Background Paper Series

PROVIDE PROJECT

The Provincial Decision-making Enabling Project

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

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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.

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A Profile of the Eastern Cape Province: Demographics, Poverty, Income, Inequality and Unemployment from 2000 till 2007[1]

Abstract

The Eastern Cape agricultural sector is a dynamic and livelihood sustainable sector. Approximately 1.7% of the Eastern Cape value added gross domestic product comes through agriculture and 2.9% of the population in the Eastern Cape 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 dominated by Africans and that employment in the Eastern Cape agricultural sector is on a decreasing trend, despite the increase between 2004 and 2006. 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. Poverty is extremely high for African workers in the Eastern Cape agricultural sector but has decreased since 2000. One of the principal concerns is that of inequality. It shows no improvement since 2000, actually a widening in the inequality gap, with a high in-between race inequality and lower within race inequality in the Eastern Cape agricultural sector.

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

[1] The main authors of this paper are Elné Jacobs and Cecilia Punt, Western Cape Department of Agriculture.

Table of Contents

List of Figures

List of Tables

1. Introduction

The Eastern Cape is home to about 7 million individuals and about 204 000 are working in the agricultural sector (Statistics South Africa, 2007a). Therefore 2.9% of the Eastern Cape population is working in the agricultural sector, but it contributed 1.7% through value added for the economy in 2006 (Statistics South Africa, 2007b). This shows that the agricultural sector is an important sector in the Eastern Cape and thorough analysis is needed to identify areas of need to better the sector.

This paper investigates the Eastern Cape 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 the Eastern Cape, together with the labour force profiles for South Africa, the Eastern Cape and the Eastern Cape agricultural sector. Unemployment then will be discussed as well as employment statistics of the Eastern Cape 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 the Eastern Cape agricultural households are compared with the Eastern Cape 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[2]. 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.

[2] See Metadata in Labour Force Survey reports. Available online at 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 the Eastern Cape there are 86 entries for White individuals living under the poverty line. On an average only 17% of that information is available, leaving only 14 entries. In reality, there are only 8 entries left which is too small to make any significant derivation. In the Eastern Cape, 4 743 entries were made in the African population group living under the poverty line. Of this sample 81% did not respond, leaving 863 entries. Although 863 entries is still a small sample size, a better analysis can be done. This trend of small White and Indian samples continues throughout all provinces, where the African and Coloured populations have a bigger sample size to do better analysis with.

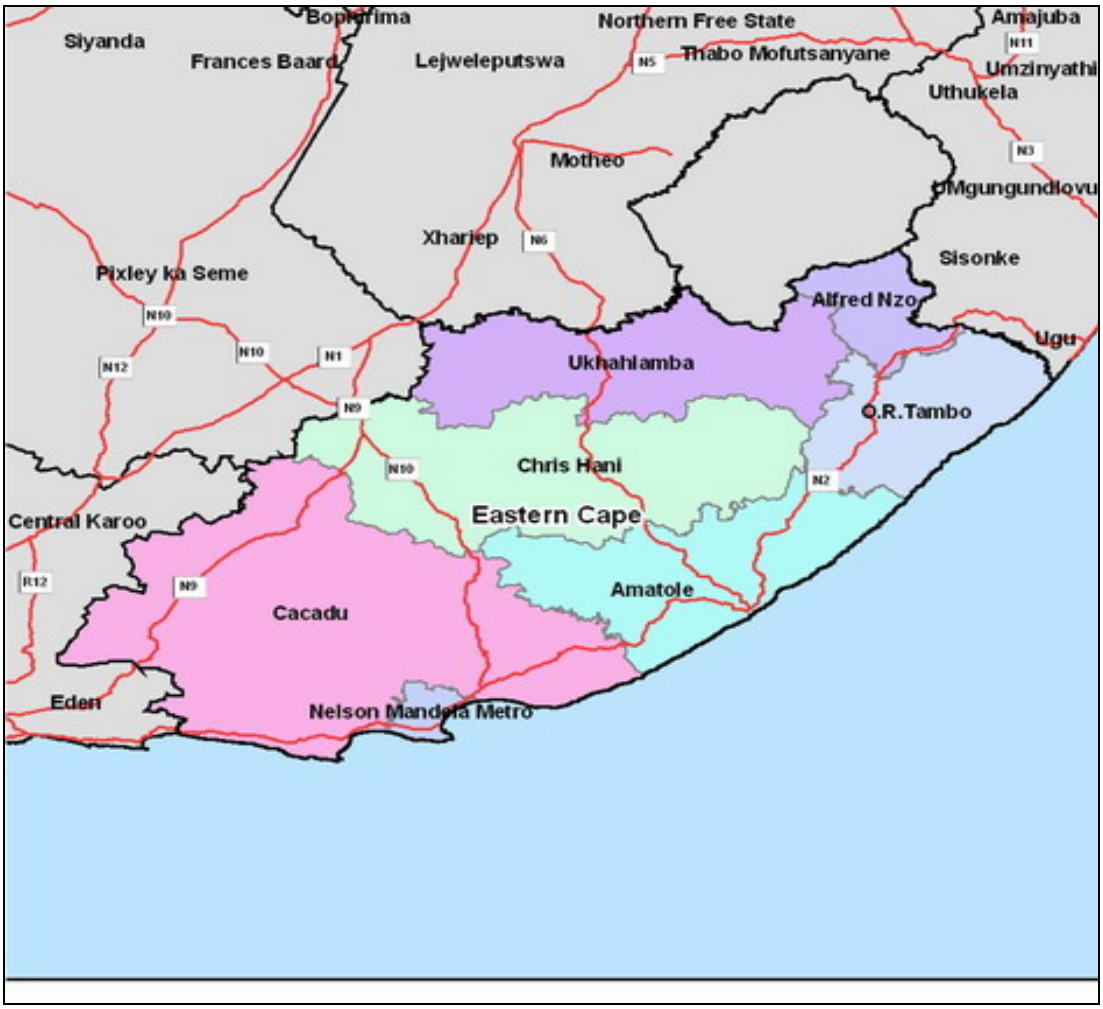
For the purpose of this paper, non-response was disregarded in income profiles, but treated as a zero in household income calculations. In the poverty profiles, per adult equivalent household income is used and thus missing values are also treated as zero.

This paper focuses on the Eastern Cape agricultural households, but does compare certain statistics with the non-agricultural households in the Eastern Cape 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 the Eastern Cape and its districts. There are seven districts within the Province

namely the Cacadu, Amatole, Chris Hani, Ukhahlamba, O.R. Tambo, Alfred Nzo and Port Elizabeth. Figure 1 reflects this:

Figure 1: Eastern Cape districts map



Source: Demarcation Board (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 Eastern Cape by race, together with their shares of the population in 2007.

Table 1: Racial Composition of South Africa and Eastern Cape in 2007

Population Group	South Africa	Share	Eastern Cape	Share
	Number	%	Number	%
African	37,887,594	79.42	6,096,777	86.34
Coloured	4,223,511	8.85	532,268	7.54
Indian	1,168,672	2.45	20,589	0.29
White	4,348,366	9.11	394,322	5.58
Other	8,764	0.17	17,732	0.25
Total	47,706,907	100	7,061,688	100.00

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%) and in the Eastern Cape (86.34%). The total population of South Africa is 47.7 million, while the Eastern Cape has 7 million residents.

Investigating the racial composition of the six districts, the following information is obtained for 2007. Table 2 indicates O.R. Tambo has the largest share of people in the Eastern Cape, and also the largest share of the African population group resides in O.R. Tambo. The Ukhahlamba district is home to only 4.64% of residents of the Eastern Cape.

Table 2: Racial Composition of Eastern Cape districts in 2007

District	Population Group				
	African	Coloured	Indian	White	Total
Cacadu	189,125	161,610	2,363	37,216	390,313
Share %	3.10	30.36	11.48	9.44	5.53
Amatole	1,668,106	32,596	4,754	92,424	1,797,881
Share %	27.36	6.12	23.09	23.44	25.46
Chris Hani	801,525	43,274	1,240	23,255	870,651
Share %	13.15	8.13	6.02	5.90	12.33
Ukhahlamba	316,558	1,291	126	9,722	327,697
Share %	5.19	0.24	0.61	2.47	4.64
O.R.Tambo	1,938,691	2,557	4,575	7,020	1,954,999
Share %	31.80	0.48	22.22	1.78	27.68
Alfred Nzo	579,631	1,089			580,720
Share %	9.51	0.20			8.22
Port Elizabeth	603,141	289,851	7,531	224,683	1,139,427

District	Population Group				
	African	Coloured	Indian	White	Total
Share %	9.89	54.46	36.58	56.98	16.14
Total	6,096,777	532,268	20,589	394,321	7,061,688

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 Eastern Cape 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 the Eastern Cape 2007

Population Group	Agricultural		Non-Agricultural		Total	
	Number	Share	Number	Share	Number	Share
African	57,347	81.24	1,464,082	83.76	1,521,429	83.66
Coloured	6,704	9.50	128,500	7.35	135,203	7.43
White	6,204	8.79	144,275	8.25	150,479	8.27
Indian		0	6,012	0.34	6,012	0.33
Total	70,594*	100.00	1,747,888	100.00	1,818,482	100.00

Source: Own calculation from Labour Force Survey 2007

*See There are 4 782 households that depend on subsistence agriculture, but they also receive salary income from employment in agriculture and this salary income is more than 50% of the household income. While 6 255 households depend on subsistence agriculture, but their salary income from employment in agriculture is less than 50% of the household income.
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 racial composition of agricultural households in the Eastern Cape districts, the following table is obtained:

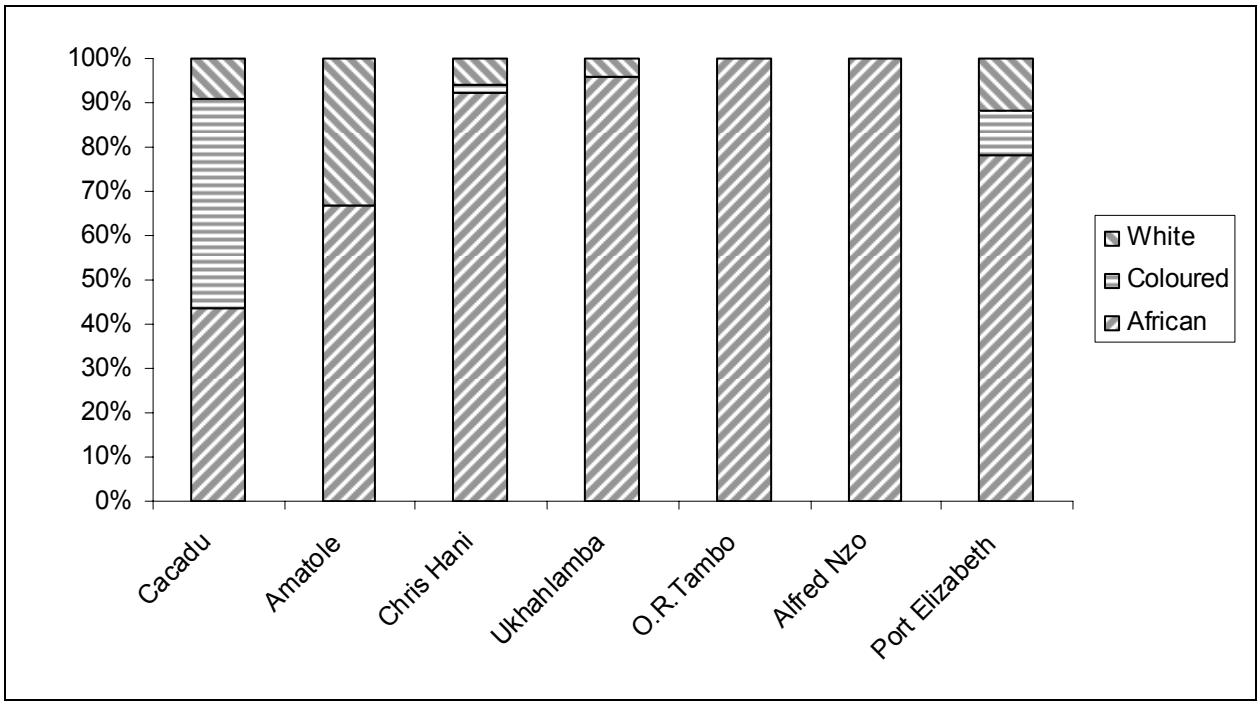
Table 4: Racial composition of agricultural households in the Eastern Cape districts

District	Population Group			
	African	Coloured	White	Total*
Cacadu	5,725	6,265	1,176	13,166
Share %	9.98	93.46	18.95	18.65
Amatole	7,460		3,715	11,175
Share %	13.01		59.88	15.83
Chris Hani	12,723	234	819	14,115
Share %	22.19	3.49	13.20	19.99
Ukhahlamba	6,148		253	6,401
Share %	10.72		4.08	9.07
O.R. Tambo	15,704			15,704
Share %	27.38			22.25
Alfred Nzo	7,979			7,979
Share %	13.91			11.30
Port Elizabeth	1,609	204	241	2,054
Share %	2.81	3.05	3.89	2.91
Total	57,347	6,704	6,204	70,594

*The Indian 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 70 000 households with agricultural workers, with the O.R. Tambo district having the biggest share and Port Elizabeth the smallest share. Compiling a stacked column chart for comparing race compositions, the results are as follows:

Figure 2: Agricultural households in the Eastern Cape districts



Source: Own calculation from Labour Force Survey 2007

Figure 2 indicates that the African households are prominent across all districts with the Coloured households appearing only in three of the districts (Cacadu, Chris Hani and Port Elizabeth). African households dominate in the Alfred Nzo district, where there are no other race households earning more than 50% of income from agriculture.

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. Both series are declining, with all households ending at 154 384 households and the more than 50% income households ending at 55 211[3] households. 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.

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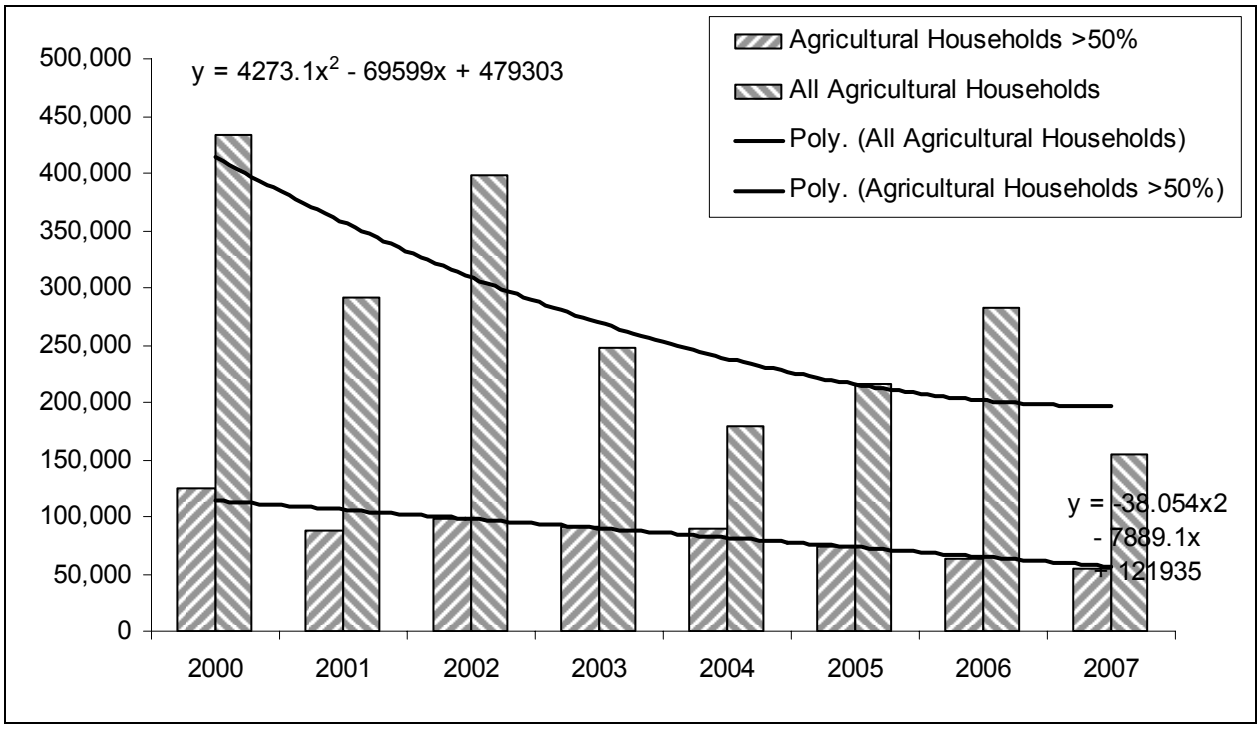
3 Comparing this to There are 4 782 households that depend on subsistence agriculture, but they also receive salary income from employment in agriculture and this salary income is more than 50% of the household income. While 6 255 households depend on subsistence agriculture, but their salary income from employment in agriculture is less than 50% of the household income.

