number of households earning more than 50% of their income from agriculture ending at 48 239<sup>3</sup>. It must be kept in mind that due to the dataset used for obtaining flow charts (thus over time), section 6 of the LFS questionnaire (access to agricultural land and main reason for it) was excluded. Households that therefore have access to agricultural land and this land is the main source of (non-salary) income and/or food, are not counted in Figure 3.

<sup>3</sup> Comparing this to Table 5, it corresponds to the total of the first two columns.

**Figure 3: Agricultural households over time**

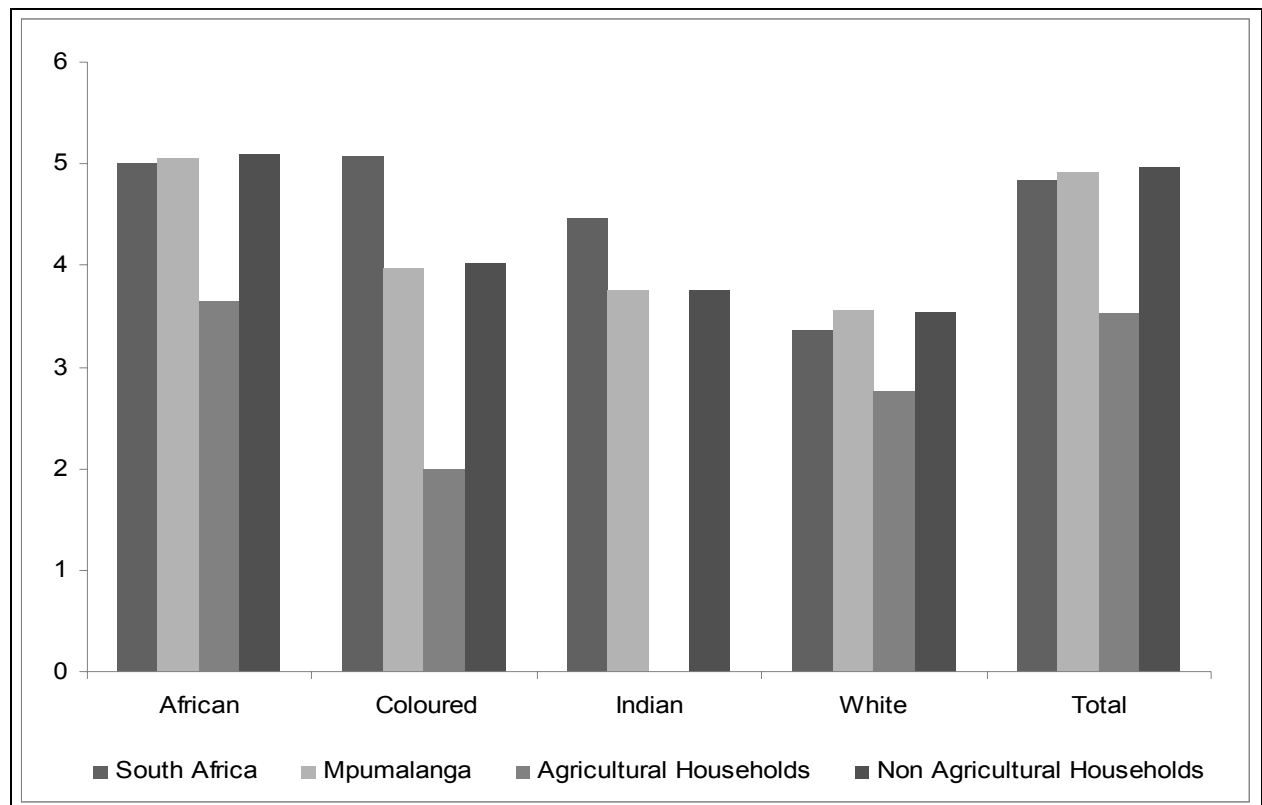


Source: Own calculation from Labour Force Survey 2000-2007

The average household size by race is given in the next figure (Figure 4). It can be seen that the household size of African and White households in Mpumalanga are bigger than those of South Africa, while the household size of the Coloured and Indian households are smaller. The size of the agricultural households is smaller than that of non-agricultural households for all population groups. The size of the African non-agricultural households in Mpumalanga is just above that of South Africa at 5.05 members and African agricultural households at 3.7 members.



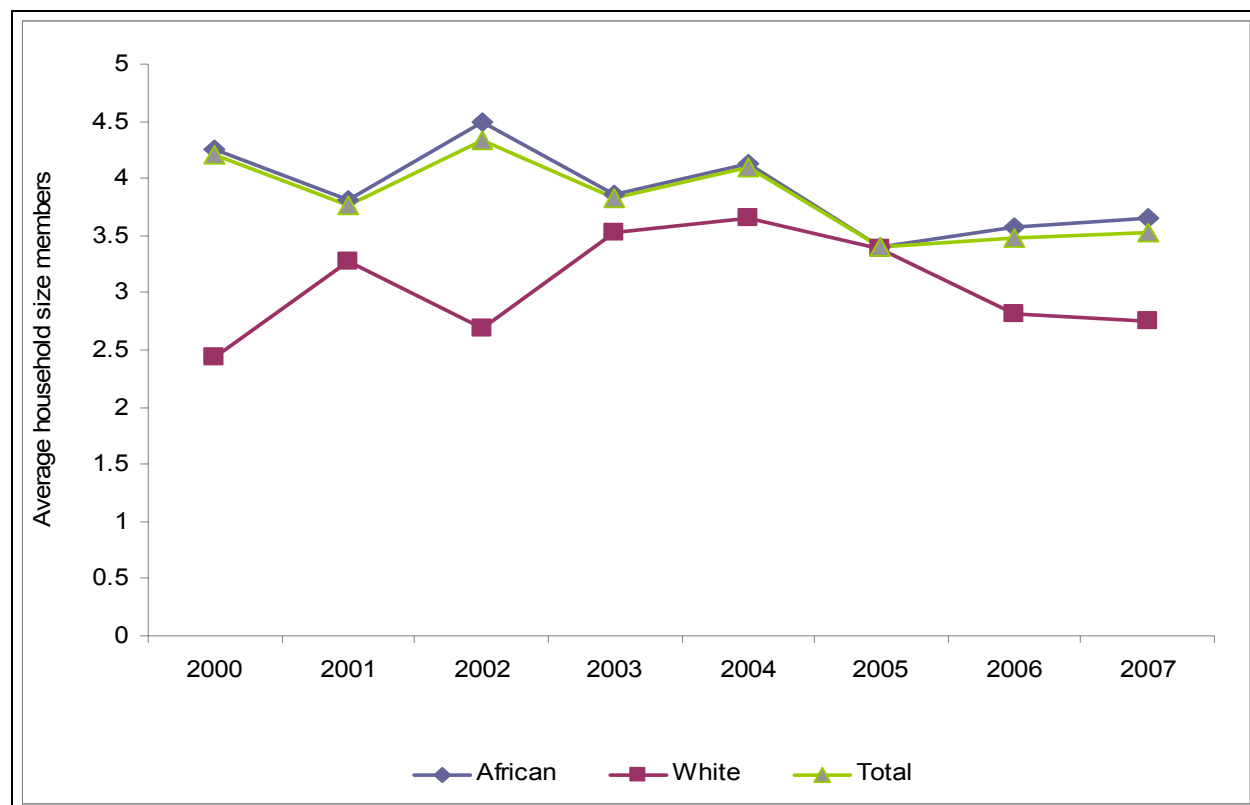
**Figure 4: Household size by race for 2007**



Source: Own calculation from Labour Force Survey 2000

Taking a look at how the household sizes increased or decreased through time for the agricultural households, the following figure (Figure 5 ) was obtained. Figure 5 indicates that the African population’s households are the biggest while the White population has the least number of people within the household. Both the African and the White population’s household sizes are on a decreasing trend, with some increase from 2005 for the African population.

**Figure 5: Household size from 2000 till 2007 for the agricultural households**



Source: Own calculation from Labour Force Survey 2000-2007

Economic activities within the agricultural households are investigated next to identify whether the households obtain their income and/or food from employment or subsistence farming. Table 5 indicates the number and share of agricultural households in Mpumalanga that obtain more than 50% of their income from agricultural activities, or whose main food source is from agricultural activities. These households have indicated their main source of income from agriculture, i.e. a) from employment in the agricultural sector or by agricultural occupation (column 1), b) from subsistence farming only (as defined in section 2.2.1) (column 4), or c) from a combination of a) and b) (columns 2 and 3). The African households have the largest share (89.79%) of employment in the agricultural sector, and this is consistent with the employment numbers stated earlier. There are only 5 800 households in Mpumalanga that depend solely on subsistence farming for main source of food (4 790 households) or non-salary income (1 010 households) and 100% are African households. 79.68% of agricultural households derive more than 50% of their household income from employment within the agricultural sector, while households involved with only subsistence farming comprise 10.53%. 7.99% of all agricultural households are involved in subsistence and earn income from employment in the agricultural sector that is more than 50% of the household income, while for 1.81% of all agricultural households the salary income from agriculture is less than 50% of the household income.

**Table 5: Economic activity for agricultural households by population group in 2007**

Population group	Only Employment and Occupation and >50% income		Subsistence farming and >50% income		Subsistence farming and <50% income		Subsistence farming only		Total	
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share
African	39,418	89.79	1,516	34.44	217	21.79	5,800	100	46,951	85.22
White	4,160	9.48	2,884	65.56	779	78.21			7,823	14.20
<b>Total</b>	43,900	100	4,400	100	997	100	5,800	100	55,097	100
<b>Activity Share</b>	79.68		7.99		1.81		10.53		100	

Source: Own calculation from Labour Force Survey 2007

### 3.2. South African and Mpumalanga labour force

Every citizen in a country can be classified as either economically active or economically inactive. If an individual is economically active, (s)he must be between the ages 15 and 65, and able and willing to work. (S)He is part of the labour force, whether employed or unemployed. The not economically active population is either not able or willing to work, or does not fall in the required age range. The labour force is divided between the employed and unemployed. In order to be classified as unemployed, there are two definitions, a broad (expanded) and narrow (official) definition. The broad definition states an individual is unemployed if (s)he: (a) did not work the past 7 days; (b) wants to work and is available to start within 2 weeks. The narrow (official) definition is the broad definition including (c) is actively searching for work the past 4 weeks (Statistics South Africa). The labour force can thus vary according to which definition of unemployment is used. Table 6 represents the number and share of people in 2007, according to the strict and broad definition in the labour force, for South Africa and Mpumalanga respectively:

**Table 6: South African and Mpumalanga labour force in 2007**

	South Africa				Mpumalanga			
	Broad		Strict		Broad		Strict	
	Number	Share	Number	Share	Number	Share	Number	Share
<b>African</b>	15,825,035	77.44	12,671,070	74.81	1,234,280	90.08	1,007,878	88.24
<b>Coloured</b>	1,977,240	9.68	1,746,798	10.31	11,778	0.86	10,709	0.94
<b>Indian</b>	513,937	2.52	473,161	2.79	2,147	0.16	1,982	0.17
<b>White</b>	2,117,799	10.3	2,047,715	12.09	122,050	8.91	121,575	10.64
<b>Total</b>	20,434,011	100	16,938,744	100	1,370,255	100	1,142,144	100

Source: Own calculation from Labour Force Survey 2007

In 2007 there were 20.4 million (16.9 million) individuals in the South African labour force according to the broad (strict) definition. In Mpumalanga there were 1.4 million (1.1 million), the largest share taken by the African population with 90.08% (88.24%). The largest contributor to the national labour force is the African population with 77.4% (74.81%). In both samples, the Indian population is the smallest (2.52% / 2.79% and 0.16% / 0.17% respectively).

### 3.3. Unemployment in South Africa and Mpumalanga

In explaining the labour force, unemployment was defined. The next table (Table 7) and figure (Figure 6) represent the unemployment data (in numbers and percentage respectively) for South Africa and Mpumalanga by population group.

**Table 7: Unemployment numbers for South Africa and Mpumalanga by population group in 2007**

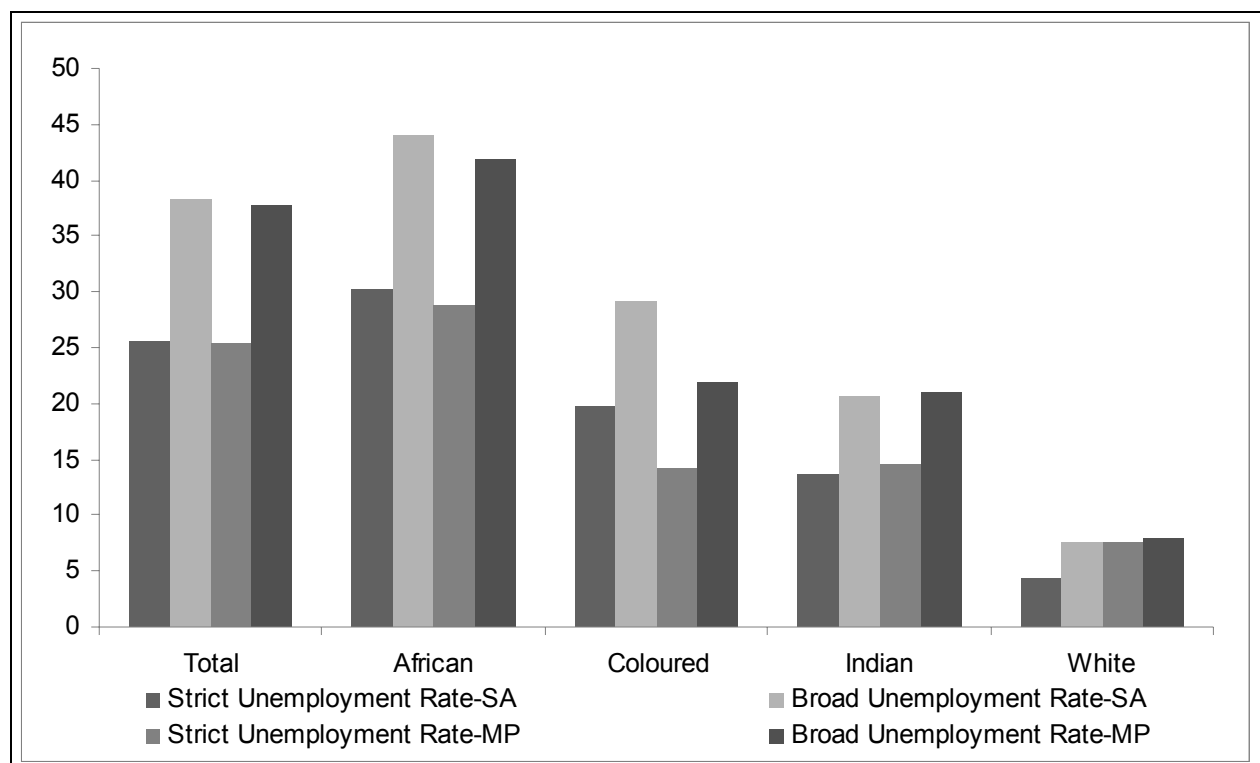
	South Africa		Mpumalanga	
	Broad	Strict (%)	Broad	Strict (%)
<b>African</b>	6,984,075	3,830,110	516,523	290,121
<b>Coloured</b>	576,177	345,735	2,587	1,518
<b>Indian</b>	105,855	65,079	453	288
<b>White</b>	158,206	88,122	9,708	9,233
<b>Total</b>	7,830,004	4,330,958	529,271	301,160

Source: Own calculation from Labour Force Survey 2007

Table 7 indicates that the African population suffers most from unemployment across both definitions and for both South Africa and Mpumalanga. In Mpumalanga the population group with the smallest number of unemployed is that of the Indian population followed by the Coloured subgroup across both definitions.

