Background Paper Series

PROVIDE PROJECT

The Provincial Decision-making Enabling Project

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

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

Abstract

The KwaZulu-Natal agricultural sector is a dynamic and livelihood sustainable sector. Approximately 3.9% of the KwaZulu-Natal value added gross domestic product comes through agriculture and 2.5% of the population in KwaZulu-Natal 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 the KwaZulu-Natal agricultural sector is on an increasing trend since 2003. 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. Poverty is extremely high for African workers in the KwaZulu-Natal agricultural sector but has decreased since 2000. One of the principal concerns is that of inequality. It shows an improvement since 2000, but there is still high in-between race inequality in the KwaZulu-Natal agricultural sector.

Throughout the report the KwaZulu-Natal agricultural sector is compared to the non-agricultural sector, KwaZulu-Natal overall and South Africa for a better understanding of the KwaZulu-Natal agricultural sector's position. This report indicates that the KwaZulu-Natal 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, and DJ Buthelezi, KwaZulu-Natal Department of Agriculture.

Table of Contents

List of Figures

List of Tables

1. Introduction

KwaZulu-Natal is home to about 9.8 million individuals and about 250 000 are working in the agricultural sector (Statistics South Africa, 2007a). Therefore 2.5% of the KwaZulu-Natal population is working in the agricultural sector, but it contributed 3.9% through value added for the economy in 2006 (Statistics South Africa, 2007b). This shows that the agricultural sector is an important sector in KwaZulu-Natal and thorough analysis is needed to identify areas of need to better the sector.

This paper investigates the KwaZulu-Natal 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 KwaZulu-Natal, together with the labour force profiles for South Africa, KwaZulu-Natal and the KwaZulu-Natal agricultural sector. Unemployment then will be discussed as well as employment statistics of the KwaZulu-Natal 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 KwaZulu-Natal agricultural households are compared with KwaZulu-Natal 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.

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

[2] See Metadata in Labour Force Survey reports. Available online at www.statssa.org.za

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 KwaZulu-Natal there are 88 entries for White individuals living under the poverty line. On an average only 17% of that information is available, leaving only 15 entries. In reality, there are only 4 entries left which is too small to make any significant derivation. In the KwaZulu-Natal, 10 408 entries were made in the African population group living under the poverty line. Of this sample 83% did not respond, leaving 1 785 entries. Although 1 785 entries is still a small sample size, a better analysis can be done. The trend of low 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 KwaZulu-Natal agricultural households, but does compare certain statistics with the non-agricultural households in KwaZulu-Natal 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 KwaZulu-Natal and its districts. There are 11 districts within the Province. Figure 1 reflects this:

Figure 1: KwaZulu-Natal 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 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 the current employees, but all members 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 KwaZulu-Natal by race, together with their shares of the population in 2007.

Table 1: Racial Composition of South Africa and KwaZulu-Natal in 2007

Population Group	South Africa	Share	KwaZulu-Natal	Share
	Number	%	Number	%
African	37,887,594	79.42	8,180,006	83.55
Coloured	4,223,511	8.85	242,917	2.48
Indian	1,168,672	2.45	804,839	8.22
White	4,348,366	9.11	556,473	5.68
Other	8,764	0.17	6,395	0.07
Total	47,706,907	100	9,790,629	

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 KwaZulu-Natal (83.55%). The total population of South Africa is 47.7 million, while KwaZulu-Natal has 9.8 million residents.

Investigating the racial composition of the districts, the following information is obtained for 2007. Table 2 indicates that not only does the Durban Metro have the largest share of people in KwaZulu-Natal, but also the largest share of all population groups resides in Durban Metro.

Table 2: Racial Composition of KwaZulu-Natal districts in 2007

District	Population Group					
	African	Coloured	Indian	White	Total	Share (%)
Ugu	639,913	3,852	18,451	38,050	700,266	7.15
Share %	7.82	1.59	2.29	6.84		
Umgungundlovu	673,484	37,422	69,879	99,394	880,710	9.00
Share %	8.23	15.41	8.68	17.86		
UThukela	595,971	1,476	17,673	5,108	620,228	6.33
Share %	7.29	0.61	2.20	0.92		
Umzinyathi	438,737	9,108	6,019	10,454	464,318	4.74
Share %	5.36	3.75	0.75	1.88		
Amajuba	475,024	6,305	10,052	25,568	518,480	5.30
Share %	5.81	2.60	1.25	4.59		
Zululand	760,004			21,208	781,212	7.98
Share %	9.29			3.81		
Umkhanyakude	549,002	6,047		4,301	559,350	5.71
Share %	6.71	2.49		0.77		
UThungulu	884,156	2,244	15,796	19,573	921,770	9.41
Share %	10.81	0.92	1.96	3.52		
ILembe	467,417	6,084	38,316	14,616	526,433	5.38
Share %	5.71	2.50	4.76	2.63		
Sisonke	265,186	5,256	667	2,335	274,183	2.80
Share %	3.24	2.16	0.08	0.42		
Durban Metro	2,431,111	165,124	627,985	315,866	3,543,679	36.19
Share %	29.72	67.98	78.03	56.76		
Total	8,180,006	242,917	804,838	556,473	9,790,629	

The racial composition of the agricultural and non-agricultural households (as defined in section 2.2.1) in KwaZulu-Natal 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 KwaZulu-Natal 2007

Population Group	Agricultural		Non-agricultural		Total	
	Number	Share	Number	Share	Number	Share
African	98,042	88.99	1,932,293	80.17	2,030,335	80.56
Coloured			55,351	2.30	55,351	2.20
Indian	4,166	3.78	209,518	8.69	213,684	8.48
White	7,970	7.23	210,194	8.72	218,164	8.66
Total	110,179*	100.00	2,410,228	100.00	2,520,407	100.00

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. There are no Coloured agricultural households recorded in KwaZulu-Natal while only 2.3% of non-agricultural households are Coloured. The share of Indian households in the agricultural sector are almost half of that of the share of White households, whilst the share of both are almost equal in the non-agricultural sector as well as in the province as a total. Taking a closer look at the agricultural KwaZulu-Natal district composition, the following table is obtained:

Table 4: Racial Composition of agricultural households in KwaZulu-Natal districts

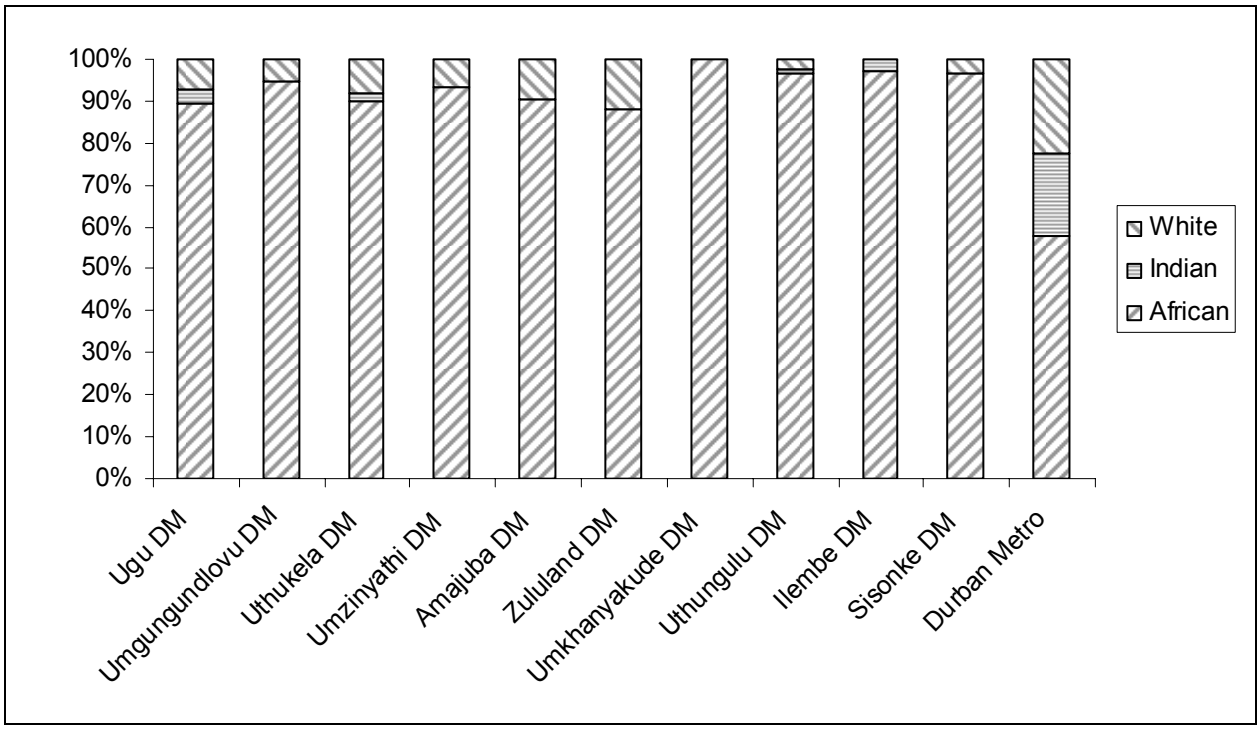
District	African	Coloured	White	Total	Share (%)
Ugu	10,841	425	849	12,115	11.00
Share %	11.06	10.21	10.65		
Umgungundlovu	13,047		745	13,792	12.52
Share %	13.31		9.35		
UThukela	8,336	183	761	9,279	8.42
Share %	8.50	4.39	9.54		
Umzinyathi	3,780		267	4,046	3.67
Share %	3.86		3.34		
Amajuba	4,487		478	4,966	4.51
Share %	4.58		6.00		
Zululand	5,710		792	6,502	5.90
Share %	5.82		9.94		
Umkhanyakude	9,564			9,564	8.68
Share %	9.75				
UThungulu	17,593	155	420	18,168	16.49
Share %	17.94	3.71	5.27		
ILembe	11,227	349		11,575	10.51

District	African	Coloured	White	Total	Share (%)
Share %	11.45	8.37			
Sisonke	4,419		158	4,577	4.15
Share %	4.51		1.99		
Durban Metro	9,040	3,054	3,500	15,594	14.15
Share %	9.22	73.31	43.91		
Total	98,042	4,166	7,970	110,179	

Source: Own calculation from Labour Force Survey 2007

Table 4 indicates that there are around 110 000 households with agricultural workers, with the uThungulu District Municipality having the biggest share and the Umzinyathi District Municipality the smallest share. Compiling a stacked column chart for comparing race compositions, the results are as follows:

Figure 2: Agricultural households in KwaZulu-Natal districts



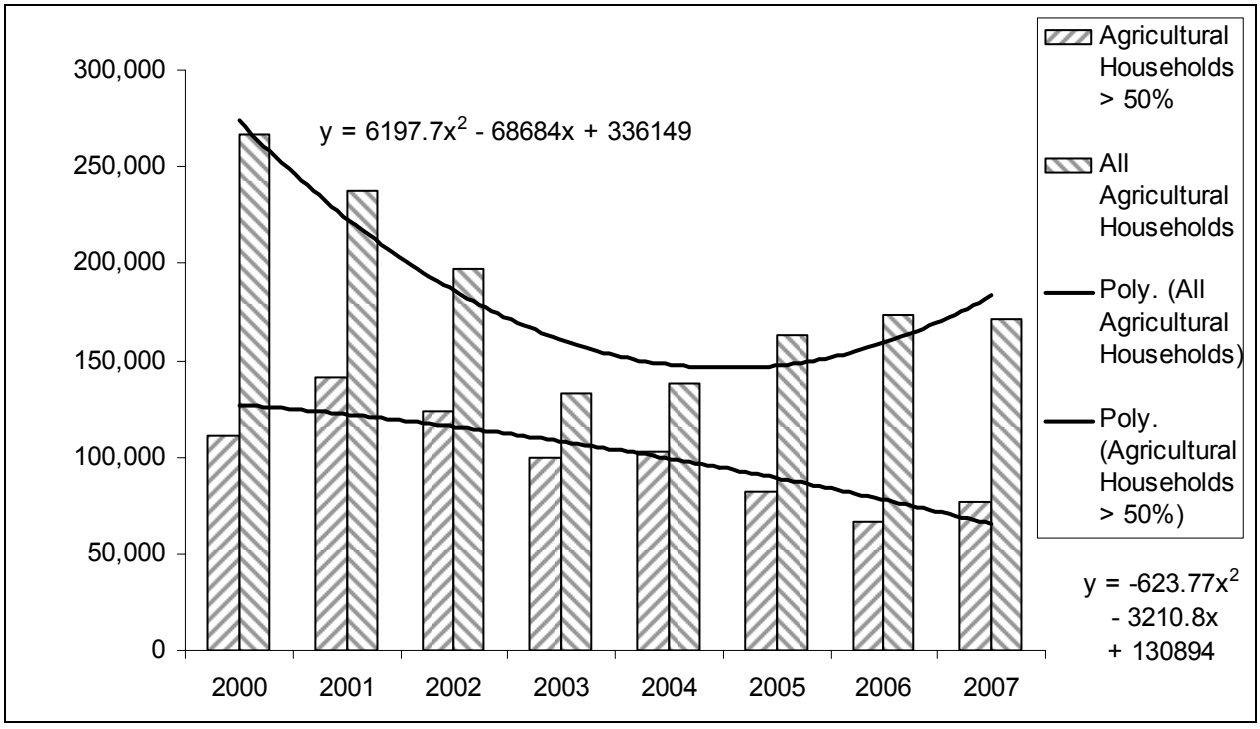
Source: Own calculation from Labour Force Survey 2007

Figure 2 clearly indicates that African households are dominant across KwaZulu-Natal and in the Umkhanyakhude District Municipality there are only Africans residing. The majority of the Whites and Indians live in the Durban Metro area.

Looking at the change in agricultural households since 2000, Figure 3 indicates the change in both households with a member or members working in agriculture and households whose agricultural income is more than 50% of household income. All agricultural household series declined till 2003 and then increased subsequently ending at 171 341 in 2007, while the

agricultural households with more than 50% of household income from employment in agriculture decreased from 2001 to 2006 and then increased slightly to 76 929[3] in 2007. 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 income and/or food, are not counted in Figure 3.

Figure 3: Agricultural households over time

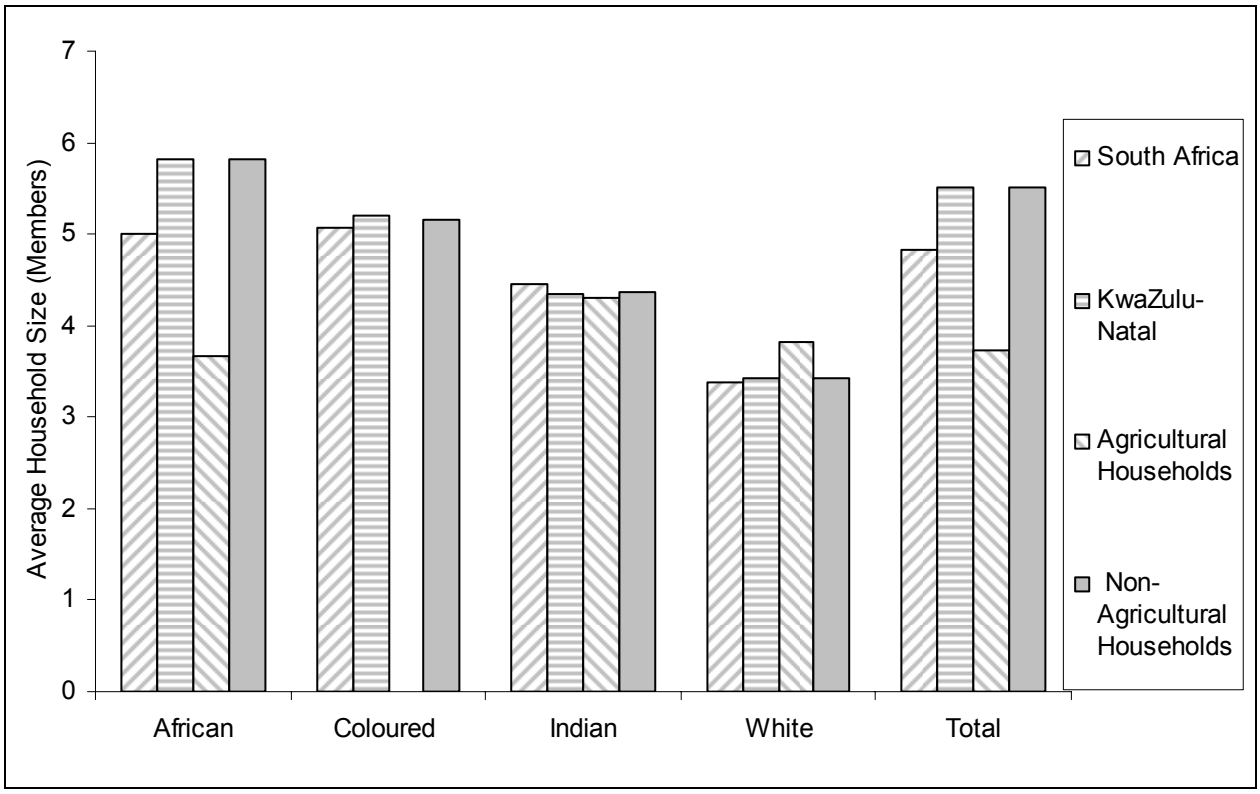


Source: Own calculation from Labour Force Survey 2000-2007

The average household size by race is given in the next figure (Figure 4). It can be seen that the household sizes in KwaZulu-Natal are larger than the national average except for the Indian population. The non-agricultural household size drives the provincial average across the races. With regards to the agricultural households, household size is considerably smaller (3.72) than that of the average in South Africa (4.83) and KwaZulu-Natal (5.51).

