Effect of rural inequality on migration among the farming households of Limpopo Province, South Africa

By

JULIANA KENTE RWELAMIRA

Submitted in partial fulfilment of the
requirement for the degree of

PhD

in the
Department of Agricultural Economics, Extension
and Rural Development
Faculty of Natural and Agricultural Sciences
University of Pretoria
Pretoria

July 2008

DEDICATION

To

Adela, Adelina and Anita,

My wonderful and caring daughters, whose support, encouragement and love were
my greatest source of inspiration;

My beloved late husband, Professor Medard Rwelamira, whose academic excellence
and astuteness kept me on my toes, rest in peace my love.

and

I salute the migrant workers of South Africa, who provide the backbone of livelihood
to many rural households that would not survive otherwise.

DECLARATION TO BE SIGNED BY THE STUDENT

I declare that the thesis that I hereby submit, for the degree PhD at the University of Pretoria has not previously been submitted by me for degree purposes at any other University.

I take note that, if the thesis is approved, I have to submit final copies as stipulated by the relevant regulations by 15 July (for the Spring graduation ceremony and 15 February (for the Autumn graduation ceremony), and that if I do not comply with the stipulations, the degree will not be conferred upon me

SIGNATURE…………………………………..DATE 22.July, 2008

The author and promoters give permission to use this dissertation only for consultation and to copy parts of it for personal, academic and non-commercial use. Any other use is subject to copy right laws; when using results from this work the source should be exclusively specified. Permission to reproduce any material contained in this work should be obtained from the author.

The author

……………………………………….

Juliana K. Rwelamira

BSc Agric. (Hons):–Univ. DSM-Tanzania, MAMRD: Univ. Florida-USA

The Promoters

Prof. JF KIRSTEN   **Prof.Luc D'HAESE**

ACKNOWLEDGEMENTS

Effect of rural inequality on migration among the farming households of Limpopo Province, South Africa

BY

JULIANA KENTE RWELAMIRA

Degree:	PhD
Department:	Department of Agricultural Economics, Extension and Rural Development
Promoter:	**Professor Johann Kirsten**
Co-promoter:	**Professor Luc D'Haese**

ABSTRACT

This thesis describes a study undertaken in the semi arid areas of Limpopo among rural households with or without migrant workers in their households. The study aimed at analyzing and establishing the association between unequal distribution of land and other productive assets and rural household migration decisions; and to ascertain the relationship between migration remittances received by migration sending households and rural inequality in the migration sending economies. In essence, two important phenomena of inequality and migration are addressed simultaneously from two related angles: the effect of rural inequality on migration behaviour and the effect of migration (through cash and in-kind remittances) on rural inequality.

A combination of explorative and confirmative economic analytical tools was used for empirical data analysis. Explorative analysis was meant to present distribution characteristics of the data including frequency analysis, descriptive statistics and cross tabulation; correlation and non-parametric analysis. In the confirmative analysis model specific deterministic relationships among variables or response models were used to confirm the existence of relationships. First, the Gini coefficient technique and Lorenz curves were used to measure inter household income and asset inequality.

Factor Analysis (FA) was used to combine variables and create new but fewer factors; and logistic regression analysis LRA) was used to determine variables that positively or negatively affect migration.

A survey was conducted among 573 rural households selected from 24 villages of Limpopo in the Central, Southern and Western Regions. Two types of research instruments were used. The first was a semi-structured village questionnaire to gather qualitative information about the villages by interviewing key informants. The second instrument was a structured household questionnaire, which provided information on household composition and characteristics, household income land and other assets, environmental issues, migration and remittances. The household head or his/her deputy responded to a major part of the questionnaire but the migrants responded to some of the migration and remittance related questions.

Findings from the Gini coefficient measure and Lorenz curves indicated uneven assets distribution and that landlessness is common in Lebowa. However, comparatively, land and income are more evenly distributed than the other assets. The results of the correlation matrix indicate that there is a negative correlation between the presence of migrants and per-capita household assets and per-capita land ownership (-0.043 and – 0.126 respectively). A one tailed t test indicated that per-capita land is significantly related to the presence of migrants within households (p<05). The presence of migration in a household was also negatively correlated with adult equivalent landholding. Households with migrants tended to have smaller landholdings and the relationship between migration and other asset categories were negative, implying an inverse relationship between them and the propensity to migrate. Variables influencing migration were aggregated using Factor analysis and on the basis of the factor loadings four factors (components) with the largest loadings were identified as: household land and income factor, livestock factor, asset (farm and non farm) factor and lastly pension and household composition factor.

The Logistic regression analysis (LRA) using a non-metric, dichotomous dependent 'dummy variable for presence of migrants in households showed that: the presence of migrant(s) is significantly influenced by per-capita land, per-capita income, per-capita all assets, and total assets (p<05). The results show that a unit increase in value of per-

capita assets will result to 0.1 percent change in the odds ratio against migration; a unit increase in pension received by a member in a household will result in a 0.6 per cent change in odds ratio against migration; as pension money increases there would be less incentive for members of the household receiving it to migrate. However, a unit increase in per capita income will not result in any change in the odds ratio of migration. In the Central, Southern and Western regions of Limpopo households with smaller land holding per capita tended to have migrants, however, the pattern of migration from these areas does not support the hypothesis that higher inequality of land holding lead to higher out-migration. The Western Region, which has better land distribution than the other two regions, has a higher proportion of households with migrants than the other two regions. Thus, migration must be influenced by a complex association of variables other than just land. Livestock did not have significant influence on migration from the rural areas. This is not surprising for Limpopo, since the province is not well endowed with livestock as a form of asset. Nevertheless, households with migrants have higher total value of livestock than those without migrants.

The empirical findings have shown that remittances are an important source of livelihood and the relationship between migration and rural inequality depend critically on how remittances and the losses and gains of human resources through migration are distributed across households.

Different income sources add to income inequality but at different rates and extent. In the case of Limpopo, remittances account for a smaller percentage of total inequality (14.9%) than that of salaries and wages (72.3%); pensions contribute the least to the rural income inequality, contributing only 4.3%. This means that remittances are distributed more evenly than salaries and wages among the households that receive them. It means also that even some migration sending households at the lower end of the income spectrum in rural areas have access to some migrant remittances. Income inequality decreases considerably when migrant remittances are combined with income from other sources; in our case it drops by fifteen percentage points from 0.62 to 0.47. The influence of migration remittances upon income inequality will tends to become more favourable as migration opportunities spread throughout the villages.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

"No political democracy can survive and flourish if the majority of its people remain in poverty without land, without their basic needs being met and without tangible prospects for a better life. Attacking poverty, deprivation and inequality is the first priority of a democratic government." South African Government of National Unity, 1994.

1.1   BACKGROUND

The migration of labour, geographically from rural areas and occupationally from farm jobs, is one of the most widespread features of rural transformation and economic growth (Taylor, 2001). This is true historically in developed countries and currently in developing countries of the world. China, for examples, is currently experiencing the largest flow of labour out of agriculture ever witnessed in world history (Shen., 1996; Brauw et al., 2001), while in Mexico it has been proven that remittances represent one of the largest economic impacts of migration on migrant-sending areas.

The migration behaviour and decisions of rural households in arid and semi-arid areas of the developing world are said to respond to the different distributions of rural resources, both natural (especially land-holdings, water and associated resources) and capital assets (Lipton et al., 1996, Kirsten & Kirsten, 2000), and the resulting demographics can affect the sustainability of land and water use. The structure of land-holding and access to natural resources are recognised as important determinants of equity and efficiency in agriculture (Sandru & Grewal, 1987) and are the most fundamental aspects of agrarian structure in developing economies, especially among rural communities.

Migration in the South African context has been for many years regarded as the main option for earning a living. Able-bodied men and women from many rural households migrated to ensure a decent livelihood for the majority of black South Africans

(Magubane, 1975). The areas that were allocated as African reserves towards the end of the nineteenth century and which became "Bantustans" or homelands following the 1913 Native Land Act and the Native Trust and Land Act covered only a portion of land originally occupied by Africans (Baber, 1996). The legacy of a long period of appropriation, during which African communities were deprived of means of subsistence and set aside as cheap labour reserves, made Africans almost totally dependent on migrant wage earnings and other transfer income sources. Owing to inadequate resources in rural areas, many households found it hard to continue any form of independent subsistence except through the sale of labour as mineworkers and later as farm workers, housemaids and garden-boys (Magubane, 1975). Land, water and other natural resources were also scarce, as they were forcefully transferred from black communities to large commercial farms, to which Africans had to sell their labour.

This study starts off on the premise that the prevailing situation in the rural areas in Limpopo (and elsewhere in the former homelands) is a result of historical processes and imposition of apartheid policies. The distribution of natural resources in South Africa, especially of land and associated resources (water, wetlands, forestry, etc.), was, and as far as we know still is, highly skewed (Woolard & Barbarton, 1998). This, according to Njobe, (1993) was a result of four centuries of conquest, occupation, denial, expropriation, transfer, purchase and consolidation, which resulted in a pattern of distribution of resources which was highly in favour of minority occupation. The unequal distribution of land and other resources transcended boundaries of provinces, regions, districts, areas and even villages.

This notwithstanding, the study also takes into account another school of thought: despite historical biases, migration is considered by many rural dwellers as another option to improve their livelihood. Delius (1983) showed that the Pedi people, including those from Limpopo, participated in labour migration as far back as the 1830s, almost four decades before the conquest of their society in 1879. Thus, the opening of the Kimberly diamond fields in 1869 presented improved employment opportunities to a people already deeply engaged in the labour market. It is known that, even at that time, the driving force to migrate was partly a desire to increase income.

There are "push factors" that exacerbated the situation, such as the endemic overcrowded areas, a result of the racial land laws which squeezed 80% of the population into townships and ex-homeland areas, with exceedingly small farms (Department of Land Affairs, 1997). In KwaZulu-Natal, for example, the average farm size was estimated as ± 0.75 hectare (Nieuwoudt & Vink, 1989). They concluded that, in addition to landlessness, inequality of land ownership and associated assets among cultivating households is an important "push" factor out of agriculture. The Limpopo survey found that the mean land ownership per person is only 0.35 hectare with 80% of the landed households occupying less than 0.5 hectare per resident, while more than 50% of households surveyed are landless (Kirsten et al., 2002).

1.2   EVIDENCE OF RURAL INEQUALITY IN LIMPOPO

Limpopo Province, formally known as the Northern Province, is the area on which this thesis is based; it is officially referred to as Limpopo (rather than Limpopo Province). Limpopo is quite rural and essentially agrarian in nature, sharing some common village resources and using communal land; a similar situation to all the other rural areas in South Africa inhabited by black people. Communal land tenure is mainly practised in all the former homelands including Lebowa, Venda and Gazankulu. Land is under the control of local and district authorities (headmen and tribal authorities) or residents associations that allocate land to individuals (mainly grown-up males). Land is allocated by means of certificates called `*Permission to Occupy' (PTOs)*, which are approved by the headmen and the magistrates (Kirsten et al., 2000). As land and other resources in the rural areas are scarce, the size and distribution of land and other productive assets among households are not the same.

1.2.1   Basic social indicators

Limpopo is one of the poorest provinces of South Africa; it is ranked last in terms of overall human development index. Table 1.1 gives a decomposed view of the basic social indicators of Limpopo and of South Africa as a whole for comparison. Limpopo covers 123 910 square km, which is 10.2% of national area; it carries 12.1%

(5.31 million people) of the national population, 89% of whom live in rural areas. The people consists of several ethnic groups distinguished by culture, language and race. The Northern Sotho (Sepedi) makes up the largest number, being nearly 57%. The Tsonga (Shangaan) speakers comprise 23%, the Venda 12%. Afrikaans 2.6% and English speaking whites are less than 0.5%.

Table 1.1:   A comparison of social indicators for South Africa and Limpopo

Indicator	South Africa	Limpopo
Population (Census 2001, published 2003)	46.5 million	5.31 million
Population growth rate	2.08 %	2.31%
Urban population as percentage of total	53.70%	10.95%
Infant mortality rate	41	53
Total fertility rate	2.7	3.2
Percentage of population younger than 15 years	34.33%	42.75%
Life expectancy at birth	63	63
Non-urban economic active population as percentage of total economic active population	32.9%	82.8%
Total unemployment rate [5]	33.8%	45.9%
Doctors per 10 000 population	2.9	1.5
Hospital beds per 1 000 population	4.0	3.1
Diseases[6] Percentage of HIV-infected women at antenatal clinics Malaria cases per 100 000 population Tuberculosis cases per 100 000 population Typhoid cases per 100 000 population Viral hepatitis cases per 100 000 population	22.8% - 22 950 63 136 425 1 042	11.5% 286 4 814 1 947 98 109
Human Development Index	0.672	0.566
Gini coefficient (for income)	0.65	0.66
Infrastructure: Percentage of households with access to electricity-lighting Percentage of households with access to electricity-cooking Percentage of households with access to piped water Percentage of households with access to sanitation Percentage of households with access to telephones	 78.7% 59.0% 63.3% 63.4% 46.9%	 75.5% 29.7% 39.2% 26.0% 36.6%

Source: DBSA Development Report 2000 & 2004; General Household Surveys 2002&2003: Statistics South Africa

---

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

[6]   *The lower figures for Limpopo could perhaps be attributed to lower population density and possibly under reporting in remote areas.*

A relatively high proportion of the population is younger than 15 years of age. The Premier's Report for the March 2000 – February 2001 fiscal year indicates an acute shortage of classrooms and other educational facilities, coupled with a shortage of science and skills training teachers. Likewise, other basic amenities and services, including water supply, sanitation facilities, telecommunication and electricity supply are all reportedly inadequate (Limpopo Government, 2000/2001). The HIV and AIDS infection is estimated at 17 persons per 100 people. As young people are potentially the group at greatest risk, this will further drastically reduce the number of able-bodied persons in the rural areas.

1.2.2 Demographic and economic indicators

1.2.2.1 Unemployment

Limpopo's economy currently contributes the third least to the South African gross domestic product (GDP) of 6.5% and labour absorption, ahead of Free State and Northern Cape (GHS 2003); its capacity as a major market for goods is constrained by unemployment and lack of income. The challenge is to catalyse economic growth while exploiting opportunities which arise from programme(s) designed to address social-economic backlogs.

According to the results of the 1996 Census the South African population was estimated at 40,584 million with population growth slowing to about 2 percent per annum, down from 2.5% per annum during the 1980s.

The South Africa Human Development Report (2003), reported that important strides had been made towards overcoming past inequalities in the labour market. Efforts were made towards the Declaration of the Jobs Summit in 1998, but employment opportunities remained too low to slow down the dominant trend of massive unemployment.

Unemployment has continued to rise since 1996; the economy provided only 11.56 million jobs for 16.81 million economically active South Africans in March 2003,

(out of 29.6million working age population) resulting in 5.25 million unemployed, or an official unemployment rate of 33.8 per cent (South Africa Human Development Report, 2003.

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

While the rural unemployment rate for South Africa was around 44.2% (urban = 28.7%) in 1996, the unemployment rates in Limpopo was 50.5%, (23.7% for urban areas) in 1996, which translates to over 487 000 of economically active people in 1996 (Census 1996). It declined to 43.5% in 2002 but rose again to 49.3% in 2003 (DBSA, 2004). In order to reduce the unemployment rate to at least the national average new jobs have to be created in the province each year. According to the DBSA study (2004) the percentage of *formally* employed persons dropped from 43.3 % in 1996 to 34.3% in 2003.

In any country the youth are considered to be the future; however, they have to be skilled mentored and groomed to take part in growing the economy. Unfortunately, the South African youth unemployment makes up 48.5% of total unemployment (43.8% in Limpopo). Growing youth unemployment is a major challenge impacting on crime trends and threatening the integrity of family and community structures. The census confirmed that the unemployment burden falls disproportionately on black men and women under the age of 35 and is particularly severe in rural areas. The employment challenge has been the focus of concerted deliberations by government, business, labour and community representatives. Against this background, the demographic and selected economic indicators in Limpopo are summarised and presented in Table 1.2.

Table 1.2: **Important demographic and selected economic characteristics in Limpopo**

Characteristics	Limpopo
Population size	5.31 million
Males (%)	46.0%
Females (%)	54.0%
Urban	10.9%
Non-urban	89.1%
Urban males	12.4%
Non-urban males	87.6%
Urban females	11.4%
Non-urban females	88.6%
Most important source of income (%)	
Wages	43.1%
Pension	27.1%
Remittances	21.5%
Farming	2.2%
Other	6.1%
Household income in the month prior to the survey (%) (1997 prices)	
R1501 or more	10.1%
R801-R1500	20.6%
R401-R800	33.1%
R400 or less	36.2%

Source: Central Statistics Service: Population Census 2001(published 2003),Statistics South Africa; General Household Surveys 2002 &2003 and Rural Survey 1997.

1.2.2.2 Equitable distribution of resources

According to the United Nations Development Programme (UNDP) South Africa Human Development Report (SAHDR) 2003, Unemployment in South Africa has continued to rise. In March 2003, for example, the economy provided only 11.56 million jobs for 16.81 million economically active South Africans, resulting in 5.25 million unemployed. This translates to an official unemployment rate of 31.2 per cent, which is substantially higher than the 19.3 per cent unemployment rate in 1996 (Census 1996).

SAHDR, 2003, estimated the unemployment in Limpopo to have risen to 49.3 in 2003, compared to the previous surveys. According to the 1995 October Household Survey National Census, 44.5% of the households in Limpopo had no apparent cash income. The unemployment rate was recorded at 46 per cent (Census 1996) and 46.6 per cent in the 1998 General Household Survey.

The Provincial Growth and Development Strategy (PGDS) 2004 to 2014 provides a summary of income distribution for more recent years. The Gini coefficient for income distribution were 0.60 in 1998 and increased to 0.63 in 2003, this correlates with the unemployment rate discussed above. New jobs should accommodate the very poor and should address current income and asset inequalities through redistribution and fair trade. The broad strategies for job creation and economic development are articulated in the "Growth and Development Strategy in Limpopo (GDS-NP) of 1997/98" which was adopted by the Provincial Executive Council in 1997. The Strategy represents a five-year multi-sectoral growth and development strategic plan of the provincial government. A review of Limpopo GDS-NP of 1997/98 is presented as the Provincial Growth and Development Strategy (PGDS) 2004 – 2014.

One of the priority areas for implementation of the GDS-NP (1997/98) as well as the PGDS 2004-2014 is increased agricultural production through small farmer support programmes and increased access to economic opportunities via small, medium and micro enterprises (SMMEs) in a way that fosters employment creation. Part of the five-year plan of Limpopo was to acquire agricultural state land and under-used commercial areas for redistribution within the land reform programme to create viable farming units for individuals and groups that have demonstrated a capacity to use the land. The PGDS, on the other hand seeks to consolidate and improve upon the 4% economic growth rate, which the province has been enjoying over the period 1998-2004; reduce the unemployment rate, which was at 49.3% in 2003.

1.2.3 State of agriculture in Limpopo

In terms of agriculture, the Limpopo Province has good potential, given its rich fruit and vegetable production. The province produces 75% of South Africa's mangoes, 65% of its papaya, 36% of its tea, 25% of its citrus, bananas and litchis, 60% of its avocados, 66% of its tomatoes and 285,000 tonnes of potatoes. Other products include coffee, nuts, guavas, sisal, cotton, tobacco, timber (from more than 170 plantations), sunflower, maize and wheat. Most of the higher lying areas are devoted to cattle and game ranching.

Despite favourable agricultural conditions, land scarcity in the Limpopo Province, among farming households, is one of the challenges to increased agricultural production. According to Meyer (1993), rural households in the Limpopo Province fall into four basic categories in terms of household resource access commercial orientation:

- resource poor households, comprising farmers who have no arable land or grazing rights (estimates range from less ± 50% in former Lebowa and Gazankulu to about 36% in Venda);

- smallholders, comprising households who operate below subsistence level and who usually do not sell produce. African farmers, occupying small parcels of land (≤0.5 – 5ha), do not use any form of irrigation and produce at subsistence level;

- progressive emerging farmers, comprising households who use some technology and sell produce or livestock, and

- market orientated commercial farmers, comprising households who make a living from farming. Such farmers are pre-dominantly found in the west of the provincial capital, Polokwane (Pietersburg) or the Western region of our study area. Due to dryness there is extensive livestock production, especially among the white commercial farmers, who own large tracks of land. Dry land crops, such as maize, potatoes, vegetables and citrus are grown by commercial farmers mainly under borehole irrigation.

The majority of black farmers falls in the first and second categories, thus, is either landless and /or engaged in subsistence farming on individual farms of ≤0.5 to 5 hectares. In the study area 47.1 per cent of the households studies were had little (<0.05ha) or no land at all. These were mainly located in the Southern and Central Regions of the study area. The vast majority of households in these areas is dependent on non-farm incomes for their livelihood, either through commuter jobs, remittances from migration and/or pensions. According to Eastwood et al (2006) there is a sharp specialisation by income source among the study households, or a three way split between income from internal sources (wages and farm income), and from external sources, such as remittances and pensions; this aspect is discussed further in Chapter 5. The concentration of the rural population outside the formal town (peri-urban

areas) has led to an increase in non-variable smallholdings. At the same time, the out-migration from the rural communities of able bodied and skilled males (and, to a lesser extent, females) has undermined the domestic potential of the rural economy.

Mekuria and Moletsane (1996) obtained similar findings in a study conducted among selected rural households in five districts of the Limpopo Province. The results indicate that the most important sources of income for most rural households (excluding commercial white farmers) are crop (vegetables, grains, fruits) and livestock sales, remittances from relatives, pensions and wages. The results further show the wide spread landlessness that ranges from over 10% in Nebo to over 25% in Seshego. The study also highlights the problems rural households have to access credit and markets.

Results of the Rural Survey (1997) by Statistics South Africa (presented in 1999), reveal some pertinent characteristics of the African farming households living in the former homelands (Lebowa, Gazankulu and Venda) of the Limpopo Province. These characteristics are summarised in Table 1.3. The results reveal the subsistence nature of farming, which should be understood in the context of the land and labour scarcity. The other serious but disguised constraint is drought, which is exacerbated by inadequate irrigation facilities. The results in Table 1.3 reveal the subsistence nature of agriculture among the farming households in the former homelands of Limpopo, who clearly, must be depending on some other sources of income other than farming.

According to the Census 2003, Out of 1.2 million people in Limpopo, who are eligible for land for agricultural purposes, only 298 000 people, (23.7per cent) had access to land for agriculture in 2001.

In some rural areas, where electricity is available and the supply is relatively dependable, for example in some parts of the NorthWest and KwaZulu-Natal, individuals and groups of farmers have embarked on modern, small to medium-scale poultry production projects in addition to crop production (Rwelamira & Ewang, 1999). So far, rural water supply in South Africa depends, almost exclusively, on ground water. The availability, or rather the unavailability, of such water is dictated

by the availability of energy for water pumping. In rural areas, the source of water usually varies from hand pumps and wind pumps to diesel-generated and electric pumps. Although diesel pumps were highly favoured in the past as a rural water supply technology, the cost of fuel (diesel) and the unreliability in harsh operating conditions are serious constraints, both in terms of securing supplies and in terms of cost-effectiveness of the technology. The potential of using electricity in rural industries and SMMEs is also quite high.

Makhura (1999) establishes the importance of various economic activities to households in rural Limpopo. Using a factor analysis procedure, he demonstrated three patterns of a farm-non-farm relationship: the complete farming, farm/non-farm links and complete non-farm orientation. His results support Mekhuria and Moletsane's findings (1996) that most households derive their livelihood from a diversified income source. However, those households with enough land place more emphasis on crop farming (fruits and vegetables, field crops and maize) and livestock rearing on communal land. The landless depend more on non-farm income sources, especially migrant remittances. Entrepreneurs, who generate livelihood through local businesses and services, also tend to have limited access to land and other farm related assets.

Table 1.3:   Characteristics of farming households in the former homelands of Limpopo

Characteristic	Limpopo
% of Households with access to land for agriculture (*regardless of size*)	74.1%
% of landless households	25.9%
% of Households with access to animal grazing.	37.0%
Reasons for farming: • Subsistence • Profit • Other	93.5% 4.5% 1.7%
% of farmers that experience serious crop failure	24.3%

Source: Statistics South Africa, 1999: Rural Survey 1997.

Another group of households combine farm with non-farm activities. This group consists mainly of salaried people who take advantage of farm/non-farm links. Most salary earners are government civil servants, who tend to create an upper income class in rural areas. Part of the income from salaries is used to establish orchards and buy livestock, sometimes through government-assisted projects. The salary earners have access to more information regarding government projects.

The reasons provided in Table 1.3 for farming imply that most households do not obtain any income from farming; they must be getting income from elsewhere, and this study shows the main sources of income for such households are pensions and migrant remittances.

1.3   PROBLEM STATEMENT AND CONTEXT

1.3.1   Rural inequality and migration

South Africa has a dualistic economy, with a well-developed industrial sector and commercial agriculture alongside a poor and developing rural sector. It is now classified by the UNDP as a lower middle income country, in which about 48.5% of the population (21.9 million people) currently fall below the national poverty line[7] (UNDP, 2003). Other sources, such as the World Development Report, 1996 and DBSA Report 2002 classify South Africa as a higher middle income country. Many South Africans still live in the former "Bantustans" or homelands, which are characterised by high population densities, an underdeveloped and inadequate agricultural base and high levels of out-migration to wage employment in the wider South African economy. Limpopo, where this study was conducted, was home to three of the Bantustans (Venda, Lebowa and Gazankulu). There is shortage of land in the rural tribal authority areas, which have, since colonial times, accommodated families removed from white-owned farms. Overcrowding, poverty, lack of opportunities and lack of income are some of the main causes of out-migration from

---

[7]   *The national poverty line was R352 and R354 monthly household expenditure per AE in 1999 and 2002, respectively (May, 1999 and SAHDR, 2003). The international poverty line was set at $1 per day in 1985 PPP term and recalculated in 1993 PPP terms at about $1.08 per day.*

these areas. According to Baber (1996), overcrowding on arable lands and the level of landlessness are quite substantial; at the same time, May (1999) estimates that 30% of the urban population is poor and that poverty rates are highest in rural areas. Land and associated assets were for decades the major sources of economic and social inequality in rural South Africa. The General Household Survey, 2003, shows the ratio of households with access to land to those without land to be about 2:11 and 3:10 for South Africa and Limpopo respectively. Moreover, the presence of inequality in rural South Africa is documented in a number of studies, including (Eckert, 1991; Houghton & Walton, 1952; Magubane, in Safa & Dutont, 1975; Carter & May; May (ed.), 1998; Cross et al., 1998; Dorrit Posel, 2003; Oosthuizen & Naidoo, 2004).

According to "Poverty and Inequality in South Africa: A Report to the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality" (May, 1998), "inequality" is defined in terms of being the opposite of "equality", a state of social organisation, which enables or gives equal access to resources and opportunities to all members. Thus, *inequality* can be defined as *the state of social organisation, which gives unequal access to resources and opportunities to its members.* Based on income inequality, which is the most common form of inequality and which is relatively easier to measure, the report describes the prevalence of extreme inequality in South Africa.

At the time of democratization of South Africa in 1994, 86% of agricultural land was owned by about 55 000 commercial white farmers, while the majority of the country's black population shares only 14% of total farm land (Kirsten & Kirsten, 2000). That system of land use and management and the structure of land ownership were socially and ecologically unsustainable. Thus, the land reform programme was established on the basis of the Reconstruction and Development Programme (RDP) to address these imbalances. Black people were either reclaiming their long expropriated land or buying new land from willing sellers.

In Chapter 2, Section 25 (property clause) of the Constitution Act 108 of 1996, the democratically elected government of South Africa made a commitment to reverse the effects of colonialism and apartheid through the three legs of land reform, namely: land redistribution, land restitution, and land tenure reform. The process and pace of

restitution has been quite slow; out of more than 79 000 valid land claims lodged with the Land Claims Court, only 41 land claims were settled between 1995 and 1999.

The latest figures (Statistics South Africa, 2007) indicate that the amount of farmland that has been distributed is only 2.8 per cent against the target of 30 per cent. There has been a very slow pace of success with the South African land reform. By 2000, after more than six years of land reform the government's efforts had resulted in only 1 per cent of farm land being redistributed, (Kirsten et al., 2000). By 2002, a negligible 0.33 per cent of total land in South Africa had been transferred, including non-agricultural land in urban areas (South African Human Development Report (SA-HDR), 2003). The above notwithstanding, it is noted that in 1999 amendments to the Act were passed by Parliament and gave powers to the Minister of Agriculture and Land Affairs to make awards based on negotiated settlement agreements. This administrative approach resulted in an increase in the number of claims settled to more than 36 000 in 2003 (The Land Restitution Commission, 2003).

Certain literature indicates that inequality of access to and ownership of material and non-material scarce resources, such as unequal access to land and related assets and scarce resources (like income, education, employment and other economic opportunities, infrastructure, etc.), at international, national, spatial and even inter-group level, is closely associated with certain demographic behaviour, such as high rural out-migration among insecure tenants looking for other opportunities away from their homes. Inequality is said to affect the behaviour of households as well as the behaviour of individuals within households (Theron & Graaff, 1987)

More specifically, the literature indicates that rural inequality may cause or contribute to migration. Studies about the relationship between migration and inequality of income, land-holdings and assets have been found mainly from the Asian, Latin American and Egyptian experiences.[8] Cain (1985) refers to the finding by Larson and Mundlale that migration from farm to non-farm ventures within and between communities takes place if the income differential is large enough. A research study carried out in some Indian villages suggests that high migration from villages is

closely associated with unequal distribution of resources, usually land and associated assets. Similarly, Stark (1991) argues that relative deprivation plays an important role in migration decisions.

Inequality of income is widespread in the rural areas of many countries as a result of unequal access to and ownership of land. The main line of argument put forward by authors of study reports is that unequal land distribution represents a key determinant of rural economic inequality. Griffin (1996) and Nguyen (1989) argue that, since land ownership is highly correlated with agricultural income and agricultural income is itself a major component of rural income, uneven land distribution is an important factor contributing to rural inequality. A study by Julka and Soni (1988) in India also supports the view that inequality of income in rural areas is due to the unequal distribution of land and other productive assets. They and several other authors[9] in this area, who are reviewed in Chapter 2, indicate that unequal access to and ownership of land and other rural assets and economic opportunities leads to movement from the countryside to townships and cities in search of other opportunities. At the same time, in many countries the structure of land-holding has long been recognised as an important determinant of equity and efficiency in agriculture.

South African rural migration studies, including May (1987) which concentrated on the social dynamics of differentiation and inequality in the former Bantustans of South Africa, are based on the situation in KwaZulu-Natal. Another study by Cross et al. (1998) describes the current migration situation; it focuses on the unstable balance between migration, small-scale farming communities, infrastructure and livelihoods on the Eastern Seaboard, focusing on KwaZulu-Natal. Cross and her team try to unearth the forces behind the high migration levels recorded in KwaZulu-Natal and the dynamics of migration, which they argue are the most neglected dynamic in South Africa. The study does not, however, link rural inequality and migration *per se* but

---

[8]   *Adams., 1996; De Haan,, 1997;Julka & Soni, 1988; Sandhu & Grewal, 1987; Connell et al., 1976; among others*

[9]   *Lipton (1982) found in a review of literature that variances in rates of migration were determined by unequal land ownership in Bihar, Ivory Coast and Nepal and by unequal education in Colombia, Brazil, Liberia, Ghana, Kenya and the Philippines. More recently,* Kok, et al (eds), 2003 and *Posel, 2003, found out that the patterns of internal*

points out that severe land shortage and a high rate of unemployment in the rural areas are among the factors influencing the migration flow.

1.3.2 Rural inequality and poverty

The eradication of income and asset inequality and poverty is an indispensable requirement for sustainable development. What people can and cannot do and how they survive in a market economy depends largely on their access to the necessary financial resources and assets to meet an increasing portion of their needs. According to the United Nations Development Programme - South African Human Development Report 2003 (UNDP-SA HDR 2003), pronounced income and wealth inequality impedes sustainable development by contributing to a rise in poverty, distorting the use of society's productive resources, frustrating the growth potential of a country and jeopardising the sustainability of its environmental well-being. At the same time, unequal income and wealth distribution becomes economically costly and growth reducing when large numbers of a country's people are unable or unwilling to work or engage in entrepreneurial activity, unable to save and invest and unable to meet the costs for the provision of essential goods and services.

The Reconstruction and Development Programme document, which was the present government's election manifesto in 1994, emphasises that planning needs to focus on narrowing inequality, breaking down barriers that hamper participation in the economy and reducing poverty. The latest UNDP-SA HDR 2003 identifies five central challenges facing South Africa's sustainable development prospects. The first on the list is the eradication of poverty and extreme income and wealth inequalities.

Few studies have addressed the issue of inequality in rural South Africa[10]. At the same time, such studies have not looked at the interrelationship between inequality, migration and the impact of remittances on inequality. Most studies on rural inequality in South Africa concentrate on racial inequalities, given the historical

---

migration, at least, in post – Apartheid South Africa, have remained static since the late-1970s.

background. Inequalities within rural black communities and between rural black households have not been considered. However, early studies, such as the Kleiskammahoek Rural Survey (K.R.S) by Houghton and Walton (1952) and Mills and Wilson (1952) highlight the fact that land owners were relatively better-off than the rest of the community members in terms of education, cash income, access to land and livestock holdings. De Wet (1995) suggests that the difference between land owners and the landless members of the community, who were said to live on the "commonage", was not only economic and educational but had also over time developed social dimensions.

Cater and May (1997, 1999) and Roberts and May (2000) used findings of the Project for Statistics on Living Standards and Development (PSLSD) survey undertaken in the last half of 1993. The study, which incorporates a large sample of households (approximately 8 800 households nationwide, of which 4 259 are rural African households), is generally considered the benchmark for comprehensive poverty-inequality related data in the country. It was the first national representative, multipurpose household survey undertaken nine months prior to the country's first democratic elections held in April 1994, and thus signifies an important baseline against which to monitor the progress of the government in its determination to reduce poverty and inequality (Klaasen, 1997).

The PSLSD study sheds some light on rural inequality and poverty over the entire country. The results from the survey revealed, *inter alia that:*

- The level of income inequality overall (across race groups) in South Africa, measured by the Gini coefficient (0.58 in 1993) was among the highest in the world.

- By engendering a situation of inequitable access to employment, services and resources by the African population, apartheid policies had resulted in poverty being characterised by a strong racial dimension.

- Poverty and inequality are geographically concentrated, with the largest share of the poor (72%) residing in the rural areas, especially the former homelands.

---

[10] *Those studies that have addressed this issue include May (ed.) 1998; Cross et al., 1998 and Woolard and Barbarton, 1998.*

- Only over a quarter of African rural households have access to a plot of land for crop production. The average land size of these plots for households is estimated at only 2.2 hectare.

Livestock ownership revealed a similar pattern with only 24% of African households in the rural areas owning livestock with an average holding of 5.4 mature livestock units (MLU), valued at about R 4 300. The livestock situation could have been exacerbated by both the drought conditions and the increase in densely populated rural settlements, which have limited grazing land.

The findings of the PSLSD study, therefore, indicate that people in the rural areas with limited access to land, livestock and markets experience high levels of inequality and poverty relative to the rest of the country.

Inequality is not the same as poverty; however, in the South Africa context inequality is closely linked to and intertwined with poverty. Even though the classification of South Africa is still quite ambiguous (considered a higher middle income country by some and lower middle income by others), her per capita income level was similar to that of Poland, Thailand, Botswana, Brazil, Malaysia, Venezuela and Mauritius, just to name a few (World Development Report, 1996, Development Bank of Southern Africa (DBSA), 2002) but most South African households still experience outright poverty or vulnerability to poverty. In a number of these countries and many other developing countries, land ownership and other rural assets, such as water and forests, are considered to be the primary source of economic inequality and social differentiation in rural areas (De Janvry, 1976). This is particularly true in countries at early stages of agricultural development, whose rural populations depend, to a large extent, on agriculture for their livelihood. Many South Africans still have unsatisfactory access to clean water, energy, health care and education.

The Poverty and Inequality Report, which was presented to then Deputy President Thabo Mbeki by May (Ed.) (1998), reports that 50% of the South African population can be classified as poor. The latest UNDP-SA HDR 2003, reflecting the nine years after democracy, reports that in 2002 about 48.5% of the South African population

(21.9 million people) fall below the national poverty line; 91.1% of those people are from African ethnic groups living in rural areas. Compared to the HDR-SA Report, (UNDP, 2000), when 71% of people in rural areas fell below the poverty line, the reported incidences of income poverty and inequality in South Africa have increased during recent years. Recent empirical studies show that there is a large segment of initially poor households that have either remained at the same level of poverty or have fallen further behind. Poverty and inequality continue to exhibit strong spatial and racial biases.

Using the Income and Expenditure Survey of 1995 (quoted in UNDP-SA HDR 2003), a poverty line of R352 per month per adult equivalent was derived as the national poverty line for 1995 to 1999, after more than seven years the poverty line changed only slightly to R354 per month per adult equivalent in 2002. The international poverty line of $1 purchasing power parity (PPP) a day and $2 PPP a day per person was also selected. Thus, the number of people in poverty varies according to the choice of poverty line and assumptions about the intra-household allocation of resources.

The UNDP-SA HDR 2003 further reports that South Africa has one of the largest earning inequalities in the world; this is reflected in the difference between the average monthly income of a relatively small group of skilled employees and the majority of the employees who are semi-skilled or unskilled. Likewise, the colonial and apartheid policies of forced removal, expropriation and discriminatory property laws produced an extraordinary concentration of financial, land and physical capital in the hands of a small minority group. The land-holdings and other assets that are available to households and the opportunities to generate a sustainable livelihood are all unequally distributed between and within race groups, the nine provinces, and more critically, between and within the rural communities of South Africa. In per capita terms, South Africa is an upper middle income country; the World Bank (1998) reported a mean income of $7 450 in 1996 for South Africa, in purchasing power parity dollars (PPP$) of 1993. SA-HDR 2000 quotes lower estimates based on data obtained from the Reserve Bank of South Africa. Real GDP per capita (PPP$) is estimated at only $3 056 (SA-HDR, 2000).

Virtually every indicator highlights the extreme inequalities that still define the South African society. Measured by Gini coefficient, the income inequality for a number of years is indicated in Table 1.4.

Table 1.4:   Gini Coefficients indicating income inequality in South Africa

Year	1991	1995	1997	1998	2001	2003
Gini coefficient	0.65	0.60	0.65	0.62	0.64	0.64

Source: UNDP Human Development Report, 1994 and UNDP - South Africa Human Development Report, 2003

According to the figures in Table 1.4, the Gini coefficient indicating the latest UNDP-SA Human Development Report 2003, income inequality is worsening and continues to place South Africa in the ranks of the most unequal societies in the world. It is ranked as the third most unequal society, surpassed only by Guatemala (SA-HDR, 2000). A random selection of income Gini coefficients for countries at a similar level of development in Table 1.5 illustrates this point.

Table 1.5:   Comparison of Gini coefficients of countries at similar level of Development in 2001

Country	Botswana	Venezuela	Bolivia	Chile	South Africa	Brazil
Gini coefficient	0.63 (1993	0.49 (1998)	0.45 (1999)	0.58 (1998)	0.64 (2001)	0.58 (1998)

Source: South Africa Human Development Report, 2003

The poorest 40% of households, mainly black Africans, receive only 11% of the total income, while the richest 10% of the households, mainly white, receive over 40% of the total income. The unequal distribution of income between racial groups in South Africa is considerable and accounts for 37% of total income inequality (SA-HDR, 2000). An earlier report by the UNDP (*Human Development Report, 1994, p. 98*) states "If white South Africa were a separate country, it would rank 24th in the world (just after Spain); black South Africa would rank 123rd in the world (just above Congo); not just two different peoples, these are almost two different worlds."

1.3.3 Reaction to inequality and poverty

In the past, due to constraints under the influx control legislation, African migrants could only move (migrate) either temporarily or permanently in search of income and jobs to designated work places, such as the mines or commercial farms. The African rural areas were, and still are, characterised by overcrowding, poor service delivery and ownership of small plots of land per household. Such a structure is conducive to high rural out-migration among insecure smallholder farmers looking for other opportunities.

Within the new dispensation, where all people may move freely, inhabitants in rural areas are being pushed out of these poor areas by poverty in search of work; at the same time, they are pulled towards other areas (cities, towns, regions and informal settlements) which have better or superior infrastructure (including land, improved housing, water and sanitation, electricity, better transport, health and school facilities).

A study by Bekker (2003) alludes to new and more complicated migration flows in view of the newly found freedom of movement, especially among the African ethnic group. The study points out a new reason for migrating (in addition to the search for income and jobs): to search for superior infrastructure. The relevance of these and other studies to the thesis of this study is captured in Chapter 2.

1.3.4 The impact of migration and remittances on rural economies

Migration can profoundly impact on the rural economies of developing countries, both negatively and positively (Adams, 1996). Pessimistic studies (in the 1970s and 1980s) argue that migration reduces income in migrant-sending areas because the marginal product of the migrants' labour is large prior to migration and migrants take productive capital (including human capital) with them when they go. In this pessimistic scenario, poverty may increase if migrants originate from poor households; or if the marginal product of the poor villagers' labour on their own or on others' farms, becomes less as a result of the loss of the migrants' labour (and capital).

Initially, rural out-migration raises the average product of rural labour along a given supply curve, through diminishing returns. As migration continues and the available rural labour becomes more depleted, the average product of rural labour may also decline. Rural out migration may also change the position of the supply curve due to the selective nature of migration on the basis of age, gender, education and skills of individuals who are likelier to migrate. Todaro (2003) adds to this scenario by observing that migration imposes external costs on rural areas emptied of better educated, more venturesome young people, as well as lost output. Moreover, if an inflow of remittances to rural households is at the upper end of the income distribution spectrum, it could increase income inequality and land accumulation by the rich.

However, a more optimistic scenario of migration is found in research findings of the 1990s and later, such as the literature of the new economics of labour migration (NELM), which analyses migration as a household decision rather than as an individual decision (Taylor, 2000, 2001; Massey et al., 1998; Stark, 1991; Stark & Bloom, 1985). NELM advocates continuing interactions between migrants and their rural households, and thus, suggests that a household model rather than an individual–level model of migration decisions is appropriate for analysing migration dynamics. NELM hypothesises that rural households facing imperfect market environments decide whether or not to participate in migration as part of a set of interwoven economic choices (Taylor et al., 1996). The household, wishing to reduce risk, decides to diversify its income earning portfolio, by sending out (as migrant), one or more of its members to work away from home.

Under normal circumstances, individuals working as migrants do not sever ties with their source households to which they still belong; the source households participate in the migration decision and may pay migration costs and support the migrants until they become established at their destination. Family members who remain behind (often parents, partners and siblings) may reorganise both their consumption and production activities in response to the migrants' departure. On the other end, migrants usually share part of their earnings with their households of origin through remittances.

Migration remittances may decrease rural inequality and poverty by creating income and employment multipliers in migrant-sending villages, towns or communities. This is especially true where more of the migrant sending villages represent income and asset poorer people than those villages sending fewer migrants out. The same is true within villages, where people migrate from poorer households than from relatively richer households. According to Taylor and Wyatt (1996), remittances received by rural households have both direct and indirect effects. While they can directly increase income available for consumption, they can also play an important role in loosening the constraints, imposed by risk and capital markets the household are subject to. In the absence of formal capital markets, households are forced to self-finance investments in production assets, such as farm implements and inputs (fertiliser, seeds etc.), and self-insure against income risks. Moreover, remittances can be expected to have a non-unitary effect on income, as they ease capital constraints and stimulate investments; giving rise to additional income. Due to their multiplier effect, remittances can help to narrow down income inequality in migrant-sending rural areas, if migrants originate from the lower income levels of the income distribution stratum. Similarly, if multiplier spending is on goods and services made with low skilled persons the distribution of the gains from multiplier effect will help to even out rural income inequality in the migrant sending areas. The NELM theory is discussed in more details in Chapter 3.

1.4   THE THESIS AND RESEARCH OBJECTIVES

Against this background, the aim of this thesis is to:

- analyse and establish the relationship between rural inequality and migration, that is, the influence of unequal distribution of land and other productive assets on African rural household migration decisions; and
- establish the association between migration and rural inequality by assessing whether migration remittances (in cash and in kind) received by migrant-sending households have a decreasing or increasing influence on rural inequality in the African migrant-sending communities or economies.

It is important to note that this study is only addressing the inequality of assets among the African rural households rather than across the different racial groups of South Africa. One great injustice (and linked inefficiencies) blinded people of many injustices (and linked inefficiencies). The African white inequality is the elephant in the garden in this thesis. What is important is whether a change in the African -white inequality, especially of farmland (for example through land reform), can change the inequality among Africans in South Africa generally, and in Limpopo in particular. How would such changes affect resource distribution among Africans in the rural areas of Limpopo? De-concentration of land and other rural assets accumulations is considered to be a step in the right direction towards poverty eradication.

This will be a new contribution towards understanding inequality in the rural areas as there are not many such research studies addressing inequality within rural African communities. Inequality between races of South Africa has received more than its equitable share of attention from old and recent researchers nationally and internationally.

Two important phenomena, namely, inequality and migration, co-exist side by side in rural South Africa in general, and in Limpopo, in particular. Available evidence shows that fairly distributed land and other productive assets are good for efficiency, agricultural performance and economic growth (Gills et al., 1996). Other development economists, especially within the World Bank have also researched extensively on different aspects of income and assets inequality as a constraint to growth, (Bruno, et al., 1996; Solimano, 1999; Ravallion, 2000; Deininger & Olinto, 2000; Christiaensen et al., 2002, Birdsall et al., 1997;Rosset, P., 2001; de Janvry et al., 2001). Their contribution to this topic is well covered under the literature review Chapter 2.

It is also believed that high levels of inequality contribute to high levels of poverty. This is especially true for African countries that are concerned with eradicating poverty and that are at the lower levels of development.

It is, thus, essential and critical to correctly identify "inequality-decreasing" and "inequality-increasing" resources in order to come up with the right policies for the

common good. This study attempts to determine whether migrant remittances, as an income source, contribute towards increasing or decreasing inequality in the rural areas that receive such income. One of the outputs of this study will be recommendations that can influence policy aimed at reducing rural inequality, and eventually reducing rural poverty. This will be achieved by identifying aspects of migration that work towards decreasing inequality, so that these may be promoted, and those that add to inequality (and thus exacerbate poverty) so that policies can be designed to discourage them. It is important to analyse migration from both optimistic and pessimistic scenarios. The true impact of migration is likely to be found not at one extreme or another but most probably somewhere in between.

The specific objectives of the study are:

i)   to determine the effect of unequal distribution of land and other productive assets on household behaviour regarding migration from the rural areas of Limpopo and

ii)   to establish whether remittances (in cash and in kind), received by migrant-sending households, decrease or increase rural inequality in the migrant-sending areas.

1.5   HYPOTHESES

There are conflicting views, mostly available in literature in India and Africa which show that unequal rural distribution of assets influences decisions by families and individuals regarding out-migration. Much of the literature reviewed for the study indicates that unequal access and ownership of land and other rural assets leads to movement from the countryside to townships and cities in search of other opportunities. All of them imply a push factor from the migration sending areas for search of a better situation. However, there are many cases where the poor individuals or poor households get to know that, by moving, their chances of landing a permanent job and receiving a predictable income are minimal. According to Bekker (2003), under these conditions, such individuals and households often migrate, because they are attracted by better facilities they can get elsewhere, they go away in search of

better or superior infrastructure; more and better land; improved housing, water and sanitation; electricity, and better transport, as well as better school and health facilities. According to Bekker, (2003), this second engine of migration, which operates for many poor South African households and individuals, takes place due to the pull factor.

With the above background in mind this study decided to unravel two issues, stated as our hypotheses, regarding the South African rural migration. The hypotheses state that:

i)   The size and distribution of household land-holdings and other productive farm and non-farm assets influence household behaviour regarding migration.

Unequal access to rural assets, mainly land and related assets could be the result of migration and it could also result into migration. The rationale is that more assets will likely lead to more income as the productive assets are utilised for production and income generation. On the other hand, with inadequate or no assets to facilitate livelihood activities households and individuals will look for alternatives in order to survive. The propensity to migrate in search of alternative means of survival will change over time depending on a host of intervening variables, including, but not limited to land and related assets, access to information, the influence of costs(social, psychological and financial), and the influence of risk.

ii)   Migration remittances received by migration sending households may have an increasing or decreasing outcome on rural inequality in migrant-sending areas.

The direction of the impact of migration remittances on the rural income distribution depends on the whether the poor rather than the rich access the remittances, the degree to which migration opportunities are diffused across village households and the distribution of remittance-enhancing skills.

1.6   DELIMITATION

The data used for this study were taken from a large household survey research study conducted in Limpopo Province of South Africa. The findings of the study on the relationship between rural inequality and migration are therefore interpreted in the context of Limpopo and we may not necessarily infer the same on interpersonal inequality within South Africa. The study is largely confined to the farm level dynamics of migration, that is, migrants are not traced to the receiving areas. The data are not adequate to support analysis beyond the farm level. Thus, the effect of migration on the receiving communities, townships, towns and cities within South Africa and across its borders is not a subject for this study. Likewise, cyclical, return and urban to rural migration is not investigated, but is acknowledged and referred to when necessary. Also, the study only addresses the inequality of assets among the African rural households rather than across the different racial groups of South Africa. The discussion about the relationship between rural inequality and rural out-migration is mainly concerned with migration of labour (focusing on working age persons). However, other aspects of migration, such as migration for schooling, joining working spouses and other relatives are also acknowledged.

The way the data was collected does not allow an exhaustive analysis of the effect of migration on rural inequality other than analysing the impact of migration remittances on the household incomes and area income inequality. That means that, using the survey data we can not accurately test a causal model, but wherever possible discussion on how the causation problem might change or alter the findings of the study is provided. The study does not critically look into the effect of migration on rural inequalities of income and assets owned by the rural households in migration sending areas.

1.7   ORGANISATION OF THE THESIS

The thesis is divided into nine chapters. Chapter 2 presents the literature review on inequality and migration and empirical evidence of the effect of land and asset inequality available from literature. Chapter 3 reviews selected theories of inequality

and models of migration behaviour that are relevant to the study objectives. Chapter 4 explains in detail the conceptual framework on which the rest of the chapters are based relating to the complex relationships between inequality and migration and remittances from migration. The methodology used in the study, indicating the research design and set up, is presented in Chapter 5. Chapter 6 highlights the descriptive and inferential statistics from the Limpopo household survey regarding the characteristics of the rural households surveyed, asset distribution indicating the presence or absence of inequality and the dynamics and typology of rural migration. Chapter 7 analyses the cause and effect issues specific to size and distribution of land and other assets and their consequences to migration. Chapter 8 presents the impact of migration on rural migration-sending economies by addressing the role of remittances on migrants-sending households and communities and the impact of remittances on rural inequality. Chapter 9 summarises the general findings presents the conclusions of the study and provides possible policy options and recommendations for future research.

CHAPTER 2
A REVIEW OF THE EFFECT OF RURAL INEQUALITY ON MIGRATION

2.1   INTRODUCTION

The literature on unequal distribution of income, landholding (access and ownership) and associated assets among rural households of the developing world has been growing over the years since the 1970s; such information is reviewed carefully in this chapter in order to learn from the experiences therein, which may have relevance to the South African situation. Many examples of studies on the distribution of income and rural and agricultural assets relate mainly to Asia (Cornell et al, 1976; Prahladachar, 1987; Sharma, 1988; Sandhu & Grewal, 1987; Julka & Soni; among others) and Latin America (Shaw, 1974; De Janvry & Sadoulet, 1996; Stark, Taylor&Yitzhaki, 1986; Birdsall et al., 1997; among others.) Lipton, 1980, 1982; May, 1987; Hassan et al., 1989; Francis & Hoddinott, 1993; Cater & May, 1997 and Adams, 1993 are among the few researchers who have done similar studies in some African countries including South Africa. Only a few of these studies link asset distribution to agricultural production and migration. Most of them explicitly confirm that assets are unequally distributed in rural areas.

This chapter reviews selected[11] studies about rural asset inequality and migration, and also looks at the link between asset distribution, livelihoods and migration in different countries and contexts. The chapter is divided into six parts of which this introduction is the first section. Section 2.2 discusses a selected international survey of the literature that provides information on asset ownership and distribution and its effect on rural out-migration. Where possible, the conditions and policies under which asset inequalities occur are also discussed. In section 2.3, a review of literature on the relationship between inequality and rural our-migration is presented. The interracial inequalities are not covered because they are not relevant to the study, which focuses

---

[11]   *As there is abundant literature about rural asset and income inequality in Asia (especially India) and Latin America only the most relevant studies have been reviewed.*

only on black rural households. Section 2.4 reviews the relationship between remittances and rural inequality, looking at case studies from around the world. A number of studies that have been conducted in rural households in the Limpopo Province are carefully reviewed in section 2.5; section 2.6 gives a summary of the chapter

2.2 INTERNATIONAL EVIDENCE OF MIGRATION AND RURAL INEQUALITY

2.2.1 Prevalence of rural inequality

Among the early authors on rural inequality of land and other productive assets were Julka, and Soni, (1988), who analysed inequalities of income, land ownership and associated assets among a random sample of cultivating households from one region of Patiala district in Punjab. Their empirical results showed that the top income group (10%) had 30% of the land, 33% of the modern productive assets, 22% of dairy cows, 30% of liquidity, 38% of tractors, and 17% of the total engines / motors. The poorest households (bottom 10%), on the other hand, owned just seven percent of the land, seven percent of the dairy cows, six percent of liquidity, 0.54% of tractors, eight percent of engines / motors and a merge four percent of modern productive assets. The results further showed that land distribution was the single dominant factor contributing to income inequality, as 40% of the income inequality was attributed to land area operated, with the number of farm workers and dairy cows accounting for another 25% and six per cent, respectively. Thus the size related variables (land and cattle) together explain the bulk of income inequality – 71%. They concluded that widespread inequalities of income in the rural areas have their genesis in an unequal distribution of land and other productive assets. Therefore any serious commitment to reducing income inequalities in the rural areas boils down to a pledge for redistribution of productive resources especially of land.