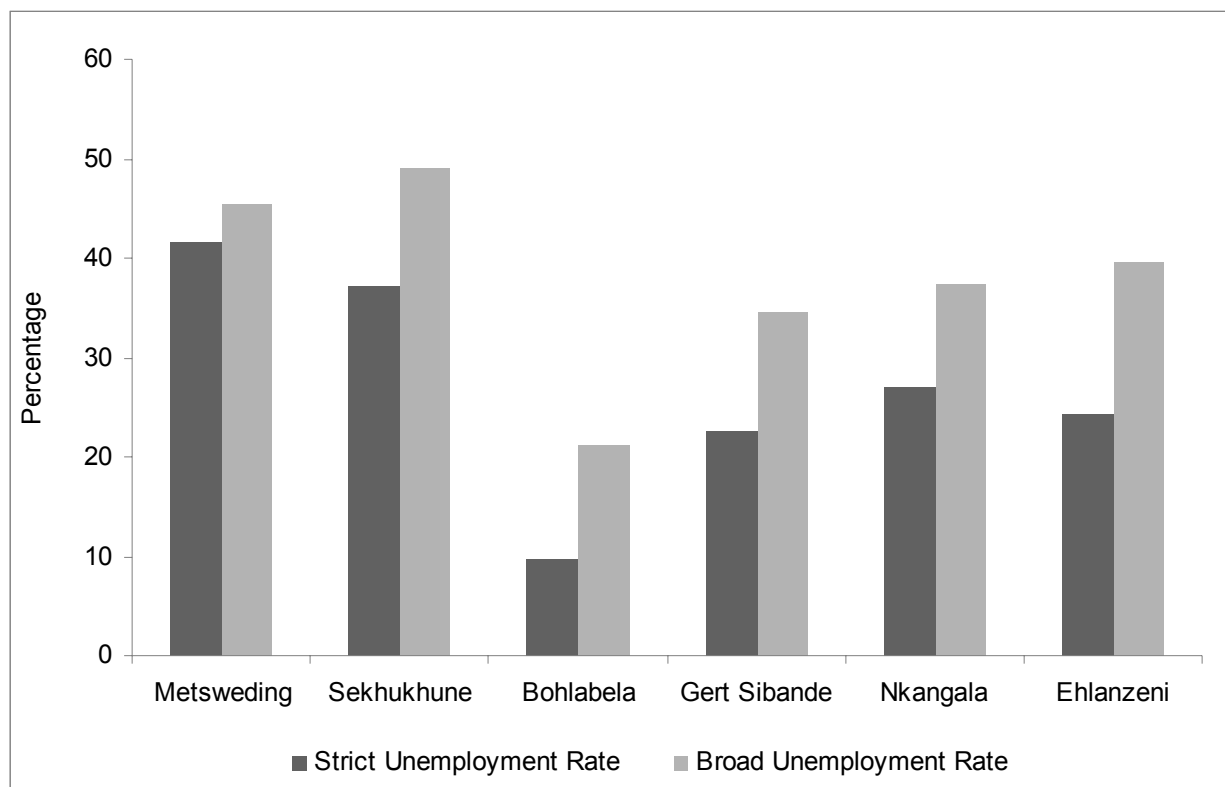
Figure 6 shows that there is a clear trend with Africans having the highest unemployment rate in South Africa and Mpumalanga for both definitions (broad 44% and 42% respectively and for strict 30% and 28% respectively). Coloureds and Africans in Mpumalanga have slightly lower unemployment rates than in South Africa, whereas the Whites and Indians have higher rates. The White population in both South Africa (4.3% strict and 7.5% broad) and Mpumalanga (7.5% strict and 8.0% broad) have significantly lower unemployment rates than the other population groups and the total. The total unemployment rate for the official (strict) definition for South Africa and Mpumalanga respectively are 25.50% and 25.4%.

**Figure 6: Unemployment rates for South Africa and Mpumalanga by population group**



Source: Own calculation from Labour Force Survey 2007

Taking a closer look at Mpumalanga, the following information regarding district level was obtained. In Figure 7, Metsweding has the highest unemployment levels considering the strict definition (41.61%) and Sekhukhune has the highest broad rate (49.15%). The lowest unemployment levels are in the Bohlabela District (9.65% and 21.17% respectively). The three mentioned districts are all cross border districts. Strict unemployment for the three main districts range between 22.72% for Gert Sibande and 27.16% for Nkangala.

**Figure 7: Unemployment rates for districts in Mpumalanga**

Source: Own calculation from Labour Force Survey 2007

### 3.4. Work-force and employment in Mpumalanga agriculture

A work-force is defined as all individuals that are able to work, of working age and employed according to various dictionaries ([www.thefreedictionary.com](http://www.thefreedictionary.com) ; [www.patana.ac.th](http://www.patana.ac.th) ; [www.allwords.com](http://www.allwords.com)), although Wikipedia ([www.wikipedia.org](http://www.wikipedia.org)) excludes the management and only refer to manual labour. For the purpose of this report, the full definition (including management) will be used to avoid making sample sizes too small by excluding management data.

The agricultural work-force, thus those between 15 and 65, and as previously mentioned in the agricultural industry or occupation, is listed for both South Africa and Mpumalanga for 2007 in the subsequent table:

**Table 8: South African and Mpumalanga agricultural work-force**

	South Africa		Mpumalanga	
	Number	Share (%)	Number	Share (%)
<b>African</b>	741,228	75.82	60,815	80.51
<b>Coloured</b>	143,172	14.65	322	0.43
<b>Indian</b>	5,458	0.56		
<b>White</b>	87,728	8.97	14,398	19.06
<b>Total</b>	977,586	100	75,535	100

Source: Own calculation from Labour Force Survey 2007

As can be seen in Table 8, the African population dominates the South African agricultural work-force as well as in the agricultural work-force of Mpumalanga. There are no Indians in the Mpumalanga agriculture work-force and only 0.56% nationally. The White population's share in both South Africa and Mpumalanga is 8.97% and 19.06% respectively. Decomposing Mpumalanga to a district level by gender, the following is obtained:

**Table 9: Agricultural work-force of the Mpumalanga districts by gender in 2007**

	Male	Share (%)	Female	Share (%)	Total	Share (%)
<b>Metsweding</b>	203	38.02	331	61.98	534	100
<b>Sekhukhune</b>	5,263	84.84	940	15.16	6,204	100
<b>Bohlabela</b>	0	0.00	384	100.00	384	100
<b>Gert Sibande</b>	15,672	73.29	5,713	26.71	21,384	100
<b>Nkangala</b>	13,012	73.92	4,591	26.08	17,603	100
<b>Ehlanzeni</b>	20,200	68.43	9,320	31.57	29,520	100
<b>Total</b>	54,349	71.86	21,279	28.14	75,628	100

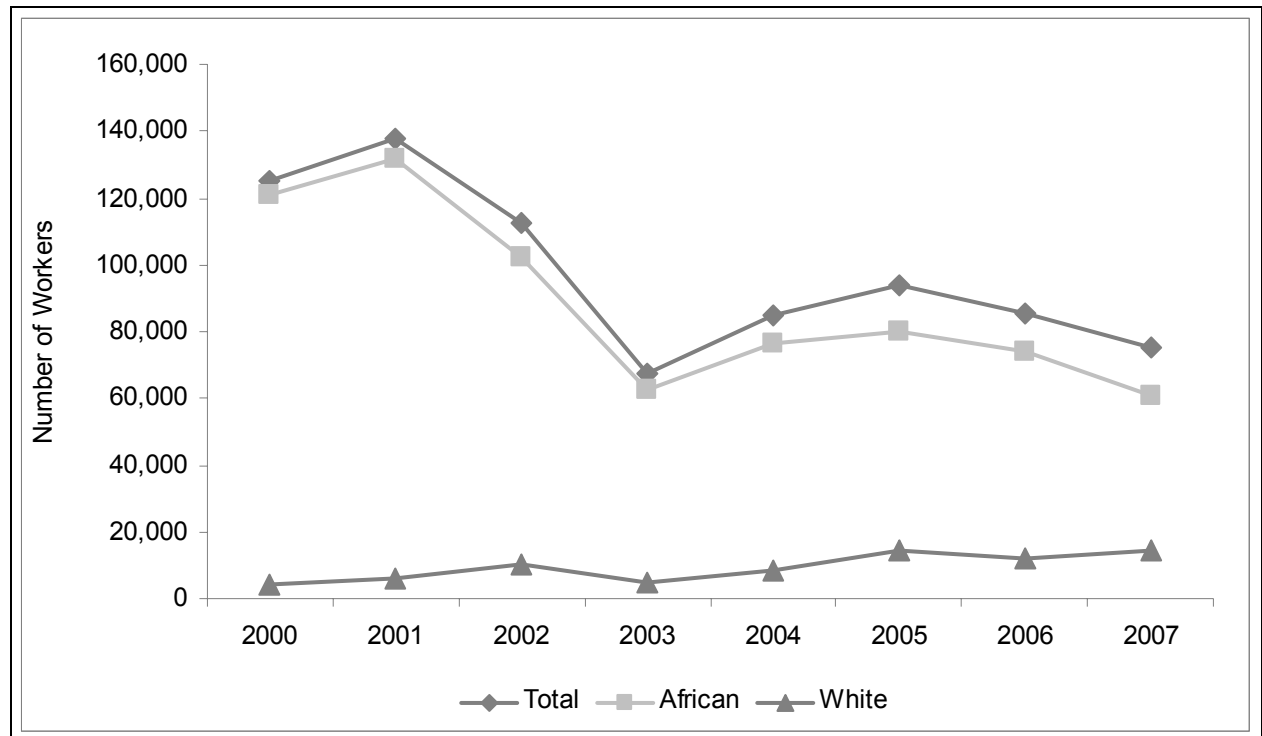
Source: Own calculation from Labour Force Survey 2007

Table 9 illustrates that the majority of the work-force is male, except for Metsweding cross border district with 38.02% males and 61.98% females. The cross border district of Sekhukhune is the most gender unequal. Ehlanzeni has the largest work-force (29 520 workers) and Metsweding the smallest (534 workers).

3.4.1. Employment over time

According to Statistics South Africa the definition of an agriculture worker is if (s)he claims that the main industry that (s)he works in is that of Agriculture, Fishery and Hunting, or if the main occupation is skilled agricultural worker regardless the industry. The industry Agriculture, Fishery and Hunting was evaluated, and workers of only agricultural activities were used in this report. The following figure was obtained from the data:

**Figure 8: Agricultural Employment figures from 2000 to 2007**



Source: Own calculation from Labour Force Survey 2000-2007

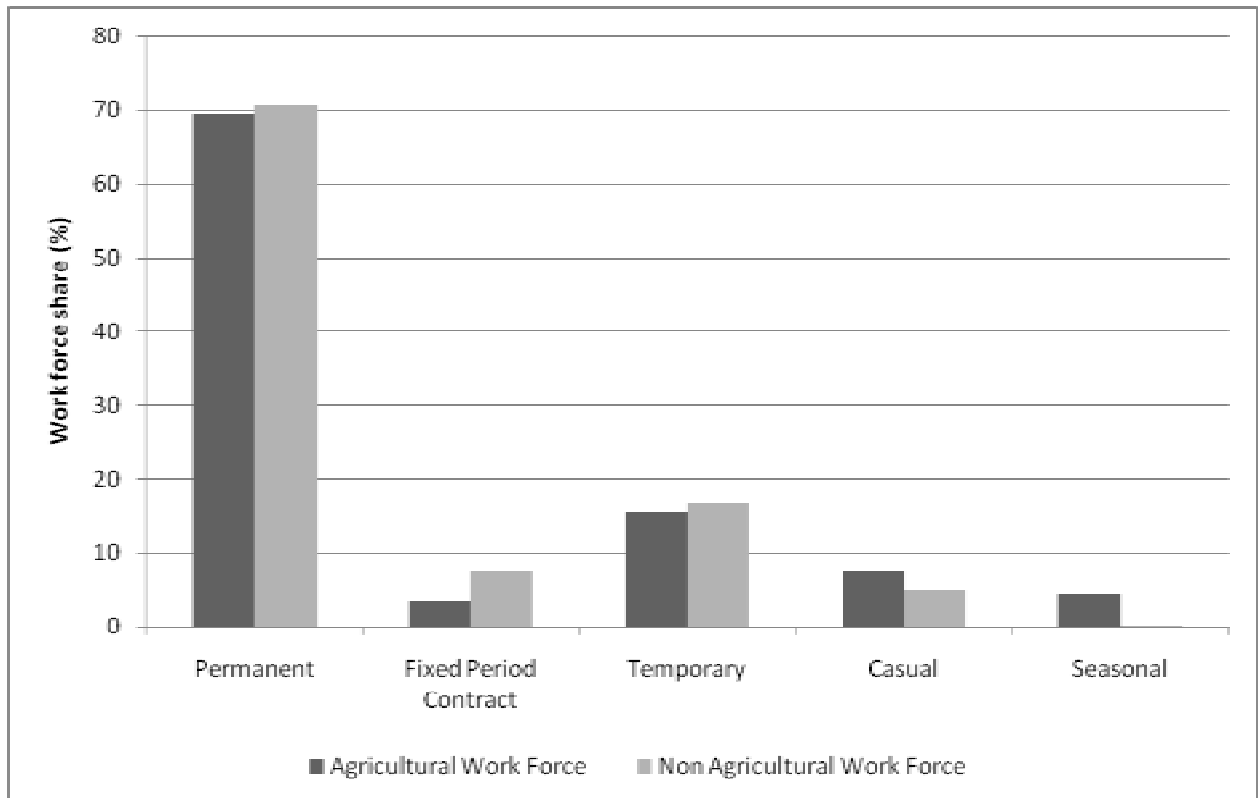
It can be observed in Figure 8 that there is definitively a decreasing trend in total employment. The African employment decrease significantly over time with a sharp drop from 2000 to 2003. From 2005 to 2007 there was slight drop of African workers from 79 720 to 60 815. Their White counterparts increased from 14 342 to 14 398 for the same period. Further analysis needs to be done in order to investigate the reasons behind this declining trend.



3.4.2. *Employment status*

The Labour Force Survey asks various work-related questions to employed respondents, one being that of the terms of employment. Respondents had to classify whether their job was permanent, a fixed period contract, temporary, casual or seasonal. The following results in Figure 9 were obtained for 2007 while Figure 10 indicates the period 2000-2007:

**Figure 9: Work status for Mpumalanga work-force in 2007**

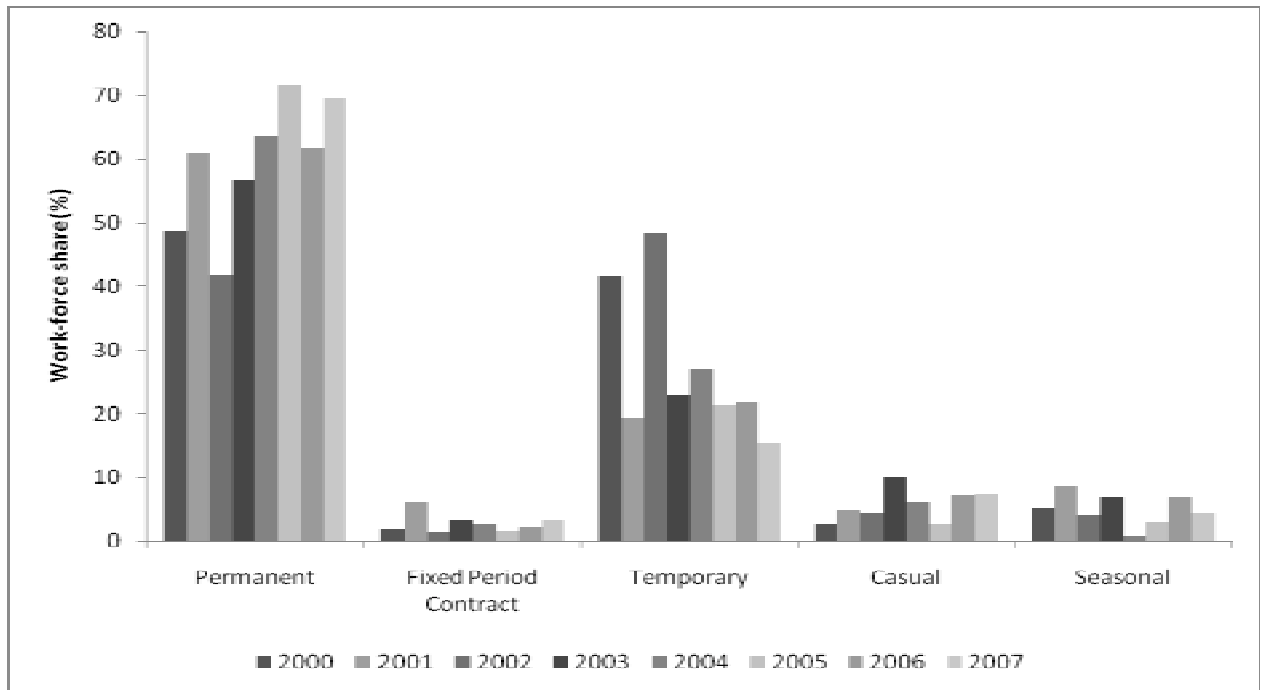


Source: Own calculation from Labour Force Survey 2007

The agricultural work-force has predominantly a permanent work-force, with the temporary work-force second highest. This seasonal element is clearly unique within the agricultural work-force, as the non-agricultural work-force has almost no seasonal employees. The fixed period contract workers in the agricultural work-force are the minority compared to the non-agricultural work-force, while the casual workers of the agricultural work-force is dominating.