Table 5, it corresponds to the total of the first two columns.

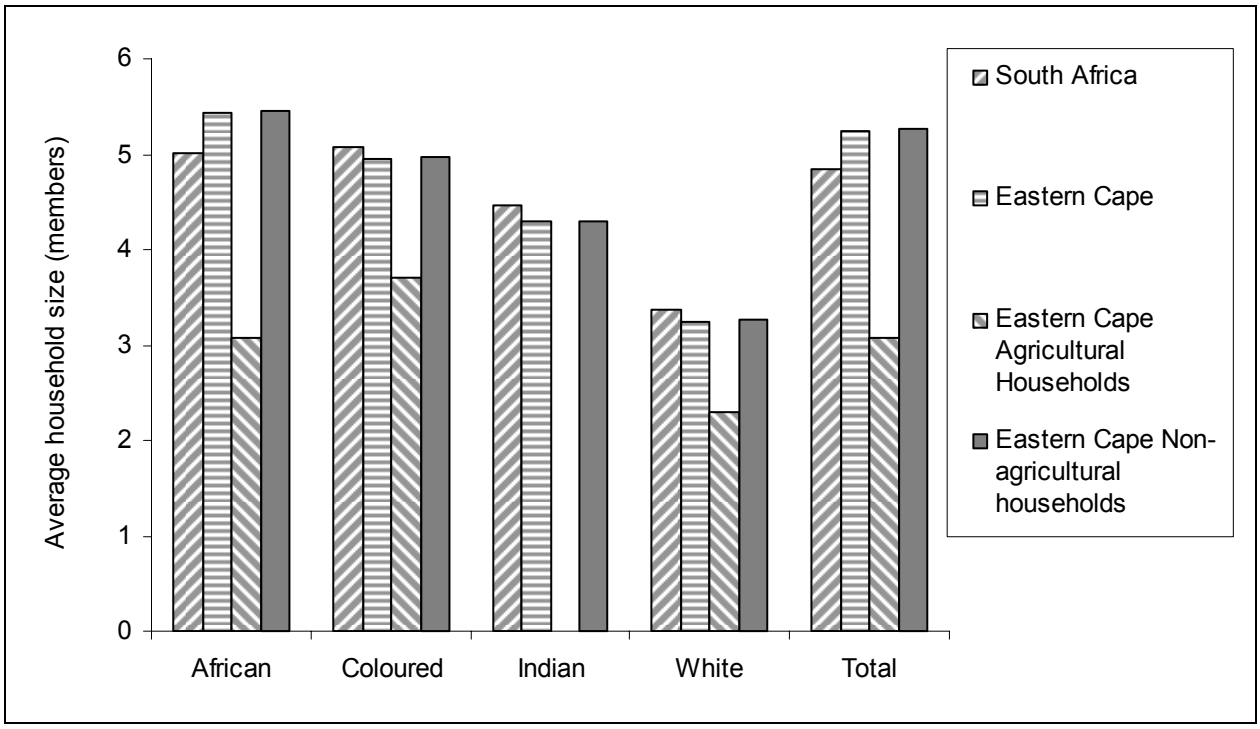
Figure 3: Agricultural households over time



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 Eastern Cape's households are greater than South Africa's for the total and for the African households, but smaller for the Coloured, Indian and White households. The non-agricultural household size of the Eastern Cape is across all races equivalent to the average household size in the Eastern Cape. With regards to the agricultural households, household size is considerably smaller (3.06) than that of the average in South Africa and the Eastern Cape (4.83 and 5.25).

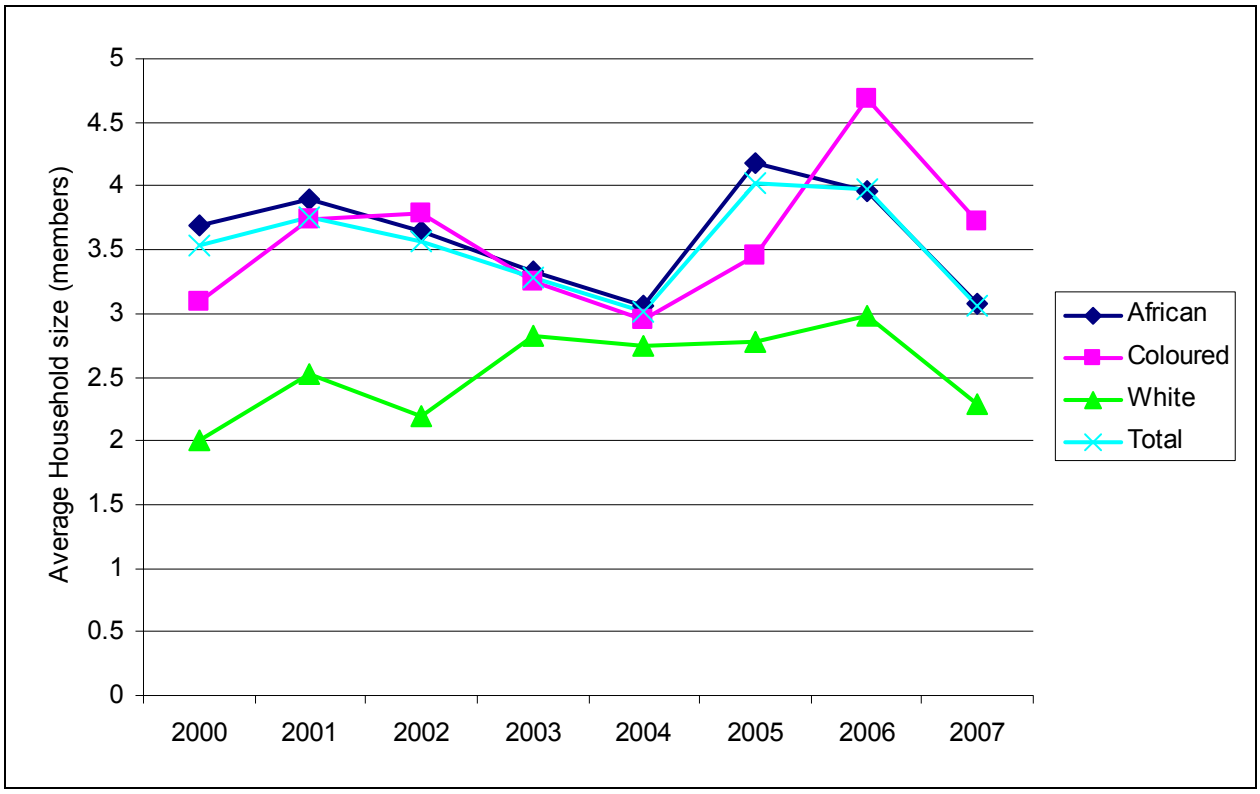
Figure 4: Household size by race for 2007



Source: Own calculation from Labour Force Survey 2007

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 Coloured population's households are the biggest while the White population have the least number of people within the household in 2007. The African population's size is on a decreasing trend, with some sharp incline in 2005. This might be due to measurement error, as it is not in accordance with the rest of the trend. The Coloured population follows the same trend as that of the African populations' household size.

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. There are 4 782 households that depend on subsistence agriculture, but they also receive salary income from employment in agriculture and this salary income is more than 50% of the household income. While 6 255 households depend on subsistence agriculture, but their salary income from employment in agriculture is less than 50% of the household income.

Table 5 indicates the number and share of agricultural households in the Eastern Cape 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 (78.66%) of employment in the agricultural sector, and this is consistent with the employment numbers stated earlier. There are only 9 039 households in the Eastern Cape that depend solely on subsistence farming for main source of food (5 335 households) or income (3 704 households) and 92.19% are African households, the rest are White households. 71.56% of agricultural households derive more than 50% of their household income from employment within the agricultural sector, while households involved with subsistence farming comprise 12.8%. There are 4 782 households that depend on subsistence agriculture, but they also

receive salary income from employment in agriculture and this salary income is more than 50% of the household income. While 6 255 households depend on subsistence agriculture, but their salary income from employment in agriculture is less than 50% of the household income.

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

	Only Employment and Occupation and >50% income		Subsistence farming and >50% income		Subsistence farming and <50% income		Subsistence farming only		Total	
Population group	**Number**	**Share**	**Number**	**Share**	**Number**	**Share**	**Number**	**Share**	**Number**	**Share**
African	39,740	78.66	3,478	72.74	5,796	92.66	8,333	92.19	57,347	81.24
Coloured	6,704	13.27							6,704	9.50
White	3,736	7.39	1,304	27.26	459	7.34	706	7.81	6,204	8.79
Total	50,519	100.00	4,782	100.00	6,255	100.00	9,039	100.00	70,594	100.00
Activity Share	71.56		6.77		8.86		12.80		100.00	

Source: Own calculation from Labour Force Survey 2007

3.2. South African and Eastern Cape 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 the Eastern Cape respectively:

Table 6: South African and Eastern Cape labour force in 2007

	South Africa				Eastern Cape			
	Broad		**Strict**		**Broad**		**Strict**	
	Number	**Share**	**Number**	**Share**	**Number**	**Share**	**Number**	**Share**
African	15,825,035	77.44	12,671,070	74.81	1,983,900	81.59	1,454,482	78.11
Coloured	1,977,240	9.68	1,746,798	10.31	239,418	9.85	205,016	11.01
Indian	513,937	2.52	473,161	2.79	11,803	0.49	10,891	0.58
White	2,117,799	10.3	2,047,715	12.09	196,363	8.08	191,789	10.30
Total	20,434,011	100	16,938,744	100	2,431,484	100.00	1,862,178	100.00

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 the Eastern Cape there were 2.4 million (1.8 million), the largest share taken by the African population with 81.59% (78.11%). 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 0.49% / 0.58% respectively).

3.3. Unemployment in South Africa and the Eastern Cape

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 the Eastern Cape by population group.

Table 7: Unemployment numbers for South Africa and Eastern Cape by population group in 2007

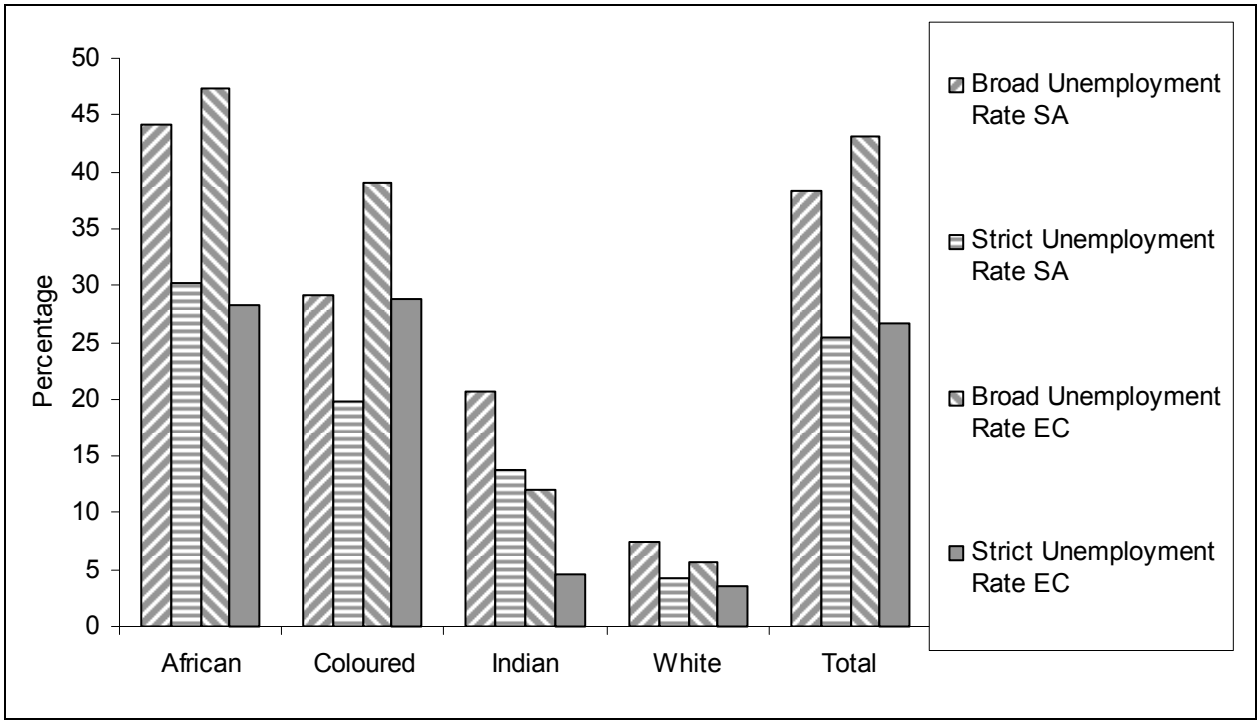
	South Africa		Eastern Cape	
	Broad	**Strict**	**Broad**	**Strict**
African	6,984,075	3,830,110	940,134	410,716
Coloured	576,177	345,735	93,586	59,184
Indian	105,855	65,079	1,415	503
White	158,206	88,122	11,210	26,141
Total	7,830,004	4,330,958	1,046,345	496,544

Source: Own calculation from Labour Force Survey 2007

Table 7 indicates that the leading population group in terms of unemployment is the African population across all definitions and for both South Africa and the Eastern Cape. The smallest unemployed group is that of the Indian population followed by the White subgroup across all definitions and for both South Africa and the Eastern Cape.

There is a clear trend with Africans having the highest unemployment rate in South Africa and the Eastern Cape for the broad definition and in South Africa for the strict definition (Figure 6). The rates for the broad definition are 44.13% for South African and 47.39% for the Eastern Cape. However in the Eastern Cape, Coloureds have the highest unemployment rate (28.87% compared to 28.24 % for Africans) and their unemployment rate is also higher than the national average for the strict definition (28.97% compared to 26.66%). Indians in the Eastern Cape have a lower unemployment rate than in South Africa. The White population in both South Africa (4.30% strict and 7.47% broad) and the Eastern Cape (3.46% strict and 5.71% broad) have generally lower unemployment rates than the other population groups and the total. The total unemployment rate for the official (strict) definition for South Africa and Eastern Cape respectively are 25.53% and 26.66%.