[3] Comparing this with Table 5, it corresponds to the total of the first two columns.

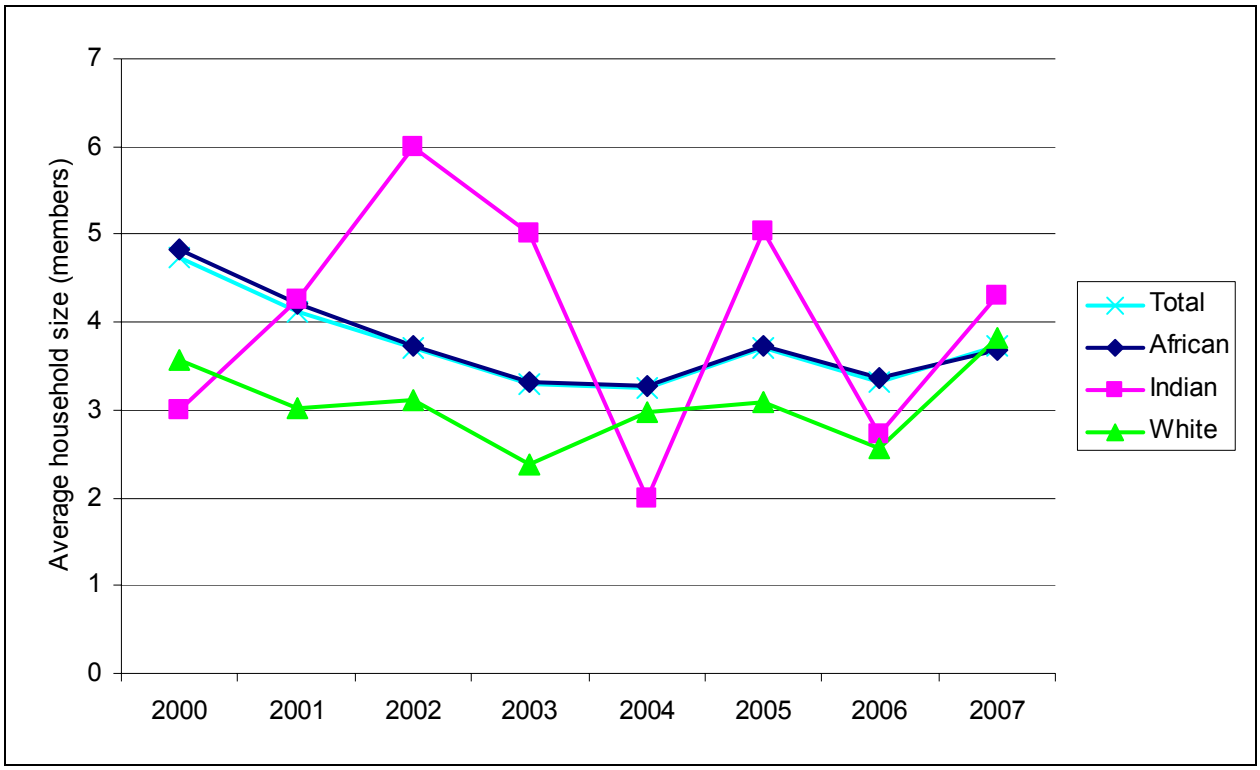
Figure 4: Household size by race for 2007



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 Indians population's households are the biggest while the White population have the least number of people within the household from 2000 until 2006. The African population's size was on a decreasing trend till 2004, after which it increased in 2005 and 2007. The Indian household size vary year on year, while the White household size follows the same trend as the Africans except in 2007 where it increased considerably.

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 KwaZulu-Natal that obtain more than 50% of their income or food source 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 (89.95%) of employment in the agricultural sector, and this is consistent with the employment numbers stated earlier. There are 19 176 households in the KwaZulu-Natal that depend solely on subsistence farming for main source of food (14 395 households) or non-salary income (4 781 households) and all are African households. 60.18% of agricultural households derive more than 50% of their household income from employment within the agricultural sector, while households involved with subsistence farming comprise 17.4%. There are 10 108 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 14 591 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	59,640	89.95	5,159	51.04	14,067	96.41	19,176	100	98,042	88.99
Indian	2,818	4.25	1,348	13.34					4,166	3.78
White	3,846	5.80	3,601	35.63	523	3.59			7,970	7.23
Total	66,304	100	10,108	100	14,591	100	19,176	100	110,179	100
Activity Share	60.18		9.17		13.24		17.40		100	

Source: Own calculation from Labour Force Survey 2007

3.2. South African and KwaZulu-Natal labour force

Every citizen in a country can be classified as either economically active or economically inactive. If an individual is economically active, he or she 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 KwaZulu-Natal respectively:

Table 6: South African and KwaZulu-Natal labour force in 2007

	South Africa				KwaZulu-Natal			
	Broad		Strict		Broad		Strict	
	Number	Share	Number	Share	Number	Share	Number	Share
African	15,825,035	77.44	12,671,070	74.81	3,218,970	81.6	2,556,104	79.11
Coloured	1,977,240	9.68	1,746,798	10.31	109,874	2.79	98,523	3.05
Indian	513,937	2.52	473,161	2.79	348,861	8.84	315,565	9.77
White	2,117,799	10.3	2,047,715	12.09	267,216	6.77	260,853	8.07
Total	20,434,011	100	16,938,744	100	3,944,921	100	3,231,045	100

Source: Own calculation from Labour Force Survey 2007

In 2007, there was 20.4 million (16.9 million) individuals in the South African labour force according to the broad (strict) definition. In KwaZulu-Natal there were 3.9 million (3.2 million), the largest share taken by the African population with 81.6% (79.11%). The largest contributor to the national labour force is the African population with 77.4% (74.81%). In the KwaZulu-Natal sample, the Coloured population is the smallest (2.79% and 3.05% respectively).

3.3. Unemployment in South Africa and KwaZulu-Natal

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 KwaZulu-Natal Province by population group.

Table 7: Unemployment numbers for South Africa and KwaZulu-Natal by population group in 2007

	South Africa		KwaZulu-Natal	
	Broad	Strict	Broad	Strict
African	6,984,075	3,830,110	1,524,767	861,901
Coloured	576,177	345,735	34,043	22,692
Indian	105,855	65,079	85,359	52,063
White	158,206	88,122	14,629	8,266
Total	7,830,004	4,330,958	1,658,798	944,922

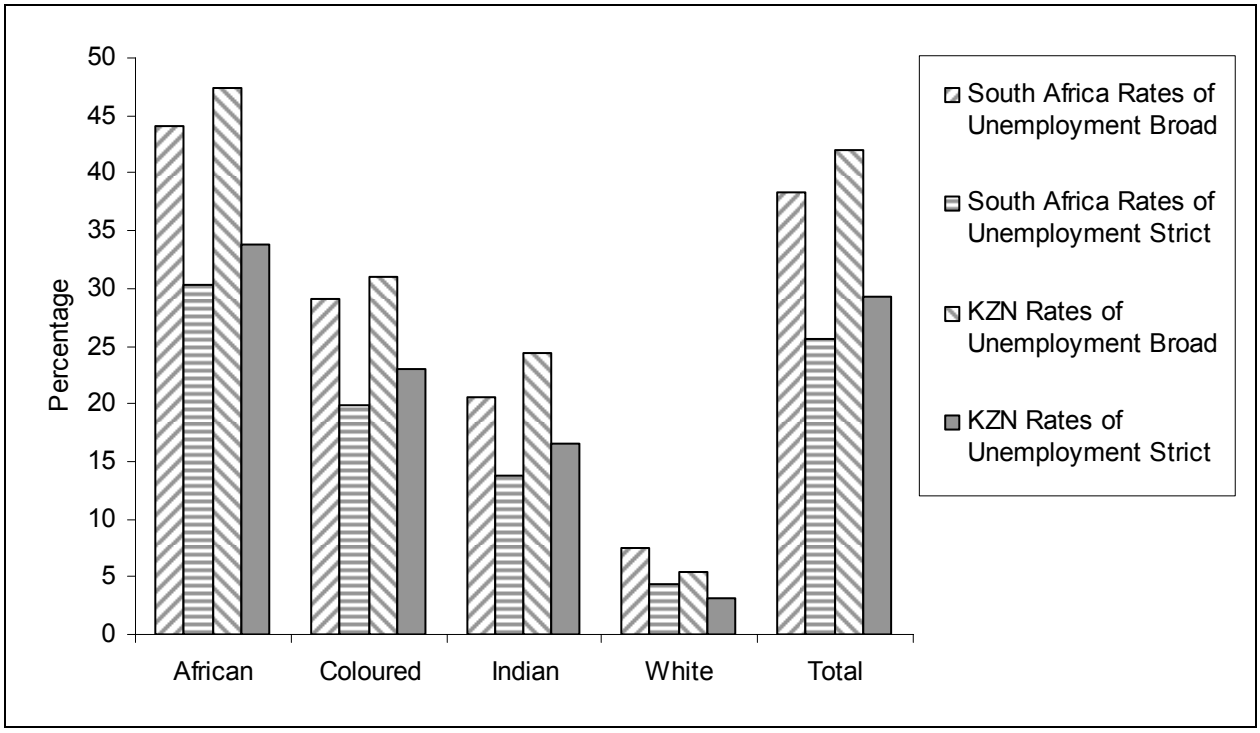
Source: Own calculation from Labour Force Survey 2007

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 KwaZulu-Natal. The least unemployed group in KwaZulu-Natal are Whites across all definitions. The smallest

unemployed group in South Africa is that of the Indian population followed by the White subgroup across all definitions.

There is a clear trend with Africans having the highest unemployment in South Africa and KwaZulu-Natal for both definitions (broad and strict respectively) (Figure 6). The White population in both South Africa (strict and broad) and KwaZulu-Natal (strict and broad) have significantly lower unemployment rates than the other population groups. The total unemployment rate for the official (strict) definition for South Africa and KwaZulu-Natal respectively are 25.53% and 29.24%.

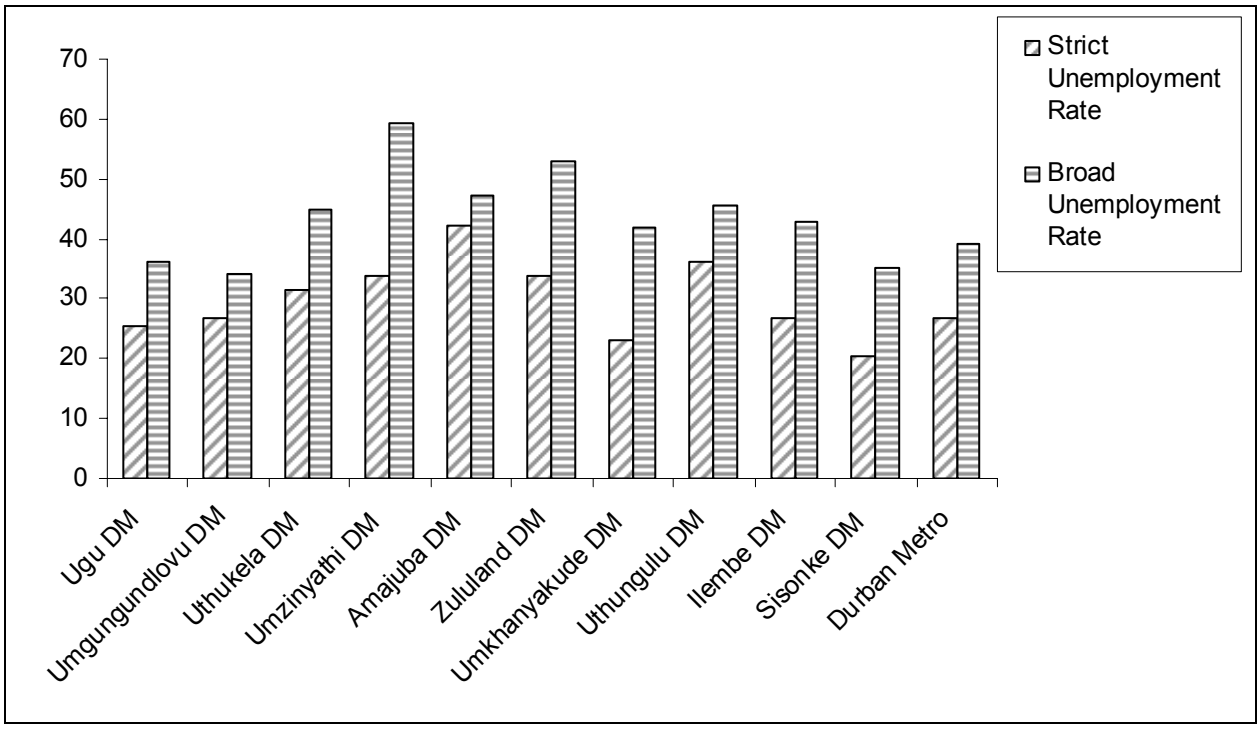
Figure 6: Unemployment rates for South Africa and KwaZulu-Natal by population group



Source: Own calculation from Labour Force Survey 2007

Taking a closer look at KwaZulu-Natal, the following information regarding district level was obtained. In Figure 7, Umzinyathi District Municipality has the highest unemployment rates considering the broad definition (59.12%) followed by Zululand District Municipality (52.82%). The lowest unemployment rates are in Sisonke District Municipality considering the strict definition (20.49%). Amajuba District Municipality has the highest unemployment rates considering the strict definition (42.33%) followed by uThungulu District Municipality (36.06%).