Earlier attention by professional economists (inside as well as outside the World Bank) to income distribution and particularly to rural inequality neglected what has turned out to be the second determinant of poverty reduction as well a promoter of

growth, that is, the distribution of assets, both physical and human capital (Birdsall et al., 1997). With the renewed interest in income inequality as a constraint on growth, the World Bank economists (Bruno, et al., 1996; Deininger and Squire, 1995; Solimano, 1999; Ravallion, 2000; Deininger & Olinto, 2000; ChristiAEnsen et al., 2002) and other development economists (de Janvry & Sadoulet, 1996; Birdsall et al., 1997; Rosset, P., 2001; de Janvry et al., 2001) have researched and reported extensively regarding the different aspects of inequality, especially among the poor.

Inequality and poverty are commonly considered from the income distribution point of view, simply because income inequality is much easier to measure than asset inequality. According to the May et al., 1998, poverty and inequality concentrates on dimensions of poverty and inequality that are easily and objectively measurable. It focuses on conventional, money-metric measures, as money is commonly the means of obtaining inputs into human development. Such measures are considered to be practicable, allow for comparisons, and are a fair good proxy for standard of living. However, there is consensus that the poor depend heavily on capital accumulation rather than on income (Birdsall et al., 1997); for the poor the initial inequalities in the distribution of land and human capital have almost twice as greater an impact than for the population as a whole. Empirical evidence from 43 selected countries[12] suggests that the effect of asset inequality on growth dominates the effect of income inequality (Birdsall et al., 1997). Deininger and Squire (1995) also agree with this analysis and emphasize the aggregate growth and accumulation effects of assets for raising the incomes of the poor and reducing poverty.

Exploring inequality from a different perspective, Stark (1984, 1991) developed an explanation of the rural – urban migration process based on what he termed "relative deprivation" The term *relative deprivation* was first coined by Sam Stouffer and his associates in their wartime study *The American Soldier (1949).* However, it was rigorously formulated by WG Runciman in 1966. His exposition, considered the best

---

[12] *Using "high-quality" data base (data which is based on fully representative household surveys, with all sources of income – monetary and non-monetary, covered) of Deininger and Squire (1996) the study was done for countries with comparable data*

on this concept, is contained in Routledge, (1966), Relative Deprivation and Social Justice. The details of Runciman and Stark's theory are discusses in Chapter 3.

According to the relative deprivation theory, discontentment can arise due to unequal distribution. Given a set of households and/or individuals with whom comparisons are made, an unfavourable comparison could induce a departure for work elsewhere (migration), where wages are higher and prospects are better. He argues that relative deprivation plays an important role in migration decisions.

The literature reviewed thus far indicates that unequal access and ownership of land and other rural assets leads to movement from the countryside to townships and cities in search of other opportunities. All of them imply a push factor from the migration sending area for search of a better situation. However, there are many cases where the poor individual or poor households get to know that, by moving, their chances of landing a permanent job and receiving a predictable income are minimal. According to Bekker (2003), under these conditions, such individuals and households often migrate, because they are attracted by better facilities they can get elsewhere, they go away in search of superior infrastructure – land and improved housing, water and sanitation, electricity, and better transport as well as better school and health facilities. This second engine of migration, which operates for many poor South African households and individuals, takes place due to the pull factor.

2.2.2 Overview on migration internationally

Traditionally migration has been associated with the process of industrialisation, economic development and the growing demand for labour in urban centres (Oberai & Singh, 1983). Presently, population shifts from rural to urban areas in middle income and developing countries follow a similar pattern to what happened in the now developed countries during the Industrial Revolution (Balán 1981). In many countries, the urban-biased development policies invariably stimulate movement towards urban and industrial areas, with their booming mining, plantation and processing industries, both within and between countries. Roberts (in Balán, 1981) finds similarities in his comparative study of migration and industrialising economies

of Manchester, Barcelona and Lima, in the context within which different patterns of migration and industrialisation processes emerged..

In recent years extensive literature has been produced on migration. Laczko, Appave and Pinto Dobernig (2005), edited a series of studies conducted under the auspices of the International Organization for Migration (IOM), focused on the contribution internal migrants make to local and national development, including poverty reduction, and how this can be complemented by strategies to reduce the risks of migration for poor people in Asia. Countries such as China, Bangladesh, India, Pakistan, Vietnam and Sri Lanka were covered in these studies. Usher, (2005), analyses the Millenium Development Goals and Migration. Earlier on, Balán (1981), edited case studies on migration in Latin America, Asia, Mexico, Africa and Eastern and Western Europe presented at an international symposium.

Oosthuizen and Naidoo, (2004), analysed the quantified and described internal migration to and migrant labour in Gauteng by using the 2001 Census and the September 2002 Labour Force Survey. They found out that a large proportion of Gauteng residents were born outside the province, moved into the province in the inter-census period, indicating a relatively mobile population. One of their main conclusion was that, through remittances, the economic situation of the Gauteng province and the migrant workers may have important consequences in the rural areas of the provinces of Limpopo, Eastern Cape, KwaZulu Natal and Mpumalanga, where most migrants come from. Posel, (2003) focused on the expected shift away from migration labour system in South Africa, from the 1990s, to concerns with immigration into South Africa. The paper, however, goes on to prove that there is no evidence nationally to support the assumption that circular labour migration ended, or even declined during the 1990s, as it assumed by some researchers. Moreover, the rural to rural migration experience especially on commercial farms and mines still continues as before.

Oberai and Singh, (1983) and Connell et al. (1976) carried out extensive studies to analyse the process of internal migration in India. Stark has researched and written extensively about rural to urban migration in least developed countries (LDCs), (for example in Stark, 1976, 1984 and 1991). Adams (1994 and 1996) analysed migration

remittances and inequality in Pakistan and Egypt respectively. Toure and Fadayomi (1992) edited a series of studies carried out in selected sub-Saharan African countries. These studies were conducted under the auspices of the Council of Development of Social Sciences Research in Africa (CODESTRIA) and involved the following countries: Southern Africa: Lesotho and Zambia in Southern Africa; Tanzania; in East Africa; The Central African Republic and the Congo in Central Africa and Ivory Coast, Nigeria and Senegal in West Africa. Taylor, Zabin and Eckhoff (1999) investigated migration and its effect on rural development in El Salvador, while Cross et al. (1998) focused on the dynamics of migration in South Africa. Most of these studies were done in developing countries since the vast majority of the world's migrations currently taking place, originate in rural areas (Taylor, 2001). The effects of migration on rural inequality studied in this research are discussed in Chapters 6 to 8.

According to Balan (1981), the increase in migration studies since the 1960s has been a response to a growing interest among policymakers and planners in population growth and urbanisation. Rural to urban migration, which has been singled out as a crucial form of mobility, has been clearly evident in migration studies. In the 1950s and 1960s, economic issues, such as the equilibrating features of labour force transfer, industrialisation, disguised unemployment, growing squatter settlement and the pressure placed on urban services by migrants, and policy concerns were reshaped by the interests of economists in migration (Balán, 1981).

The focus of these studies has been the extent of rural-urban migration in past years, which has greatly exceeded the capacity of modern industrial and other urban sectors (Oberai & Singh, 1983). Modern economic research on migration is often traced back to Lewis' (1954) so-called seminal work on economic development with unlimited supply of labour based on the concept of a dual economy. Lewis seeks to explain economic development under what he terms situations of unlimited labour supply. Expanding, high productivity and modern capitalist sectors (usually urban), with industries and output and employment growth, draw labour from traditional, overpopulated, non-capitalist rural subsistence sectors, which are characterised by low or marginal labour productivity. Fei and Ranis (1961) extend the labour surplus theory in the two-sector model, so that rural-urban migration is seen as a response to

the high demand for labour by the industrial sector. This demand assures greater levels of productivity for workers and positive profits for investors. The labour surplus model is consistent with the Kuznets' (1955) so-called inverted–U hypothesis, in which income inequality increases during the early stages of economic development and declines when all surplus labour has been absorbed into modern sector employment. The model is discussed in detail in Chapter 3.

2.2.2.1 Characteristics of migrants

Migrants are not a random sample of the population of origin; authors, such as, (Oberai & Singh, 1983; Clark, 1986 and Testaye & Yisehac, 1998) write that migration is selective on the basis of one or a combination of characteristics. Age, sex and social and occupational characteristics of migrants are important variables affecting household and individual choices regarding migration. It is important therefore, to understand the way in which the process is selective and how that selection occurs. There are two types or categories of reasons why migration is selective, namely:

i)   Environmental forces in the areas of origin and destination (the "push" and "pull" factors, respectively), and

ii)   Different responses of the people to those forces.

The factors which are externally determined (i.e. the environmental factors) can operate in the receiving society, and may include the demands of an industrial labour market seeking certain skills and occupations, or in the sending society, for example, famine, drought, disease, likely employment opportunities and inheritance customs. The response of individuals to these may depend on such things as the age, education, the stage they have reached in their life cycle, the strength of their bonds to the communities, their ability to meet transportation costs and their knowledge of conditions in the potential area of destination. The manner in which all these variables operate will affect the form and selectivity of migration. Figure 2.1 presents the factors that may contribute to the migration decision making process in a household and even by individuals.
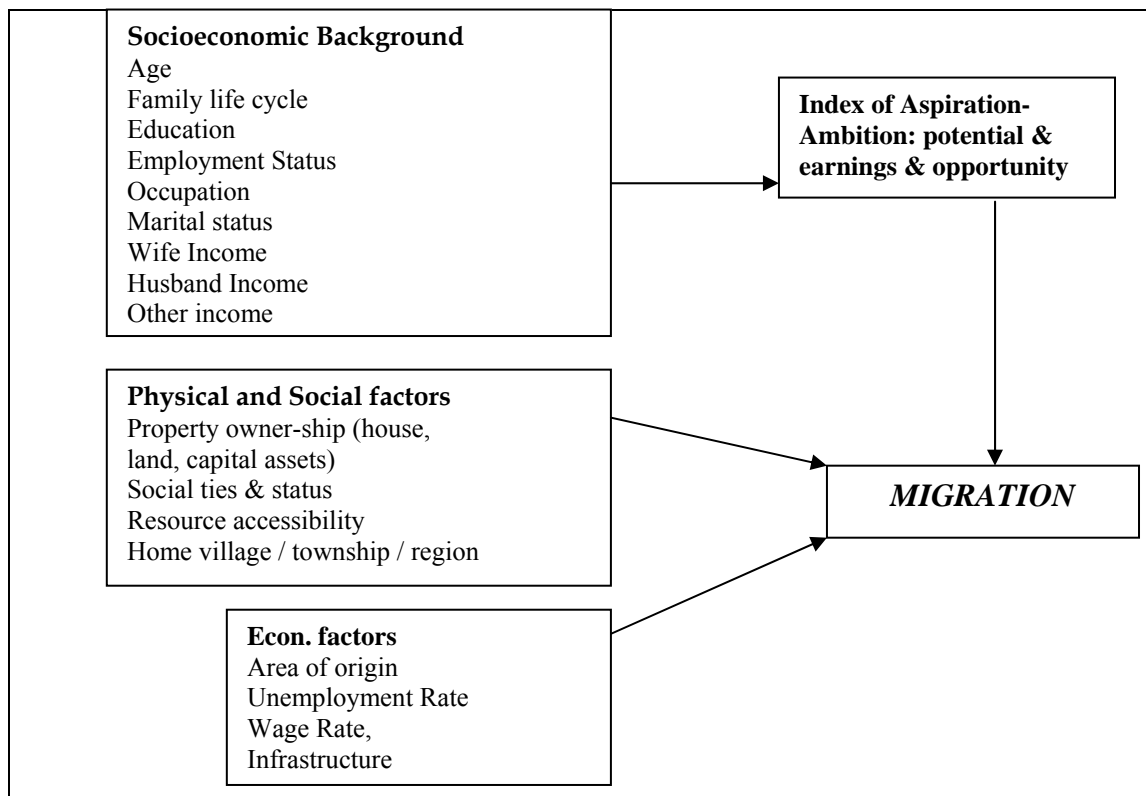
Figure 2.1: **A General framework of the household-migration decision-making process**

Source: Kim, J., 1979, p. 39. Why People move: Moving Decisions and directionality in migration analysis (with adaptation)

There are no universally sets of push and pull factors, but the following list, developed by the National Resources Institute University of Greenwich (1999) includes most of the factors considered to be important by different interest groups.

i)   *The Push factors include:*

- Population growth

- Increasing scarcity of arable land and decreasing access to fertile land

- Decreasing fertility and productivity of land

- Decline of the natural resource basis

- Declining return to farming

- Increasing monetarisation of people's lives

- Temporary events and shocks

- Lack of access to farm input markets

- Absence of well-functioning rural financial and other economic institutions

ii)   Pull factors include:

- Higher return on labour in urban and rural non farm sectors

- Higher return on investments in rural non-farm sector

- Economic opportunities, often associated with social advantages, offered in urban centres and outside one's own region

- Attractiveness of urban life in particular to young people

2.2.2.2 Effect of age and education of the migrant

It is often stated that the migrants tend to be disproportionately younger, better educated and more innovative than those who stay. One of the first and still most significant findings from studied of migration world over is the role of age in distinguishing migrants from non-migrants. Young adults between the age of 20 and 35 are among the most migratory segments of the population. Clark (1986) affirms that this is true for different cultural contexts and at all spatial levels. Migration studies in developing countries (Oberai and Singh 1983) found that migration, especially rural to urban, is predominantly composed of young adults (15-29 years), and largely educated than those remaining behind. The young are said to have a high propensity to migrate because the returns on investment in human capital decline with an increase in age. On the other hand, older people tend to develop stronger attachments on their properties and families. This is more so if migration is for reasons other than employment, such as migration for marriage and for education, both of which are common among lower age groups.

The educated are known to have a higher propensity to migrate, because they can earn relatively higher incomes in peri-urban and urban than in rural areas (Todaro, 1997; Tesfaye & Yisehac, 1998); for them the rural-urban differences in incomes are much greater than for the less educated. Furthermore, where economic growth and

technological problems have stimulated migration it will attract the better educated and skilled.

According to Todaro, (1997), migrants with considerable human capital in a form of secondary, university and technical college education have better opportunities; many of these will find formal – sector jobs relatively quickly. In the case of migration for education, the choice is not simply between better education in towns and cities and poorer in the rural areas, but between additional education opportunities in the towns and cities and little or no further education in the rural areas. Also, the preference for farming and manual work declines with education while the attraction of white-collar job increases. Tesfaye & Yisehac, (1998) found that migrants from the rural areas in Botswana tend to come from larger households and these migrants are often in the age group 21-45 years, better educated, and engaged mainly in wage employment. One may argue that large household may have surplus labour to send out and or adequate resources to sponsor migration of some members of the household.

2.3 THE CAUSE AND EFFECT RELATIONSHIP BETWEEN INEQUALITY AND MIGRATION

2.3.1 Land distribution affects migration

Most available literature shows that unequal rural distribution of assets causes out-migration; there are, however conflicting views about this. Studies completed in India provide a richer literature on the distribution of rural and agricultural assets than compared to other countries at a similar development level. The findings of the 1960s and early 1970s Indian village study show a link between inequality and rural-urban migration. The study, which was carried out in forty Indian villages, suggests that high migration from villages is closely associated with unequal distribution of resources, usually land and associated assets (Connell et al. 1976). In the report, the researchers stated: "Our analysis of data from forty Indian villages suggests that high

emigration from a village is intimately associated with unequal distribution of resources (usually land)."[13]

Nevertheless, in the literature there are conflicting views regarding land distribution and migration. Some studies support the view that the lack of land and other assets pushes people to migrate; for example an analysis of the Latin American countryside (Shaw, 1974) found strong empirical support for the argument that farmers' limited access to land is inversely related to the exodus from the countryside. Likewise, a study of the impact of land reform in Iran in 1962-72 on rural inequality and the impact of rural inequality on rural out-migration (Mohtadi, 1986) found that in transforming the Iranian sharecropping arrangements into modern capitalist ones, land reform had an unequalising effect. It split an earlier homogeneous class of sharecroppers into two subclasses: small capitalist farmers (owner-cultivators) and landless farmers, dispossessed of earlier sharecropping rights. Mohtadi (1986) investigated the subsequent migration of each new subclass and found that the propensity to emigrate is significant in both groups, but particularly so among the landless.

On the other end, other analysts (Peek & Antolinez, 1980 quoted in Adams, 1993) maintain that medium-sized landowning farmers have the lowest propensity to migrate, yet others (such as El–Dib, IsmAEl & Gad, 1984 quoted in Adams, 1993) have found that landless people, especially landless agricultural workers, have a high propensity to migrate. Bilsborrow et al. (1987) found an inverted U-shaped relationship between land and migration, implying that farmers owning medium–sized plots of land are the most likely to migrate.

Lipton (1980) argues that both poor and rich migrants tend to come from the same villages. According to Lipton, while better-off migrants are 'pulled' towards fairly firm job (or education) prospects, the poor are 'pushed' by rural poverty and labour-replacing methods. He argues that 'push' and 'pull' migration are twin children of inequality in the same sort of village; but they are also sources of new inequality" (Lipton, 1980, p. 4). In a review of the literature, Lipton (1982, p.197) finds that variances in rates of migration are determined by unequal landownership in Bihar,

---

[13]   *Connell et al., 1976, p.10, also quote similar links in other studies in Nepal and West Africa. They emphasize that single-factor analyses of land-based determinants of migration are inadequate.*

Ivory Coast and Nepal and by unequal education in Colombia, Brazil, Liberia, Ghana, Kenya and the Philippines.

Prahladachar (1987) analyses some aspects of asset structure in the state of Karnataka (India). The results reveal on unequal and skewed asset distribution, even though distribution has improved somewhat as a result of a reduction in inequality amongst cultivator households. However, the distribution of assets between cultivators and non-cultivators is extremely skewed. Inequality in land distribution leads to discrimination between cultivator classes. Prahladachar suggests that land reform could moderate this effect if other income increasing assets, such as machinery and equipment, irrigation and draught animal power are more evenly distributed.

Sharma (1988) carried out a similar study in Himachal Pradesh to analyse the distribution of productive and unproductive assets, with a sample of farmers from three villages. The productive assets included land, dairy animals, draught animals, traditional implements and farm buildings. The findings indicate that the distribution of unproductive assets is more unequal compared to productive assets. This makes sense, since unproductive assets are likely to include some "luxurious" goods, which poor people cannot afford. The farms and farm buildings and dairy animals accounted for 90% of the total assets owned by households. Another important finding is that operated land is much less unequally distributed than owned land. This positive indication implies that land rentals contribute towards easing the problems of optimal farm size for those owning small land holdings.

De Haan (1997) referring to his study in Bihar, India, argues that migrants are both landowners and people who work on the land. They migrate and they keep the land when they migrate because they do not want to depend on others. De Haan (2004), in assessing literature from other studies, indicates that some findings are context-dependent; for example a survey in India in the 1980s showed how migration dynamics differ across states. In Bihar, the landless and poor were more prone to migrate, in Kerala the middle peasantry migrated more and in Uttar Pradesh all the landed groups, except the largest cultivators, had a relatively high propensity to

migrate.[10] Longitudinal research in Palanpur in Uttar Pradesh, India showed that in 1983/84 higher castes were more prominently represented among migrants, while lower castes had seized the opportunities for outside jobs in earlier years (Lanjouw & Stern, 1989, p.17).[11]

In a study of economic and demographic determinants of international migration in rural Egypt, Adams (1993) found that a combination of income and wealth (in the form of land) has an inverse impact on migration, that is, as the product of these two variables increases, the propensity to migrate falls. He argues that rural Egyptians, who are richer and wealthier, feel less of a 'push' to go to work abroad and more of a 'pull" to stay at home to enjoy the economic opportunities associated with landholding. It is the poor and landless males, rather than middle-income males, who have the highest propensity to migrate. This is despite the considerable travel and opportunity costs associated with international migration. Males who are poor and landless are usually able to find or borrow the money needed to get abroad.

In another study, Adams (1996) investigates the effects of different types of remittances on inequality by measuring the effect of external and internal remittances on income distribution, asset accumulation and rural inequality in rural Pakistan. He used data gathered over three years (1986/87 to 1987/88) from 727 households. The results show that it is mainly lower income groups that earn internal remittances and that such remittances form an important component of the incomes of the households at the bottom income quintile. Therefore, internal remittances in Pakistan account for only a small proportion of overall income inequality (less than three per cent). Upper

---

[10]   *Oberai et al (1989). In Bihar, 15 % of the out-migrants belonged to the lowest income class, while 7 % of the total population sample belonged to this income group. However, these figures excluded remittances. Of the migrants, 72 % remitted to the family, but within the lower income groups, the percentage of remitters was higher: remittances formed 93 % of the income of the migrant households in the lowest income group.*

[11]   *In Burkina Faso, Singh and Anayetei (1996/97) found that people with less land migrated more. Song (1997), using survey data from Hebei province, China, concludes that migrants came from households suffering 'absolute disadvantage' in farming.*

income groups are involved in international[12] migration and earn external remittances, which account for 12% of overall income inequality, thus increasing inequality.

2.3.2 Asset distribution (other than land) affects migration

Land is often considered the primary source of economic inequality and social differentiation in rural areas (Robinson, 1956; Nurske, 1962; De Janvry, 1975). However, unequal wealth accumulation and income inequality also occurs as a result of unequal access to capital and other productive assets (Julka & Sony 1988). Other studies on the distribution of fixed productive assets in the rural areas of developing countries show that this distribution tends to be highly concentrated in the hands of a few (Shen, 1995). Those households that control large holdings of land also tend to monopolise stocks of productive assets.

The study by Hassan et al. (1989) analyses the distribution of productive assets other than land and water in a unimodel model of farm resource organisation in Sudan's Radad Irrigation Scheme as the key to explaining rising inequality. Capital is an important production resource that is privately owned and allocated by tenant households. Therefore, the impact of differential access to capital assets on the distribution of net household income and end of the wealth was assessed. The results (Hassan et al., 1989) show that the richer farmers, who control substantial stocks of productive assets in various farm and non-farm activities, accumulate more wealth and resources over the years, leading to greater income differences. In contrast, the poorer farmers suffer negative wealth changes; they do not save and become relatively poorer. Owing to a lack of access to institutional credit, many households liquidate physical assets or resort to wage labour and other non-farm income activities to finance their production and marketing requirements. The broader implications of the differential access to capital assets is the differential on and off farm investment opportunities and unequal status of farmers participating in the capital and labour markets. The plight of the poor households is partially relieved by off-farm work and out-migration of family members to earn wages from other occupations.

---

[12] *International migration and remittances are not discussed in details in this study.*

In a study of the agrarian transformation of China, McKinley (1993) found that a consequence of the reform is that land is more equally distributed than fixed productive assets. Also, unusual and unique to China is the finding that the distribution of income is more unequal than the distribution of wealth. In most developing countries, the distribution of wealth is much more concentrated in the hands of a few than the distribution of income (McKinley, 1993), mainly due to concentration of land and fixed productive assets in the hands of the few. All the same, rural-to-urban migration in China, which has been shown to be the highest in the world at the present moment (Shen, 1995; De Brauw et al., 2001), is partly associated with unequal distribution of productive assets other than land.

2.3.2.1 *Human capital and rural inequality*

Human capital should be mentioned because it is usually ignored. Birdsall et al. 1997 produces empirical evidence (for Latin America) that suggests that the initial distribution of assets, especially of human capital, affects the performance of an economy. The results further show that the initial inequalities in the distribution of assets, especially of land and human capital (education and skills training), have almost twice as great a negative impact on growth for the poor as for the population as a whole. These findings support Lipton's (1982) review (see section 2.3.1).

Research on migration in Western Kenya shows that migration in that country also increases differentiation, however, not through agriculture but through investment in education (Francis & Hoddinott, 1993). Similarly, Ferreira (1996 quoted in Kirsten & Kirsten, 2000), in a study of poverty and inequality in Tanzania, finds that distribution of human capital makes a difference even where land is not a determinant of income distribution. She singles out human capital as one of the three most important assets of rural households, together with land and livestock. The better off households tend to have higher levels of education. The inequality in human capital ownership is more striking between genders, with women more likely to be illiterate than men. The relatively better-educated members of the rural population have better opportunities in the rural areas. At the same time, they have higher propensity to migrate than their counterparts with less education (Francis & Hoddinott 1993).

2.4   RURAL INEQUALITY AND MIGRATION IN SOUTH AFRICA: PAST AND PRESENT

This study starts from the premise that the prevailing conditions in the rural areas of South Africa's former homelands generally, and in Limpopo Province in particular, are the result of historical process and apartheid policies. The distribution of natural resources in South Africa, especially of land and associated resources (water, wetlands, forestry, etc.), was until recently, highly skewed (Woolard & Barbarton, 1998). This, according to Njobe (1993) was a result of four centuries of conquest, occupation, denial, expropriation, transfer, purchase and consolidation, which resulted in a pattern of distribution of resources which was highly in favour of minority occupation. The unequal distribution of land and other resources transcend boundaries of provinces, regions, districts, areas and even villages.

These facts notwithstanding, the study takes into account the other school of thought that, despite the historical biases migration has always been considered by rural dwellers as another option to improve their livelihood. Delius (1983) shows that the Pedi people, including those from the Limpopo, participated in labour migration as far back as the 1830s, almost four decades before the conquest of their society in 1879. Thus, the opening of the Kimberly diamond fields in 1869 merely presented improved employment opportunities for a people already deeply engaged in the labour market. It is known that even at that time, the driving force to migrate was a desire to increase income. The same is still true today, when able bodied men and women.

In Limpopo, findings from our sample confirm the later school of thought; the majority of non-residents moved away from home to find a job away from home. Other reasons for migration indicated included: seeking for a job opportunity staying with a family member who has a job in the city and some times work was combined with education.

For decades ownership of land and associated assets were the major sources of economic and social inequality in rural South Africa. The presence of inequality has been documented in a number of studies, including Eckert, 1991; Houghton and Walton, 1952; Magubane, B., in Safa and Dutont, 1975; Cater & May (1997); May,

1998; Cross et al, 1998, (see Chapter 1, section 1.3.) Within the agricultural sector, 86% of agricultural land is owned by about 55 000 commercial white farmers, while the majority of the country's black population owns only 14% of total farm land (Kirsten & Kirsten, 2000). With the land reform programme, the situation is changing, but very slowly. Black people are either claiming their long expropriated land or buying new land from willing sellers. The progress made with the land redistribution programme has not met with initial expectations (ref. section 1.3.1). Studies that have analysed differentiation between landowners and other households in different provinces of South Africa confirm these disparities. In 1999 amendments to the Restitution Act No 22 of 1994 were passed by Parliament and Section 42 D of the Act gave powers to the Minister to make awards based on negotiated settlement agreements. This administrative approach resulted in a phenomenal and exponential increase in the number of claims settled. By May 2003 in excess of 36 488 claims were settled, equivalent to 89 573 hectares.

The issue of land scarcity can be demonstrated with a number of examples; Nieuwoudt and Vink (1989) estimate that the average farm size in KwaZulu Natal is about 0.75 ha. They concluded that, in addition to landlessness, inequality of land ownership and associated assets among cultivating households is an important "push" factor out of agriculture.

A case study of the Eastern Cape rural community in Rabula by De Wet (1995) highlights the importance of land ownership and land tenure in economic differentiation. From the results, De Wet concludes that the landowners are substantially better off, in material and human welfare, than the landless and those with limited land-holdings. Moreover, they are able to use their superior education and income levels to secure better paying jobs and to improve themselves. Table 2.1 illustrates the clear differentiation.

A study by May (1987), shows that there is considerable inequality amongst rural households, especially at low income levels. The results show that inequality is, to a large extent, linked to the participation of rural households in the wage economy of South Africa at that stage. It is evident from the May's (1987) findings that the

distribution of land and livestock among rural households is particularly unequal, with the distribution of labour power even so.

Cater and May (1997), May (1998) and Roberts and May (2000) use the findings of the Project for Statistics on Living Standards and Development (PSLSD) survey, undertaken in the last half of 1993. PSLSD is considered as a South African milestone because it was the first nationally representative, multi-purpose household survey.

Table 2.1 **Economic indicators differentiating landowners and other households in Rabura, Eastern Cape**

	Land owning households	Other households
Annual cash income (1987)	R4 770 (100% of households)	R2 444 (51% of households)
Years of education per adult	8.51	7.16
Percentage of households owning livestock:		
Cattle	82%	16%
Sheep	32%	0%
Goats	86%	83%
Average household livestock holding		
Cattle	7.85	0.16
Sheep	10.39	0
Goats	11.04	5

Source: De Wet (1995)

It was conducted nine months prior to the country's first democratic elections in April 1994 and thus signifies an important baseline against which to monitor the progress of the government in its determination to reduce poverty and inequality (Klasen, 1997).

The PSLSD study, which incorporated a large sample of households (approximately 8800 households nationwide, of which 4 259 were rural African households), shed some light on rural inequality and poverty in the entire country. The results from the survey revealed, inter alia that:

(i)   The high levels of income inequality across race groups in South Africa, measured by the Gini co-efficient (0.58 in 1993), were among the highest in

the world.

(ii)   By engendering a situation of inequitable access to employment, services and resources to the African population, apartheid policies resulted in poverty being characterised by a strong racial dimension.

(iii)   Poverty and inequality are geographically concentrated, with the largest share of the poor (72%) residing in the rural areas, especially the homelands.

(iv)   Only over a quarter of African rural households have access to a plot of land for crop cultivation. The average land size for these households is estimated as only 2.2 hectares.

(v)   Livestock ownership revealed a similar pattern with only 24% of African households in the rural areas owning livestock with an average holding of 5.4 mature livestock units (MLU), valued at about R 4 300. The livestock situation could have been exacerbated by the drought conditions and the increase in densely populated rural settlements, which have limited grazing land.

Cater and May (1997) gave some estimates of ownership of agricultural and other productive machinery and equipment for the rural African households. Only 18% and 8% respectively owned such assets. This implies not only a limitation on agricultural production but also on non-farm economic enterprises that could generate income.

However, rural households were found to be relatively better endowed with human capital compared to other assets. In 78% of the household have at least one adult member was functionally literate and 37% of the households had at least one adult member with 10 or more years of education. Only 30% of the households had a pensionable person and 35% had at least one member of the family who was a migrant worker away from home.

May (1998) reviews the extent and nature of poverty and inequality in South Africa as a whole and assesses the current policy framework for the reduction of both. The report attempts to provide clear conceptual and practical guidelines concerning the issues, which need to be taken into consideration in the formulation of policy. The report shows the increasing significance and important developmental concern attached to the reduction of poverty and inequality in South Africa.

The empirical findings in the different studies reviewed above indicate the level of land scarcity for rural African households, while the small proportion of the population, mainly whites own almost all the arable land. The implication of this is twofold; first that the amount of land remaining available to Africans is simply too little; even if they were to share it equally it would be inadequate. Thus meaningful interventions towards reducing inequality of land holding within or among African villages should start with securing more land from white owners to increase the village resource base. Secondly, as long as the people in the rural areas continue to face land scarcity they will continue to look elsewhere for opportunities to sustain themselves and their families, thus, migration of people from their home villages to other rural areas (especially to the commercial farms) and to the cities will continue.

2.4.1 Historical perspective of rural inequality and migration in South Africa

The phenomenon of migration in South Africa is unique and differs from the general patterns and processes of migration. According to the Migration Studies of the Open University (1982), migration concerns people moving spatially at various times of their lives for varying motives. Such movement is assumed to be voluntary, with decisions made by the migrants and /or their families. However, in the case of South Africa, rural out-migration was initially designed to supply labour for commercial farms, and later for the diamond and other mines.

According to Magubane (in Safa & Du Toit, 1975), from the very beginning of white colonisation, the African population was targeted for labour. A policy of conquest was instituted that did not only destroy the population but also deprived it of its land and resources for subsistence, thus reducing it to a mere instrument of economic activity. The African reservations, in which they would find it hard to continue any form of independent subsistence, was designed to make the African people totally dependent on their "masters" for existence. These reserves, which started off as merely places in which Africans were to be protected for their own sake, were turned into autonomous, so-called, homelands or "Bantustans" or self governing states under the apartheid policy, until 1994. This is one of the few cases where Karl Marx's prediction and

fears (Gillis et al., 1996, p.87) were vindicated. Marx predicted that capitalists have an incentive to create a "reserve army of the unemployed", whose brooding presence ensures that the wages of employed labourers stay at the subsistence level. Under the new dispensation, South Africa is united but the legacy of the policies of separate development lingers on.

Despite the new labour rules and regulations, and a very strong labour movement in South Africa the miners and farm workers in South Africa remain vulnerable and are still considered the lowest wage earners. Without other skills and resources (land, capital) many miners and farm workers have very few options, if any, for income generation, but to remain migrants selling their labour cheaply. In the Limpopo study the majority of the migrants (40.4%) found employment in the industrial and mining sector, a further 29% were employed in the tertiary sector and 3% were employed on farms. It is reasonable to expect that migrants with access to better information (most likely from relatively richer households) will take up better paying jobs in the industrial sector and to a lesser extend in the mining sector. Poorer migrant end up on farms, either because they are closer to their villages or because they cannot afford the costs of relocating to far places in the cities.

Migration was synonymous with "work" for the majority of black South Africans, especially from the rural areas (Magubane, 1975). The areas that were allocated as African reserves towards the end of the nineteenth century, and which became "Bantustans" or "homelands" following the 1913 Native Land Act and the Native Trust and Land Act, covered only a portion of land originally occupied by Africans (Baber, 1996). The legacy of a long period of exploitation and appropriation, during which the African communities were deprived of their means of subsistence and set aside as labour reserves, made them almost totally dependent on migrant wage earnings and other transfer income sources, such as pensions. Many households found it hard to sustain any form of independent existence based on agriculture, except through the sale of labour as mineworkers, and later, as farm workers, housemaids and garden-boys (Magubane, 1975).

The extent to which these areas failed to provide adequate base for African agriculture and other forms of livelihood is indicated by the 1936 census. Of all Africans in the then Transvaal, 37% lived on white-owned land, either as sharecroppers or as tenants,

while 47% lived in the former homelands (cited in Beinart, 1994). According to the 1996 census data (Statistics South Africa, 1996), the main incomes sources of the rural former homeland populations are wages (52%), social transfers (18%) and remittances (14%). The poorest rural households have neither access to social pension nor links to the urban labour market through own employment or migrant remittances. Agriculture production, with the poor resources described earlier, offers little scope as income source for most rural households. Rural poverty is strongly influenced by the nature of rural-urban interactions through migration, thus, to come to grips with rural poverty an understanding of the dynamics of migration is required.

The former homelands faced increasing pressure from growing populations, not only from high internal population growth but also from having to absorb ex-tenants and ex-farm workers, and later, the victims of forced removals. The South African White Paper for Population Policy Development (1996, p. 31) states that the most important underlying factors for the high rate of internal migration were forced removals of African people from the commercial farms to the homelands from the 1960s until the early 1990s and the continuing migrant labour system. The endemic, overcrowded areas and exceedingly small farm size are certainly important "push" factors in the former homeland rural regions. Areas, such as Lebowa, demonstrate the adverse impact of overcrowding in an unsuitable communal area. Faced with desertification, soil erosion, salination and the pressure of settlement development, the task of improving the quality of lives of these people has become almost impossible. Therefore, large numbers of the impoverished population, which relied heavily on agriculture, resort to migrating to other areas in search of better opportunities. For decades, there simply has not been enough land, water or information to support serious farming and other rural livelihood systems for black communities in rural South Africa. Out-migration of one or more members of a household has always been an important component of survival and risk aversion.

2.5 RURAL INEQUALITY AND MIGRATION IN THE LIMPOPO

2.5.1 Background and setting

The Limpopo Province is situated in the northeastern corner of the Republic of South Africa. It has a population of 5.31 million, which is made up of several ethnic groups distinguished by culture, language and race. The Northern Sotho (Sepedi) at 57% is the largest portion of the population. The Tsonga (Shangaan) speakers comprise 23 % while the Venda makes up 12 %. Afrikaans speakers make up 2.6 % while English speaking whites are less than half a per cent.

The province is divided into four regions, namely: the Capricorn Region, the Bushveld Region, the Soutpansberg Region and the Valley of the Olifants. Within the borders of the province are four previous administrations which were created during the apartheid era: Lebowa, Gazankulu, Venda and Transvaal Administration. Another unique feature of this province is that it shares international borders with three countries: Botswana to the west and northwest, Zimbabwe to the north and Mozambique to the east. Therefore, the Limpopo Province is the link between South Africa and countries further afield in sub-Saharan Africa. On its southern flank, the province shares borders with Gauteng, with its industrious Johannesburg-Pretoria axis. Potentially, the province is placed at the centre of the vortex of developing regional, national and international markets.

These connections are well served by excellent road, rail and air links. The N1 route from Johannesburg which goes through the length of the province is the busiest overland route in Africa in terms of cross-border trade in raw materials and beneficiated goods. The port of Durban, Africa's busiest, is served directly by the province, as are the ports of Richard's Bay and Maputo. The Gateway international airport, situated in Pietersburg (now also known as Polokwane), the capital of the province, is another significant facility in the province. This is complimented by the presence of other airports in major centres of the province including [Elisras (Lephalale), Louis Trichardt (Makhado), Messina (Musina), Phalaborwa, Potgietersrus (Mokopane), Thabazimbi, Tzaneen, Thohoyandou and Warmbaths

(Bele-Bela)]; the new names are in brackets. The province is also linked to the Maputo Development Corridor through Phalaborwa Spatial Development Initiative. This network of road and rail corridors, connecting to the major seaports, will open up the Limpopo Province and surrounding regions for trade and investment.

The Limpopo Province is also endowed with mineral resources, with mining as the critical economic activity in the province. Mining contributes 22% of the gross geographical product (GGP). Minerals include platinum, chromium, nickel, cobalt, vanadium, tin, lime-stone and uranium clay. Other reserves include antinomy, phosphates, fluorspar, gold, diamonds, copper, emeralds, scheelites, magnetite, vermiculite, silicon, mica, black granite, corundum, feldspar and salt. Already the Chinese company, Rockfield Pty., has set up a granite mining venture here with the raw material being processed into mosaic tiles.

Despite this rosy picture, the villages in the Limpopo Province, like elsewhere in rural South Africa, are still essentially agrarian in nature, sharing some common village resources and using communal land. In South Africa communal land tenure is mainly practised in the former homelands. In these areas land is under the control of local and district authorities (headmen and tribal authorities) or residents associations that allocate land to individuals (mainly adult males). Land is allocated by means of certificates called `*Permission to Occupy' (PTOs*), which are approved by the headmen and magistrates (Kirsten et al., 2000). As land and other resources are scarce in the rural areas, the size and distribution of land and other productive assets are in most cases unequal.

This section gives evidence of rural inequality and migration in the Limpopo Province from the literature. The section will be used as a reference point with which to compare the empirical evidence of this study. A detailed account of the empirical results from the survey is presented in Chapter 5.

2.5.2 Some important indicators

The population of Limpopo increased from 4.9 in 1996 to 5.31 million (11% of the population of South Africa) in 2001; this is according to the Census 2001, published in 2003 by Statistics South Africa. This implies an annual population growth rate of 1.3%. The 1996 Census results indicated that overall, total employment in the economy was about 9 114 000, of which about 1 800 000 were informal job opportunities. About 22 % of the economically active population was unemployed, numbering about 2 000, 000 work seekers. A further 2 200 000 people wanted to work but were no longer actively seek employment after trying and failing for a long period of time. The figures have since changed slightly, the 2001 Census Report indicate the employed people to have increased to 11.2 million, while the unemployed people increased to 4.9 million. According to the Census 2001, the figures for Limpopo, show that 22.7 per cent of the population working age (15-65 years) were employed, 21.6 per cent were unemployed and 55.7 per cent were not economically active. The implication is a high dependence ratio in Limpopo which does not auger well with poverty alleviation.

2.5.3 Equitable distribution of resources

According to the 1995 October Household Survey National Census, 44.5 % of the households in the Limpopo Province had no cash income. This correlates with the present unemployment rate of about 46 % (Census 1996). New jobs should accommodate the very poor and should address the current income and asset inequalities through redistribution and fair trade. The broad strategies for job creation and economic development are articulated in the "Growth and Development Strategy in the Limpopo Province (GDS-NP) of 1997/98" which was adopted by the Provincial Executive Council in 1997. The strategy represents a five-year multi-sectoral growth and development strategic plan by the provincial government.

One of the priority areas for implementation of the GDS-NP (1997/98) is increased agricultural production through small farmer support programmes and increased access to economic opportunities via small, medium and micro enterprises (SMMEs)

in a way that fosters employment creation. The five-year plan of the Limpopo Province is to acquire agricultural state land and underused commercial areas to redistribute within the land reform framework to create viable farming units for individuals and groups that have demonstrated a capacity to use the land.

The findings on the income and asset distribution among the households of Limpopo sampled for the study covered by this thesis is presented in Chapter 6, Section 6.5.

2.6   SUMMARY

The available literature, from both international and South African studies in different provinces, indicates that assets are unequally distributed in rural areas, even in China. However, the effect of rural asset inequality on migration has not been extensively studied up to now, as different studies show people across the entire spectrum of asset ownership and distribution migrating for different reasons.

Literature on migration in South Africa in general, and in the Limpopo in particular has to be considered in the context of the legacy of the past system that perpetuated racially-based inequality in asset ownership and distribution, especially of land and other livelihood opportunities. Rural areas were at a disadvantage right from the time that forced removals of people were carried out. As a result of overcrowding access to land is limited and the size depends on family status and characteristics. The land reform programme is working towards solving some of the land distribution issues. Nevertheless, rural asset inequality, especially of land, is a serious 'push' factor for out-migration, from the rural areas or at least a move out of agriculture, in Limpopo.

CHAPTER 3

THEORIES OF INEQUALITY AND MODELS OF MIGRATION BEHAVIOUR

The process of industrialisation engenders increasing income inequality as the labour force shifts from low-income agriculture to the high-income sectors.
Kuznets, S., 1955

3.1   INTRODUCTION

This chapter reviews inequality theories and migration models to set the scene within which to analyse rural inequality and migration behaviour. It is presented in seven sections, starting with the current international experiences about inequality and social and economic phenomena. Section 3.2 discusses the neo-classical patterns and theories of inequality and puts into perspective the Kuznets debate on the inverted-U curve. Section 3.3 develops the conceptual framework indicating the links between asset inequality and migration. The effect of remittances on rural economies and income inequality is also presented. Different models have been adapted and have provided the basis for the model used in this study. The most important models relating to migration are discussed in section 3.5. The shortcomings of the models, which have necessitated modifications in analysing the determinants and impact of rural – out migration, are explicitly pointed out in this section. Section 3.6 assimilates all the factors mentioned and looks at the positive or optimistic side of migration and how best to proceed in the South African context. Section 3.7 gives a short summary of the chapter.

3.2   Patterns and theories of inequality

Worldwide, policy-makers are interested in equality and equity issues for different reasons, including but not limited to, fairness and social justice, reduction of poverty, sustainability of development and social cohesion. The issue of who benefits from economic growth has always been important (Gillis et al., 1996). Even in Victorian England, rising inequalities in income and wealth and persistent poverty among the

lower classes were widely perceived and discussed. Themes considered by social philosophers such as Karl Marx, novelists like Charles Dickens and classical economists, such as David Ricardo and Kaldor included equity issues (Ferreira, 1999).

Labour–surplus model and Kuznets hypothesised
"Inverted-U"

W. Arthur Lewis (1954) and Simon Kuznets (1955) developed a modern version of the two-sector labour–surplus model. Kuznets (1955) was one of the first development economists to introduce inequality in a model. In his 1955 presidential address to the American Economic Association, Simon Kuznets suggested that the relationship between per capita gross national product (GNP) and inequality in the distribution of income may take the form of an inverted–U (illustrated in Figure 3.1). The highlight of Kuznets' contribution was the observation that, if inequality between low-productivity sectors was more substantial than within each sector, then inequality would first rise, as people move across sectors, and then fall. Most of them will find themselves in the new sector; or the economy will reach a point where factor movement was equalising returns across sectors.
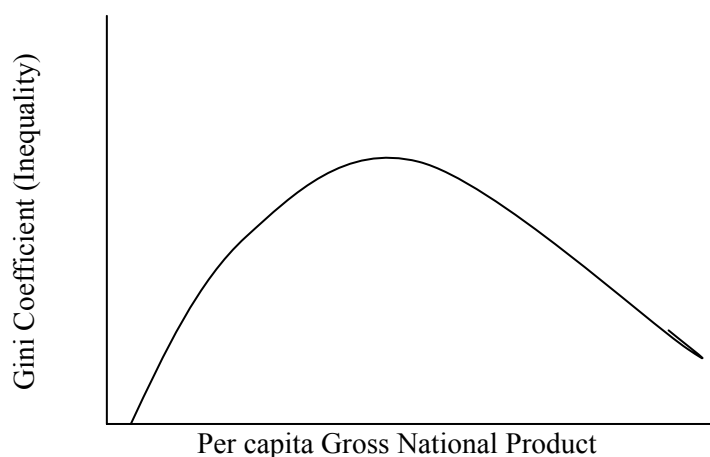
Figure 3.1:   Kuznets Inverted Curve
Source: Todaro, M.P., 1997 p.161. Economic Development

The graph implies that as per capita income rises, inequality initially rises, reaches a maximum at an intermediate level of income and then declines as income levels characteristic of an industrial country are reached (see Figure 3.1).

The importance of the movement or flow of people, mainly from rural to urban centres, is labour transfer or migration from locations where their social marginal product (MP) is assumed to be zero to places where their marginal product is positive and rapidly growing as a result of capital accumulation and technological progress.

According to the Wikipedia, the free encyclopedia, Kuznets Curve can be further interpreted as follows: The transition from an agrarian sector to urban industrialization, in which there is growth in income inequality as income in agriculture is relatively low compared to income earned in the city. With this opening up of inequality, we also see that the level of income people earn in rural areas is similar to one another, whereas we see wide range of income level in the industrialized city, which further opens up inequality.

The scenario played out above is quite similar to what is going on in the former homelands of South Africa, including Lebowa, on which this study is based. However, the level of income rural people AErn in Limpopo is not at all similar as enticipated by the Kuznets interpretation above. Within the same rural area there are those with little or no income at all (especially those with no access to local wages and no remittances), while ther are those with relatively high income levels (mainly from local wages and or remittances).

The decline in Kuznets Curve is associated with:

- a rise in mass education, which may open up opportunity for all and reduce the gap in income inequality.
- Government putting up social policy for provision of transfers, welfare, retirement pension, health care, in an effort to redistribute income throughout different levels of income earning groups.In South Africa such transfers include pensions, child

support grants, unemployment grants as a the amount and extent of coverage of transfer payments keep changing.

Following the publication of Kuznets's address in the American Economic Review (1955, 45:1-28), considerable research has been devoted to what has become known as the Kuznets's hypothesis, which postulated that, "income inequality increases during the early stages of economic development and after reaching a turning point declines".

The problem with Kuznets's theory lies in its empirical validation. While analysis of some cross-sectional data confirms the "Inverted-U" curve hypothesis, many others studies dispute it. A cross-country study of 60 countries by Ahluwalia (1976) supports Kuznets's hypothesis. The evidence shows a distinct inverse U–shaped pattern between the level of development, proxied by GNP per capita and inequality. However earlier on Adelman and Morris, (1973) found the poor in many countries worse off, in absolute and relative terms, as development occurred. No evidence could be found that the benefits of economic growth automatically trickle down to the very poor.

Evidence from more studies over the last three decades seems to find no credible support for Kuznets hypothesis. Anand and Kanbur (1993) tested and rejected Kuznets's hypothesis using data that is consistent across countries. They also scrutinised and disputed Ahluwalia's findings due to inconsistencies in the data used. Ahluwalia's data set consists of income distributions for 60 developing and developed countries whose distributions are not comparable with respect to income concepts, population unit and survey coverage. Bruno, Ravallion and Squire (1996), using data from 63 surveys from 44 countries over a time period 1981 to 1992, found no evidence of a systematic worsening of inequality in the transitional economies as their GDP declined. They observed no simple relationship between growth and inequality. They concluded that the "stylised fact" that distribution must get worse with economic growth in poor countries before it gets better turns out not to be a fact at all. Other researchers of Kuznets's hypothesis include Ravallion and Chen, 1996, Ravallion, 2000, Birdsall, 2000 and De Janvry and Sadoulet, 1996. They all indicate that a country's level of real GDP per capita (or growth rate) has little or no influence

on inequality or the distribution indicators of a country; also that Kunets assumption that inequality would enhance growth is not true.

It follows, therefore, that the high rates of inequality of income and assets can persist despite increasing growth, as has been the case among some upper middle-income countries (in Latin America, Asia and Africa) with a relatively high per capita GDP. Surely, if Kuznets's hypothesis were true, inequality in countries, such as South Africa, would already have started to decline..

3.3 THE BASIS FOR A LINK BETWEEN ASSET INEQUALITY AND MIGRATION

The ultimate cause of unequal distribution of personal income in most countries with high inequality rate is the unequal and highly concentrated patterns of asset ownership in those countries, especially in the continents of Asia, Latin America and Africa (House, 1991; McKinley, 1993. In the case of South Africa for example, the principal reasons why 10% of the population receives over 40% of the total national income (HDR-SA, 2000) is because 10% of the population owns and controls well over 60% of the productive resources, especially physical capital and land, as well as human capital in the form of better education. According to Todaro, (1997), correcting factor prices is not sufficient to substantially reduce income inequalities, where physical asset ownership and education are highly concentrated.

In some countries of Asia and Africa, characterised by high levels of asset inequality, coupled with low levels of education, capital market imperfections and credit constraints prevent the rural poor from undertaking profitable indivisible investments (Deininger & Olinto, 2000). [The reasoning underlying this approach is that households and/or individuals are assumed to be able to engage in specific productive economic enterprises for livelihood] One of the important prerequisite of credit market activity and its sustainability is continued commitment of the borrowers to repay at agreed intervals the assigned amount under all circumstances. In order to ensure an adequate incentive structure on the part of the borrowers, lenders demand collateral to secure their money lent out, leading to the emergence of equilibrium credit rationing.

Baltensperger (1978) defined Equilibrium credit rationing as *'whenever some borrower's demand for credit is turned down although the borrower is willing to pay all the price and non-price elements of the loan contract."* According to Baltensperger (1978) there are two types of credit rationing:

- Type I rationing occurs when there is a partial or complete rationing of all the borrowers within a given group.
- Type II rationing concerns the rationing that occurs within a group that is homogeneous from the lender standpoint, so that some borrowers of the group obtain the loan they demand while others are rationed. This seems to be the case with the rural households that we interviewed. Even though there are banks in 12 of the 24 villages in the survey, most households find it difficult to obtain credit from the banks due to lack of collateral

Stiglitz and Weiss (1981) observed that there are no equilibrium interest rates, at which demand equals supply (of capital) in the loan market, even when the market is competitive. They define credit rationing as a phenomenon where either: (i) Among seemingly similar loan applicants some do not obtain credit at any interest rate; or (ii) Some identifiable potential borrowers do not obtain credit even though they would with greater supply of capital at the lender level. Thus, according to them credit rationing is an equilibrium phenomenon

As a consequence of equilibrium credit rationing, only entrepreneurs with sufficiently high levels of personal wealth are able to finance their projects. The initial asset distribution determines the households and/or individuals that are able to borrow. Those left out in this way are forced to find alternative means of livelihood and migration, in search of opportunities elsewhere, is one of the alternatives. The above notwithstanding, borrowing still take place among the rural poor, not from formal credit markets, but from family, friends and neighbours, who do not require them to put down collateral or pay interest rate.

There is evidence to shown that the initial distribution of wealth not only perpetuates inequality but affects growth and leads to intergenerational persistence of poverty and

encourages migration. This is more likely to happen through indivisible investment in human capital (Birdsall & Londono, 1997). In most poor countries of Latin America, Asia and Africa, the amount of education children receive is greater the higher the income and education of their parents. At the same time, it is reasonable and rational to assume that children's educational achievement is a good predictor of their future position in the ranking of lifetime income and status (Birdsall, 2000); thus, intergenerational social mobility is relatively limited. In cases where education has to be financed by accessing capital markets, it has been shown that among individuals with equal ability, those with higher assets and wealth may be able to become more educated while the poor ones will not, thus condemning the children of the poor to limited education and low future income and a self-perpetuating poverty trap. In the presence of financial market imperfections, regions, countries and even provinces with different asset distribution patterns (and initial asset levels) will follow different growth paths. This may explain the high rate of migration for education, as households that can afford to pay send their children to town schools that have better facilities than schools in the rural areas. Birdsall & Londono, 1997, showed that inequality of education limits access to financial markets by the poor as they become entangled in a vicious circle, for example; initial inequality of education generates inequality of income, and in a vicious circle inequality of income induces a new round of unequal education. Likewise, initial inequality of assets sets the tone for policy and for the evolution of institutions (rules, social norms, and the role of the state) that can lock in inequality. This is the scenario in most of the rural areas of the former homeland districts of South Africa, including Limpopo.