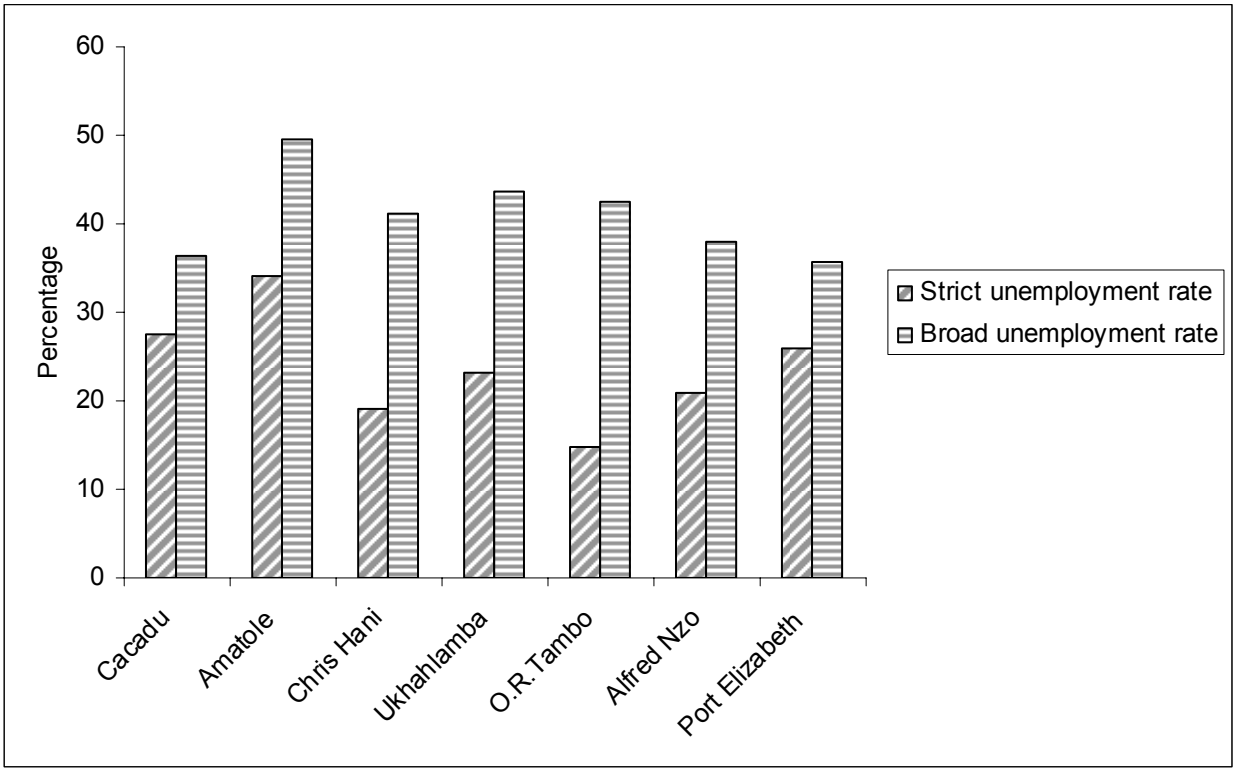
Figure 6: Unemployment rates for South Africa and Eastern Cape by population group



Source: Own calculation from Labour Force Survey 2007

Taking a closer look at the Eastern Cape, the following information regarding district level was obtained. In Figure 7, Amatole has the highest unemployment levels considering the broad and strict definitions (49.65% and 34% respectively). The lowest unemployment levels are in O.R. Tambo for the strict definition (14.86%) and Port Elizabeth for the broad definition (35.68%). The broad and strict rates show a different trend towards unemployment, with the only similarity that of the highest unemployment in Amatole and the fifth highest in Alfred Nzo.

Figure 7: Unemployment rates for districts in the Eastern Cape



Source: Own calculation from Labour Force Survey 2007

3.4. Work-force and employment in Eastern Cape 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 ; www.patana.ac.th ; www.allwords.com), although Wikipedia (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 the Eastern Cape for 2007 in the subsequent table:

Table 8: South African and Eastern Cape agricultural work-force

	South Africa		Eastern Cape	
	Number	**Share**	**Number**	**Share**
African	741,228	75.82	186,686	91.20
Coloured	143,172	14.65	10,147	4.96
Indian	5,458	0.56	0	0.00
White	87,728	8.97	7,865	3.84
Total	977,586	100.00	204,698	100.00

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 the Eastern Cape agricultural work-force. There are no Indians reported in the Eastern Cape agriculture work-force and only 0.56% nationally. The White population's share in both South Africa and the Eastern Cape are around 9% and 4% respectively. Decomposing the Eastern Cape to a district level by gender, the following is obtained:

Table 9: Agricultural work-force of the Eastern Cape districts by gender in 2007

	Male	Share (%)	Female	Share (%)	Total	Share(%)
Cacadu	13,759	66.07	7,067	33.93	20,826	100
Amatole	15,593	72.11	6,031	27.89	21,624	100
Chris Hani	25,542	64.87	13,829	35.13	39,371	100
Ukhahlamba	10,216	77.90	2,898	22.10	13,114	100
O.R.Tambo	40,420	55.48	32,433	44.52	72,853	100
Alfred Nzo	21,535	60.93	13,812	39.07	35,347	100
Port Elizabeth	1,853	86.22	296	13.78	2,150	100
Total	128,919	62.80	76,366	37.20	205,285	100

Source: Own calculation from Labour Force Survey 2007

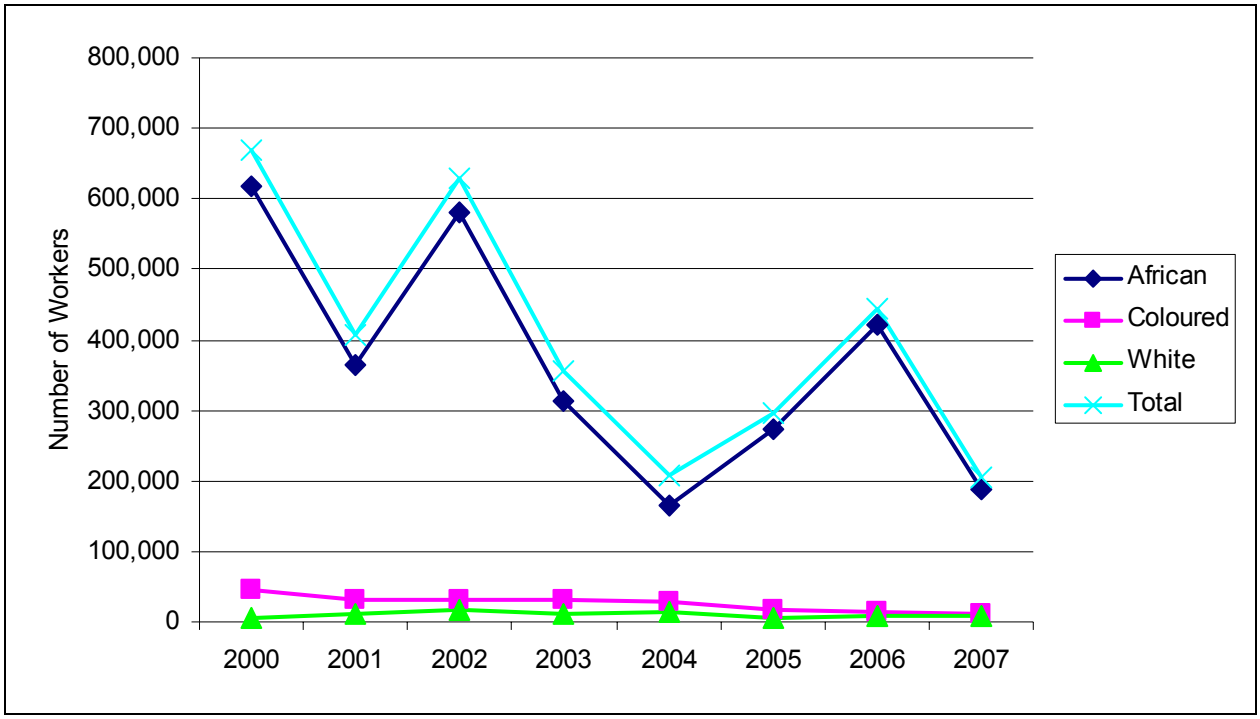
Table 9 illustrates that there are more males (62.8%) than females (37.2%) in the agricultural work-force in the Eastern Cape. Port Elizabeth is the most gender unequal with men comprising 86.22%% of the work-force. OR Tambo has the most equal agricultural work-force with 55.48% males and 44.52% females. O.R. Tambo has the most workers (72 853 workers) and Port Elizabeth the least (2 150 workers).

3.4.1. Employment over time

Employment for the agricultural sector has been in the limelight the past few years due to reports stating the steady decline within the sector. 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



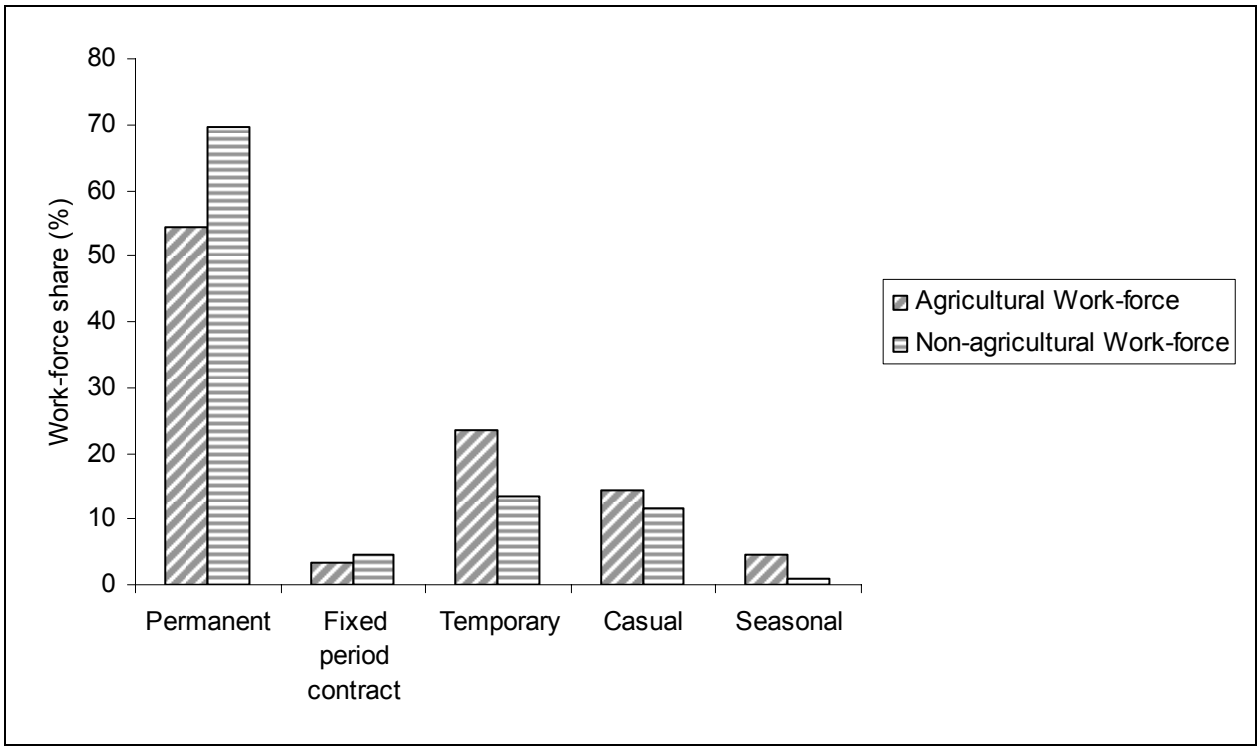
Source: Own calculation from Labour Force Survey 2000-2007

It can be observed in Figure 8 that there is definitively a decreasing trend in total employment. The African workers leaving the sector are mostly responsible for this occurrence as their trend follows a similar path as the trend for total employment. White employment stayed more or less constant over time, while African workers decreased from 618 228 workers to 186 686 workers. Coloured workers decreased from 45 951 to 10 147. The total workers decreased from 669 229 workers to 204 698 workers. 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 Eastern Cape work-force in 2007

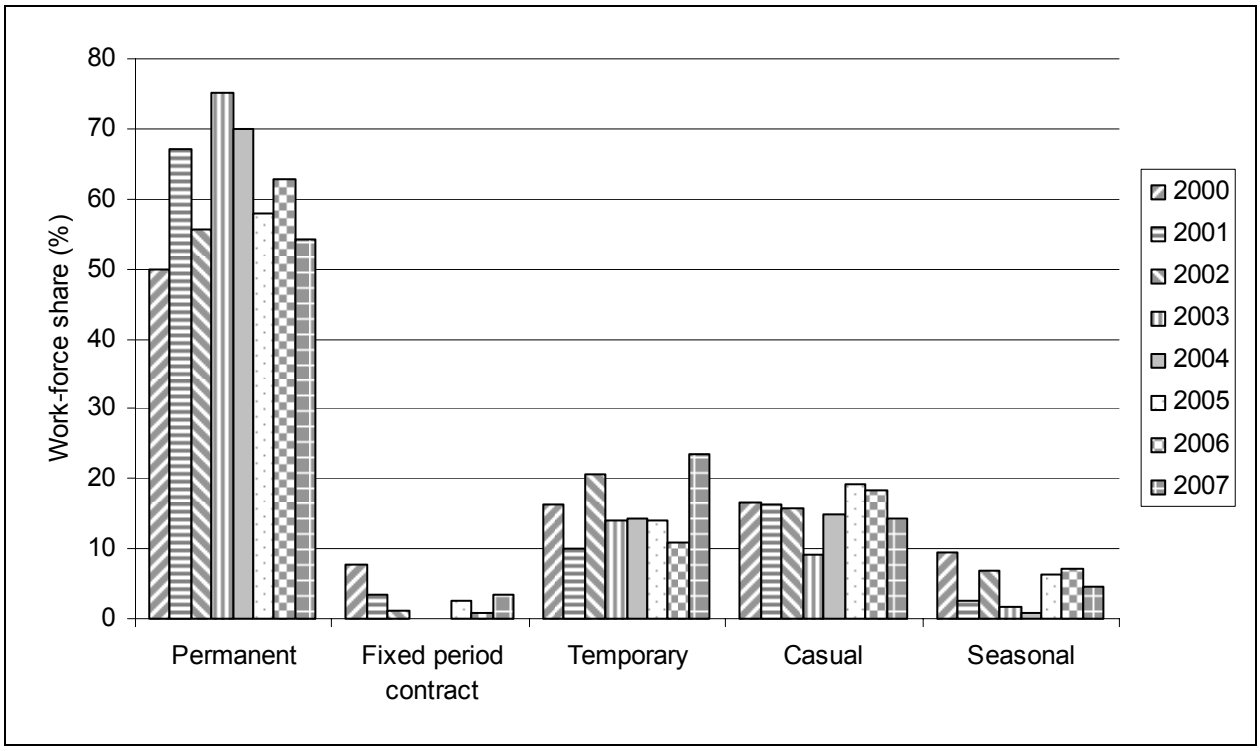


Source: Own calculation from Labour Force Survey 2007

The agricultural work-force has predominantly a permanent work-force (54.32%), but a high temporary work-force is also visible (23.58%). The fixed period contract workers in the agricultural work-force are the minority, while the share of casual workers in the agricultural work-force is also higher compared to other industries. There is almost no seasonal non-agricultural work-force (0.79%) and only 4.45% of the agricultural work-force is seasonal workers.