Figure 7: Unemployment rates for districts in KwaZulu-Natal



Source: Own calculation from Labour Force Survey 2007

3.4. Work-force and Employment in KwaZulu-Natal 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 KwaZulu-Natal for 2007 in the subsequent table:

Table 8: South African and KwaZulu-Natal agricultural work-force

	South Africa		KwaZulu-Natal	
	Number	**Share**	**Number**	**Share**
African	741,228	75.82	231,426	92.94
Coloured	143,172	14.65	2,025	0.81
Indian	5,458	0.56	5,398	2.17
White	87,728	8.97	10,146	4.07
Total	977,586	100	248,995	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 the agricultural work-force in KwaZulu-Natal. There are few Coloureds in the KwaZulu-Natal agriculture work-force compared to the national average (0.81% *vs.* 14.56%), whereas there are relatively more Indians (2.17% *vs.* 0.56% nationally). The White population's share in South Africa and KwaZulu-Natal is 8.97% and 4.07% respectively. Decomposing the KwaZulu-Natal province to a district level by gender, the following is obtained:

Table 9: Agricultural work-force of KwaZulu-Natal districts by gender in 2007

Districts	**Male**	**Share**	**Female**	**Share**	**Total**	**Share**
Ugu	20,524	37.90	33,629	62.10	54,153	100
Umgungundlovu	12,916	52.13	11,862	47.87	24,777	100
Uthukela	11,695	55.40	9,417	44.60	21,112	100
Umzinyathi	3,370	43.12	4,446	56.88	7,817	100
Amajuba	6,385	56.45	4,927	43.55	11,312	100
Zululand	11,203	63.05	6,566	36.95	17,768	100
Umkhanyakude	12,938	43.19	17,014	56.81	29,952	100
Uthungulu	8,693	47.26	9,702	52.74	18,395	100
Ilembe	8,374	53.72	7,215	46.28	15,589	100
Sisonke	9,729	41.55	13,688	58.45	23,417	100
Durban Metro	14,381	56.81	10,932	43.19	25,313	100
Total	120,207	48.16	129,399	51.84	249,606	100

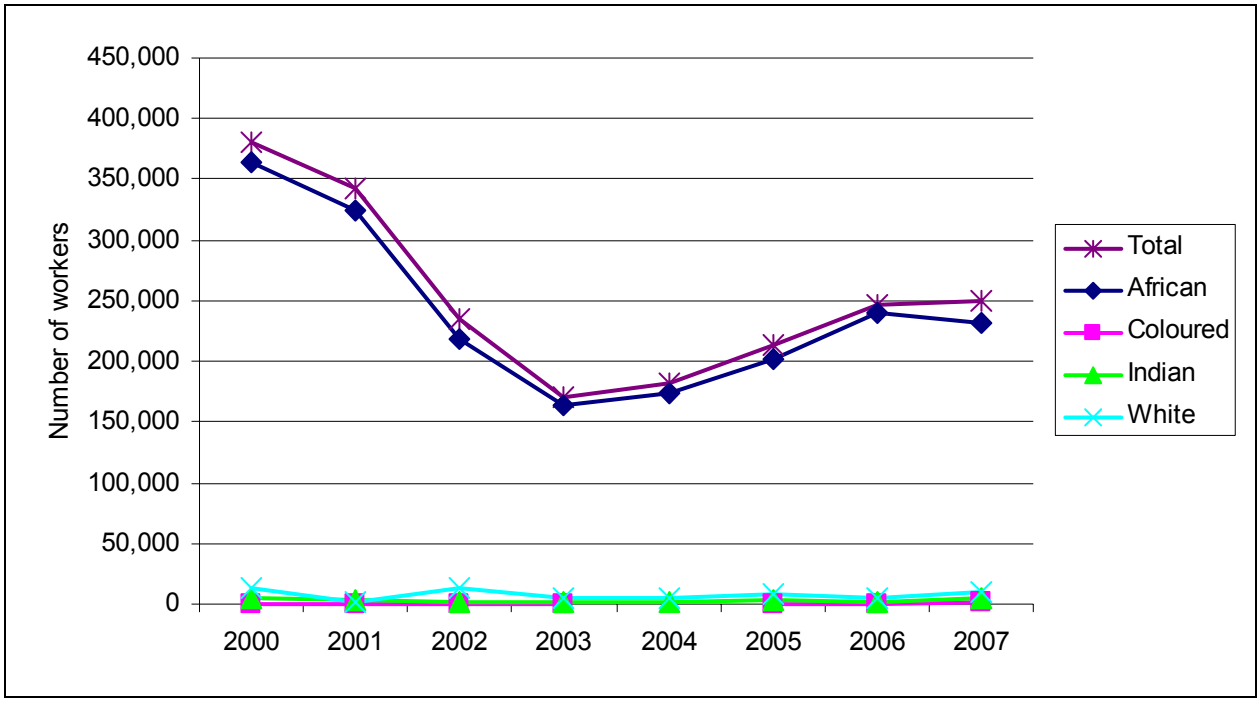
Source: Own calculation from Labour Force Survey 2007

Table 9 illustrates that the work-force is almost equal in KwaZulu-Natal with males comprising 48.16% of the work-force and females 51.84%. The Ugu District Municipality has the highest work-force amongst the other District Municipalities with the total of 54 153 followed by Umkhanyakude District Municipality with the total work-force of 29 952. UMzinyathi District Municipality has the lowest work-force share with the total of 7 817 followed by Amajuba.

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 agriculture disregarding 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: KwaZulu-Natal agricultural employment figures from 2000 to 2007



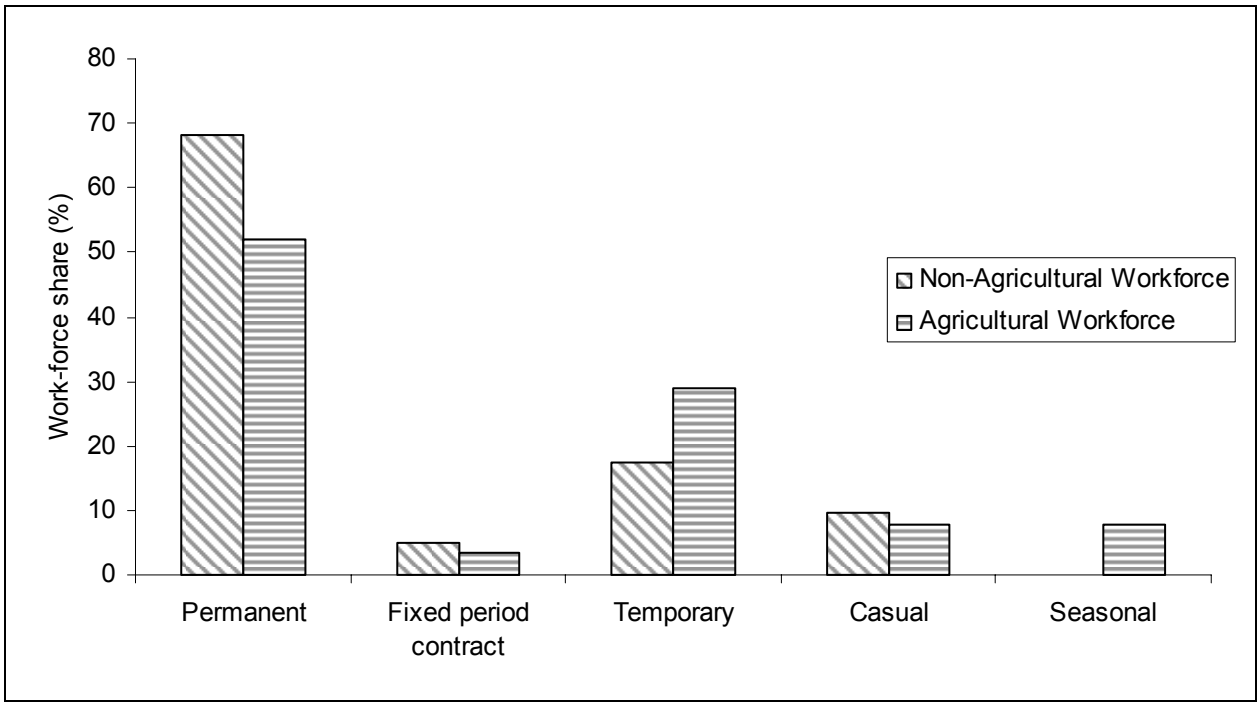
Source: Own calculation from Labour Force Survey 2000-2007

It can be observed in Figure 8 that there was a decreasing trend until 2003 in total employment, but since then it slowly increased again. 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. Indian, Coloured and White employment stays constant over time. The African employment decreased from 363 207 to 231 426 in 2007 and the total employment decreased from 381 259 to 248 995. 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 KwaZulu-Natal work-force in 2007

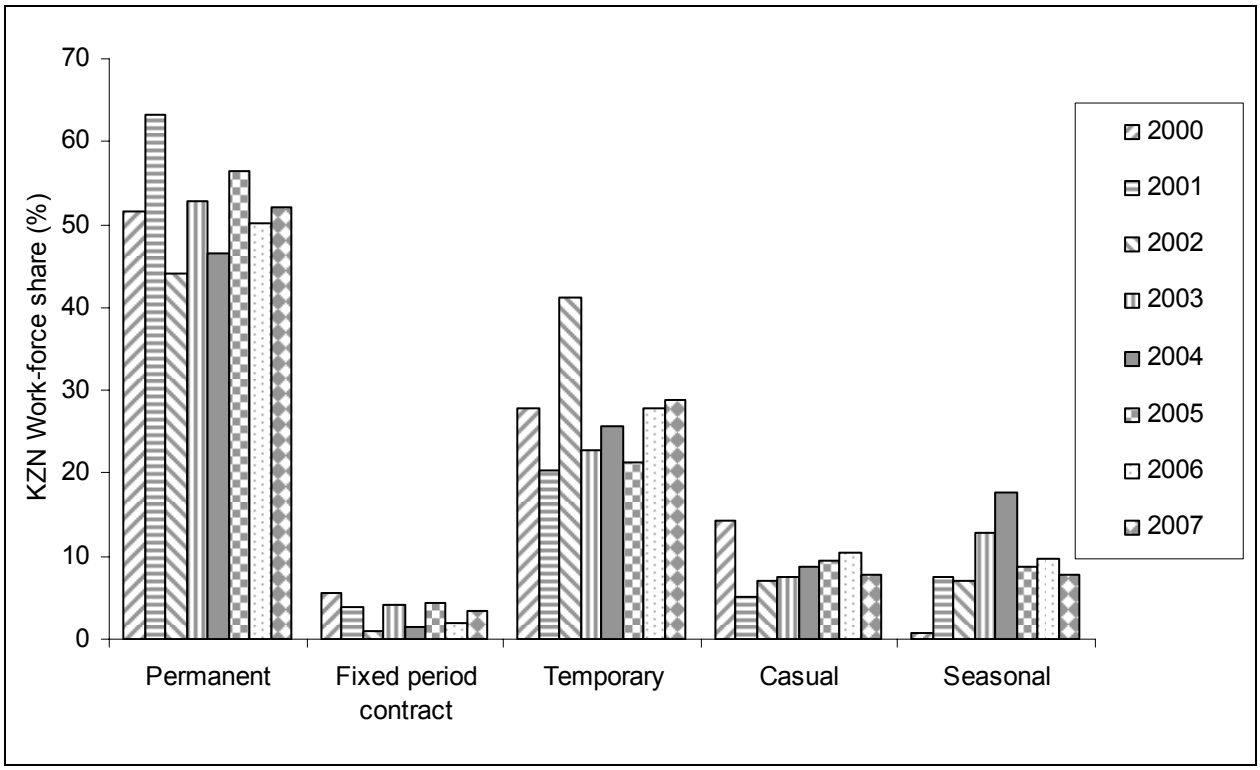


Source: Own calculation from Labour Force Survey 2007

The agricultural work-force has predominantly a permanent work-force (52.1%), but a high temporary work-force is also visible (28.9%). This seasonal element is clearly unique within the agricultural work-force, as the non-agricultural work-force has no seasonal employees. The share of fixed period contract and casual workers in the agricultural work-force are smaller than for the non-agricultural work-force.

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

Figure 10: KwaZulu-Natal Work status over time



Source: Own calculation from Labour Force Survey 2000-2007

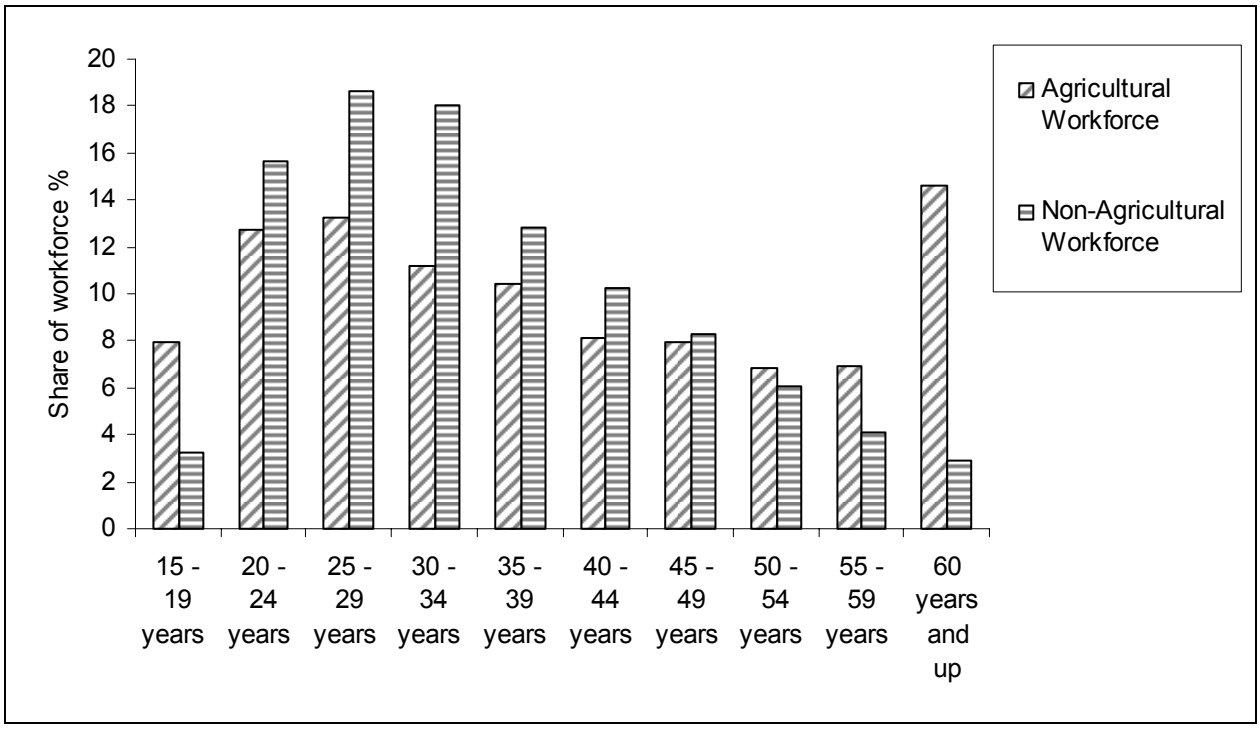
This figure indicates an increase since 2002 in the share of permanent labour, while the share of fixed period employees remained relatively constant. There is also an increase in share of temporary employment since 2003 and the share of casual employment increased between 2001 and 2006, but declined in 2007. The share of seasonal workers reached a peak in 2004.

3.5. Characteristics of KwaZulu-Natal 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 KwaZulu-Natal



Source: Own calculation from Labour Force Survey 2007

The greatest share of the work-force for both the non-agricultural and agricultural sector is between the ages of 25-29 years. The agricultural sector has a greater share of young (15-19 years) and old (60 years and up) workers compared to the non-agricultural sector. The share of workers 60 years and older for agriculture is 14.59% compared to the 2.94% for non-agriculture.

3.5.2. Location and occupation

The agricultural workers also indicated where the location is of their work. As expected, the majority (78.3%) work on a farm. The second most common place where agricultural activities take place is inside a formal business (factory or shop) and the least common is at a service outlet (0.39%). Table 10 present the full results, including the number and share.

Table 10: Location of KwaZulu-Natal agricultural work-force

	Number	Share %
In the owner's home/On the owner's farm	195,448	78.30
In someone else's home / Private household	15,300	6.13
Inside a formal business premises such as factory or shop	16,393	6.57
At a service outlet such as a shop, school, post office etc	981	0.39
On a footpath, street, street corner, open space or field	12,134	4.86
No fixed location	5,014	2.01
Other	273	0.11
Unspecified	4,062	1.63
Total	249,605	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 skilled agricultural workers dominate (67.97%), while professionals are the minority (0.05%).