It is difficult to measure equality of opportunity, likewise, it is difficult to distinguish between "constructive" inequality (Okun, 1975), which is believed to provide incentive for individual effort for hard work, innovation and productive risk-taking from "destructive" inequality, which is mainly due to the absence of a level playing field and unfair practices. The latter reflects inefficiencies in the market that inhibit growth. For example, weak, inefficient or incomplete capital markets, such as those found in the rural areas, critically contribute to the growth-reducing effect of inequality. If creditworthy borrowers cannot borrow because they are too poor, with limited information and without collateral to put down, then the resulting liquidity constraints they face will limit their ability to invest. Similarly, lack of direct credit

programmes, exorbitant loan interest rates and poor insurance markets may trap the poor in inefficient informal systems of risk sharing, such as, low interest saving clubs (stockvells, and burial clubs are common in rural and even urban areas in South Africa). Likewise, macro-economic conditions, social policies (e.g. education policy) and economic policies (e.g. relating to markets) affect the extent of "destructive" inequality (Behrman, Birdsall & Szekely, 1999).

Inequality of assets is also an impediment to growth in developing countries. Deininger and Olinto (2000) provide estimates showing that initial land ownership inequality is associated with low growth. They further argue that inequality of land ownership is linked to rural poverty, which in turn limits human capital accumulation and thus growth. Carter (2000) shows how the concentration of land ownership and associated assets is linked, over long subsequent periods, to concentration of income, even in countries where the economic importance of agriculture has diminished. South Africa is erroneously considered to belong to this category; because the economic importance of agriculture is still quite high due to its contribution to rural employment and livelihood for the poor, but also because agriculture value addition industries in South Africa still contributes substantially to the GDP. Moreover, a sizeable proportion of the African rural population still subsist on agriculture. The implication is that, over time the inequality of assets, such as land, affects, the evolution of all types of political and social institutions that end up limiting growth and development.

The poor depend heavily on overall resource consolidation and accumulation (Deininger & Squire, 1995), therefore, any mechanisms that offer potential to increase the asset endowment of the poor, such as the land reform programme in South Africa will invaluably raise their income. Theoretically, the land reform programme is expected to have solved all the ills regarding land, but realistically this has not happened due to bureaucratic and logistical problems. Even where land has exchanged hands to black communities there has been numerous problems related to delivery of necessary services, such as, financial support, skills training and mentorship and access to markets. On a general stand point, redistributive programmes have to take care not to undermine the functioning of markets, to reduce incentives for investment and increase social tension and polarisation. Well-designed

measures sponsored by either government or multilateral institutions or partnerships between public and private sector should allow countries, provinces or regions to redistribute assets to increase equity among its people, improve productive efficiency and enhance aggregate growth; this may also affect the economy's growth trajectory as well.

Inequality, be it of income or assets, also causes social instability and social stratification. There are incentive–effects associated with ownership of factors of production, as exemplified by literature on sharecropping (Deininger & Squire, 1995; Deininger, 2000). Inequality can create barriers that affect the cost of social interaction and economic exchange through, for example ethnic, homogenous and social capital. Inequality can be directly associated with violence and crime, which induce insecurity of property rights on investment incentives. These forces may act as 'push factors' for rural–urban migration, as seemingly the case in South Africa where asset distribution is highly skewed. De Janvry and Sadoulet (2000) report that poverty has declined in Latin America over the past three decades, but due to the high level of inequality in land ownership and associated assets, migration is still the main escape route for the rural poor to urban areas.

According to Todaro and Smith (2003), the most important type of migration from the stand- point of long-run development is rural–urban migration. However, a great deal of rural–rural, urban–urban and even urban–rural migration also takes place. This study focuses on rural to urban and rural to rural migration and what it implies to African rural households and rural economies.

3.4   REVIEW OF SELECTED MIGRATION THEORIES AND MODELS

Theoretical explanations which do not have empirical evidence to substantiate them are referred to as 'Theories', while explanations accompanied by research and empirical proof, presented in a unique structured format that can be used under different economic and social environment are referred to as Models.

3.4.1 Theories

3.4.1.1 Ravenstein's laws of migration

As early as 1885, Ernst George Ravenstein presented to the Royal Statistical Society "Laws of migration" in an attempt to show regularities in the scale and direction of migration and to explain migration movements in relation to opportunities and constraints (Migration studies of the Open University, 1982). This is the first example, available from the literature, of a systematic record of general laws of human behaviour. Theoretical explanations of migration go as far back as the 1880s when Ravenstein proposed eleven 'laws' of migration (Oberai & Singh 1983). The 'laws" were listed in his article, published in the *Statistical Journal* 1885 and 1889. According to Ravenstein (1885 and 1889), migrants move from areas of low opportunity to those areas with high opportunity. The choice, according to him, is regulated by distance, with migrants from the rural areas often showing a tendency to move to the nearby towns first and then towards large cities. A list of Ravenstein's laws of migration is presented in Box 3.1.

Box 3.1: Ravenstein's laws of migration

1. The majority of migrants go only a short distance.
2. Migration proceeds step by step.
3. Migrants going long distances generally go by preference to one of the great centres of commerce or industry.
4. Each current of migration produces a compensating counter–current.
5. The natives of towns are less migratory than those of rural areas.
6. Females are more migratory than males within the country of their birth (See comments on the text) but males more frequently venture beyond.
7. Most migrants are adults: families rarely migrate out of their county of birth.
8. Large towns grow more by migration than by natural increase.
9. Migration increases in volume as industries and commerce develop and transport improves.
10. The major direction of migration is from the agricultural areas to the centres of industry and commerce.
11. The major causes of migration are economic.

Source: Migration Studies of the Open University, 1982. Derived by Grigg (1977) from Ravenstein 1876, 1885 and 1889.

In many ways, Ravenstein is to migration studies as what Simon Kuznets is to the modern economics of inequality and growth. As with Kuznets, there is a considerable debate concerning Ravenstein's work. His basic laws have since been discussed, systematised and expanded on by researchers the world over (Lee, 1966; Oberai & Manmohan-Singh, 1983). Although still referred to as "laws", these statements are better regarded as generalisations (Migration studies of the Open University, 1982) based on the empirical information and analysis of the time.

Laws or no laws, the importance of the economic motive in the decision to migrate, the negative influence of distance and the role of step-migration suggested by Ravenstein are some of the important features, which have yet to be invalidated.

3.4.1.2 The "push-pull" model

Another model concerned with the cause of migration between two points is the *'push-pull' model,* which attempts to explain migration in terms of the relative attractiveness of different locations. In 1938, Herberle argued that a series of forces encouraged an individual to leave one place and attracted him to another (reference). Later, Bogue (1969) summarised these forces into 'push' and 'pull' factors respectively. The 'push' forces include decline or exhaustion of national resources and the prices paid for it; loss of employment; oppressive treatment on religious, ethnic or political grounds; alienation from a community; lack of opportunities for personal development or the effects of natural disasters. Amongst the 'pull' factors are better opportunities for employment and/or education; income increases; better living conditions; dependency due to either migration at marriage or the movement of dependants with a relative and the lure of new or different cultural, intellectual or recreational activities (Bogue 1969).

Push-pull forces can be regarded as falling into two broad categories: (1) those relating to change in the environment, and (2) those relating to changes in the motives of the individuals. This calls for analysis on two levels: the macro, concerned with society in the aggregate, and the micro, concerned with the individual. Additional problems with the push and pull model are firstly that it is often difficult to differentiate between the forces, i.e. to establish where the 'push' ends and the 'pull'

begins. Secondly, it tends to create a 'snap-shot' view of migration – that is, as a once-only phenomenon, rather than as a process. Nevertheless, the push and pull forces cannot be ignored, but should be considered as part of the migration process rather than an end to it. Migration from the rural areas of Limpopo responds to similar push pull forces as noted above. However judging from the responses on the reasons for migration the majority of migrants moved away from home to find a job. Other reasons included seeking for job opportunities; staying with a family member who has a job in the city and sometimes work and education were combined.

3.4.1.3 Sjaastad's human investment theory

In 1962, Sjaastad presented a human investment theory of migration, which treats the decision to migrate as an investment (Sjaastad, 1962). The returns are divided into money and non-money components. Non-money returns include changes in "psychological benefits" as a result of locational preferences. Similarly, costs include both money and non-money costs, such as costs of transport; of disposal of movable and immovable property necessitated by a shift in residence; of wages foregone while in transit and of retraining for a new job, if necessary. There are psychological costs too: of leaving familiar surroundings; in many cases, of giving up one's language and culture, of adopting new dietary habits and social customs and of growing out of one's ethos altogether.

Although Sjaastad takes into account money as well as non-money costs and benefits, in calculating net returns to migration he includes only money costs and non-psychic benefits. He assumes that in deciding to move, migrants tend to maximise their net real lifespan incomes. They also have, at least, a rough idea of what their lifespan income streams would be in the present place of residence as well as in the destination area and of the costs involved in migration. This assumption does not hold true most of the time otherwise we would fewer unemployed migrants, some of whom stay long periods of time without finding a job.

3.4.1.4 Lee's "pluses and minuses" theory

Building on Ravenstein's law of migration, Lee developed a "general scheme into which a variety of spatial movements can be placed" (Lee, 1966). He divides forces exerting influence on migrant perception into "pluses" and "minuses". Pluses pull individuals towards them and minuses tend to drive them away. There are "zeros" also, in which the competing forces are, more or less, evenly balanced. In their own way, these forces, associated with the area of origin and the area of destination, are governed by personal factors "which affect individual thresholds and facilitate or retard migration" (Lee, 1966). However, Lee does not manage to distinguish between factors affecting the characteristics of migrants and those affecting the volume and the stream of migration. Lee's model implies a complete appreciation of both the economic and personal conditions underlying the migration process.

3.4.1.4 Relative Deprivation

The concept of relative deprivation as formulated by WG Runciman in 1966, is said to occur where individuals or groups subjectively perceive themselves as unfairly disadvantaged over others perceived as having similar attributes and deserving similar rewards (their reference group).It is in contrast with absolute deprivation, where biological health is impaired or where relative levels of wealth are compared based on objective differences. Relative deprivation is more likely when the differences between two groups narrows so that comparison can be easily made than where there is institutionalised differences, such as the caste-like differences. The discontent arising from relative deprivation has been used to explain radical politics (whether of left or right), religious fundamentalism, the rise of social movements, migration, industrial disputes and different types of crimes and deviations.

From the 1980s, this concept was widely used in criminology, particularly by the so called left realists. According to Young, (1999), the attraction of the relative deprivation concept, as an explanatory variable in the post war period, is because of the rise of crime in the majority of industrial societies despite the increase in living standards.

Other author who have contributed to the relative deprivation discussion include Stark (1984), Stark and Yitzhaki (1988), Stark and Taylor (1989, 1991), whose empirical findings led them to conclude that among other things, relative deprivation contributes positively in migration decisions.

Mehlum's, ( ) came up with a relative deprivation hypothesis, which states that, an improvement in an agents' (potential migrants in a rural village) relative income also improves his welfare. Mehlum showed that the relative deprivation effect represents a positive externality between migrants and that their decision to migrate, are strategic compliments. Therefore, the migration will partly be a result of cumulative causation and dual migration equilibria may result. The presence of cumulative causation has implications for the effect of policy measures affecting migration.

3.4.2   Economic models of migration

3.4.2.1 The Lewis model or Lewis-Fei-Ranis (L-F-R) model of development

Lewis (1954) formulated the best-known theoretical work on development, primarily concerned with economic development in a dual economy, involving the capitalist and non-capitalist sectors of the economy. Later, with Ranis and Fei (1961), Lewis extended this model; the combined structure is known as the L-F-R Model. It considers migration as an equilibrium mechanisation, which, through transfer of labour from labour-surplus sectors to labour-deficit sectors, brings about equality between the two sectors. The model is based on the concept of a dual economy in which Lewis seeks to explain economic development under what he terms situations of unlimited labour supply. An expanding high productivity modern capitalist sector (urban), with industries and growth of output and employment, draws labour from the traditional, overpopulated, non-capitalist rural subsistence sector, which is characterised by low or marginal productivity of labour. The model implies zero or marginal product of rural labour which stems from the fact that, given excess supply of labour, some labour could be withdrawn from the rural sector and not make any difference to agricultural output. Thus, at a constant urban wage, the supply curve of

labour is considered to be perfectly elastic, meaning that, the supply of labour at the capitalist wage from the traditional rural sector is unlimited.

The simplicity of Lewis's model has been found to be inadequate by several researchers (Dasgupta cited in Oberai & Singh 1983; Toure & Fadayomi, 1992; Saith, 1998; Taylor, 2001; to analyse the causes and consequences of migration, especially in developing countries. First, migration is not induced by unemployment and underemployment in the rural areas, although employment is an important factor in the decision to migrate. Secondly, the zero marginal productivity of labour in the rural areas, especially in the agricultural sector, has not been confirmed empirically. That is, no one, not even the poor, would willingly spend his last hour of work when s/he knows that it will produce or earn nothing. Thirdly, present day migration into urban and peri-urban centres persists in the face of inadequate urban resources and unemployment. At the same time, a number of studies in rural areas (Dasgupta cited in Oberai & Singh 1983]; Saith, 1998; Kirsten et al., 2002) show the significant negative effects of migration on agriculture. The available evidence from the cited studies shows that, under given conditions of production, the allocation of labour tends to be optimal and any withdrawal of labour leads to a fall in output, unless yield- increasing technologies are simultaneously introduced. If the zero or marginal productivity of labour hypothesis was true the absence of migrants from the agricultural sector should not affect agricultural production negatively.

Another questionable assumption made by Lewis (1954) is that all the profits are reinvested, causing the capital stock to increase. A larger capital stock would cause the total product curve of the modern sector to rise, which in turn would induce a rise in the marginal product demand curve for labour, thus shifting the demand curve. This implies a rate of growth of the modern sector that is big enough to draw away the unemployed from the subsistence sector. In most countries (South Africa included), this has not happened as the rate of growth of the modern sector has been too slow to permit such development.

Box 3.2   Todaro's criticisms of Lewis's model

i)   The model implicitly assumes that the rate of labour transfer and employment creation in the modern sector is proportional to the rate of modern capital accumulations. In cases where profits are reinvested in labour-saving capital equipment rather than just duplicating the existing capital, the assumption cannot be true.

ii) The assumptions about surplus labour existing in rural areas, while there is full employment in the urban areas is certainly not true. Todaro (1986) points to the fact that most research in recent years indicates the opposite to be true. By and large, development economists today seem to agree that the assumptions of urban surplus labour is empirically more valid than the opposite Lewis assumption of general rural surplus labour. The third world today is faced with increasing rural-urban migration despite rising levels of urban unemployment.

iii) The third questionable assumption of the model is that of a competitive modern sector labour market that guarantees the existence of real urban wages up to the point where the supply of rural surplus labour is exhausted. The fact is that, in most developing countries, wages rise over time due to institutional factors such as civil service wage scales, trade union lobbying, multinational corporations living practices and other similar factors.

Source: Todaro (1987, pp. 69-71)

Despite its popularity for modelling purposes, this wage-driven, neo-classical analysis of rural out-migration has largely been disputed. The most important reason is the continuation of migration despite high and increasing urban unemployment. For this reason Todaro, and later Harris and Todaro, came up with the expected income model of migration in the presence of labour market imperfections.

However, researchers in developing countries have noted that high urban unemployment rates mean that migrants have to include in their decision to migrate an assessment of their chances of getting an urban job. A model that takes this explicitly into account is the one provided by Todaro.

3.4.2.2 The Harris-Todaro model

The economic motive of migration is best articulated in the Harris - Todaro model (H-T M) (Todaro, 1997, Todaro & Smith, 2003), which postulates that migration, responds to urban - rural differences in expected incomes rather than actual earnings. Normally, people move from their places of origin for higher incomes and better jobs; the H-T M has set the basis for analysing the migration decision systematically.

The assumption in the H-T M is that migration is primarily an economic phenomenon. Migrants are assumed to consider the various labour market opportunities available to them in the rural and urban sectors and choose the one that maximises their expected gains from migration (Todaro & Smith, 2003). However, Todaro admits that H-T M and other migration economic models were developed in the context of the industrial economies (Todaro, 1997) and therefore assume the existence of full or near full employment; but the overwhelming evidence of the 1960s and 1970s in many developing nations, indicate massive migration of their rural populations into urban areas despite chronic and rising levels of urban unemployment and under employment. In such a situation, a typical migrant can not expect to secure a high paying urban job immediately. As Todaro (1997), Lappé (1998), and Todaro & Smith (2003), put it, most of the poor uneducated, unskilled migrants will either seek casual and part-time employment as vendors, hawkers, repair persons in the urban traditional or informal sector or become totally unemployed and languish in slums and shanty towns.

In a labour market with high rates of unemployment, only a few migrants with considerable human capital in a form of secondary, technical college and university education have better opportunities; many of these will find formal sector jobs relatively quickly (Todaro, 1997; Todaro & Smith, 2003). The H-T M also implies that migrants with urban contacts may have better information about the job market before they embark or the expensive venture of travelling to town. Consequently, in deciding to migrate, the individual must balance the probabilities and risks of being unemployed or underemployed for a considerable period of time against the positive urban-rural real income differential.

Todaro (1969), and later Harris and Todaro (1970), developed a model that attempts to explain the phenomenon of rising rural-urban migration in the context of rising urban unemployment. The Harris–Todaro model of rural–urban migration is premised on the urban–rural wage differential as the motivating force behind migration. The model is an important formulation of the role of economic incentive in the migration decision (Gillis et al. 1996). The model assumes that migration depends primarily on

$$M_t = f(W_u - W_r), \qquad (3.1)$$

a comparison of wages in the rural and urban labour markets.

The model for rural–urban migration is specified as follows:

Where M_t is a number of rural to urban migrants in time t

   f is a response function

   W_u is the urban wage

   W_r is the rural wage

The expected urban wage is the actual wage times the probability of finding a job, or

$$W*u = pW_u \qquad\qquad (3.2)$$

Where W*u is the expected urban wage and p is the probability of finding a job, p can be defined as:

$$p = \frac{E_u}{E_u + U_u}$$

Where E_u is the urban employment and U_u is the urban unemployment.

All members of the urban workforce are assumed to have equal chances of obtaining the jobs that are available, so W*u becomes simply the urban wage times the urban employment rate. At any time period, migration depends on three factors,

The rural urban-wage gap
The urban employment rate
The responsiveness of potential migrants to resulting opportunities

$$M_t = h(pW_u - W_r) \qquad\qquad (3.3)$$

Mt is the   migration in period t and h is the response rate of potential migrants.

As long as $W*u$ exceeds $W\ r$, rural-urban migration will continue. It will only stop when migration has forced down the urban wage or forced up urban unemployment

sufficiently that $W*u = W r$. If $W r$ becomes greater that $W*u$ "reverse migration" will occur.

The Harris-Todaro model postulates that migration proceeds in response to differences in expected rather than actual earnings, by the hope of finding a better job within a given time period. According to Harris and Todaro (1970) the model can be described as a two-sector internal trade model taking unemployment into account. The two sectors are the urban sectors, which specialise in the production of manufactured goods, (part of which is exported in exchange for agricultural goods) and the rural sector, which uses all available labour to produce agricultural goods, some of which are exported to the urban sector.

The decision of the migrant to migrate is taken even though he/she knows that high unemployment exists in urban areas. According to the model, this is still "rational" as long as expected benefits exceed expected costs. The expected benefits take into consideration not just the probability of being able to secure a job, but also the other benefits associated with securing a job, such as being able to send money back home for investment into petty rural businesses thus generating employment there as well. However, it may be that the private costs exceed the costs of society because the unemployed migrant requires social services and adds to urban congestion. In this regard, government policy can be introduced to reduce the divergence between social and private costs. Consequently, the Harris-Todaro model justifies state intervention situations where the rate of migration is not considered 'socially optimal' (Collier & Rampell, 1977).

An additional criticism of the Harriss and Todaro Model by Peck (1981) is that migration is not necessarily a reaction to expected income deferential. He adds that if the means of production are enough to provide for subsistence, then migration may not increase when urban and peri-urban wages are a result of economic and political forces appropriating the means of production and forcing people to migrate because they are unable to earn a subsistence wage.

Moreover, studies have shown that the job situation presents a series of imbalances. According to Toure and Fadayomi (1992), the urban job market, though oversupplied,

lacks skilled workers while teeming with masses of unskilled labours. At the same time, the rural job market, which offers more jobs for unskilled workers, is sometimes short of labour.

Despite its contribution to understanding determinants and impact of rural out-migration, the H-T M model makes a number of restrictive assumptions and expected income differentials usually fall short of explaining most of the difference in migration between regions that shape migrants' decisions and also their potential impact on rural economies. As Williamson (1988) rightly put it, the most critical restriction of Todaro models is the omission of influences, besides income.

It has therefore become necessary to consider factors other than economic incentives in order to understand fully the migration decision by both the individual migrant and the migration household. According to Kim (1979), the factors that contribute to the migration decision may range from potential earnings and opportunities, socio-economic background (e.g., age, education, marital status, occupation and family-life cycle), physical and social constraints (e.g., asset ownership, social ties and status, resource accessibility and home village / region / province) to economic factors in the area of origin (e.g., wage and unemployment rates and infrastructure).

Recent literature shows that decisions to migrate can occur in the absence of a significant wage gap (Stark, 1984; Stark and Yitzhaki, 1988). The work of Stark (1991) emphasises the collective nature of migration decision and the mutual interdependence of household members. Decision to migrate might be motivated by a concern to minimise the risk that attaches to agricultural income variability. The household may engage in pooling strategies that diversify risk; for example human capital investment in the children and geographical location of household's migrants. On the migrants' side, remittances made in cash and in kind to the rural household are seen as an integral part of the household's migration decision.

Policy makers and planners of development programmes are becoming increasingly concerned about the way migration-source communities and local economies are affected by migration. The "new economics of labour migration (NELM) literature, based on Asia and Latin American experiences has proved to provide a better model

for analysis of determinants and impacts of migration as a household decision rather than an individual decision (Stark 1991, Taylor et al., 1996). A closer look at the rural side is leading to conceptual and technical revisions with broad implications. Labour utilisation in agricultural production and its role in various forms of organisation of the rural economy is becoming a focus of analysis. The NELM model highlights other, equally important factors other than economic motivation that have to be incorporated into a model to analyse migration determinants, decisions and impacts.

3.4.2.3 The Harris-Todaro model and the informal sector

Garrison (1982) shows that the Todaro mechanism is important but that including the probability of finding a job and higher earnings in the informal sector can make improvements. In the Harris-Todaro model, the migrant is assumed to go through a waiting period before he or she finds formal employment in the urban or industrial sector. In the meantime, he or she finds "something to do" in the informal sector, which is usually characterised by a large number of small-scale production and service activities that are owned by family or individual, labour intensive and based on the use of simple technologies. According to Todaro (1987), informal sector workers are less productive and their wages are lower due to their lower education and skills level.

The informal sector in many countries has grown without helping to solve the structural problem of unemployment (Toure & Fadayami, 1992). Even though the informal sector provides income and employment to many migrants, labour absorption is limited. The existence of the informal sector employment lowers the urban unemployment rate somewhat, thus raising the probability of finding urban wage employment (thus shortening the waiting period), but by so doing results in an increase in the migration rate to the urban areas.

Harris-Todaro model, thus addresses unemployment and earnings as economic causes of migration. But subsidiary economic reasons for migration other than employment and earnings are also important. Landlessness caused by acquisition of the land of poor farmers by wealthier ones and urban dwellers and by the need for cash on the part of rural people to meet other needs is another important factor.

These shortcomings and limitations make it necessary to modify these analytical frameworks to make them adequate for studying the cause and effect of migration, especially rural–urban migration. People move away from their places of origin for reasons other than for higher immediate or expected incomes.

3.4.2.4 New Economics of Labour Migration (NELM) Model: A household perspective

NELM is a relatively new migration model compared to those discussed earlier; it is thus, necessary to explain its conceptual framework. The focus of the most recent wave of literature on migration determinants and impacts on sending and receiving areas (both internal and international) has become known as the new economics of labour migration (NELM). Researchers and authors who have written extensively about NELM include: De Brauw et al., 2001; Taylor, 2001; Stark & Bloom, 1985; Singh et al., 1986; and Stark, 1991, just to mention a few. The NELM hypothesises that rural households facing imperfect market environments decide whether or not to participate in migration as part of a set of interwoven economic choices (Taylor et al., 1996). This does not mean that the migrants themselves (especially working migrants) have no say in the matter or that they are being forced. On the contrary, they participate fully in the household decision and some of them, who are heads of households, may take a lead in such discussions and decisions.

Under normal circumstances individual migrants do not sever ties with their source households, which they still belong to. Since the source households participate in the migration decision, they may pay migration cost and support the migrants until they become established at their destination. When a household decides to send out a migrant, it makes simultaneous decisions about both its short-term and long-term production possibilities. Specifically, the household decides on its present labour and other input allocations, which affect its short-term production, and on its investment in household resources and savings management strategy, which affects it long-term production. Family members who remain behind (often, parents, partners and siblings) may reorganise both their consumption and production activities in response to the migrants' departure.

On the other end of the arrangement, migrants usually share their earnings with their households of origin through remittances. Continuing interactions between migrants and the rural households suggest that a household model would be more appropriate than an individual level model of migration decisions. The neo-classical models, such as Todaro's, do not consider the likely impacts of migration and remittances on rural economies. Equally important with NELM is the contention that people act collectively not only to minimise risks but also to loosen constraints created by a variety of market failures, including missing or incomplete capital insurance and labour markets.

Migrants frequently play the role of financial intermediaries for the source migration-households (Taylor, 2001). For example, a household wishing to expand its agricultural enterprise to a commercial level may be lacking access to credit and income insurance; by placing a member of the household in a town labour market, the household gains access to liquidity (through remittances) and income insurance. Mutual altruism reinforces an implicit contract for mutual support between migrant and household. This concept has been well researched by Liu and Reilly (1999) in the case of China, but it is widely known and even expected in the African extended family system. Equally, inheritance motives are an incentive to remit (i.e. non-remitting migrants may stand a chance of losing their inheritance (Lucas, 1987). Migrants' aversion to risk encourages them to honour their responsibility to continual receiving support and ensure future support from the household should they experience an adverse income shock, such as unemployment or some other misfortune in the future.

3.4.2.5 NELM on remittances their multiplier effects

According to NELM there are four broad issues that can be highlighted about the impact of migration and remittances in migrant-sending areas that have emerged from a number of studies utilising NELM techniques (Rozelle et al., 1999; Liu & Reilly, 1999; Taylor & Fletcher, 2000; de Brauw et al., 2001):

(i)   First, migrant remittances create income and employment multipliers in migrant sending villages, towns or communities. The size and magnitude of these multipliers can be large; for example, a $100 increase in remittances

from USA led to a $178 increase in total income in a migration –sending village in Mexico (Aldelman et al., 1988). The additional income is created by expenditure from remittance-receiving households, which generate demand for locally produced goods and services, thus boosting the incomes of others in the villages. However, both the magnitude of the remittance-multipliers and the distribution of income gains across household groups and production sectors are sensitive to rural economic structures (Taylor 2000). The distribution of the gains from multipliers depends, firstly, on whether multiplier spending is on goods and services made with high or low skilled wage components. Secondly, it will depend on whether migrants come from the poorer income levels and thirdly, spending by poorer groups may be more equalising in its multiplier effects because it is on more labour intensive commodities or services than spending by richer groups.

(ii)   Second, in general the more closely integrated migrant-sending villages and towns are with the outside markets, the smaller the village or town income multipliers resulting from migrant remittances. Through trade, the impact of remittances on local economies are transferred to other parts of the country, and studies focusing on individual migrant-sending communities and those focusing on migrant sending households, miss many if not most of the migration's impacts. It is likely that a large part of the benefits from migration become concentrated in regional urban centers of migration sending villages or regions, even if the remittances themselves do not go there initially.

(iii)   Thirdly, the multiplier effects of remittances upon income in migrant –sending areas appear to depend, critically, on the supply of response of local production activities. They are smaller when agricultural supply response is inelastic. This highlights the importance of policies to remove technological constraints on production, promote investment, and develop markets as a means to make remittances more productive in migrant-sending economies. Integrated agricultural and food value chains that incorporate value addition, agribusiness and non- agricultural small and medium enterprises performed in the migration sending areas would be the best way of tap into remittance-multiplier effects.

(iv)   Lastly, migration may compete with local production for scarce resources, especially family labour resources, at least in the short run, warranting a re-organisation of work schedules and tasks. The effects of migration on rural poverty and inequality depend critically on how remittances and the losses and gains of human resources through out-migration are distributed across poor and rich villages and household; on production constraints facing different household groups and on expenditure linkages with the rural economy.

Another fundamental departure by the NELM from the past migration research is the explicit recognition of the interrelationship between determinants and impact of migration. For example, if lack of liquidity or credit to invest in a new technology (such as facilities for irrigation) is a determinant of migration, then migrant remittance should provide liquidity and stimulate technological change. If it is a case of lack of enough land to cultivate, as is the case in most instances in South Africa, then remittances should be used as down payment to enable the migrant-households to obtain government land reform subsidy to purchase more land. In the NELM model, market imperfections result in household–specific shadow prices that transmit remittance impacts to the production side of the household farm economy.

3.5   CAN MIGRATION PROVIDE A WINDOW OF OPPORTUNITY?

The optimistic view that rural out-migration can lead to agricultural expansion has wide support (Oberai & Singh, 1983) and is an inherent part of a dualistic model of development, such as the one prevailing in South Africa. Migration between any two areas (especially rural and urban areas) involves the flow of human resources, income and capital and information. In this dual model, rural out-migration is assumed to have two main effects. First, a declining labour/land ratio providing a new environment conducive to changing rural production techniques (Renis and Fei, 1961). The reduced supply of family labour encourages the farmers left behind to adopt one or more compensatory measures to maintain the level of production and family income. This includes, but is not limited to, a shifting towards less labour–intensive crops, adoption of labour–saving capital equipment, greater work participation by the remaining family members and some reliance on hired labour. If the marginal product of the migrants' labour prior to migration and the capital

migrants take with them are small, the loss of population to migration raises the average incomes of those left behind (Taylor, 2001).

Second, the reduced supply of labour is also likely to push up agricultural wages (Nicholls, 1964) and stimulate the adoption of labour–saving technologies (Kim, 1973). Technological change will also be stimulated due to the out-migrants repatriation of savings to the rural areas in the form of remittances or capital equipment (Stark, 1976). Some studies have attributed such a change to the dynamism of visiting and/or returning migrants who bring with them money, knowledge and experiences of alternative technologies and techniques, which are rarely available in remote rural areas. This is particularly true in South Africa of migrants that work or may have worked as farm labourers or farm foremen on commercial farms. Similarly, such migrants may introduce cash crops and establish market outlets for goods produced in their rural areas. By collaborating with neighbouring commercial farmers or the farms they work for, they may create marketing networks to external markets for their produce, thereby promoting commercialisation of agriculture.

In essence, migrant households can potentially improve and increase agricultural production and income from agriculture since they can access capital assets and skills. However for that to happen, migrant households require more land (bigger sizes and of better quality). Migrants in South Africa have a strong interest in acquiring land (Cross et al. 1998) to subsidise earnings from wages and small businesses. In a study in KwaZulu Natal (Cross et al. 1998), migrant households that had land and had succeeded to enter small-scale farming at a semi-commercial level, were found to have higher average incomes than households without migrants.

There is shortage of land in tribal authority areas, which have, since colonial times, accommodated families removed from white-owned farms. Overcrowding and a lack of income in these areas are some of the main causes of out-migration from these areas. In Limpopo, which was home for three homelands (Venda, Lebowa and Gazankulu), overcrowding on arable lands and the level of landlessness is quite substantial (Baber, 1996). Over 47 per cent of the study sample from Limpopo, on which this study is based, were landless or nearly so.

Micro studies of former Bantustans in other parts of South Africa (Nattrass & May, 1986; Sperber, 1993; Gandar & Bromberger, 1984 cited in Baber, 1996) make it clear that the average farm size that rural households have is less than 2 hectare. The reward from the effort in agriculture on a farm that size is too small to sustain a family (Dushmanitch & Nieuwoudt, 1994). Therefore, households have to obtain income from multiple sources, including migration, most of which are often irregular and the amounts earned are quite small. The current small size of the farm in for rural households in South Africa partly explains the low adoption of technologies that are not scale neutral, such as dams, irrigation and associated inputs (Dushmanitch & Nieuwoudt, 1994). Even though the poor people may still adopt the use of the best crop varieties and chemicals, their production is still restricted by the size of their farming plots.

The implications of this scenario to the land reform programme (LRP) in South Africa are that a mechanism is required to deliver land to those who need it and who can work it, including migrant-households, who receive capital resources out of the proceeds of migration. Inequality of land, materials and opportunity are sensitive issues in South Africa. It is essential that policy actions that are likely to alter land and related productive assets are based on concrete information; for example, allocating land to those who cannot work it fully may lead to a decrease in agricultural production and agricultural income with a consequent increase in rural inequality. Only migrants who can be proved to have serious interest in agriculture (for example, those who have invested in agriculture oriented capital resource, such as implements, livestock, irrigation equipment and knowledge etc) should be eligible for more arable land. On the other hand, other possible rural non-farm investments of migration remittances have to be carefully explored. Ensuring remunerative and safe employment in manufacturing and rural services should be a pursued policy goal and viewed as complementary to other rural development policies in the effort to reduce poverty and inequality in the countryside. Apart from considering various means of improving the understanding of the causes and effects of migration, as well as designing programmes to reduce the costs of migration, policy makers need to ask more fundamental questions about the best approaches towards reducing poverty and inequality in the rural setting. Migration needs to be understood from a livelihoods

perspective and policies need to be designed from a multidisciplinary and multi-sectoral approach.

3.6   SUMMARY

The reviewed literature on economic theories and models presented in this chapter has illustrated the interrelationship between inequality, migration and rural incomes of the migration sending areas. Most of the economic theories and models focus on economic incentives as the driving force to migrate but the relative deprivation hypothesis and the new economics of labour migration model show the complexity of the migration decision-making process that is better analysed as a household than as an individual decision. Whereas the earlier models of migration laid the foundation for analysis, their shortcomings have to be recognised and taken into consideration to make the analysis of migration decision and process more intuitive.

CHAPTER 4
CONCEPTUAL FRAMEWORK

4.1 INTRODUCTION

The relationships between rural inequality, migration and remittances are as complex as the multiple reasons underpinning the multidirectional movement of people in South Africa. The economic theory and empirical research, discussed in Chapter 3, have shown that the foundation of rural out-migration is the existence of a wage differential between rural (agricultural) and urban wages. People from different backgrounds, rich and poor, migrate for different reasons but the majority migrate for economic reasons. They migrate in search of jobs, income and better economic and social opportunities. Even migration determinants, such as age, education and contacts, reflect that wage and productivity differences exist. In South Africa, recent studies (Cross et al., 1997; Cross et al., 1999 and Bekker, 2003) have established that rural, poor people are leaving the more remote rural areas for a range of destinations, including the commercial and 'other' sector. The "other sector" seemingly comprises settlements which fall under neither the commercial nor the traditional, institutional sectors. These studies have identified that in addition to income and jobs, superior infrastructure, including better and bigger plots of land, improved housing, water and electricity supply, better sanitation, transport, schools and health facilities, induce migration from rural areas (Bekker, 2003). This [directly] acknowledges that a lack of access to goods and services induces migration. The reaction to lack of access and rural asset inequality is not homogeneous among the people affected by it because it is complicated by other factors.

This chapter provides the conceptual framework of the study by setting the scene for the analysis of the relationships between households' decisions regarding migration, the distribution of land and other assets and the effect of remittances on rural inequality. It considers the evidence from the literature that shows that there is a relationship between inequality of rural asset ownership and migration. Migration from rural areas encompasses the movement of skilled, semi-skilled and unskilled migrants, contract workers, farm workers and other migrants. The patterns of

migration movement crisscrossing the country in a complex web are also investigated and incorporated. The chapter is presented in four sections. Section 4.2 presents the operational definitions of the different terminologies used in the study. Section 4.3 presents the relationship between migration and socio-economic factors that contribute to rural out-migration and the impact and consequence of migration. A summary of the chapter is presented in section 4.4.

4.2   KEY DEFINITIONS

4.2.1 Inequality

A debate is raging as to whether a definition of inequality should take into account ethical concepts, such as the desirability of a particular system of reward, or whether it should be regarded simply as differences in income (World Bank Poverty Network Website, 2002). The Concise Oxford Dictionary of Current English, Ninth Edition, (1995) defines inequality as lack of equality in any respect or a condition of being unequal; lack of equality, as of opportunity, treatment or status, social or economic disparity. According to Gills *et al*. (1996), equality does not exist in reality, it is neither possible nor desirable[14] but the concept provides an objective standard against which to judge any actual distribution. Equality is a measure of the relative welfare of different groups of people.

Inequality is defined by May[15], et al. (1998) in terms of being the opposite of "equality", a state of social organisation, which enables or gives equal access to resources and opportunities to all members. Equality simply means that everyone gets the same income (or owns the same wealth).

---

[14] *Inequality is said to be justified by interpersonal differences in ability, effort, training / skills and willingness to take risk. Equality of income and wealth is good but there has to be extra reward for hard work, education, saving and ability to achieve economic growth*

[15] *Poverty and Inequality in South Africa is a Report to the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality (May, 1998) It was a ground breaking study on poverty in South Africa post apartheid.*

However, the Food and Agriculture Organization of the United Nations (FAO) (2001) definition is that inequality is the distribution pattern of income, assets, consumption or other welfare indicators or attributes of a population.

Inequality can refer to distribution, within a household, a community, a village and a society, with several scarce resources, goods and services, including but not limited to health and education facilities, nutrition, housing and other infrastructure, income, job opportunities and productive resources (land and other assets). Rural inequality is the main concern of this study; it is conceptualised as the distribution pattern of income, land and associated assets among cultivating households in African rural communities of South Africa, in this case the communities in question are those residing in arid and semi-arid areas of Limpopo's former homeland of Lebowa. In this study, inequality is measured using the Gini coefficients and Lorenz curves method. Using panel data, total, per capita and adult equivalent measures of the four main categories of assets, were computed. The assets studied included: land, livestock, other farm assets, non-farm assets and financial assets for the sample population.

Inequality is often studied as part of broader analyses covering other concepts, such as, poverty, growth and welfare. Such studies have been conducted by Ravallion, 2000; Bruno, Ravallion and Squire, 1996; De Janvry and Sadoulet 1996, among others.

The available literature shows that there is a very close link between inequality and poverty[16]; for example the more unequal the income distribution, the larger the percentage of the population living in income-poverty (Bruno, Ravallion & Squire, 1996).

---

[16] *Poverty is not discussed or analysed in this study, but its close link to inequality is acknowledged and reflected upon where necessary.*

4.2.2 Household assets and income

4.2.2.1 Household land ownership

Permission to Occupy' (PTOs) may be issued for residential sites, arable plots, shops, community buildings and other property-related uses. Traditionally, once land has been allocated to a family it can be passed on from father to sons as inheritance as long as they continue to use it.

Under the current land and tenure reform system, communities are able to arrange for more secure tenure to enable them to increase investment and efficiency of land use. Outside the homeland areas, cropland is privately owned and operated by private owners, mainly white commercial farmers,

4.2.2.2 Household income

The concept of household income in this study is much broader than farm incomes or operating surpluses. It consists of the total value of crops and dairy output produced for the year, plus income from the sale of labour (salaries and wages), plus rent from hiring out of machinery (such as animal-drawn implements) and rent from lodgers, plus remittances and pensions received by all the members of the household over the year, minus costs.

4.2.3 Migration

In today's dynamic world, very few people are born, live and die in the same location. Spatial changes are associated with key events in one's life cycle, including but not limited to studying or training for employment, starting one's first job, getting married, changing jobs, retiring or just visiting. However, not all these forms of movement can be regarded as migration; different types of migration are listed in Table 4.1

Table 4. 1: **Types of migration**

Migration	moves which involve a permanent or semi-permanent change of residence
In-migrant	a migrant who crosses a migration-defining boundary in the process of changing residence and entering another residence
Out-migrant	a migrant who crosses a migration-defining boundary while departing from a residence to reside in another area within the same territory
Immigrant	Incoming international migrant
Emigrant	Outgoing international migrant
Step migration	migration comprising a series of movements to the final destination e.g. rural to small town, small town to city, city to metropolis (not always on a continuum of destination, size or always from rural to urban)
Chain migration	a process whereby an initial group makes a first move from an area of origin, to be followed by others from that area to the destination
Return migration	the movements of migrants back to their area of origin; the return move may occur over a period from a few months to a few years and the decision may or may not have been intended at the time of the of the original move

Source: Patterns and processes of internal migration, The Open University (1982, p.10)

A much-quoted definition of migration is "a permanent or semi-permanent change of residence" (Lee, 1969). This definition introduces the time period during which migration takes place and space. However, it places no restrictions on the distance of the movement or the voluntary or involuntary nature of the act. Therefore, in addition to time and distance, migration boundaries have to be defined. The boundaries may be administrative in nature (city, parish, village, region district or province) in the case of internal migration, that is migration within a country, or it may be based on politico-geographical divides in the case of international migration. The migration studies of the Open University (1982) define migration simply as a process, which concerns people moving spatially at various times of their lives for varying motives.

Whiteside (1985), in trying to define a migrant worker in the South African context, says: "In South Africa the de facto definition of a migrant was very much broader. In effect, all Black persons who did not have residential rights in white areas but who were employed there on contracts were migrants. This included persons from South Africa's national states (i.e., former homelands) as well as foreigners." This definition captures past mentality but the scenario of black South Africans moving out of their rural places of origin in search of work is still very much the same.

4.2.3.1 Rural out-migration

Rural out-migration, which is the focus of this study, is migration from rural areas to other rural areas or to urban or peri-urban areas in South Africa or beyond. However, for purposes of this study, a rural area is a village in Limpopo and migration outside South Africa is not considered.

4.3 FRAMEWORK FOR ANALYSING THE MIGRATION DECISION AND ITS IMPACT

The important determinants of aggregate migration flows from rural to other areas, mainly to urban centres, are estimated by the macro-migration models by Todaro (1969), Harris and Todaro (1970) and more recent adaptations such as Cole and Sanders (1985) and Todaro and Smith (2003); these are discussed in Chapter 3. The key finding of these models is that if urban-rural income differentials are high enough, people will migrate even if their chances of actually gaining urban (formal sector) employment in the short term are quite low. Equations (3.1), (3.2) and (3.3) presented in section 3.5.2.2 in Chapter 3 summarise the theoretical individual response to wage differences.

However, normally migrants come from and belong to households who jointly make migration decisions in the same way as they decide on production, consumption and other important matters. The importance of the household's involvement in migration decisions has been extensively researched by Lucas (1997), Stark and Levhari (1982), Rosenzweig (1985 and 1988) and Rozelle, Taylor and De Brauw (1999). This phenomenon is particularly noticeable in rural African households, who, under most circumstances, adhere to and respect the extended family norms.

The framework presented in Figure 4.1 provides an operational scheme of variables that are analysed in this study. The framework, which has benefited from several well-known migration models, illustrates the cause-effect relationship between the various variables of the study. The model recognises the importance of the economic motive in the decision to migrate as specified by the Harris-Todaro-Model (H-T-M).

PART I: FACTORS OR DETERMINANTS O...

Complementary factors (wage rates, unemployment, and infrastructure)
- Complementary factors (wage rates, unemployment, and infrastructure)
- Government policies
- Social systems - marital status, size, grown-ups, olds, children
- Individual's education, age, gender, partner's income, etc.

Landlessness / scarcity of land, water & other resources, overcrowding,

Perceived value of Migration
-Information flow through media etc.
-Rural urban contact
-Better education
-Better infrastructure
-Better life
-Household hold decision to participate in migrate for benefit of family

More Migration

Land sub-division & fragmentation, degradation of crop & pasture land

Rural situation: PUSH Unequal distribution of land, income and opportunities

Separate development of former homelands

Psychological returns: PULL
- Real & perceived:
- High returns to labour
- Higher incomes
- Attractive urban life

Explicit benefits Remittances in cash & in kind Increase household income and security

Low yield of range land - reduction of carrying capacity

- Decline in yields, low income, low asset accumulation
- Difficult to adopt technologies (size)
- Poverty and under-nutrition
- Cattle mortality

-Insecure tenancy & unequal share cropping
-Degradation of environment
-Marginalization
-Landless
-Mutual family decision

PART III: BENEFITS RETURNS TO IMMIGRATION

- Urban wages
- Self-employment
- Probability of job

INTERNAL & EXTERNAL MIGRATION & REMITTANCES

Implicit benefits & multiplier effects of migration & remittances
- Mutual altruism
- Investment capital
- Financial intermediaries & self insurance
- Improved liquidity and credit
- Physical & working capital
- Technological change
- Off farm enterprises
- Increased demand for local products & services
- Income & employment multipliers in local economy
- Labour saving –technologies and greater participation by family members
- Higher rural wages due to reduced supply of labour

Opportunity cost / consequences
- Labour shortage
- Low productivity in short run
- Low income
- Increase of women-headed households
- Accentuated rural poverty
- Under nutrition & malnutrition

PART II COST OF MIGRATION

Cost of living before job

Transport costs

Psychological costs (e.g. risks, social adjustment)

Figure 4. 1:   Framework Analysing Migration Decision, Impact and Consequences

89

It takes into account the two-way relationship between migration and population distribution on one hand and economic variables on the other.

The point of departure in the modified model used for this study is that it also considers other factors beyond those emphasized by the models that mainly focus on the income differential as the sole determinant of the decision to migrate. The framework also illustrates the implicit positive perspective of migration in the form of possible multiplier effects that benefit the local economies where migrants come from, as rightly envisaged in the NELM model. While the family supports the migrant members of the family they in turn, help to improve the family by the cash and kind remittances migrants send home, which improve the liquidity and credit worthiness of the family and are used as investment capital. Remittances are not only a source of physical and working capital but they are also used as a means for technological change. On a broader community level, migration removes surplus labour, leading to higher rural wages, higher incomes, and employment multiplier effect in the local economy.

4.4   FACTORS OR DETERMINANTS OF MIGRATION

In Figure 4.1, Part I of the model illustrates the interaction of the push and pull factors that contribute to the decision to migrate and the results of migration. Details of the pull and push factors are explained in detail in section *3.5.1.2*.

This model shows how economic and government policy factors (e.g. wage rate, unemployment and infrastructure) are reinforced by individual-level factors, household-level (human and capital) factors and community-level factors are combined to yield an estimable three-level model of the determinants of migration.

Considering the insights of the individual, household and community in which migrants are located, the determinants of the migration model in the following form are estimated:

$$\text{Prob}\,(\mathit{MGRDMY}) = \text{f}\,(X_i, H_i, C_i)\text{.. (4.1),}$$

where *MGRDMY* is an abbreviation for the dummy variable of presence of migrants (=1) no migrants =0; X_i is a vector of individual characteristics and H_i is a vector of household characteristics and C_i is a vector of community characteristics. Equation 4.1 is elaborated upon in section 4.4.2.

- **Individual-level motivations and variables**

The individual migration model of Todaro has generally supported the hypothesis of income disparity-induced migration. The important individual characteristics hinge on human capital, especially formal education; others include age, marital status, employment status, partner's income, and gender. The Todaro model suggests that migration at younger ages increases the time period for expected income calculations, while higher levels of education increase the probability of obtaining formal sector employment in the destination. Married individuals are expected to have lower migration rates because of the elevated costs associated with relocating whole families, although married women are more likely to accompany their husbands if the latter move for economic reasons (Mincer 1978). Gender has been shown to influence migration differently across regions of the world; however; its analysis would require an in-depth study beyond the scope of this study.

- **Household –level motivations and variables:**

In Mincer's household level approach to migration, 'net family gain rather than net personal gain motivates migration' The relationship of household-level variables on the migration decision are analysed by considering both human and capital variables (including total household size, members of household of working age (15-65 years), older people over 65 years, dependence ratio (total number of children under the age of 15 relative to the total number of adults in the household), total males and females, education level of the household head, and different types of assets owned by household or household wealth). Issues pertaining to unequal distribution of rural household assets are analysed in more detail than the human factors.

- **Community –level approach and variables**

Community-level approach is less well specified theoretically than either the individual or household migration approaches; but some research has been done on

the impact of local or regional macroeconomic conditions on migration patterns in developing countries. In some cases, geographically defined variables are used as proxies for individual or household-level data where the latter are not available. The data requirements for successfully incorporating community level information into a migration model are quite high, as information has to be collected on a range of macro variables anticipated to potentially influence the migration decision. Moreover, it is extremely difficult to interpret the magnitude or statistical significance of estimated coefficients on location dummies (used for residential variables, as it is not generally known which place specific characteristics are driving the results. For these reasons, it is preferable to measure the macro-local factors hypothesized to be associated with migration and include them as separate variables in the analysis rather than include the 'community' as a variable in the computation.

The relevant community-level variables that may influence or be influenced by migration start with the fact that most of the areas were former homelands, which inevitably implies overcrowding in those locations and small landholdings for households and agricultural activities; location in terms of region and sub-region where migrants come from; public service provision (schools, health centre, post office, telephone access; social capital; development projects ; the level of remoteness (accessibility and distance from nearest town and markets), local livelihood-supporting economic conditions and activity. All these characteristics, individual, household and community are discussed in details in Chapter 6, and analysed further in Chapter 7.

4.4.1   Part II: The cost of migration

The cost of migration is an important migration-determining factor. In 1962, Sjaastad presented a human investment theory of migration, which treats the decision to migrate as an investment (Sjaastad, 1962). The returns are divided into money and non-money components. Non-money returns include changes in "psychological benefits" as a result of locational preferences. The psychological costs are associated with leaving familiar surroundings, in many cases of giving up one's language and

culture, adopting new dietary habits and social customs and growing out of one's ethos.

Similarly, costs include both money and non-money costs. Money costs include all out-of-pocket expenses incurred in the process of moving, such as transport costs and additional food and lodging costs caused by migration (Tahmoures, 1984). Non-money costs involve opportunity costs of wages forgone while in transit, searching for work or retraining for a new job, if necessary. The distance of migration tends to increase forgone earnings, given the original area and the destination area levels of unemployment.

When a new job opportunity arises, households with members that have established, strong migration networks are the first to know and may be the first to take advantage of the opportunity, if they can afford the cost of claiming that opportunity. Migrant siblings tend to follow one another, the following migrants taking advantage of housing and employment contacts that the previous sibling(s) have made.

Members from poorer households may get the information later or may not have transport money immediately. Literature (Bilsborrow et al., 1997 and Bilsborrow, 1998) shows that as the migration stream settles some of the initial obstacles to movement, such as high transportation costs, tend to lessen or disappear. For instance, when the first migrants to an area provide passage money for family members left behind, as was the case with nineteenth-century Irish emigration to America, the result is chain migration (Balán, 1962). This 'beaten path' process often leads to a self-perpetuating flow of migration. This is particularly noteworthy when considering the importance of 'information flow' for potential migration.

Land reform economists have looked at the cost of migration from a macroeconomic level and shown how expensive migration is relative to settling people on the land. For example, Rosset (2001), using the Brazilian example, shows that estimates of the cost of creating a migrant's job in the commercial sector of Brazil ranges from 2 to 20 times more than the cost of establishing an unemployed head of a household on farm land, through agrarian reform. This provides a powerful argument that land reform, geared towards creating a small farm economy, is good not only for local economic development but also good for more effective social policy. It is better than allowing

the status quo to keep driving the poor out of rural areas in search of unavailable jobs in the cities.

4.4.1.1 Opportunity cost

Apart from the opportunity costs of wages forgone while in transit, the opportunity cost of migration can be explained in terms of labour shortages for farming and other rural activities, low productivity, low income, increase of women-headed households, accentuated rural poverty and even under-nutrition and malnutrition. When the loss of labour to migration creates labour shortages, it can negatively impact on production, and consequently, on non-migration incomes in migrant-sending areas. Moreover, there may be social costs that are beyond market wage level; for example, there may be social costs associated with moving away from family and friends, the familiar or preferred surroundings and the compensation one would expect in return to bearing extra risks.,

4.4.2   Returns to migration

Part III of the model assesses the positive impacts of migration from the point of view of the household and the local economy. The details of this aspect of the analysis are adequately discussed in Chapter 3. It is sufficient to mention here that migration remittances compensate implicitly and explicitly for the loss of labour by adding to the income of the migrant-sending households, generating "income multipliers" in the migrant-sending economies, providing migrant-sending households with investment capital and increasing the demand for goods and services offered by others in the migrant-sending areas.