Figure 10 presents the work status data from 2000 till 2007 for the agricultural work-force:

**Figure 10: Work status over time**



Source: Own calculation from Labour Force Survey 2000-2007

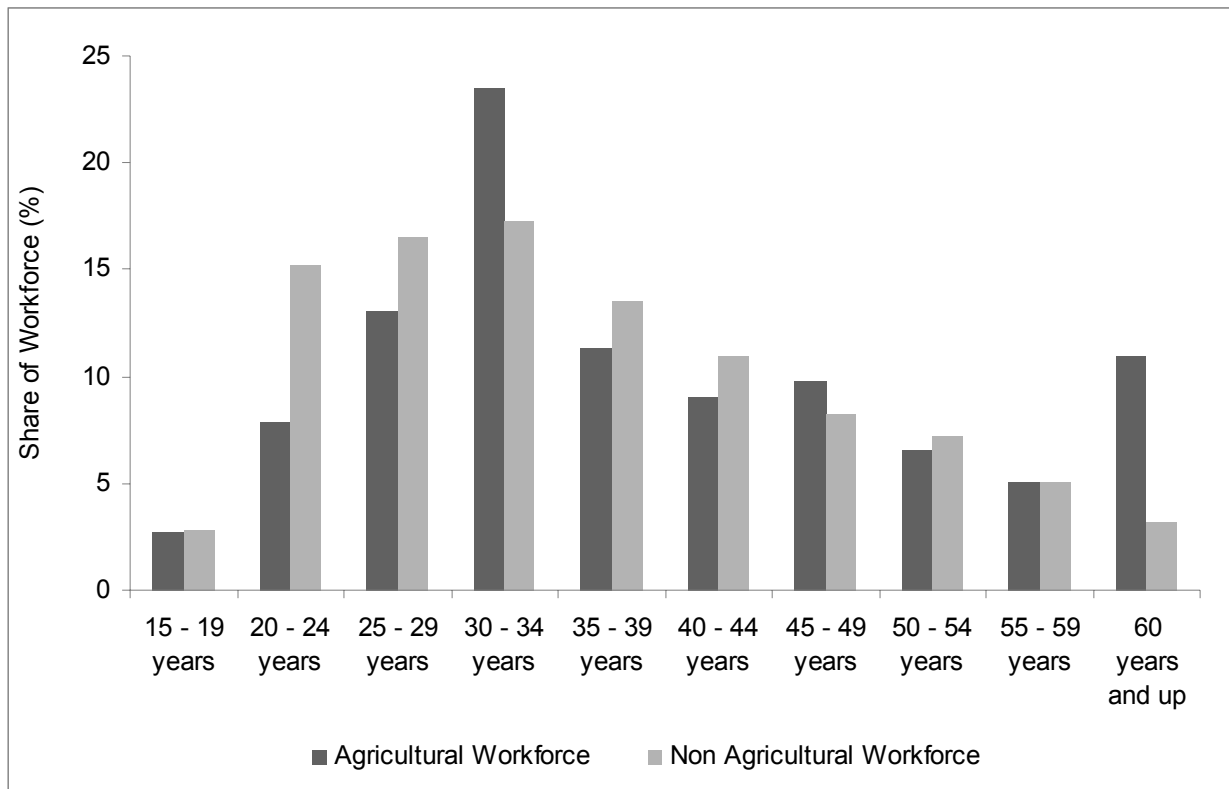
This figure indicates there is a general increase in the share of permanent labour, while the share of fixed period contract employees remained relatively constant. There is a decline in the share of temporary employment, while and casual employment differs from year to year. The share of seasonal workers appears quite variable but has not changed significantly when comparing 2000 and 2007.. Taking Figure 8 into consideration and comparing figures for 2000 and 2007, total employment decreased, while the share of permanent employment increased. However, the decrease in employment is a result of a combination of a decrease in the numbers of temporary workers and permanent workers.

3.5. Characteristics of Mpumalanga agricultural work-force

3.5.1. *Age structure*

Comparing the agricultural work-force with the non-agricultural work-force (thus those in other industries), Figure 11 was obtained.

**Figure 11: Age structure of agricultural and non-agricultural work-force in Mpumalanga**



Source: Own calculation from Labour Force Survey 2007

A similar trend can be observed between the two work-forces, with the non-agricultural and agricultural work-forces peaking at ages 30-34 years. The agricultural work-force in Mpumalanga is also an older work-force, seen through their domination in the older age categories (60 years and up) with a share of 10.97% compared to 3.15% of the non-agricultural work-force.

3.5.2. *Location and occupation*

The agricultural workers also indicated where the location is of their work. As expected, the majority (72.47%) work on a farm. The second most common place where agricultural activities take place is inside a formal business (factory or shop) (10.34%) and the least common is at a service outlet (3.18%). Table 10 present the full results, including the number and share.

**Table 10: Location of Mpumalanga agricultural work-force**

	Number	Share %
<b>In the owner's home/On the owner's farm</b>	45,409	72.47
<b>In someone else's home / Private household</b>	3,435	5.48
<b>Inside a formal business premises such as factory or shop</b>	6,480	10.34
<b>At a service outlet such as a shop, school, post office etc.</b>	1,990	3.18
<b>On a footpath, street, street corner, open space or field</b>	4,300	6.86
<b>No fixed location</b>	1,042	1.66
<b>Total</b>	62,656	100

Source: Own calculation from Labour Force Survey 2007

The occupation of agricultural workers, as classified by Statistics South Africa, is expressed in Table 11. As can be seen through Table 11, the elementary occupation dominates (56.67%), while professionals are the minority (0.40%). It can be seen that only 14.19% of workers in the agricultural sector in Mpumalanga is classified as skilled agricultural workers.

**Table 11: Occupation of the agricultural work-force of Mpumalanga**

	Number	Share %
<b>Legislators, senior officials and managers</b>	4,885	6.47
<b>Professionals</b>	303	0.4
<b>Technicians and associate professionals</b>	2,342	3.1
<b>Clerks</b>	1,740	2.3
<b>Service workers and shop and market sales worker</b>	2,008	2.66
<b>Skilled agricultural and fishery worker</b>	10,722	14.19
<b>Craft and related trade workers</b>	1,133	1.5
<b>Plant and machinery operators and assemblers</b>	9,597	12.71
<b>Elementary occupations</b>	42,805	56.67
<b>Total</b>	75,535	100

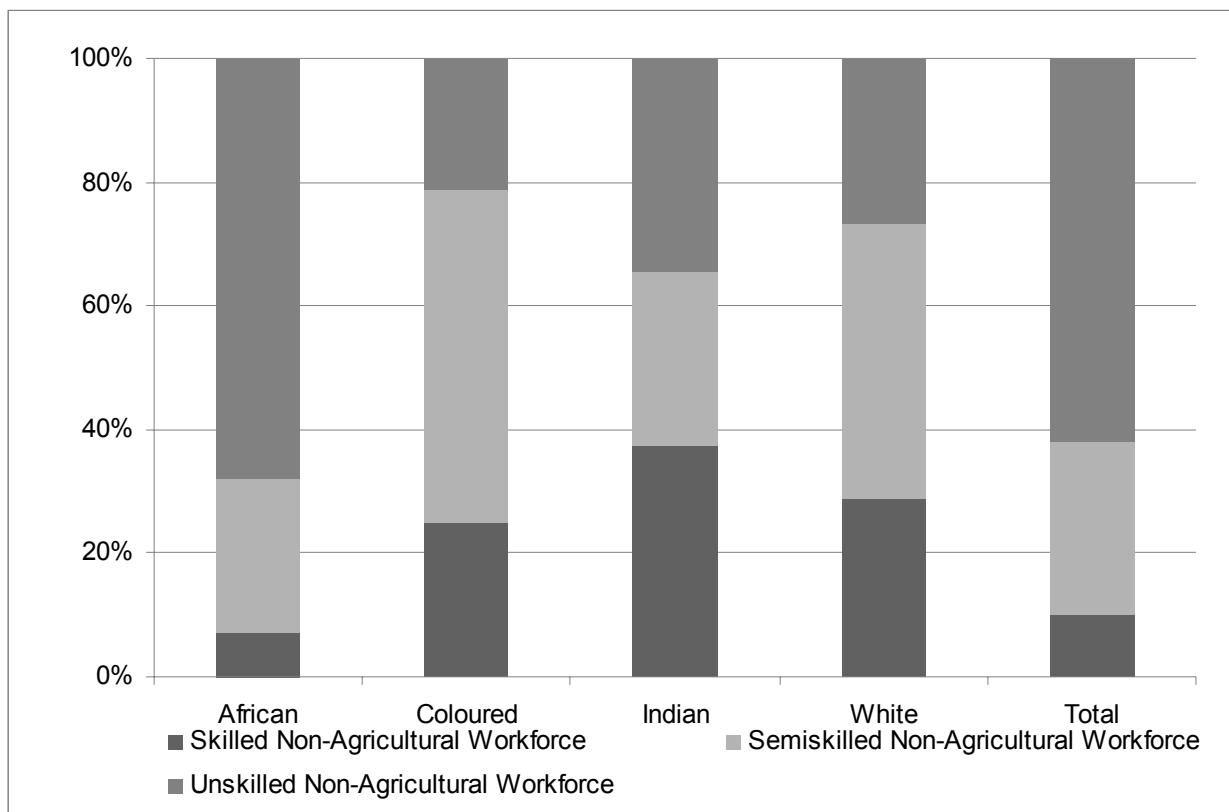
Source: Own calculation from Labour Force Survey 2007

3.5.3. Skills level

The occupation of workers is an indicator of the skills level of the individual. Workers working in a legislative, senior official, manager or professional occupation are classified as skilled workers by Statistics South Africa. Semi-skilled workers are technical and associated professionals, clerks, and service and sales workers. The rest, skilled agricultural and fishery workers, craft workers, plant and machine operators and assemblers, elementary occupation and domestic workers, are classified as unskilled labour.

The subsequent figures were obtained for the skills level in 2007 of every population group in the non-agricultural sector:

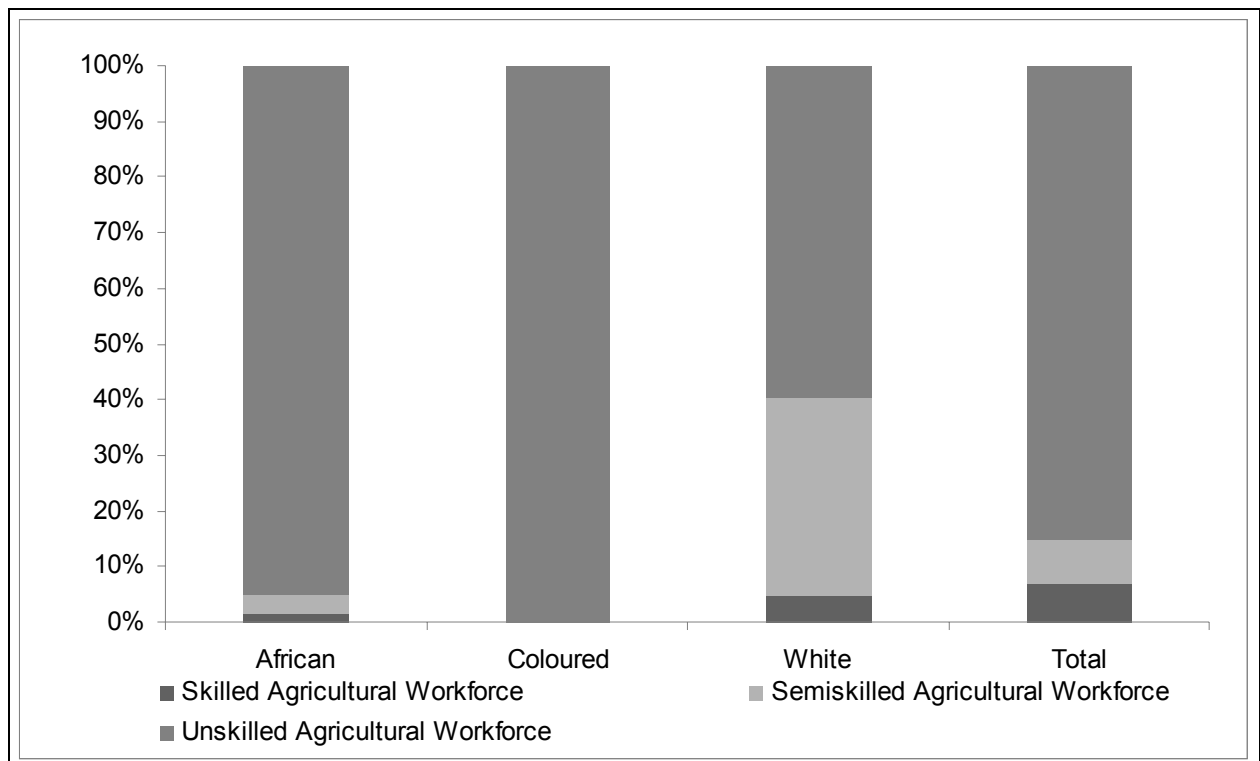
**Figure 12: Skills level of the non-agricultural work-force of Mpumalanga in 2007**



Source: Own calculation from Labour Force Survey 2007

Figure 12 represents the skills level for every population group for the non-agricultural sector in 2007. There is clear distinction between African and White workers, with the majority (73.52%) of White workers being skilled or semiskilled workers and the minority (32.15%) of the African workers being skilled or semiskilled workers. Looking at the skill levels of agricultural workers in Figure 13, the same trend can be observed. 5% of the African workers are skilled or semiskilled, while 40.59% of White agricultural workers are skilled or semiskilled. The whole sector is also more dominated by unskilled labour, compared to the non-agricultural sector.

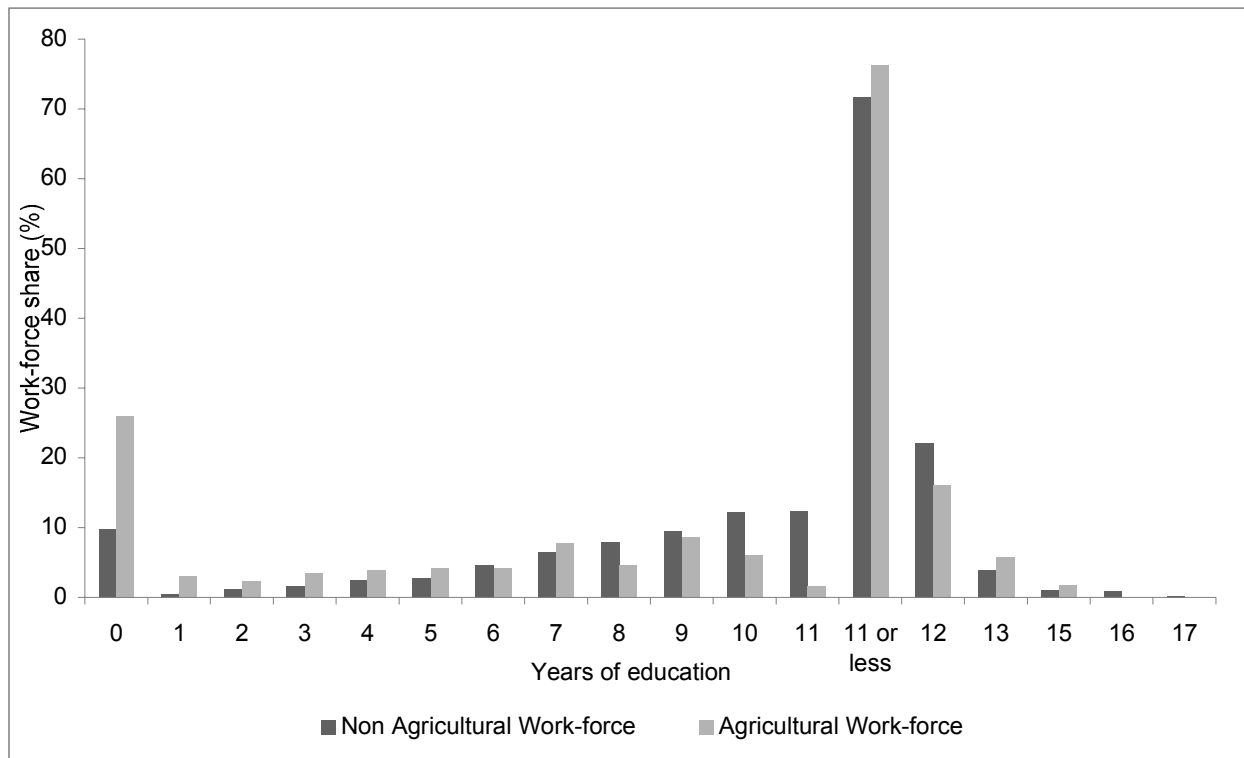
**Figure 13: Skills level of the agricultural work-force of Mpumalanga**



Source: Own calculation from Labour Force Survey 2007

Examining the education level of agricultural workers and non-agricultural workers, the following bar graph (Figure 14) contains the information:

**Figure 14: Highest education received for agricultural and non-agricultural workers**

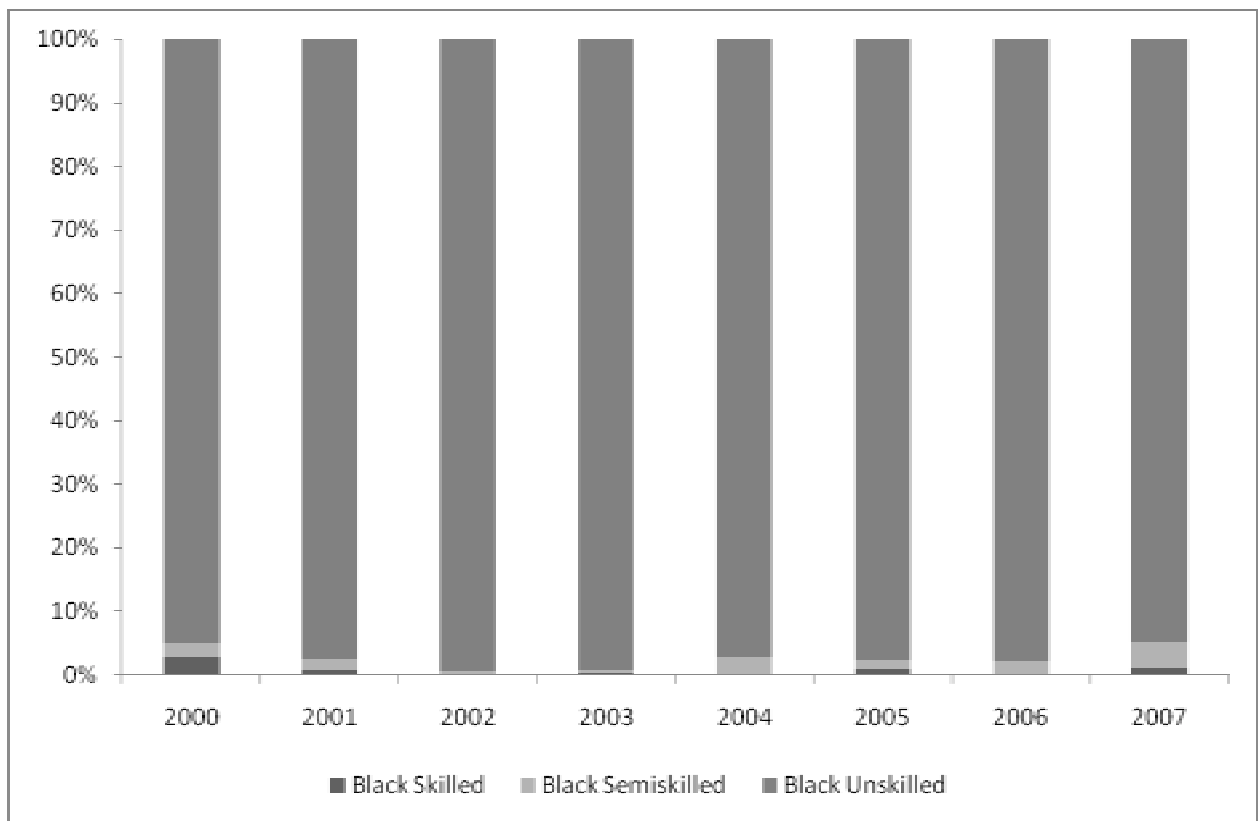


Source: Own calculation from Labour Force Survey 2007

The graph clearly shows that the majority of agricultural workers do not have a matric qualification (76%), although they received high school education. Only a small portion received more than 12 years of education (24%). The non-agricultural work-force has a higher share of matriculant workers (28%) and workers with post-matric education (8% compared to 6 % of agricultural work-force). 26.05% of the agricultural work-force has no education, compared to 9.78 of the non-agricultural work-force. This clearly indicates that the agricultural work-force has less formal education than the non-agricultural work-force.

Looking at the skills level trend through years 2000 till 2007, the subsequent figures illustrate each population group’s skills:

**Figure 15: Skills level for African in the agricultural work-force**

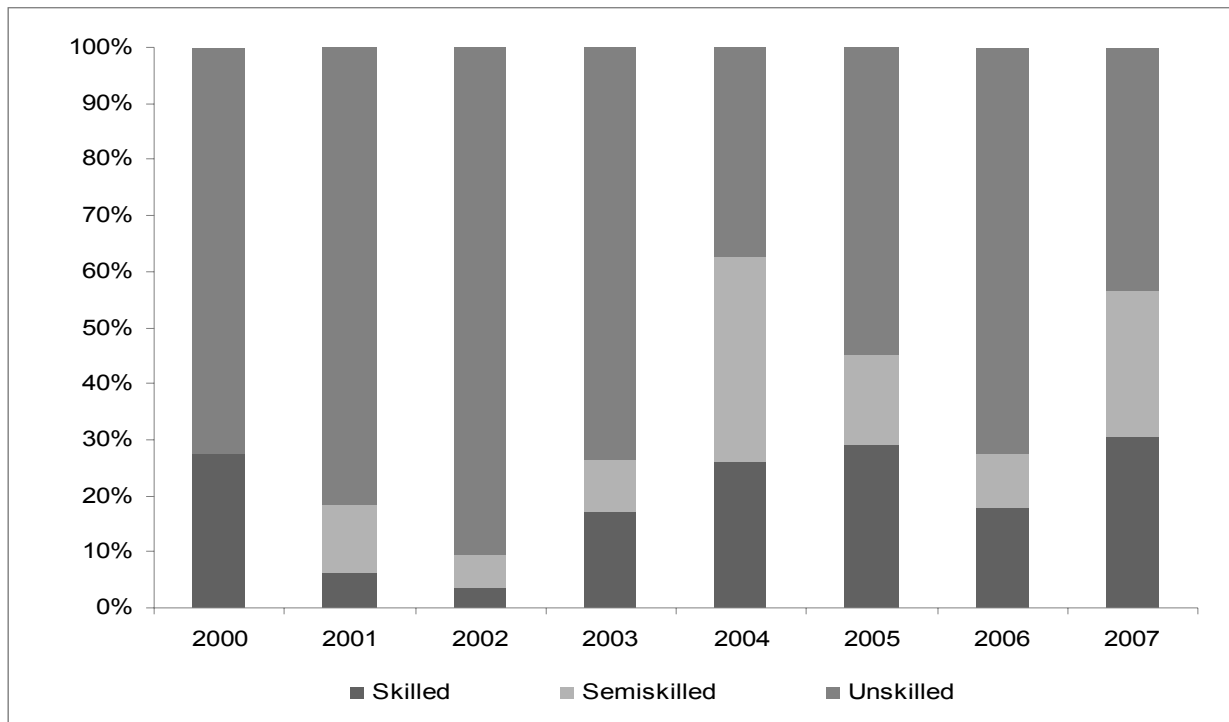


Source: Own calculation from Labour Force Survey 2000-2007

The skills level of the African population group did not change notably from 2000 (Figure 15). The majority of workers are unskilled, without any increase in the other two levels. This is a major source of concern, indicating that the African agricultural workers remain unskilled.



**Figure 16: Skills level of the White agricultural work-force**



Source: Own calculation from Labour Force Survey 2000-2007

In Figure 16 the White work-force has a dramatically different composition of skills than the African population group. It differs from year to year, but the share of skilled workers increased with time (27.73% to 30.55%), while the unskilled declined (72.27% to 43.37%).

There is a definite skills gap between the two race groups in the agricultural sector of Mpumalanga, with the Whites as the only notable skilled group. According to the National Scarce Skills list of 2007 (Department of Labour), farm managers are rated as one of the most scarce skills in South Africa, while agricultural technicians, plant operators, crop farm workers and livestock farm workers also appear on the list. This indicates that there is definitely a need for skilled agricultural workers.

#### 4. Income

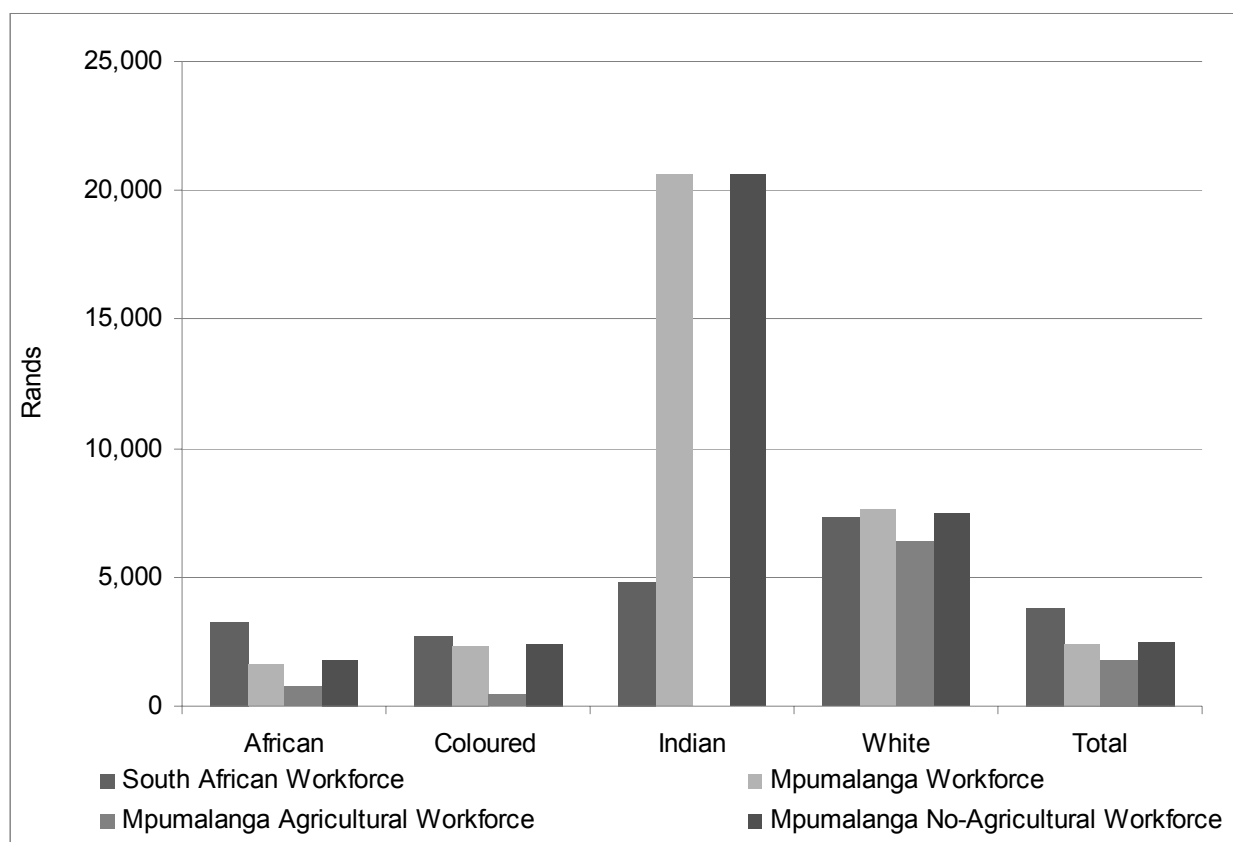
##### 4.1. South Africa and Mpumalanga

Respondents were asked about their income, and as explained previously, it was reported in either actual values or income bands. A value was dictated to each band by using the Interval Regression in 2.3.2. Three different reporting measures were used to seek variation and to verify for consistency. The first figure reports the results for the earnings for the working individual. The second figure represents the per capita household earnings while the last figure embodies the median incomes for working individuals. The first and second figures' income is

an average and all three were adjusted for the consumer price index (CPI) making it real incomes. Therefore all values are in 2000 prices to have consistency when comparing from 2000 to 2007.

The subsequent figures represent the results of the analysis in 2007. It must be remembered that earnings used were total salary of main job, therefore excluding any remittances, social grants or payments in kind. Home consumption from home production is also excluded. Comparisons are made between the South African, Mpumalanga, Mpumalanga agricultural and Mpumalanga non-agricultural work-forces.

**Figure 17: Real mean monthly income from main source by race for 2007**

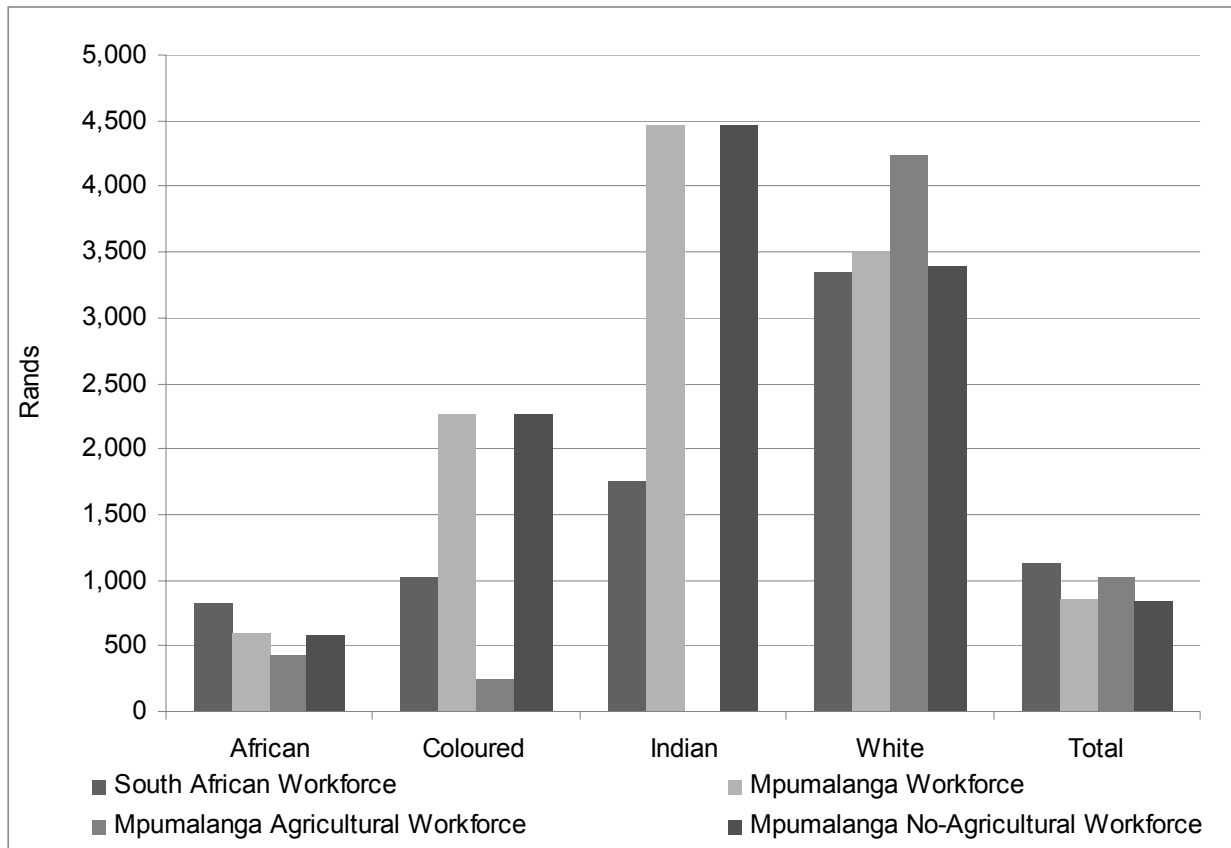


Source: Own calculation from Labour Force Survey 2007

The mean monthly income for Mpumalanga in Figure 17 is lower to that of South Africa for all population groups except the Indian and White population groups. The results for the Indian population are driven by a high non-agricultural household income. This suggests that there might be some outliers driving this occurrence. Overall the agricultural households of Mpumalanga receive a lower income. Generally, the non-agricultural income is similar to the mean income for the province and the country.

Looking at the mean real household income per capita for 2007, a similar pattern as the individual income is found. Household earnings are thus divided by household size, disregarding other income sources.

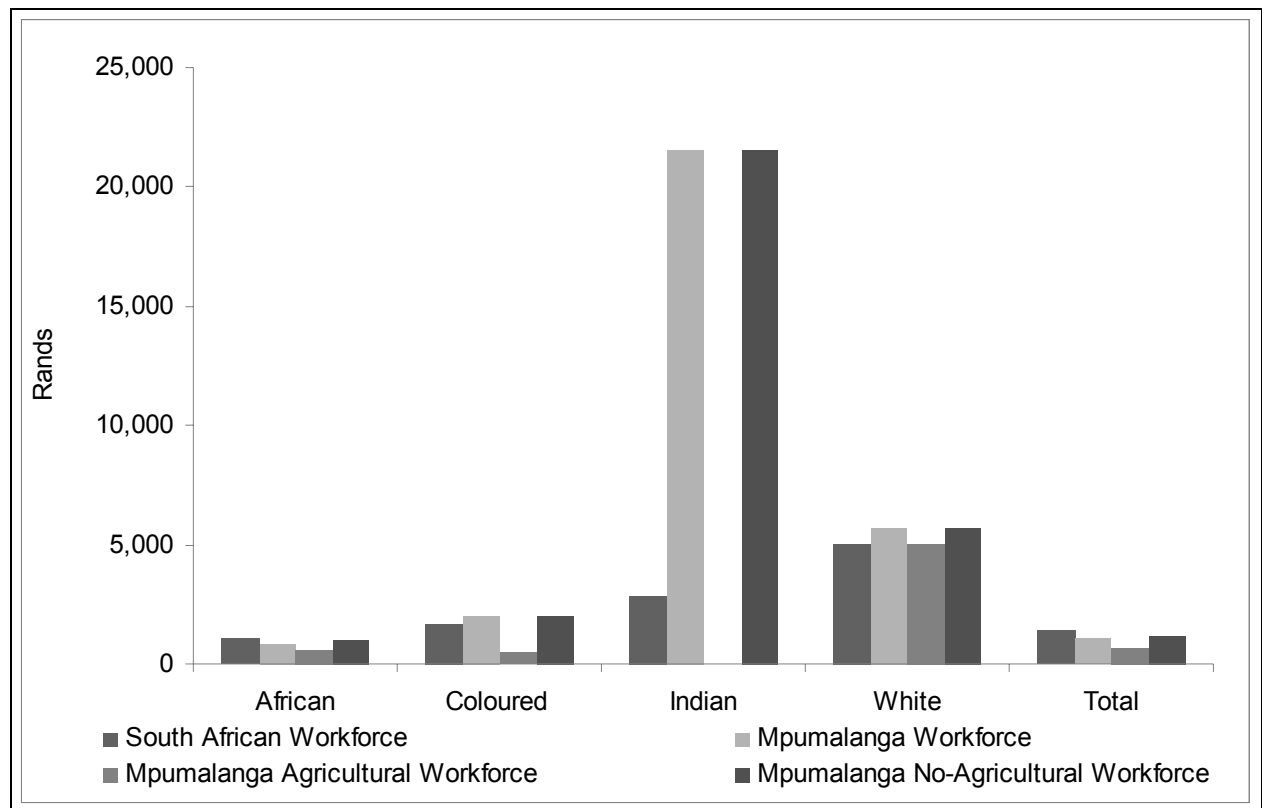
**Figure 18: Mean monthly real household income per capita by race for 2007**



Source: Own calculation from Labour Force Survey 2007

In Figure 18 again the mean household income per capita for agricultural households compared to South Africa, Mpumalanga and Mpumalanga non-agriculture, is lower across all races except for the White population. The household incomes of non-agricultural households in Mpumalanga and households in South Africa display the same patterns as the individual incomes, with Whites earning the most on average and Africans and Coloureds earning the least. Again the outliers influence the Indian, non-agriculture sector in Mpumalanga.