Table 11: Occupation of KwaZulu-Natal agricultural work-force

	Number	Share %
Legislators, senior officials and managers	3,436	1.38
Professionals	132	0.05
Technicians and associate professionals	1,272	0.51
Clerks	1,795	0.72
Service workers and shop and market sales worker	1,824	0.73
Skilled agricultural and fishery worker	169,230	67.97
Craft and related trade workers	669	0.27
Plant and machinery operators and assemblers	8,567	3.44
Elementary occupations	62,070	24.93
Total	248,995	100

Source: Own calculation from Labour Force Survey 2007

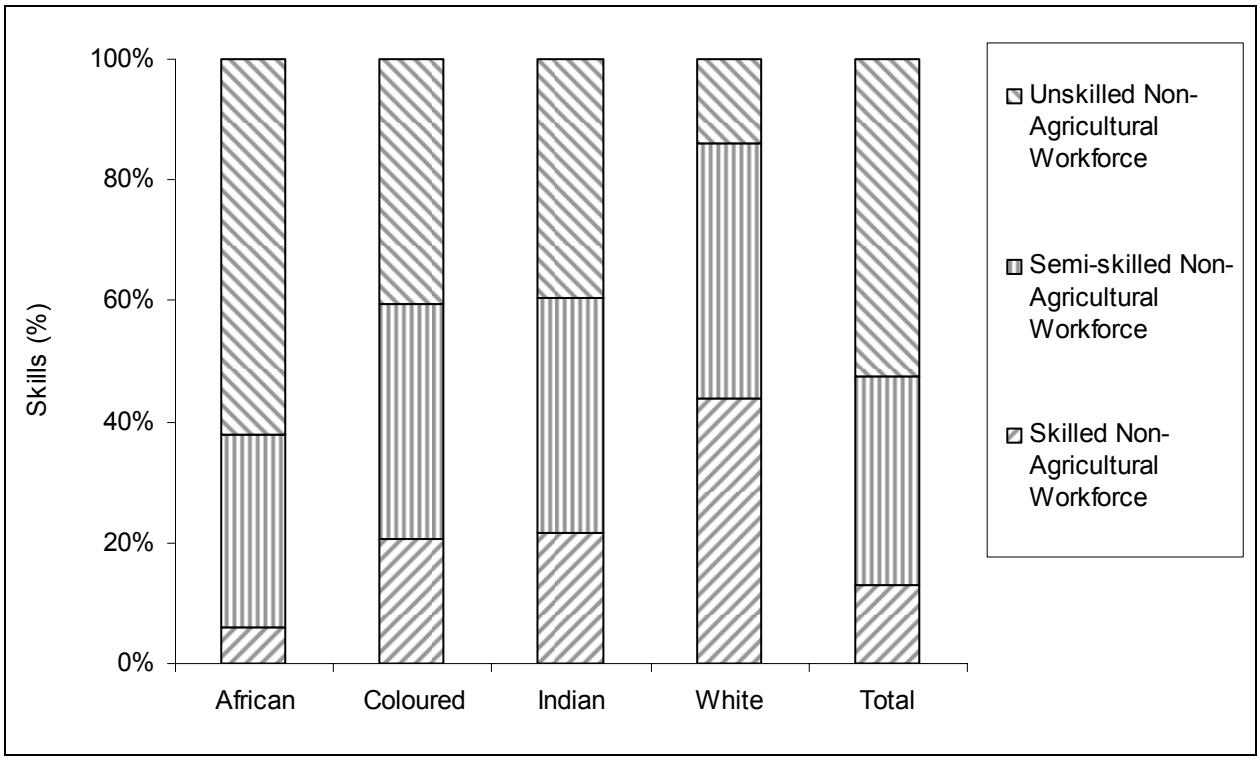
3.5.3. Skills level

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 KwaZulu-Natal for non-agricultural work-force in 2007

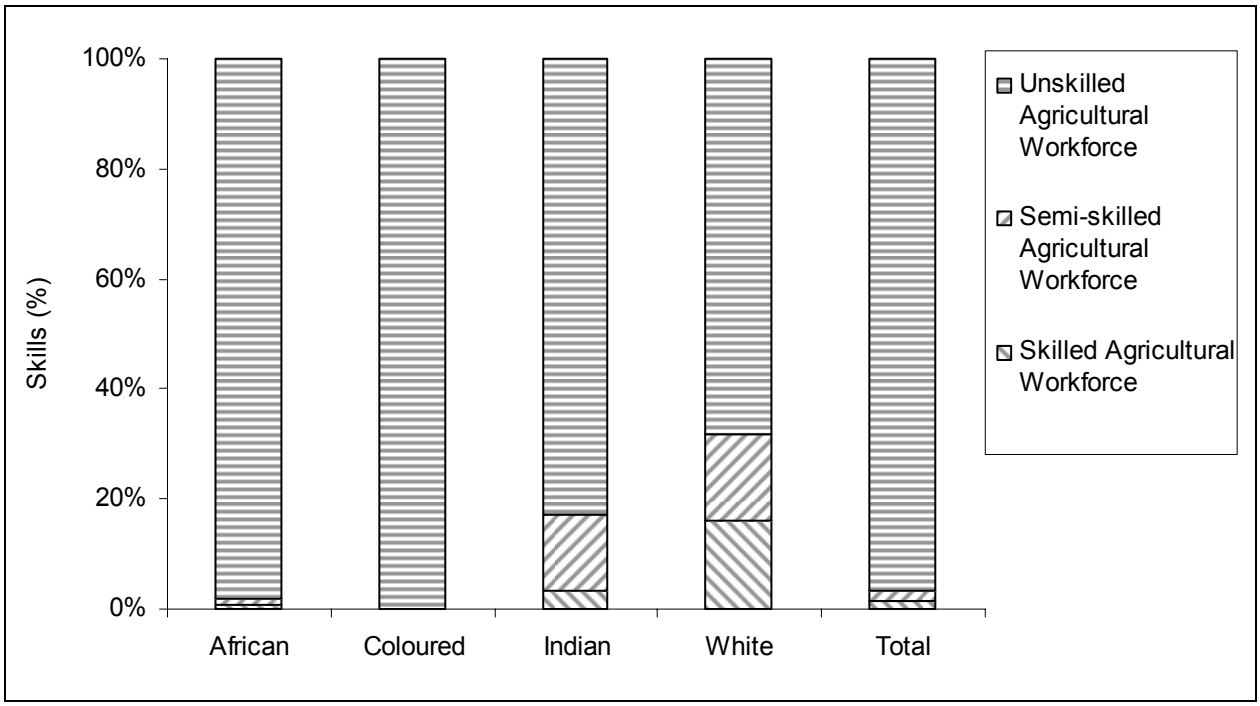


Source: Own calculation from Labour Force Survey 2007

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 (86.05%) of White workers being skilled or semiskilled workers and the minority (37.84%) of the African workers being skilled or semiskilled workers.

Looking at the skill levels of agricultural workers in Figure 13 it can be seen that almost none of the African workers are skilled (0.76%), while 16.08% of White agricultural workers are skilled. The whole sector is also more dominated by unskilled labour, compared to the non-agricultural sector.

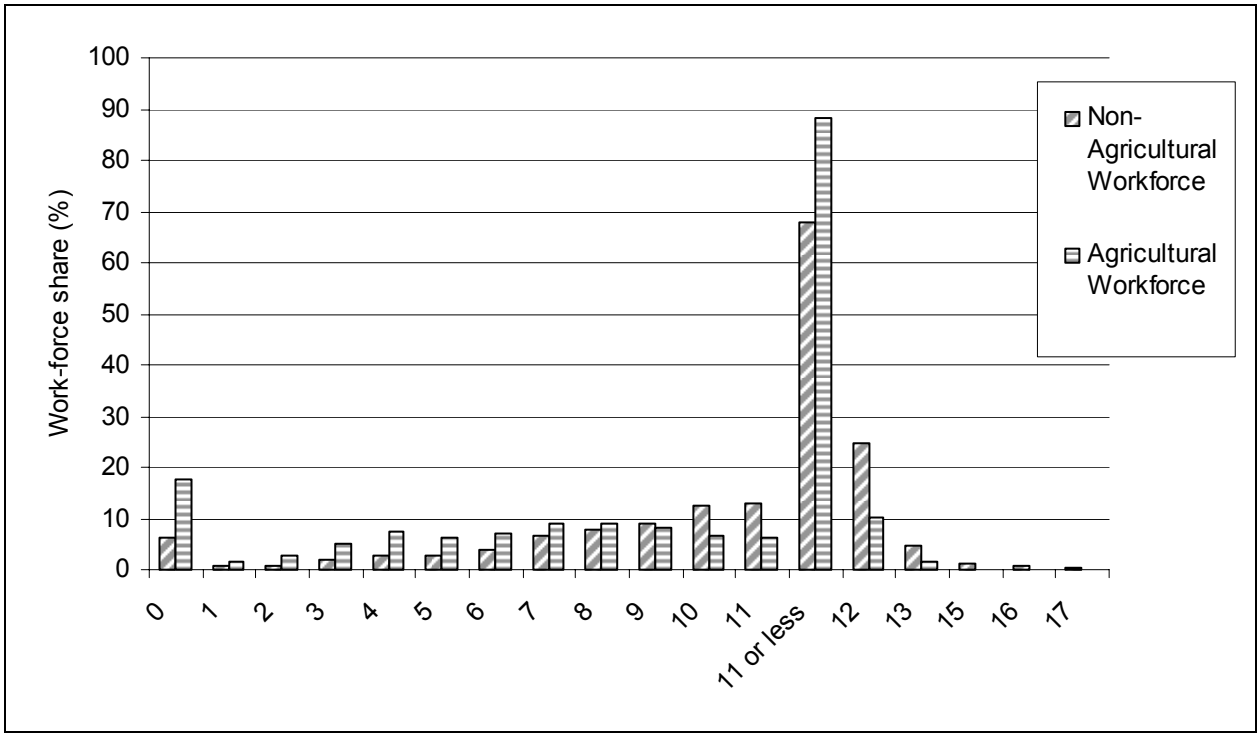
Figure 13: Skills level of the KwaZulu-Natal agricultural work-force



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 & non-agricultural workers in KwaZulu-Natal

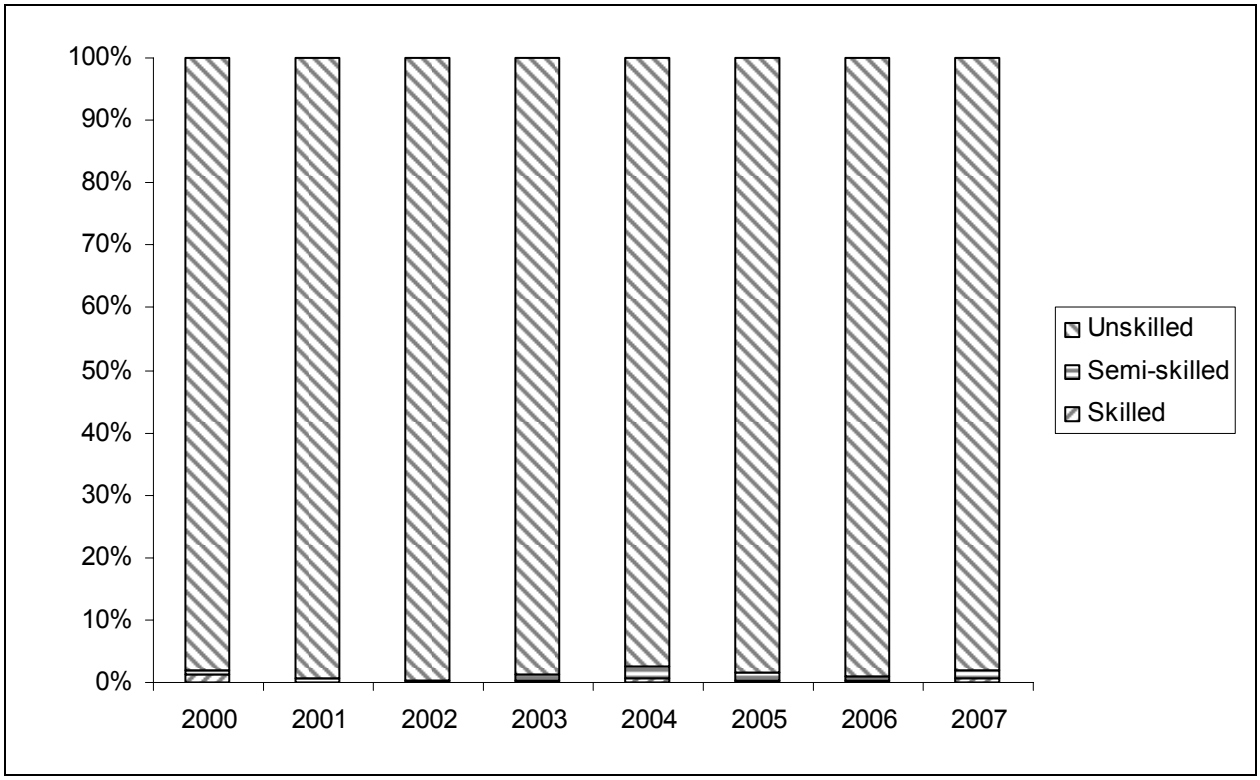


Source: Own calculation from Labour Force Survey 2007

The graph clearly shows that the majority of agricultural workers do not have a matric qualification (88.13%), although they received some high school education. Only a small portion received 12 years or more education (11.87%). The non-agricultural work-force has a higher share of matriculant workers (24.81%) and workers with post-matric education (7.23% compared to 1.51% 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:

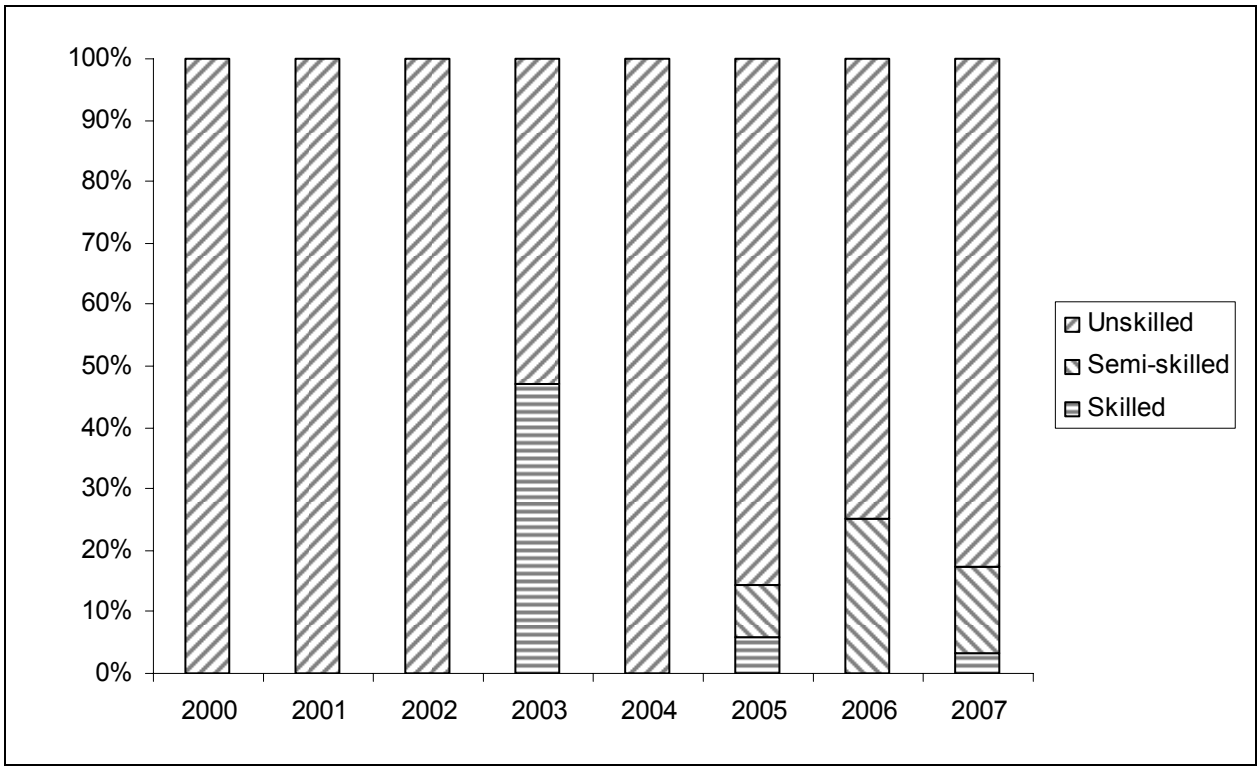
Figure 15: Skills level for Africans in the agricultural work-force