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

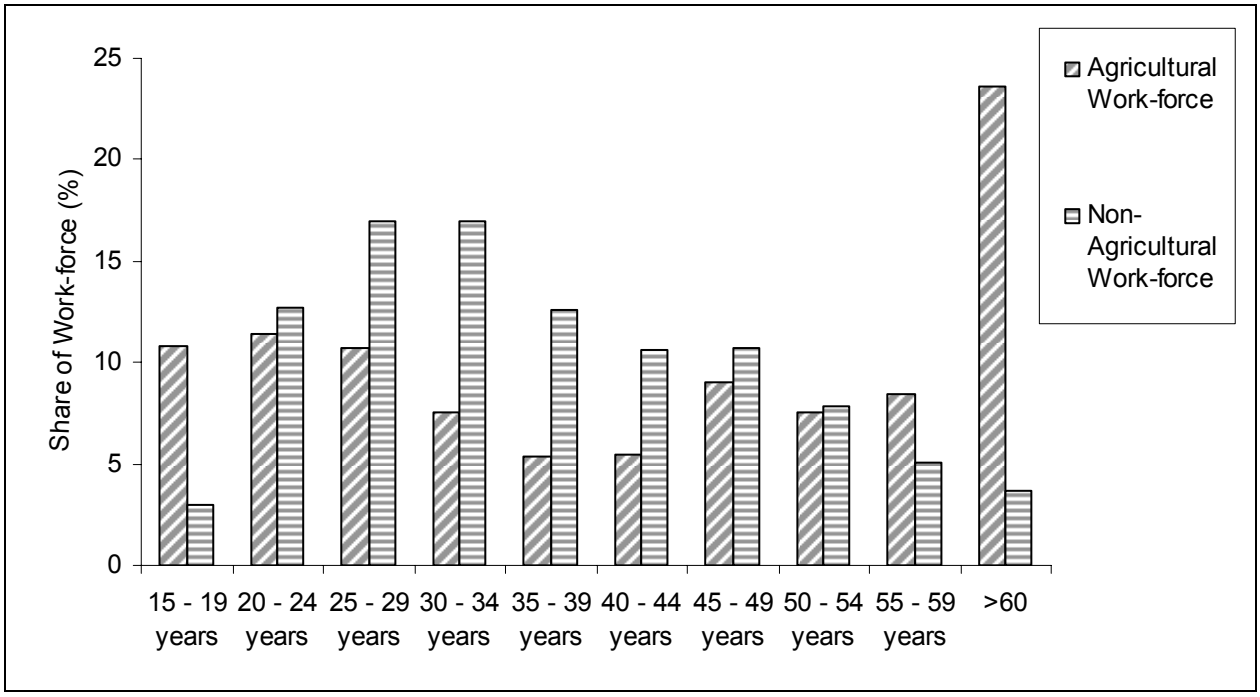
This figure indicates a slight increase followed by a decrease in permanent labour, while the other work-statuses differ year on year. Fixed period contract workers and seasonal workers stay in the minority while temporary and casual workers alternatively have the second highest work-force share. Taking Figure 8 into consideration, total employment decreased, which is consistent with the permanent work-force that is declining. It is thus permanent workers that are mostly responsible for the decreasing trend in the total work-force.

3.5. Characteristics of Eastern Cape 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 the Eastern Cape



Source: Own calculation from Labour Force Survey 2007

A different trend can be observed between the two work-forces, with the agricultural work-force decreasing until ages 35-39, and then start increasing. The non-agricultural work-force increases up to ages 30-34 years, after which it start decreasing. There is also a high over 60 years of age agricultural work-force (23.65%) compared to the non-agricultural sector (3.67%).

3.5.2. Location and occupation

The agricultural workers also indicated where the location is of their work. As expected, the majority (80.85%) work on a farm. The second most common place where agricultural activities take place is in someone else's home or private households and the least common is at a service outlet (0.52%)[4].

[4] Disregarding the unspecified category.

Table 10 present the full results, including the number and share.

Table 10: Location of Eastern Cape agricultural work-force

	Number	Share %
In the owner's home/On the owner's farm	165,967	80.85
In someone else's home / Private households	24,967	12.16
Inside a formal business premises such as factory or shop	4,880	2.38
At a service outlet such as a shop, school, post office etc	1,074	0.52
On a footpath, street, street corner, open space or field	4,583	2.23
No fixed location	3,572	1.74
Unspecified	243	0.12
Total	205,285	100.00

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 skilled agricultural and fishery worker occupation dominates (69.15%), while there are no professionals recorded.

Table 11: Occupation of Eastern Cape agricultural work-force

	Number	Share (%)
Legislators, senior officials and managers	849	0.41
Professionals	0	0
Technicians and associate professionals	207	0.1
Clerks	1,424	0.69
Service workers and shop and market sales worker	415	0.2
Skilled agricultural and fishery worker	141,779	69.15
Craft and related trade workers	132	0.06
Plant and machinery operators and assemblers	6,785	3.31
Elementary occupations	53,446	26.07
Total	205,037	100

Source: Own calculation from Labour Force Survey 2007

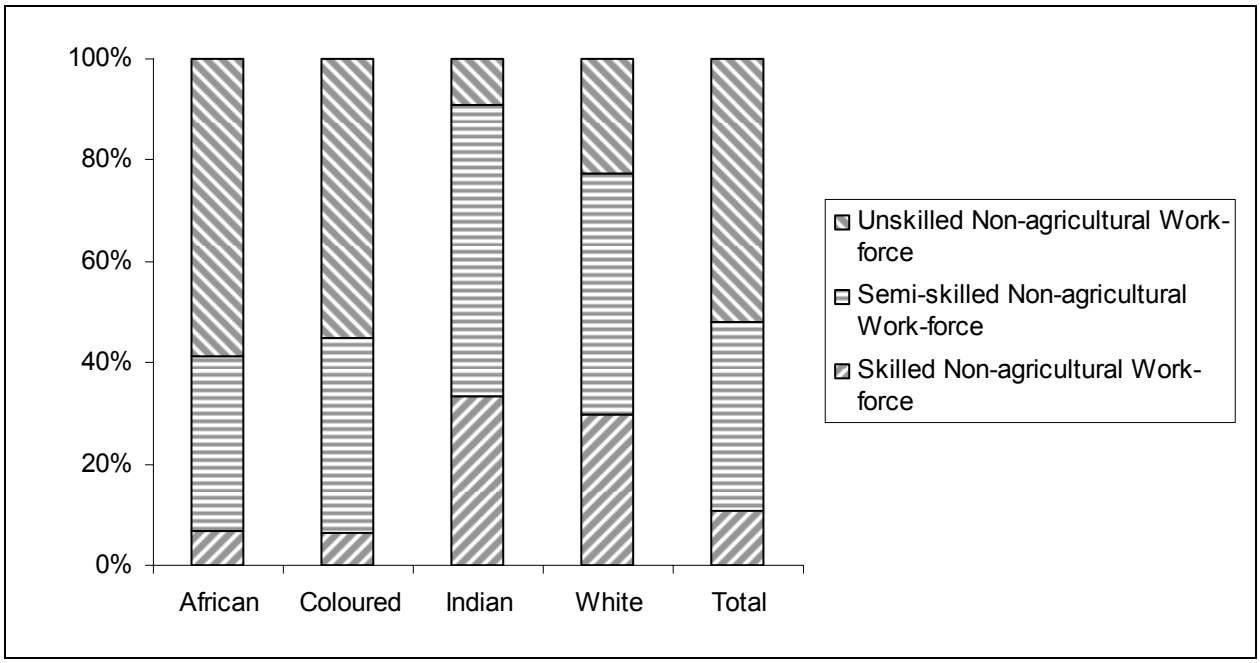
3.5.3. Skills level

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:

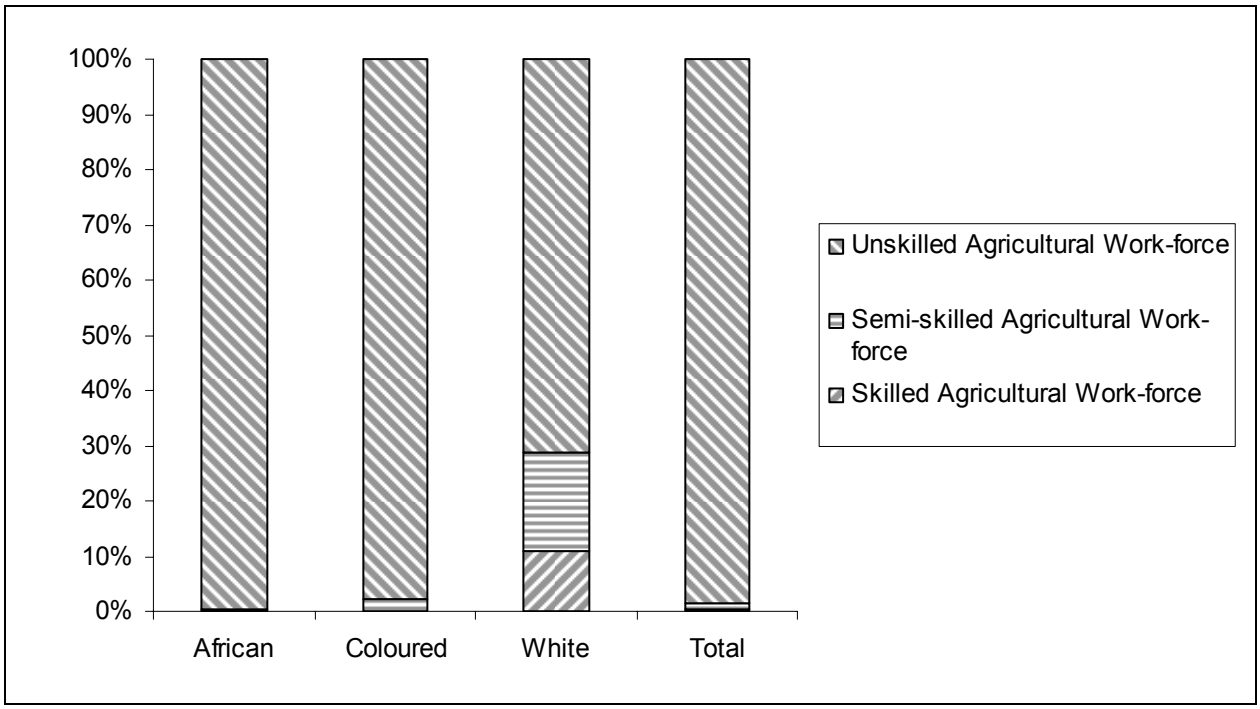
Figure 12: Skills level of the Eastern Cape non-agricultural work-force in 2007



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 (77.57%) of White workers being skilled/semiskilled workers and the minority (41.29%) of the African workers being skilled/semiskilled workers. Looking at the skill levels of agricultural workers in Figure 13, the same trend can be observed. Almost none of the African workers are skilled (0.22%), while 10.79% of White agricultural workers are skilled. The whole sector is also dominated by unskilled labour, compared to the non-agricultural sector.

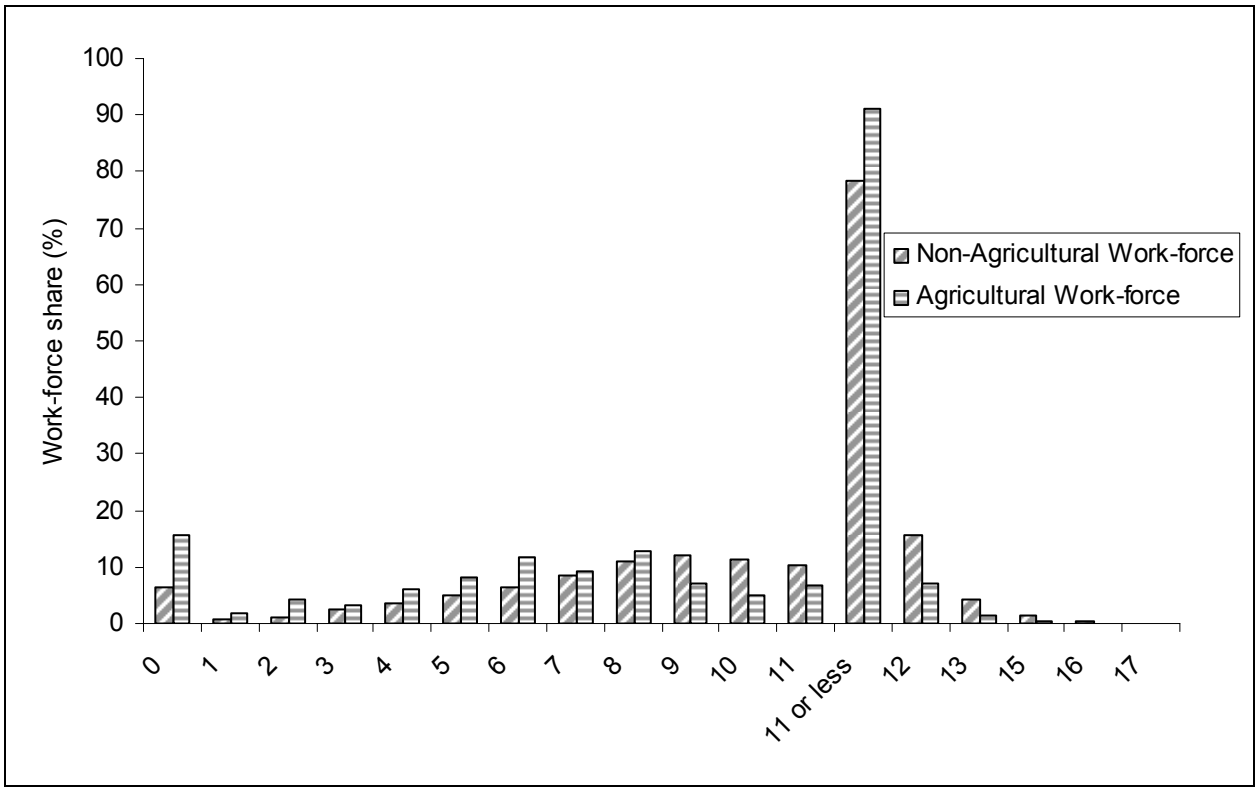
Figure 13: Skills level of the Eastern Cape agricultural work-force



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

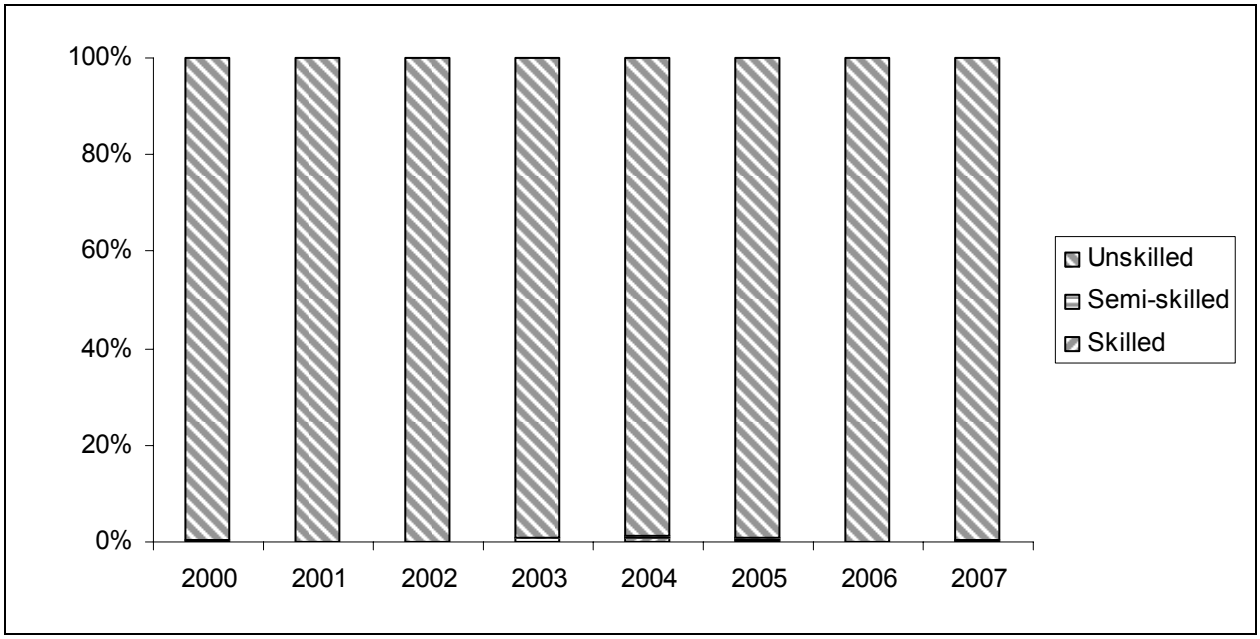


Source: Own calculation from Labour Force Survey 2007

The graph clearly shows that the majority of agricultural workers do not have a matric qualification (91.26%), although they received high school education. Only a small portion received more than 12 years of education (8.73%). The non-agricultural work-force has a higher share of matriculant workers (15.58%) and workers with post-matric education (6.15% compared to 1.74% of 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 level:

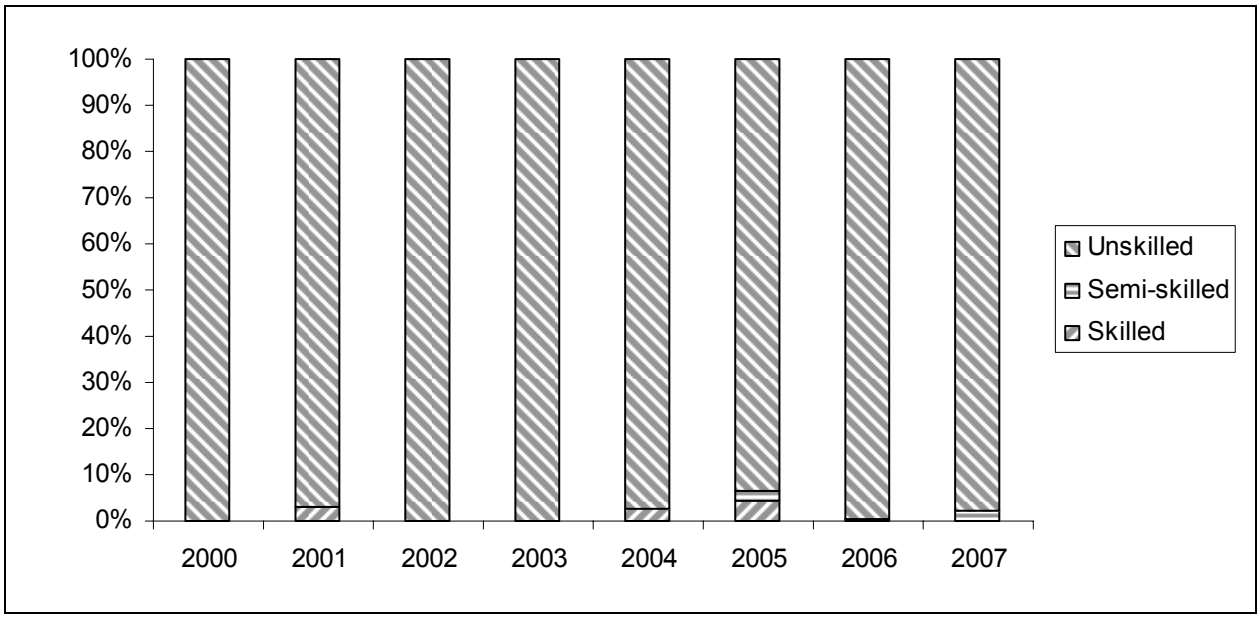
Figure 15: Skills level for Africans in the agricultural work-force



Source: Own calculation from Labour Force Survey 2000-2007

The skills level of the African population group did not change 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.