**Figure 19: Monthly median income for individuals by race for 2007**



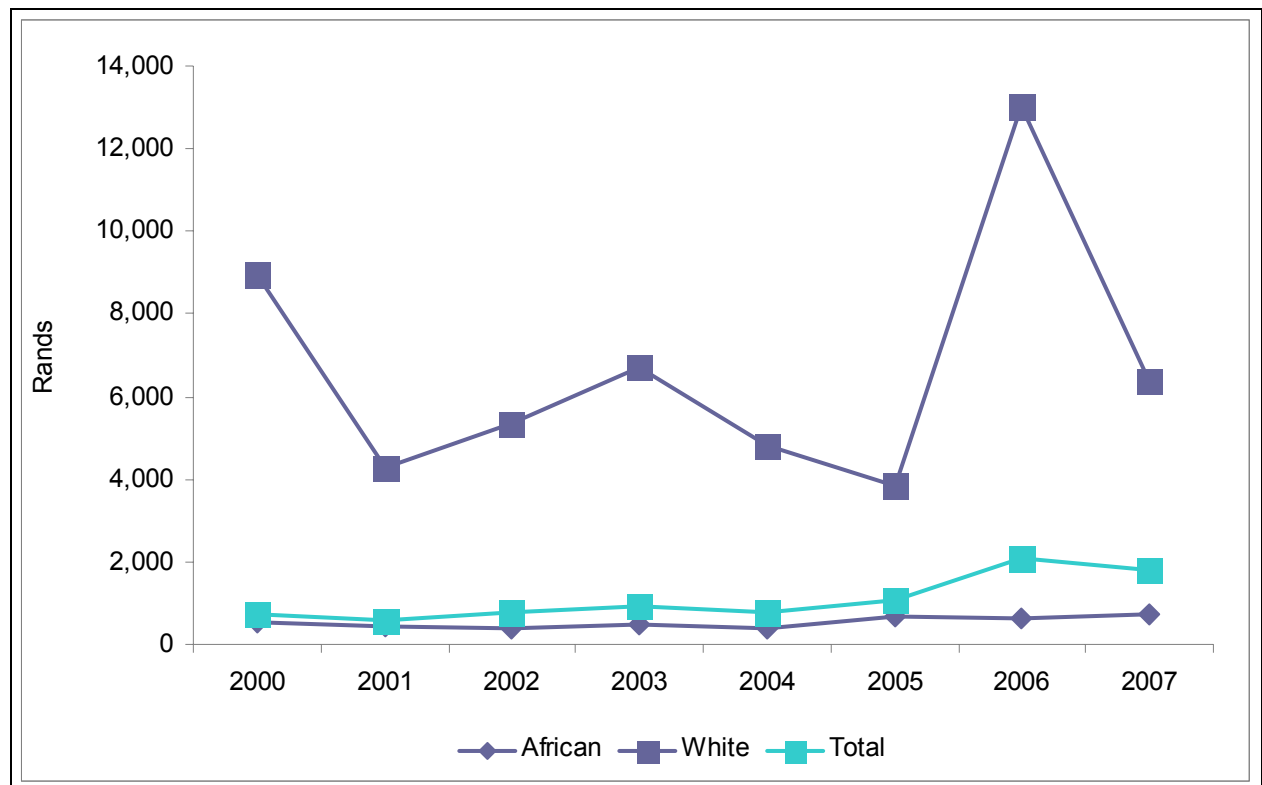
Source: Own calculation from Labour Force Survey 2007

The median incomes are illustrated above in Figure 19 to correct for any measurement error with regards to mean incomes. The mean can be influenced by outliers, and in a country like South Africa with the high inequality, median better reflects the true nature of profiles. Median represents the 50<sup>th</sup> percentile, meaning 50% of the individuals receive equal or less than the mentioned income. Hence this figure shows a lower income across all population groups. The trend remains the same, with Whites earning the most and Africans earning the least. Indian non-agricultural households also have the highest median income, and also Mpumalanga is doing financially better than South Africa concerning White incomes. Across the other races, incomes in Mpumalanga are comparable to that of South Africa (except for Indians), while the agricultural sector is earning a lower median income.

4.2. Mpumalanga agricultural work-force

Taking a closer look at the agricultural work-force in Mpumalanga over time, the subsequent figures were obtained:

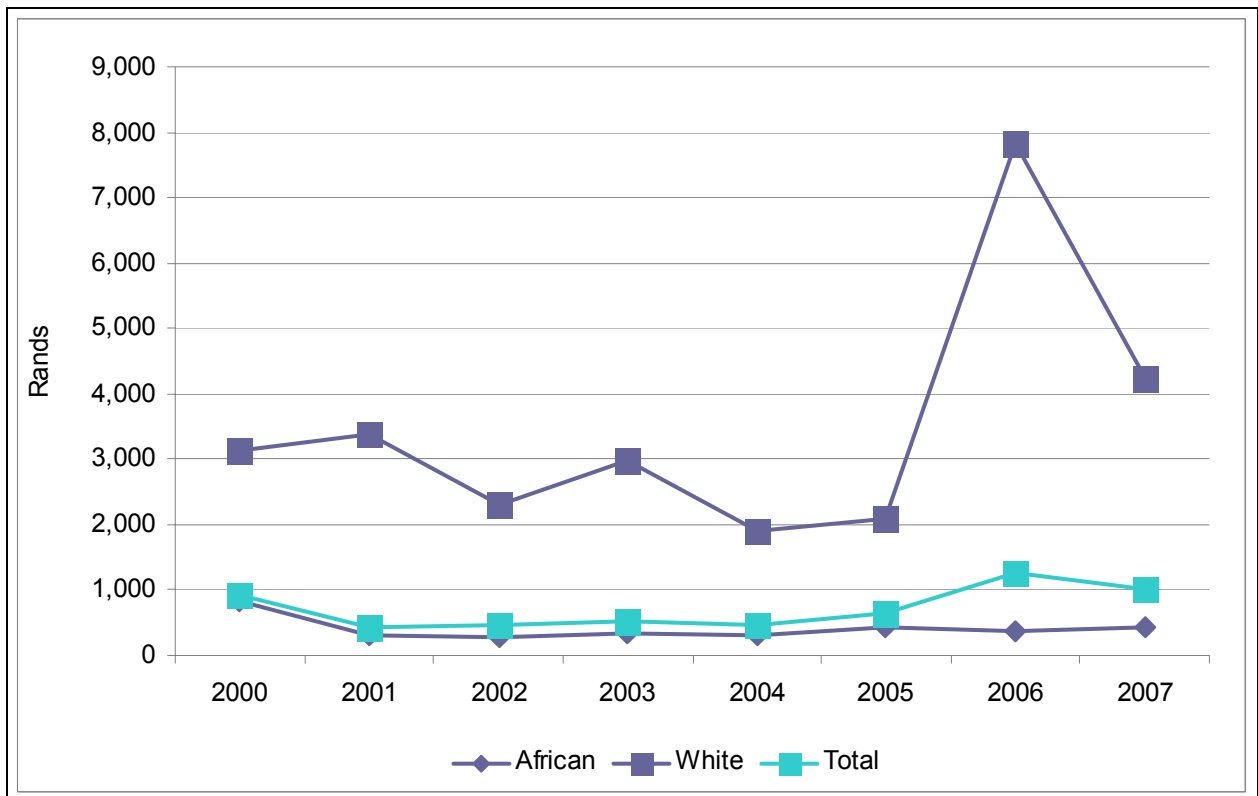
**Figure 20: Real monthly mean income for individuals working in agriculture from 2000**



Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 20) clearly indicates the huge difference between the mean income of the White population compared to that of the African population. The African population’s average income remains stable and alike over time, whereas the White’s income differs immensely from period to period. This large up- and downswings can be due to measurement error, and can be seen throughout the income profiles.

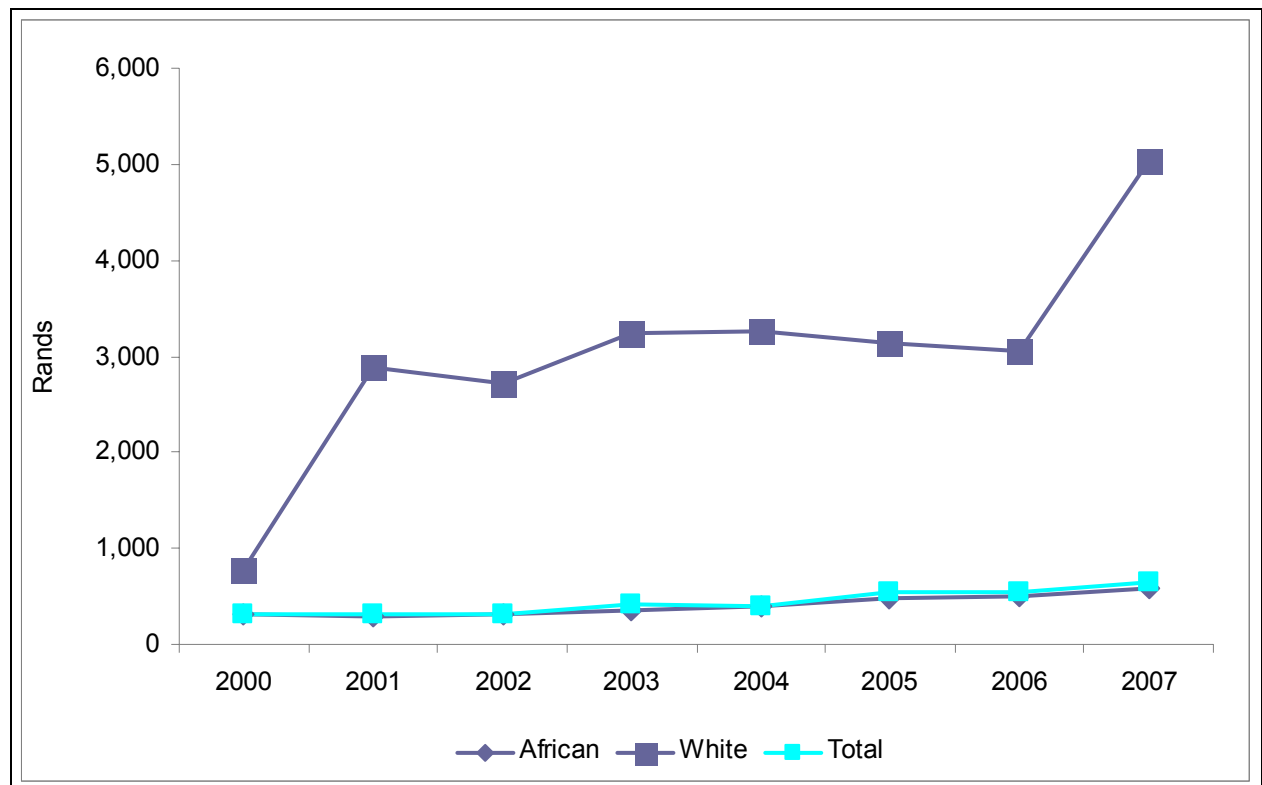
**Figure 21: Real mean household income per capita for all agricultural households since 2000**



Source: Own calculation from Labour Force Survey 2000-2007

The household earnings are presented above (Figure 21) for all agricultural households, thus all households that have a member / members working in the agricultural sector. The figure signifies a similar trend than the individual earnings profile. This indicates that households are very much dependent on the agricultural individual earnings within the household.

**Figure 22: Monthly median incomes of individuals in agriculture since 2000**



Source: Own calculation from Labour Force Survey 2000-2007

The trend stays the same within the median income (Figure 22) as for mean income, showing a wide disparity between White’s incomes and the African population’s income. The conclusion from above three figures is that there is a significant difference between the White’s populations’ income and the incomes of the African population.

**4.2.1. Beneficiaries from agricultural activities**

Considering the number of beneficiaries of the agricultural workers, the following table and figure were obtained. Beneficiaries were defined as the number of people in a household with an agricultural employee amongst them. But there are two different reporting measures. The first measures all beneficiaries, thus all individuals that get affected by agricultural activities, meaning a household with four members, all employed, will be beneficiaries if only one works in the agricultural sector. The second reporting measure is that of beneficiaries living in agricultural households where agricultural income is more than 50% of household income, thus as reported in Section 2.2.1.

**Table 12: Number of beneficiaries in 2007**

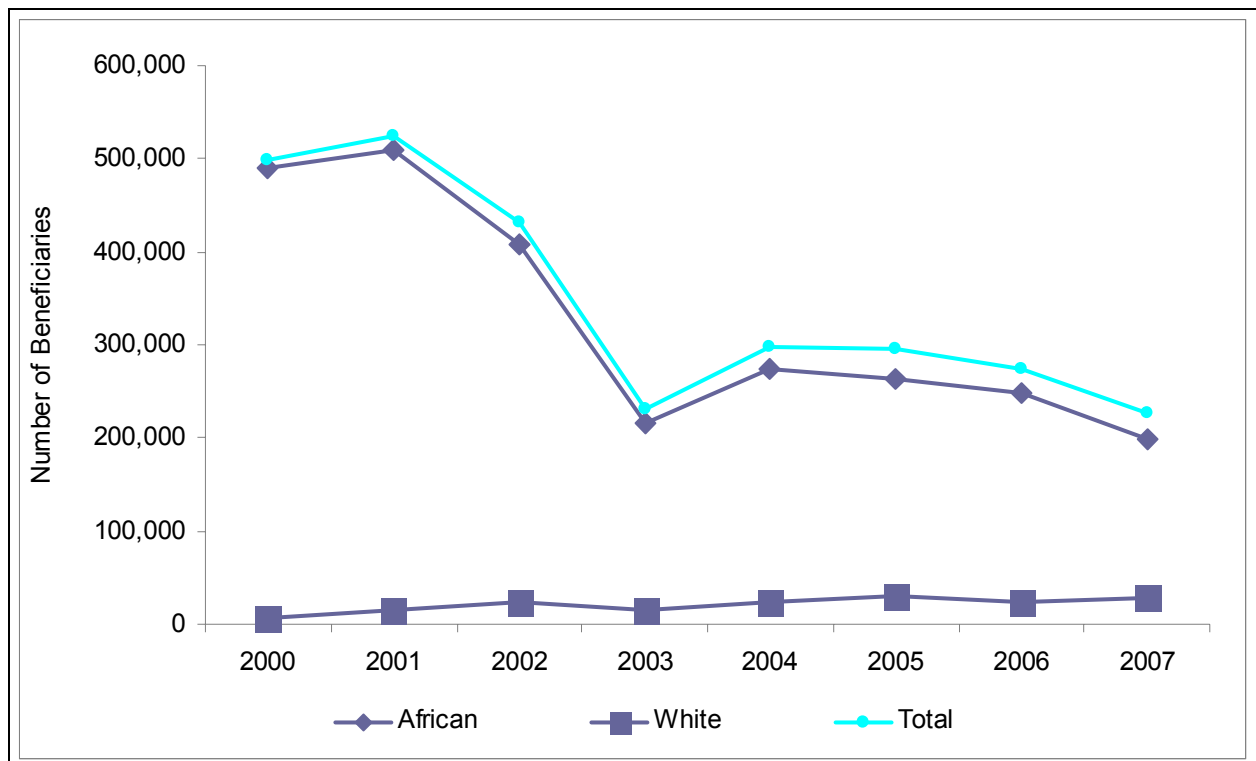
	All		More than 50%	
	Number	Share	Number	Share
<b>African</b>	198,013	87.18	148,628	88.35
<b>White</b>	29,109	12.82	19,607	11.65
<b>Total</b>	227,122	100	168,235	100

Source: Own calculation from Labour Force Survey 2007

Table 12 indicates that the African population have the highest number of beneficiaries in the agricultural sector of Mpumalanga, dominating by 87.18% and 88.35% respectively. Investigating the trend over years in Figure 23, the number of African beneficiaries' households follows a declining trend; there is first a sharp decrease between 2000 and 2003, an increase between 2003 and 2004, and then a steady decrease from 2004. These African households have decreased from 490 671 to 198 013. The White households have been constant over time since 2000. Relating this to the poverty profile that will be discussed in section five, poverty within this population group can be understood. A single worker needs to care for more relatives than in other population groups due to the higher number of dependents or as Figure 4 suggest due to greater household sizes. A single wage of an African worker must support more household members, resulting in a higher level of poverty. The declining trend within the African population in agricultural beneficiaries is an indication of the decreasing trend within employment, signifying a decrease in beneficiaries due to lower employment in the sector, and to some extent due to smaller household sizes.