Source: Own calculation from Labour Force Survey 2000-2007

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

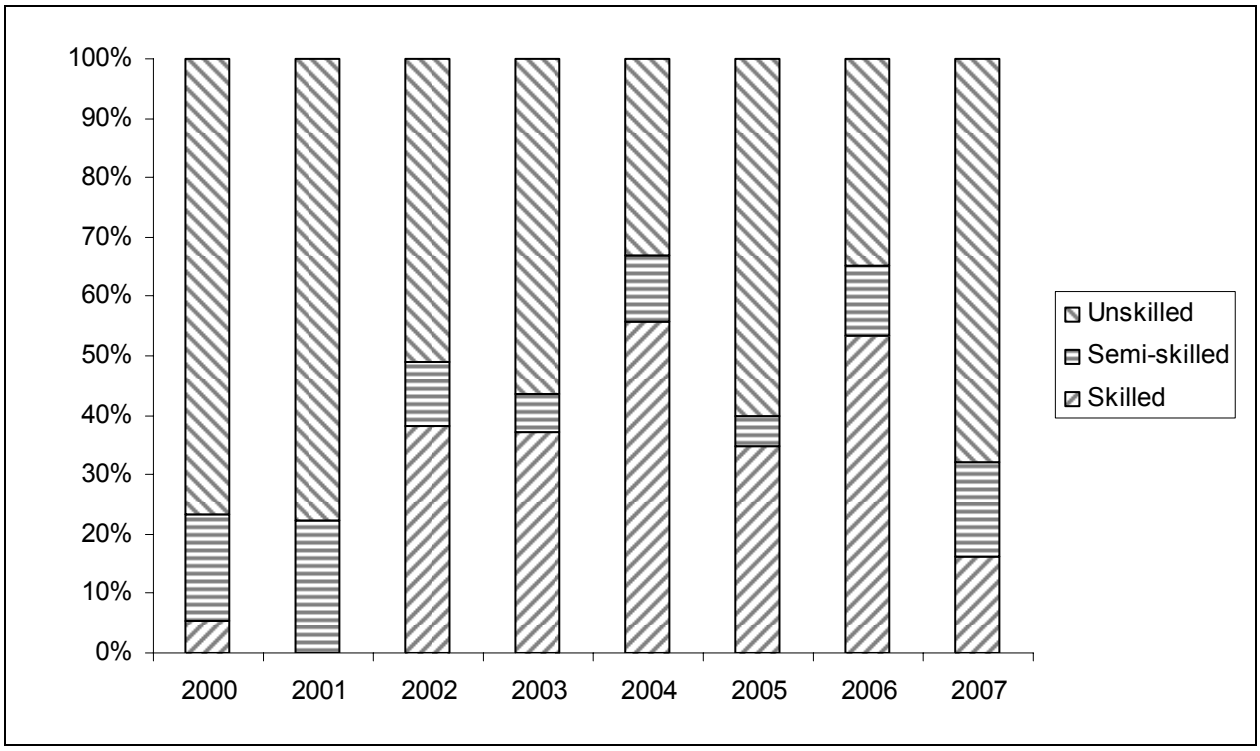
Figure 16: Skills level of the Indian agricultural workers



Source: Own calculation from Labour Force Survey 2000-2007

The skills level of the Indian population in Figure 16 does not differ much from the African population's skills level, but a slight share increase in semi-skilled (8.4% to 13.95%) through time. This indicates that a minority did acquire more skills to move towards more specialised work.

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 the share of skilled workers increased with time (5.25% to 16.08%), while the unskilled declined (76.70% to 68.08%).

There is a definite skills gap between race groups in the KwaZulu-Natal 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

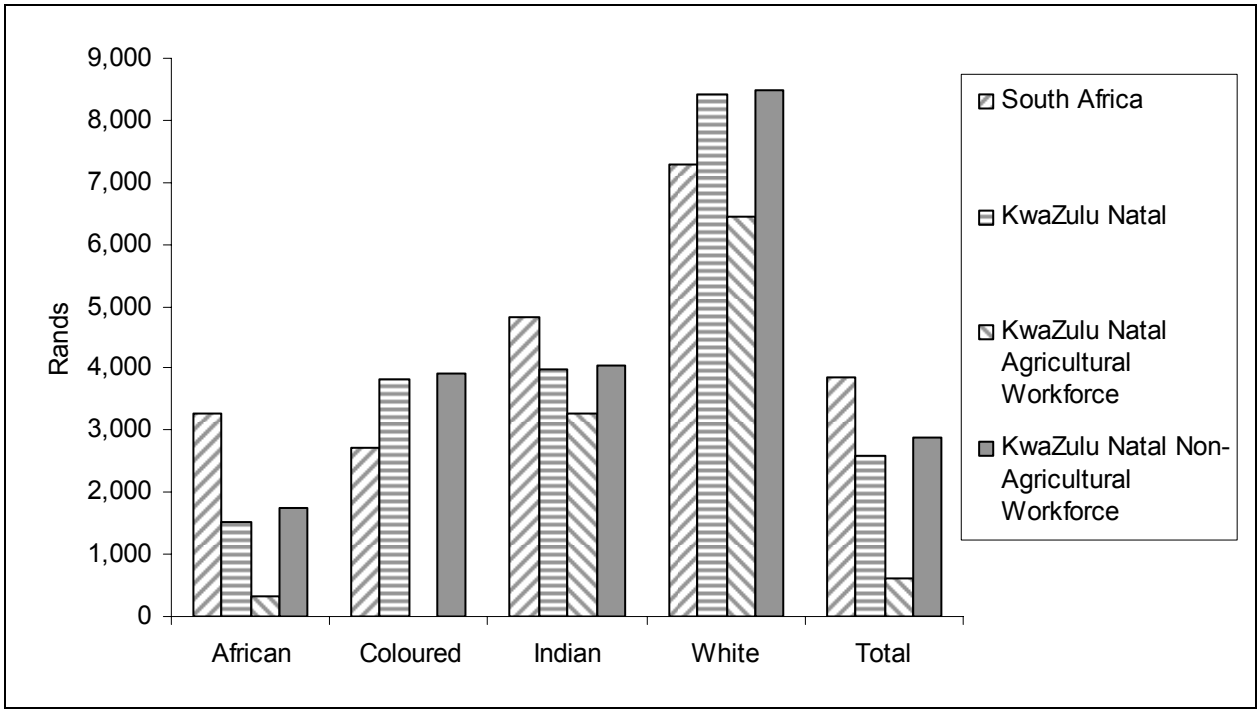
4.1. South Africa and KwaZulu-Natal

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, KwaZulu-Natal, KwaZulu-Natal agricultural and KwaZulu-Natal non-agricultural work-forces.

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

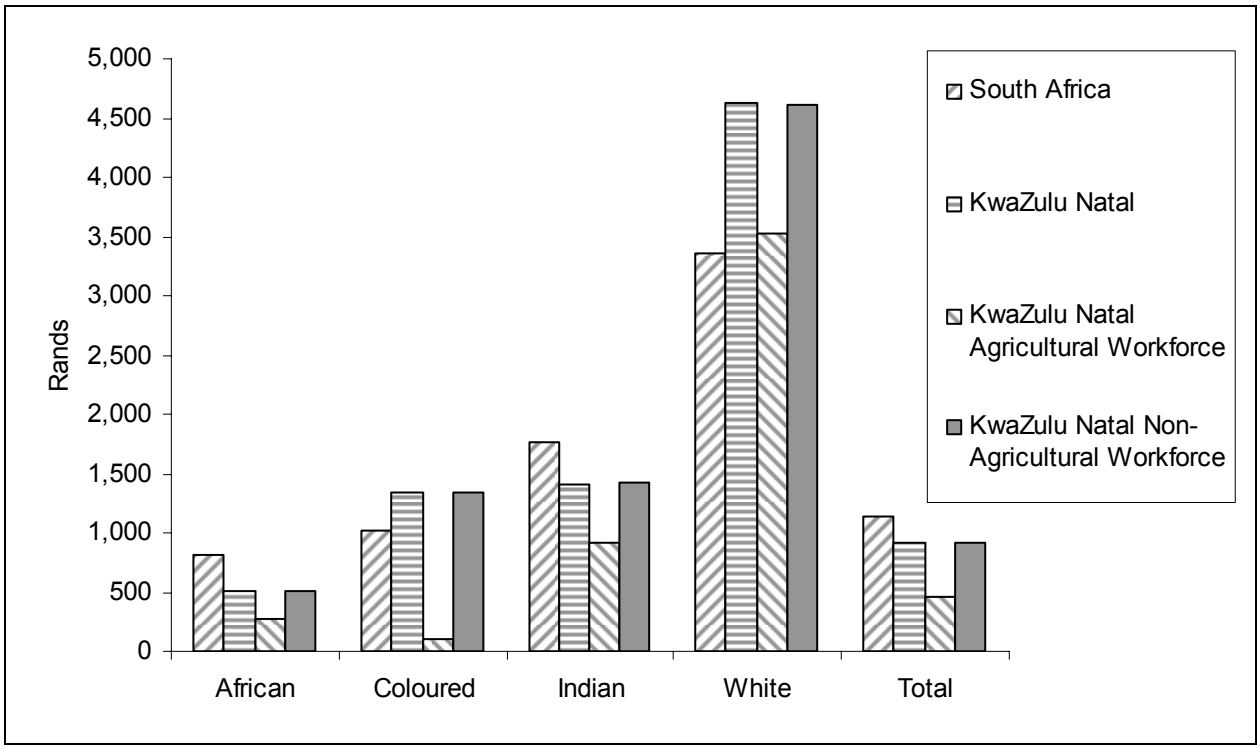


Source: Own calculation from Labour Force Survey 2007

The KwaZulu-Natal mean monthly income is displayed in Figure 18. Overall the agricultural work-force of KwaZulu-Natal receive a lower income (R627), while the non-agricultural income is similar to the mean income (R2 605) for the province. The White agricultural mean income (R6 434) is higher than the other agricultural incomes, suggesting that on average a White individual in the agricultural household in the KwaZulu-Natal is doing financially better than his/her peers of other population groups.

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.

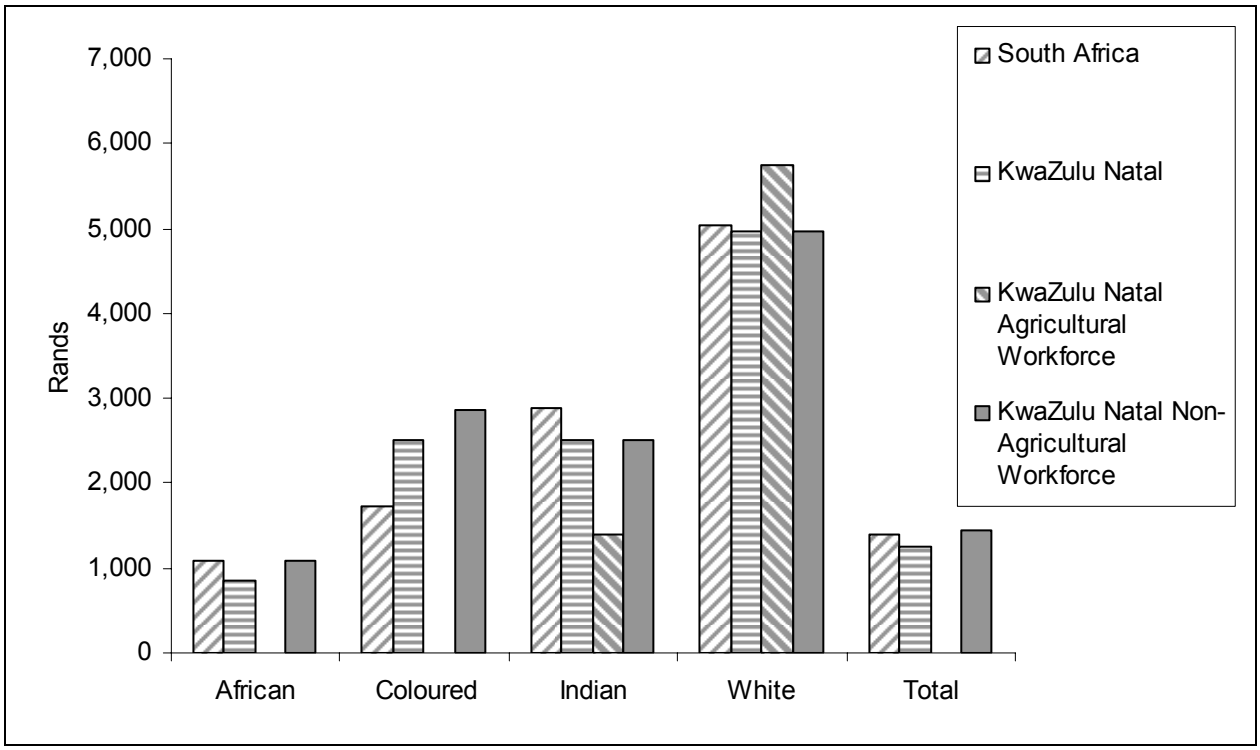
Figure 19: Mean monthly real household income per capita by race for 2007



Source: Own calculation from Labour Force Survey 2007

In Figure 19 again the agricultural workforce's mean household income per capita is lower across all races. The non-agriculture KwaZulu-Natal and South African household incomes display the same patterns as the individual incomes, with Whites (R4 617) earning the most on average and Africans and Coloureds earning the least (R514 and R1 341 respectively).

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



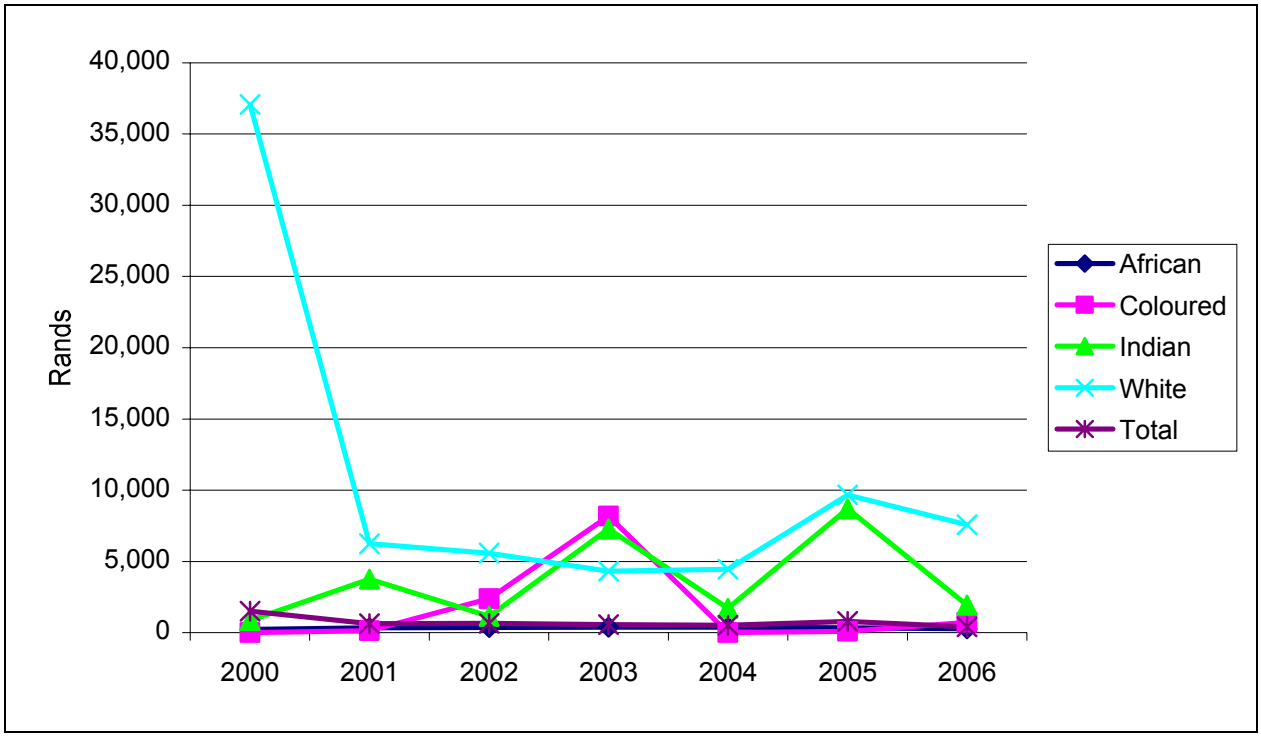
Source: Own calculation from Labour Force Survey 2007

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, the median better reflects 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 compared to the mean incomes in Figure 18. The pattern remains the same, with Whites earning the most and Africans earning the least, with the exception of the relatively higher White agricultural income. The provincial average median income is lower than the national average and the median incomes of agricultural households are lower than those of the non-agricultural sector, except for the White agricultural households. The zero median income for African agricultural households implies that more than 50% of African agricultural households do not earn any income. The zero median income for Africans, Coloureds and the total implies that 50% or more individuals of each of these groups do not earn any income.