It is necessary to adopt a unitary (or common preference) approach to household resource allocation; that is, the exogeneity and aggregation of preferences across family members, income pooling and a strict comparative advantage approach to labour allocation decisions while at the same time allowing for self-interested factors. In an arrangement where family members sacrifice their own income-earning potential, it is assumed that they will be compensated by sharing rules (altruism), which allow them to benefit from the overall higher household earnings. This is

especially true for women members of the family who, in spite of their individual interest to migrate, may not be able to move away from home due to family responsibilities. The migration model constructed here considers individual and household characteristics.

The dependent variable (*MGRDMY)* of the migration function at any period *t* is the rate at which rural people move away to urban areas, commercial farms or other areas in the informal sector. The independent variables are wage or income levels in both rural (agricultural) and urban, peri-urban or commercial farms sectors (Y_{rt} and Y_{ut}, where $Y_{rt} < Y_{ut}$). In the case of the rural sector, such wage or income may be obtained in the form of farm income (Y_f), self-employment income (Y_s) and/or other income (Y_o), such as off-farm wages and pension. Thus, Y_{rt} may comprise farm income alone or a combination of the different forms of incomes, thus, Y_{rt} represents the total sum of all rural household income sources. The other independent variables are the unemployment rate (U_{ut}), an array of individual characteristics (X_i), such as age, sex and education, and an array of household human characteristics (H_{rt}), including age and education of household head, number of people of working age, household size and dependence ratio. Household capital factors (K_{rt}) include land-holding, livestock, farm assets, assets used inside the house and financial assets made up of salaries, wages, pensions and other transfer payments. The subscripts *r* and *u* refer to agricultural or rural and urban, peri-urban or commercial farm areas, respectively. Lastly, we have an array of community characteristics (C_{rt}), including accessibility (infrastructure), status of resources (landholding, water, grazing land, vegetation). Community characteristics would indicate what communities have in terms of natural resources, the environment surroundings them and how they can transform it into meaningful economic activities to secure their livelihood.

$$MGRDMY = f(Y_{ft}, Y_{rt}, Y_{ut}, U_{ut}, X_i H_{rt}, K_{rt}, C_{rt}) \qquad (4.2)$$

Thus, an individual, i, in a household, j, and community h, considers information at individual, household and community levels (Adam, 1993). The simplest form of such a model is:

$$MGRDMY_{ij_h} = \beta_0 + \beta_1 X_{ij} + \beta_2 X_j \qquad (4.3)$$

where $MGRDMY_{ij_h}$ = the probability of migration of the ith individual in the jth household and h[th] community.

X_{ij} = individual-level variables

X_j = household-level variables

β_0, β_1 and β_2 are parameters to be estimated

The algebraic form used in migration functions is generally linear or logarithmic in variables[17] because the expected wage hypothesis assumes multiplicative interactions between wage rates and employment that are easily specified logarithmically.

Other authors have specified the migration function differently depending on the nature of their studies. For example, when studying educated migrants, Levy and Waycki (1974) and Bowles (1970) specify that migration depends on the wage differential, distance, unemployment rate and education. Meanwhile, Beals et al. (1967) conducted a similar study and specifies that the migration function depends on distance, income (without remittances), population size, education and the degree of urbanisation.

Migration experts such as Adams (1993) and Findley (1987) acknowledge the problems inherent with studies carried out to identify the economic determinants of migration. The use of aggregate data, which tend to mask and even obscure individual

---

[17] *Linear in the variable means that the marginal effect of each variable does not depend on the level at which the marginal effect is calculated. If an equation is linear in an independent variable, it means that the marginal effect of that variable on the dependent variable does not depend on the level of the independent variable at which the marginal change occurs.*

aspects of the migration decision-making process, is one of such problems. Their studies have tried to relate migration to a host of individual and household variables, such as education, employment and land, but without information on income or earnings in either the areas of origin or destination or both, the studies cannot be used to test the economic rationale behind migration decisions. This study takes into consideration these factors.

4.4.3   Measuring and decomposing inequality

The detailed measurements of inequality by regions, sub-regions and households are presented in Chapter 7. The Gini coefficient procedure is used to measure and decompose inequality for this investigation because it conforms to a set of five key properties or axioms, which are considered necessary to measure inequality.

4.4.3.1 The axioms

(a) The Pigou-Dalton Transfer Principle: (Dalton, 1920, Pigou, 1912)

This axiom requires the inequality measure to rise (or at least not fall) in response to a mean-preserving spread: an income transfer from a poorer person to a richer person should register as a rise (or at least not as a fall) in inequality and an income transfer from a richer to a poorer person should register as a fall (or at least not as an increase) in inequality (Atkinson, 1970, 1983; Cowell, 1985; Sen, 1973). Consider the vector $\mathbf{y'}$ which is a transformation of the vector $\mathbf{y}$ obtained by a transfer δ from y_j to y_i, where $y_i > y_j$, and $y_i + \delta > y_j - \delta$, then the transfer principle is satisfied if $I(\mathbf{y'}) \geq I(\mathbf{y})$. Most measures in the literature, including the Generalized Entropy class, the Atkinson class and the Gini coefficient, satisfy this principle, with the main exception of the logarithmic variance and the variance of logarithms (Cowell, 1995).

(b) Income Scale Independence

This axiom requires the inequality measure to be invariant to uniform proportional changes: if each individual's income changes by the same proportion (as happens, say

when changing currency unit) then inequality should not change. Thus, for any scalar $\lambda > 0$, $I(\mathbf{y}) = I(\lambda \, \mathbf{y})$. Again, most standard measures pass this test except the variance since $\text{var } \lambda \, \mathbf{y}) = \lambda^2 \text{var}(\mathbf{y})$. A stronger version of this axiom may also be applied to uniform absolute changes in income and combinations of the form $\lambda_1 \mathbf{y} + \lambda_2 \mathbf{1}$ (Cowell, 1999).

(c)   Principle of Population

The population principle requires inequality measures to be invariant to replications of the population: merging two identical distributions should not alter inequality. For any scalar $\lambda > 0$, $I(\mathbf{y}) = I(\mathbf{y}[\lambda \,])$, where $\mathbf{y}[\lambda \,]$ is a sequence (or link) of the vector $\mathbf{y}$, λ times (Dalton, 1920).

(d)   Anonymity

This axiom – sometimes also referred to as '*Symmetry*' - requires that the inequality measure be independent of any characteristic of individuals other than their income (or the welfare indicator whose distribution is being measured). Hence for any permutation $\mathbf{y}'$ of $\mathbf{y}$, $I(\mathbf{y}) = I(\mathbf{y}')$.

(e   Decomposability

This requires overall inequality to be related consistently to constituent parts of the distribution, such as population sub-groups. For example, if inequality rises in each sub-group of the population, overall inequality should also increase. Some measures, such as the Generalized Entropy class of measures, are easily decomposed into intuitively appealingly components of within-group inequality and between-group inequality: $I_{total} = I_{within} + I_{between}$. Other measures, such as the Atkinson set of inequality measures, can be decomposed but the two components of within- and between-group inequality do not sum to total inequality. The Gini coefficient is only decomposable if the partitions are non-overlapping, that is the sub-groups of the population do not overlap in the vector of incomes.

4.4.3.2 Some negative characteristics of the the Gini coefficient

The Gini coefficient measure has a number of well known weaknesses as a measure of income inequality. According to the World Bank Poverty Network reports (2000), Gini coefficient is usually used because it satisfies all the five axioms or principles that inequality measures have to meet. However, the Gini coefficient will fail the decomposability axiom if the sub-vectors of income overlap.

Graphically, it is possible for two different Lorenz curves to intersect. This implies that significantly different distributions may yield identical Gini ratios. Also the Gini Ratio is insensitive to small percentage change which may represent large income shifts to the lower income classes (Sen, 1973, 31-34)

The Mathematical derivation of the Gini coefficient is presented in Appendix .3.5.

4.5   SUMMARY

The chapter has constructed and specified a model for determinants of migration to establish whether rural inequality is one of the determinants that contribute to the migration decision and to decompose inequality according to the sources of income to isolate inequality-increasing and inequality-decreasing sources of income. The model acknowledges various existing models that are relevant to the migration

CHAPTER 5
RESEACH DESIGN

5.1   INTRODUCTION

The data used for this research originated from a household survey conducted during 1999-2000 in Limpopo in South Africa. This study was initially designed as a full component of a much broader study commissioned by the 4th European Union Research Programme (EU), the aim of which was to investigate how the amount and distribution of farmland and other rural resources affect decisions about fertility and migration within a household and through the results of such decisions and otherwise, determine how far land, water and vegetative resources have been depleted and polluted or maintained or restored. The EU study was largely a comparative study of studies carried out in Botswana and India and South Africa among small-scale farmers in the dry-land areas of these countries.

Section 5.2 describes the area in which the survey for this study was done and the sample design. This is followed by an elaborate discussion of the sample frame in section 5.3. The survey design for both the village and household surveys are presented in section 5.4. Typology of the variables that will be empirically analysed later is presented in section 5.5 (Table 5.1), and section 5.7 summarises how the analysis will proceed, the chapter ends with a summary

5.2   THE STUDY AREA AND SAMPLE DESIGN

5.2.1   Selection of the Study Area

Limpopo was purposively selected as the study area, because, as indicated in Chapters 1 and 2, this province is semi arid with a large proportion of its population living in the rural areas and it is one of the poorest provinces in South Africa with a sizeable proportion of its population involved in migration. Small-scale farmers of black African origin, practising dry-land farming, inhabit all the areas that were selected for the study. Since inequality is much more profound between race groups (due to the

apartheid legacy) and the wealthiest South Africans are mostly whites, living outside the former "homelands" areas, the selection of the areas ensured a focused approach towards investigating inequality among black rural households. Thus, the inequality between the races of South Africa is not the subject of this study.

5.2.2   Location and size of Limpopo

Limpopo is situated at the north-eastern corner of South Africa (see Figure Map 1) shares international borders with three countries: Botswana to the west and northwest, Zimbabwe to the north and Mozambique to the east. The province is adjacent to the North West, Gauteng and Mpumalanga provinces; thus the province is placed at the centre of the vortex of developing markets. Figure 1.1 indicates the districts of Limpopo and the study sites.

The old Transvaal ((old) Limpopo Province) consisted of six administrative regions, namely Northern, Lowveld, Central, Southern, Western and Bushveld regions. After transformation, which was finalized in 2001(after the survey had been done), the Province was renamed Limpopo and it is now divided into four regions: Capricorn, Bushveld, Soutpansberg and Valley of the Olifants regions. This thesis is based on three of the six former administrative regions (Central, Southern and Western regions).

The Lowveld region of Limpopo includes some of the more fertile and productive areas of South Africa while the Bushveld region consists mainly of large-scale extensive farms occupied by white commercial farmers. Therefore, it was decided to exclude these two regions as well as the Northern region (which is mainly sub-tropical and humid) from the study area. The remaining three regions (Central, Southern and Western regions) are generally classified as arid or semi-arid in terms of their rainfall and vegetation, and therefore, form the core focus of the study.

Of the estimated surface area of 12 million hectares in the province, 67% (8 million hectare) is used as agricultural land. Of this 8 million hectares of farmland, 10,6% (0.85 million hectare) is used as arable land, 67.5% (5.4 million hectare) as natural

grazing, 18.8% (1.5 million hectare) for nature conservation, 1.1% (0.088 million hectare) for forestry and 2% (0.16 million hectare) for other purposes. About 76% of arable land (0.61 million hectare) is allocated to dry-land cultivation of staple foods and vegetables which are the most important crops of cultivated in the Limpopo.

MAP 1. THE DISTRICTS AND SITES IN THE STUDY AREA
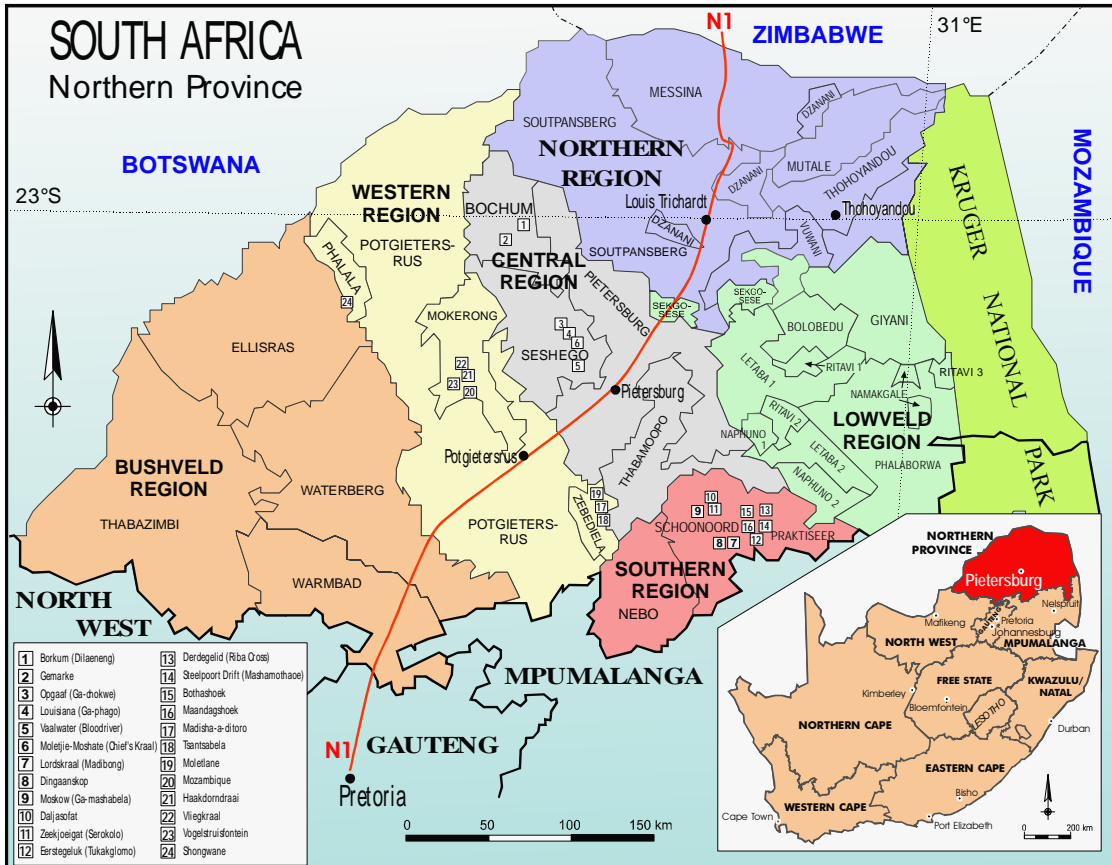
Source: Statistic South Africa, Map Division

Figure 5.1:   The districts and sites in the study area

5.3   SAMPLING FRAME AND SURVEY DESIGN

The sample selection was done in three distinct stages:

- First stage, a choice of the study regions in Limpopo that are arid and semi arid with a large number of small scale producers
- Second stage, selection of villages, considered to be the primary sampling units (PSUs)

- Third stage, selection of households in the selected villages.

The over all sample size (total number of households to be in the sample) for this study was decided, guided by the principle that the larger the population in each stratum, the smaller the percentage of that population the sample needs to be. Several other factors were considered: the budget implications, the time requirement within which the survey was to be completed, the required precision of the estimates to be produced, the total population (number of households involved in agriculture), variability of the key variables from stratum to stratum, and the field logistics. We also considered the representativeness of the sample (i.e. representing the same characteristics as the population) in order to allow generalization of the findings to the larger population and minimise the sampling error.

5.3.1   Sampling of villages

The sampling frame for the survey was a list of villages in the three arid and semi arid regions of Limpopo (Central, Southern and Western Regions) with small scale farmers. These regions were selected using the cluster sampling method to meet the agriculture, arid and semi arid characteristics. All the villages surveyed are typically rural, isolated, remote and with low levels of development. Specifically, the villages (sampling units), were selected from the following magisterial districts in Limpopo: in the Western region: Mokerong, (consisting of Phalala, Mokerong and Zebediela locations or sub-districts); in the Southern region, Sekhukhuneland (with Praktiseer and Schoonoord as sub-districts); in the Central region, Bochum and Seshego. This choice of survey areas was guided by the prevalence of arid and semi-arid lands occupied by African households, a predominant small-scale farming sector and substantial poverty. District agricultural maps were used to ascertain the locations and the climatic situations in the areas.

A total of 24 villages were selected out of the rural and deep rural areas of the districts mentioned above. Three of the villages were *purposefully* pre-selected and extensively surveyed, by sampling 75 households from each village. The district of Bochum is well known for having a high rate of migration of able-bodied men and

women. The Derdegelid area was intensively surveyed with regard to fertility and Shongwane with regard to economic activities. For the remaining 21 villages *disproportionate random sampling* method was used in view of the scattered nature of the former homelands and the villages therein. This method was found to be appropriate in view of the widely dispersed nature of the villages in Limpopo and also to fit the other criterion for selection that agriculture, including animal husbandry, is a fairly significant activity in the villages sampled. At the same time all the different areas were adequately represented in the sample, even though the number of households sampled from most of the villages was small (17 households).

According to Webb, 1992, disproportionate random sampling is suitable if there is great variability within a stratum as is the case with the regions studied, also when the proportion of the characteristics that the study is interested in possessed by the population is not reflected to the same extent in the proportion of the sample. The Central, Southern and Western regions are quite variable in the population and geographical areas. In summary, the population for the survey was considered to be composed of all the small scale agricultural households in the Western, Southern and Central regions of Limpopo, some of whom with migrant members and others without.

5.3.2   Households Sampling strategy and size

The survey element for the study was a household, represented by the head or spouse or his / her representative. A list of households in each selected village was obtained from the tribal office or the extension officer in the particular tribal ward. Names of selected households were drawn randomly from the village lists (sampling frames). Sampling was done in such a way that the number of households sampled from each village varied depending on the population size and the character of the village, we divide the total sample size disproportionally to the strata. This method was adopted for selecting the households to ensure that variability in the different segments of the population were represented in the sample, as far as possible, in the same proportions as they occur in the population under study.

Owing to the small number of sampled households per village, it was necessary to re-group the villages in the different magisterial districts to perform meaningful analyses. This is statistically allowed to validate the sample size. Phalala and Mokerong, for example, were grouped to form Western sub-region but Zebediela was kept separate since it has a different farming system and it is also some distance away from the other villages in the Western Administrative region. In Sekhukhuneland magisterial district, villages around Schoonoord and Praktiseer respectively were grouped together due to their similar conditions. Some of the analyses were thus done for six survey "sub-regions", i.e. Schoonoord, Praktiseer, Zebediela, Bochum, Western and Seshego, while others were done on three regions of Western(Phalala-Mokerong I and II) Southern (Schoornord, Practtiseer and Zebediela) and Central (Bochum and Seshego)

Initially, a total of 585 households were selectedto be interviewed in the 24 villages. This sample represented a total of 4 338 persons or 5.16% of the total population in the 24 villages. However, 12 of the households had to be dropped later after failing to interview the migrants from these households, even after two re-visits. The final sample size used for this study was 573 households (5.05% of the sample frame). The villages and the distribution of households interviewed per village is presented in Appendix 4. This sample size is reasonably large but justified, because it takes care of: i) the high variability in the different segments of the population, ii) size of the potential sampling error is reduced, iii) it is large enough to allow a valid analysis of any regions or sub-regions, iv) inferential statistics, which allow the demonstration that the probability that the results deriving from a sample are likely to be found in the population from which the sample was taken (Bryman & Cramer, 2001), and v) high precision (confidence level), precision for large populations is independent of the sample size.

5.3.3   Representativeness

The sample frame had to be designed to meet the objectives of the study, but it had also to adhere to the statistical specifications for accuracy and representativity (Vaughan & Vaughan, 1998; Webb, 1992; Bohrnstedt & Knoke, 1994). A total of 24 villages were *randomly* selected from the list of villages in the identified four

magisterial districts (obtained from the list of villages surveyed during the 1996 census). Given the widely dispersed nature of the villages in rural Limpopo, it was necessary to use the multi-stage sampling technique and to select the sample from a large number of villages to ensure representativity.

5.4   QUESTIONNAIRE DESIGN AND DATA COLECTION

It was necessary to obtain socio-economic and environmental information about the general wellbeing of the communities from which the households were selected, in addition to the focus information on households. The main methods of collecting the primary data were observation, and personal interviews with the household head or his/her spouse or representative, to obtain information on each surveyed household using a structured household questionnaires.

5.4.1   Questionnaire Design

The household questionnaire was designed to facilitate personal interviews to provide information on household characteristics, household income and assets, land, environmental issues, fertility, and migration decisions issues with all the necessary questions to respond to the stated objectives, the questionnaire is presented in as Appendix 1. The household head or his/her deputy responded to a major part of the questionnaire. The main sections of the questionnaire included:

5.4.2   Questionnaire pre-testing

The first version of the questionnaire was piloted / tested on 20 households in the autumn of 1998. The results of the preliminary analysis of data from the pilot household questionnaires were used to revise the household questionnaire. The following problems were highlighted by the pilot results and solved:

- The questionnaire was too long and had to be reduced.
- Some questions were considered too personal.
- As the questionnaire was too long, the interviews were continually interrupted and

disturbed as people had to continue with their household chores.

- Ways of recalling dates and amounts of money were required to assist older members of households to recall dates (e.g. by using important village events).

The questionnaire was modified and finalised during April – July, 1999.

The household interviews started on 16 August 1999. A significant number of non-residents were not available to be interviewed the first time. A large number of households had to be revisited twice to complete the migrant section by the migrant himself or herself. Still, in a few cases, non-residents were not interviewed due to their unavailability; for such households responses regarding migration were obtained from the household head or his wife or his or her deputy.

5.4.3 The Survey

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

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

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

5.5 CATEGORIES OF THE MAIN VARIABLES

The main categories of variables and the research questions answered in the study are summarised in Table 5.1. They relate to the distribution of assets that households own whether unequal distribution of assets has any influence on household decisions regarding migration; migration income sources and the impact of remittances.

Table 5.1:   Main categories of variables in the study

OBJECTIVE	RESEARCH QUESTIONS	VARIABLES TO BE CONSIDERED
1. Determine the relationship between unequal distribution of household land and other productive assets on household behaviour regarding migration from the rural areas of Limpopo, South Africa.	• Is the association between migration and households with small land holdings different from that with households with comparatively bigger land holdings? • What is the relationship between the size and distribution of household land-holdings and migration? • Does little access to other farm and non-farm productive assets affect household behaviour regarding migration? • Which individual, household and community-level characteristics influence or are influenced by migration	• Household income and assets (farm-including livestock and non-farm) • Households with & without migrants • Income and asset groups (classes) of households • Individual, household and community – level characteristics and variables
2. Establish whether remittances received by migrant-households, in cash	Do remittances: • -Fully compensate for loss of labour effects by adding to income in migration sending	• -Household income from different sources • -Different uses of

	households?	remittances
or in kind, received by migrant-sending households decrease or increase rural inequality in the migrant-sending areas	• -Ease capital constraints? • -Stimulate investments? • -Increase or decrease asset inequality?	• -Characteristics of migrants • -Value of total assets • -Value of household wealth

Information on migration was handled in sections 2 and 6 of the questionnaire. While the household head or his or her deputy responded to section 2, the migrants were personally interviewed for section 6. This ensured that most of the information was cross-checked, especially information pertaining to remittances, their use and whether they increase or decrease asset inequality among the households and the community at large.

5.6   FRAMEWORK FOR DATA PREPARATION AND ANALYSIS

5.6.1   Data reception, editing and organisation

The questionnaire had a built in mechanism to check and crosscheck responses by 'probing' responses to sensitive questions. This was followed by manual data editing by rotating from village to village to oversee the survey and manually check questionnaires with the interviewers. Manual editing on site helped rectify mistakes made by the interviewers, either during questioning due to misunderstanding of the questions or due to wrong recording, it also eliminated data faking by the enumerators. One of the interviewers was discharged for making up data and the village he had covered was redone. Thus, the questionnaires were received on site at the villages and were recorded as they were received by giving each questionnaire a number within the village sample and the date it was received.

5.6.2   Data capturing (punching) and cleaning

The Statistical Package for Social Scientist (SPSS)-based framework for data capturing was developed and was used for data capturing. Since a pre-coded questionnaire was used it eliminated errors due to coding, except in a few cases were

respondents gave answers that had not been anticipated. Supplementary information obtained from each village questionnaire (for each village there was only one questionnaire) was used to clear up glaring inconsistencies by households on issues of a general nature

The households whose migrants were not available for interview during the first visit were revisited. This process (of revisiting) went on for some time to try and obtain responses from all the migrants. However, the migrants of 12 households were never available for interviews.

5.6.3 Validity and reliability of data

Error in the collected data may arise from sampling, non-response and interviewer bias, inability or unwillingness of respondents to answer, ignore, or give wrong misleading answers, which lead to problems of validity and reliability. *Validity* is the extent to which a measure or set of measures correctly represents the concept of the study, free from any systematic or non-random error. Inevitably, validity problems usually arise when dealing with small scale farmers in developing countries. It is an open secret that the majority of such farmers do not keep records and when they do they are either incomplete or outdated and even unreliable. At the same time, there are issues that people do not easily talk about, including issues related to marriage, fertility, death, income and a variety of household decisions. This means that the data obtained by asking an individual may not be completely valid or reliable.

Reliability relates to the extent to which a variable or set of variables is consistent in what it is intended to measure (Hair Jr. *et al*., 1998). Questionnaire pre-testing and modification at a workshop contributed to ensuring that the questions would be asked during the surveys and that all the measures would be valid. As part of the validation exercise, using the SPSS programme, the number of cases for each variable on the file created using the frame, was checked to see if it agreed with the totals and all the codes within the specified range. In a few cases where more responses were given than the allowable codes, more codes were added to accommodate such responses. The data was mainly computed using the SPSS package at 95% confidence level

Sampling errors were taken care of as explained in section 5.3. One of the problematic non-sampling errors in the data was due to non-responses which were taken care of on a case-by-case basis. In some cases, substitution was used where a case with similar characteristics to the missing one was selected at random and duplicated as a substitute. In other cases, where the majority of the respondents had not given a response, a zero was used to replace the blanks. However, as Kish (1965) states, "no method of substitution is generally free of disadvantages, but one should choose the method with least disadvantages for a specific situation."

5.7   DATA ANALYSIS METHODS

The data obtained from the survey were used to establish differences between the households with and without migrants from the same village and in between villages and regions. Analysis of data also allowed us to detect any specific and/or peculiar patterns of variables around cases or households. Both exploratory and confirmatory data management techniques were used at different stages of the study.

5.7.1   Exploratory analysis

Exploratory analysis was used to present distribution characteristics of the study data. The exploratory methods included the descriptive statistics; including frequency, means and cross-tabulations for describing the spread, the study looked at the mean and the standard deviation. The T-Test for Equality of Means, which is a special type of the analysis of variance (ANOVA), was used as part of the exploratory analysis to assess the statistical significance of the difference between the sample means of households with migrants and households without migrants; the results are presented in Chapter 6. The t statistic is the ratio of the difference between the sample means to their standard error; the latter is an estimate of the difference between the means to be expected because sampling error, rather than real difference between means.

In Chapter 7 the findings from the correlation analysis were used to test whether the variables that are said to influence household in their decision making regarding migration are correlated with migration, and with each other.

5.7.2 Confirmative analysis

The two main research objectives and thus the hypotheses testing of the study are dealt with in chapters six, seven and eight. For each objective an empirical analytical model is specified, estimation techniques are employed and empirical results are discussed. Since the survey involved a large number of cases (573 households) it was necessary to make use of the analysis of interdependence techniques. First the Gini coefficient and Lorenz curves were used to measure inequality. The technique was also used to analyse the composition of income inequality in order to establish the impact of migration remittances upon income inequalities. Secondly, Factor Analysis techniques were used to define the underlying structure in the data matrix. It also helped to address the problem of analyzing the structure of the interrelationships or correlations among the large number of variables by defining a set of underlying dimensions known as factors; variables with characteristics which go together constitute a *factor*. Using the factor analysis techniques relationships between various variables were examined and the extent to which they compare with the study hypothesis. Thirdly regression analysis, namely, Logistic Regression was found to be an appropriate technique because in this study the dependent variable (presence or absence of migration) is a non-metric, dichotomous (binary) variable. These techniques are explained further below.

5.7.2.1 Inequality measure using the Gini coefficient

The Gini coefficient was used to measure inequality of income and productive assets among rural households in the study areas. The Gini coefficient is considered to be the most common statistical index of diversity on inequality in social sciences (Kendall & Stuart, 1969, Allison, 1978). It is widely used in econometrics as a standard measure of inter - individual or inter - household income or wealth inequality (Atkinson, 1970 and 1980; Sen, 1973; Anand, 1983) due to its convenient Lorenz

curve interpretation. Lorenz curves have also been used to study inequality in the distribution of land (Todaro, 2003) in education, health and in other assets. The determination and decomposition of inequality by the different income sources to determine the effect of remittances on inequality also depends on the Gini coeffient techniques, which were discussed at length in Chapter 4.

5.7.2.2 Factor analysis

The decision to migrate is a human behaviour caused by a number of different reasons which, if together they contribute to the decision to migrate, we would expect them to be correlated. Factor analysis helps in assessing the degree to which the different variables or items are tapping the same concept. It tells the extent to which the different aspects measure the same concepts or underlying construct; for example the tendency or propensity to migrate or as a household, make a decision for one or more members of the household to migrate is a hard to measure construct; factor analysis provides a score that weights the highly correlated responses. Secondly, the general purpose of factor analytic techniques is to find a way to condense or summarise the information contained in a number of original variables into a smaller set of new composite dimensions or variates known as factors, with minimum loss of information. Since the data set used was based on a large sample size (573 households) and a large number of variables, factor analysis was deemed appropriate for data reduction. SPSS was used to compute and assigns a score for each factor, which stands in as parsimonious descriptor for many variables.

There are critical conceptual assumptions underlying factor analysis, namely that:

- The data correlation matrix must have sufficient correlations greater than 0.30, otherwise factor analysis is inappropriate.
- The observed Kaiser-Meyer-Olkin (KMO) also provides a guide as to the appropriateness of using factor analysis; 0.70-0.80 is acceptable, beyond that it is great, but below 0.70 it is mild while below 0.50 it is unacceptable.
- The Bartlett test of sphericity, a statistical test for the presence of correlations among variables, should be significant, tending towards 0.00; the further away

from .000 the less significant it will be, for example, 0.05 to 0.10 is acceptable, but beyond 0.10 it should be rejected. At least two of the three conditions must be satisfied for factor analysis to be considered appropriate.

All the above assumptions underlying factor analysis were satisfied by the data set used in the study.

There are two most widely used forms of factor analysis, namely, *principal components* and *principal-axis factoring* (or *common factor in SPSS*). The two forms are collectively called Factor Analysis. According to the *SPSS Base 10.0 Applications Guide,* the two procedures can be used on the same data and both produce similar results. However, their difference lies in the way they handle the individual unique variance. In principal –components analysis all the variance of a variable is analysed, including the unique variance and it is set at 1. With the Principal-axis factoring, on the other hand, only the variance which is common to or shared by the tests is analysed; that is, it attempts to exclude the unique variance from the analysis and thus varies between 0 and 1. Principal components technique was preferred for the analysis in this study to avoid the complications inherent with common factor analysis. According to Hair, *et al* (1998) common factor analysis suffers from factor indeterminancy, so that for any individual respondent, several different factor scores can be calculated from the factor model results; thus there is no single unique solution as found in component analysis. Also the communalities computed from the common factor analysis may sometimes be invalid (for example, with values greater than 1 or less than 0). The complications of common factor analysis are said to have contributed to the wide-spread use of component analysis. At the same time there remains considerable debate over which factor model is more appropriate and empirical research has demonstrated similar results from both techniques. In this study the results of the variance of the test to be explained, known as the *communality,* from both techniques did not show major difference, but the results of the rotated factors from the principal component analysis provided better and clearer loadings of the variables than the one from the common factor analysis, thus the choice of principal component analysis.

The total variance presented by the *Eigenvalue* is used as a measure of variability of the factors. The selection of the factors to be retained is usually based on the

Eigenvalues and their respective factor loadings; the higher the factor loading the more the item contributes to the total score of that factor. The factor loadings express the correlation between the factors and the original variables and the factors with the *Eigenvalue* (normally ≥1.0) are retained while factors with smaller *Eigenvalue* (normally <1.0) are excluded. Selection also depend on the relative factor loading of the variable, a factor loading of at least 0.4 is used to indicate a fairly strong relationship between the variables.

5.7.2.3 Logistic regression model

In statistics, logistic regression is a model used for prediction of the probability of occurrence of an event. Binomial Logistic regression (BLR) is used. Most aggregate economic models usually try to explain continuous phenomena for which the ordinary least square (OLS) regression methods are common econometric approaches, (Boger, 2001). However, when we want to investigate individual or family decision behaviour, it often involves decision between discrete alternatives through a two-stage process. In this study, individuals and households are investigated for the probability of a decision *to migrate* (or not to *migrate*) by some of the members of the household. Equally, some qualitative variables like gender, education or quantitative response (QR) models (Kennedy, 2000), have been developed. All models have in common that their dependent variables take only discrete values and the independent variables determine the probability of an individual to choose one alternative from a choice set.

There are numerous types of QR models that are applicable in different situations. A distinction has been made by Boger, (2001) between; a) their functional form (logit versus probit models), b) the number of alternatives in the set of choice (binary versus multinomial choices), c) the type of choice variable (unordered or ordered), and d) the assumption made in the model (e.g. if a choice is independent of irrelevant alternatives).

In view of the rich variety of QR models, logistic models; - binomial (binary) logistic (BLR) has been adopted for this study based on Boger (2001). Binomial logistic model is characterised by the fact that the exogenous variable (dependent) takes two values (dichotomy) and the independent variables maybe continuous, categorical or

both. For instance, one can consider the probability that the event will occur (**y=1**) or not (**y=0**). Thus when we state the vector of explanatory variables with their estimate parameters as $\beta' x$, the dependent variable y^* can be expressed as follows:

$$y^* = \beta' x + \varepsilon \quad \text{...(5.4)}$$

What is observable in the model above is a dummy variable (y^*) interpreted as the probability of presence (*or absence*) of migrant(s) in the household as the dependent variable; then variables such as land ownership (or no land owned), assets or no assets, etc., were included in the analysis. According to Kennedy (2000), the heteroskedastic nature of the error term can easily be derived by noting that if a household has certain assets (probability $\chi\beta$) the error term takes the value (1- $\chi\beta$) and if the household does not have that particular asset (probability 1- $\chi\beta$) the error term takes the value of $\chi\beta$

The logistic function is given as $f(\theta) = \varepsilon^\theta /(1+\varepsilon^\theta)$. It varies from zero to one as θ varies from $-\infty$ to $+\infty$, and look very much like the cumulative normal distribution. Therefore, if θ is replaced with index $\chi\beta$, for example, denoting a linear function of several characteristics of households who have access to certain assets, then the logistic model specifies that the probability owning is given by:

$$Ow(owning) = \frac{e^{\chi\beta}}{1+e^{\chi\beta}} \quad \text{...(5.5)}$$

This in turn implies that the probability of not owning a particular asset is:

$$Ow(not ..owning) = 1\text{-}Ow(Owning) = \frac{1}{1+e^{\chi\beta}} \quad \text{..(5.6)}$$

The subsequent likelihood function is thus given by:

$$L = \prod_i \frac{e^{\chi i\beta}}{1+e^{\chi i\beta}} \prod_j \frac{1}{1+e^{\chi j\beta}} \quad \text{..(5.7)}$$

where *i* refers to those who own the assets and *j* refers to those who do not have the assets in question or do not undertake the activity referred to.

Maximising this likelihood with respect to the vector β produce Maximum Likelihood Estimate (MLE) of β. For the nth household, then the probability of owning a particular type of asset is estimated as:

$$\frac{e^{\chi_n \beta^{mle}}}{1 + e^{\chi_n \beta^{mle}}} \dotfill (5.8)$$

The above formula (5.8) for the logit model, implies that:

$$\frac{Ow(owning)}{Ow(not...owning)} = e^{\chi\beta} \dotfill (5.9)$$

Subsequently the log-odd ratio is given by:

$$In\left[\frac{Ow(Owning)}{Ow(not..owning)}\right] = \chi\beta \dotfill (5.10)$$

Based on this observation, the probability of occurrence of an event that the household has presence of migrant(s) (alternative *j* is chosen) depends on the vector of independent variable *x* and a vector of unknown parameter β when underlying distribution is symmetric (Mukherjee *et. al.*, 1998). Equation 5.9 expresses that the probability is a non-linear function of the explanatory variables. Since our interest is to estimate the unknown coefficients $\beta_i (i = 1,...,m)$, then once the estimates are obtained we can predict the probability of *y* $y_i = 1$ for given *x* values.

The measure used in our analysis is called the odds ratio, which is defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group, or to a sample-based estimate of that ratio. If the probabilities of the event in each of the groups are *p* (first group) and *q* (second group), then the odds ratio is:

$$\frac{p/(1-p)}{q/(1-q)} = \frac{p(1-q)}{q(1-p)}.$$

An odds ratio of 1 indicates that the condition or event under study is equally likely in both groups. An odds ratio greater than 1 indicates that the condition or event is more likely in the first group. And an odds ratio less than 1 indicates that the condition or event is less likely in the first group. The odds ratio must be greater than or equal to zero. As the odds of the first group approaches zero, the odds ratio approaches zero. As the odds of the second group approaches zero, the odds ratio approaches positive infinity.

Logistic regression has been adopted in this study, partly because of its popularity among social researchers, and also because it enables the researcher / author to overcome many of the restrictive assumptions of OLS regression (Newton, 2000). For instance, logistic regression does not assume linearity of relationship between the independent variables and the dependent, does not require normally distributed variables, does not assume homoscedasticity, does not require that the independents be interval, and does not require that the independents be unbounded. Thus logistic regression was thought to be an appropriate analytical method for this study.

5.8   SUMMARY

This chapter outlines the research strategy and design. However, the process presented here is a summarised and simplified version of an elaborate and intricate undertaking, especially the household survey in a rural setting. The aim is to obtain results that respond to the objectives and which are representative enough to make inferences about the relevant population regarding the effect of inequality on migration in the Limpopo, South Africa. In order to ensure that the study is confined rigidly to facts and figures, statistical procedures for data collection preparation and processing have followed the recommendations of experts, such as Casley and Lury, (1981); Hair Jr. et al., (1998); Mukherjee *et al*, (1998) and Bohrnstedt and Knoke, (1994) among others. The chapter also describes the various methods used for data analysis and explains why such procedures were found suitable.

CHAPTER 6

CHARACTERISTICS AND IMPACT OF RURAL MIGRATION UNDER DIFFERENT ASSET DISTRIBUTION - A CASE STUDY OF LIMPOPO

6.1   INTRODUCTION

In Chapters 1 to 3, literature showed that some members of rural households migrate as a consequence of differential access to assets. Findings of some empirical studies, mainly conducted in Asia (Adger et al. 2001; Stark & Wang, 2000; Sampath, 1990) have lead researchers to conclude that some migrant-sending households and some individual migrants are influenced by the difference in asset distribution. This is not necessarily opposed to the more orthodox view of migration being a function of economic opportunity. After all, the existence of early discriminatory measures in South Africa aimed at, and having the effect of, extracting labour from the land cannot be denied (Low, 1986).

The objective of Chapter 6 is to empirically establish the characteristics of the survey areas in general, and the sample households, in particular from an asset ownership and migration perspective and the relationship between asset inequality and rural out-migration. The level of unequal asset distribution in the six sub-regions of the study area and the entire survey area is estimated to use the information used in Chapter 7 in the model to show that the existence of asset inequality impacts on migration. The first part of section 6.2 presents the findings of the descriptive analysis of the village and the household surveys undertaken in Limpopo. Twenty-four villages, which were surveyed, were clustered into six sub-regions and further into three regions. The infrastructure and natural resource base profiles of the villages are presented in a summary form in Appendix 5. Section 6.2 outlines the socio-economic characteristics while Section 6.3 briefly describes the infrastructure and environmental characteristics of the surveyed villages within which the migration process takes place. Both village and household characteristics are analysed in Sections 6.4 and in the second part of the chapter, they are related to asset size, structure and distribution as well as their effect on migration, in Sections 6.5 specific deterministic relationships

between assets and migration, the existence of asset inequality and its impact on migration are analysed.

Section 6.6 provides an in-depth analysis of rural out-migration in the surveyed areas and empirically assesses the characteristics of migrant-sending households, migrants and the consequences of migration on farm and family level as well as beyond the farm. The chapter ends with a summary in section 6.7

6.2   SOCIO-ECONOMIC CHARACTERISTICS OF THE SURVEY AREA

The total population of the villages surveyed is 83 955 people (in 1996), which is 1.7% of the total population in Limpopo. A detailed composition of the total population by villages according to the 1996 census is presented in Appendix 6. Out of 24 villages a sample of 585 households, totalling 4 332 persons, was surveyed, making up 5.2% of the total population of the villages surveyed. More than 94% were single ethnic households, mainly of the BaPedi (Northern MoSotho) ethnic group.

The surveyed villages can be classified as rural, isolated and remote with low levels of development and deprived of access to basic infrastructure (good roads, electricity and water). However, since 1994 most villages have been experiencing some improvement, which came about as part of the implementation of, first, the Reconstruction and Development Programme (RDP) and later the Growth, Employment and Redistribution Strategy (GEAR). These two programmes have been the principal instruments to realise the policy objectives of poverty alleviation and inequality redress in South Africa by addressing structural weaknesses inhibiting economic growth and empowerment.

On average each household occupies a stand of 100 to 200 square meters, plus a plot (field) in the arable area, averaging two to four morgen (1.6 – 3 ha) per household. Natural landscape guides the residents in classifying their vegetation; for instance, those villages that have a river passing through had a good reference point, with which they can divide their land for different uses, for example, sites, which are next to the river, are mostly reserved for crop cultivation, as they are relatively fertile with some deposits of humus, iron and ferrous rock sediments, and people can irrigate

during the dry season. Since most residents do not cultivate during winter, these areas are also used for grazing. Bushes which are far from the river contain perennial wood trees that dry-out and die during winter, and are used as construction poles and fuel wood.

6.3   INFRASTRUCTURE AND NATURAL RESOURCE BASE

The key finding from the infrastructure aspect of the survey is that a large number of households have not yet attained adequate levels of basic services and facilities. Most households do not have access to ground water for irrigation purposes and only 22% of households have access to a borehole, which they can use for irrigating crops.

The information regarding rural infrastructure, basic services and environmental problems faced by the villages is summarised in Appendix 5. This information was obtained from village informants including, but not limited to, chiefs and their herdsmen, agricultural officers, teachers, health officers and other village spokespersons. Even though the information is qualitative, and to some extent subjective, it provides a good indication of the current access to basic infrastructure and services by the rural communities and the state of the natural resource base.

A common observation is that the villages in the surveyed area are not well endowed with natural resources. Each village spokesperson gave his or her view of the condition of the vegetation in the immediate area of the village and available facilities and services for the common good; their responses are summarised in Appendix 5.

6.4   HOUSEHOLD CHARACTERISTICS

By definition a private household may consist of one or several persons; a one-person household is a person living alone and catering for her or himself. A multi-person household contains two or more individuals (mainly relatives but also could be non-relatives), who live together and have common catering arrangements. Each household that participated in the survey was asked to provide information relating to age, sex, education and employment status. Educational characteristics were solicited

only from the resident members of the households. The head of individual households or their representatives reported on household asset endowments and cash incomes from various sources.

6.4.1 Demographic characteristics

Under normal circumstances, the demographic composition of a household influences its behaviour, livelihoods and its socio-economic characteristics. The structure of the surveyed households is discussed below. The following striking features are noted:

6.4.1.1 Age composition

Children form a sizeable proportion of the population in the communities, as indicated in Table 6.1 and Figure 6.1. Thirty-six percent of the surveyed population is below 15 years of age, while the 1996 census data reflect that 42.2% of the population in Limpopo is below that age. The proportion of children below 15 years does not differ much across the surveyed sub-regions and villages but Praktiseer sub-region has the highest proportion (43%) of the population below 15 years.
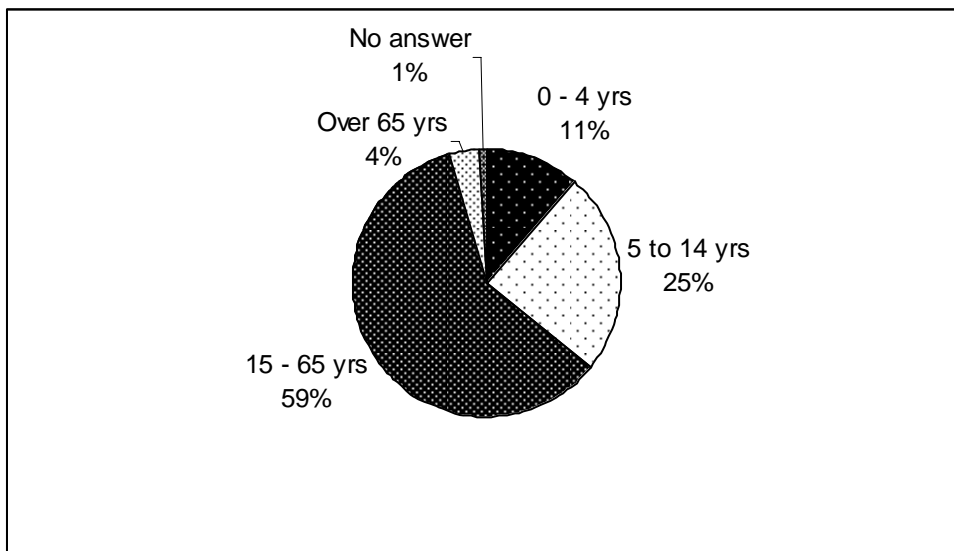
Figure 6.1:   Age composition of sample members

Table 6.1: **Distribution of household members by age and sub-regions**

Age (yrs)	Sub- Regions						
	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	Total
0 - 4	75 (10.8)	43 (9.9)	90 (12.2)	126 (13.8)	41 (10.1)	115 (10.0)	490 (11.3)
5-14	178 (25.7)	96 (22.2)	166 (22.5)	268 (29.3)	105 (25.8)	251 (21.9)	1065 (24.6)
15 - 65	407 (58.8)	253 (58.4)	451 (61.1)	499 (54.6)	242 (59.5)	733 (63.8)	2585 (59.7)
>65	31 (4.6)	16 (3.7)	27 (3.7)	16 (1.8)	6 (3.9)	47 (4.1)	152 (3.5)
No answer	1 (0.1)	25 (5.8)	4 (0.5)	5 (0.5)	3 (0.7)	2 (0.2)	40 (0.9)
Total	692 (100)	433 (100)	738 (100)	914 (100)	407 (100)	1148 (100)	4332

However, the economically active population (15 - 65 years) constitutes almost 60% of the sample population (including non-residents), the figure includes including school and college-going youths. The proportions of retired senior citizens (≥ 65 years) in the sub-region are similar, with the exception of Praktiseer, whose retired senior citizen is less than the average 3.5%.

6.4.1.2 Gender

The male to female ratio is almost the same but there are slightly more females than males; 52.2% of the population surveyed are female while 47.8% are male. These results confirm the perceptions that there are more females in rural areas than males; this is true even when the non-resident members (migrants) in communities are considered. The 1996 and 2001 census results and the General Household Surveys 2002& 2003 for the villages surveyed reflect, on the average, an almost similar distribution (55% = female and 45% = male); this phenomenon is exacerbated by the rural out-migration.

The proportion of households with de jure female heads is as high as 26.5%, while 11% of the households have de facto female heads; males head the remaining 62.5% of the households (Figure 6.2). The type of head of household influences household behaviour and decisions with regard to migration; most likely the woman will either be looking after children or grand children and not able to move out of home easily. Gender also has a significant bearing on household asset endowment. The mean age of household heads is 60.3, male and female; this clearly points to the fact that

resident male households are elderly and probably retired from active productive life, while the younger males migrate from their places of birth. As a matter of fact, as we went around conducting the surveys we encountered more elderly men and women heading households with young children / grand children. In an African setup, the head of a household has a number of important responsibilities to fulfil. He or she has to make most of the important decisions that may affect the livelihood and welfare of the household and he or she has to co-ordinate the

household activities and provide leadership and guidance to the other members of the household. The ability of the household head to perform his or her duties is influenced by attributes such as gender, age, education, and in the case of women household heads, marital status. De facto female heads suffer from lack of allocative authority, especially when it comes to decisions regarding household assets such as land and livestock, which are normally owned by males. When de facto female heads were asked to indicate who makes decisions, for instance, regarding asset disposal, taking a new loan or changing the pattern of household spending, women gave different responses. In the case of taking a new loan, the responses were: decisions are made jointly, (26 per cent), mainly the man makes the decision (24 per cent) or mainly the woman but also men (7.6 per cent)
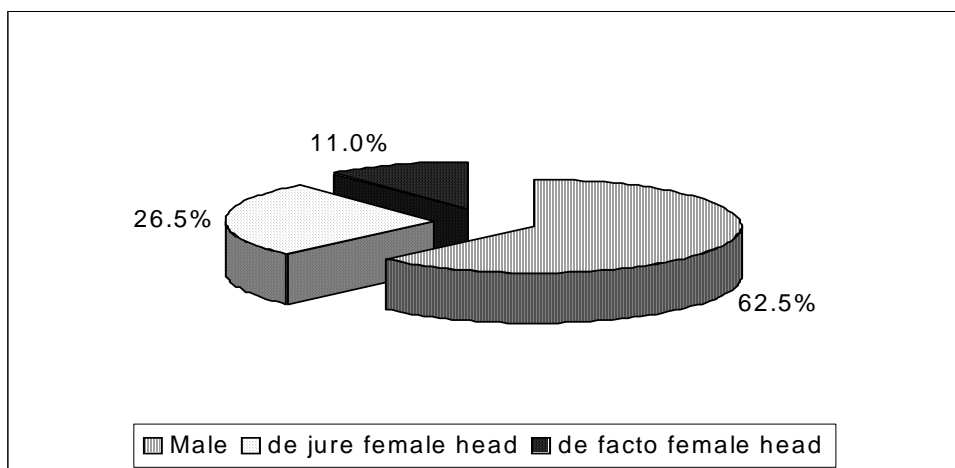
Figure 6.2:   **Gender of household head**

Among the *de facto* female heads of households, 37.1% had never gone to school, 41.5% had primary education, 13.8% had secondary education and only 3.5% had either diploma or degree level of education. In comparison, among the male heads of

household, 18.7% had no education, 45.5% had primary education, 24.3% had secondary education and 4.2% had education higher than secondary level. These results are consistent with expectations, that men in the rural areas have had a better change to go to school than women. Overall, the majority (53.8%) of resident household members attained a secondary school education, only 3.1% of the members went beyond that level. The difference in the level of education between men and women is statistically significant especially secondary level education and at the beginning, those who have not gone to school at all. The problem of dropping out of school for girls (after falling pregnant, etc) is quite serious.

6.4.1.3 Marital status

The proportion of the people who are either married or living together with their partners is smaller than anticipated; only 21% of the household members interviewed were in some form of marriage or communion. It is probable that some of the couples living together did not like to reveal that kind of relationship. The marital status of household members who are 15 years old or older is summarised in Table 6.2

Table 6.2:   **Marital status of household members**

	Male		Female		Total	
Marital Status	Number	%	Number	%	Number	%
Children < 15	836	40.4	826	36.5	1662	38.4
Single	758	36.6	788	34.8	1546	35.7
Civil marriage	205	9.9	206	9.1	411	9.5
Customary marriage	166	8	161	7.1	327	7.5
Divorced/Separated	4	0.2	17	0.8	21	0.5
Widowed not married	14	0.7	18	0.8	32	0.7
Living together	9	0.4	162	7.2	171	3.9
In process to marry	61	2.9	65	2.9	126	3.0
Civil and customary*	3	0.1	3	0.1	6	0.1
No answer	14	0.7	16	0.7	30	0.7
Total	2 070	100	2 262	100	4 332	100

6.4.1.4 Vocational status

According to the DBSA (2000:193), unemployment is fairly high in the communities surveyed. While the 1996 census estimated about 5.7% of the population in the villages to be formally employed, our household survey results show that only 3.9% of household members hold a position in the formal sector. Among the resident members, the percentage of household members who are not gainfully employed (including housewives, pensionable–retired people, disabled persons and children) is as high as 85.4%. The main sectors of economic activities for the surveyed population are indicated in Figure 6.3, with tertiary or service sector as the leading sector. Agriculture takes third position after the industrial sector. However, the agricultural sector in South Africa is strongly linked to the industrial sector and other sectors. The main vocational status of household members (excluding migrants) is summarised in Table 6.3 and Figure 6.3.