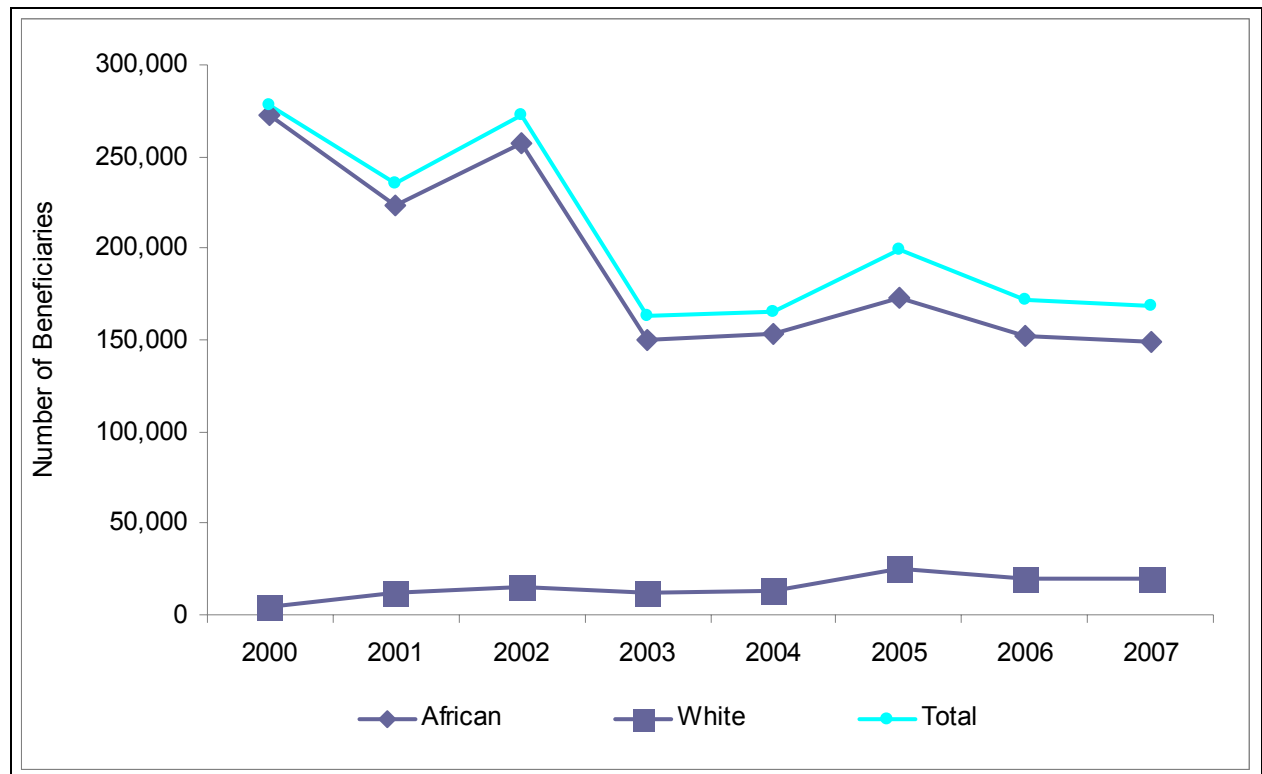
**Figure 23: Number of all beneficiaries from 2000 till 2007**



Source: Own calculation from Labour Force Survey 2000-2007

Taking incomes from other industries into consideration, Figure 24 indicates the number of beneficiaries in households that obtain more than half of their household income from agricultural activities. There were 168 235 beneficiaries in total in 2007, with the majority being African (148 628 in 2007).

**Figure 24: Number of beneficiaries in agricultural households with more than 50% income share**



Source: Own calculation from Labour Force Survey 2000-2007

In general, the total number of beneficiaries, in both reporting measures, declined from 2000 and is now at the lowest point.

## 5. Poverty indices of Mpumalanga agriculture

### 5.1. Theory

Poverty, as defined by the *Concise Oxford Dictionary*, “is the state of lacking adequate means to live comfortably and the want of things or needs indispensable to life (Govender, Kambaran, Patchett, Ruddle, Torr and Van Zyl 2007:118). A welfare indicator, usually either income or expenditure, is used to rank individuals or households.

Chambers (1988) claims that there are five dimensions of poverty namely:

1. ‘Poverty proper’ where a lack of adequate income or assets for generation of income are identified;
2. Physical weakness as a result of under-nutrition, disability or sickness;
3. Isolation, physical or social, because of location, access to goods and services;

4. Vulnerability to become more poor and risk to crisis;
5. Powerlessness within the existing economic, political, cultural and social sphere.

The first step regarding poverty analysis is to decide on a poverty (living) indicator to use, example income or expenditure, and which poverty dimension will be analysed. Next is to decide on a poverty line which separates the poor and non-poor. Woolard and Leibbrandt (1999:8) state that the point where the line is drawn is usually arbitrary. This can mean that one individual might be classified as poor; while another earning R1 more is qualified as not poor. But a poverty line needs to be drawn to analyse the nature of poverty.

Analysis of the poor usually entails measures of poverty. One of the most common measures to use is the Foster-Greer-Thorbecke class of poverty. The measure can be written as

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left[ \frac{z - y_i}{z} \right]^{\alpha} \quad \text{for } \alpha \geq 0 \quad (5)$$

Where  $z$  represents the poverty line,  $y_i$  is the living indicator (i.e. income or expenditure) and  $\alpha$  symbolizes the aversion to poverty parameter. By adjusting  $\alpha$ , different classes of poverty can be identified. The headcount ratio, which gives the number of people living under the poverty line, is represented by  $\alpha=0$ . Adjusting the value to 1, a poverty gap index is achieved, which indicates the depth of poverty; thus the average inequality amongst the poor. The last index is  $\alpha=2$ , which illustrates the severity of poverty. This option gives the most poor a higher value (weight), and therefore the severity of the poverty gap can be observed. All three measures are expressed in percentage terms, hence  $\alpha=0$  will offer the percentage number of people living under the poverty line,  $\alpha=1$  will provide the inequality for those living under the poverty line, thus between the most poor and the least poor in percentage terms where 1 is equal to perfect inequality and 0 perfect equality. The last measure,  $\alpha=2$ , can be analysed the same as the previous measure, but the poorest weights more.

## 5.2. Poverty indicators from Labour Force Surveys

The living indicator used in the analysis of the Labour Force Survey data is that of per capita household earnings. These earnings were adjusted with consumer price index to achieve real earnings (in 2000 prices) over the years. The data was adjusted for per adult equivalent as proposed by die OECD equivalence scale where household size is equivalent to:

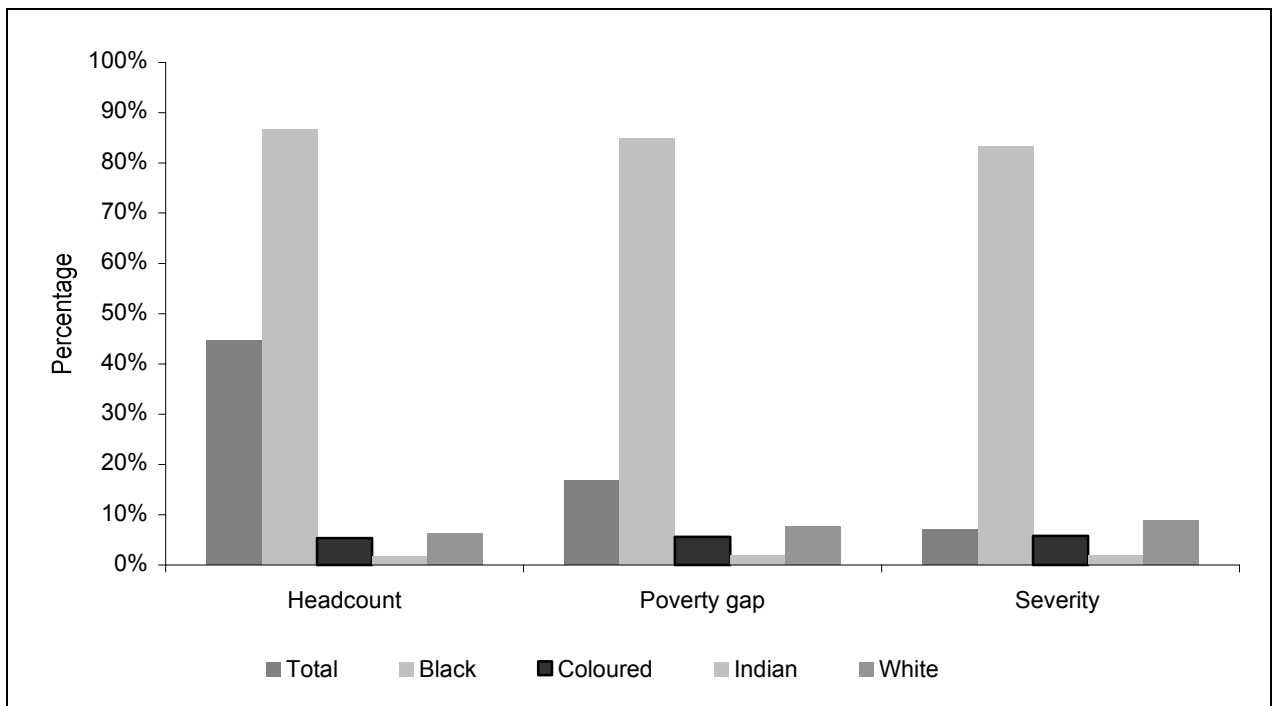
$$E = 1 + 0.5(A) + 0.3(K) \quad (6)$$

Where a value of 1 is assigned to the first household member, 0.5 to additional adult members (A) and 0.3 to each child under the age of 15 (K).

A poverty line of R 322 per adult equivalent per household per month in 2000 basis year terms was used; this poverty line was decided on by the South African Government as the ‘official’ poverty line. The advantage is that a ‘national’ poverty line was decided on, but to its disadvantage it cannot be compared with international standards.

The Foster-Greer-Thorbecke class of poverty indices were used, and the following figures illustrate the results obtained in 2007. The total rate for respectively South Africa, Mpumalanga and the agricultural households in Mpumalanga is given together with each population group’s share towards the total.

**Figure 25: Poverty rate for South Africa and shares of population groups**



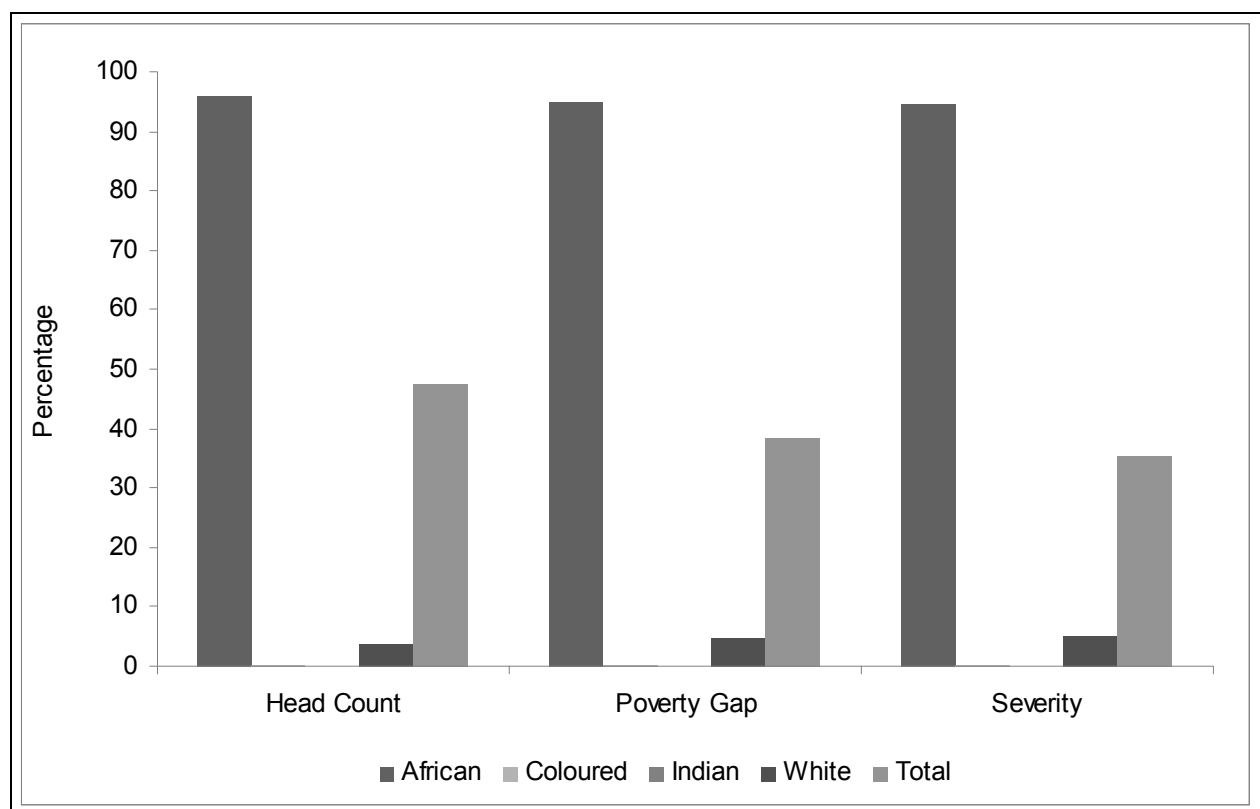
Source: Own calculation from Labour Force Survey 2007

In Figure 25 the total headcount ratio, poverty gap ratio and severity rate of individuals in South Africa are 44.57%, 16.88% and 7.15%. The African population has the highest share in the total for all classes of poverty (86.63%, 84.81% and 83.3%) and the Indians the lowest (1.7%, 1.8% and 1.9%). Thus 86.63% of the poor population is African and 1.7% is Indian according to the headcount ratio. This translates into 21 million people in households earning less than R322 per month per adult equivalent (44.57% of 47 million) with 18 million that are African and 361 164 of the Indian population group. The poverty gap of 16.88% gives an indication of the average inequality between those living below the poverty line, while the

severity index of 7.15% gives and indicates the severity of poverty by given a greater weight to the most poor.

Looking at the poverty rate of Mpumalanga in Figure 26, a similar pattern can be identified. The African population are dominating the poverty measures. The Whites are ranked the second with a share of 3.84%, 4.65% and 5.04% correspondingly. The total poverty rates for the different measures in Mpumalanga are respectively 47.64%, 38.59% and 35.61%. This corresponds to just over 1.5 million people that are living below the poverty line according to headcount ratio.