4.2. KwaZulu-Natal agricultural work-force

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

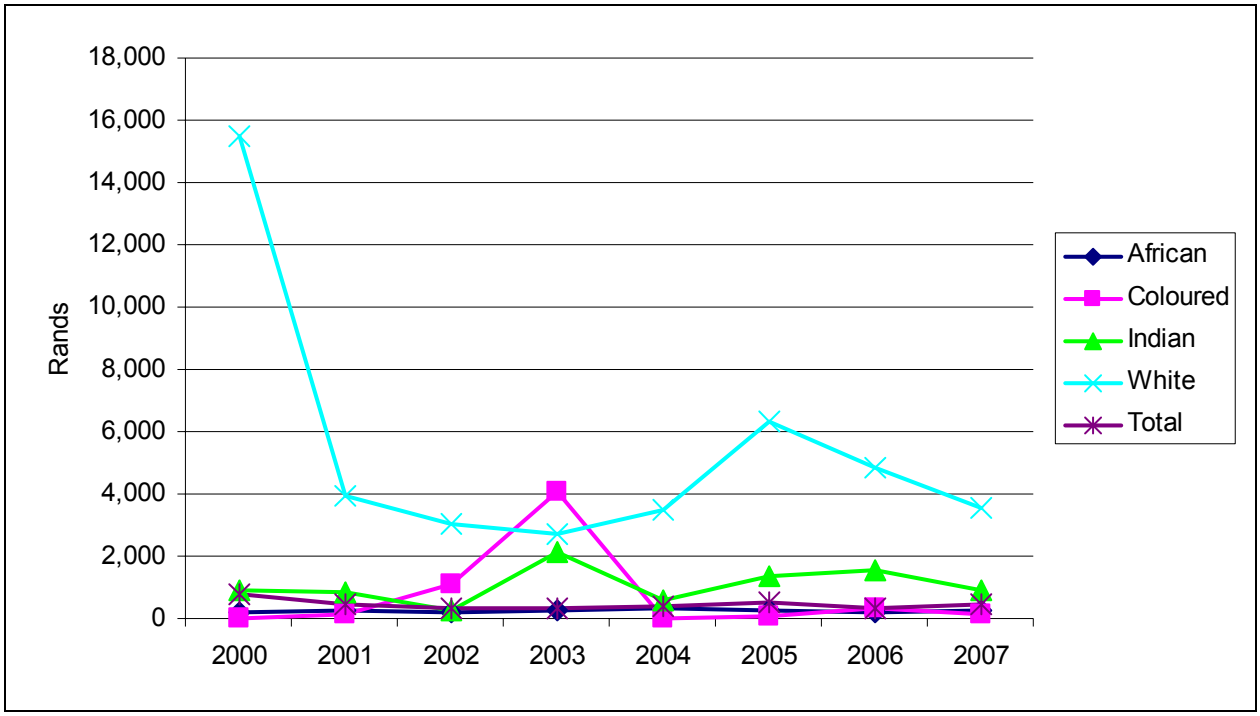
Figure 21: Real monthly mean income for individuals working in agriculture from 2000-2007



Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 21) clearly indicates the difference between the White population's mean incomes compared to that of the African population. The Coloured and Indian population's average income differ yearly, whereas the White's income decreased immensely in 2001 and then become stable. The total income also stays constant over time.

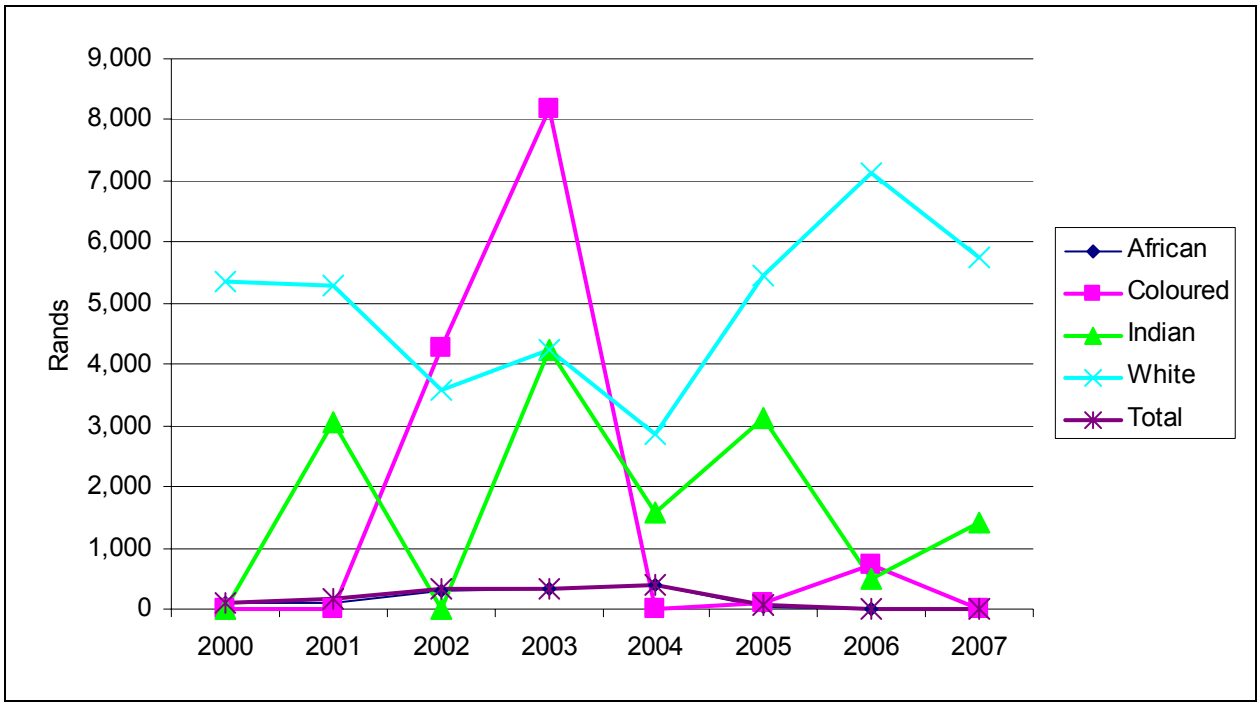
Figure 22: Real mean household income per capita for all agricultural households since 2000



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. This indicates that households are very much dependent on the agricultural individual earnings within the household.

Figure 23: Monthly median incomes of individuals in agriculture since 2000



Source: Own calculation from Labour Force Survey 2000-2007

The trend for Africans and the total stays the same within the median income (Figure 23) as for mean income, but the Indian and Coloured median income varies year on year. The White median income shows a different pattern than the mean incomes, with a decrease from 2000 until 2004, and an increase since then. In 2007, the median income of the White agricultural workers dropped again. The conclusion from above three figures is that there is a significant difference between the incomes of the White agricultural workers/households and African workers/households.

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.

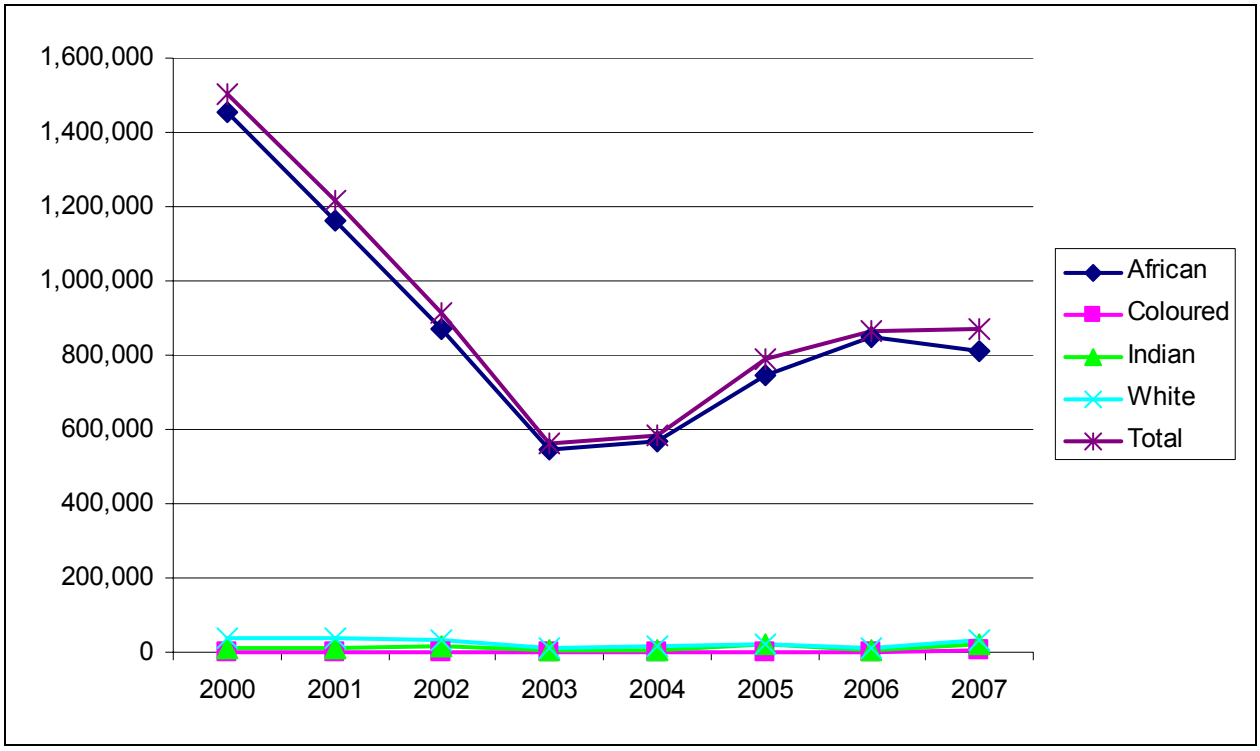
Table 12: Number of beneficiaries in 2007

	All		More than 50%	
	Number	**Share**	**Number**	**Share**
African	2,255,729	94.28%	366,804	89.77%
Coloured	21,888	0.91%	4,364	1.07%
Indian	24,745	1.03%	7,468	1.83%
White	88,279	3.69%	29,372	7.19%
Total	2,392,459		408,584	

Source: Own calculation from Labour Force Survey 2007

Table 12 indicates that the African population has the highest number of beneficiaries in the KwaZulu-Natal agricultural sector, dominating by 94.28% and 89.77% respectively. Investigating the trend over years, the total number of beneficiaries and the African households follows a similar trend; there is first a decrease and then an increase from 2003. The Coloured, Indian and White households stay relatively constant over time. It can also be seen that the African population have the highest number of beneficiaries from agricultural activities (2,255,729 beneficiaries in 2007).

Figure 24: Number of all beneficiaries from 2000 till 2007

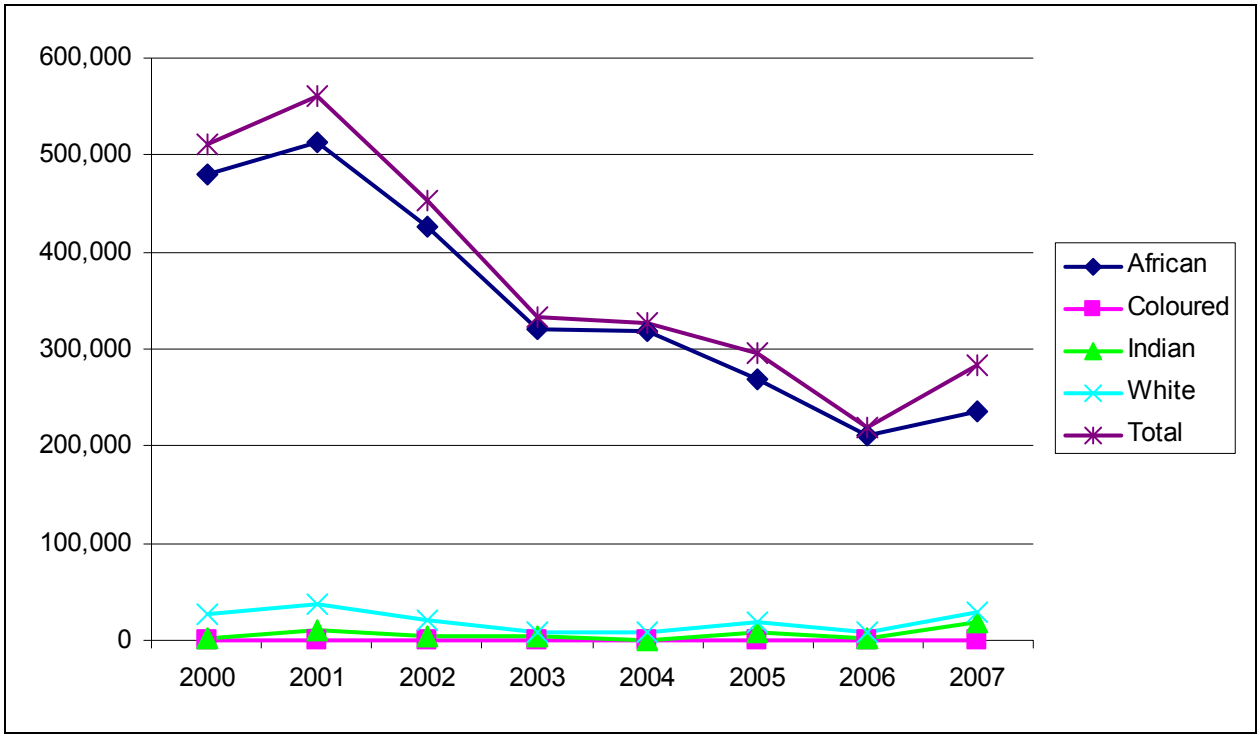


Source: Own calculation from Labour Force Survey 2000-2007

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 number of households between 2001 and 2006 , with an increase in

2007. The total beneficiaries declined from 511 595 in 2000 to 283 404 in 2007. Again the African households have the most beneficiaries (235 248 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

In general, the total number of beneficiaries, in both reporting measures, is lower in 2007 than what it was in 2000.