Table 6.3: **Main vocational Status of household members (mainly residents)**

Vocational Status	Freq. (n = 3 467)	%
Baby pre-school or crèche	478	13.2
Scholar or student	1 295	35.7
Retired – not working	228	6.3
Disabled not seeking work	46	1.3
Housewife unpaid work	234	6.4
Unemployed seeking work	723	19.9
Unemployed not seeking work	72	2
Employed – mainly informal	82	2.3
Employed – formal	141	3.9
Self-employed - formal sector	8	0.2
Self-employed - informal sector	129	3.6
Unemployed – self-employed	2	0.1
Employed formal & self-employed	4	0.1
Retired and self-employed	3	0.1
No answer	22	0.6
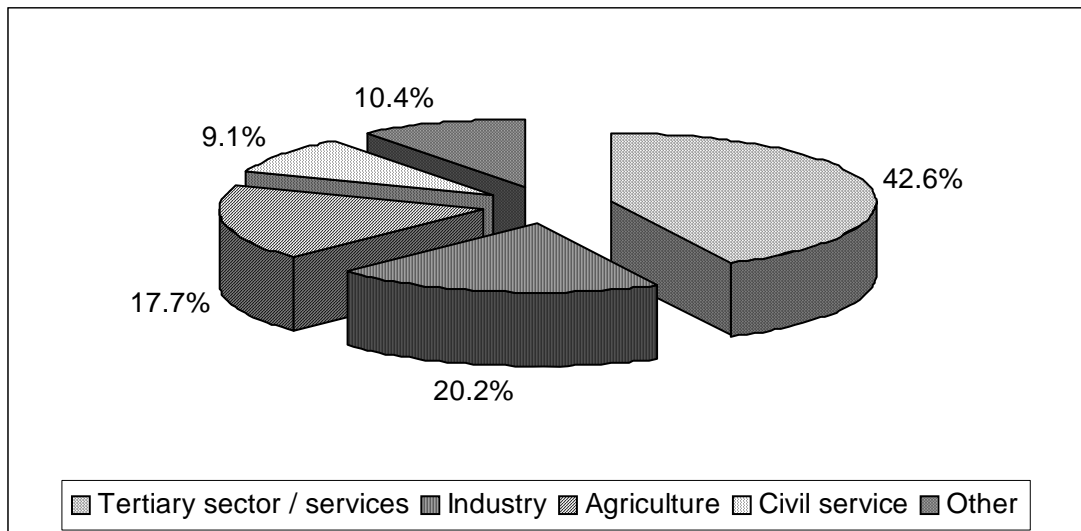
Figure 6.3: **Sectors of economic activities for sample population**

Source: Survey results, 2000-1

6.4.1.5 Household size

The average household size is 7.4 members (std.= 3.02) but differs across income groups and villages. The average household size for the poorest 25% of the households is much higher (9.0 members) compared to the overall average. Among the six sub-regions, Zebediela has the highest average household size (8.1 people). The number of children in a household for 573 sample households ranges from 0 (no children) to 9 children, with an average of 2.85 children and a standard deviation of 1.92.

For purposes of model specification (in Chapter 4), the household size has been adjusted to the adult equivalent (AE) [17] to distinguish dependent members of the household from members who are gainfully employed or potential earners. Table 6.4 indicates the mean adult equivalent size for households by regions. The mean household size for the entire sample (573 households) is about five AE members. The lowest size is 1.0 AE member and the highest is 10.8 AE members, while the median is 5.0 AE members. Using the AE size of the households, the means of the six sub-regions are compared in Table 6.5.

---

[17]   *According to Chayanov (1986), AE male = 0.8 AE female = 0.6 AE child.*

127

Table 6.4   Average household size by income group

Income group of Household**	Average household size (number of people)	CAR*	Average number of Migrants
Poorest 25% of hh	9.0	0.9	1.0
2nd poorest group	7.8	0.8	1.0
2nd richest group	7.1	0.6	1.2
Richest 25% of hh	5.9	0.5	0.9
Overall	7.4	0.7	1.0

Source: Survey results, 2000
∗CAR = Child Adult Ratio
**Income quartiles of households were set using the income per AE

Table 6.5:   **Average household size by subregions**

Sub-regions	n	Average household size	AE Size	AE migrants in household
Bochum	93	7.5	4.9	0.7
Seshego	62	6.4	4.4	0.7
Schoonoord	84	7.5	5.1	1.3
Praktiseer	137	7.1	4.6	0.6
Zebediela	54	8.1	5.1	1.3
Western	143	7.5	5.5	1.3

Table 6.4 and 6.5 shows that a typical sample of household in the areas surveyed has about five AE members. However, in three of the sub-regions (49% of the survey area), household sizes are bigger than 5.0 AE. Seshego records the lowest mean household size of about 4 AE members, while Western has the highest mean household size of 5.5 AE members. Zebediela, which has the highest mean household size in terms of the numbers of household members (8 members), has an AE of 5 members; at the same time it has the lowest child: adult ratio (0.6); [this may imply a high proportion of females in that community since the computation of AE considers female AE to be 0.8 of male AE.

The implications of the results in Table 6.5 could be that the (relatively) bigger households (in AE size) are able to send out slightly more members as migrants than smaller families. However, the pattern of migration from the different income

quartiles is not quite distinct; the second relatively richer group of households seems to be able to afford to send out more migrants while the (relatively) richest quartile is sending less; this may be because they have other lucrative businesses to take care of at home. The AE size of household seems to correlate positively to the AE migration in the household so that the sub-regions that have bigger AE size households are sending out a higher number of AE migrants.

In terms of income the results are consistence with what is normally observed in society, that the poorest strata (25%) of society, in this case of the households, have the highest child adult ratio and larger family sizes compared to the richest 25% of the households.

6.5   ASSET DISTRIBUTION

6.5.1 Land-holdings

In most African rural villages, land is considered to be the most important asset for a household. In recognition of the critical role land plays in agricultural production and in income distribution in the rural areas, South Africa is currently pursuing land redistribution programme to promote equity in land ownership. In this section, land-holding is assessed together with the other agricultural assets. However, due to the nature of the land tenure system in the survey area, it is only possible to determine the size of the plots of arable land allocated to individual households. It was not possible to estimate and evaluate the area of grazing land which is communally owned in the rural areas of the Limpopo Province. Regardless of the size of the herd of livestock that the household have, their animals graze communally with the rest of the livestock in the village.

The survey results confirm that only 320 (55.8%) of the households (out of 573) surveyed own or occupy[19] a piece of arable farmland, which include a kitchen garden and/or main field plot. Among the landed households, 17 households own less than 0.05 hectare, which is very small even for a kitchen garden. Another six households own plots bigger than 0.05 hectare, but smaller than 0.5 ha. These two categories of households (totalling 23 households) have the least landholding. Table 6.5 presents a summary of all land categories for individual households of the study sample. For conveniences sake they are categorised according to a 2 hectare range, except for case below one hectare. The average plot size is 2.4 hectare per household, with a median size of 1.66 hectare and the maximum reported land size of 10 hectare.

The proportion of landless households, amounting to 44.1% (253 households), is quite substantial. When the households cultivating less than 500 m2 (0.05 hectare) are also considered to be landless, then the figures for landless households rise (253+17) to 270 (47.1%) and the number of land-owning households decreases from 320 (55.8%) to only 306 households (52.9%). Of the 320 landed households, 50.6% (162 households, i.e. categories 1 to 4) own less than two hectares of land; these small plots are commonly referred to as kitchen gardens. Among 51 of households, these gardens are located within the perimeters of their homestead and occupy only a few square meters.

Apart from the kitchen gardens, most households only have one main field where staple food crops are grown. Only 17% of the landed households have access to a second field. Land remains the most constraining resource facing households in Limpopo, and indeed, in most of the rural areas in South Africa.

---

[19] *Although the concept of "own" and "ownership" is used in this study there are no cases where households have freehold tenure. All land is tribal land and households have usufruct rights, usually granted by "Permission to Occupy" by the traditional leader. Ownership in the context of this study therefore refers to occupation of tribal land.*

Table 6.6: Land categories 1 to 8 for all households (N=573)

Land category in Hectares	Frequency	% Hh
No land	253	44.1
<0.05	17	3.0
1) 0 to <0.05	270	47.1
2) 0.05<=land<0.5	6	1.0
3) 0.5<=land<1	56	9.9
4) 1<=land<2	83	14.5
5) 2<=land<4	107	18.8
6) 4<=land<6	36	6.3
7) 6<=land<8	9	1.6
8) 8<=land	6	1.0
Mean: 2.43		
Std Deviation: 2.399		
Total	573	100.0

Source: Survey results, 2000

In the absence of a land market, changes in land-holdings are not very common. This is particularly true in the rural areas of South Africa, and indeed, most of rural Sub-Saharan Africa, where land is communally owned. Under these circumstances, land size can only be used as a proxy to examine people with a particular set of asset distribution and their behaviour regarding migration. Out of the total 295 households with migrants, 35.6% have no arable land and 5.8% own less than 0.05 hectare, which makes them functionally landless. The two categories of landless and near landless households, together, make up 41.4% of migrant households; most of them are located in the Southern Region. It is also interesting to note that over half of the households with land are spread almost evenly over the land categories ranging from 0.5 hectare to 4 hectare.

The economic differences between the households with access to arable land and those without land are summarised in Table 6.7. The main features of Table 6.7 are that the mean household income per annum for the landed households is higher (R24 662) than for the landless (R20 369) but the mean total (cash + kind) remittances per household (R16 481) and per person (R2 603) is higher among the landless households than among the landed households and individuals (R14 144 and R1 814), respectively. This implies that the landless households receive a relatively high proportion of migrant contributions in kind, such as food, and in cash. The mean

household in kind remittances among the landless is R 3 831 while for the landed it is only R2 470; it is easier for households with land to grow the food items they need. The mean remittance per capita is also higher among the households without land than among landed households.

Table 6.7:   Characteristics of households with and without access to land

	Households with land (N = 320)	Households without land (N = 253)
Mean household income per annum	R24 662	R20 369
Mean income per person per annum	R3 048	R3 146
Mean household size	7.6	7.1
Mean number of migrants	2.0	1.8
Mean households cash remittances	11 674	12 650
Mean household in kind remittances	2 470	3 831
Mean household total remittances	14 144	16 481
Mean (total) remittance per person	R1 814	R2 603

Source: Survey results, 2000

This could mean that the migrants from landless households go out for search of work to compensate for lack of livelihood from the farm. It may also mean that there is higher propensity to migrate fro work among the landless and little-landed households than among the landed. This is a good sign because it means that the landless has something to fall back to for livelihood. Lower remittances for landed households could also imply that the migrants from these households may have migrated for reasons other than work, such as going to better schools away from the rural areas were the family lives.

6.5.1.1 Regional and sub-regional land distribution

There are regional and sub-regional differences regarding land distribution as shown in Tables 6.8 and 6.9. The differences are more pronounced in Central and Southern regions, with acute extremes of no land at all for the majority of the households and relatively large plots of land for very few households.

Table 6.8: Land categories (ha) for households by Regions

Region	Land Categories (in ha) and percentage owning									
	No land	<0.05	0.05-0.5	0.5-1	1-2	2-4	4-6	6-8	8<	Total
Central	43.2%	9%	3.9%	16.1%	5.2%	14.2%	2.6%	2.6%	3.2%	100.0%
Southern	61.5%	1.1%		6.2%	5.1%	14.8%	9.5%	1.5%	.4%	100.0%
Western	11.9%	0%		9.8%	42.7%	30.8%	4.2%	.7%		100.0%
Mean						2.43 ha				
Std. Dev.						2.4				

Source: Survey results, 2000

By disaggregating the households further to the sub-regional level (Table 6.9), it is establish that the majority of households in Praktiseer (83.2%) and Zebediela (64.8%), both in the Southern Region, have no land at all; they are followed by Bochum (44.1%) and Seshego (41.9%) in the Central Region. If the near landless households, cultivating less than 0.05 hectares are considered with the landless, the resulting figures increase for Zebediela to 70.4%, Bochum to 53.8% and Seshego to 50%. This scenario demonstrates the seriousness of landlessness in rural Limpopo, especially in the Central and Southern regions. It is in these areas that there are serious push reasons to encourage some members of the households to migrate in search of alternative means of livelihood. On the other hand, in the Western sub-region nearly 90% of the households own farmland. It is also important to point out that land ownership in the Western region is more evenly distributed, with 73.5% of the landed households owning between two and four hectares.

Is it possible that households are landless because they have migrants? Not in the Lebowa context; families were removed from some other places and planted in the former homeland of Lebowa. They were arbitrarily allocated land, on the average each household occupies a stand of 100 to 200 meter squares. Over time some households have out-grown the original size of plots, as sons got married and were given their own small slices of the original plot. Fragmentation took over up to a point when it was no longer feasible to sub-divide the plots any more and overcrowding is a permanent feature in the former homeland.

Table 6.9: **Land categories by six sub-regions (count and percent)**

Land Category (in hectares)	Subregions						Total
	Bochum	Seshego	Schoonoord	Praktiseer	Zebediela	Western	
0	41	26	20	114	35	17	253
(%)	(44.1)	(41.9)	(23.8)	(83.2)	(64.8)	(11.9)	(44.2)
0 to 0.05	9	5	0	0	3	0	17
(%)	(9.7)	(8.1)	(0.0)	(0.0)	(5.6)	(0.0)	(3.0)
0.05 to 0.5	6						6
(%)	(6.5)						(1.0)
0.5 to 1	11	14	3	3	11	14	56
(%)	(11.8)	(22.6)	(3.6)	(2.2)	(20.4)	(9.8)	(9.8)
1 to 2	3	5	7	3	4	61	83
(%)	(3.2)	8.1%	(8.3)	(2.2)	(7.4)	(42.7)	(14.5)
2 to 4	13	9	26	14	1	44	107
(%)	(14.0)	(14.5)	(31.0)	(10.2)	(1.9)	(30.8)	(18.7)
4 to 6	3	1	24	2		6	36
(%)	(3.2)	(1.6)	(28.6)	(1.5)		(4.2)	(6.3)
6 to 8	2	2	4	0	0	1	9
(%)	(2.2)	(3.2)	(4.8)	(0.0)	(0.0)	(0.7)	(1.6)
Over 8	5	0	0	1	0	0	6
(%)	(5.4)	(0.0)	(0.0)	(1.37)	(0.0)	(0.0)	(1.0)
Total	**93**	**62**	**84**	**137**	**54**	**143**	**573**

Source: Computed from data set

Of 155 households surveyed in the Central region (i.e., Bochum and Seshego), 67 households (43.2%) are landless, while 29% of the households own less than a hectare of land. Ironically, it is in this region where five of the six households that own over eight hectares of land live; five are in the Bochum sub-region. This is a clear indication of the inequality of land distribution in the Central region. Similarly, the majority of households (61.5%) in the Southern Region (Schoonord, Practisseer & Zebediela) are landless, while one household, in the Praktiseer sub-region, stands out, with over eight hectares. The Western region has a high proportion of households with land. Only 11.9% of the households in this region are landless and all the landed households own more than 0.5 hectare. Figure 6.1.5 shows the proportion of landed to landless by the regions.

6.5.1.2 Land-holding and migration

Out of the total of 270 (Table 6.9) landless plus near landless households (with up to 0.05 hectare), over 45% (122 households) have migrants; this also constitutes 41.4%

of all the households with migrants. The remaining 58.6% of the households with migrants have access to arable land. However, there is no specific pattern of distribution of households with migrants to the different land categories. There is a higher proportion of landlessness (61.5%) and near landless (1.1 per cent) of the households with migrants in the Southern Region compared to the other two regions (43.2% in Central and 1.1% and for Western regions only 11.9 per cent who are landless.

Another interesting observation from Tables 6.9 and 6.10 is that among the landless households and those with less than 0.05 hectare of land, in the Southern and Central regions where the land problem is more acute, 45.3% and 38.2% respectively of the landless and near landless people migrated, whereas from the Western region, 76.5% of the landless people migrated. This could be interpreted in two ways, either the prospective migrants in Western region have access to more information than in the other two regions or the landless households in this region can better afford the costs of migration than those in the other two regions. People may be lacking information, contacts or financial means to facilitate migration in the deep rural areas of the Southern and Central regions. Also the Western region is closer to town, Polokwane, than the other two regions.

It can be deduced that the 122 landless and near landless households have resorted to migration as an alternative for survival in the absence of agricultural production and other means of livelihood. Even though the remaining number of migrants is almost evenly spread between the households of different land categories, the rate of migration is highest among households with between one and two hectares of land than the other land categories, (except for the special category of landless and near landless (122 households with migrants) were most of them have opted to migrate.

Another interesting fact is that 62% of all migrants in the sample originated from households with access to some arable land. The region contributing most to this statistic are the villages in the Zebediela region, which is the region with the lowest arable land size per person of 0.17 hectares. This implies a high propensity to migrate from this area due to lack of adequate local resourced to make a living. What is puzzling however, is the high number of migrants from Schoonoord despite the fact

that it is the region of villages which recorded the highest mean land size per household and second highest land per person figures. This area is known for its extremely risky and variable agricultural conditions, which probably contribute to an increased dependence on migration income. The confirmatory analysis for correlation between landholding and migration is discussed in Chapter 7 sections 7.2.2 and 7.3.4.

Table 6.10:   **Households with migrants by land category and by surveyed regions**

Item	Regions			Total
	Central	Southern	Western	
Total Hh WITH migrants	63 (40.6% of n Central)	139 (50.5% of n Southern)	93 (65.% of n Western)	295 (51.5% of N)
Households with migrants and no land	17	75	13	105
Households. with migrants and some land: <0.05[20]	14	3	0	17
0.05 to 0.5 ha	1 (3.1%)	0	0	1 (0.6%)
0.5 to 1 ha	14 (43.8%)	11 (18.0%)	10 (12.5%)	35 (20.2%)
1 to 2 ha	5 (15.6%)	9 (14.8%)	34 (42.5%)	48 (27.8%)
2 to 4 ha	7 (21.9%)	26 (42.62%)	32 (40.0%)	65 (37.6%)
4 to 6 ha	1 (3.1%)	13 (21.3%)	4 (5.0%)	18 (10.4%)
6 to 8 ha	2 (6.25%)	1 (1.64%)	0	3 (1.7%)
> 8 ha	2 (6.25%)	1 (1.64%)	0	3 (1.7%)
Total (number of Households with migrant and land ≥0.05ha)	32 (20.6%)	78 (28.4%)	13 (9.1%)	173 (100%)

Source: Research data-set, 2000
Figures in parentheses show percentage of households with migrants in each land category.

6.5.2   Livestock ownership

In most African rural communities, livestock is considered an important asset for several reasons (Sibisi, 1980). Traditionally, livestock in general and cattle in particular, are seen as a store of wealth and a sign of prosperity; they also have an important role in cultural and social customs, such as payment of bride price and for

---

[20]   *This land category is also considered to be for landless or near landless households, but is composed of 253 households who have no land at all [44.2% of total sample population including non-migrant households, plus 17 households (3.0%), who own some land <0.05 ha, making that category to be as big as 270 households (47.2% of the sample population].*

slaughter at special ceremonies. Most families keep a small number of livestock, especially small stock (goats, sheep, pigs and poultry) for social or cultural motivations rather than for economic or business reasons. According to Sibisi (1980), owners of large quantities of livestock in general and cattle in particular form the core of the African aristocrats and the well-to-do families. Usually, they are a small proportion of the community and stand out for their wealth. Households who rear livestock as a business consider it an insurance economic activity, especially in the drier areas were most crops do not do well. Moreover, the income-poor households in the rural areas prefer to keep small stock rather than large stock as a means of enhancing their liquidity and divisibility.

Small stock subsistence farming (goats, sheep, pigs and poultry) is considered ideal in a province prone to drought like Limpopo, which also suffers from inadequate water supply (The Limpopo Province Integrated Rural Development Framework, 2000). A higher proportion of households (60.6%) keep small stock than large stock (39.4%). This is characteristic of the income-poor households, which have productive assets structured towards liquidity and divisibility to allow easy and fast access for emergencies. Pigs are the least popular type of small stock; this could be because most people cannot keep them due to their religious affiliations[21]. Table 6.11 presents the different types of livestock owned and the proportion of the surveyed households owning them; needless to say, Limpopo is not well endowed with big livestock such as cattle. Owing to small numbers of livestock per region, and even smaller per sub-region, it was not statistically feasible to disaggregate ownership for the different areas.

---

[21]*Zionist Christian and Apostolic churches do not allow their followers to handle pigs.*

Table 6.11:   Livestock ownership

Type of stock	Number (and %) of 573 households	Mean herd size	Maximum	Std. Deviation
Calves	64 (11)	5.6	33	5.5
Heifers	13 (2.2)	2.7	10	2.4
Cows (>3yrs)	74 (12.6)	18.2	150	24.6
Oxen (>3 yrs)	16 (2.3)	4.7	12	3.7
Bulls (>3 yrs)	44 (7.5)	3.6	12	2.9
Donkeys	31 (5.3)	4.9	21	4.5
Goats	133 (22.7)	9.8	30	6.7
Sheep	27 (4.6)	12.7	42	10.2
Pigs	10 (1.7)	2.8	11	3.0
Chickens	148 (25.3)	18.2	1000	81.8
Other*	37 (6.3)			

Source: Survey results, 2000
*Includes: geese, chicks, doves, dogs and cats

6.5.3   Farm assets other than land and livestock

Differences in agricultural production are not only affected by land and livestock endowments but also by other farm (and even non-farm) assets (some of which are shown in Table 6.12). McKinley (1993), in his study of the China's agrarian transformation, concludes that the ownership of fixed productive assets, such as machinery, may have a significant effect on the level of household income.

Table 6.12:   Ownership and value of farm assets other than land and livestock

Farm Asset	Number (and %) of households owning (n=573)	Mean value* Rand	Std
Motor vehicle/bakkies	17 (2.9)	21 666.0	14 969.8
Tractor	23 (3.9)	29 195.0	20 310.2
Trailer/cart	27 (4.6)	662.5	287.9
Shop/workshop	2 (0.3)	90 666.0	65 736.8
Plough	21 (3.6)	868.0	1568.6
Ridger	5 (0.9)	380.0	192.4
Harrower	7 (1.2)	885.1	1381.3
Generator	3 (0.5)	15899.0	19 941.1
Other	113 (19.7)	49.7	135.1

Source: Survey results, 2000
* Mean value calculated for households owning a particular asset

The striking feature of the ownership of agricultural assets (in Table 6.11) is that very few households own these assets, the highest proportion is 4.6% of households, who own farm trailers or carts. This clearly shows that the majority of the rural households are asset poor; the mean value of total farm assets per household is only R2 275 with a high Standard Deviation of 13 566.8. Farm assets are unequally distributed; almost all the farm assets belong to 10% of the households. This is not surprising, given the fact almost 50% of the households own very little or no agricultural land and do not carry out any agricultural economic activities as a source of livelihood.

6.5.4   Non–farm assets

Dwellings or homesteads in the rural areas are not easy to valuate given the nature of tenure arrangements in the villages. Nevertheless, the results obtained from the survey, which are considered to be reasonably consistent, are summarised in Appendix 8, which presents the overall picture of the adult equivalent ownership of asset base. The figures therein exhibit unequal distribution of assets among the farming households of the surveyed areas and probably of all of rural Limpopo. Appendix 8 also provides good comparison of the importance of the different sources of income (in adult equivalent) for different percentile groups. For the poorest 25 % of the sample population, the adult equivalent income excluding remittances is only R51, while it is R1316 when remittances are included. The values of household assets (such as furniture and appliances) and the household dwellings are included to determine the value of the total assets the households own and the household wealth, but they are not analysed in any detail beyond that.

About 94% (537 households) of the surveyed households own some form of non-farm assets (or assets inside the house). This is the highest proportion of asset owners out of all the asset categories, indicating that many more households own non-farm assets for house use than farm assets for farm use.

The overall picture of the value of movable household assets (farm, livestock and house assets) characterises the survey area as one with very few "relatively well-to-do" households and a majority of poor households. The results show that 80% of the

households own less than R20 000 worth of assets. The ten richest households (1.8% of the survey sample) own 27.2% of the total value of movable household assets (farm, house and livestock), while the poorest 50% of households own less than a percent of the total asset base, emphasising inequality in asset distribution. Combining the values for land, dwellings and livestock to estimate total wealth improves the situation slightly. The mean value of total assets (or wealth) is R56 588 per household or R9 010 per capita with 70% of the households with a total wealth holding of less than R64 000. It seems from these estimates that total wealth ownership is more equal than the movable assets of the households.

6.5.5   Household income

In order to complete the picture of the economic standing of the households this section presents the various income sources of the areas and the households surveyed. The main household sources of income are local salaries and wages, pensions, farm income and remittances; each source is discussed**.** Appendix 9 provides a summary of sources of household income and their distribution

According to Eastwood et al, (2006), most households in the study areas rely, to a great extent on just one of the three main income sources, namely, local salaries and wages, remittances or pension, which they term 'a three way split of income source specialisation of livelihood. The team, working with the same data on which this thesis is based, found out that while 32 per cent of household dependent solely on migrant remittances (in cash and in kind), 27 percent of households are dependent on pension and 39 per cent are dependent on income generated locally from either salaries and wages or from the sale of farm produce. Similarly, the results of this study indicate that for each region and sub region there is a dominant source of income; for example, 54.6 per cent of households in Western region receive agricultural income of varying amounts, while in the Central region about 15 per cent of the household receive income from pension.   However, household income is reasonably diversified.

6.5.5.1 Salaries and Wages

Almost half, (48.3%) of the households, receive a contribution from resident household members who earn a salary or wage. Many of these commuting residents work in the mines or farms located close to the different villages. The mean contribution received by individual recipient households is R17 227 (Std Deviation = 31 607.54) per annum. There are a number of respondents who reported annual salaries of R336 000, which is partly responsible for the high standard deviation. In 71% of the households, only one member of the household made cash contributions to the household[22]..

6.5.5.2 Pensions

Contributions to the household income also come from resident pensioners. There are 217 (37.9%) households that receive contributions from the pensioners who, in most cases, get a monthly pension amount of R550 (in 1999). The average annual contribution of pensions per household (in 1999) was R7 701 with a standard deviation of 336.95. Moreover, 13% of the households received contributions from both wage earnings and pensions. Taking the two sources of income flows into consideration, 73% of the households received a contribution from either a resident wage earner or a pensioner amounting to an annual average of R15 324. This equates to an average of R203.50 per person per month or roughly $100 (purchasing parity dollars) per person per month ($3/day). This presents only cash contributions to the households from wages and pensions and excludes other non-cash incomes such as own consumption of agricultural produce and those proportions of the wage or pension income that were not added to the household's income pool.

---

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

6.5.5.3 Farm income (agricultural produce sales and other farm sources)

Besides the contribution from the resident pensioners and wage employees, the households also earn income from other sources, such as selling agricultural and livestock produce and renting out equipment and accommodation. Income from agricultural activities is very limited as Table 6.13 clearly illustrates. Only 16.4% of households earn an income through the sales of crops and another 17.1% sold either live animals or animal products. However, an additional 34.2% of the households produced food crops for subsistence purposes. This again confirms the limited contribution of agriculture to the cash income of these households; this is not surprising given the harsh circumstances and poor support services under which rural smallholders try to farm. However, one would expect that household income would be supplemented by own consumption of staple foods, as is usually the case in smallholder farming.

Table 6.13:   Farm-based sources of household income

Source	% of households	Minimum contribution	Maximum contribution	Mean income/year/hh#	Std Dev
	(n = 573)	R	R		
Crop sales	16.10%	100	15 000	R930	1706
Renting out oxen, plough and equipment	2.80%	200	7 000	R3 418	1 995.4
Sale of manure or compost	0.70%	104	240	R146	63.1
Sale of livestock	16.10%	80	24 000	R3 454	4 446.7
Sale of livestock products	0.70%	60	500	R290	197.7
Subsistence production	33.60%	0	2 570	R 532	363.7
Overall from farm	38.50%	107	30 476	R2 621	4 277.6

Source: Survey results, 2000
Mean of those households earning income from the source.

It is surprising that the survey findings indicate that almost 57.2% of the households interviewed in the 24 villages did not grow any crops, including staple crops such as maize. Only five (0.8%) households indicated that they had grown enough food staple crops with a surplus for sale. Some 42% of households managed to grow food crops to satisfy only part of their household staple food needs ranging from more than half

to very little. This implies dependency on external sources for food and household food security. In their findings in a rural household food security study in some selected districts of Limpopo, Mekuria and Moletsane (1996) conclude that food security in that province is highly dependent on salaries, wages, pensions and remittances.

6.5.5.4 Remittances from migrant members [23]

Another very important source of household income is remittances from non-resident migrant members of the households. More details on household remittances and their relationship with inequality are discussed Chapter 8 but, for purposes of presenting a complete household income structure, it is necessary to include the income contributed by the migrant household members to the total household income. Remittances, both in cash and in kind, make a difference to the total household income.

A total of 295 households (51.5%) reported to have migrant members older than 15 years; 27.2% of the households had one migrant each, while 24.3% had two or more migrants contributing on average R7 389 in cash per year. Many of the migrant workers also brought home goods ranging from R74 to as much as R26 000 per annum. Taking the in-kind contribution into consideration, total migrant remittances are, on average, valued at R14 342 per annum per household. The cash contribution ranges from R200 to R73 600 per annum. These are quite substantial amounts, especially to households who have little or no income from other sources. There are 278 (48.5%) of the households who do not have any migrants. A summary of the migrants' contribution to the household income is presented in Table 6.14.

---

[23] *In 12 households several attempts to interview the migrants failed, thus those 12 households were dropped out of the sample. For consistency the sample size (n) was reduced from 585 to 573 households for whom most usable income data from all sources were recorded.*

Table 6. 14   Migrants' contributions to household income (N=573)

# of households with income contribution from migrants	295 (51.4% of N)
Mean cash contribution (annual)	R7 389
# of households with one migrant worker	156 (27.2% of N)
# of households with two migrant workers	70 (12.2% of N)
# of households with three migrant workers	43 (7.5% of N)
# of households with more than three migrant workers	26 (4.6% of N)
Value of goods brought home by migrant workers (annual)	R74 – R26 000
Mean total migrant remittances (including 'in-kind' contributions) annually	R14 156
Mean per capita total remittances (annual)	R2 125
Range of mean per capita total remittances	R38 – R19 730
% of hh which receive > R800 per resident per annum	25%
% of hh which receive > R2600 per resident per annum	75%
Standard Deviation of average per capita total remittances	2337.008

Source: Survey results, 2000

The overall average share of remittances in household income among households with migrants is 25.64%. The contribution of remittances to households income first increases with increasing land holdings, reaches a maximum (27.6%) at land holding between 2-4 hectares then starts to fall; it reaches a minimum of 3.4 per cent at the landholding of over 8 hectares; as indicated in Table 6.14. These findings strongly suggest an inverse U relationship for landed households between land per household and the remittance share in income as shown in Figure 6.4. Households with 0.5 - 4 hectare land-holding have the highest share of remittances in household income. Surprisingly, the 23 households who have the least land (less than 0.5 hectare, 17 households of whom own only up to 0.05hectare), also have low percentage share of remittances in household income (11%), probably received in kind rather than in cash remittances. It is possible that some of the landless households probably can not afford the cost of migration and depend mainly on pensions; consequently, they are among the very poor households with very little income.

The share of remittances in household income becomes lower at highest land holdings; it drops to a mere 3.4% for households with more than 8 hectares. At the same time, it is surprising that the households in the highest landholding bracket have the lowest share (1.25%) of agricultural income in household income, which implies that they are dependent on other income sources, most probably, salaries and wages

144

and or non farm enterprises. Table 6.15 shows that there is an inverse U relationship for landed households between land per household and remittance share in household income. no clear cut relationship between household land-holding and the share of remittances in the household income.

Table 6.15: Distribution of land ownership and share of remittance in household income (N 320 = landed households)

Land size category (ha)	# of Household in category (frequency)	Percentage in category (%)	Cumulative percentage (%)	Average land size in category (ha)	Share of remittances in household income (%)	Share of agric. income in household income (%)
< 0.5	23	7.19	7.19	0.17	11.0	0.60
0.5 to 1	49	17.5	24.69	0.83	25.60	6.58
1 to 2	83	25.94	50.63	1.58	25.44	11.09
2 to 4	107	33.44	84.07	2.82	27.64	7.55
4 to 6	36	11.25	95.32	4.32	14.12	3.54
6 to 8	9	2.81	98.13	6.28	14.81	10.40
> 8	6	1.87	100	9.97	3.4	1.25
Grand Total	320	100		average 2.24	25.64	

In value terms, the landless households in all the three regions receive higher remittances than the landed households. There are several ways of interpreting this finding:

- If landless people are among the poorer income levels, then remittances may smoothen out income inequality in the villages or areas where the recipients of remittances are located.

- If recipients of remittances will spend remittance cash on goods and services made with low unskilled wage earners and or labour intensive produced commodities, multiplier spending may further lower inequality within the communities where they are spent.

- Recipients of remittances may be able to invest some of the remittance income into some form of small business or utilise some of the in-kind remittances (such as sewing machine, baking oven, etc) generate more some income; this is another way of spreading the multiplier effect in the communities they are located in as
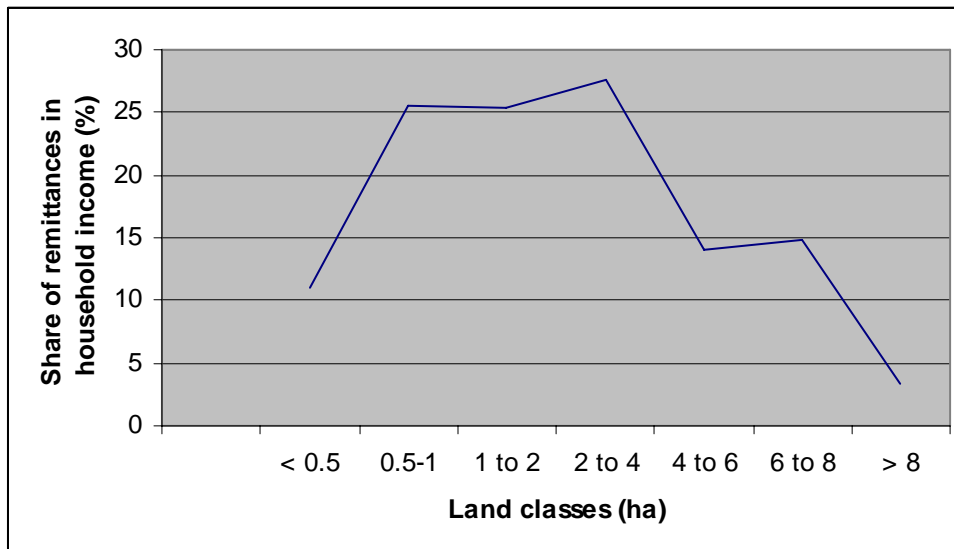
Source: Survey results, 2000

Figure 6.4:   **Share of remittances in household income and land per household**

they may be able to employ casual labour, for instance for sewing school uniforms.

- On the negative note, if recipients of remittances are too old, too young, too sickly or simply too lazy to use the remittance income productively, chances are that remittance income may lead to land abandonment, reducing the benefits to recipients.

- If remittances would lead to a reduction in rural inequality would that lead to more migration? Most likely yes; the good experiences by the recipients will be shared throughout the community. This may be associated with more able bodied persons leaving the community in search of opportunities away from home. Such actions may lead to depletion of agricultural labour in the rural areas. During the survey, a number of households had only elderly members taking care of grand children, the old and the sick. In such circumstances household choirs which need strong manpower (such as bush clearing, ploughing, etc) sometimes lag behind because of lack of appropriate manpower.

6.5.5.5 Total household income

The aggregate of all the sources of household income gives a picture of the total household income. Figure 6.5 and Tables 6.16 and 6.17 present a summary of the different sources of household income by sub-regions and for the entire surveyed area and their contributions to the total household income. On average, agriculture (including subsistence production) contributes a mere R3 322 to total household income while local wage and salary income amounts to a substantial average per annum of almost R17 289, which is by far the dominant source of income followed by the migrant remittances (cash and goods), which average R14 156 per annum. Pension is another very important source of income to 38% of the households. Figure 6.5 shows the percentage contribution by income sources.
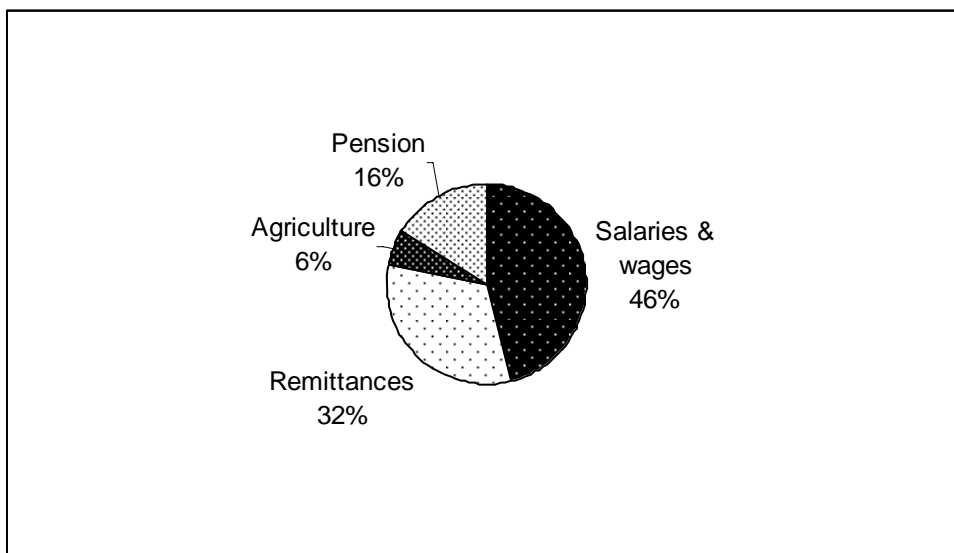
Figure 6. 5: **Contribution of different sources of income to total Household income**

The disaggregated annual household income by the surveyed sub-regions shows the importance of the different sources of income in each sub-region. For all income sources, the highest percentage of households receiving income is in the Western sub-region. The sub-region includes Shongwane village, which was intensively surveyed for its economic activities because of the high prevalence of agriculture and other non-farming activities. On the basis of actual values of the different sources of household income, salaries and wages (R17 289 per annum), followed by remittances

(R14 156 per annum), are the two main sources of household income. The highest remittance contribution (in Rand terms) is received in three sub-regions, namely, Praktiseer (R21 408 per annum), Schoonord (R19 092 per annum) and Western (R12 265 per annum). Praktiseer also has the highest proportion of landless households. Therefore, it is true that more migrants come from areas with either no land or those with small landholdings. This, however, does not necessarily mean that the area experiences less inequality than the other areas, unless the migrants are from the bottom deciles of the population.

Table 6. 16:   Annual household income in surveyed sub-regions

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

Source: Calculated from survey data

Bochum has more households receiving pension income (19.8%) and salaries and wages (11.2%) than those receiving remittances (10.5%). The picture is made clearer by looking at the percentage of households in the different sub-regions receiving income from the different sources. A summary of the number and percentage of households receiving income from the different sources for the six sub- regions surveyed is presented in Table 6.17.

The figures in Table 6.17 imply that 24% of households in Zebediela and almost 20% in Seshego have no income at all (or did not report having any). The Western sub-region has the highest proportion (37.3%) of households receiving migrant cash remittances but the majority (54.6%) of the households in the Western region receive income from agricultural production followed by 23.3% of households in

Schoonoord. The other sub-region with a substantial proportion of households receiving remittances is Praktiseer (18.4%). Seshego has the lowest proportion (7.9%) of households receiving remittances. Another important observation is that a high proportion of households in the Central region, in Bochum and Seshego, depend on pensions. In each sub-region household income is diversified even though there is a dominant income source from which a significant number of the households their receive income.

Table 6. 17:   Households reporting income from source by sub-regions

Sources of income	Sub-Region						Total N=513
	Bochum (n=93)	Seshego (n=62)	Schoonoord (n=84)	Praktiseer (n=137)	Zebediela (n=54)	Western (n=143)	
Salaries & wages	31 (11.2%)	25 (9.0%)	29 (10.5%)	80 (28.9)	11 (4.0%)	101 (36.5%)	**277**
Cash remittances	24 (10.6)	18 (8.0%)	35 (15.5%)	42 (18.6%)	23 (10.2)	84 (37.2%)	**226**
Remittances in kind	22 (10.3%)	15 (7.0%)	32 (15.0%)	40 (18.8%)	22 (10.3%)	82 (10.3%)	**213**
Remittances (cash + goods)	**24 (10.5%)**	**18 (7.9%)**	**36 (15.8%)**	**42 (18.4%)**	**23 (10.1%)**	**85 (37.3%)**	**228**
Pension contributions	43 (19.8%)	22 (10.1%)	33 (15.2%)	39 (18.0%)	19 (8.8%)	61 (28.1%)	**217**
Agricultural income incl. subsistence	6 (2.6%)	17 (7.5%)	53 (23.3%)	25 (11.0%)	2 (0.9%)	124 (54.6%)	**227**
Total number of households reporting income*	78 (15.2)	50 (9.7%)	77 (15.0%)	126 (24.6%)	41 (8.0%)	141 (27.5%)	**513 (100%)**
% of total Hh. sampled	**83.9%**	**80.6%**	**91.7%**	**92.0%**	**75.9%**	**98.6%**	
% of total Hh. sampled without income	16.1%	19.4%	9%	8%	24.1%	1.4%	**10.5%**

Total count and percentages for sub-regions are against 513 total households, who reported having income. The percentages (in brackets) are against the total number of households in each sub-region.

6.6   EXTENT OF MIGRATION IN LIMPOPO

In order to identify migration, the household questionnaire asked the respondent, usually the head of the household, whether anybody in the household had migrated. Migrants were defined in a broad sense, as persons considered to be members of the household but not usually in residence; persons supporting the household who are in regular contact with it but who currently live, work and/or study away from home. This implies that migration, as defined, did not cover activities and income by commuters (but their activities are registered within the overall household income). In cases where the migrant(s) was not at home, the researchers went back to interview the migrant(s) at a later stage when he or she had returned. In twelve migrant households the migrants were not available to be interviewed even during revisits; these households are left out of the migration analysis. There were no significant

differences in the replies obtained from the head of the households and those from the migrants themselves (except on questions relating to the impact of remittances, as discussed later in Chapter 8).

6.6.1 Extent of migration by sub-regions and regions

Only 551 persons, nearly 13% of the total population covered in the survey, are migrants. A total of 295 households (51.5%) reported that they have non-residents members; the Western sub-region has the highest proportion of it households reporting migrants (65%) followed by Zebediela (61.1%). The proportion of households with migrants in the Bochum sub-region, which was initially thought to have higher incidences of migration than the other sub-regions, is only 40.9%, which is on the lower side. The distribution of migrants by the six sub regions and three regions is presented in Table 6.18.

Table 6.18:   Households with migrant by sub-regions and regions

Sub-regions	Households without migrants: count & (%)	Households with migrants: count & (%)	n
Bochum	55 (59.1)	38 (40.9)	93
Seshego	37 (59.7)	25 (40.3)	62
Schoonoord	36 (42.9)	48 (57.1)	84
Prakttiseer	79 (57.7)	58 (42.3)	137
Zebediela	21 (38.9)	33 (61.1)	54
Western	50 (35.0)	93 (65.0)	143
Total	278 (48.5)	295 (51.5)	573
Regions			
Central	92 (59.4)	63 (40.6)	155
Southern	136 (49.5)	139 (50.5)	275
Western	50 (35.0)	93 (65.0)	143
Total	**278(48.5)**	**295 (51.5)**	**573**

In most villages, migrants were available at home and were interviewed during the first visit, which was around Christmas and shortly after New Year, 1999. A follow up visit was done at Easter time, 2000 to capture information from migrants. Still there were 12 households whose migrant members were not available even after a third visit. These were omitted from the analysis for this study. The number of migrants each household has is different, but over half (53%) of the migrant

households have one migrant member, while 38.3% of migrant households have two or three migrants.

6.6.2   Characteristics of migrants

Migrants in Limpopo have similar characteristics as described in the literature review (section 2.2.2.1): predominantly young men moving primarily to find jobs. However, push factors like unproductive land, scarcity of resources and education are also given as motivation for migration. The majority of non-residents move away from home in search of work. The first period of migration took place between the ages of 15 – 30; the mean age of first migration is 23.8 years and a mode of 20 years. Of the 286 migrants who indicated their age, 250 (87.4%) were in the 15 – 30 years age group, 3.1 per cent were below 15 years (mainly migrating for education purposes) and 9.4 per cent were above 30 years of age.

Since the survey did not obtain information on individual migrants, maximum and minimum education levels of the migrant households were compared (as a proxy for migrant education levels) to the sampled population. The results show that the majority (70.7%) of the households in the total sample attained secondary school but only 67.5% of the migrant households attained the same level. Almost a similar proportion (6.1% and 6.3% respectively) obtained diploma level education and 9.1% of the sample households and 10.4% of migrant households do not have formal education but had undergone practical skills training. These findings do not necessarily dispute the experiences from the literature, but imply that education attainment among the surveyed population is almost homogeneous, regardless of the presence or absence of migration in households.

6.6.3   Migration decisions

The heads of the households as well as the migrants themselves were asked to indicate the reasons for migration in addition to seeking for employment. The list included looking for better job opportunities, staying with a family member who has a job in

the city and some times work and education were combined; the reasons are summarised in Table 6.19.

Table 6.19:   Reasons for migration

Reasons for migration	
Reason	**% of non-residents**
Work	51.2%
Education	34.5%
Mix(work, education & other)	14.3%

In line with the new economics of labour migration (NELM, discussed in Chapter 3, section 3.5.3) the decision to migrate is in many cases made by the household for the benefit of the household rather than by and for the migrant(s) alone (Stark and Bloom, 1985; Singh et al. 1986; Stark, 1991). However, this does not imply that the migrant is forced to migrate; in most cases the migrant may take the lead in such decisions, especially if he or she is the head of the household.

The results from Limpopo survey indicate that the majority (63.4%) of non-residents make the decision to migrate; for the remaining 36.6% parents, husbands, wives or partners and other relatives influence the decision or they take the decision jointly.

6.6.3.1 Period of absence

During the period 1995 to 1999, the majority of the non-residents were involved in long-term migration. However, the percentage decreased from 92.0% in 1995 to 74.1% in 1999, with an average of 85.3% over the five years. This could mean that employers, such as the mine houses and commercial farms, have improved working conditions for the migrant workers to go home after shorter periods of time. It could also mean that more migrant workers are either self-employed or they are in the formal sector where employees take leave at least once a year. The second most common type of migration was school attendance, the percentage of which increased over the years from 1.6% in 1995 to 11.7% in 1999. The availability of better education opportunities in the towns and cities are likely to continue to attract young people from the rural areas. The third type of migration was the occasional activities

that do not occur each year. The percentage is more or less the same over the five-year period at 4.1%.

6.6.3.2 Affinity of migrant to households left behind

The migration pattern tends to be 'circular'. Most migrants (96.9%) maintain close links with the areas from which they migrated, intend to return and usually maintain their assets and rights to use assets, in line with the NELM theory. Three-quarters of migrants from Limpopo do not intend to settle permanently elsewhere other than home (the majority hoped to resettle in the village).[24]

Most migration movements involved activities throughout the year. The period of the most recent migration of non-residents was fairly long. The mean period of absence is 9.4 months, with a median and mode at 10 months and a maximum of 12 months. The majority (32.7%) of non-residents were away from home for between 10 - 11 months but the time period of 8 -10 months absence of non-residents was also common. Responses about periods of absence five years before 1999 were very weak since most indicated periods of 10 - 11 months for all migrants. However, most non-residents usually stay away from home for ten months and return home only for the long summer (Christmas) holidays and short Easter break.

Despite the caution by Cross et al. (1998), there is evidence from the survey findings to show that, while being away from home, 96.9% of the non-residents kept contact through visits or by sending remittances. Also, 96% of the non-residents did not lose their right to use the household assets, including land.

---

[24]   *Cross et al. (1998) have cautioned against taking for granted statements made by migrants regarding returning home. The Eastern Seaboard of South Africa study exposed both permanent migration reflected by residential settlement of a migrant (and his/her family) as well as temporal migration for work. In a process termed "one way gravity flow" the debate regarding circulatory migration in South Africa has indicated that as urbanisation takes place, rural people who migrate, especially to urban areas, end up settling permanently in their new homes. In a study of Xhosa migrants from the Eastern Cape to the Western Cape, Bekker (1999) conclude that even though migrants express intentions to return home, this expectation weakens over time, more so if the children initially left behind join their parents.*

The results indicate further that on the average 63.8% of the migrants would not want to settle elsewhere other than their current households. The majority, 76.1% of the migrants do not intend to settle permanently elsewhere other than home. This validates the NELM rationale (Taylor et al., 1996) that under normal circumstances individuals do not sever ties with their source households to which they still belong. Continuing interactions between migrants and the rural households suggest that a household model would be more appropriate than an individual -level model of migration decisions. While 22.4% would only want to settle back home after retirement, 36.7% would like to do so after a few more years of work; only 8.0% wanted to settle back home as soon as possible and 3.6% never want to go back to their original homes.

6.6.4   Migrants' economic activities

Table 6.20 summarises the economic activities migrants were involved in away from home. The highest proportion of migrants' activities (36.6%) is performed within the industrial sector followed by the tertiary sector activities (31.2%). The majority of migrants (34.4%) were engaged in formal or informal economic activities in the industrial sector (including mining and agro-processing); a further 29% were employed in the tertiary sector. Only 3% were employed in primary agriculture, most probably as labourers on nearby commercial farms. This figure is lower than expected, may be because some labourers commute between the commercial farms where they work and their homes, thus they were not counted as migrants. By our definition of a migrant, being someone who does not share normal daily meals with his / her family on a daily regular basis, does not consider commuting casual labourers as migrants. Likewise, many residents who work on shops and other business establishments in their vicinity as commuting casual labourers responded to this question as non migrants.

Table 6.20: Migrant current economic activity

Activity	Frequency	%	Cumulative%
Agriculture	13	3	3
Cattle farming	3	0.7	3.7
Industry	150	34.4	38.1
Tertiary services	126	28.9	67.0
Civil service	8	1.8	68.8
None or do not work	94	21.6	90.4
Other	5	1.1	91.5
No response	37	8.5	100
Total	**436**	**100**	

21.6% of migrants were not gainfully employed, but were either seeking for work or involved in education away from Lebowa.

The difference between the sub-regions in the concentration of economic activities for migrants is presented in Table 6.21. Migrants from the Western sub-region are almost divided equally between the industrial (40.5%) and tertiary sectors 46.6%, with none in the civil service. Migrants from Bochum (72%), Zebediela (63.5%) and Seshego (55.6%) rely heavily on the industrial and mining sector. Each of the six sub-regions has only a small proportion of migrants employed in the agricultural or livestock sector, with Bochum leading (16%).

Table 6.21: Activity of migrants per region in the Limpopo Province- South Africa

	Agric	Cattle	Industry/Mining	Tertiary	Civils	None	Other
Bochum	16%	-	72%	-	12%	-	-
Seshego	5.5%	2.8%	55.6%	-	5.5%	27.8%	2.8%
Praktiseer	-	-	3.8%	56.4%	2.6%	37.2%	-
Schoonord	4.1%	1.4%	21.9%	31.5%	5.5%	31.5%	4.1%
Zebediela	-	-	63.5%	-	-	36.5%	-
Western	2.3%	0.6%	40.5%	40.5%	-	14.3%	1.8%

Note: Some migrants indicated more than one activity, thus, the total percentage indicate the proportion of activities in different sectors of the economy and will not add up.

In addition to the sectoral economic activities, migrants are a significant force behind the rapid growth of the informal sector in South Africa (known as townships), which harbours many migrants in transit to towns and cities but provides income and employment for many migrants. According to Welch (2000), the existence of informal sector employment lowers the urban unemployment rate, thus raising the probability of finding urban wage employment (therefore, shortening the waiting period); but by so doing results in an increase in the migration rate to the urban areas.

6.6.5 Effect of migration on family labour

The negative effect on family and agricultural labour caused by rural out-migration has been well researched and documented (Renis & Fei, 1961; Oberai & Singh, 1983; Taylor et al., 1996, among others) and was discussed fully in Chapter 3. Migration does not only reduce family labour but also affects the allocation of tasks among members of the households. In this respect the questionnaire asked respondents about the replacement labour and the people taking over the household tasks from the non-resident.

Table 6.22:   Effect of migration on family responsibilities

Household has enough people to take over tasks (n =292)		Who took over migrant's tasks? (n =286)	
Answer	# & (%) of non-residents	Answer	% of non-residents
Yes, all the time	147 (50.3)	Head of household's wife	7.4
Yes, usually	20 (6.9)	Son or daughter	16.1
Usually not	26 (8.9)	Grandchild	8.6
Hardly ever	99 (31.9)	Nobody	30.3
Total	292 (100)	Head of household's wife and children	5.2
		Various	6.8
		No tasks	5.2

Over half of the migrant households (50.3%) had enough people to take over the migrants' tasks. The responses on the effect of migration on family labour are in line with the NELM view that migration decisions take place within a family or household context and that the household members left behind reorganise themselves to accommodate the departed members tasks. For their part, the migrants compensate for their absence by sending home remittances both in cash and in kind. The survey

findings indicate that 95% of the non-residents keep in contact with their households left behind in the rural areas, through visits or by sending remittances. Only 15.3% of the migrant households indicated that they do not receive any remittances at all; the rest receive remittances at varying degrees, some frequently (33.2%), others sometimes (38.3%) and some rarely (12.5%).

6.6.6 Effect of migration on household income

The contribution of migrant remittances to household income was adequately discussed in section 6.5.5.4 and will not be repeated here; Appendix 7 also gives a summary of the different sources of income by percentiles and clearly indicates the significant contribution of migration remittances to the total income of the households. A more detailed analysis of the effect of migration remittances is presented in Chapter 8. It suffices to say that migrant remittances, in both cash and in kind, contribute significantly to household income of those who receive them.