**Figure 26: Poverty rate of Mpumalanga and shares of population groups**

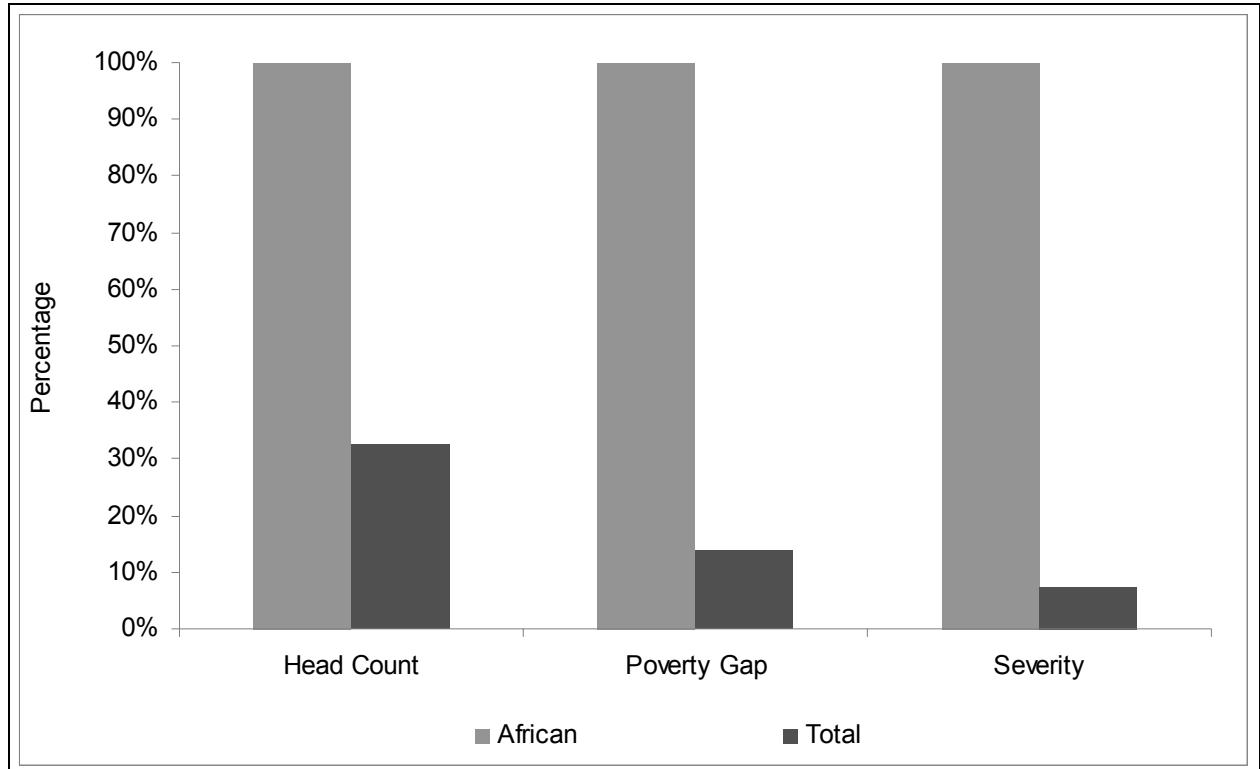


Source: Own calculation from Labour Force Survey 2007

Mpumalanga’s agricultural households (more than 50% of income from agricultural activities) were also analysed in Figure 27, and the results shows a slightly different pattern as that of the rest of Mpumalanga. Total poverty rates are 32.56%, 13.75% and 7.49% for respective measures. This translates into around 54 780 individuals that are living below the poverty line. The highest share of these is the African population with a 100% share across all three measurements as there were no Coloured, Indian and White households recorded as living below the poverty line. It must be kept in mind that poverty profiles can be lower due to the subsample used. The subsample only takes households which earn between 50 and 100 percent of their income from agricultural activities. Thus all households with zero to 50 percent

incomes from agriculture are not regarded, excluding the households of lower income agricultural workers that contribute less than 50% to the household income.

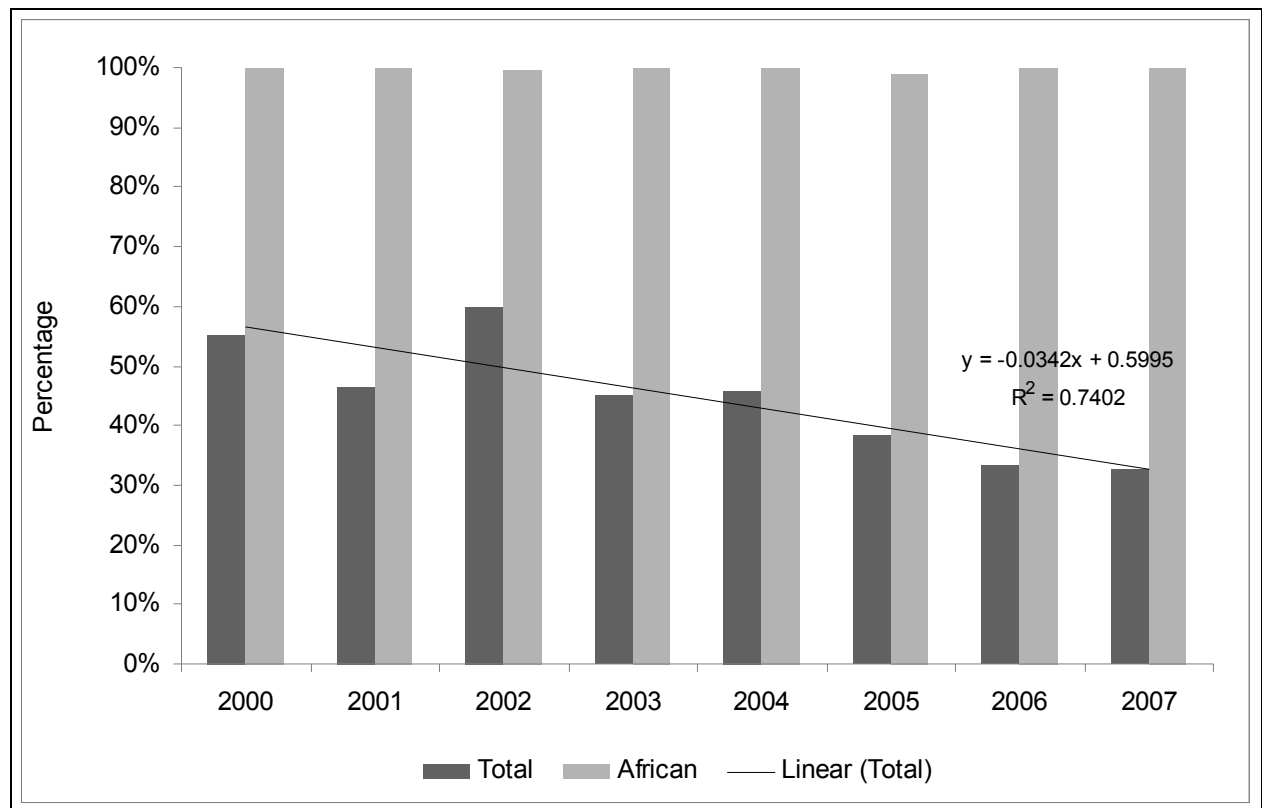
**Figure 27: Poverty rate for agricultural households of Mpumalanga and shares of population groups**



Source: Own calculation from Labour Force Survey 2007

Investigating the trend over years (2000 till 2007) of the agricultural households of Mpumalanga, the subsequent figures were obtained:

**Figure 28: Poverty headcount by year for Mpumalanga agricultural households**

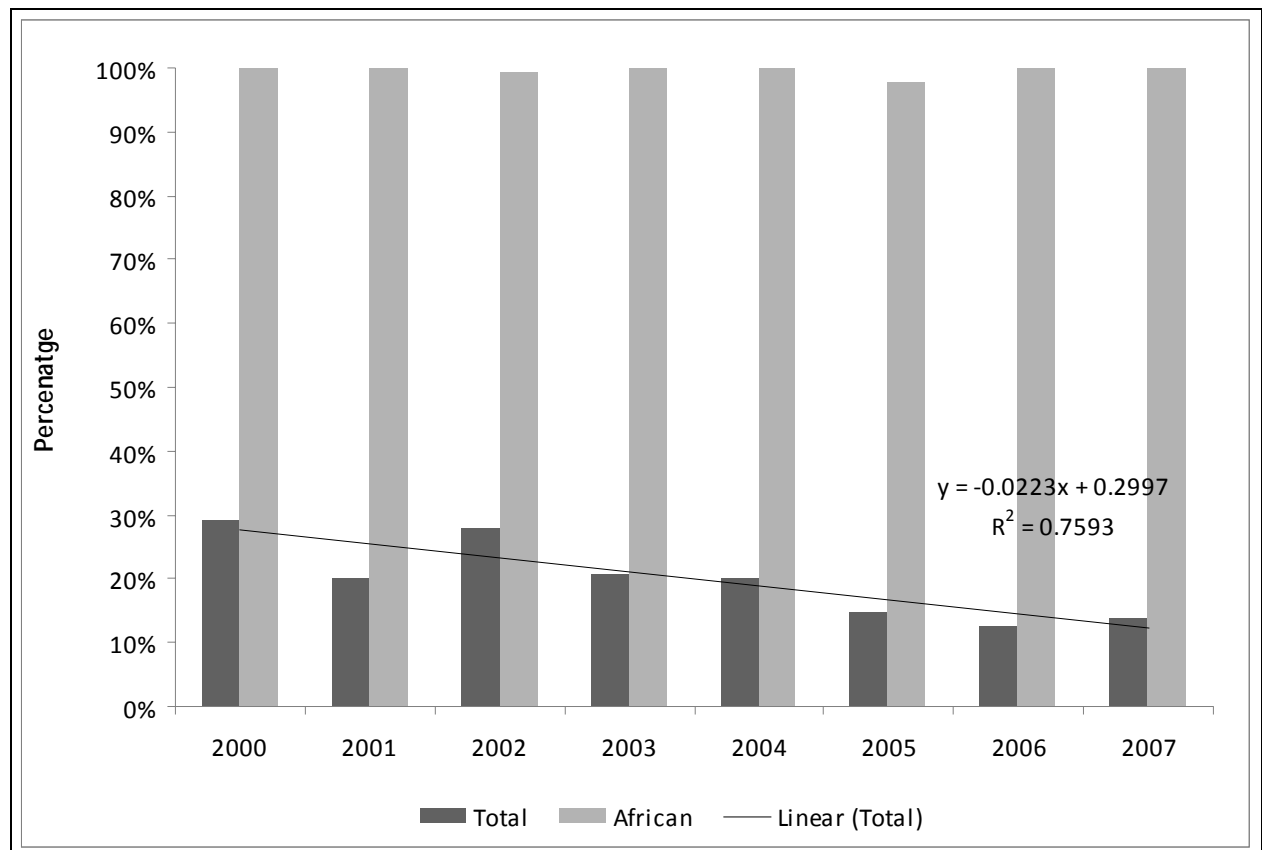


Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 28) indicates the headcount ratio of individuals in Mpumalanga’s agricultural households and the share of African individuals towards the total headcount ratio. It is clear that African individuals contribute the most to overall poverty dominating each year. There is also a slight increase and then decrease in total poverty, as the trend line indicates, ranging from a poverty of 55.17% to a 32.57% over time.

The next figure (Figure 29) indicates the poverty gap ratio:

**Figure 29: Poverty gap by year for Mpumalanga agricultural households**

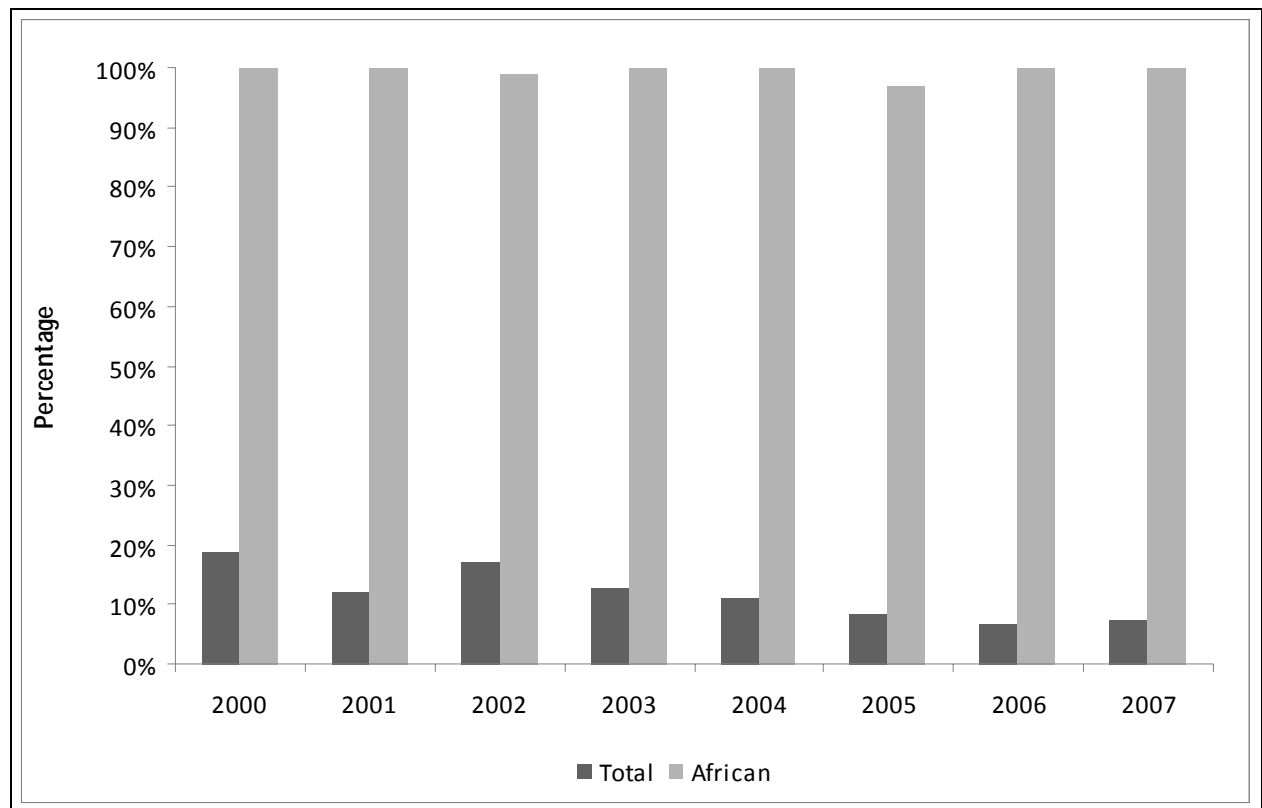


Source: Own calculation from Labour Force Survey 2000-2007

The poverty gap ratios over time indicate that individuals in African households have the highest inequality amongst the poor in the province with the highest share in the poverty gap measurement. The total poverty gap increased until 2002 (28.01%) after which it decreased up to 2006, but increased again to 13.75% in 2007. A decrease signifies a decrease of inequality within the households living below the poverty line. The African households living below R322 per month per adult equivalent are thus more equal resulting in less extreme poverty. The gap between the extremely poor and those living just below the poverty line has decreased, but is starting to increase again.



**Figure 30: The severity of poverty by year for Mpumalanga agricultural households**



Source: Own calculation from Labour Force Survey 2000-2007

Again, a similar trend can be seen in Figure 30 as the previous figure with increases and decreases. Total severity of poverty has decreased since 2000 and African individuals are the dominant population group in this poverty measure. The low poverty gap and severity of poverty in Mpumalanga’s agricultural households can be connected with inequality in the next section. It will be stated that within group inequality is relatively low compared to between group inequalities. The inequality of poverty (poverty gap) and the severity of poverty will be lower, because there is less variance between poor individuals’ income levels. Figures 28 to 30 indicate that poverty reduction on all measures occurred through time within the agricultural households of Mpumalanga.

**6. Inequality within the Province**

**6.1. Theory**

Inequality is regularly measured with regards to income, and represents the distribution of income in a population or population sub-group. The poverty gap described in Section 6 is an example of such an inequality measure within a sub-group, in this case between the poor populations. There are various ways to measure income inequality, although most common is to provide summary statistics of the income distribution (Govender et al. 2007:127). Therefore the

share of poorest 10% to the total population’s income can be measured. Another measure is that of the Lorenz curve and Gini coefficient. The Lorenz curve plots the cumulative percentage of households against the cumulative percentage of incomes, creating a cumulative density function. The Gini coefficient ranges from 0 to 1, with 1 being perfectly unequal and 0 perfectly equal. The Gini coefficient is derived from the Lorenz curve. The area between the Lorenz curve and the hypothetical perfect equality line divided by the area underneath the line reflects the Gini coefficient. Another measure is the Theil index which was developed by the econometrician Henri Theil, which can be written as follows:

$$T_T = \frac{1}{n} \sum_{i=1}^N \left( \frac{x_i}{\bar{x}} * \ln \frac{x_i}{\bar{x}} \right) \tag{7}$$

With  $x_i$  the income of the  $i$ th person,  $N$  the number of people and  $\bar{x} = \frac{1}{n} \sum_{i=1}^N x_i$  the mean income. The first part in the brackets can be seen as the individual’s share of aggregate income, and the second part is the individual’s income relative to the mean. The Theil index is equal to 0 if there is no income inequality (thus 50:50 distribution), equal to 0.5 if the distribution is 74:26, equal to 1 if it is distributed 82:18, equal to 2 if the distribution is 92:8, and 4 if it is distributed 98:2 (Wikipedia). Thus the higher the Theil, the skewer the income distribution.