5. Poverty indices of KwaZulu-Natal 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:

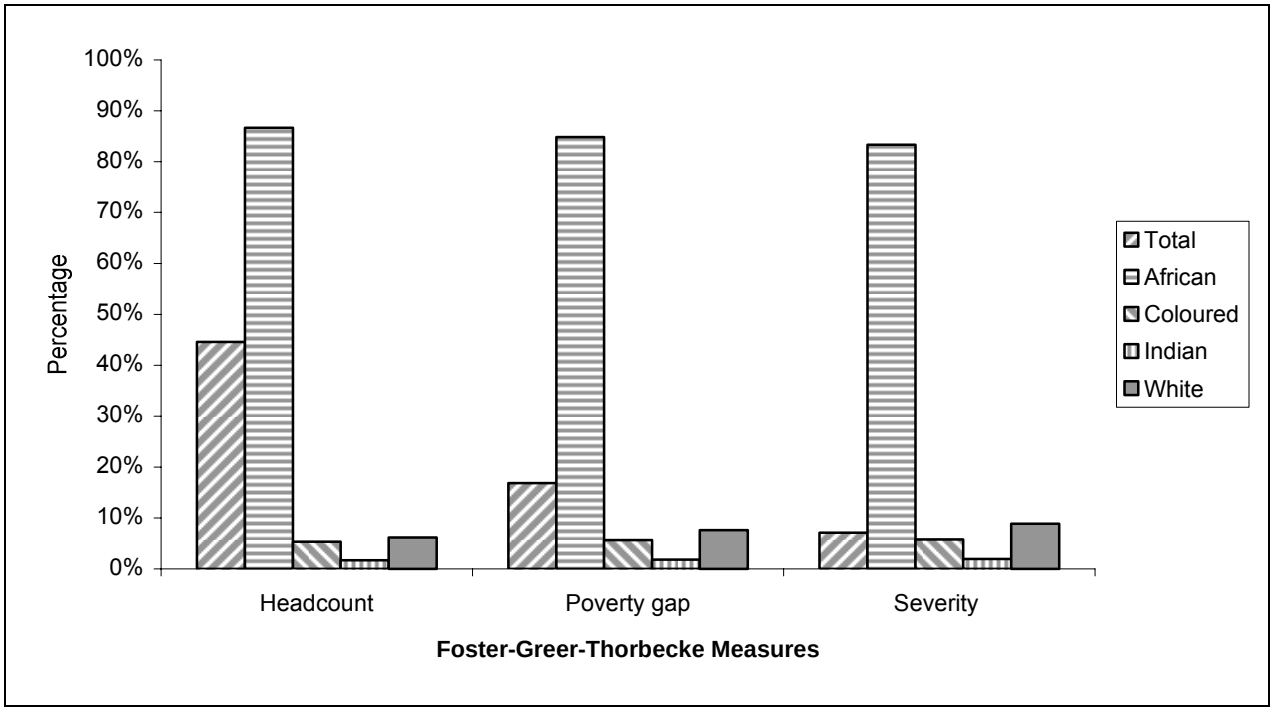
$$E = 1+0.5(A) + 0.3(K) \qquad (6)$$

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, KwaZulu-Natal and the agricultural households in KwaZulu-Natal is given together with each population group's share towards the total.

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



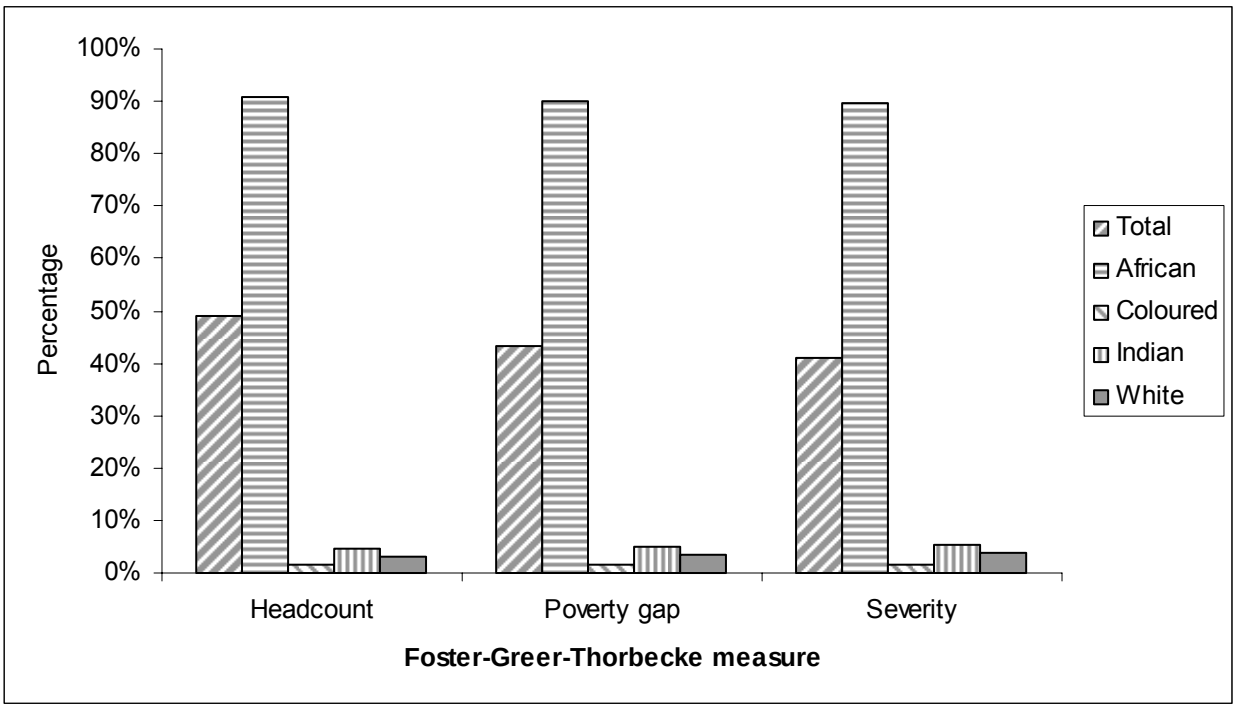
Source: Own calculation from Labour Force Survey 2007

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 KwaZulu-Natal in Figure 27, a similar pattern can be identified. The African population are dominating the poverty measures; they are having the highest share in the total poverty. The total poverty rates for the different measures in KwaZulu-Natal are 49.23%, 43.19% and 41.07% for the respected measures. This corresponds to just over 4.8 million people that are living below the poverty line according to headcount ratio.

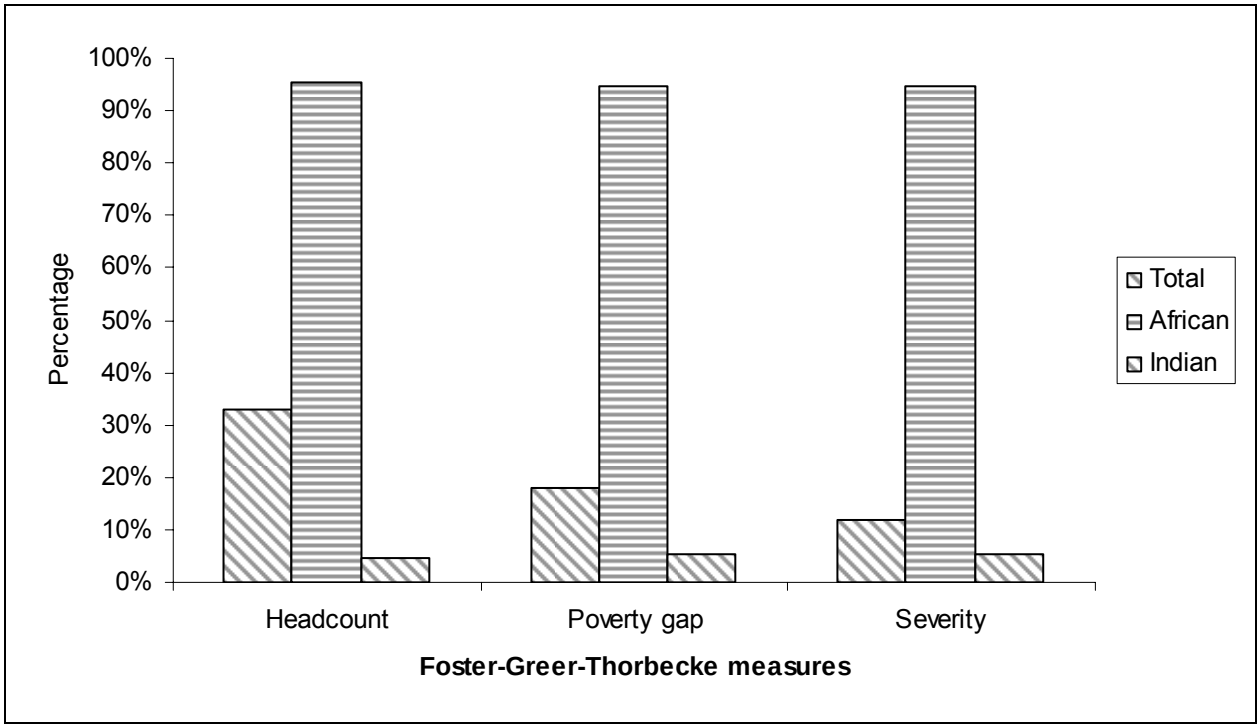
Figure 27: Poverty rate of KwaZulu-Natal and shares of population groups



Source: Own calculation from Labour Force Survey 2007

The KwaZulu-Natal agricultural households (more than 50% of income from agricultural activities) were also analysed in Figure 28, and the results shows a related pattern as that of the rest of the country. The White and Coloured population have no recorded entries and the total poverty rates are 33.13%, 17.89% and 11.73% for respective measures. This translates into around 135 360 individuals in agricultural households that are 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 form agriculture are not regarded, excluding the households of lower income agricultural workers that contribute less than 50% to the household income.

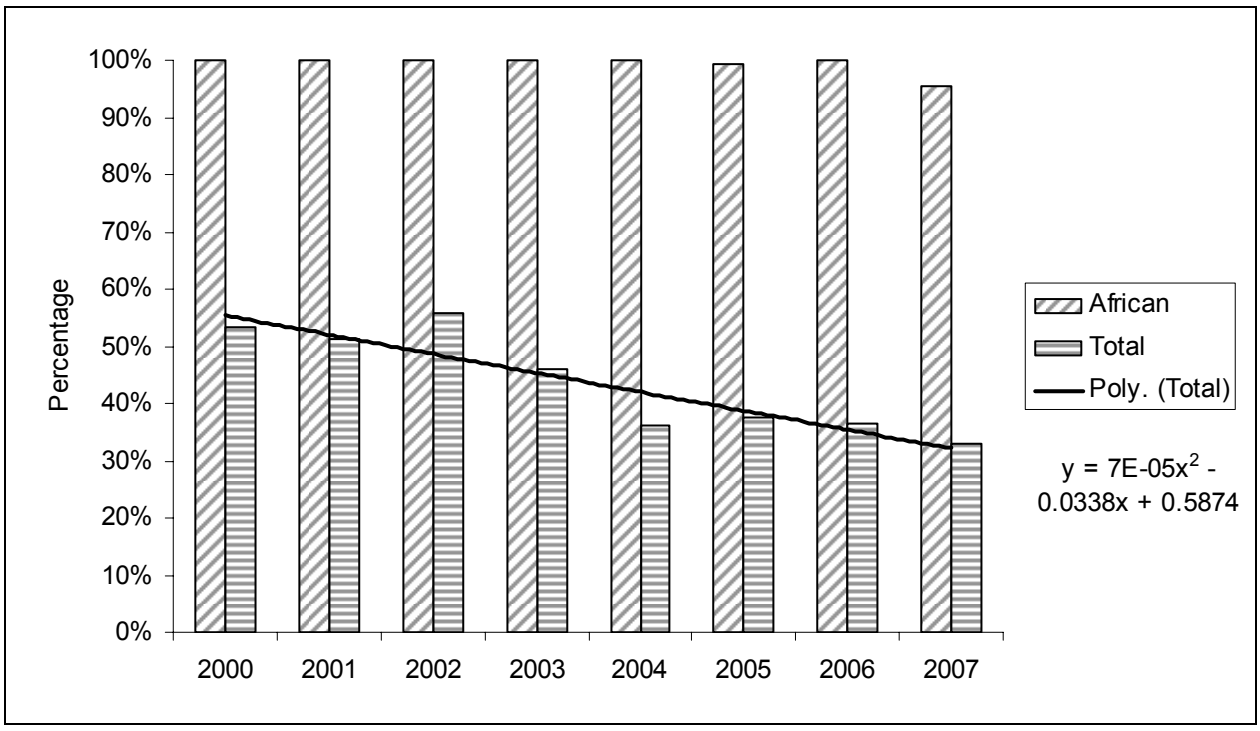
Figure 28: Poverty rate for the KwaZulu-Natal agricultural households and shares of population groups



Source: Own calculation from Labour Force Survey 2007

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

Figure 29: Poverty headcount by year for KwaZulu-Natal agricultural households

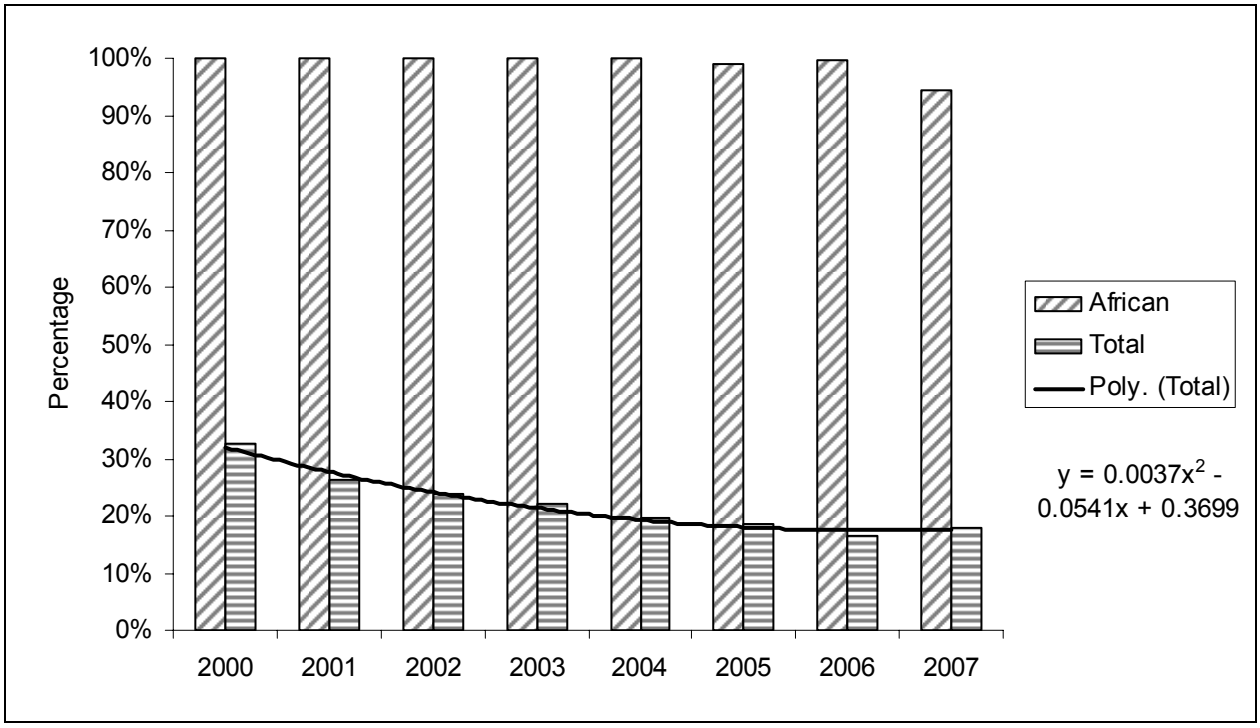


Source: Own calculation from Labour Force Survey 2000-2007

Above figure (Figure 29) indicates the headcount ratio of individuals in KwaZulu-Natal agricultural households and the share of African households towards the total headcount ratio. It is clear that African individuals contribute the most to overall poverty dominating each year. There is also a decrease in total poverty, as the trend line indicates, ranging from a poverty of 53.18% to a 33.13% over time.