6.7 DISTINCTION BETWEEN HOUSEHOLDS WITH AND WITHOUT MIGRANTS

6.7.1 Are households with and without migrants significantly different?

One of the exploratory analyses applied to the data is a special type of Analysis of Variance (ANOVA) test known as the *t* Test discussed in section 5.7.1. It is a test to assess the statistical significance of the difference between two sample means for a single dependent variable In this study we assessed the statistical difference between the means of households with migrants and those without migrants. The single dependent variable is the presence / absence of migration in households. The independent variables are categorised into three groups: the social aspects, assets and income. The *t* test was used to examine the variability among the sample means of observation of key variables relative to the spread of the observations within households with and without migrants. The null hypothesis is that the samples of values come from populations with equal means. Where the *t* value is sufficiently large, then we say that the difference was not due to sampling variability, but

represents a true difference (Hair, et al, 1998). If the absolute value of the t statistic is greater than the critical value of the t statistic the null hypothesis of no difference between households with and without migrants is rejected. The Type 1 error level, denoted as α or as significance level, indicates the probability level that the it will be accepted that the group means are different when in fact they are not. The closer α is to zero the more significant it is, implying that the group means are actually different and the difference is not due to sampling error. All the computations were done using the SPSS package. The results of the t Test are discussed below and presented in Appendix 11.

The variables that indicate strong significant differences between households without migrants and those with migrants are discussed below:

- Household size (number of people in the household, both residents and non residents; the number of adults 15 years old and older (that is members of the household of working age); children adult ratio as well as the number of male and female number of household members were among the social aspects for which the means of households with migrants and those without migrants showed significant differences. Migrant households were significantly bigger in size and had more adults of working age than those without migrants. In all cases α was significant at the 0.01 level (or 99%); This implies that large families have more flexibility regarding sending some members of the household to seek for work outside their home, while the remaining people may take over the migrants' responsibilities. It could also mean that the presence of migrants influence the families to have bigger families to compensate for labour lost to migration.

- Some asset categories measured in adult equivalent showed very strong significant difference between means of households with migrants and those without migrants, they include: AE total size of property in hectare (at one per cent significant level) and the AE value of household land (at 5 per cent significance level). The rest of the asset categories are not significant (AE value of livestock, AE in house assets - such as television) as well as farm assets and livestock. However, households with migrants have higher means of total values of livestock

as well as the mean adult equivalent value of all livestock, even though the means are not significantly different. Households with migrants also have higher means for household income (including remittances) and wealth, but because the families are relatively bigger the per capita and adult equivalent values of wealth are smaller than for households without migrants. Though not proven at this stage, the migration remittances may contribute to higher means for household income among households with migrants.

- The means of some income categories are in the two groups are significantly different; for instance AE pension (at one per cent level of significance), migrant households depend less on pensions as the mean AE pension is significantly lower than in households without migrants. AE household income including remittances is also significantly different within the two groups (at 10 per cent level of significance). Surprisingly, the AE agricultural income and subsistence is higher among migrant households. This could be because some remittances, especially in kind, may come in a form of agricultural inputs.

6.7.2 Remittances and their uses

The value of remittances and goods sent or brought to the household by the migrants were discussed earlier in section *6.5.5.4*. Here we present some basic facts to complete the overview of migration.[25] In half of the cases, the migrant also received support from the household when necessary. The migrants, thus, usually remain part of the extended household.

Virtually all of the cash remittances received by the household were used for food-related expenditure. However, some of it was used to pay for other basic needs such as clothing, education and health bills, and in almost all cases, the whole household was said to benefit. There are many combinations of the basic items acquired using

---

[25] *Different respondents have different views about the actual size of the remittance contribution to the household. In the Limpopo case study, it was found that in some regions the migrant overstated his or her contribution to the household while in other regions the migrant understated his or her contribution as compared to the perception of the head of household.*

cash remittances but the main ones involving the majority of the household members are summarised in Table 6.23. An interesting finding to note is that a negligible proportion of households indicated use of cash remittances for buying land or purchasing farm inputs and tools or off-farm investments. This could be due to the inadequate amount of remittance income sent to them, only sufficing for expenditure on items basic; it could also be a function of the complicated land tenure system, which does not facilitate easy land transactions.

For 49% of the households the amount sent or brought home by the non-residents was almost the same as in previous years; 25% of the respondents said it was more than before while 25.5% said the migrants brought less than the preceding year. It is important to note that remittances free up other household income, which can be used to buy food items and other necessities such as productive inputs for economic activities. Thus, there are some fungibility issues, to be explored; for instance, migrants' income remitted back to their households of origin may provide households with new funds to invest in agricultural and non-agricultural production and enterprises. Presence of migration may also offer rural families with a new source of income security, if the correlation between remittances and farm income is low. According to Taylor, (2001), by contributing to family income, remittances increase the demand for normal goods, including some locally produced goods by poorer households. In this way, migration creates expenditure linkages that generate local and regional income multipliers (discussed in Chapter1, section 1.3.4) and transmit impacts of remittances from migrants to non- migrant households. These remittances may also increase families demand for leisure, which in perfect labour market may discourage production or lead to abandonment of the farms. Fungibility issues, which the survey did not explore in-depth could be an area for further research in future

Table 6.23:   Use of cash remittances

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

The main beneficiary of remittances, in most cases was indicated as the whole family, 70.6%, the head of the household, 15.9%, the head of the household's partner, 8% and 15.8% indicated other beneficiaries (sister, mother, child, wife, brother and children). In return for the financial support to their households, non-residents received support from their household members. On average 58.4% of the households with non-residents rendered support to their non-resident member. The majority of households were of the opinion that migration improves the financial position of the household. Only 12.6% of households viewed migration in a negative light arguing that it made the household worse off. In these cases the reasons for negativity could be varied: either the migrant's departure left a void in the household without anybody to take over her / his responsibilities, the migrant is a delinquent who does not send much home or the migrant is a dependent (e.g., a student) who for the time being is not likely to benefit the family financially and other wise.

6.8   SUMMARY

The chapter presented the empirical findings from the household survey of 24 villages in Limpopo regarding land and other assets, household income and migration. Incidences of migration were high in all the villages and migrants come from all income and assets categories. Similarly, the amounts of remittances are extremely varied. Contrary to expectations, there are higher incidences of migration from the Western region, which is relatively better endowed with land and other rural assets than the other two regions. It may be true that the wealthy are in a better position to pay the expenses of moving (for work as well as for acquiring education) which makes it easier for them to find work elsewhere. On the other hand, it is possible that migration could have generated the wealth for the household. There is a significant proportion of the surveyed households (12.6%) who are of the opinion that migration made the households worse off by extracting able bodied members of the households out of the family labour pool.

It was established that the migrants maintain close links with their households, and contribute significantly to household income. However, the findings project an artificial picture that agriculture is of little importance; this has to be analysed further before any conclusions can be made. Landless households tend to receive the highest

in kind remittances income. Nevertheless, even if total remittances are lower for poorer households, they are significant as a source of income and livelihood from their point of view, and may help to alleviate poverty and decrease inequality. Both income and asset size and distribution findings already indicate a link between inequality and out-migration. We also found a link between household size and migration incidences. In Chapters 7 and 8 more rigorous analyses are applied to confirm relationships and cause and effect between these important variables of the study.

CHAPTER 7
RURAL ASSET INEQUALITY AND MIGRATION

7.1   INTRODUCTION

In Chapter 6 the descriptive results, the characteristics of the individual migrants and of the participating households were presented. The *t*- test, as a special Analysis of Variance (ANOVA) was applied as an exploratory analysis to establish whether there is significant difference in the means of important variables of the study between households with migrants and those without migrants.

The findings in the Chapter 6 also enable us to make certain observations regarding the three regions of the study and migration:

- Household in the Western region have the highest mean annual household income and per capita income. The majority (54.6 per cent) of the households in this region depend on dry land agricultural production of potatoes, citrus, maize and other crops; borehole irrigation is also practiced where water is adequate. Extensive livestock production is dominant, since the area is dry but with adequate land. There are white commercial farmers who own game and beef ranches. Other forms of farm and non farm production are also possible since the area is close to the city of Polokwane, which provides a reliable market. At the same time over 65 per cent of the households have migrants, out of whom 37 per cent of the households receive remittances, Western Region therefore can be said to be relatively better off than the other two regions. Migrants from this area most likely access high paying opportunities, since labour from this region can choose from the different economic options; they could also be migrating for better facilities in the cities or to high profile jobs that are better than the local economic opportunities.

- On the other hand, the Central Region, composed of Bochum and Seshego, perform minimal agricultural activities. In both sub-regions there is a high proportion of households (19.8% and 10.1% respectively) depends on pension

income. However, since this region is not too far from Polokwane and the road infrastructure is reasonably good, there is a strong pull factor to the cities (Polokwane and Pretoria) to look for wage employment, schools, and other modern facilities. The proportion of households receiving income from salaries and wages is 11.2% and 9% respectively. Even though the migration rate is not as high as was initially anticipated at the time of the survey, the propensity to migrate from this area is quite high both from the pull and push point of view.

- The Southern Region, consisting of Schoonord, Praktiseer and Zebediela sub-regions, has a mixed economy. While Praktiseer is characterised by 83.2 per cent of its households having no land at all, it has a vibrant wage / salary earning community (28.9 per cent of households) coupled with 18.8 per cent of the households receiving remittances and another 18 per cent receiving pension. Praktiseer received the highest amount of remittances (R21, 408) in 1999. Schoonord, on the other hand, relies more on salaries, wages and remittances, than on agricultural production. Zebediela has a staggering 64.8 per cent of its households without any land at all. A significant proportion of the households in this area are poor as 24 per cent of them reported to have no income at all. Only 10 per cent of the households in Zebediela receive remittances and another 8.8 per cent receive pension income. The implication, in this case, is that people are too poor to even send out members of the households to work outside the home, most likely due to the costs of migration. Those who are resident members may be a failing to find work in the locality. That means there are high levels of unemployment in this rural area. The Southern region is quite remote and poor compared to the Western and Central regions. Migration from this region could increase in future if constraints of accessibility were solved. Chances are that more people would like to venture out to look for jobs or change to better jobs, but the remoteness of the area is prohibitive.

Eastwood et al, (2006), found out that the there was a negative association between external and local incomes in Limpopo as there was higher unemployment rates in pension and remittance receiving households. They further established that the male unemployment rates in pension and remittance receiving households are quite high (in the range of 75-78 per cent). They concluded that the presence of an external income

source may reduce the incentive for members of the households receiving such transfer payments to seek for work.

In this chapter, the first key hypothesis of the thesis is analysed. It states that "*the size and distribution of household landholdings and productive farm and non-farm assets influence household behaviour regarding migration*". The analysis in this chapter will prove or disapprove whether inequality of land and productive assets leads to higher rates of out migration as was indicated by the literature review.

In Section 7.2 the presence of asset inequality is analysed using the Gini coefficient measure. Gini coefficients for different categories of assets, namely land, livestock, other farm assets, non-farm in-house assets and household income are computed to establish the level of inequality in asset and income distribution. For purposes of this study, inequality is analysed in terms of the size and distribution of assets. The values, rather than volumes and quantities of the assets are used in the analysis to maintain consistency. The investigation further establishes whether there is any association between high inequality (exhibited by high Gini coefficients) and the propensity to migrate. Using the model specified in Chapter 4, the causality relationships between asset inequalities and rural out migration is tested in Section 7.3 using. Section 7.4 gives a summary of the chapter.

7.2   ESTIMATION STRATEGY AND EMPIRICAL ANALYSIS OF RURAL HOUSEHOLD ASSETS

The empirical analysis carried out in this chapter is aimed at answering the following questions: What determines the household's decision to participate in the migration process? In particular, does inequality of rural assets contribute to the decision to migrate from home? The first step of the empirical strategy is to establish whether inequality of rural assets exists. The second step is estimating the determinants of household choice of having a migrant member in the household. In the third step of the empirical analysis, presented in Chapter 8, the impact of migrant remittances on the rural economy is estimated.

The size and distribution of assets are measured in terms of their values of total, per capita (PC) and adult equivalent (AE) Gini coefficients. However, with some variables only some of the measures are performed. The choice to undertake total, per capita (PC) or adult equivalent (AE) measure is guided by the significance of the measure, for example, pension per household gives more meaningful interpretation than pension per capita or pension per adult equivalent, because pension is supposed to be received by retired persons in the household. Due to poverty and desperation there are households that depend sorely on the pension money received by the old person(s).

7.2.1 Measuring inequality using the Gini coefficients and Lorenz curves

Table 7.1 presents the findings of the Gini coefficients for total, per capita and adult equivalent measures computed from the empirical results for the four main categories of assets, fixed assets (land and livestock), farm assets, non-farm assets and financial assets for the sample population. The Gini coefficients for total, PC and AE value of all assets for the entire sample are the same at about 0.76. The Gini coefficient for total land-holding for the entire sample of 573 households is 0.66, for per capita land it is 0.69, while AE land-holding is the lowest at 0.54. Appendix 2 contains a series of computations for AE Gini coefficients for the four categories of assets. Individual asset categories are analyzed in details in section 7.3.

An interesting observation from Table 7.1 is the fact that the Gini coefficients depicted for total ownership of different assets are smaller than the AE Gini coefficients for ownership of the same asset categories. According to Chayanov (1986) AE male = 0.8 AE female = 0.6 AE child.

The total (owners only) inequality, which does not distinguish between male heads from female heads of households, and does not single out children, result into a smaller inequality figure than the AE total (owners only) inequality, which takes into consideration Chayanov's definition of adult equivalent. Even if males and females were considered as equal, the total (owners only) inequality is still smaller than AE due to the consideration of children in the total. The magnitude of total versus AE

Gini coefficients depends on the ratio of adults to children in the households, as well as the number of male and female members in the households of the village or population being considered.

Table 7.1: **Total, per capita and adult equivalent Gini coefficients for different categories assets**

Category of assets	Gini coefficients						
	Total (N=573)	Total owners only	N	PC (N=573)	AE (N=573)	AE- owners only	N
All assets	0.76	**0.74**	**537**	0.77	0.76	**0.75**	**537**
Land	0.66	**0.39**	**320**	0.69	0.54	**0.43**	**320**
Farm assets	0.97	**0.87**	**127**	0.97	0.97	**0.88**	**127**
Livestock	0.89	**0.76**	**250**	0.90	0.90	**0.77**	**250**
Non-farm assets	0.70	**0.68**	**537**	0.74	0.73	**0.71**	**537**
Household income including remittances	0.52	**0.46**	**513**	0.55	0.54	**0.48**	**513**
Household income excluding remittances	0.62	**0.52**	**459**	0.85	0.84	**0.59**	**220**

Source: Survey results, 2000.

All the Gini coefficient measures for the entire sampled (N=573) and for all tested categories of assets are above the 0.5 mark indicating unequal distribution of the said assets. The lowest computed Gini coefficient is for the household income including migrant remittances (0.52), and this coefficient is lowered further to 0.46, when only those households who earn such income (N=513) are considered. This is a good sign as it could imply an equalising effect of remittances on income distribution (this is explored further in Chapter 8). Compared to income, the values of Gini coefficients for physical assets (farm, livestock and non-farm assets) are more unequally distributed than income, as demonstrated by the Gini coefficients in Table 7.1. This is expected, since the accumulation of physical assets by the poor is limited, given their limited saving and borrowing abilities against their high propensity to consume. Farm and non-farm asset ownership was exhaustively discussed in Chapter 6 where it was indicated that very few households own any physical assets.

7.2.1.1 Inequality in landholdings

Land is the main inheritable form of wealth for rural South African households and their main asset (apart from labour) that allow them to invest in widening opportunities. It is still considered the main form of collateral by micro credit financial institutions and formal-sector lenders. However, in the former homelands, where land was, and still is communally owned and the chiefs decide on the allocation of land, individual households can not put land as collateral. Poorer households attach more importance to land as it is often the main productive rural asset. Moreover, land in South Africa is an important issue because of its scarcity and its high marketability.

One of the main conclusions that can be deduced from Gini coefficients in Table 7.1 is that land and income are the most equally distributed assets. The Lorenz curve in Figure 7.1 illustrates the distribution of land among the 320 households who have got land; the resultant Gini coefficient of 0.43 and a flat looking Lorenz curve, implying fairly well distributed landholdings. This does not come as a surprise, since in South Africa the issue of land inequality and redistribution refers mainly to the large areas of land owned by white commercial farmers, who under apartheid, obtained large tracts of land. The masses in the rural areas, out of which the study sample was taken, still owned small parcels of land. The land distribution among clusters of African farmers in areas that used to be called homelands (including the study areas) is fairly even. The mean land size per household in the study area is as small as 2.4 hectare (excluding grazing land, which is communally owned and is not part of this analysis).

Since land in the rural areas is allocated by the chiefs and their headmen the difference between what one family owns compared to another family is guided by, among other things, the status of the head of the family and the number of grown-up sons in the household. In this case, the adult equivalent measure of land ownership more accurately depicts the situation than the total household land-holding measure does.
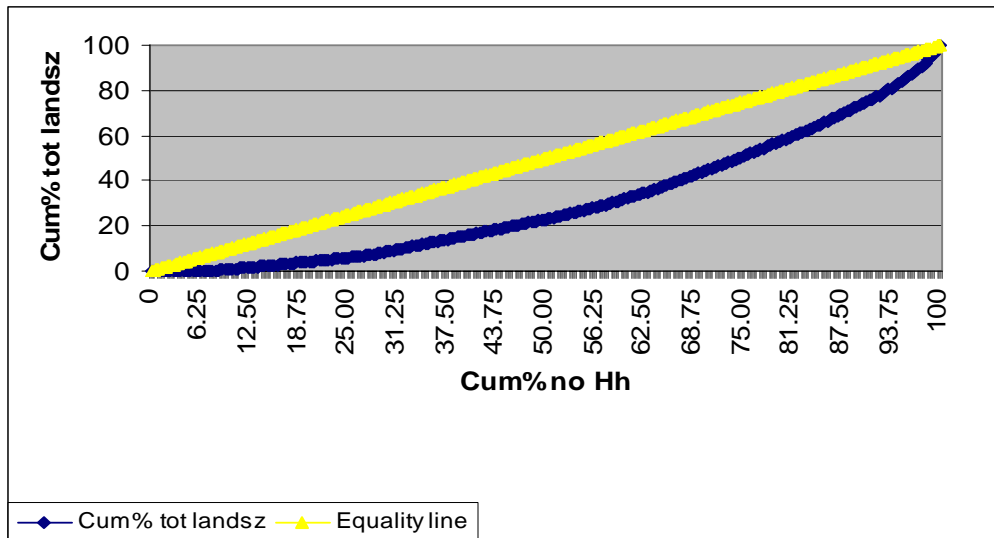
Source: Computed from survey data

Figure 7.1:   **Total land owned (land-owners only, N=320)**

The computed Gini coefficient for AE landholding for the entire sample of 573 household, including 253 landless households is higher at 0.54. Since the thesis of this study is based on the premise that there is inequality in asset ownership, it is important to make this distinction. The Gini coefficient among households who own land, disguises, to some extent, the level of inequality. The Gini coefficient which has taken into consideration landlessness among the communities is a better reflection of land distribution among the households studied.

Comparison between a Lorenz curve for the AE landholding for the whole sample of 573 households and that for the AE land holding for the 320 households who actually own land, revealed an interesting phenomenon. The Lorenz curve for the entire sample of 573 households runs along the X axis for over 40% of the households, reflecting the landless households within that sample; its computed Gini coefficient is 0.54. The curve for the owners only does not run along the X axis and the Gini coefficient among 320 land owning households is only 0.43, thus disguising the severity of the landlessness problem. The Gini coefficient of land owners only does not reflect the full extent of inequality in the community. To explore the problem adequately one needs to look at the entire sample rather than just the people who own the land, who form a proportion of the population.

Table 7.2 presents a summary of the Gini coefficients (GC) for the six sub-regions for total land-holdings, and in brackets, AE land-holdings Gini coefficients. The coefficients and curves confirm the explanation in the preceding paragraph.

Table 7.2: Gini coefficients for total and (AE) land-holding by sub-regions

Sub-regions	N	Y (Ha)	GC=GA/TA (Total)	GC=GA/TA (AE)
Bochum	93	124.51	0.78	0.80
Seshego	62	56.77	0.70	0.67
Schoonord	84	211.6	0.42	0.48
Praktisser	137	61.36	0.88	0.90
Zebediela	54	17.14	0.75	0.78
Western	143	278.22	0.33	0.36
TOTAL (all areas)	573		0.66	0.54

Source: Survey data 2000.

Y = Sum total land (in ha) by sub-region

The highest Gini coefficients are for Praktiseer in the Southern region (total 0.88 and AE 0.90) and for Bochum in the Central region (total 0.78 and AE 0.80), closely followed by Zebediela (total 0.75 and AE 0.78). The implication is clearly unevenly land distribution in those areas.

The Western sub-region stands out as the sub-region with the least unequal distribution of land-holding with the lowest total land-holding Gini coefficient of 0.33 and an AE Gini coefficient of 0.36. This implies that land access is widespread and well distributed among the community members of Western sub-region, thus, making farming for many households a potential source of livelihood. Schoonord, in the Southern region, has the second least unequal land distribution while Praktiseer, in the same region, has the most unequal distribution of land-holding, with AE Gini coefficient as high as 0.90. Our hypothesis that *asset inequality impacts on household decisions regarding migration* would have been correct if migration was more prevalent in Praktiseer and Bochum than in Schoonord and Western sub-regions. However, that is not the case. There is no clear cut pattern between the prevalence of migration and land distribution, as shown in Table 6.7. Western region, with relatively better land distribution also has the highest percentage of households with migrants (65%). However, Zebediela with relatively more unequal land distribution also has a

high prevalence of households with migrants (61.1%). So far there is no evidence to support this hypothesis.

7.2.1.2 Inequality in livestock ownership

Livestock among households in the study area is unevenly distributed. This is clearly demonstrated in Figure 7.2, which shows a Lorenz Curve along the X axis for over 80% of the households. Inequality in livestock distribution was earlier reflected in the estimated Gini coefficients in Table 7.1. Inequality among 250 households owning livestock is quite high with the estimated total Gini coefficient of 0.76 and adult equivalent Gini coefficient of 0.77.
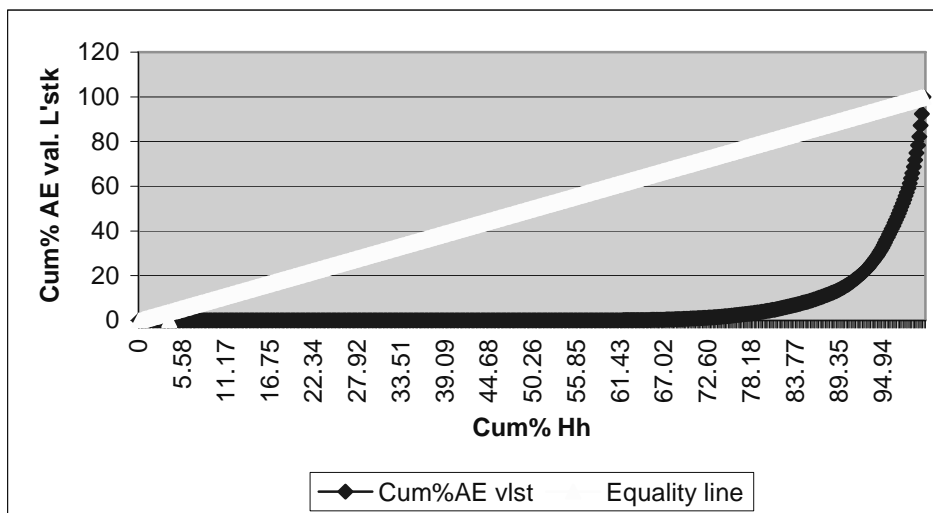
Figure 7. 2:   Lorenz curve for Adult Equivalent value[26] of livestock

The total and adult equivalent Gini coefficient for the entire sample of 573 households is much higher, at 0.90, demonstrating the fact that livestock distribution is highly unequal. In Limpopo livestock is owned by only a small proportion of the community many of whom own small stock, such as goats, pigs and sheep, which have high

---

[26]   *Livestock prices for different types were estimated from representative prices obtained from the regional agricultural offices. The range of values was as follows: cattle: R900 to R2250 depending on the region and the animals; goats: R180 to R350 and chickens R25 to R30.*

liquidity and divisibility characteristics. The majority of households are too poor to own any livestock, especially large stock such as cattle.

7.2.1.3 Farm assets

Farm and non-farm asset access by rural households is an important determinant of household income, security and status. However, only 127 households (22% of the surveyed households) own farm assets, such as, machinery and equipment. The distribution of these assets is quite unequal (as discussed in Chapter 6 section 6.5.3); the bulk of the farm assets in the communities belong to 10% of the households. AE Gini coefficient among owners of these assets is as high as 0.88. In comparison, this figure is the highest among all AE Gini coefficients for all the categories of assets presented in Table 7.1. The lowest AE Gini coefficient (0.43) is that of land-holding among land owners. This implies that the highest proportion of farm assets owned by the rural households is in a form of land, which enables households to undertake subsistence farming even in the absence of other farm assets. Very few households own non –land farm assets or livestock (except small stock such as goats and chickens). Thus, the point that land is the most important asset in rural Africa can not be overemphasised. However, Land ownership alone does not always guarantee that they are better off than those without land. As shown in Table 6.6 in Chapter 6, households without access to arable land receive higher cash and in kind remittances and have a higher mean income per person per annum. Some households without land are better off than those with land, because they benefit from other income opportunities such as salaries and wages and transfer payments and/or other non-farm opportunities. At sub-regional level, the distribution of assets is clearly uneven (Table 7.3), with Seshego topping the list.

Table 7. 2:   AE value of HH assets in sub regions

Subreg/reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000- LA	GC=GA/TA
Bochum	93	150912.82	12285001	5000	1300.58	3699.42	0.74
Seshego	62	212341.9	12418433	5000	647.87	4352.13	0.87
Schonord	84	76087.19	5664578.8	5000	1196.60	3803.40	0.76
Praktisser	137	215579.67	24358481	5000	1789.01	3210.99	0.64
Zebediela	54	71977.64	3148163.8	5000	1992.95	3007.05	0.60
Western	143	201647.12	23659075	5000	1830.13	3169.87	0.63

7.2.1.4 Non-farm assets

The distribution of non-farm assets even among those households that own such assets is quite unequal. This is a category of assets that include appliances used inside houses, such as, refrigerator, television, radio, as well as family cars. Some productive non-farm assets, such as sewing machines, deep-freezer and pick-up cars are used for undertaking small businesses to complement household income. AE Gini coefficient of the value of non-farm assets for the entire sample is 0.71, implying high inequality in the distribution of non-farm assets; it reflects the fact that many rural households, who are poor, do not have substantial (or high value) non-farm assets and are mainly reliant on either subsistence agriculture or transfer payments for livelihood. The few households who own some assets include those who receive remittances either in cash or in kind or both. The majority of the rural households with assets own farm-related assets that are used to facilitate agricultural production. As with land, non-farm asset ownership (for example, bicycle, sewing machines and baking facilities) enables households to undertake rural non-farm economic activities to complement other income sources. Some women have started local village bakeries and sewing of local school uniforms using assets sent to them or brought by their migrant relatives. However, some household assets (such as, television and household furniture) simply reflect the status of the households that own them.

From Table 7.3 it is obvious that majority of the households especially in Seshego, Bochum and Schoonord do not access such assets to enable them to carry out non-farm enterprises to generate income.

7.2.1.5 Household income

In most developing countries (with the exception of China), the distribution of fixed assets and of wealth is much more concentrated than the distribution of income (McKinley, 1993). This point is illustrated by the Gini coefficients presented in Table 7.1. It suffices to point out that the Gini coefficients for household income (or financial assets), among those who own some income works out as 0.46 for total household income, 0.55 per capita income and 0.48 for adult equivalent income, all of which are lower than the Gini coefficients for physical assets except land-holding.

The disaggregated Gini coefficients by income sources are higher than the total household income Gini coefficient except for the pension income. The total Gini coefficients for different income sources are 0.55 for remittances (n=295), 0.55 for salaries and wages (n=277), 0.76 for farm or agriculture income (n=227) and 0.22 for pension (n=217). Pension rates are set by the government according to the job status held by the individual pensioners, but the pensioners from our study group do not exhibit much difference in the amount of pension they receive. The income from agriculture is the most unequally distributed; this can be attributed to the distribution of all farm assets, including land, which accounts for a large share of rural assets. Lack of physical farm assets has a direct impact on the income generated from the farm. In the dry areas of Limpopo surveyed there was neither irrigation nor adequate farm implements. Agricultural production in these areas is a low input, low-value crop, small-stock farming; resulting in low farm income.

The extent of sub-regional level income inequality in terms of Gini coefficients is summarised in Table7. 4.

Table 7.3:   1AE income Gini by sub-region & regions

Subreg/reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000-LA	GC=GA/TA
Bochum	93	238513.3	16771808	5000	2492.68	2507.32	0.50
Seshego	62	206986.3	10296764.7	5000	2057.08	2942.92	0.59
Schonord	84	352355.4	23946662.8	5000	1968.85	3031.15	0.61
Praktisser	137	637168.2	65257311.5	5000	2560.75	2439.25	0.49

Zebediela	54	133162.6	5740852.06	5000	2108.97	2891.03	0.58
Western	143	695112.1	65132368.3	5000	3482.48	1517.52	0.30

Western and Praktisser, which are less remote and closer to town than the rest of the sub-regions seem to have a fairly evenly distributed income

7.2.1.6 Remittances

A detailed analysis on remittances is presented in Chapter 8. The computation of the total and AE Gini coefficients (in Table 7.1) for the overall financial assets (income) among the sample households clearly shows that remittances have an equalising effect on the distribution of income. The Gini coefficient for AE income (with remittances) is 0.48 while the coefficient rises to 0.59 for the Gini coefficient for AE income when remittances are excluded from the computation.

7.3   DOES ASSET INEQUALITY CAUSE MIGRATION?

A combination of strategies is used in this section to establish the causality relationships between asset inequality and migration. In this study we are only testing for the decision to migrate or to send out a migrant member from a household, regardless of the destination of the migrants. However, the type of migration movement studied is exclusively internal; this is in view of the fact that for many decades, migration converged to South African mines and commercial farms from within the country and from Southern African countries for better opportunities for work.

7.3.1 Dependent and independent variables used in the model

As set out in equation 4.2 in Chapter 4, the decision to migrate or to have a migrant member is regarded as a binary (dichotomous) choice-problem, thus requiring binary dependent variables represented by $MGRDMY = 0$, if the household does not have any migrant member(s), $MGRDMY = 1$, if the household has at least one migrant member, thus, a binomial logit model is used for the test.

Table 7. 4:   Dependent and independent variables

1. DEPENDENT VARIABLE	
MGRDMY	Dummy variable for presence of Migrants (=1) no migrants =0
INDEPENDENT VARIABLES	Description of variable
HOUSEHOLD HUMAN CHARACTERISTICS	
HH SIZE	Total number of people in household (residents + non-residents)
NWKAGE	Number of household members of working age
AGEHHEAD	Average age of household head
HOUSEHOLD PHYSICAL ASSETS	
LANDSIZE	Total land-holding (ha) per household
ALHHASSET	Total all household assets excluding livestock and land
AEVASSET	Adult equivalent value of assets inside house (e.g., TV)
PCLAND	Per capita land holding (ha)
AELAND	Adult Equivalent land holding (ha)
TVLIV	Total value of all livestock
PCVLIVSK	Per capita value of all livestock
PCVFASSET	Per capita value of farm assets excluding livestock
PCALLSS	Per capita value all assets
HVALIVSK	Total value of livestock in household
HOUSEHOLD INCOME	
PCTINCWS	Per capita income incl. salaries and wages:
AGINC	Av.agric inc. including subs
AEPEN	AE pension
PCAGINC	Per capita agricultural income including subsistence
PCPENSI	Per Capita pension

The observable factors Xi influences the participation to the migration process; they include household demographic characteristics, which are also related to the family labour endowment; the wealth position of the household assessed by its physical assets and household income, (including capital variables, such as, landholdings, livestock, farm assets, non-farm assets and financial assets).

MGRDMY may be hypothesised to be a function of the independent variables listed in Table 7.4 selected on the basis of the results of the preliminary analysis in Chapter 6.

7.3.2 Relationship between assets, some household characteristics and migration

The first confirmative tests of the main hypothesis regarding asset inequality and migration were done using:

1.   Correlation analysis with un-weighted data
2.   Correlation analysis with weighted data

7.3.2.1 Correlation analysis using un-standardised data

The analysis of the relationship between assets, selected household characteristics and migration using bivariate correlation analysis performed on the un-standardised data gave the results discussed below:

There was a significant positive correlation between the presence of migrants and the size of the household and the number of household members older than 15 years (0.198** and 0.146**, respectively), significant at the 1% level. The implication is that bigger households have a higher tendency of sending out a household member to become a migrant worker, and the more the number of grown up members there are, the higher the tendency to have a migrant. It could also mean that the households send out the youth to high schools and tertiary institutions away from Limpopo for perceived better education in cities away from Lebowa. The other variables (sex of household members, age of household head and average education of household) were positively related to migration but not significant.

The presence of migrants is negatively correlated with per capita land size and property, as well as with per capita pension income (-0.127* and -0.227** respectively) significant at 5% and 1% respectively. Also, per capita value of household landholding is negatively related to migration (-0.032) but not significantly. The results of the correlation matrices are tabulated in Appendices 10-1. These findings support the hypothesis that the size and distribution of household land-holdings contribute to the factors that influence household behaviour regarding

migration; other things being equal, the bigger the land-holding, the lower would be the migration rate. However, in real life other factors, such as, local unemployment rate, poverty level, and the presence or absence of rural based non farm opportunities will usually play a part in migration decisions making process.

The negative relationship to pension implies that pension is considered as a substantial source of income and more pension money would discourage migration and somewhat substitute for migration remittances. However, the negative relationship could also be a factor of age, reflecting the fact that those who receive pensions are old people who are no longer in a position to migrate.

7.3.2.2 Correlation using standardised data

Variables with large values contribute more to the calculations of distance measures than those with small values; for example, a value for the size of a household might be five members, while household wealth might be R 250 800; this introduces a problem of differences in scale and units, which is solved by transforming all variables to the same scale. The correlation analysis also utilised standardized data; all the variables were transformed to z scores, so that each transformed variable has a mean of 0 and a standard deviation of 1.

The results of the full correlation matrices using standardised per capita and adult equivalent variables are summarised in Table 7.5, which reinforces the discussion in section 7.3.2.1. The results indicate significant and positive relationships between migration (in terms of both the presence of migrants and the number of migrants in the households) and some selected human resource related household characteristics: the more grown-up members in the household (especially males), the higher the likelihood of migration. Per capita and adult equivalent correlation coefficients relating migration to the value of total household property and dwelling, the value of land size and the value of land for adults over the age of 15 years are all significant and negative; so are the coefficients between migration and pension, salaries and wages, and per capita agricultural income when the number of migrants per household is considered.

Table 7.5: **Correlation Matrices – migration and assets**

INDEPENDENT VARIABLES	DEPENDENT VARIABLES			
	Number of Migrants		Dummy var. –presence of migrant	
No. of people in household	0.397**		0.198**	
Average. educ. level of migrant hh	0.121*		(-)0.007	
Average age of household head	(-)0.020		0.066	
	PC	**AE**	**PC**	**AE**
Value of hh. land size and property	(-)0.175*	(-)0.151*	(-)0.127*	(-)0.137*
Value of household landholding	(-)0.200**	0.012	(-)0.203**	0.001
Farm assets excl. livestock	(-)0.27	(-)0.019	(-)0.048	(-)0.067
Value of livestock	(-)0.030	(-)0.110	0.071	(-)0.045
Household wealth	0.049	0.049	0.085*	0.085*
Agric. income with subsistence	(-)0.258**	(-)0.263**	0.054	0.060
Salaries & wages	(-)0.075	(-)0.104*	(-)0.114*	(-)0.102*
Pension	(-)0.298**	(-)0.281**	(-)0.227**	(-)0.241**
Household assets (TV etc)	(-)0.009	(-)0.014	(-)0.044	-0.041

** Significant at the 0.01 level (two-tailed)
* Significant at the 0.05 level (two-tailed)

The implication is that per capita and adult equivalent landholding, household property and dwelling and financial assets are significantly related to the presence of migration (and the number of migrants in a household). Households with migrants tend to have smaller land-holdings, household property and dwelling and less financial assets per capita and per adult equivalent. The hypothesis that 'the size and distribution of household land-holdings (and some of the other assets) influence household migration behaviour, is supported by these results. Small asset endowments, especially of land-holding per person and adult equivalent land-holding, coupled with scarcity of other livelihood opportunities in the rural areas seem to encourage migration from home'.

The relationships between migration and individual asset variables are mainly negative but not significant, except for the value of landholding and overall household property. The negative sign of the coefficients imply an inverse relationship between them and the propensity to migrate.

Per capita and adult equivalent pension coefficients are also negatively related to

migration and significant, implying that households consider pension as an important source of income and will send fewer members away as migrants if they receive high pension income.

The result in Table 7.5, therefore, supports the hypothesis that better access to and the size of rural assets and income have an influence on the household decisions regarding migration behaviour. Likewise household migration behaviour is likely to influence rural asset accumulation, but this aspect of the migration phenomenon was not analysed for this thesis. The inverse relationship implies that, as assets become more accessible and increase in amount, migration will decrease, but only to a certain level, since households in the Western Region, where land is more widely distributed and the plots are relatively bigger than in the other regions, proved to have a high rate of migrants. This is probably more related to the productivity of the Western region compared to the other areas.

Some asset variables do not show any significant relationship to migration; for example, per capita and adult equivalent farm assets, livestock and agricultural income are all negatively related to migration but not significantly, even at a 5% level. Likewise, when all the assets are considered together there is a negative relationship with migration, but not at a significant level. There does not seem to be a significant association between the education level of the households and migration. The education aspect of migration was considered by household rather than by migrant, maximum and minimum education per household generally and per migrant household was considered. Schooling status generally had no significant correlation with any of the variables being tested. However, the status of maximum education was positively significantly correlated with per capita all assets, per capita income and to the total number of people in the household. This may imply that household assets, especially those accumulated from migration income are may be influenced by the level of education of the household from which the migrant comes from However, households with migrants have slightly lower education levels compared to non-migrant households, even though they have better skills training level. The latter can be associated with exposure and information which migrants bring back home with them when they return home.

7.3.3 Aggregating variables influencing migration using Factor Analysis

Migration as a human behaviour is influenced by a number of variables, some of which are correlated. Factor analysis is used to perform two functions:

(i)   One is to identify underlying construct in the data that could be indicated by a set of variables.

(ii)   Secondly, to reduce the number of variables, but retaining as much information as possible

Empirical evidence shows that there are complex motivations behind migration, such as diversification of income portfolios for the families and risk-management strategies in the presence of inadequate resources and constraints to access resources (Stark and Levhari, 1982; Katz and Stark, 1986; Stark 1991), as well as household characteristics and their endowment of human, physical and social capital.

7.3.3.1 Correlation Matrix of variables

The initial step in factor analysis was to test if the variables were factorisable by computing a correlation matrix for the variables, which are said to have an influence on the decision to migrate. *Bartlett's test of sphericity* was used to examine the hypothesis that the variables are uncorrelated in the population. According to Bryman & Cramer, 2001, the rule that has to be met is that the majority of the variables should be significantly correlated either positively or negatively. If there are no significant correlations between the variables then it would mean they are not related and it would not be worthwhile to conduct a factor analysis. The correlation matrix of the variables inputted and their significance levels is presented as Appendix 8. The results indicate that many of the variables have correlation coefficients larger than 0.30 and are significantly correlated at less than 0.05 levels, either positively or negatively with one another. This implies that some variables are related and constitute one or more factors. Therefore, it is worth a while to carry out a factor analysis. However, there are some variables which were not significantly correlated, meaning that they are unrelated and can not form factors.

7.3.3.2 Communality and Variance Explained

The method used for extracting the factors was principal components for reasons explained in Chapter 5, section 5.7.2.2. This method first extracts the combinations of variables explaining the greatest amount of variance and proceeds to combinations that account for smaller amounts of variance. The variance of the test to be explained is known as its *communality*, it is the percentage of a variable's variance that contributes to the correlation with other variables or is common to other variables. Since principal component analysis examines the total variance of the test, its initial *communalities* are set at 1. Table 7.6 shows the SPSS output for the communalities of the principal component analysis. The first component or axis to be extracted accounts for the largest amount of variance shared by the variables and the second factor consists of the next largest amount of variance which is not related to or explained by the first factor; this means that the factors are unrelated or *orthogonal* to one another.

The SPSS output showing the initial and the rotated factors produced by the principal components analysis of the variables are associated to migration decisions and the amount of variance they account for (their *eigenvalue*) is presented in Table7.8; it is further showing the total variance explained, or the percentage of variance explained for all the original variables.

In the initial component the variance accounted for by the first factor is 14.266 or 71.33, percent of the total variance, which after rotation is reduced to 47.29 per cent. The total variance explained by the 15 factors is the sum of their eigenvalues, which is, in this case, is 20 and their cumulative percentage variance explained, adding up to 100 per cent. The sum of squares of the factor loadings of each variable on a factor represents the *Eigenvalues*, or the total variance explained by that factor. Based on the *Eigenvalues* the factors are arranged in order of decreasing variance, so that the most informative factor is the first and the least informative is the last.

Table 7.6: **Communalities of principal component**

	Initial	Extraction
pc earnings salaries & wages	1.000	.954
pc farm assets (eg tractor)	1.000	.769
pc hh assets (eg TV)	1.000	.922
per capita total income including subsistence & rem.	1.000	.973
per capita all asset including livestock	1.000	.990
pc total income with subsis., excl. remittances	1.000	.976
pc agric. income +subs.	1.000	.827
pc pension = pension / hhsize	1.000	.959
pcvland = vland/family	1.000	.847
Per capita value of livestock	1.000	.972
AE salaries & wages contribution (x12)	1.000	.952
AE hh pension	1.000	.911
AE hh wealth	1.000	.982
AE value hhl and	1.000	.847
AE hh income incl. subs & rem.	1.000	.960
AE total income excl. rem.	1.000	.970
AE value of livestock	1.000	.960
AE farm assets (excl. livst)	1.000	.673
AE hh assets (egTV)	1.000	.897
AE agric income & subs.	1.000	.742

Extraction Method: Principal Component Analysis.

The proportion of variance accounted for by any one factor is its eigenvalue divided by the sum of the eigenvalues, which are presented in the third column of Table 7.6. Some of the factors account for very small proportion of the total variance and would, therefore, not make sense to keep all of them, since there are as many factors as variables. Thus the first few factors are the most important ones

Table 7.7:   Initial and rotated principal components and total their variance

Compo-nent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.266	71.329	71.329	14.266	71.329	71.329	9.458	47.290	47.290
2	2.124	10.619	81.948	2.124	10.619	81.948	5.497	27.483	74.772
3	1.693	8.467	90.415	1.693	8.467	90.415	3.128	15.642	90.415
4	.859	4.297	94.712						
5	.588	2.942	97.653						
6	.301	1.504	99.157						
7	.095	.477	99.634						
8	.041	.203	99.837						
9	.017	.083	99.919						
10	.008	.042	99.961						
11	.003	.017	99.979						
12	.002	.012	99.990						
13	.001	.007	99.997						
14	.000	.002	99.999						
15	.000	.001	100.000						
16	3.80E-005	.000	100.000						
17	1.54E-005	7.70E-005	100.000						
18	4.84E-015	2.42E-014	100.000						
19	1.31E-016	6.53E-016	100.000						
20	-2.63E-016	-1.32E-015	100.000						

Extraction Method: Principal Component Analysis.

7.3.3.3 Factors retained

The decision on how many factors to extract was guided by two main criteria (Bryman & Cremer, 2001, Hair, et al, 1998), namely:

(i)   *Kaiser's criterion* (or the latent root criterion) which requires that only factors which have an eigenvalue of greater than one should be selected. SPSS does

this by default unless it is instructed to do otherwise. Since the total variance that any one variable can have has been standardised as one (   ), it means that a factor which explains less variance than a single variable is excluded. Thus, from Table 7.6 it is clear that only factors 1 to 3 have to be retained; together they represent 90.42 per cent of the variance of all the variables. According to Bryman & Cramer (2001), the Kaiser criterion is recommended for situations where the number of variables is fewer than thirty and the average communality is greater than 0.70, or the number of participants is greater than 250 and the mean communality is greater than or equal to 0.60, a situation similar to what this study is addressing.

(ii)   The second criterion or method is the graphical *scree test* proposed by Cattell (1966), quoted by Bryman and Cramer, (2001). The Scree plot is a graph drawn of the descending variance accounted for by the factors initially extracted. Where the plot shows a break between the steep slope of the initial factors and the gentle slope of the latter factors is considered to be the cut off point. The factors to be retained are those which lie before the point at which the eigenvalues seem to level off.

The SPSS produced scree plot for the factors presented in Table 7.6 is depicted in Figure 7.3. After the fourth factor the scree plot makes a break (point of inflection) and starts to level off. As a general rule, the scree test results in at least one and sometimes two or three more factors being considered for inclusion than does the Kaiser's criterion (Hair, et al, 1998). In this analysis the scree tests results in four factors, that is, one more factor than in the laten root criterion, which shows the fourth factor as having an eigenvalue of 0.859, disqualifying it from being retained as it is less than one.
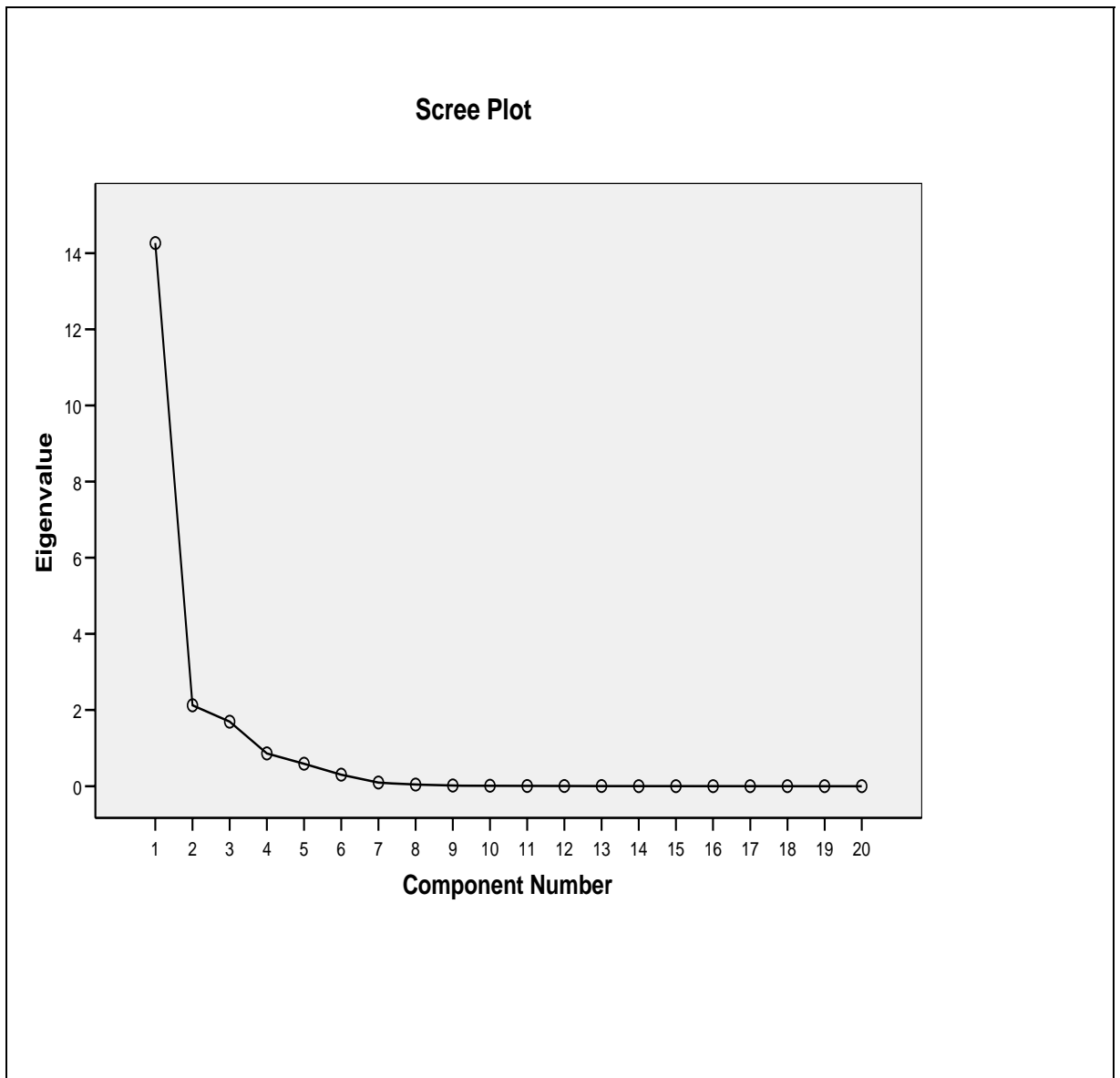
Figure 7.3:   **Scree test of eigenvalues for component analysis**

7.3.3.4 Interpretation of Results

The factors derived from the component analysis are presented in Table 7.9, as the unrotated component analysis factor matrix and Table 7.10, as the rotated component analysis factor matrix. In the unrotated component

The initial unrotated factor matrix provides a preliminary indication of the number of factors to extract. Three factors or components were extracted showing the best linear combination of variables that account for more variance in the data as a whole than any other linear combination of variables. The first factor is viewed as the single best

186

summary of linear relationship exhibited in the data. Almost all the different aspects of per capita (pc) and adult equivalent (AE) income and assets loaded heavily on factor one.

Table 7.8:   Unrotated Component Matrix*

	Component		
	1	**2**	**3**
per capita total income including subsistence & rem.	.986		
pc total income with subsis., excl. remittances	.978		
AE hh income incl. subs & rem.	.972		
AE total income excl. rem.	.961		
pc earnings salaries & wages	.950		-.223
AE salaries & wages contribution (x12)	.939		-.264
AE hh wealth	.929	-.283	
pc hh assets (eg TV)	.912	-.300	
AE hh assets (egTV)	.891	-.317	
pc agric. income +subs.	.880		
per capita all asset including livestock	.873	-.395	.270
pc farm assets (eg tractor)	.824		-.291
AE agric income & subs.	.803	.227	-.212
pcvland = vland/family	.798	.455	
AE farm assets (excl. livst)	.754		-.317
AE value hhl and	.747	.532	
Per capita value of livestock	.738	-.459	.466
AE value of livestock	.710	-.497	.457
AE hh pension	.481	.595	.570
pc pension = pension / hhsize	.539	.519	.631
Sum of squares (eigenvalue)	14.27	2.12	1.69
Percentage of trace	71.33	10.62	8.47

Extraction Method: Principal Component Analysis.

*3 components extracted.

Table 7.9:   Rotated Component Matrix

	Component		
	1	2	3
AE salaries & wages contribution (x12)	.893	.374	
AE total income excl. rem.	.878	.340	.289
pc earnings salaries & wages	.872	.419	
pc total income with subsis., excl. remittances	.847	.408	.302
AE hh income incl. subs & rem.	.839	.424	.276
pc farm assets (eg tractor)	.808	.340	
pc agric. income +subs.	.806	.275	.318
AE agric income & subs.	.798		.276
per capita total income including subsistence & rem.	.791	.498	.316
AE farm assets (excl. livst)	.769	.284	
AE value hhl and	.729		.561
pcvland = vland/family	.683		.601
AE hh assets (egTV)	.676	.663	
AE value of livestock		.946	
Per capita value of livestock	.219	.940	.202
per capita all asset including livestock	.452	.871	
AE hh wealth	.560	.789	.216
pc hh assets (eg TV)	.669	.686	
pc pension = pension / hhsize		.248	.936
AE hh pension			.933

Extraction Method: Principal Component Analysis.

 Rotation Method: Varimax with Kaiser Normalization.

A Rotation converged in 6 iterations.

Examining the pattern of the variable loadings (the correlation of each variable and the factor) for factor two and three the interpretation of the role they have to play in defining the other factors is not clear. It is, therefore, preferred to look to the rotated component matrix because it displays coefficients (factor loadings) in such a way that the larger loadings are made larger and the smaller loadings are made smaller than their un-rotated values (Hair et al). Thus it was necessary to employ a rotational

method to achieve simpler, more meaningful and more interpretable factor solutions. An orthogonal Varimax rotation method was used and the rotated component matrix obtained is presented in Table 7.10.

A number of authors have given guidelines on the interpretation of the factor loadings (Hair, et al, 1998; Bryman & Cramer, 2001). In interpreting factors, a decision has to be made regarding which factor loadings are worth considering from a practical and statistical point of view. Factor loadings greater than 0.30 (±0.30) are considered to meet the minimum level; loadings ±0.40 are considered more important and if the loadings are ≥0.50 they are considered to be practically significant. The larger the absolute size of the factor loading the more important the loading in interpreting the factor matrix. Further more guidelines towards statistical significance are based on the sample size; the smaller the sample size the lager the factor loading required and vice versa.