6.2. Inequality measures from Labour Force Surveys

Investigating the 2007, the following table represents the Gini and Theil inequality measurements by race for South Africa, Mpumalanga and the agricultural households of Mpumalanga. Per capita household earnings are used as reference throughout this section:

**Table 13 : Gini and Theil measures of inequality for 2007**

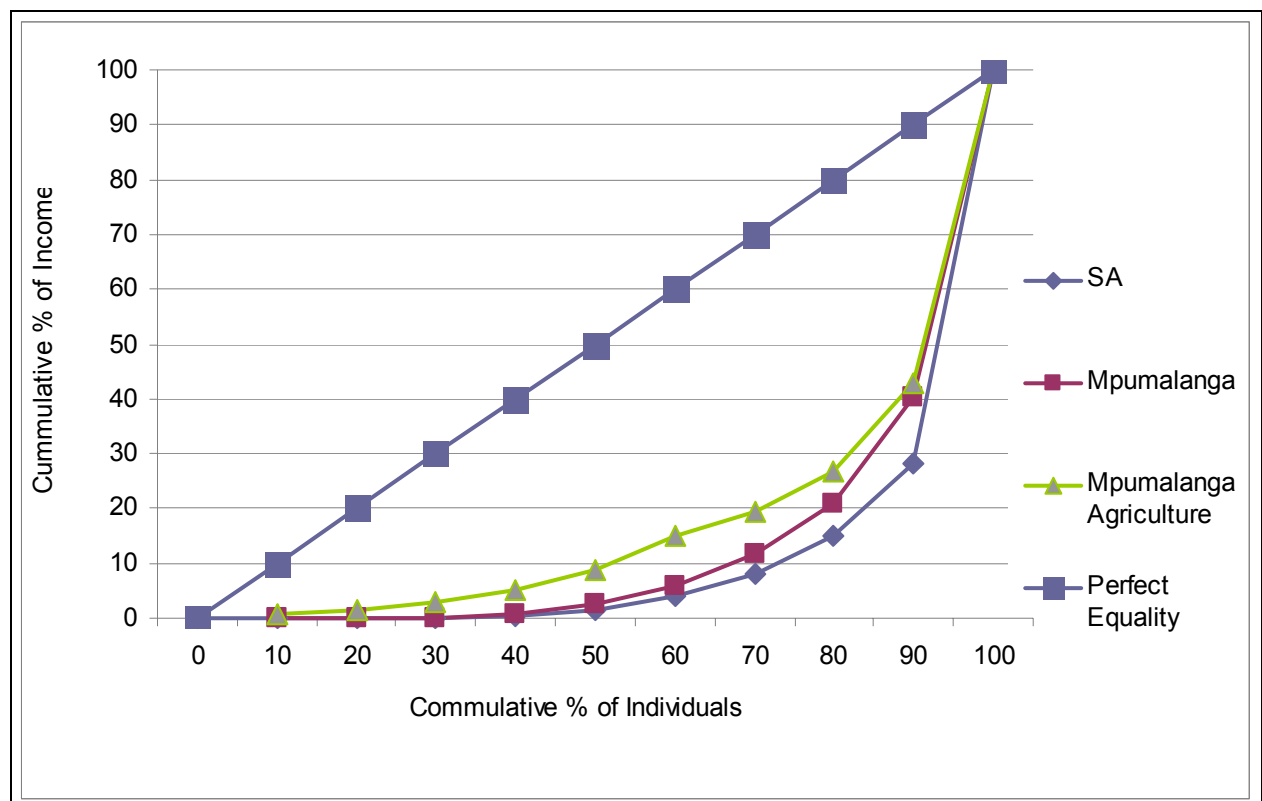
	South Africa		Mpumalanga		Mpumalanga Agriculture	
	Gini	Theil	Gini	Theil	Gini	Theil
<b>African</b>	0.79	3.19	0.61	0.69	0.5	0.5
<b>Coloured</b>	0.55	0.56	0.53	0.49	0	0
<b>Indian</b>	0.57	0.6	0.53	0.52		
<b>White</b>	0.47	0.4	0.68	0.98	0.35	0.25
<b>Total</b>	0.75	2.25	0.66	0.85	0.67	0.97

Source: Own calculation from Labour Force Survey 2007

In Table 13, the African population with a Gini of 0.79 and Theil of 3.19 have the highest inequality in South Africa. The lowest in the White subgroup with 0.47 and 0.4 respectively, and the average for South Africa is 0.75 and 2.25. In Mpumalanga, the Whites dominate but in agriculture the Africans dominates. What is interesting to note is the low inequality within race in the agricultural households of Mpumalanga, but the total inequality is high. This indicates that between races inequality is high. The average for Mpumalanga is also very high, signifying that there is high inequality within the province.

Looking at the Lorenz curve in Figure 31, the line for Mpumalanga agricultural households lies the closest to the equity line, followed by the lines for Mpumalanga and then for South Africa. This indicates that the inequality in Mpumalanga is less than the national average, and that inequality amongst Mpumalanga agricultural households is less than the average for Mpumalanga as an entire province.

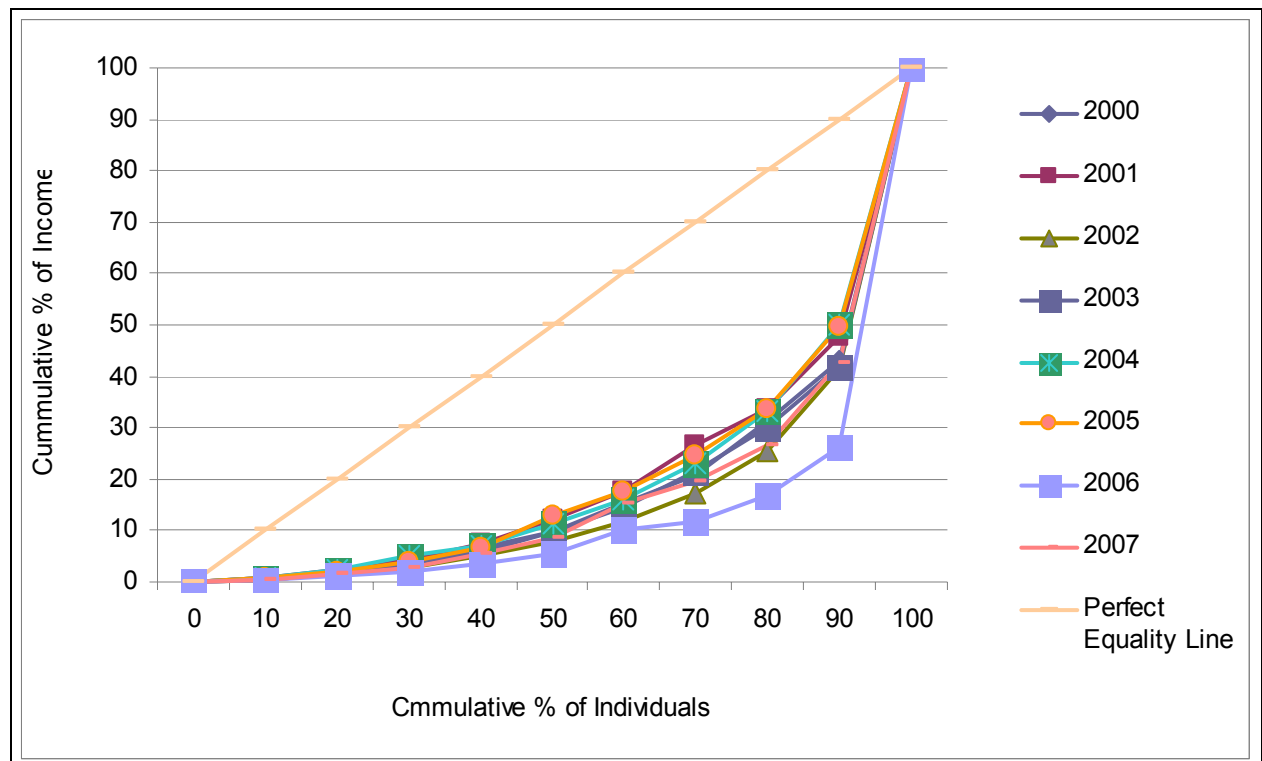
**Figure 31: Lorenz curve for individuals in South Africa, Mpumalanga and Mpumalanga agricultural households in 2007**



Source: Own calculation from Labour Force Survey 2007

The following 2 figures represent the Lorenz curve and Gini coefficients for Mpumalanga agricultural households from 2000 till 2007. It can be observed in Figure 32 that inequality was the highest in 2006.

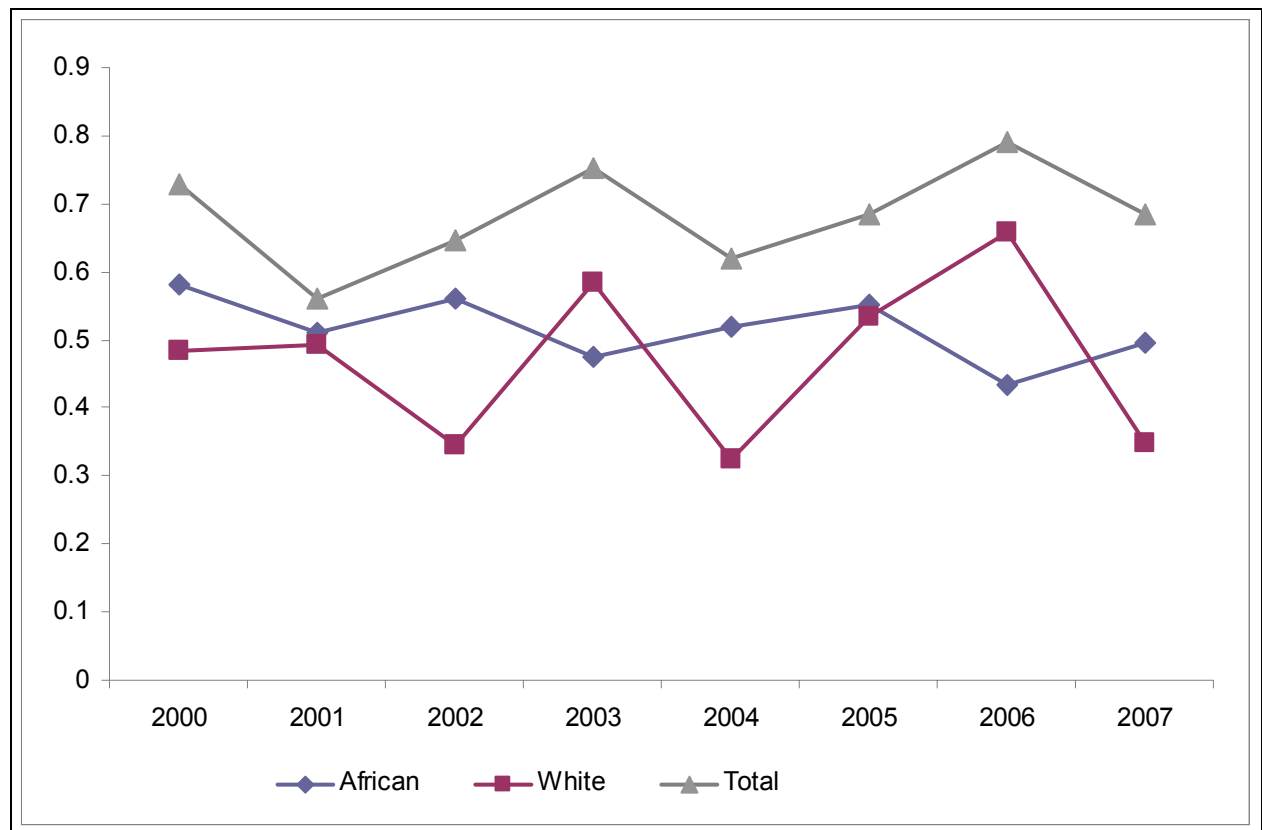
**Figure 32: Lorenz curve for Mpumalanga agricultural households by year**



Source: Own calculation from Labour Force Survey 2000-2007

In Figure 33, the Gini coefficients of Africans and Whites decreased from 0.58 to 0.50 and from 0.48 to 0.35 respectively. For the entire period the total inequality is higher than the inequality for the two race groups, indicating that inequality is more pronounced between race groups than within race groups. Inequality within Mpumalanga agricultural work-force has not decreased since 2000, which indicates that there is still a large gap between the rich and poor within the sector.

**Figure 33: Gini coefficient for Mpumalanga agricultural households by year**



Source: Own calculation from Labour Force Survey 2000-2007

## 7. Conclusion

Mpumalanga agricultural sector is a vital player in the economy of Mpumalanga and therefore this paper analysed the trends associated with the sector with regards to demographics, poverty, income and inequality. The Labour Force Survey provided the necessary data to compute the required results, ranging from the year 2000 till 2007. The paper indicated that the African population is dominant in this sector as it is in South Africa. The total number of individuals in respective economic segments, i.e. South Africa, Mpumalanga and Mpumalanga agriculture are also provided together with statistics such as age structures and employment figures.

The skills level of the agricultural sector is worrisome, and the impact of low skill levels reflects in the income profiles. Incomes are lower across the board except for the White populations'. Unemployment rates are being driven by the high unemployment within the African population in both South Africa and Mpumalanga. This reflects in the high share of the Africans in the total poverty rate throughout the country. Share of total poverty levels are extremely high amongst the Africans in the agricultural sector of Mpumalanga, reflecting the need for poverty alleviation. When using the poverty line of R322 per capita per adult equivalent

as measure, poverty levels have been decreasing since 2000 till 2007, but have shown slight increases during 2007.

Income inequality paints a rather grim picture indicating that inequality has not decreased over the past seven years for the agricultural sector. The sector is also characterised by more between-race inequality and not so much by within-race inequality as the rest of the country.

This report provides an in-depth look at the agricultural sector of Mpumalanga. Policy decisions and redistribution policies at provincial level need to take these data into account to promote the economic growth of Mpumalanga and also to enhance the living standard of the people of Mpumalanga.

## 8. References

- Chambers, R. (1988). Poverty in India: Concepts, Research and Reality. Discussion Paper 241. Institute of Development Studies, University of Sussex.
- Daniels, R. and Rospabé, S. (2005). Estimating an Earnings Function from Coarsened Data by an Interval Censored Regression Procedure. Development Policy Research Unit Working Paper 05/91.
- Demarcation Board (2008). Available online at [www.demarcation.org.za](http://www.demarcation.org.za).
- Department of Labour (2008). National Scarce Skills List 2007. Available online at: [www.labour.gov.za](http://www.labour.gov.za).
- Govender, P; Kambaran, N; Patchett, N; Ruddle, A; Torr, G; Van Zyl, N. (2007). Poverty and Inequality in South Africa and the World. South African Actuarial Journal. Vol.7 pp.117-160.
- Provide (2005). A profile of the Western Cape Province: Demographics, poverty, Inequality and unemployment. Background Paper 2005:1(1). Department of Agriculture: Western Cape.
- Schoier, G. (2008). On partial nonresponse situations: the hot deck imputation method. Retrieved 17 July 2008 from: [www.stat.fi/isi99/proceedings/arkisto/varasto/scho0502](http://www.stat.fi/isi99/proceedings/arkisto/varasto/scho0502).
- Statistics South Africa (2000). Labour Force Survey, March 2000. Pretoria, Statistics South Africa.
- Statistics South Africa (2001). Labour Force Survey, March 2001. Pretoria, Statistics South Africa.
- Statistics South Africa (2002). Labour Force Survey, March 2002. Pretoria, Statistics South Africa.
- Statistics South Africa (2003). Labour Force Survey, March 2003. Pretoria, Statistics South Africa.
- Statistics South Africa (2004). Labour Force Survey, March 2004. Pretoria, Statistics South Africa.
- Statistics South Africa (2005). Labour Force Survey, March 2005. Pretoria, Statistics South Africa.
- Statistics South Africa (2006). Labour Force Survey, March 2006. Pretoria, Statistics South Africa.
- Statistics South Africa (2007a). Labour Force Survey, March 2007. Pretoria, Statistics South Africa.
- Statistics South Africa (2007b). Gross Domestic Product, Third Quarter 2007. Statistical Release P0441. Pretoria, Statistics South Africa.
- Von Fintel, D. (2006). Earnings bracket obstacles in household surveys-How sharp are the tools in the shed? Stellenbosch Economic Working Paper: 08/06.
- Wikipedia (2008). Onlive available at [www.wikipedia.org](http://www.wikipedia.org).

Woolard, I. and Leibrandt, M. (1999). Measuring Poverty in South Africa. Development Policy Research Unit. Working Paper No.99/33.

Work-force definition. Online available at [www.thefreedictionary.com](http://www.thefreedictionary.com) ; [www.patana.ac.th](http://www.patana.ac.th) ; [www.allwords.com](http://www.allwords.com).

## **Background Papers in this Series**

<b>Number</b>	<b>Title</b>	<b>Date</b>
BP2003: 1	Multivariate Statistical Techniques	September 2003
BP2003: 2	Household Expenditure Patterns in South Africa – 1995	September 2003
BP2003: 3	Demographics of South African Households – 1995	September 2003
BP2003: 4	Social Accounting Matrices	September 2003
BP2003: 5	Functional forms used in CGE models: Modelling production and commodity flows	September 2003
BP2005: 1, Vol. 1 – 9	Provincial Profiles: Demographics, poverty, inequality and unemployment (One volume for each of the nine provinces )	August 2005
BP2006: 1	The Economic Contribution of Home Production for Home Consumption in South African Agriculture	November 2006
BP2009: 1, Vol. 1 – 9	Provincial Profiles 2000 - 2007: Demographics, poverty, inequality and unemployment (One volume for each of the nine provinces )	February 2009

## **Other PROVIDE Publications**

Technical Paper Series  
Working Paper Series  
Research Reports