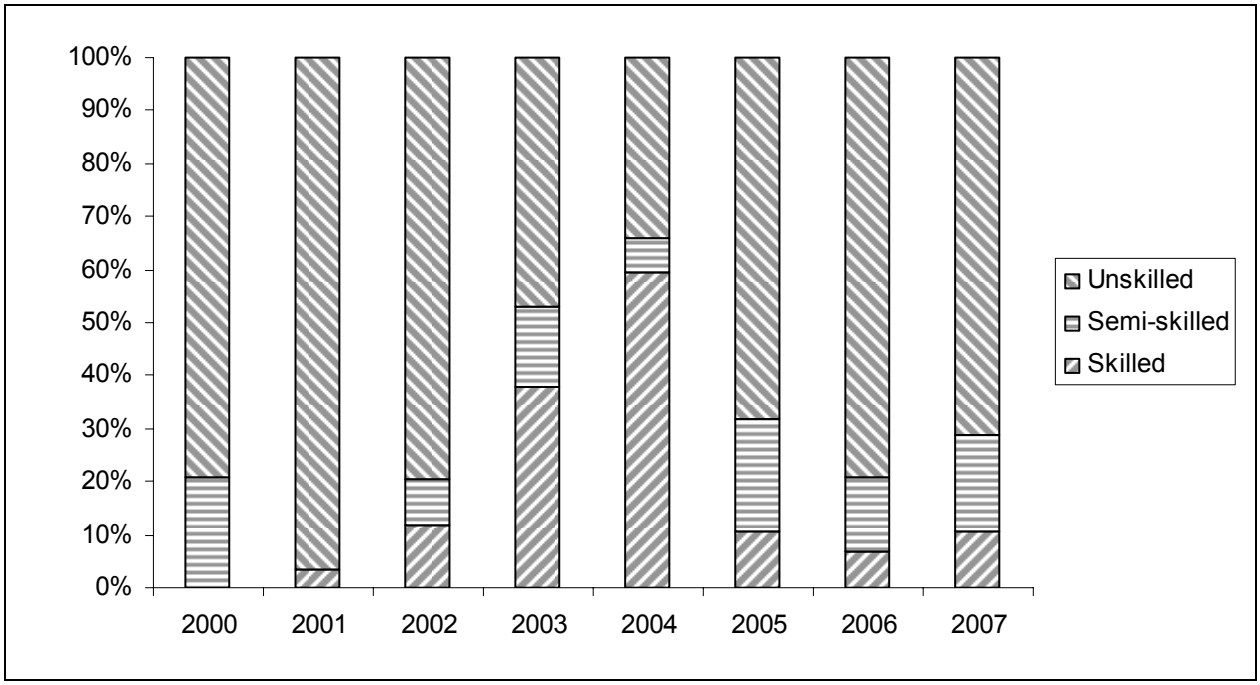
Figure 16: Skills level of the Coloured agricultural workers



Source: Own calculation from Labour Force Survey 2000-2007

The skills level of the Coloured population in Figure 16 does not differ much from the African population's skills level, except for some skilled labour in 2001, 2004 and 2005. In 2005 and 2007, semi-skilled labour also appears. This inconsistent measure of skilled and semi-skilled labour can be due to data discrepancies or small sample size.

Figure 17: Skills level of the White agricultural work-force



Source: Own calculation from Labour Force Survey 2000-2007

In Figure 17 the White work-force has a dramatically different composition of skills than the other two population groups. It differs from year to year, but there is yearly semi-skilled labour

(except for 2001) and skilled labour (except for 2000). The White work-force is not being dominated every year by unskilled labour as the previous two race groups.

There is a definite skills gap between race groups in the Eastern Cape agricultural sector, 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.

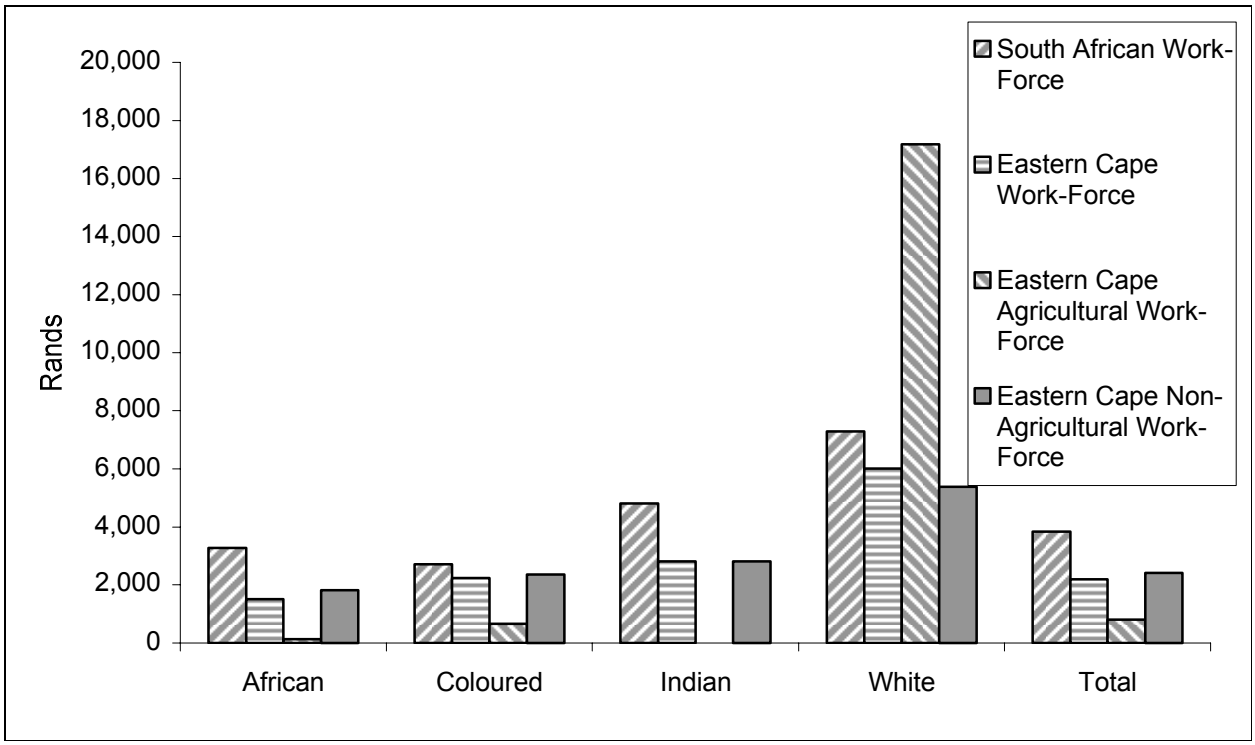
4. Income

4.1. South Africa and Eastern Cape

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 method as indicated 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, Eastern Cape, Eastern Cape agricultural and Eastern Cape non-agricultural work-forces.

Figure 18: Real mean monthly income from main source by race for 2007

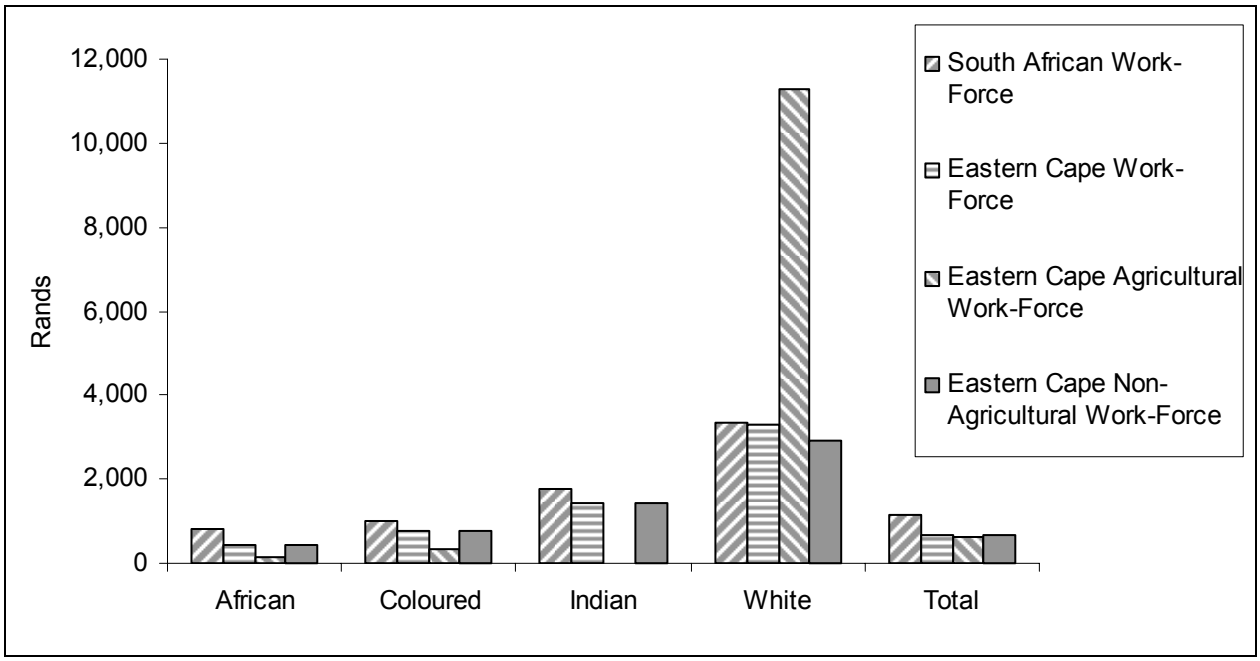


Source: Own calculation from Labour Force Survey 2007

The Eastern Cape mean monthly income in Figure 18 is lower to that of South Africa for all population groups. Overall the agricultural households of the Eastern Cape receive a significantly lower income, excluding the White population. The White agricultural mean income is higher than the other mean incomes, suggesting that on average a white individual in the agricultural household in the Eastern Cape is doing financially better than his/her peers. 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.

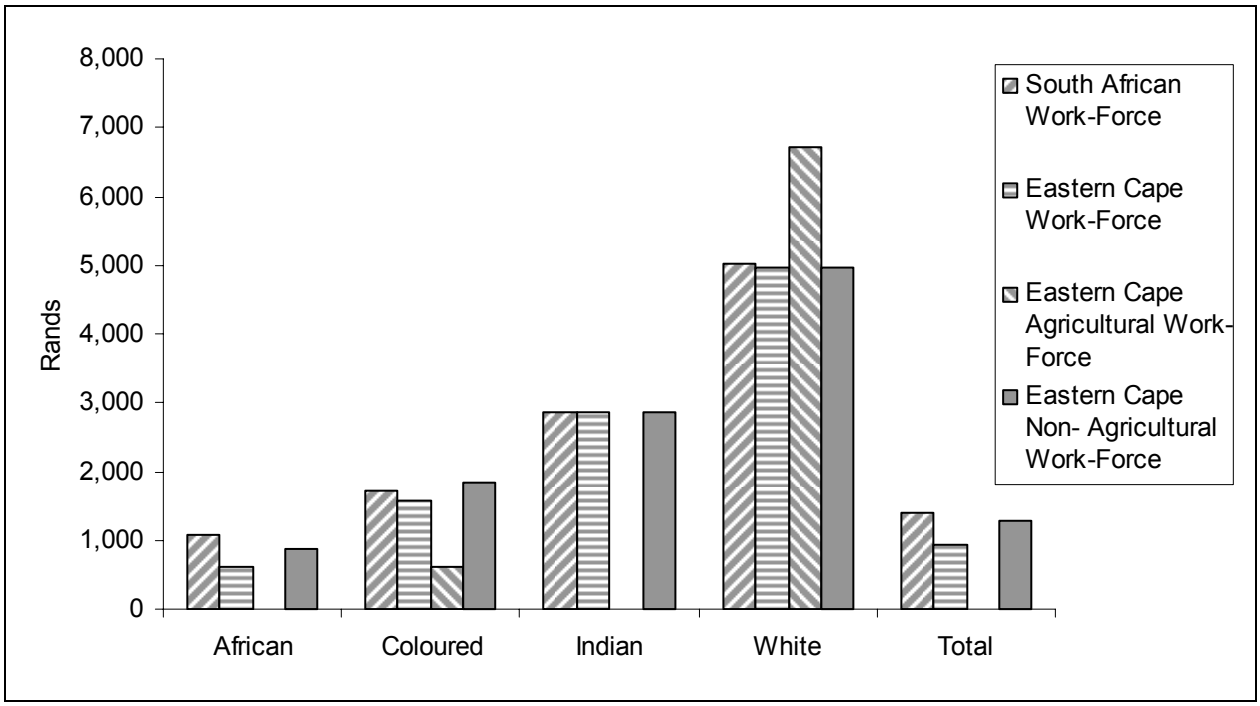
Figure 19: Mean monthly real household income per capita by race for 2007



Source: Own calculation from Labour Force Survey 2007

In Figure 19 again the agriculture sector's mean household income per capita is lower across all races except for the White populations. The non-agriculture Eastern Cape and South African household incomes display the same patterns as the individual incomes, with Whites earning the most on average and Africans and Coloureds earning the least.