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

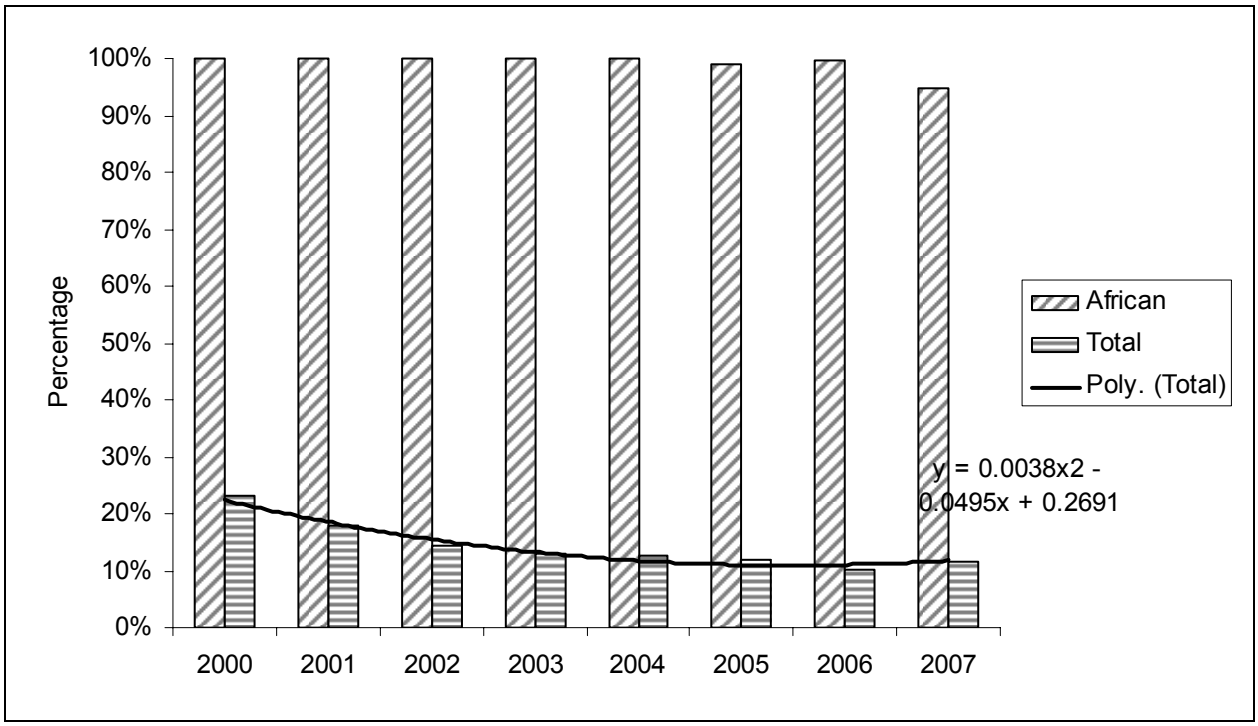
Figure 30: Poverty gap by year for KwaZulu-Natal agricultural households



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 decreased slightly, with a slight increase 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 KwaZulu-Natal agricultural households



Source: Own calculation from Labour Force Survey 2000-2007

A similar trend can be seen in Figure 31 as the previous figure with a decrease in total severity of poverty, with a slight increase in 2007. The African population group contributes most towards poverty in this poverty measure. The low poverty gap and severity of poverty in the KwaZulu-Natal 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 no substantial variation in income of poor individuals. But it must be highlighted that poverty reduction as measure by the headcount poverty ratio did occur through time within the KwaZulu-Natal agricultural households.

6. Inequality within KwaZulu-Natal

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 data, the following table represents the Gini and Theil inequality measurements by race for South Africa, KwaZulu-Natal and the KwaZulu-Natal agricultural households. Per capita household earnings are used as reference throughout this section:

Table 13 : Gini and Theil measures of inequality for 2007

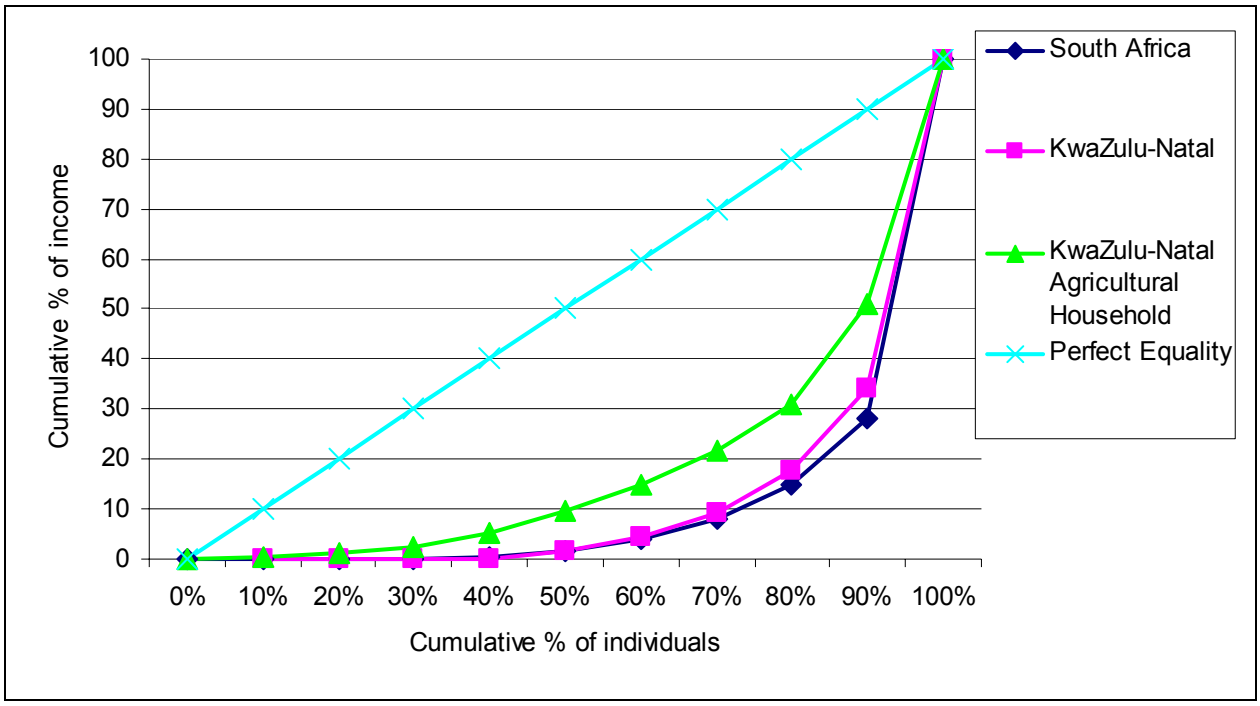
	South Africa		**KwaZulu-Natal**		**KwaZulu-Natal agriculture**	
	Gini	**Theil**	**Gini**	**Theil**	**Gini**	**Theil**
African	0.79	3.19	0.61	0.75	0.55	0.56
Coloured	0.55	0.56	0.65	0.82		
Indian	0.57	0.6	0.53	0.54	0.55	0.58
White	0.47	0.4	0.52	0.49	0.43	0.34
Total	0.75	2.25	0.69	1.01	0.65	0.87

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 is the White subgroup with 0.47 and 0.4 respectively, and the average for South Africa is 0.75 and 2.25. In KwaZulu-Natal, the Coloured population dominates, but in agriculture the Indians have the highest income inequality. What is interesting to note is the low inequality within race in the KwaZulu-Natal agriculture households, but the total inequality is high. This indicates that between races inequality is high. The KwaZulu-Natal average is also relatively high, signifying that there is high inequality within the province.

Looking at the Lorenz curve in Figure 32, it can be seen that the KwaZulu-Natal agricultural households are the least unequal, followed by KwaZulu-Natal and South Africa, which has the highest inequality.

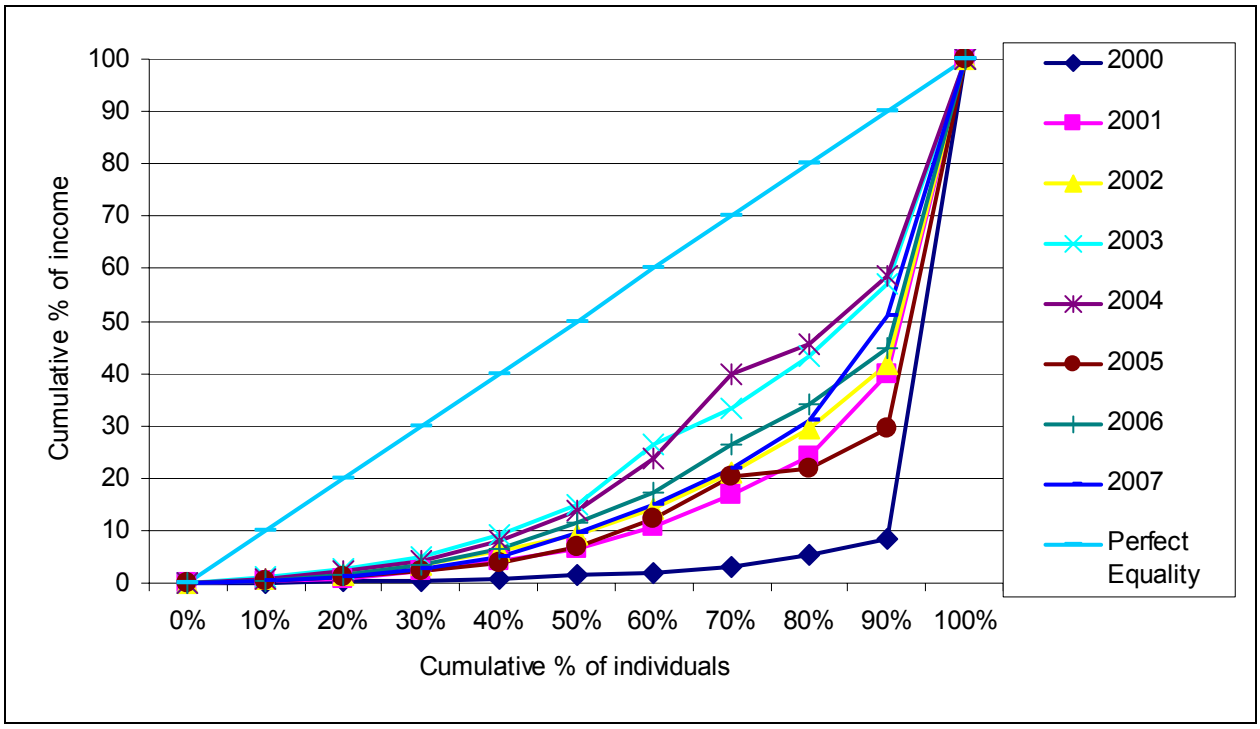
Figure 32: Lorenz curve for individuals in South Africa, KwaZulu-Natal and KwaZulu-Natal agricultural households in 2007



Source: Own calculation from Labour Force Survey 2007

The following 2 figures represent the Lorenz curve and Gini coefficients for KwaZulu-Natal agricultural households from 2000 till 2007. It can be observed from the Lorenz curves in Figure 33 that there was a change towards equality from 2000. Although no clear trend emerges, inequality has decreased comparing 2000 and 2007.

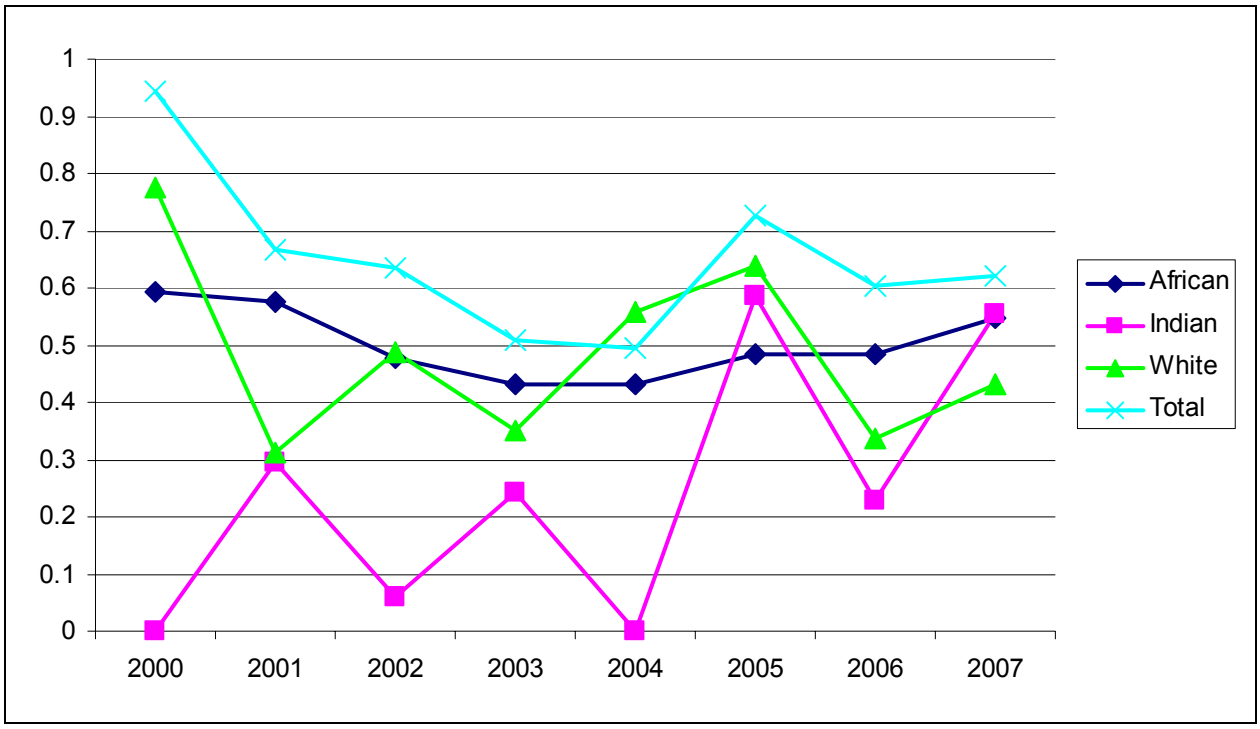
Figure 33: Lorenz curve for KwaZulu-Natal agricultural households by year



Source: Own calculation from Labour Force Survey 2000-2007

The Gini coefficient in Figure 34 also shows a downward pattern for the total (from 0.94 in 2000 to 0.62 in 2007). The Gini coefficient of Africans is the only one that stays relatively constant, decreasing from 0.59 to 0.55. The Gini coefficients other subgroups differ year on year. This can be due to small sample size. This high Gini in 2000, and the decreasing total Gini corresponds to the above figure of the Lorenz curves.

Figure 34: Gini coefficient for KwaZulu-Natal agricultural households by year



Source: Own calculation from Labour Force Survey 2000-2007

Inequality within the KwaZulu-Natal agricultural households is lower than during 2000, but it has been lower during 2003 and 2004. Inequality within the sector is still very high and it increased from 2006 to 2007.

7. Conclusion

The KwaZulu-Natal agricultural sector is a vital player in the economy of the province 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, while they also take that position in South Africa. The total number of individuals in respective economic segments, i.e. South Africa, KwaZulu-Natal and KwaZulu-Natal 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 that of the White population. Unemployment rates are being driven by the high unemployment within the African population in both South Africa and KwaZulu-Natal. This is reflected in the high share of the Africans in the total poverty rate throughout the country. The share of Africans in the agricultural sector of KwaZulu-Natal in total poverty is extremely high, reflecting the need for poverty

alleviation. However, results show that the poverty level according to the headcount ratio has decreased between 2000 and 2007.

Income inequality paints a rather grim picture indicating that equality has not increased from 2006 to 2007 for agricultural households, but it improved compared to 2000. 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 KwaZulu-Natal. Policy decisions and redistribution policies of provincial level need to take these data into account to promote the economic growth of KwaZulu-Natal and also to enhance the living standard of the people of the province.

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