Based on above rules of thumb, practically all the variables are loading significantly on factor one except the per capita value of livestock. This is not surprising since the first factor tends to be a general factor with almost every variable loading significantly. In this case all the different types of assets (farm, non-farm and livestock) and income from different sources correlate significantly to factor one which can reasonably be called _asset /income factor._ This factor accounts for 71.33 of the total variance. However, per capita and adult equivalent livestock, household wealth including 'in the house assets' are variables that are loading heavily on factor two, which we can safely call _Livestock factor_, it accounts for 10.69 of the total variance. Despite rotating the factor matrix orthogonally some variables are still loading significantly on two or all the three factors; many of the variables are asset or income related and thus are correlated. The third factor, which accounts for only 8.47 per cent of the total variance, is composed of per capita and household pension, it is called _pension factor_. Clearly, these three factors represent groupings of variables, here termed factors, which explain or influence decisions regarding migration. The asset/income factor and livestock factor could be looked ate from both the cause and effect regarding migration. Presence of migration proceeds can enhance asset accumulation, especially livestock, which is considered a store of wealth by African

people. At the same time, lack of such assets and income can positively influence migration decisions within a household.

7.3.4 Relationship between migration, assets and selected household characteristics using Logistic Regression Analysis

The relationship between asset inequality and migration was tested using the t Test in Chapter 6 and the correlation analysis in the preceding sections. The hypothesis regarding migration and assets is tested further using the *Logistic Regression Analysis*, also known as *Logit Analysis*. The dependent variable, in the study is a non-metric, dichotomous (binary) variable taken to be the dummy variable of presence of migrants and absence of migrants in households, while the independent variables are metric (Table 7.5). Households can decide to send out one or more or their members to work away from home as migrants in order to maximise their available human resources. The decision to do so may be dictated by one or more factors (predictor or independent variables). The Logistic regression approach is suited to handle the nonlinear relationship between the dependent and independent variables by directly predicts the probability of an event occurring.

The results of the Logistic regression are statistically used for prediction of the probability of occurrence of an event. In our case the results are used to test for the predictor variables associated with the presence of migrants (dummy variable) in the households as presented in Table 7.11. The different measures of independent variables used include: total, adult equivalent and per capita assets.

The interpretation of the Exp B is such that a unit change in the independent variables will lead to a change in the odds ratio in favour of or against the presence of migrant by the respective Exp B coefficients. The percentage in the odds ratio (ExB-1) x 100) means that a unit change in the independent variable will result in a given percentage change in the odds ratio in favour of or against the presence of migration.

Table 7.10:   Factors influencing migration

VARIABLE	B	S.E	df	Sig	Exp(B)	% change in odds (EX(B)-1)x100
AGEHHEAD	.002	.001	1	2.625	.105	0.2
NWKAGE	.481	.079	1	37.180**	.000	61.7
HHSIZE	.155	.041	1	14.183**	.000	16.7
LANDSIZE	-.056	.068	1	.676	.411	-5.4
PCLAND	-3.849	1.947	1	4.501*	.034	-53.6
PCPENSIN	-.006	.002	1	9.496**	.002	-0.6
PCTINCWS	.000	.000	1	22.422**	.000	0
VLIV	.000	.000	1	1.284	.257	0
PCVLIVSK	.000	.000	1	.448	.503	0
PCFASSE	.000	.001	1	.047	.829	-0.2
ALHHASS	.000	.000	1	4.636*	.215	0
PCALLASS	-.001	.000	1	4.305*	.038	0
Constant	-1.374	.254	1	29.246	.000	-74.7

**Significant at $p < 0.01$, *significant at $p < 0.05$

7.3.4.1 Land-holding and migration

The findings in Table 7.11 indicate that the presence of migration is significantly associated with per capita land holding has a significant and negative influence on migration at $p < 0.05$. An increase in land ownership by one unit (hectare, acre, etc.) will result in a 53.6% change in the odds ratio against migration. This finding has important implications to the land reform programme of South Africa as long as the land transfer goes to people who are likely to use it productively. A unit change in the predictor "LANDSIZE" which indicates the total land in hectares owned by the households has a negative influence on migration, even though the influence does not test significant. Increasing land size by one unit (hectare, acre, etc.) will result in a 5.4% change in the odds ratio against the presence of migrants.

7.3.3.2 Other assets and migration

The presence of migrants is significantly influenced by per capita pension and per capita income at $p<0.01$ and by total assets and per capita assets at $p<0.05$. Our findings show that unit increase in the value of per capita pension will result to 0.6 percent change in the odds ratio against migration, a unit increase in per capita

income does not have any influence on the odds ratio of migrating. Total assets and per capita assets also influence migration significantly at $p<0.05$. A unit increase in per capita assets will result in 0.1 per cent change against the odds ratio of migration. The household data used in the study focused on migration that involved absence from home; migrants were defined as non-resident household members and those of working age were considered for the analysis. The activities of household members commuting from home to work on a daily or weekly basis were combined with activities of residents and were captured under local salaries and wages income.

Destination and duration of migrants vary a great deal, from nearby farms near home to the mines in another province and sometimes outside the country. The choice of the type of migration will vary depending on individual circumstances.

The results also show that the presence of migrants is positively but not significantly influenced by agriculture income This is not surprising as the discussion on migration in the three regions of the study (Central, Southern and Western) showed that the Western Region, which has more agricultural activities taking place and better land distribution, has a higher proportion (65%) of households with migrants than the other two regions (40.6% and 50.5% for Central and Southern, respectively). This positive influence of agriculture income on migration can also be interpreted to mean that the reverse causality will also be true, so that migration positively influences agricultural income through remittances. This line of thinking is explored further in Chapter 8.

The following additional observations can be made from the findings:

(i)   Households with adequate income can easily take advantage of an occurring opportunity away from home by sending a member(s) of the household to work or study away from home and the family will help meet the necessary costs.

(ii)   In all cases and will all the factors except pension, the reverse causation may apply; that is, migration may influence, positively or negatively the size and distribution of household assets. However, it has to be stressed that this study focused on migration, what might influence it and how the use of migrant remittances may influence inequality in the communities where migrants come

from. Future analysis of the data should endeavour to look into such issues

(iii)   A successful migrant, who has already established himself or herself and has good networks, may decide to help more members of the household to look and obtain jobs or study opportunities away from home. That would lead to a reduced cost of migration but will increasing the rate of migration from that particular area migration.

(iv)   The negative influence of pension on migration implies that pension is considered to be one of the main sources of livelihood; an increase in pension income received by the household would discourage migration. This is not necessarily a good thing because active members of households should not be encouraged to depend on pensioners but should be encouraged to assist pensioners. However, in reality, due to high unemployment levels in Limpopo, in some cases pensions are the only source of income for some households, used not only to buy food but also to meet other basic needs such as costs of health and school fees.

(v)   A number of household characteristics also significantly influence the presence of migration. Migration tends to increase with increasing household size. The influence of household size is significant and positive at $p < 0.01$; an increase in the number of members of the household by one will result in a 16.7 per cent change in the odds ratio in favour of migration. This influence becomes even greater when only the number of working age members of the household is considered. A unit increase in the number of working age persons will result in a 61.7 percent change in the odds ratio in favour of migration and this is significant at $p < 0.01$.Having said that, we have to remember that a single factor may not necessarily on its own influence migration. It is the combination and complexity of the rural set up that will in the final analysis lead to a decision by a household or individual to go migrate.

One might ask, if the presence of migration have any influence on the household size? We can only speculate that in relatively well to do households, regular income flow from remittance may encourage families to have more children. However for poor household the size of the household is influenced by many other factors and migration may not necessarily be one of them.

The preceding discussion clearly shows that the presence of migrants in rural households is associated positively or negatively, to household characteristics and the amount and distribution of some physical and financial assets. Specifically, the results show that:

1.   A unit change in land size, per capita land-holding (in hectare), per capita pension and adult equivalent salaries and wages will result in change in the odds ratio against migration. In the Central, Southern and Western regions, households with smaller land-holdings per capita tend to have migrants. However, the pattern of migration from these areas does not support the hypothesis that higher inequality of land lead to higher out-migration, since the Western Region with better land distribution has a higher proportion of households with migrants. Likewise, looking at this from the sub-region point of view, one would have expected a higher proportion of households from Praktiseer, where 83.2% of the households have no land to have migrants; only 42.3% of the households have got migrants.

2.   A unit change in per capita (total household) income, adult equivalent agriculture income and household size (especially the number of the members in the household of working age) will lead to a change in the odds ratio in favour of migration

3.   Farm assets, the distribution of which is uneven, do not have a significant influence on migration. Indirectly, however, one may consider adult equivalent agriculture income to be influenced by appropriate farm technologies including farm assets. Assets used inside the houses (such as electrical appliances) do not have any influence on migration. On the other hand, remittances from migration (in kind and in cash) do influence asset accumulation and distribution in the rural areas.

4.   Limpopo is not well endowed with livestock as a form of asset; it is therefore not surprising that livestock does not have significant influence on migration from the rural areas. However, as revealed by the t-Test analysis in Chapter 6, households with migrants have a higher total value of livestock than those without migrants. This may have future implications that migrants would consider investing in livestock production if other things remain equal.

7.4 SUMMARY

This chapter has presented the complexity of the dynamics of rural out migration from Limpopo in South Africa. The analyses have produced the main empirical results relating to unequal distribution of rural assets to migration and have confirmed some of the exploratory analyses undertaken in Chapter 6. The procedures applied on the basic data in this chapter were the Gini coefficients analysis, correlation analysis, factor analysis, and Logistic Regression analysis.

The findings discussed in this chapter indicate that a relationship exists between presence of migrants in rural households, the amount and distribution of some of the physical and financial assets they own; the influence associated to different factors varies and should not be generalised. The presence of migration is significantly and negatively influenced by per capita land-holding, adult equivalent salaries and wages and per capita pension. Adult equivalent agriculture income significantly and positively influences the presence of migration The reverse causality, which is reflected mainly from the use of the migration remittances is not analysed in this study, but its existence is acknowledged and referred to where possible.

A number of household characteristics also play a role in influencing migration decisions. The results show that the presence of migration increases with increasing household size, especially when the number of household members of working age increases.

CHAPTER 8
REMITTANCES AND RURAL INEQUALITY

8.1   INTRODUCTION

In this chapter the second key hypothesis of the thesis is analysed; it states that: *"migration decreases rural income inequality in migration sending areas."* It is concerned with whether remittances (in cash and/or in kind) received by migrant-sending households decrease or increase rural inequality in the migrant-sending areas. The literature reviewed in Chapter 2 indicates the varying views on the way remittances are used and whether remittances increase or decrease inequality in rural areas. There is also disagreement about the answers to fundamental questions regarding the link between migration and development (World Bank, 1999), such as: Are migrants drawn disproportionately from low income, middle income, or high income families? Do remittances compensate rural households and communities for their loss of labour to migration? Do migrants send remittances to their families, or vice versa? Are poor families likely to receive more or fewer remittances from their migrant members than rich families? Migrants from poor families might be expected to have an interest in supporting their family members, but migrants from wealthier families may have greater vested interest in pleasing their parents in anticipation for better chances to inherit their parents' wealth. Does participation in migration raise rural incomes? How do migration remittances affect rural income distribution?

Answers to these and other similar questions are vital to understanding the role that migration plays in meeting food and other basic needs and income objectives. However, this study only attempts to respond to the last question regarding the impact of migrant remittances on the distribution of rural income by size. The answer to this question is very important as it sheds light on rural income inequality, economic growth and social welfare.

In section 8.2 the importance and share of remittances, as already observed from the findings of the study and also from other empirical studies, are summarised. Section 8.3 presents the framework which is later used to analyse the impact of remittances on

the distribution of rural household income in the study area in Limpopo. The effect of remittances on income inequality is measured by the Gini index and depends on the proportion of remittances relative to total household income, the inequality of remittances and the Gini correlation between remittances and total income. The household data from the 1999 / 2000 survey are used to derive Gini indices empirically and to highlight the role of migrant remittances in the level and distribution of rural income. Section 8.4 summarises the findings and highlights some conclusions.

8.2 THE IMPORTANCE AND SHARE OF REMITTANCES IN HOUSEHOLD INCOME

There are pertinent points that emerged from Chapter 6 regarding migration and remittances that will guide the discussion in this chapter:

i)   Most households in the study sample rely, to a great extent, on one of the three income sources, local salaries and wages, remittances or pension, as discussed in Eastwood, et al, 2006.

ii)   The share of remittance in household income of households with land is almost evenly distributed among households with land holdings of between 0.5 to 4 hectares.

iii) The number of migrants and the share of remittance in household income is low among households with land-holdings bigger than four hectare. However, the share of remittance in household income is also low among households with less than 0.5 hectare.

iv)   In value terms, the total amount of remittances received per annum by landless households is higher than the total amount of remittances among the households with land. The highest remittances were received among the landless households, especially in the Southern region. The average annual household cash remittance among households with land was R11 674, while it was R12 650 among landless households. Likewise, the value of the total annual remittances (cash and in-kind) among households with land was R14 144 per household, while it was R16 4881 per household among the landless households. Therefore, it is true that, on the average, the landless households

depend on remittances and receive more remittances than households with larger land-holdings.

In order to analyse income inequality, it is essential to know the structure and composition of income in the rural economy. Part of the discussion on income is presented in Chapter 6 section 6.5; Appendix 7 summarises the different sources of income and provides the necessary background for income inequality analysis. The share of the different sources of income in the total household income is quite distinct; salaries and wages contribute the highest share of 46.3%, remittances (in cash and in kind) contribute 31.7%, pensions contribute 16.2% and income from agriculture contributes only 5.8 % to the total household income. Based on these figures it is fair to say that remittances cannot be ignored as they represent a very large (31.7%) and significant part of income for rural households; thus the remittances, to some extent, determine the distribution of village income.

Clearly, remittances are an important source of livelihood and the effects of migration on rural inequality depend critically on how remittances and the losses and gains of human resources through migration are distributed across households, on how production constraints are faced by different household groups and on how expenditure is linked to the rural economy. According to Stark et al. (1986), over a period of time, migration facilitating information and contacts become diffused through the village population making it possible for migration and receipt of remittances by households across the income spectrum, including the lower end of income distribution. This would most probably work in favour of reducing income inequality, as the poorest households get access to remittances.

These conclusions notwithstanding, there is no agreement on whether remittances increase or decrease inequality in the rural areas. Empirical studies have shown that remittances can increase as well as decrease inequality. While the Indian Village Studies show increasing inequality, Gustaffson and Makonnen's (1994) simulation analysis regarding remittances from male Lesotho migrants employed in South Africa show that remittances decreased inequality. Oberai and Singh (1980) conclude that, as only 6% of remittances flowing into the Indian Punjab were used for productive

investment, remittances improve the distribution of income. Adam's (1996) analysis of the role of remittances in rural Pakistan indicates that different sources of remittances have different effects: remittances from international migration tend to increase inequality, whereas those from national migration have an equalising effect. Stark, Taylor, and Yitzhaki (1998), analysing the impact of migrants' remittances on the distribution of household income in two Mexican villages, argue that inequality depends critically on how the migration opportunities are diffused across village as well as the "returns to human capital embedded in migrants' remittances".

While some studies conclude that migration results in improvement (Adelman & Robinson, 1977), others have concluded that it worsens inequality; for example, Singh, 1977; Rodgers et al., 1978). The overall effect is extremely hard to gauge since it depends on the period over which an assessment is made and on whether both direct and indirect effects are considered. Above all, it depends primarily on the relative propensities of migration among different segments of the rural population and on the flow of remittances and return-migration (return migration is out of the scope of this study). If migration is concentrated among the fairly rich and the fairly poor, then income inequality may tend to grow. However, if the very poor migrate as whole families pushed from the rural areas by debts and loss of land, the beneficial effect on wages may reduce income inequality. In this chapter an attempt is made to test the hypothesis that "remittances received by migration-sending households decrease rural inequality in the migrant-sending area".

8.3   ANALYTICAL FRAMEWORK

Let $y_1 \ldots \ldots y_K$ represent K components of household income and y_0 represent total household income, such that $y_0 = \sum_{k}^{K} = 1 \, y_k$. Since the income receiving unit of analysis is the household, in this discussion, income will refer to household income component k. The component of the income may be positive, such as the regular migrant to household income, or negative, such as household to migrant remittances or taxes. The analysis follows Stuart (1954), Pyatt, Chen and Fei (1980) and Lerman and Yitzhaki (1985). The Gini coefficient for village income is written as a function of the covariance between income and its cumulative distribution, that is:

$$G_0 = \frac{2Cov[y_0 F(y_0)]}{\mu},$$ (8.1)

where, G_0 is the Gini coefficient of total village income, μ_0 denotes village mean income and $F(y_0)$ is the cumulative distribution of total income in the village. Using the properties of the covariance, equation (8.1) can be written as

$$G_0 = \frac{2\sum_{k=1}^{K} Cov[y_0, F(y_0)]}{\mu_0} = \sum_{K=1}^{K} R_k G_k S_{k,}$$ (8.2)

where, S_k is the share of component k of rural income, i.e. $S_k = \overline{y_k}/\overline{y_0}$; G_k is the Gini index corresponding to income component k; and

$$R_k = \frac{Cov[y_k, F(y_0)]}{Cov[y_k, F(y_k)]}$$ (8.3)

R_k is the Gini correlation of component k with total income.[27] The properties of the Gini correlation are a mixture of the properties of Pearson's and Spearman's correlation coefficients (Schechtman and Yitzhaki, 1985).

Equation (8.2) enables us to decompose the impact of remittances in inequality into three terms:

i)   The magnitude of remittances relative to total income
ii)   The inequality of remittances
iii)   The correlation of remittances with total income.

Using this formulation, the effect of a small percentage change in any one component on the Gini of total income can be calculated. If an exogenous change happens in each of the household's income components j by a factor of e, such that $y_j(e) = (I + e)y_j$, taking household labour and decisions as given, then:

$$\frac{\partial G_0}{\partial e} = S_j(R_j G_j - G_0)$$ (8.4)

---

[27] R_k is the correlation coefficient between two variables y_k and y_0.

where $S_{j,} G_j, G_0$ and R_j denote the jth income share, Gini coefficients and Gini correlation before the marginal income changes. Dividing by G_0, we obtain

$$\frac{\partial G_0/\partial e}{G_0} = S_j G_j R_j / G_0 - S_j \qquad (8.5)$$

Equation (8.5) states that the relative effect of a marginal percentage change in component *j* on inequality equals the relative contribution of component *j* to overall inequality minus relative contribution to total income. Thus, as long as remittances play a role in rural village incomes, then

- If the Gini correlation between remittances and total income, R_j, is negative or zero, an increase in remittances necessarily *decreases* inequality.
- If the Gini correlation is positive, then the impact on inequality depends on the sign of $R_j G_j - G_0$. A necessary condition for inequality to *increase* is that the inequality of remittances must exceed the inequality of total household income: $G_j > G_0$ (since $R_j \leq I$).

More understanding of equation 8.5 can be gained by rewriting it as

$$\frac{\partial G_0/\partial e}{G_0} = MR - AR \qquad (8.6)$$

where, MR is a weighted average of the marginal importance from source *j* in households' total income, calculated over all possible pairs of households and weighted by income differences; while AR is the average importance of income from source *j* in households' total income. Equation (8.6) states that the effect of a small percentage change in income from source *j* on inequality depends on the difference between the importance of that income in households' total income.

8.4   EMPIRICAL DERIVATION OF DECOMPOSED GINI INDICES

A detailed analysis of the characteristics of households with and without migrants and the roles played by migration was presented in Chapter 6. It was found that internal

migration plays an important role in labour allocation in all the six sub regions under this study (Bochum, Seshego, Schoonord, Praktiseer, Zebediela and Western). The analysis is now turning to the decomposition of household income inequality in each sub-region and overall in order to establish whether migrant remittances decrease or increase income inequality. Decomposed Gini indices were empirically derived using the aggregated data from three regions (Central, Southern and Western) of Limpopo. Four components of rural income, and therefore, of income inequality were considered, namely:

i)   Farm income (agricultural income: crops and livestock sales)

ii)   Salaries and wages,

iii)   Pension and

iv)   Internal migration remittances.

The results of the decomposition of income inequality by the different sources of income are provided in Table 8.1.

Table 8.1:   Composition of 1999 / 2000 income inequality in Limpopo

Income source	Percentage share in total household income	Share in total household income (S)	Gini coefficient for income source (G)	Gini correlation with total income rankings (R).	Contribution to Gini coefficient of income (SGR)	Percent share in Gini of total income
Salaries/ wages	46.3%	0.46	0.78	0.96**	0.34	72.3
Agricultural income	5.8%	0.06	0.90	0.68**	0.04	8.5
Pensions	16.2%	0.16	0.70	0.16*	0.02	4.3
Remittances	31.7%	0.32	0.55	0.38**	0.07	14.9
Total income including remittances	100%	1.00	0.47	1.000	0.47	100.0
Total income excluding remittances	100%	1.00	0.62 Note the higher Gini coefficient	0.88*	0.54	100.0

** Significant at the 0.01 level (or 99%); * Significant at the 0.05 level (or 95%)

8.4.1 Overall inequality from different income sources

Column (S) of Table 8.1 presents the share of each income source in the total income. Non-remittance income comprises just over two thirds (68%). However, the contribution of migrant remittance income to the household income of 32% is significant. Note that in row 5 only remittance incomes are analysed, while in row 6 all income sources, including remittances, are considered. In row 7 only non-remittance incomes are analyses.

8.4.1.1 Key conclusions

The Gini coefficient (G) in the last row shows the distribution of total income by size excluding remittances. By comparing the last row to the Gini coeficients corresponding to total income (6th row) we obtain a measure of the overall impact of the remittances upon the community income inequality. Income inequality decreases considerably when migrant remittances are considered; it drops by fifteen percentage points from 0.62 to 0.47. The last column of Table 8.1 presents the percentage share in the Gini coefficient of the total income. Salaries and wages contribute the highest share to the Gini coefficient (72.3%) followed by remittances (14.9%). Pensions are shown to contribute the least to the rural income inequality, contributing only 4.3% to the Gini coefficient of the total income. Salaries and wages and agricultural income have the highest Gini coefficients and they are also highly correlated with total income. Thus, it is the relatively better off households at the upper end of the income distribution that receive salaries and wages and agricultural income (most people do not farm because of lack of land). In contrast, pension and remittances have low correlation with total income (0.16 and 0.38, respectively), indicating that pensions and migrant remittances are widely accessible across income groups. The impact of migration remittances upon income inequality will tend to become more favourable as migration opportunities spread throughout the villages, this is explored further in the next section looking at the different sub-regions.

The last column of Table 8.1 shows the percentage contribution of each income category to the total rural inequality. Salaries and wages as one income source and

migrant remittances as another source have an almost similar share of total income (column 3 of Table 8.1); however, remittances account for a smaller percentage of total inequality (14.9%) than that of salaries and wages (72.3%). This means that remittances are distributed more evenly than salaries and wages among the households that receive them. It means also that even some households at the lower end of the income spectrum in rural areas have access to some migrant remittances.

The above explanation not withstanding, it is important to note from the observation in column 6 of Table 8.1 that all the contributions to Gini coefficient of income are positive, implying that all income sources are unequal but pensions and remittances less so than salaries and wages.

Another interesting observation from Table 8.1 is the share in total household income of agriculture income and pensions (respectively 0.06 and 0.16) and the resulting percentage share in Gini of total income (8.5% and 4.3%) of agricultural income and pensions, respectively. Whereas pensions are fairly evenly distributed, agricultural incomes are relatively more unequally distributed, that is, agricultural incomes contribute more to total income inequality than pensions. This is not surprising, given the fact that pensions are distributed among the old and retired people across the income spectrum where as agricultural income are only obtained by the few who own enough arable land and or own livestock.

8.4.2 Share of income sources in the Gini coefficients of sub-regional total incomes

The incomes levels in the six sub-regions were decomposed using two income categories, namely: (1) the non-remittance income (salaries and wages, pensions, agricultural income and any other) and (2) remittance income (only internal remittances are dealt with in this study). A summary of the second decomposition is presented in Table 8.2.

The first column (S) of Table 8.2 presents the share of each income source in the total income of each sub-region. In each case, non-remittance income comprises over half

of all income in all the six sub-regions. However, the contribution of remittance income is also significant, ranging from 21% in Seshego to 45% in Praktiseer.

The distribution of income, by size, in each sub-region is presented as the Gini coefficient, (G) for non-remittance income, remittances and total income. By comparing the non-remittance income Gini coefficients to those corresponding to the total income (bottom row of each sub-region), a measure of the overall impact of the remittances upon sub-regional income inequality is obtained.

Table 8.2: **Composition of 1999 / 2000 income inequality in six sub-regions**

Sub-region and income source (in Adult Equivalent – AE)	Share in total household income (S)	Gini coefficient for income source (G)	Percentage drop in Gini coefficient due to remittances.	Gini correlation with total income rankings (R)	Contribution to Gini coefficient of income (SGR)	Percent share in Gini of total income
Bochum						
Non-remittance income	0.75	0.86		0.96	0.62	76.5
Remittance income	0.25	0.84	**36**	0.90	0.19	23.5
Total income	1.00	0.50		1.00	0.81	100.0
Seshego						
Non-remittance income	0.79	0.79		0.92	0.57	78.1
Remittance income	0.21	0.82	**20**	0.91	0.16	21.9
Total income	1.00	0.59		1.00	0.73	100.0
Schoonord						
Non-remittance income	0.62	0.73		0.68	0.31	58.5
Remittance income	0.38	0.77	**12**	0.76	0.22	41.5
Total income	1.00	0.61		1.00	0.53	100.0
Praktiseer						
Non-remittance income	0.55	0.88		0.89	0.43	55.8
Remittance income	0.45	0.81	**39**	0.94	0.34	44.2
Total income	1.00	0.49		1.00	0.77	100.0
Zebediela						
Non-remittance income	0.73	0.86		0.95	0.60	76.9
Remittance income	0.27	0.74	**27**	0.91	0.18	23.1
Total income	1.00	0.59		1.00	0.78	100.0
Western						
Non-remittance income	0.70	0.78		0.99	0.54	76.1
Remittance income	0.30	0.58	**48**	0.98	0.17	23.9
Total income	1.00	0.30		1.00	0.71	100.0

In each sub-region income inequalities decreased when migration remittances were considered. Column 4 of Table 8.2 indicates the percentage drop in Gini coefficients when remittances are included, ranging from 48% to 12% in the Western and Schoonord sub-regions respectively. In each sub-region, the Gini coefficient for remittance income is nearly as high as for non-remittance income when each income source is considered alone. However, when the two sources of income are combined the resultant Gini coefficient is much smaller than for each source considered alone; this is due to the overall equalizing impact of remittances upon village income inequality. In each sub-region, income inequality decreases when migrant remittances are considered; that is to say, migration remittances have an equalizing effect on rural incomes as follows:

Bochum, from 0.86 to 0.50, resulting to Gini drop of 36%

Seshego, from 0.79 to 0.59, resulting to Gini drop of 20%

Schoonord, from 0.73 to 0.61, resulting to Gini drop of 12%

Praktiseer, from 0.88 to 0.49, resulting to Gini drop of 39%

Zebediela, from 0.86 to 0.59, resulting to Gini drop of 27% and

Western, from 0.78 to 0.30, resulting to Gini drop of 48%

Since in each sub-region income inequality among the sampled households decreased when migrant remittances were considered, the hypothesis that 'migration decreases rural inequality in migration sending areas" is cautiously accepted, at least at the sample and sub-regional levels. Even in the sub-regions where the findings imply that households at the upper hand of the income spectrum received migration remittances (thus accentuating inequality within the sub-region), the overall effect of the remittances was to dampen the level of inequality. This is the case where a high Gini coefficient of the remittances is associated with a high Gini correlation between remittances and total income (as was the case in Bochum, Seshego and Praktiseer). In Bochum and Seshego the highest proportion of the households sampled (19.8% and 10.1%, respectively), depend on pension, while in Praktiseer the highest proportion (28.9%) of sampled households rely on salaries and wages.

The above notwithstanding, in value terms, the landless households of the sampled population received higher remittances than the landed households (see table 6.15);

such a phenomenon is conducive to a situation where remittances may decrease inequality in the rural areas. Thus, it is true that a significant proportion of migrants come from landless households and those that have low land holdings. Where this is the case it implies that the remittances received would play an income equalising role if migrants come from predominantly landless and land poor household.

Stark, et al. (1986) argues that the impact of migrant remittances on income inequalities tends to become more favourable as migration opportunities spread throughout the area or sub-region. A comparison of the impact of the overall remittances upon inequalities in the six sub-regions shows that the decline in inequality due to migration remittances is higher in the sub-regions which were identified in Chapter 6 as having the highest proportion of households receiving remittances. In the Western Region 65% of households have migrants and 37.3% of those households reported receiving remittance income; the Western Region experienced the highest percentage drop in Gini coefficient of 48% when remittances were included. Likewise, Praktiseer, where 18.4% of the households receive remittances, experienced a 39% percentage drop in Gini coefficient of total income. It also worthy noting that:

- When considered separately, the distribution of non-remittance income and the distribution of remittance income in each sub-region are considerably uneven, thus exhibiting high inequality of income as measured by the Gini coefficients. The distribution of remittances between sub-regions also varies considerably, from 0.58 to 0.84 Gini coefficients in the Western and Bochum, respectively.

As equation (8.2) shows, the distribution of income from a particular source and the share of that source in total income reflect only part of the contribution of the income source to overall income inequality. The remaining contribution depends on where the recipients of the different categories of income are located in the overall sub-region income distribution. Column R of Table 8.2 presents the Gini correlations between each income category and total income. The variation in the correlations of the six sub-regions is not too striking but the correlations are all highly correlated with total income.

The importance of the Gini correlation is evident when the percentage contribution of the non-remittance and the remittance income categories of each sub-region are compared to sub-regional income inequality. In all the sub-regions, the migrant remittances account for a significant part of total inequality; the lowest being 21.9% in Seshego and the highest 44.2% in Praktiseer. However, in all cases, the non-remittance income contributes more to the total income inequality of the sub-region; it ranges from a high of 78.1% in Seshego (in Central region) to a low of 55.8% in Praktiseer (in the Southern region).

Two extreme cases have emerged from the empirical results and are pointed out below:

a.   In Seshego, Bochum and Zebediela, percentage shares of remittance income in the Gini of total income are the lowest, implying that in these areas migrant remittances are distributed more evenly than the non-remittance income. It also means that even households at the lower end of the income spectrum in these rural areas may have access to some migrant remittances, thus remittances are seen to decrease inequality. This is a positive indication because it is in these areas where the highest proportion of households that are landless and near landless are found (see Chapter 6, section 6.5.1); most households in these areas are dependent on remittances.

b.   The other extreme represents areas where migrant remittances contribute a high percentage shares in the Gini of total income or to the total inequality. Praktiseer and Schoonoord fall in this category, contributing 44.2% and 41.5% share in the Gini of total income of those areas. Schoonord has the highest mean annual contribution of salaries and wages from resident members and the highest mean of land size. The majority of households undertake some agricultural activities and do not rely on remittances. Migrants in this area most probably originate from the upper end of the income distribution thus increasing income inequality.

c. Praktiseer is more puzzling: 83.2% of the households in that sub-region are landless but only 42.3% of the households have migrants. However, in value terms, Praktiseer receives the highest average annual contribution to total income from migrant remittances (R21 408), which is 45% of the household income. This clearly indicates that less than half of the households have access to remittances, thus increasing income inequality in that area. The area has a double dilemma for the poor people; they have neither access to land or to migrant remittances, probably left to depend on pensions and agriculture subsistence production.

8.5   SUMMARY

The effect of migration remittances on the rural income distribution by size varies from one area to another. It appears to depend critically on the sub-region's migration history and on the degree to which migration opportunities are diffused across the households in a particular area. In the areas where only households at the upper end of the income distribution receive migrant remittances, remittances increase income inequality. This phenomenon may be exacerbated by potential remittance–enhancing skills and education. However, in the sub-regions where the remittances are fairly evenly distributed across the income spectrum their percentage share in the Gini of total income is small. Overall, remittances exhibited a decreasing effect on rural income inequality among the sampled households of each of the six sub-regions studied. The percentage drop in the Gini coefficient due to remittances was substantial in each sub-region.

CHAPTER 9
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

9.1   INTRODUCTION

The main theme of this study was to find out if a link exists between rural out migration and rural inequality of assets; the economic analysis of such link was conducted and the conclusions herein are based on the empirical findings. This study started from the concerns expressed regarding agricultural production in the arid and semi arid areas of Limpopo, where migration was seen as one of the important dynamics in Limpopo provincial economy; it was considered essential to establish the link of migration on rural economies. The study focused on the African rural households and did not deal with all the rural households across the race spectrum.

The overall aim of this study was twofold; firstly, the study analysed and established the effect of unequal distribution of land and other productive assets on rural household migration decisions, secondly it established whether migration remittances (in cash and in kind) received by migrant-sending households decrease or increase rural inequality in the migrant-sending communities or economies, thus assessing the contribution of migration, through remittances, to the migration-sending rural economies. Migration behaviour and characteristics and the influence of household assets size and distribution on migration were investigated. Data were collected using a structured survey instrument to conduct face to face interviews of household heads or their representatives and migrant members of the family. Key informants in the villages surveyed also provided valuable information of the general nature about the villages. Using a multi-stage sampling technique a sample of 585 households was selected and interviews carried out on them, but 12 households were omitted at a later stage, because the migrants in those homes could not be interviewed, despite revisits; thus the sample was reduced to 573 households. The households were selected from 24 randomly selected villages in the Central, Southern and Western Regions of Limpopo. Descriptive and multivariate data analysis was used for this investigation. Note that the author was fully involved in all the stages of the study from field work,

data capturing, cleaning, analysis and coordination to result interpretation and write ups. This Thesis used only part of the data collected relating to the aspects discussed herein.

This chapter holistically looks at the different parts of the study that have tried to explain why migrants leave their homes in search of jobs away from home and whether rural inequality of resources is one of the determinants of migration. The chapter is presented in three sections. Section 9.2 provides the main conclusions based on the findings of the study. Section 9.3 provides some broad and specific recommendations as well as questions for further research in rural migration.

9.2   RESULTING CONCLUSIONS

The following conclusions can be deduced from the empirical results:

(i)   Migrants are not a random sample of the population of origin; it is selective group formed on the basis of one or a combination of characteristics, such as gender, age, education and social status. Migrants in the Limpopo Province have similar usual characteristics as described in the literature: predominantly men, young, fairly educated and moving primarily to find a job; the first period of migration took place between the ages of 15 and 30, the mean age of first migration was about 23.8 years.

(ii)   Economic reasons are no longer considered to be the only trigger for migration, because migration from rural Limpopo (as from other areas of rural South Africa) is continuing despite the prevalence of high urban unemployment. Push factors, such as overcrowded areas and unproductive land were also quoted as motivation for migration. Attractiveness of the urban life to young people and better education facilities were important pull factors. At the same time, the economic contribution from migration through remittances cannot be over emphasized.

(iii)   Households sending out migrants support the migrants through the settling in period. Generally, migration reduces family labour and affects the allocation

of tasks among members of the households. However, in Limpopo over half of the migrant households had enough people to take over the migrants' tasks. The responses on the effect of migration on family labour are in line with the new economics of labour migration (NELM)'s view that migration decisions take place within a family or household context and that the household members left behind reorganise themselves to accommodate the departed members' tasks.

(iv)   The migrants compensate for their absence by regularly sending home remittances in both cash and kind. As migrants do not loose their right to use of the household assets, especially land, they send some remittances for investment back home. However households with migrants receive remittances at varying degrees, some frequently, others sometimes and some rarely.

(v)   Migration remittances supplement rural incomes, boost consumption in rural areas, contribute to household savings and thus can stimulate the local economy. Entire families who receive remittances benefit, and their financial position is improved.

(vi)   Asset distribution is un-evenly distributed and landlessness is common in rural Limpopo, but compared to other assets land and income are more evenly distributed than the other physical assets (farm, livestock and non-farm assets). The lowest Gini coefficient is for total income, including migrant remittances (0.52), and is lowered further to 0.46, when only the households who earn that income are considered. This is a good sign as it implies an equalizing effect of remittances on income distribution. However it could also mean that due to migration assets and income in the rural areas become more unequally distributed; this depends on the whether the migrants are from the poorer or relatively better off segments of the communities.

(vii)   There is a regional dimension of inequality of land distribution that cannot be ignored. Land access is widespread and well distributed among the community members of Western sub-region, thus, making faming for many households a

potential source of livelihood. Praktiseer, in the Southern region, has the most unequal distribution of land-holding the situation is variable in the other sub-regions. Households with smaller land holdings per capita tended to have migrants. This study did not find any evidence to suggest a reverse causation between migration and household size.

(viii)   From a regional perspective, there is no clear cut pattern between the prevalence of migration and land distribution. Our hypothesis that land inequality impacts on household decisions regarding migration would have been accepted if migration was more prevalent in Praktiseer than in Western sub-region, but that is not the case. Western sub-region, with relatively better land distribution also has the highest percentage of households with migrants compared to Pracktiseer. On the other hand, Zebediela with relatively more unequal land distribution also has a high prevalence of households with migrants. The above notwithstanding the findings strongly suggest an inverse U relationship for landed households between land per household and the remittance share in income.

(ix)   In Limpopo livestock is owned by only a small proportion of the community many of whom own small stock, such as goats, pigs and sheep, which have high liquidity and divisibility characteristics. The majority of households are too poor to own any livestock, especially large stock such as cattle.

(x)   The bulk of the farm assets in rural Limpopo belong to 10% of the households. Since the AE Gini coefficient (0.43) for land-holding among land owners is the lowest of the physical assets, it implies that the highest proportion of farm assets owned by the rural households is in a form of land, which enables households to undertake subsistence farming even in the absence of other farm assets. Thus, the point that land is the most important asset in rural Africa can not be overemphasised.

(xi)   Households with land are not always better off than those without land. Some households without land are better off than those with land, because they benefit from other income opportunities, such as salaries and wages, transfer

payments and/or other non-farm opportunities.

(xii) The income from agriculture is the most unequally distributed; this can be attributed to the distribution of all farm and non-farm assets, including land, which accounts for a large share of rural assets. Lack of physical farm assets has a direct impact on the income generated from farm.

(xiii) There is significant positive correlation between the presence of migrants and the size of the household and the number of household members older than 15 years. The implication is that bigger households have a higher tendency of sending out a household member to become a migrant worker, and the more the number of grown up members there are, the higher the tendency to have a migrant. More over, if there is a successful migrant remitting enough to the household the other members who are of age and unemployed or under employed may follow suit. Alternatively it may lead to some members coming back home if the income from remittances is considered to be enough.

(xiv) There is a negative correlation between the presence of migrant and assets and land ownership. Households with migrants tended to have smaller landholdings; the relationship between migration and other asset categories were also negative, implying an inverse relationship between them and the propensity to migrate. These results, therefore, support the hypothesis that access, size and distribution of rural assets and income are important determinants of household migration behaviour. The inverse relationship implies that, as assets become more accessible and increase in amount, migration will tend to decrease.

(xv) Variables influencing migration decisions, either positively or negatively, identified on the basis of the factor loadings include: household land and income factor, pension and household composition factor, livestock factor and asset factor.

(xvi) Increasing household access and size of land, other assets and old age pension decreases the propensity of households to send out members of the family as

migrants, but changing per capita income neither decrease nor increase the odds of migration. Thus the hypothesis that *the size and distribution of household landholding and other productive farm and non-farm assets influence household behaviour regarding migration* is partly accepted because the relationship can not be generalised over all the assets and under all circumstances.

(xvii) The negative influence of pension on migration implies that pension is considered to be one of the main sources of livelihood; an increase in pension income received by the household would discourage migration. This is not necessarily a good thing because active members of households should not be encouraged to depend on pensioners but should be encouraged to assist pensioners. In reality, due to high unemployment levels in Limpopo, in some cases pensions are the only source of income for some households, used not only to buy food but also to meet other basic needs such as costs of health and school fees.

(xviii) Livestock did not have significant influence on migration from the rural areas. This is not surprising for Limpopo, since the province is not well endowed with livestock as a form of asset. Nevertheless, households with migrants have higher total value of livestock than those without migrants.

(xix) Remittances are an important source of livelihood and the effects of migration on rural inequality depend critically on how remittances and the losses and gains of human resources through migration are distributed across households. If the impact of migration on rural income distribution exceeds that of the remittances rational reason would dictate that at individual and household level migrants would return home, but since there is evidence that people migrate for other reasons other than for economic opportunities this may not always happen.

(xx) Different income sources add to income inequality but at different rates and extents. In the case of Limpopo, remittances account for a smaller percentage of total inequality compared to salaries and wages; but pensions contribute the

215

least to the rural income inequality. Income inequality decreases considerably when migrant remittances are considered with the other sources of income and pensions and migrant remittances are more widely accessible across income groups. The second hypothesis, which states that *Migration remittances decrease rural inequality in migration sending areas,* is accepted for Lebowa in Limpopo. However, the impact of migration remittances upon income inequality will tends to become more favourable as migration opportunities spread throughout the villages.

(xxi) Agricultural income is relatively more unequally distributed, and agricultural incomes contribute more to total income inequality than pensions and remittances. This is not surprising, given the fact that pensions are distributed among the old and retired people across the income spectrum and agriculture is a monopoly of only those that own enough land. It is also because agricultural income is affected by all the other unequally distributed farm assets; pension income is weakly correlated with land

(xxii) In each of the six sub-regions (Bochum, Seshego, Schoonord, Praktiseer, Zebediela and Western) income inequalities decreased when migration remittances were included with the other sources of income. In each sub-region, the Gini coefficient for remittance income was nearly as high as for non-remittance income when each income source is considered alone. However, when the two sources of income are combined the resultant Gini coefficient is much smaller than for each source considered alone due to the overall decreasing impact of remittances upon village income inequality.

(xxiii) Overall, remittances exhibit a decreasing effect on rural income inequality; the Gini coefficient of total income including remittances is lower than the Gini coefficients of total income excluding remittances. However the extent to which remittances can decrease or increase income inequality depends critically on the areas' migration history and the degree to which migration opportunities are diffused across the households in that area or village.

(xxiv) Migrant remittances are distributed more evenly than the non-remittance

income in some areas (Bochum, Praktiseer, Zebediela an Western), so that even households at the lower end of the income spectrum have access to some migrant remittances. In such cases remittances are seen to decrease inequality. This is a positive indication because it is in such areas where the highest proportion of households that are landless and near landless are found.

In areas such as Schoonoord and Western, migrant remittances contribute a high percentage shares to the total inequality. Important to note is the fact that, the majority of households in these areas undertake some agricultural activities and do not sorely rely on remittances. The migrants in this area most probably originate from the upper end of the income distribution thus increasing income inequality.

(xxv)   The poor people in areas such as Praktiseer are faced with two dilemma; they have neither access to land or to migrant remittances, probably left to depend on pensions and agriculture subsistence production and or pension.

(xxvi) The effect of migrant remittances on the rural income distribution varies from one area to another and in Limpopo, it appears to depend critically on the sub-regions, migration history and on the degree to which migration opportunities are diffused across the households in a particular area. In the areas where only households at the upper end of the income distribution receive migrant remittances they may increase income inequality; this phenomenon may be exacerbated by potential remittance-enhancing skills and education.

9.3   RECOMMENDATIONS

(i)   Internal migration is likely to continue, in South Africa generally, and in Limpopo in particular, because of the strong regional inequalities that exist. (*A case in hand is the on going disputes of people refusing to have their areas incorporated into other provinces, for example the people from Khotsong, an area currently based in Gauteng, considered a province of opportunities, to the North West considered a poor province* . Even if these people were to be

forcibly and physically moved, they will always find their way back to Gauteng in search of jobs and other attractions). Internal migration is unstoppable, thus planners and policy makers have to concentrate on maximizing the benefits of internal migration for development and reduction of inequality and poverty. Although migration is not the ideal solution to employment generation and poverty reduction, it is an important (and in some cases the only) route out of poverty in the rural areas, where opportunities are scarce and conventional development efforts have had limited success.

(ii)   Evidence from the findings generally suggests that the distribution of assets including land among rural households in Limpopo is unequal and uneven. All other physical assets have an inverse relationship between them and the propensity to migrate. The inverse relationship implies that, as assets become more accessible and increase in amount, migration will tend to decrease. The implication of these findings is that any serious strategy to reduce rural inequalities should hinge on methods that would promote redistribution of productive resources in the rural areas. This provides a powerful argument for land reform, geared towards creating a small farm economy, which is not only for local economic development, but also good for more effective social policy, than allowing the status quo, to keep driving the poor out of the rural areas in search of unavailable jobs in the city. On the other side of the coin, migration remittances, in cash and in kind, may lead to assets being more accessible if some of the remittances are invested in acquiring them.

(iii)   Migrants who have shown commitment to agriculture (for example, those who have invested in agriculture oriented capital resource, such as implements, livestock, irrigation equipment and knowledge etc) should be eligible for more arable land. On the other hand, other possible rural non-farm investments of migration remittances have to be carefully explored. Ensuring remunerative and safe employment in manufacturing and rural services should be a pursued policy goal and viewed as complementary to other rural development policies in the effort to reduce poverty and inequality in the countryside.

(iv)   In areas where households at the middle and lower end of the income

distribution receive migrant remittances, they (remittances) have been shown to decrease income inequality, as shown in Chapter 8. Such a situation should be taken advantage of, by promoting diversification through mobility, for example, by designing possible programmes to reduce the costs of migration. Even though the manner in which remittances are utilized varies and much is used for consumption purposes, remittances can have positive impact on sending households by freeing up other household income, which can be used to purchase other necessities and exert a multiplier effect on the economy, in turn leading a reduction in inequality and poverty and enhancing development in the rural areas.

(vi)   Knowledge management
It is essential to collect and improve the quality of migration data and its use; this will increase awareness and understanding by policy makers leading to effective policies base on up to date information. Data should be widely shared and easily accessed by all stakeholders working in the area of migration and development.

(vii)   Policy makers need to ask more fundamental questions about the best approaches towards reducing poverty and inequality in the rural setting using all available opportunities; for example, other possible rural non-farm investments of migration remittances have to be carefully explored. Ensuring remunerative and safe employment in manufacturing and rural services should be a pursued policy goal and viewed as complementary to other rural development policies in the effort to reduce poverty and inequality in the countryside. Migration needs to be understood from a livelihood perspective and policies need to be designed through multidisciplinary and multi-sectoral studies and analysis. In order to hasten policy response more data and methods for understanding migration and remittance flows have to be explored. The focus should be towards raising awareness of decision makers about socio-economic impact of migration on both sending and receiving areas.

9.5   CONTRIBUTION OF THE STUDY

The information generated by this study will add to the body of knowledge that promotes sustainable rural development through the reduction of rural inequality, and ultimately, the reduction of rural poverty. By isolating the impact of rural inequality on rural migration and the impact of migration on rural inequality and the consequences thereof on rural income and asset distribution, policy makers and planners will be able to make appropriate decisions, for example, regarding the Land Redistribution and Development (LRAD) Programme and similar rural development programmes. Also, by understanding the impact of migration remittances on the migration sending economies policy makers will be able to understand how to maximize the benefits of internal migration for development; for example, this study has clearly showed that migration remittances decreases inequality among the households of migration sending communities, as long as the poor are among those who receive such remittances.

There is a lot of information about counties in Asia and other African countries rural out migration and a concentration of international migration in the South African literature. This study is among the few that has addressed African rural out migration and its effect on communities where the migrants come from; the study adds to the literature about this topic which other researchers can refer to and expand upon.

9.6   POSSIBLE QUESTIONS FOR FURTHER RESEARCH IN RURAL MIGRATION

1. The links between migration and development are complex as there are positives and negatives associated with it, but if well managed migration could have a significant development impact. What kind of policies would make internal migration compatible with and conducive to development?

2. South Africa could investigate about support programmes for maximizing the benefits of migration for development that have been successful in other countries; for examples, the migration labour support programme (MLSP) that was established in Western India (Deshingkar, 2005). Also schemes for migration to improve livelihoods

through vocational training and development of small businesses and agribusinesses as well as support for those left behind.

REFERENCES

ADAMS, R.H (Jr.), 1993. 'The Economic and Demographic Determinants of International Migration in rural Egypt'. *The Journal of Development Studies,* 30(1):146-167. Frank Cass.

ADAMS, R.H. (Jr), 1994. *Non-Farm Income and Inequality in rural Pakistan. A Decomposition Analysis.*

ADAMS, R.H. (Jr), 1995. *Agricultural Income. Cash Crops, ad Inequality in rural Pakistan. Economic Development and Cultural Change (1995).*

ADAMS, R.H. (Jr), 1996. *Remittances, Income Distribution and Rural Asset Accumulation.* Food Consumption and Nutrition Division. International Food Policy Research Institute. Washington, D.C. A Discussion Paper.

ADAMS, R.H. (Jr), 1996. *Non-farm Income, Inequality and Land in Rural Egypt(Draft)* . World Bank. Washington, D.C. Final Paper : *Economic Development and Cultural Change (2002).*

ADELMAN, I., & MORRIS, C.T., 1973. Economic Growth and Social Equity in Developing Countries (Stanford University Press, Stanford, CA).

ADELMAN, I., TAYLOR J.E. & VOGEL, S., 1988. Life in a Mexican Village: a SAM perspective. *Journal of Development Studies,* 25:5-24.

AFRICAN NATIONAL CONGRESS, 1994a. *The Reconstruction and Development Programme (RDP): A policy framework.* Johannesburg: Umanyano.

AHLUWALIA, M.S., 1976. Inequality, Poverty and Development. *Journal of Development Economics 3 307-342.*

ARRIGHI, G., 1970. Labour supplies in historical perspective: A stud o the proletarianization of the African peasantry in Rhodesia. *Journal of Development Studies,* 6:197-237.

ATKINSON, A.B., 1970, "On the Measurement of Inequality". *Journal of Economic Theory*, 2:244-63.

AUDINGTON, E. & LUND, F., 1977. "Questioning Rural Livelihoods" in Lipton and Ellis, F. (eds) *Land Labour and Livelihoods in rural South Africa*, Vol.2: KwaZulu Natal and Northern Province, Durban: Indicator Press.

BALÁN J. (ed.), 1981. Why People Move. Comparative perspectives on the dynamics of internal migration. The UNESO Press.

BEALS, R.E., LEVEY, M.B. & MOSES, L.N., 1967. Rationality and Migration in Ghana'. *The Review of Economics and Statistics,* 49(4):480-86.

BEHRMAN, J., BIRDSALL, N. & SZEKELY, M. 1999. Intergenerational Mobility in Latin America: Deeper Markets and Better Schools Make a Difference. In Nancy Birdsall and Carol Graham, eds. *New Markets, New Opportunities? Economic and Social Mobility in a Changing World.* Washington DC: The Brookings Institution and Carnegie Endowment for International Peace. 135-167.

BENART, W., 1994. *Twentieth-Century South Africa*. Oxford University Press.

BEKKER, S., 1999. Circulatory Migration Linking Cape Town to the Eastern Cape. Some Reflections. University of Stellenbosch. Conference Paper.

BEKKER, S., 2003. The Social Role of Agriculture in South Africa. Paper presented for the Role of Agriculture International Conference. 20-22 October 2003.

BILSBOROW, R., MCDEVITT, T. KOSSOUDJI, S. & FULLER, R., 1987. The Impact of OriginCommunity Characteristics on Rural-Urban Out-Migration in a Developing Country. Demography, Vol. 224, No2, pp.191-210.

BIRDSALL, N. & LONDOŇO, J.L. 1997. Asset Inequality does Matter: Lessons from Latin America. OCE Working Paper. Inter American Development Bank.

BIRDSALL, N., 2000. Why Inequality Matters: The Developing and Transitional Economies. Paper prepared for the conference on The World Economy in the 21st Century: Challenges and Opportunities. Mt. Holyoke College, South Hardley, Massachusetts. February 18-19, 2000.

BOGER, S., 2000. Agricultural Markets Markets in Transition: An Empirical study on contracts and transaction costs in the Polish hog sector. *Institutional Change in Agriculture and Natural Resources 4(275*) Shaker Verlag Germany.

BORHNSTEDT, G.W. & KNOKE, D., 1994. *Statistics for Social Data Analysis.* Third Edition. Itasca, Illinois: FE Peacock Publishers. NB.

BOWLES, S., 1970. 'Migration as Investment: Empirical Test of the Human Investment Approachto Geographic Mobility'. *A Review of Economics Statistics,* 52(4: 354-62.)

BRUNO, M. RAVALLION, M. & SQUIRE, L., 1996. Equity and Growth in Developing Countries. Old and New Perspectives on the Policy Issues. Policy Research Working Paper 1563. World Bank.

BRYCESON, .F. & JAMAL, V., 1997. Farewell to Farms: De-agrarianisation and employment in Africa. Ashgate: 1997.

BRYMAN, A. & CRAMER, D., 2001. Quantitative Data Analysis with SPSS Release 10 for Windows: a guide for social scientists. Routledge, 27 Church Road, Hove, East Sussex BN3 2FA.

BURNS, T., EDDINGTON, B., GRANT, C. & LLOYD, I., 1996. Land titling experience in Asia. Paper prepared for the International Conference on Land titling and administration, Orlando, Florida, November, 196.