Figure 20: Monthly median income for individuals by race for 2007



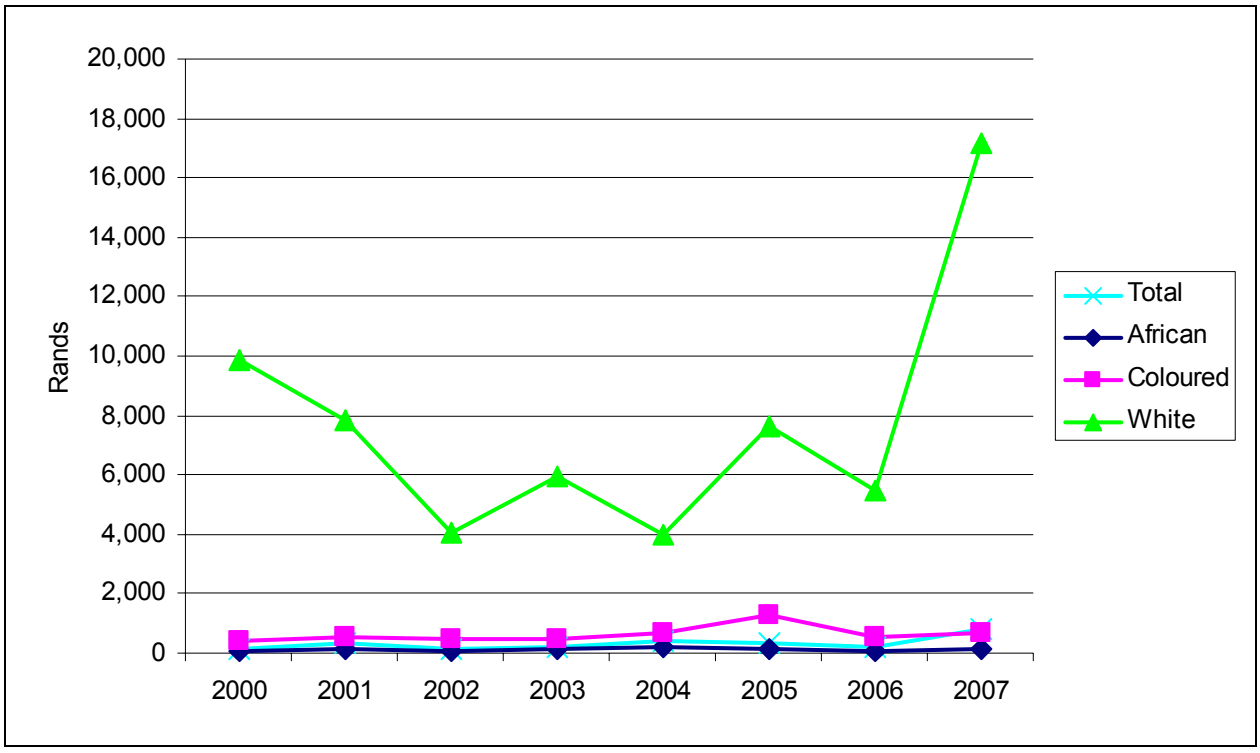
Source: Own calculation from Labour Force Survey 2007

The median incomes are illustrated above in Figure 20 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 reflect the true nature of profiles. Median represents the 50th 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. White agricultural households also have the highest median income. Across the other races, non-agricultural incomes in the Eastern Cape are comparable to that of South Africa, while the agricultural sector is earning a lower median income.

4.2. Eastern Cape agricultural work-force

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

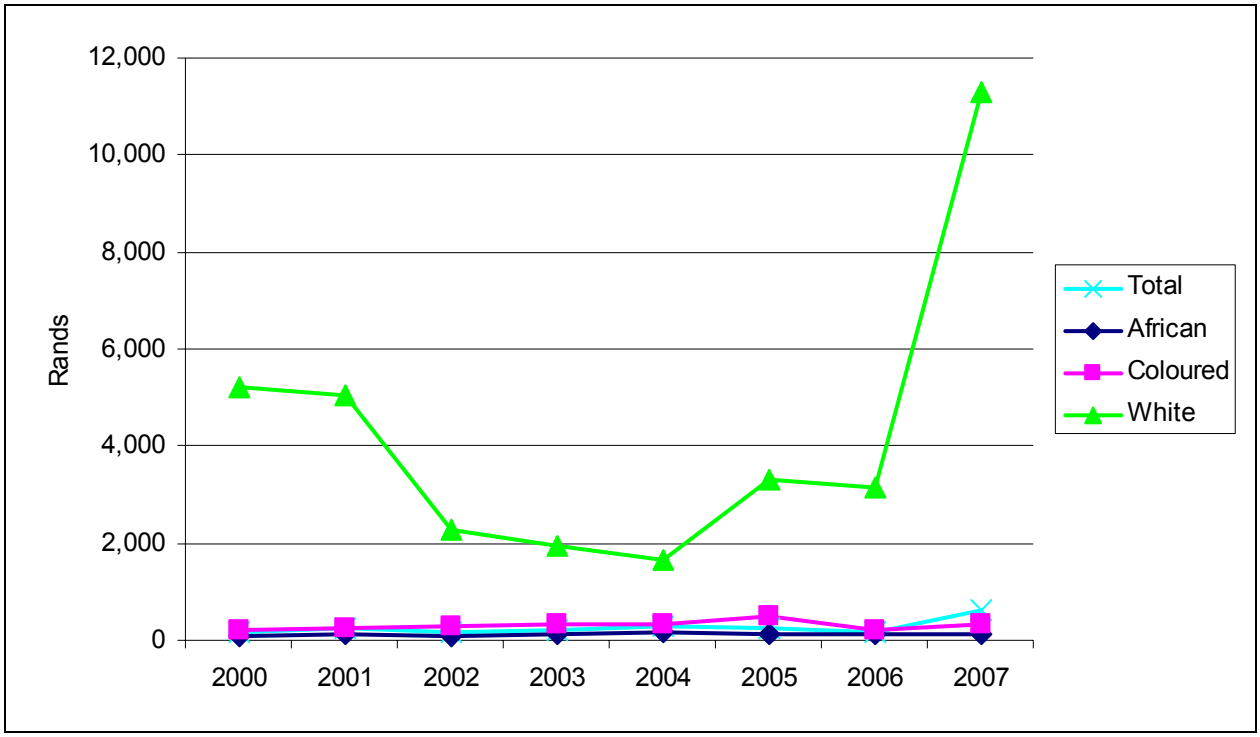
Figure 21: Real monthly mean income for individuals working in agriculture from 2000



Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 21) clearly indicates the huge difference between the White population's mean income compared to that of the Coloured and African population. The Coloured and African population's average income remains relatively 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. The total income profile is like those of the Coloured and African populations.

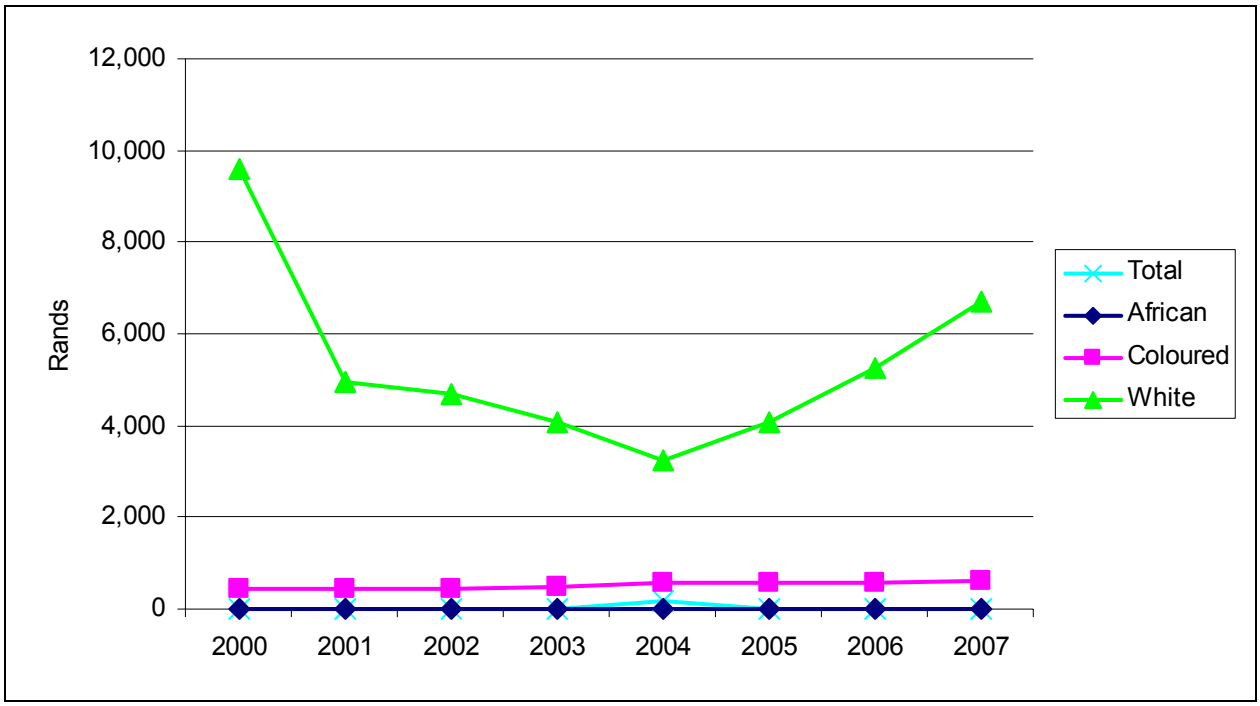
Figure 22: Real mean household income per capita for all agricultural households since 2000



Source: Own calculation from Labour Force Survey 2000-2007

The household earnings are presented above (Figure 22) for all agricultural households, thus all households that have a member/members in the agricultural sector. The figure signifies a similar trend than the individual earnings profile. The White and Coloured household per capita income is lower than that of the individual earnings, whereas the African per capita household income is similar than that of the individual earnings profile. Again the White per capita household income is significantly higher than the per capita income of the other races.

Figure 23: 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 23) as for mean income, showing a wide disparity between the incomes of Whites and those of the Coloured and African population. The conclusion from above three figures is that there is a significant difference between the White populations' income and the incomes of the African and Coloured 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

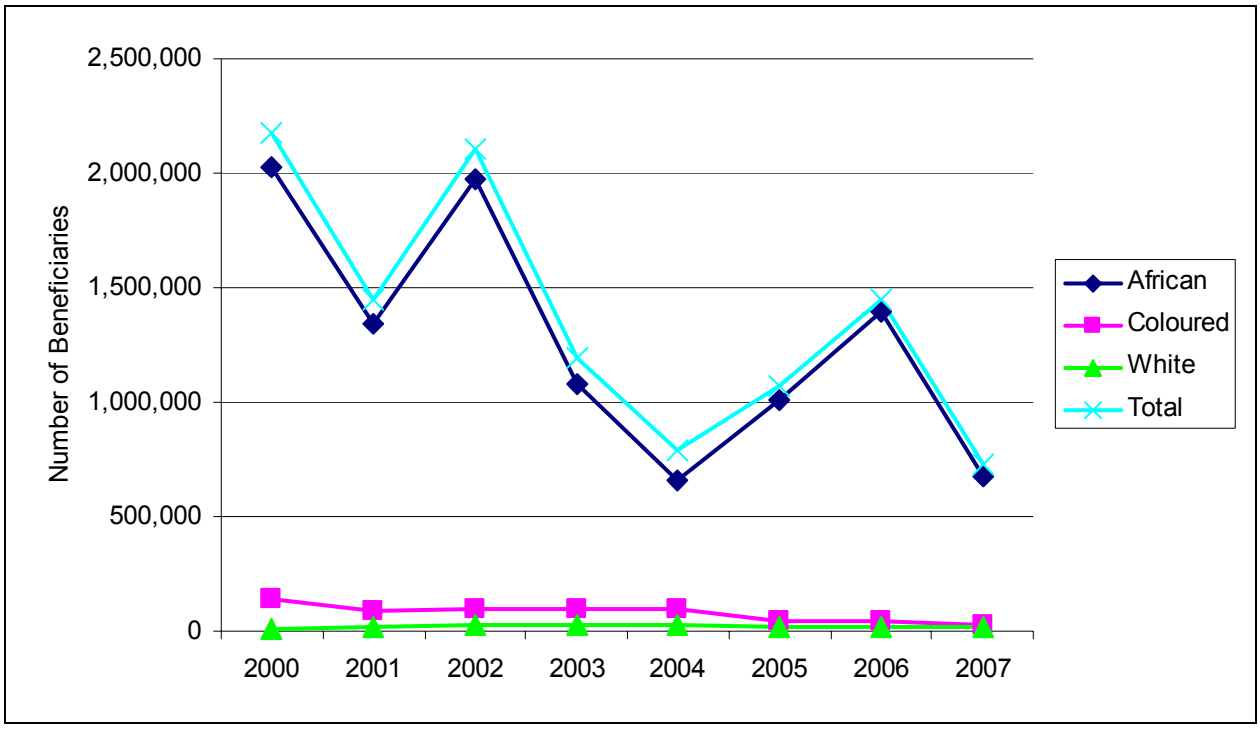
	All		More than 50%	
	Number	**Share**	**Number**	**Share**
African	679,422	93.61%	132,579	78.29%
Coloured	30,422	4.19%	24,835	14.66%
White	15,923	2.19%	11,938	7.05%
Total	725,767		169,352	

Source: Own calculation from Labour Force Survey 2007

Table 12 indicates that the African population have the highest number of beneficiaries in the Eastern Cape agricultural sector, dominating by 93.69% and 78.29% respectively. Investigating the trend over years in Figure 24, the total number of beneficiaries and the number of African beneficiaries follow a similar trend; it is generally on a decreasing trend with increases in several years. There can also be seen that the African population have the highest number of beneficiaries from agricultural activities (679 422 beneficiaries in 2007).The total number of beneficiaries declined from 2.1 million in 2000 to 725 767 beneficiaries in 2007. The Coloured beneficiaries declined from 139 872 in 2007 to 30 422 in 2007.

Relating this to the poverty profile that will be discussed in section five, poverty within the African population group is partially explained. A single worker needs to support more household members than in White households due to greater household sizes as suggested by Figure 4. The sharp decline in the African beneficiaries was preceded by increases in 2005 and 2006, therefore the number of African beneficiaries in 2007 is comparable to the level in 2004, which is the lowest during the past 5 years.

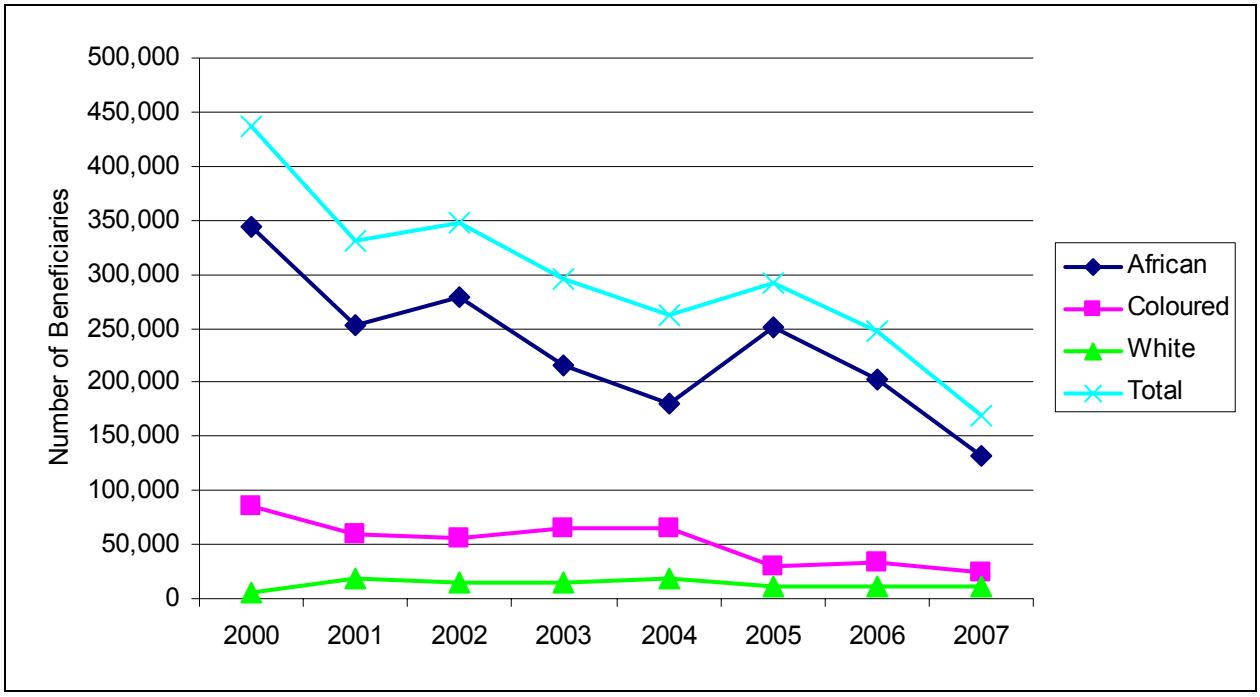
Figure 24: Number of all beneficiaries from 2000 till 2007



Source: Own calculation from Labour Force Survey 2000-2007

Taking incomes from other industries into consideration, Figure 25 indicates the number of beneficiaries in households that obtain more than half of their household income from agricultural activities. The trend over time follows the same path as for all beneficiaries, declining over time (from 436 232 to 169 352 in total). The only significant difference is that in Figure 24 the White households decreased over time, whereas in Figure 25 they increase (from 6 154 to 11 938). Again the African households have the most beneficiaries (132 579 in 2007).

Figure 25: Number of beneficiaries in agricultural households with more than 50% income share



Source: Own calculation from Labour Force Survey 2000-2007

The total number of beneficiaries, in both reporting measures, declined from 2000 and is now at the lowest point, except for White households earning more than 50% of income from agricultural activities.

5. Poverty indices of Western Cape 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 indictor, 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

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{z - y_1}{z}\right]^\alpha \qquad \text{for } \alpha \geq 0 \qquad (5)$$

Where *z* represents the poverty line, y_1 is the living indicator (i.e. income or expenditure) and *α* symbolizes the aversion to poverty parameter. By adjusting *α*, different classes of poverty can be identified. The headcount ratio, which gives the number of people living under the poverty line, is represented by α=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 α=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 α=0 will offer the percentage number of people living under the poverty line, α=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, α=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:

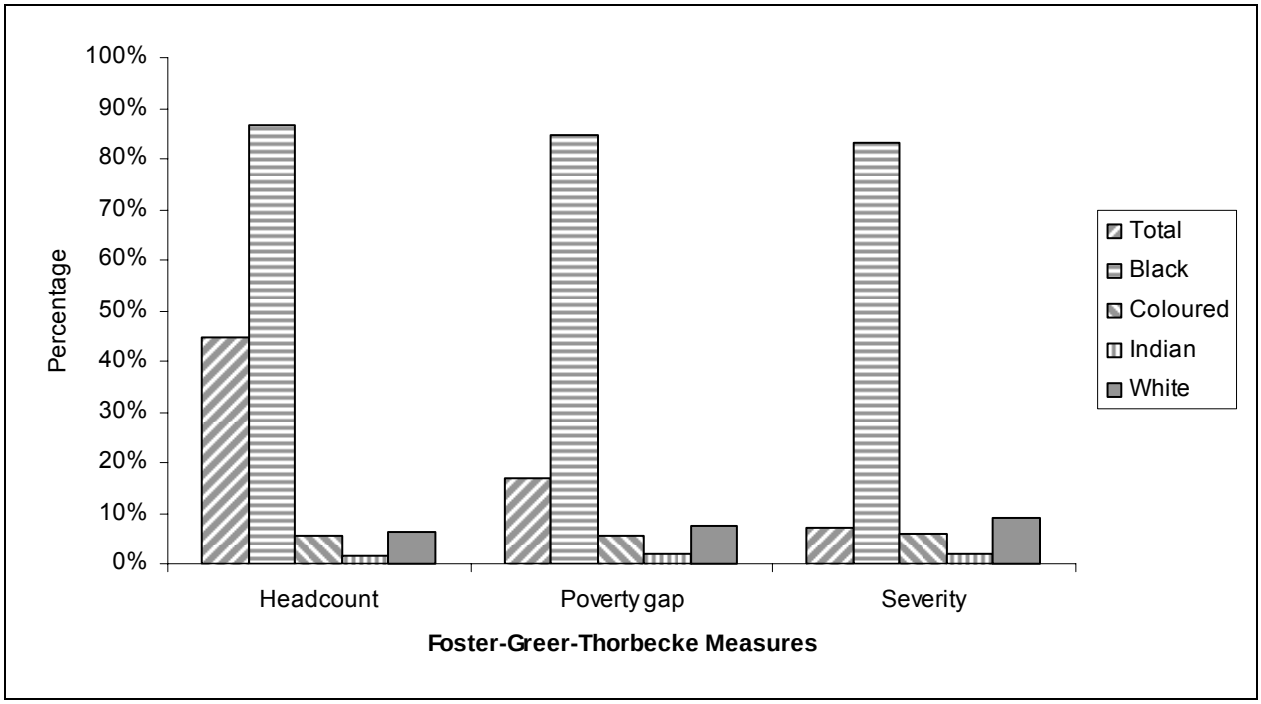
$$E = 1+0.5(A) + 0.3(K) \qquad (6)$$

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, Eastern Cape and the agricultural households in the Eastern Cape is given together with each population group's share towards the total.

Figure 26: Poverty rate for South Africa and shares of population groups

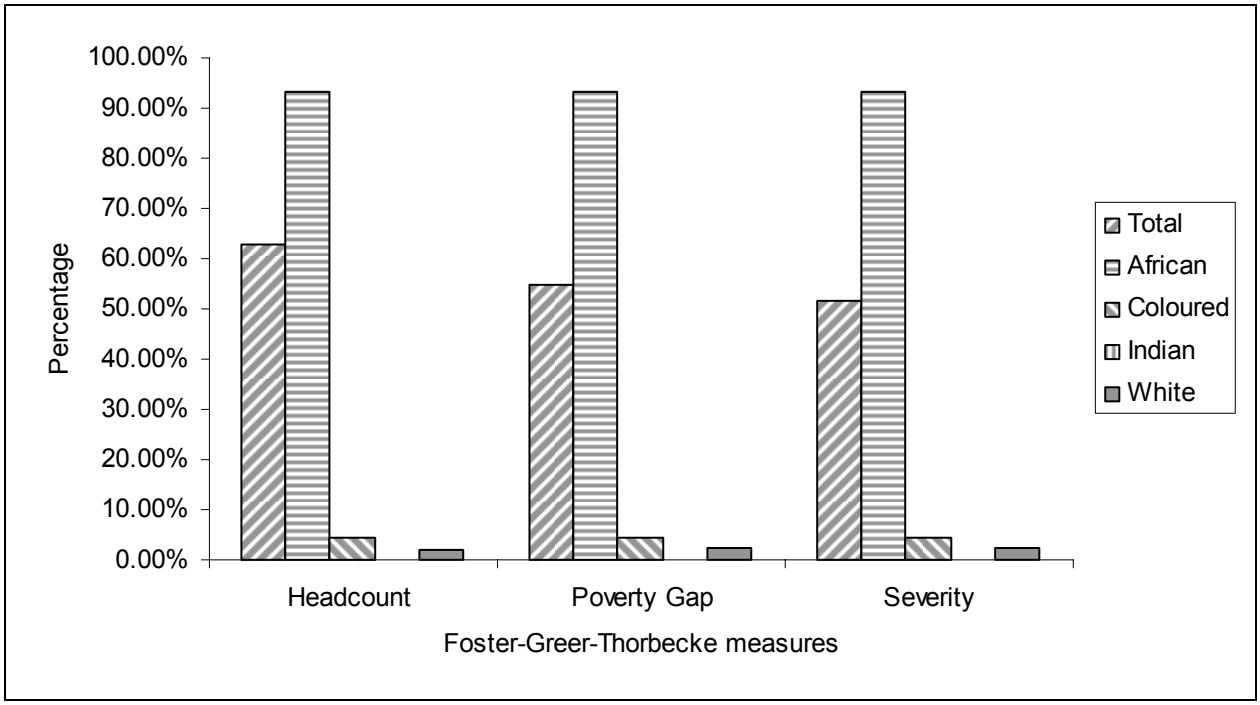


Source: Own calculation from Labour Force Survey 2007

In Figure 26 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 Eastern Cape in Figure 27, a similar trend can be identified. The African population are dominating the poverty measures; while the Coloured and White populations have a modest contribution to total poverty. The total poverty rates for the different measures in the Eastern Cape are respectively 62.81%, 54.69% and 51.75%. This corresponds to over 4 million people that are living below the poverty line according to headcount ratio. The Africans again have the largest share in the total poverty profile with a share of 93% for all three measures.

Figure 27: Poverty rate of the Eastern Cape and shares of population groups



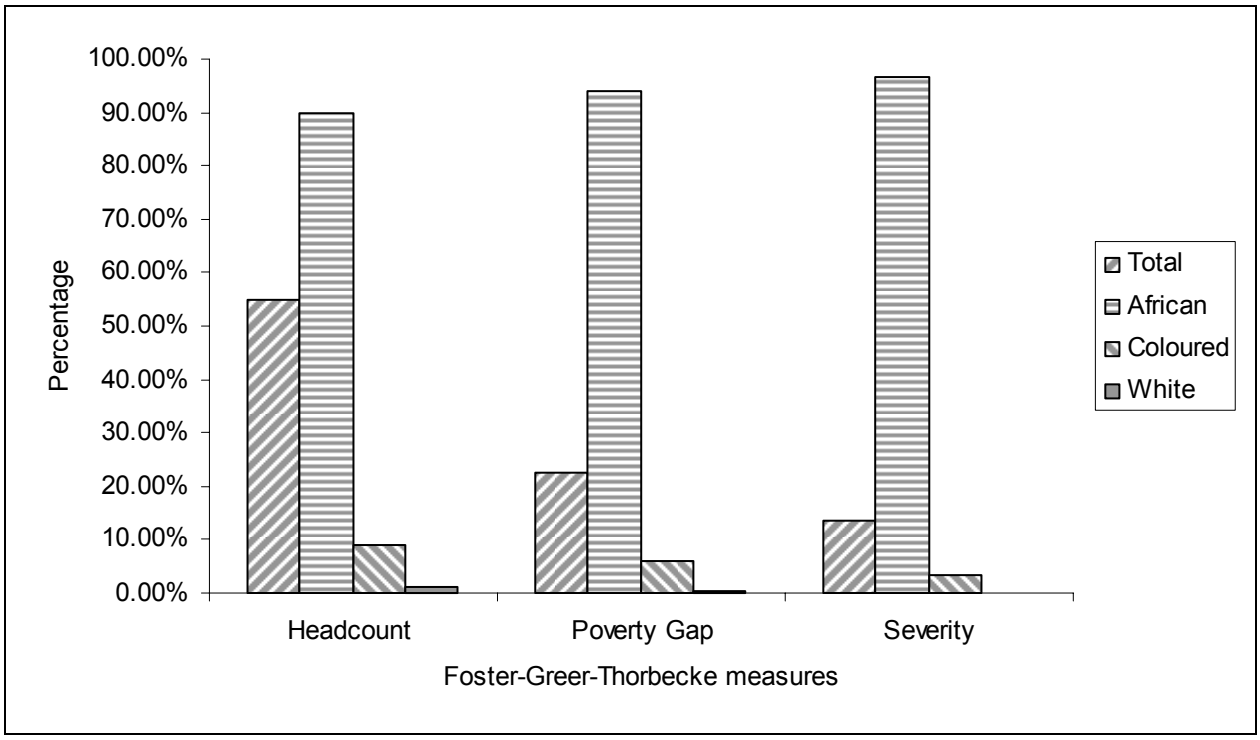
Source: Own calculation from Labour Force Survey 2007

The Eastern Cape agricultural households (more than 50% of income from agricultural activities) were also analysed in Figure 28, and the results shows a similar pattern as that of the rest of the Eastern Cape, except for lower rates for the totals across all three measures. The Indian population are not present (0% poverty, but this is because of sample design of no observations) and the total poverty rates are 54.8%, 22.41% and 13.65% for respective measures. This translates into around 38 734 households that are living below the poverty line. The highest share of these is the African population with an 89.78% (34 776 households) share in headcount ratio. Their share increase as the poverty measure change from $\alpha=0$ to $\alpha=2$. The positive is the significant lower poverty gap and severity of poverty in the Eastern Cape agricultural sector. This indicates that there is less inequality between households living under the poverty line, and that the severity of poverty is also less.

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

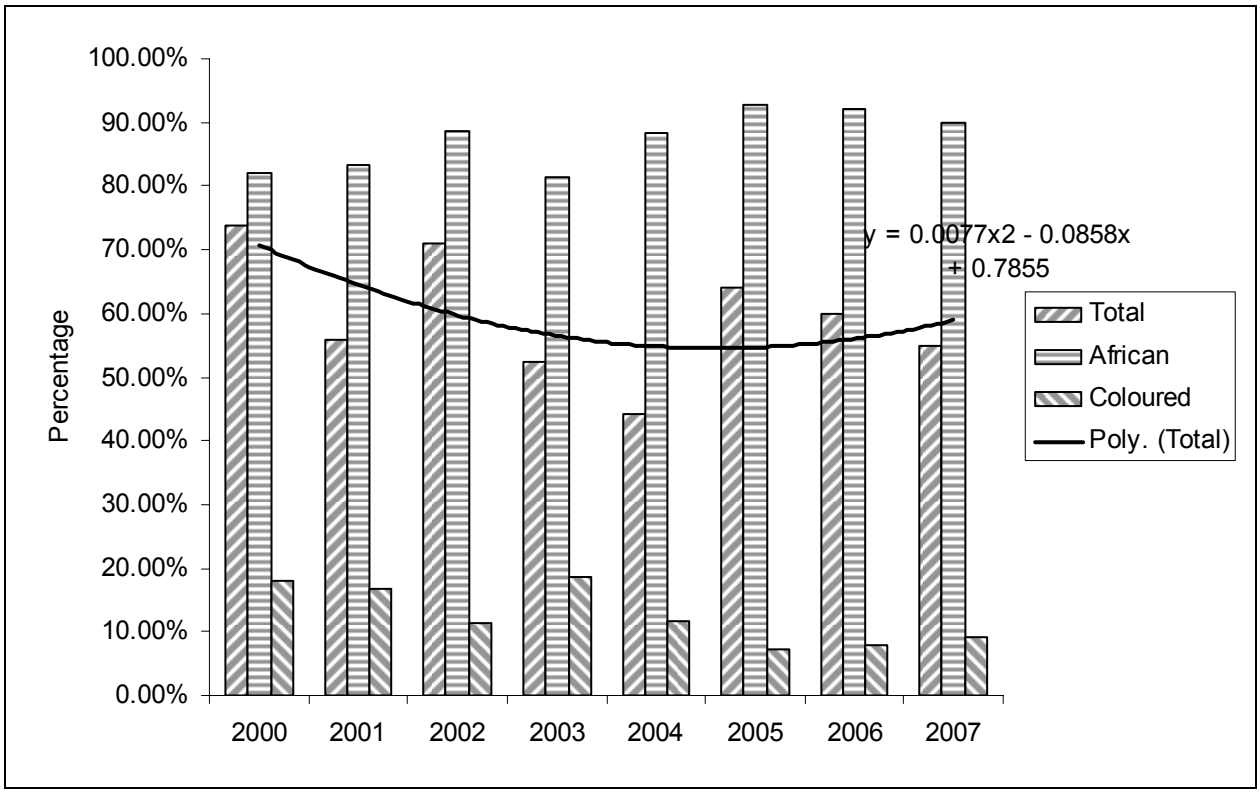
Figure 28: Poverty rate for the Eastern Cape agricultural households and shares of population groups



Source: Own calculation from Labour Force Survey 2007

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

Figure 29: Poverty headcount by year for Eastern Cape agricultural households

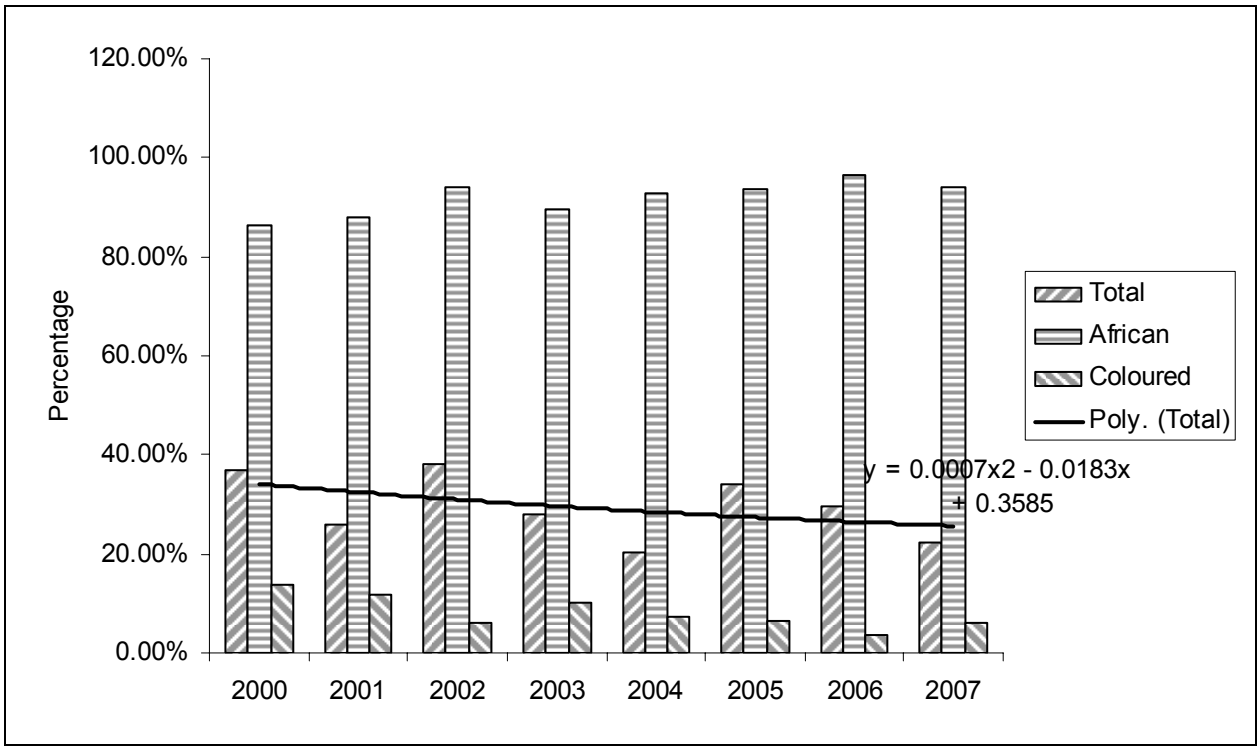


Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 29) indicates the headcount ratio of individuals in the Eastern Cape agricultural households and the share of African and Coloured households towards the total headcount ratio. It is clear that African individuals contribute the most to overall poverty dominating each year with at least an 80% share. The overall trend also suggests a decreasing trend in headcount poverty (from 73.75% to 54.8%) with an increasing share for Africans (82.1% to 89.78%).

The next figure (Figure 30) indicates the poverty gap ratio:

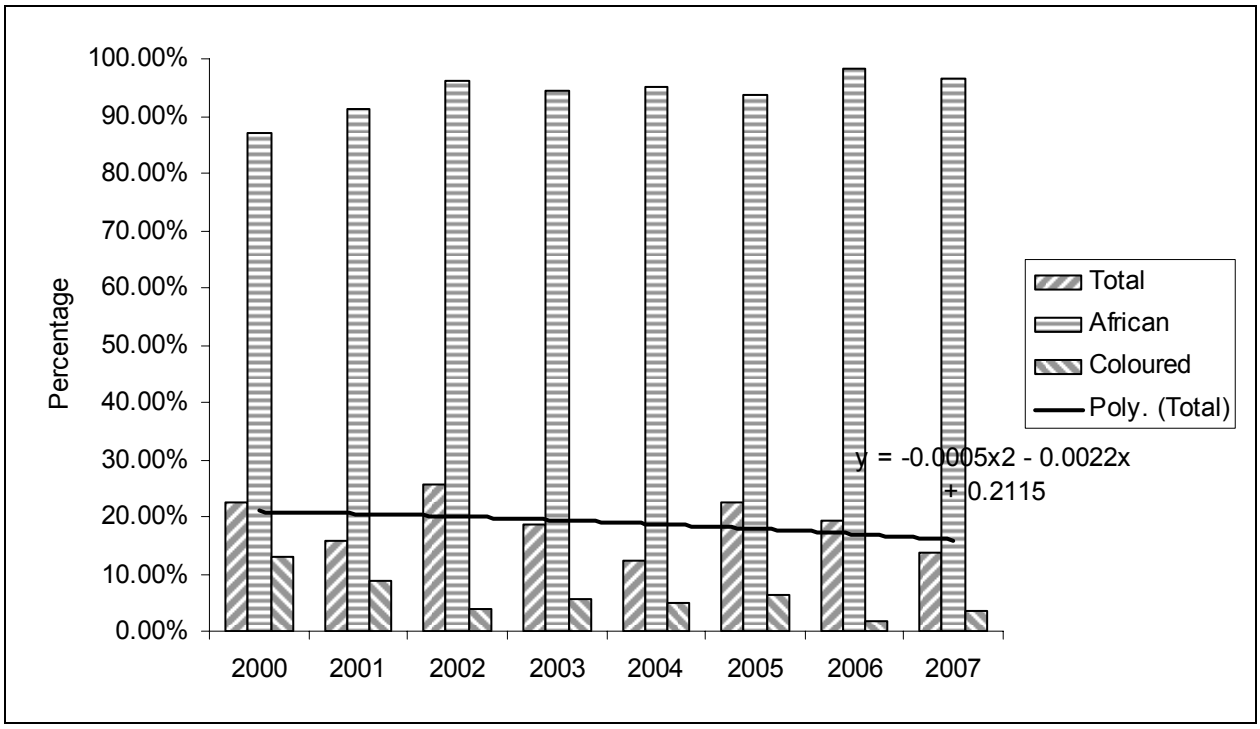
Figure 30: Poverty gap by year for Eastern Cape agricultural households



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 decreases over time from 36.81% in 2000 to 22.41% in 2007. The African share again increases over time from 86.34% to 93.89% in 2007. This signifies the 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.

Figure 31: The severity of poverty by year for Eastern Cape agricultural households



Source: Own calculation from Labour Force Survey 2000-2007

Again, a similar trend can be seen in Figure 31 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 the Eastern Cape 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 all poor individuals are on a relative similar scale. The poverty rates according to all measures decreased through time within the Eastern Cape agricultural households, as indicated by the polynomial lines for the totals in Figures 29 to 31.

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:

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

With x_i the income of the *ith* person, *N* the number of people and $\ddot{x} = \frac{1}{n}\sum_{i=1}^{N} x_1$ 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, the Eastern Cape and the Eastern Cape agricultural households. Per capita household earnings are used as reference throughout this section:

Table 13 : Gini and Theil measures of inequality for 2007

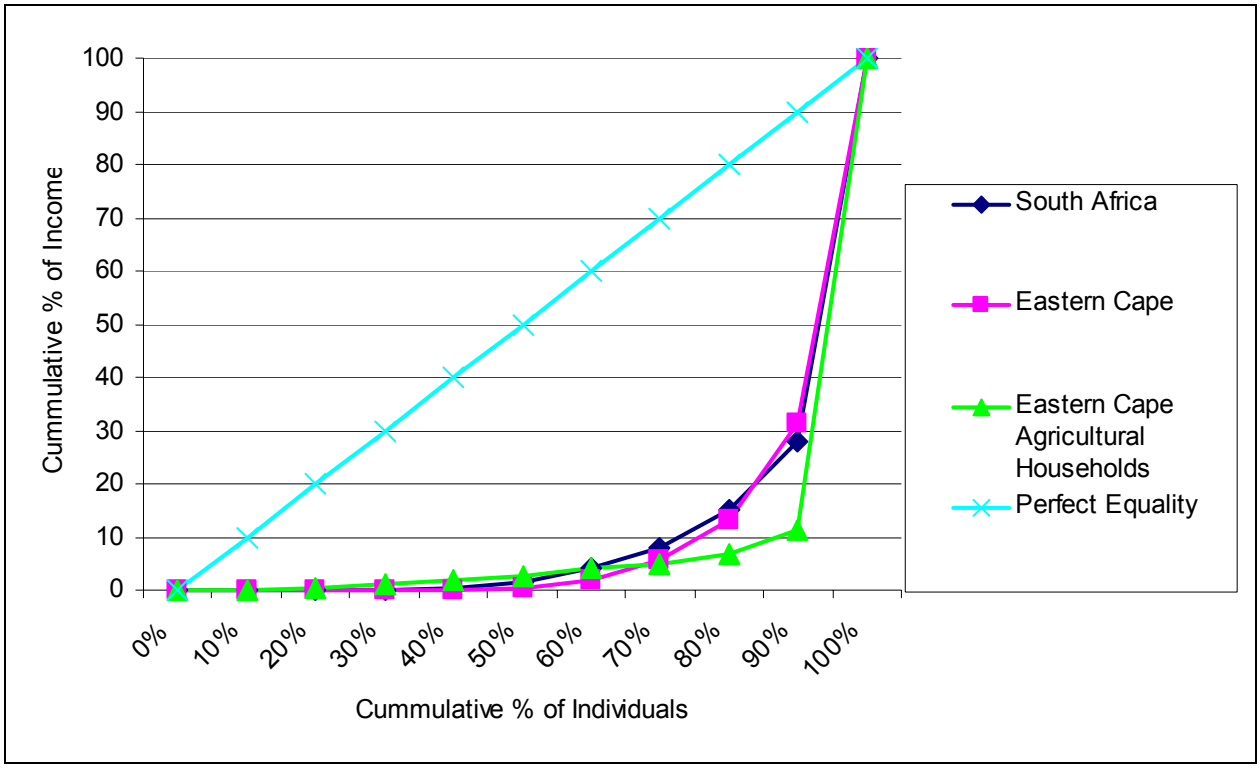
	South Africa		Eastern Cape		Eastern Cape Agriculture	
	Gini	Theil	Gini	Theil	Gini	Theil
African	0.79	3.19	0.67	0.89	0.48	0.44
Coloured	0.55	0.56	0.55	0.54	0.40	0.25
Indian	0.57	0.6	0.20	0.09		
White	0.47	0.4	0.48	0.45	0.44	0.39
Total	0.75	2.25	0.68	0.94	0.87	2.02

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 the Eastern Cape, the Africans dominate again, as well as in the agricultural sector. What is interesting to note is the low inequality within race in the Eastern Cape agriculture households, but the total inequality is high. This indicates that between races inequality is high. Although the Gini coefficient of the Eastern Cape is lower than the national average, the Eastern Cape average is still high by international standards, signifying that there is high inequality within the province.

The Lorenz curve in Figure 32 indicates that the Eastern Cape agricultural households have the highest inequality. It can be seen that 90% of individuals in households that derive more than 50% of their income from employment in agriculture, receive only 10% of the total income earned by these households. For the Eastern Cape in general 90% of individuals receive 30% of the total income earned in the Eastern Cape.

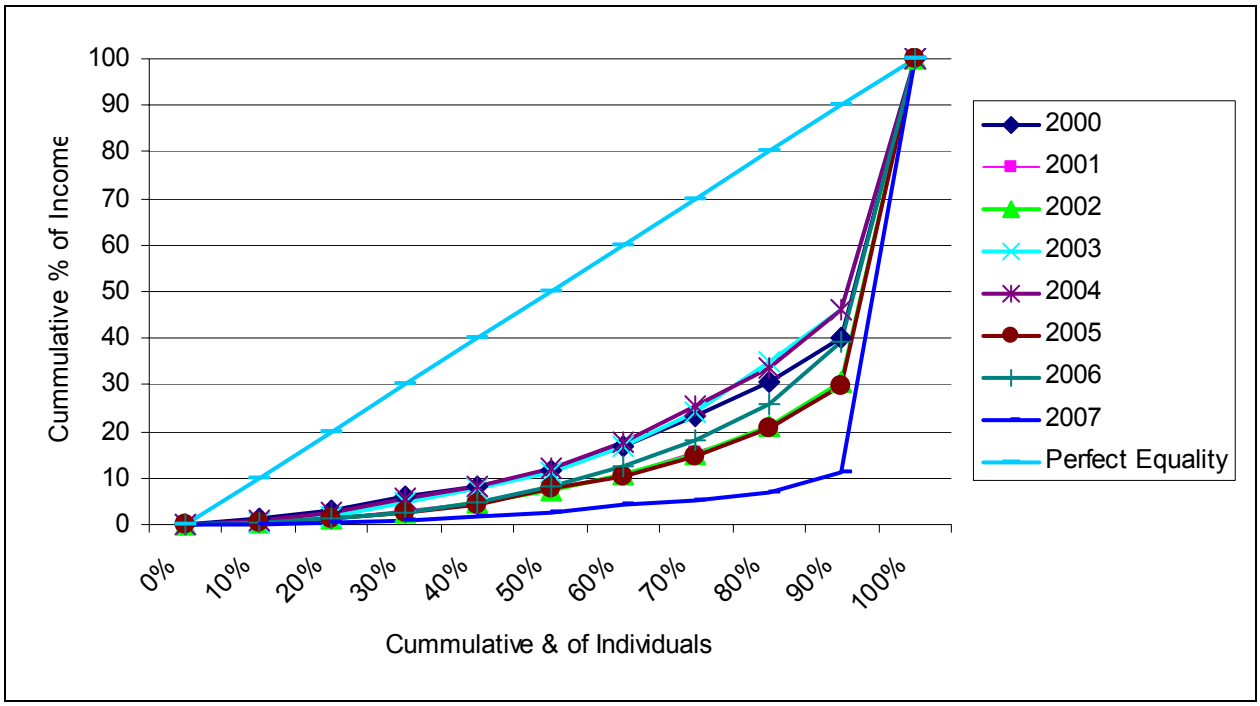
Figure 32: Lorenz curve for individuals in South Africa, Eastern Cape and Eastern Cape agricultural households in 2007



Source: Own calculation from Labour Force Survey 2007

The following 2 figures represent the Lorenz curve and Gini coefficients for the Eastern Cape agricultural households from 2000 till 2007. It can be observed in Figure 33 that in general the Lorenz curve shifted more outward over time up to 2007, indicating an increase in unequal income distribution within the Eastern Cape agricultural sector.

Figure 33: Lorenz curve for Eastern Cape agricultural households by year



Source: Own calculation from Labour Force Survey 2000-2007

The Gini coefficient in Figure 34 also shows an upward pattern for the total (from 0.63 to 0.82). The Africans' Gini coefficient increased from 0.42 to 0.47. The Gini of the Coloureds and Whites varied through time, but is in general lower than the Africans' Gini. The up and down movements of the Coloured and White households counteracts each other which creates a more smoother trend in the total inequality which is similar to the African trend. This is corresponding to above figure of the Lorenz curves where there is a significant change in inequality.

Figure 34: Gini coefficient for Eastern Cape agricultural households by year

Source: Own calculation from Labour Force Survey 2000-2007

Inequality within the Eastern Cape agricultural work-force since 2000 has not decreased which indicates that there is still a large gap between the rich and poor within the sector.

7. Conclusion

The Eastern Cape agricultural sector is a small but vital player in the economy of the Eastern Cape 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 well as in South Africa. The total number of individuals in respective economic segments, i.e. South Africa, Eastern Cape and Eastern Cape 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 population's income. Unemployment rates are being driven by the high unemployment within the African population in both South Africa and the Eastern Cape. 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 Eastern Cape agricultural sector, reflecting the need

for poverty alleviation. Poverty levels have been decreasing during the past 7 years when using the poverty line of R322 per capita per adult equivalent as measure.

Income inequality paints a rather grim picture indicating that equality has not increased over the past 7 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 the Eastern Cape. Policy decisions and redistribution policies of provincial level need to take these data into account to promote the economic growth of the Eastern Cape and also to enhance the living standard of the people of the Eastern Cape.

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