CAIN, M., 1985. *On the Relationship between Landholding and Fertility. Population Studies.* Vol. 39(1). Casley, .J. and Lury, D.A. 1981. Data Collection in Developing Countries. Oxford University Press, New York.

CARTER, R.C., 2000. Land Ownership Inequality and he Income Distribution Consequences of Economic Growth. Working Paper o.201. UNU World Institute for Development Economic Research (UNU / WIDER).

CATER, M. & MAY, J., 1997. Poverty and Class in rural South Africa. Unpublished paper presented at the Land and Agricultural Policy Centre (LAPC) conference on rural Livelihoods in South Africa, Fourways, Johannesburg, January 1997.

CHRISTIAENSEN, L., DEMERY, L. & PATERNOSTRO, S., 2002. Growth Distribution and Poverty in Africa. Messages from the 1990s. *POVERTY Dynamics Series.* World Bank.

CLARK, W.A.V., 1986. Human Migration. Volume 7, *Scientific Geography Series.* Editor: GrantIan Thrall.

COLE, W. & SANDERS, R., 1985. "Internal Migration and Urban Employment in the Third World". *American Economic Review* 7(3): 481-494.

COLLIER, P.C. & REMPEL, H., 1977. The Divergence of Private from Social Costs in Rural-Urban Migration: A case study for Nairobi, Kenya. *Journal of Development Studies, No.13, April.*

COMMISSION ON RESTITUTION OF LAND RIGHTS, 2003. Land Restitution in South Africa: Achievements and Challenges.

CONNELL, J., DASGUPTA, B., LAISHLEY, R. & LIPTON, M., 1976. *Migration from rural areas: The evidence from the village studies.* Delhi: Oxford University Press.

COWELL, F.A., 1999, "Measurement of Inequality" in Atkinson, A.B. and F. Bourguignon (eds) *Handbook of Income Distribution*, North Holland, Amsterdam

COWELL, F.A., 1995. *Measuring Inequality* (2nd edition). Harvester Wheatsheaf, Hemel Hempstead.

CROSS, C., MNGADI, MBELE, T., KLEINBOOI, K. SAAYMAN, L. PRETORIUS, H. & BEKKER, S., 1988. *An Unstable Balance: Migration, Small Farming, Infrastructure and Livelihoods the Eastern Seaboard.* Final Report to the Development Ban of Southern Africa. DBSA.Halfway House.

DALTON, H., 1920. "The Measurement of the Inequality of Incomes", *Economic Journal,* 30: 348-61.

DAVANZO, J., 1981. 'Microeconomic Approaches to Studing Migration Decisions.' In Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries, DeJong G.F. and Gardner, R.W., eds. New York: Pergamon Press.

DBSA, 2000. Development Report. *Building Developmental Local Government.* Development of Bank of Southern Africa, Halfway House.

DE BRAUW, A., TAYLOR, E. EDWARD & ROZELLE, S., 2001. Migration and Incomes in Source Communities: A New Economics of Migration Perspective for China.

DE HAAN, A., 1997. Rural Urban Migration and Poverty. The Case of India. *IDS Bulletin*, Vol. 28(2).

DE JANVRY, A., 1995. The Political Economy of Rural Development in Latin America: An Interpretation. *American Journal of Agricultural Economics,* 57 (Aug), pp.490-99.

DE JANVRY, A. & SADOULET, E., 1996. Growth, Inequality and Poverty in Latin America: A Causal Analysis, 1970-94. Working Paper No. 784. University of California at Berkeley.

DE JANVRY, A., 1976. The Political Economy of Rural Development in Latin America: An Interpretation: Reply. *American Journal of Agricultural Economics*, Vol. 58. August, 1976.

DE JANVRY, A., SADOULET, E. AND WOLDFORD, W., 2001. The Changing Role of the State in Latin American Land Reform. Chapter 11 in Alain de Janvry, Gusttavo Gordillo, Jean-Philippe Platteau and Elisabeth Sadoulet (eds.). *Access to Land: Rural Poverty and Public Action*. New York Oxford University Press.

DEININGER, K., 2001. Negotiated Land Reform as One Way of Land Access: Experiences from Colombia, Brazil and South Africa. Chapter 13 in Alain de Janvry, Gusttavo Gordillo, Jean-Philippe Platteau and Elisabeth Sadoulet (eds.). Access to Land: rural Poverty and Public Action. New York: Oxford University Press.

DEININGER, K. & SQUIRE, H., 2001. 1995. Income Distribution and Development. Policy Research Department. World Bank.

DEININGER, K. & BINSWANGER, H.. 2001. The Evolution of the World Bank's Land Policy. Chapter 17 in Alain de Janvry, Gusttavo Gordillo, Jean-Philippe Platteau and Elisabeth Sadoulet (eds.). Access to Land: rural Poverty and Public Action. New York: Oxford University Press.

DEININGER, K. & OLINTO, P., 2000. Asset Distribution, Inequality and Growth. World Bank Group.

DEININGER, K., VAN DEN BRINK, R. HOOGENVEEN, H. & MOYO, S., 2000. How Land Reform Can Contribute Economic Growth and Poverty Reduction: Empirical Evidence from International and Zimbabwean Experience, SARIPS, April 26, 2000.

DELIUS, P., 1997. *The Land Belongs to Us*. Ravan Press. Johannesburg. Department of Land Affairs, National Office, 1997. White paper on South African Land Policy.

DESHINGKAR, P., 2005. Maximizing the Benefit of Internal Migration for Development. In Migration, Development and Poverty Reduction in Asia. International Organization for Migration (IOM), 2005, Geneva Switzerland.

DE WET, C., 1995. Land Tenure, Economic Differentiation and Social Interaction in Ciskei Settlement. *Journal of Contemporary African Studies*, Vol. 13(1).

EASTWOOD, R., KIRSTEN, J. & LIPTON, M., 2006. Premature Deagriculturalisation? Land inequality and rural dependency in Limpopo province, South Africa. *Journal of Development Studies,* Vol. 42(8), 1325-1349.

FINDLEY, S.E., 1987. 'An Interactive Contextual Model of Migration in Ilocos Notre, The Philippines;/ *Demography*, 24(2): 163-90.

FOOD AND AGRICULTURE OF THE UNITED NATIONS (FAO), 2001. Food Agriculture and rural Development. Current and emerging Issues for Economic Analysis and Policy research. Edited by Stamoulis, K.G.(Available on http://www.fao/org/docrep/003/X9808e/X9808e00.htm

FRANCIS, E. & HODDINOTT, J., 1993. Migration and Differentiation in Western Kenya: A Tale of Two Sub-Locations. *Journal of Development Studies, 1993, Vol.30, pp. 115-145.*

GILLIS, M., PERKINS, D.G. ROEMER, M. & SNODGRASS, D.R., 1996. Economics of Development (4th Edition). W.W. Norton & Company.

GRIFFIN, K., 1996. *Land Concentration and Rural Poverty*. London. MacMillan, 1996.

HAIR, J.F. (Jr)., ANDERSON, R.E. TATHAM, L.R. & BLACK, W.C. 1998. Multivariate Data Analysis. Fifth Edition. Prentice-Hall International, Inc.

HARRIS, J.R. & TODARO, M.P., 1970. Migration, Unemployment and Development: A Two-Sector Analysis, *The American Economic Review,* 60 (1970) 1:126-38.

HASSAN, R.M., FLETCHER, L.B. & ADMED, S., 1989. Unequal Wealth Accumulation and Income Inequality in a Unimodal agriculture: Sudan's Rada Irrigation Scheme.

HAYAMI, Y., ADRIANO, L.S. & QUISUMBING, M.A.R., 1990. Toward an Alternative Land Reform Paradigm, a Philippine Perspective Ateneo de Manila University Press, Manila.

HERBELE, R., 1938. "The Causes of rural-Urban Migration: A Survey of German Theories", *American Journal of sociology*, Vol. 42, pp. 932-950.

HOUGHTON, D. & WALTON E., 1952. *The Economy of Native Reserve, Pietermarizburg: Shuter and Shooter.* (Volume 2 of the Keiskammahoek Rural Survey).

HOUSE, W.J., 1991. The Nature and Determinants of Socioeconomic Inequality Among Peasant Households in Southern Sudan. *World Development,* Vol.19, No.7, pp. 876-884, 1991. Printed in Great Britain. Pergamon Press plc.

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD), 2001. *World Poverty Report 2001*. Oxford and New York: Oxford University Press.

JULKA, A.C. & SONI, R.N., 1988. Inequality of Income, Land Ownership and Associated Assets Among cultivating Households in Punjab: An Exercise in Determining Decomposition. *Journal of agricultural Economics*, 43(2).

KENNEDY, P., 2000. AGuide to Econometrics. Blackwell publishers, Maassachusetts, USA. 468pp.

KIM, J., 1979. *Why People Move: Moving Decisions and Directionality in Current Migration Analysis*. Ph.D. Thesis. University of Michigan, University Microfilm International.

KIM, S., 1973. Rural-Urban Migration and Technological Change in Agriculture of a Developing Country, in *Economic Record, Mar.,* Vol.49.

KIRSTEN, J., NGQANGWENI, S. & VAN ZYL, J., 2000. The Revised Programme of Land Reform in South Africa – a Catalyst for Rural Economy Growth? Working Paper. World Bank Processed (May), 2000

KIRSTEN, J.F. & KIRSTEN, M., 2000. The Effect of rural Inequality on Fertility and Migration: A Literature Review. *Development Southern Africa,* 17(.4)..

KIRSTEN J.F., RWELAMIRA, J.K. FRASER, F. & MAKHURA, M., 2002. *The Effects of rural Inequality on Fertility, Migration, Environment and thus Agricultural Sustainability: A Case Study in the Arid and Semi-Arid Areas in the Northern Province of south Africa.* A Country Report submitted to the European Union.

KISH, L., 1965. *Survey Sampling*, Wiley, 1965.

KLASEN, S., 1997. Poverty, Inequality and Deprivation in South Africa: An Analysis of SALDRU Survey, *Social Indicators Research,* Vol. 41, Nos. 1-3, pp. 51-94.

LACZKO,F., APPAVE, G. & PINTO-DOBERNIG, I., 2005. Migration, Development and Poverty Reduction in Asia. International Organization for Migration (IOM), Geneva.

LANJOUW, P. & STERN, N., 1989. '*Agricultural Chains and Inequality in Palanpur*, 1954-1984.

LAPPÉ, F.M., CHOLLINS, J. & ROSSET, P. WITH ESPARZA, L., 1998. *World Hunger: Twelve Mythis World Hunger: Twelve Myths.* Second Edition. New York and London: Grove Press and Earthscan.

LE ROUX, P., 1995. *'The Impact of social Old Age pensions on Household Income in South Africa: The Results of a Study Based on the South African Living Standards Survey',* unpublished mimeograph.

LEE, E.S., 1969. 'A Theory of Migration' in *Demography*, Vol.3 No.1, pp. 47-57.

LEE, E.S., 1969. *'A Theory of Migration'* in Jackson, J.A. (ed.) 1969.

LEVY, M. & WADYEKI, W., 1974. 'What is the Opportunity Cost of Moving? Reconsideration of the Effects on Migration'. *Economic Development and Cultural Change,* 22(2): 198-214.

LEWIS, W.A., 1954. Economic Development with Unlimited Supplies of Labour. *Manchester School of Economic and social Studies.* 22 (May 1954): 139-192.

LIMPOPO PROVINCIAL GROWTH AND DEVELOPMENT STRATEGY (PGDS), 2004 -2014.

LIPTON, M., 1980. Migration from rural Areas of Poor Countries: The Impact of rural Productivity and Income Distribution. *World Development.* *.8(1):1-24,* Pergamon Press Ltd. Great Britain.

Lipton, M. and Klerk, M. (eds.) 1996. Land, Labour and Livelihoods in rural Africa. Indicator Press. 1996. London School of Economics, Development Economics, Re. Programme, DEP No.24, October.

LOW, ALLAN, 1986. Agricultural Development in Southern Africa: Farm – Household Economics and the food Crisis. British Library Cataloguing in Publication Data.

Lucas, R.E., 1997. Internal Migration in Developing countries in *Handbook of Population and Family Economics*, edited by Rosenzweig, M. and Stark, I., Elsevier Science, B.V.

MAGUBANE, B., MIGRATION AND DEVELOPMENT. IMPLICATIONS FOR ETHNIC IDENTITY AND POLITICAL CONFLICT, Safa, H.I. & Du Toit, B.M. General (Ed.) 1975. Mouton Publishers.

MAKHURA, M., 1999. A Factor Model of the Nature and Pattern of Farm-Non-Farm Linkages in the Rural Areas of the Northern Province. Poster paper presented at the 37th annual AEASA (LEVSA) conference held in Club Mykonos, Langebaan, WC on 28-30 September 1999.

MAKHURA, M.T., 2001. Overcoming Transaction Costs Barriers to Market Participation of Smallholder Farmers in the Limpopo Province of South Africa. Unpublished Ph.D. thesis, University of Pretoria.

MANLAY, B. F. J.,1998. *Multivariate Statistical Methods: A primer.* Chapman & Hall London. 215pp.

MASSEY, D.S., ARANGO, J. HUGO, G. KOUAOUCI, A. PELLEGRINO, A. & TAYLOR J.E., 1998. *Worlds in Motion: Understanding International Migration at the End of the Millennium (with).* Oxford: Oxford University Press.

MAY, J. (ed.) ,1998. *Poverty and Inequality in South Africa.* Report prepared for the Office of the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality. Durban. Praxis Publishing, 1998.

MAY, J., 1987. Differentiation and Inequality in the Bantustans: Evidence from KwaZulu. Social Dynamics Vol. 13, No.2: 1-13.

MAY, J., (ed.)., 1998. *Poverty and Inequality in South Africa.* Report prepared for the Office of the Executive Deputy President and the Inter-Ministerial committee for Poverty and Inequality. Durban, Praxis Publishing, 1998.

MCDOWELL, C. & DE HAAN, A., 1997. 'Migration and Sustainable Livelihoods: A Critical Review of the Literature. 'IDS Working Paper 65'.

MCKINLEY, T., 1993. Agrarian Transformation and the Distribution of Fixed Productive Assets in China. *Development and change* (SAGE, London, Newbury Park and New Delhi), Vol.24 (1993), 487-510.

MEKURIA, M. & MOLETSANE, N.P., 1996. Initial findings of Rural Household food Security in Selected Districts of the Northern Province. Agrekon Vol. 35, No.4: 309-313.

MEYER, J.P., 1993. Constraints to Agricultural Development in the Northern Province: A Report to the Development Bank of southern Africa, Halfway House.

MILLS, M. & WILSON, M., 1952. Land Tenure. Pietermaritzburg: Shuter and Shooter (Vol. 4 of the Keiskammahoek rural Survey).

MINCER, J., 1978. "Family Migration Decisions: *Journal of Political Economy* 86(5): 749-773.

MOHTADI, H., 1990. Rural Inequality and rural Push versus Urban Pull Migration: the Case of Iran, 1956-1976. *World Development*, 18, No.6 pp.837-844, 1990.

MUKHERJEE, C., WHITE, H. & WUYTS, M. 1998. Econometrics and Data Analysis for Developing countries. Priorities for Development Economics. Routledge Publishers, London, New York.

MURPHY, R., 2005. Helping Migration to Improve Livelihoods in China: Vocational Training, Development of Small Businesses and Support for Those Left

Behind. In Migration, Development and Poverty Reduction in Asia. International Organization for Migration (IOM), 2005, Geneva Switzerland.

NATIONAL RESOURCES INSTITUTE, 1999. University of Greenwich.

NGUYEN, Q., 1989. *Concentration of Income and Landholdings: Prediction by Latent Variable and Partial Least Squares. Journal of Development Economics,* 1999.

NICHOLLS, W.H., 1964. The Place of Agriculture in Economic Development, in Eicher, C. and Witt, L. (eds.). Agriculture in Economic Development. New York, McGraw Hill.

NJOBE, B., 1993. Beneficiary Identification; Establishing Criteria for participation in South Africa rural Restructuring Programme. In the Land Redistribution Options Conference Proceedings. 12-15 October 1993. the Land and Agriculture Policy Centre, Braamfontein.

NURKSE, R., 1962. Problems of Capital formation in Underdeveloped countries, Oxford: Basis Blackwell.

OBERAI, A.S. & SINGH, H.K.M., 1983. Causes and consequences of Internal Migration. A Study in Indian Punjab. Oxford University Press.

OOSTHUIZEN, M. & NAIDOO, P., 2004. International Migration to Gauteng Province. Working Paper 04/88. ISBN 1-920055-03-7. Development Policy Research Unit, University of Cape Town.

OKUN, A.M., 1975. Equality and Efficiency: The Big Tradeoff. Washington, D.C.: The Brookings Institute.

PIGOU, A.F., 1912. *Wealth and Welfare,* MacMillan, London.

POSEL, D., 2003. Have Migration Patterns in Post-Apartheid South Africa Changed? Paper prepared on African Migration in Comparative Perspective, in Johannesburg, South Africa, 4-7 June 2003. University of Natal, South Africa.

PRAHLADACHAR, M., 1987. Some Aspects of Asset Structure in Rural Marnataka, 1971-82. *India Journal of Agricultural Economics.* Vol.42, No.3., July-September 1987.

RANIS, G. & FEI, J.C.H., 1961. A Theory of Economic Development. *Economic Review,* .51(4):533-565.

RAVALLION, M., 2000. Growth, Inequality and Poverty: Looking Beyond Averages. http://www.worldbank.org/research/povmonitor. Development Research Group, World Bank.

ROBERTS, B. & MAY, J., 2000. A Dynamic Analysis of Household Livelihoods and Asset Accumulation in Post-Apartheid South Africa: Evidence from KwaZulu Natal. Paper presented to CSAE Conference "Opportunities in Africa: Micro-evidence on Firms and Households", St. Catherine's college, Oxford, April 9th – 10th , 2000.

ROBINSON, J., 1956. The Accumulation of Capital. London: Penguin Books.

ROSENZWEIG, M.R., 1985. "Specific Experience, Household Structure and Integrated Transfers: Farm, Family Land and Labour Arrangements in Developing countries". *Quarterly Journal of Economics*, 100:961-86 (Supplement).

ROSENZWEIG, M.R., 1988. Risk. Private Information and the Family. *American Economic Review*, Vol.78, pp. 837-844.

ROSSET, P., 2001. Access to Land Reform and Security of Tenure. Food First / Institute for Food and Development Policy, Oakland, USA.

ROZELLE, S., TAYLOR, J.E. & DE BRAUW, A. 1999. "Migration, Remittances and Productivity in China". *American Economic Review*, 89(2): 287-291.

RWELAMIRA, J. & EWANG, P., 199. 'Linkages Between Farm and Non-Farm Enterprise: Implications for rural enterprise Development". Study commissioned by the Land and Agriculture Policy Centre (LAPC).

SALVATORE, D., 1982. Schaum's Outline of theory and Problems of Statistics and Econometrics. Schaum's Outline Series, McGraw-Hill Book company.

SANDHU, P.S. & GREWAL, S.S. 1987. The changing Land Holdings Structure in Punjab. *Indian Journal of Agricultural Economics,* Vol.42, No.3, July-Sept. 1987.

SEN, A.K., 1973, *On Economic Inequality*, Oxford University Press, London

SHARMA, H.R., 1988. Structure and Distribution of Agricultural assets on Irrigated Farms of Himachal Pradesh. *Agricultural Situation in India*. Vol.42, No.10: 899-902.

SHAW, R.P., 1974. Land Tenure and the Rural Exodus in America. *Economic Development and Change*, 23:123-132.

SHEN, J., 1995. Rural Development and Rural to Urban Migration in china. *Geo-Forum,* .26(4):395-409. Swansea, U.K.

SOLIMANO, A., 1999. Beyond Unequal Development: An Overview. In A. Solimano, E. Animat and N. Birdsall (eds*.). Distributive Justice and Economic Development*. The University of Michigan Press, 1999.

SINGH, I., SQUIRE, L. & STRAUSS, J., 1986. An Overview of Agricultural Household Models – The Basic Model: theory, Empirical results and Policy conclusions. In Singh I., L. Squire, and J. Strauss (eds). *Agriculture Household Models, Extensions, applications and Policy*. Baltimore: The World Bank and the Johns Hopkins University Press. Pp. 17-47.

SPSS Inc., 1999. SPSS® Base 10.0 Applications Guide. ISBN 0-13-017901-9. Marketing Department, SPSS Inc., Chicago, IL 60606-6307.

STARK, O., 1976. Rural to Urban Migration and Some Economic Issues. A Review utilizing findings of surveys and empirical studies covering the 1965-1975 period. Geneva, ILO: mimeographed World Employment Programme Research Working Paper.

-------, 1984. "Rural to Rural Migration in LDC's: A Relative Deprivation Approach." *Economic Development and Cultural Change*, 32(3), 1984: 475-86.

-------, 1991. "Migration Incentives, Migration Types: the Role of Relative Deprivation", *The Economic Journal* 1101 (1991): 1163-78.

STARK, O. BLOOM, D., 1985. The New Economics of Labour Migration. *American Economic Review,* 75: 173-8. (re-printed in Stark, 1991.)

STARK, O. & LEVHARI, D., 1982. On Migration and risk in LDCs, *Economic Development and Cultural Change*, Vol.36, 465-81.

STARK, O., TAYLOR, J.E. & YITZHAKI, S., 1986. "Remittances and Inequality". *"The Economic.Journal 96*: 722-40."

STARK, O. & YITZHAKI, S., 1988. "Labour Migration as a Response to Relative Deprivation." *Journal of Population Economics* (1988): 57-70.

STATISTICS SOUTH AFRICA, 1994-1999. October Household Surveys, 1994-1999.

STATISTICS SOUTH AFRICA, 1996. The People of south Africa Population Census, 1996. Report No. 03-01-11 (1996). Published by Statistics South Africa, Private Bag X44, Pretoria 0001

STATISTICS SOUTH AFRICA, 2003. The People of South Africa Population Census, 2001. Published by Statistics South Africa, Private Bag X44, Pretoria 0001.

STATISTICS SOUTH AFRICA. Rural Survey 1997.

STATISTICS SOUTH AFRICA, General Household Survey, July 2003.

STIGLITZ, J.E. & WEISS, A., 1981."Credit Rationing in Markets with Imperfect Information", with, *AER*

SUBRAMANIAN, S. & SODOULET, E., 1990. The Transmission of Production Fluctuations and technical Change in a Village Economy: A Social Accounting Matrix Approach. *Economic Development and Cultural Change 3 (1):131-173*.

TAYLOR, J.E, 2001. Migration: New Dimensions and characteristics, Causes, Consequences and Implications for Rural Poverty.

TAYLOR, J.E. & WYATT, T.J., 1996. The Shadow Value of Migration Remittances, Income Inequality in a Household-Farm Economy. *Journal of Development Studies,* 32(6):900-912.

TAYLOR, J.E., ZABIN, C. & ECKOFF, K., 1999. Migration and Rural Development in El-Salvador: Micro-Economy wide Perspective. *North American Journal of Economy and finance*, 10:91-114.

TESFAYE, T. & YISEEHAC, Y., 1998. On Poverty in Rural Botswana: Results from a Survey of Small Villages. The Organisation for Social Science Research in Eastern and Southern Africa. *Eastern Africa Social Science Research Review,* Vol. XIV: 2. June. Addis Ababa.

THE CONCISE OXFORD DICTIONARY OF CURRENT ENGLISH, 9th Edition, 1995.

THE LIMPOPO PROVINCE INTEGRATED RURAL DEVELOPMENT FRAMEWORK, 2000. Office of the Premier, Pietersburg.

THE NEW PARTNERSHIP FOR AFRICA'S DEVELOPMENT (NEPAD) Document. October 2001. http://nepad.org

THE NORTHERN PROVINCE GOVERNMENT, 1997/98.   Growth and Development Strategy in the Northern Province.. 1997/98.

THE NORTHERN PROVINCE GOVERNMENT, 2000/2001. Report of Activities of the Northern Province Government, March 2000 – February 2001.

THE OPEN UNIVERSITY, 1982. Migration Studies. Patterns and Processes of Internal Migration. The Curwen Press Ltd., London, 1982.

THERON, F. & GRAAFF, J.F., 1987. Rural-Urban Migration: Aspects of Theory, Policy and Practice.

THOMPSON, D., (ed.). 1995. The Concise Oxford Dictionary of Current English, Ninth Edition, (1995). Clarendon Press. Oxford. First edited by H.W. fowler and F.G. Fowler.

TODARO, M.P., 1969. "A Model of Labour Migration and Urban Unemployment in Less Developed Countries". *American Economic review* 59(1): 138-158. http://www.worldbank.org/poverty/inequal/methods/measure.htm.

-----, 1991. Economic Development in the third World. Fourth Edition. New York. Longman Inc., 1991.

Todaro, M.P. and Smith, S.C. 2003. Economic Development, Eighth Edition. The Addison-   Wesley series in Economics.

TODARO, M.P., 1997.   Economic Development Sixth Edition.   New York University. Addison- Wesley Reading, Massachusetts. Longman Limited.

TODARO, M.P., 1969. A Model of Labour Migration and Urban Unemployment in Less Developed Countries. *The American Economic Review* 59(1):138-148.

TOURE, M. & FADAYOMI, T.E. (eds.)., 1992. Migrations, Development and Urbanisation Policies in Sub-Saharan Africa. CODESTRIA Book Series.

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP), Human Development Report, 1994 (New York : Oxford University Press, 1994).

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP), South Africa Human Development Report 2003. Oxford University Press.

USHER, E. (ed), 2005. The Millenium Development Goals and Migration. IOM, Geneva Vaughan, E.D. and Vaughan, E.A. 1998. Statistics. Tools for Understanding Data on Behavioural Sciences. Prentice Hall.

WEBB, JOHN R., 1992. Understanding the Designing Marketing Research. London: Academic Press.

WHITEFORD, A. & VAN SEVENTER, D.E. 1999. Winners and Losers, South Africa's Changing Income Distribution. WEFA Southern Africa: Pretoria, south Africa.

WHITESIDE, A., 1985. Past Trends and future Prospects for Labour Migration to South Africa. The South African Institute of International Affairs.

WILLIAMSON, J.G., 1985. Migration and Urbanization in H. Chenery and T.N. Srinivisan (eds.). P. *Handbook of Development Economics*. Elsevier Science Publishers, New York, 426-446.

Woolard, I. and Barbaton, 1998. "The Extent of Poverty and Inequality" in Barberton, C., Blake, M. and H. Kotzé, Creation Action Space: *The Challenge of*

Poverty and Democracy in South Africa. Cape Town, IDAA and David Philip Publishers.

WORLD   BANK   POVERTY   NETWORK   WEBSITE,   2002. http:www.wordbank.org/poverty/inequality/themgrp/seminars/index.htm

WORLD BANK, 1998. World Development Indicators. World Bank,. Washington, D.C. U.S.A.

ZOOMERS, A & VAN NAERSSEN, T., 2006. International Migration and national development in sub- Saharan Africa. Working Paper Migration and Development Series. Report No. 14. Migration and Development Research Group, Radboud University, Nijmegen, the Netherlands.

242

APPENDICES

Appendix 1: Study questionnaire

THE IMPACT OF RURAL INEQUALITY ON MIGRATION, VIEWED AS AN ALTERNATIVE HOUSEHOLD RESPONSE TO CHANGING RESOURCE RATIOS

HOUSEHOLD QUESTIONNAIRE

(Respondent: Mainly household head or his/her representative)

SECTION 0: INTRODUCTION

0.1	0.2	0.3	0.4	0.5	0.6
Code of interviewer	Number of community	Name of village	Service Center (sampling unit)	Number of dwelling	Number of household
I._._.	C._._._.		E._._._._.	D._._.	H._._.

0.7	0.8 (only if the household is single-ethnic)
Is this a single or multiethnic household?	Ethnicity of household
[_] Single →Q.0.8 [_] Multi →Q. 0.9	**South-Africa:** [_] 1=MoPedi (N. MoSotho) [_] 2=MoVenda [_] 3=MoTsonga [_] 4=MoXhosa [_] 5=MoZulu [_] 6=MoSwazi [_] 7= Asian [_] 8= Coloured [_] 9=White [_]10=Other (Specify) _____ ____ **India:** [_] 1=Scheduled castes [_] 2=Scheduled tribes [_] 3=Other backward castes [_] 4=Other **Botswana:** [_] 1=Motswana [_] 2=Mokalanga [_] 3=Mokhalaghadi [_] 4=San [_] 5=Coloured [_] 6=White [_] 7=Other

0.9	0.10 (only if the household has a unique religious affiliation)
Is this household characterised by a unique religious affiliation?	Which one?
[_] Yes →Q 0.10 [_] No →Q 0.11 ._._._.	[_] 1= Hindu [_] 2= Muslim [_] 3= Sikh [_] 4= Jain [_] 5=Jewish [_] 6= Parsi/Zoroastrian [_] 7= Buddhist/Neobuddhist [_] 8= Animist/ Traditional/Spirits [_] 9= Catholic [_] 10= Protestant [_] 11=Zionist [_] 12=Apostolic [_] 13=Other Christian [_] 14=Other (Specify)_____ [_] 15=No religion

Please, record the following information

	First visit	Second visit	Third visit
Date of interview	0.11	0.12	0.13
Time started	0.14	0.15	0.16
Time ended	0.17	0.18	0.19
Result	0.20	0.21	0.22

SECTION 1 - HOUSEHOLD COMPOSITION

List names of all members who are considered part of the household, whether usually residing there or not.*	1.1	1.2	1.3	1.4	1.5	Individual ID*
	Age now	Gender	Marital Status	Relationship to the household head	Is he/she a usual resident member of the household or not?	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	
		[_] M / F [_]			[_] Yes / No [_] / _-_-_-	

		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	
		[_] M / F [_]			[_] Yes / No [_] / _._._.	

| Note: We are interested in gathering information about all the people who the interviewed person / head of the household considers part of his/her household. Therefore we want to list all resident and non-resident members (though not all questions are administered to non-residents). These categories are 'migrants', but we want to avoid this term as much as possible. What is important is who is considered a member, whether absent or not. (See interviews instructions) | Enter raw number of age at last birthday | | 1=Single 2=Civil marriage 3=Customary marriage 4=Divorced 5=Separated 6=Widowed not married 7=Living together /in process to get married | 1= Resident head 2= Absent head 3= Wife / husband /partner 4= Son / daughter 5= Father / mother 6= Grandchild 7= Grandparent | 8= Brother / sister 9= Brother/ sister in law 10= Son/daughter in law 11= Other relative 12= Household help 13= Other (e.g. lodger) (Specify)_____ | 1=Yes 2=No

In all cases fill next column; if resident go to Q.1.6, else skip to next member or, if last member, go to next section | * Note: R._._. (usual Resident member within that Hh: e.g. R01; R02; etc.) N._._. (usual Non resident member within that Hh: e.g. N01; N02; etc.) |

ONLY FOR RESIDENT MEMBERS

ID	1.6	1.7 (Only if the household is multi-religious, cf. Q.0.9)	1.8 (Only if the household is multiethnic, cf. Q.0.7)
	Highest school standard passed	Religion	Ethnicity
R.0.0.1			
R._._._.			
R._._._.			
R._._._.			
R._._._.			
R._._._.			
R._._._.			
R._._._.			

R._._._.						
R._._._.						
R._._._.						
R._._._.						
R._._._.						
R._._._.						
R._._._.						
R._._._.						
	Use either years- preferred choice- or levels: 1, 2, …, 18=Years of school 50= Primary school 51=Secondary school 52=Diploma 53=Degreee 54= Other (Specify)_____	1= Hindu 2= Muslim 3= Sikh 4= Jain 5=Jewish	6= Parsi/Zoroastrian 7= Buddhist/Neobuddhist 8= Animist/ Traditional/Spirits 9= Catholic 10= Protestant	11=Zionist 12=Apostalic 13=Other Christian 13=Other (Specify) _____ 14=No religion	South-Africa: 1=MoPedi 2=MoVenda 3=MoTsonga 4=MoXhosa 5=MoZulu 6=MoSwazi 7=Asian 8=Coloured 9=White 10=Other, Specify	India: 1=Scheduled castes 2=Scheduled tribes 3=Other backward castes 4=Hindu other that scheduled caste or tribe 5=Non-Hindu Indian 6=Other (Specify)_____	Botswana: 1=Motswana 2=Mokalanga 3=Mokhalaghadi 4=San 5=Coloured 6=White 7=Other (Specify)_____

ONLY FOR RESIDENT MEMBERS

ID	1.9	1.10 Only for employed and self-emp.	1.11 Only for students and workers	1.12		1.13	
	Main vocational status of each h/h member in month before survey	For the employed, main sector of work	Where does this person work or study? (NOTE: estimate and insert distance categories from place name as mentioned by respondent)	How much did each household member contribute to the home from labour earning?		How much did each household member contribute to the home from pension/welfare remittances?	
				1.12.1 Amount	1.12.2 Currency	1.13.1 Amount	1.13.2 Currency
R.0.0.1				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	
R._._._.				-_-_-_-_-_-		-_-_-_-_-_-	

R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	
R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	
R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	
R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	
R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	
R._-_-_.			`-_-_-_-_-`		`-_-_-_-_-`	

R._._._.			·-_-_-_-·-		·-_-_-_-·-	
	1=Baby, pre-school - home or crèche→go to next Q 2=Scholar / student – attending →Q.1.11 3=Retired - not working →Q.1.13 4=Labour disabled-not seeking work →go to next Q 5=Housewife / help - unpaid work →go to next Q 6=Unemployed - seeking work →go to next Q 7=Unemployed - not seeking work →go to next Q 8=Employed - mainly informal[28] →Q.1.10 9=Employed - mainly formal[29] →Q.1.10 10=Employed - both sectors 50:50 →Q.1.10 11=Self-employed - formal sector[b] →Q.1.10 12=Self-employed - informal sector[b] →Q.1.10	1= Agriculture 2=Cattle farming 3= Industry 4= Tertiary sector/services of any kind 5= Civil servant	1= This village 2= Neighbouring village 3= Less than 20 km 4= More than 20 km away 5= More than 100 km away 6=Other (Specify)_____	NOTE: Indicate raw amount in Rands / rupees / pula earned/contributed by each person permanently living in household from wages or salaries or pensions or welfare or migrant or business activities remittance, in the last month up to survey day, or average month if last month exception. If respondent does not wish to state actual amount, ask e.g. 'Between 50 and 100, 100 and 150, etc. and write in mid figure, e.g. 75, 125, etc. If None=0.		

SECTION 2: QUESTIONS TO HOUSEHOLD HEAD ABOUT USUALLY NON-RESIDENT MEMBERS

---

28 Employment is informal when unregistered, e.g. by small firms, or family artisan enterprises, or on family farms.

29 Formal employment or self-employment means that the employer is a large or registered company or farm, or the government, or that one's activity is officially registered.

(NOTE: Ask household head about usually non-resident members, if any. Use ID codes of non resident member as in section 1)

Use ID codes of non-resident (see ID section 1)	2.1	2.2	2.3
	At what age did (NAME) first migrate? (e.g. leave the household to live somewhere else for some relevant amount of time)	Why did this person migrate? (NOTE: main reason only. Same definition as in question 2.1)	Has this person been in contact with you during the last year? (NOTE: any kind of contact, visiting, sending money etc.)
N.0.1			
N._._.			
N._._.			
N._._.			
N._._			
N._._.			
		1= Work 2= Education 3= Marry 4= Natural disaster (includes flood, crop pests, widespread fire) 5= Drought 6= Illness 7= Death of an earner 8= Quarrel 9= Unproductive land 10= Other (Specify) _____	Yes= →go to next question No= →Q 2.15

ASK ABOUT NON-RESIDENT MEMBERS WHO HAVE BEEN IN CONTACT

253

ID	2.4				
	What type of migration did this involve? (e.g. occasional/regular: see codes) (Repeat the question for each year below)				
	2.4a During this/last year (1999) ..	2.4b year before (1998)	2.4c – 2 years ago (1997)	2.4d - 3 years ago (1996)	2.4e - 4 years ago (1995)
N._._.					
N._._.					
N._._.					
N._._.					
N._._.					
N._._.					
N._._.					
	From Q2.4a to Q2.5e use the following codes: 1=None; 2= Seasonal (harvest etc.); 3=Occasional/activities that do not occur each year (e.g. for building roads); 4=Long-term; 5=School attendance; 6= Other (specify)				

ID	2.5				
	Would it be possible for you to give us an idea of the amount of time, expressed in number of months he/she was absent?				
	2.5a During this/last year (1999)	2.5.b year before (1998)	2.5.c – 2 years ago (1997)	2.5.d - 3 years ago (1996)	2.5.e - 4 years ago (1995)
N._._.					
N._._.					
N._._.					
N._._.					
N._._.					
N._._.					

ID	2.6	2.7	2.8
	When this person left, did he/she lose the right to the use of assets (land, cattle, any other)?	When (NAME) left, were any of his/her tasks taken over by somebody else?	Within your household, was there sufficient labour (people) available to take over the tasks of the person who left
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
N._._.	[_] 1=Yes / 2=No [_] / ._._._.		
		(Codes from 3 to 12 are the same codes of Q.1.4) 50=Nobody 7= Head's grandparent 51=Various 8= Head's brother / sister 52=No tasks 9= Head's brother/ sister in law 3= Head's wife / husband /partner 10= Head's son/daughter in law 4= Head's son / daughter 11= Other relative 5= Head's father / mother 12= Household help 6= Head's grandchild 13= Other (e.g. lodger) (Specify)_____	1= Yes, all the time 2=Yes, usually or except in peak seasons 3= Usually not 4=No or hardly ever

255

ID	2.9	2.10.				2.11 (If migrant away for more than 1 year)
	Does she/he support the household by sending or bringing back goods or money ?	Can you give us some idea of how much (NAME) has brought or sent home during the last year?				Would you say that the amount brought / sent back (total) was more or less than the preceedings years?
		2.10.1 Cash	2.10.2 Currency	2.10.3 Value of goods	2.10.4Currency	
N._._.		._._._._._._._.		._._._._._._._.		
N._._.		._._._._._._._.		._._._._._._._.		
N._._.		._._._._._._._.		._._._._._._._.		
N._._.		._._._._._._._.		._._._._._._._.		
N._._.		._._._._._._._.		._._._._._._._.		
N._._.		._._._._._._._.		._._._._._._._.		
	1=Frequently or to a large extent 2=Sometime or to a moderate extent 3= Rarely or to a small extent 4=Not at all→Q2.14					1=Less 2=More 3=Same

ID	2.12	2.13	2.14	2.15 (THIS QUESTION IS REQUIRED ONLY AT HOUSEHOLD LEVEL)	2.16	2.17
	What are these remittances/ cash mainly used for?	**Who, would you say, is the main beneficiary of these remittances?**	**Do you, or other members of the household also support (NAME), e.g. by giving or sending food or money?**	**Would you say that the fact that (NAME) spends most of his/her time elsewhere has improved the situation of the household?**	**Is (NAME) present now? (NOTE: to be interviewed in section 7)**	**If YES, when is she/he available for interview? (Try to fix date for interview)**
N._._.			[_] 1=Yes / 2=No [_] / ._._._.		[_] 1=Yes / 2=No [_] / ._._._.	._._/_._/19._._.
N._._.			[_] 1=Yes / 2=No [_] / ._._._.		[_] 1=Yes / 2=No [_] / ._._._.	._._/_._/19._._.
N._._.			[_] 1=Yes / 2=No [_] / ._._._.		[_] 1=Yes / 2=No [_] / ._._._.	._._/_._/19._._.
N._._.			[_] 1=Yes / 2=No [_] / ._._._.		[_] 1=Yes / 2=No [_] / ._._._.	._._/_._/19._._.
N._._.			[_] 1=Yes / 2=No [_] / ._._._.		[_] 1=Yes / 2=No [_] / ._._._.	._._/_._/19._._.
	1=Food 2=Clothes 3=Education 4=Inputs/tools 5=Buy land 6=Health 7=Repaying t debt 8=Improving house 9=Paying labourers 10= Other (Specify)_____	1= Whole household or family 2= Head 3= Head's partner 4= Other (please, if possible, specify the ID code, see section 1)- specify_____		1=Yes, very much 2=Yes, a little bit 3=Much the same 4=A little worse 5=Much worse		

257

SECTION 3 INCOME
ONLY FOR HOUSEHOLD NOT FOR INDIVIDUALS
NOTE TO INTERVIEWERS s: Time period for the answers of this section should be one year (that is last 12 months) for "large" items (e.g. livestock) and one month (that is the last 30 days) for "small" items (e.g. livestock products). (help respondent to recall dates more precisely by referring to village events of which you know the dates. Such events will have been previously reviewed with headperson/official/records). For incomes, please try to find out the money equivalent in case of barter.

3.1	3.2
We'd like to know whether staple food/crops, grown on the land you have farmed in the last year, supply much of your resident household members' consumption of staple food	**We'd like to ask about animal products –meat, poultry meat, milk, soured milk, other dairy products, eggs, etc., - from your owned or managed animals, eaten in your household in the last year. What was such consumption like?**
[_] 1=More than enough, with a surplus for sale or other uses	[_] 1=Regular and a large part of resident household members' diet
[_] 2=More than half the staples consumption	[_] 2=Regular and a small part of the diet
[_] 3=Less than half but more than a quarter	[_] 3=Infrequent and/or unimportant
[_] 4=A quarter of staples consumption or a bit less	[_] 4=None or negligible
[_] 5=None, or almost none of your staples consumption	[_] 5=No food-providing animals managed or owned
[_] 6=No staple food crops grown	[_] 6=Other (Specify)_____
[_] 7=Other (Specify)_____	

3.3		3.4		3.5		3.6	
Income from crop sales (per year, last year)		**Income from renting out ox(en), plough, other equipment (per year, last year)**		**Income from sales of manure or compost (per year, last year)**		**Income from sales of live cattle/goats/sheep/ pigs/donkeys/chickens/other poultry/domestic animals (per year, last year)**	
3.3.1 Amount ._._._._._.	3.3.2 Currency	3.4.1 Amount ._._._._._.	3.4.2 Currency	3.5.1 Amount ._._._._._.	3.5.2 Currency	3.6.1 Amount ._._._._._.	3.6.2 Currency
Indicate raw amount in **Rands/rupees/pula** earned by household from wages or salaries or pensions or welfare or migrant or business activities remittance. If respondent does not wish to state actual amount, ask e.g. 'Between 50 and 100, 100 and 150, etc. and write in mid figure, e.g. 75, 125, etc. If None=0							

3.7	3.8	3.9	3.10
Income from sales of milk, meat, hides, eggs or other, livestock products (per month, average or last month)	**Income from renting out accommodation (per year, last year)**	**Is there anyone in your area who can help you with meals, food, or finding/giving you a job or a loan, if you run short of food or money?**	**How does this year's income compare with last year's income (included everything: crops, livestock etc.)?**

| 3.7.1 Amount ._._._._._. | 3.7.2 Currency | 3.8.1 Amount ._._._._._. | 3.8.2 Currency | [_] 1=NO
[_] 2=Yes relatives
[_] 3=Yes neighbours
[_] 4=Yes VDC
[_] 5=Yes NGO
[_] 6=Yes other (Specify)_____ | [_] 1=Better then last year
[_] 2=Much the same as last year
[_] 3=Worse the last year
[_] 4=No crops harvested/livestock sold last/this year |

SECTION 4: HOUSEHOLD INFRASTRUCTURE

4.1 How much do you think your dwelling/home is worth, including the value (if any) of the land on which the dwelling stands?		4.2 Do you feel there is, or is not, much of a risk of losing your house?	4.3 Is the household's water supply adequate?	4.4 Is the household's water supply clean?	4.5 Is the household's water supply nearby?	4.6 Does the household have access to electricity?
4.1.1 Amount ._._._._._._._.	4.1.2 Currency	[_] 1=High risk [_] 2=Small risk [_] 3=No risk ._._._	[_] 1=Always or almost always [_] 2=Usually or most of the time [_] 3=Seldom or occasionally [_] 4=Almost never	[_] 1=Always or almost always [_] 2=Usually or most of the time [_] 3=Seldom or occasionally [_] 4=Almost never	[_] 1=Own tap connection [_] 2=Outside, less than 100m [_] 3=Outside, 100m-less than 500m [_] 4=Ouside, 500m-less than 1km [_] 5=Outside,1km-less than 5km [_] 6=Other (Specify)_____	[_] 1=Good connection to electricity [_] 2=House is connected but only unreliable supply [_] 3=No connection [_] 4=Other (Specify)_____

HOUSEHOLD ASSETS NOT USED FOR FARMING

Does your house have any of these?		When did your household first acquire an item of this sort? (for all assets ever owned)	Market price or current estimated value (if the house has any such assets now)	
			Amount	Currency
Telephone	4.7 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.7.1	4.7.1. 19._._.	4.7.2 ._._._._._._._._.	4.7.3
Private toilet on the plot	4.8 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.8.1	4.8.1. 19._._.	4.8.2 ._._._._._._._._.	4.8.3
Hi-fi set	4.9 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.9.1	4.9.1. 19._._.	4.9.2 ._._._._._._._._.	4.9.3
Radio (excluding hi-fi set)	4.10 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.10.1	4.10.1. 19._._.	4.10.2._._._._._._._._.	4.10.3

TV	4.11 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.11.1	4.11.1. 19._._.	4.11.2._._._._._._._._._._._.	4.11.3
Dining room suite	4.12 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.12.1	4.12.1. 19._._.	4.12.2._._._._._._._._._._._.	4.12.3
Living room suite (excluding dining room suite)	4.13 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.13.1	4.13.1. 19._._.	4.13.2._._._._._._._._._._._.	4.13.3
Electrical stove	4.14 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.14.1	4.14.1. 19._._.	4.14.2._._._._._._._._._._._.	4.14.3
Gas stove	4.15 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.15.1	4.15.1. 19._._.	4.15.2._._._._._._._._._._._.	4.15.3
Bicycles	4.16 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.16.1	4.16.1. 19._._.	4.16.2 _._._._._._._._._._._.	4.16.3
Car used mainly for personal transport (excluding trucks or pickups, which are used mainly for farming)	4.17 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.17.1	4.17.1. 19._._.	4.17.2._._._._._._._._._._._._.	4.17.3
Other assets (Specify)_____	4.18 [_] 1=Yes/[_] 2=No/ ._._ If yes go to 4.18.1	4.18.1 19._._.	4.18.2._._._._._._._._._._._.	4.18.3
			Make a rough estimate of the current market value of all items of each kind	

SECTION 5: RESOURCE BASE AND ENVIRONMENTAL ISSUES

NOTE TO INTERVIEWERS: *In these questions we are trying to understand the household's experience of its environment. It does not matter whether the person owns the bore hole or well to which s/he has access; nor whether firewood for the household is collected by a household member or an employee; nor whether the cattle being grazed by household members belong to them. Be sure, when asking the questions, not to make implicit assumptions about these matters, or to suggest any particular answer.*

SECTION 5a: Mainly about farm water resource base

5.0	5.1	5.2 (If you have any access to ground water)	5.3 (If you have any access to ground water)
Do you have or use any grazing land or cropland or small amount of land (e.g. kitchen garden)	**Have you any access to ground-water from a dug well, tubewell or bore hole, for crops or livestock?**	**In a year of normal rains, does your dug well, tubewell or bore hole provide enough ground-water for all, most, some, few or none of your needs for crops and/or livestock?**	**Is your access to this sort of ground-water less and/or deeper (further from the surface), than five years ago; more and/or shallower (closer to the surface); or much the same?**
[_] Yes →go to next question **[_] No** →go to section 7 ._._._.	[_] 1=No groundwater for crops or stock→**Q5.4** [_] 2=Bore hole; →**Q5.2** [_] 3=Tubewell; →**Q5.2** [_] 4=Dug well; →**Q5.2** [_] 5= More than one of these sources→**Q5.2**	[_] 1=None [_] 2=Few [_] 3=Some [_] 4=Most [_] 5=All	[_] 1=No access to groundwater now and/or five years ago [_] 2=Less and/or deeper [_] 3=Same [_] 4=More and/or shallower

5.4	5.5	5.6	5.7

Do you sometimes, always, or never use surface irrigation water, such as a dam, canal, tanks, or pumps from a river (OTHER THAN direct rainfall or groundwater) on your crops?	Did you use surface irrigation water to irrigate a little, most, all or none of your crops last year?	Are your sources of surface water for farming, not counting rainfall, less or more adequate than five years ago, or much the same?	Do you always, usually, or never harvest most or some of your cropland more than once a year on the same piece of land?
[_] 1=Seldom or never sow crops [_] 2=Never [_] 3=Sometimes [_] 4= Always	[_] 1=No crops last year [_] 2=None [_] 3=Little or some [_] 4= Most [_] 5=All	[_] 1=Less adequate now [_] 2=Much the same [_] 3=More adequate now	[_] 1=Seldom or never has cropland [_] 2=Has cropland but none is ever double-cropped [_] 3=All cropland planted to trees or other continuous crops [_] 4=Double harvest on some land in some years [_] 5=Double harvest on most land, or some land in most years [_] 6=Double harvest on all

SECTION 5b: Mainly about farm vegetation resource base

NOTE TO INTERVIEWERS: If the respondent is a male, and there is an adult or adolescent woman available for interview, questions 5.10-5.12 should be asked of her, not of the male interviewee.

5.8	5.9	5.10	5.11
Is firewood collected for your household from trees or shrubs often, occasionally, or never?	Are the trees or shrubs (within walking distance and used for firewood by your household) plentiful, just about adequate, or scarce?	Compared to five years ago, do people who collect firewood for your household have to go considerably further, considerably less far, or much the same distance?	When a person takes cattle (*) to grazing land from your household, are thorn acacias or similar sharp shrubs a serious or frequent problem; a slight or rare problem; or no problem?
[_] 1=Never [_] 2= Occasionally [_] 3=Often	[_] 1=Absent [_] 2=Scarce [_] 3=Just about adequate [_] 4=Plentiful	[_] 1=Further [_] 2=Much the same distance [_] 3=Less far	[_] 1=Nobody here ever looks for grazing land [_] 2=Serious or frequent problem [_] 3=Slight or rare problem [_] 4=no problem

(*) NOTE TO INTERVIEWERS: make clear that you are talking about cattle, not goats or sheep [these can more readily cope with thorn acacia etc.]

5.12	5.13	5.14
Are thorn acacia and similar sharp shrubs, within (say) five miles/eight kilometres of your home, commoner and/or denser than five years ago; less common and/or less dense;	When your household tries to use grazing land, or to clear cropland, is the amount or density of invasion by sharp, hard grasses such as Imperata a serious or frequent problem; a slight or rare problem; or no problem?	Within five miles eight kilometres of your household, is the amount or density of invasion by sharp hard grasses like Imperata more than 5 years ago, less or much the same?

or much the same?		
[_] 1=Commoner/denser [_] 2=Same [_] 3=Less common/dense	[_] 1=No use of either grazing or cropland [_] 2=Serious or frequent [_] 3=Slight or rare [_] 4=No problem	[_] 1=More [_] 2=Much the same [_] 3=Less

SECTION 5c: Mainly about soil and terrain resource base

5.15	5.16	5.17	5.18
When you walk around the cropland or grazing land that you or your household members use, do you see the outcrops of bare rock often, seldom or never?	When you walk around the cropland or grazing land that you or your household members use, do you see the patches of pebbles often, seldom or never?	When you walk around the cropland or grazing land that you or your household members use, do you see the gravely patches often, seldom or never?	When you walk around the cropland or grazing land that you or your household members use, do you see the very sandy soil with little or no clay content often, seldom or never?
[_] 1=Often [_] 2=Seldom [_] 3=Never	[_] 1= Often [_] 2=Seldom [_] 3=Never	[_] 1= Often [_] 2=Seldom [_] 3=Never	[_] 1=Often [_] 2=Seldom [_] 3=Never

5.19	5.20	5.21	5.22	5.23
When you walk around the cropland or grazing land that you or your household members use, do you see the whitish, salty soil patches on which nothing useful grows; often, seldom or never?	For outcrops of bare rock, can you say whether- on the cropland or grazing land that you use locally- the problem is considerably less, much the same, or considerably worse than five years ago?	For patches of pebbles or medium-size stones, can you say whether- on the cropland or grazing land that you use locally- the problem is considerably less, much the same, or considerably worse than five years ago?	For gravely patches, can you say whether- on the cropland or grazing land that you use locally- the problem is considerably less, much the same, or considerably worse than five years ago?	For very sandy soil with little or no clay content, can you say whether- on the cropland or grazing land that you use locally- the problem is considerably less, much the same, or considerably worse than five years ago?
[_] 1=Often [_] 2=Seldom [_] 3=Never	[_] 1=Worse [_] 2=Same [_] 3=Less [_] 4=Absent	[_] 1=Worse [_] 2=Much the same [_] 3=Less [_] 4=Absent	[_] 1=Worse [_] 2=Same [_] 3=Less [_] 4=Absent	[_] 1=Worse [_] 2=Same [_] 3=Less [_] 4=Absent

5.24	5.25	5.26	5.27
For whitish, salty soil patches on, which nothing useful grows , can you say whether- on the cropland or grazing land that you use locally- the problem is considerably less, much the same, or considerably worse than five years ago?	Do you usually plough any land for crops?	Is your topsoil usually deep and ample, or sparse and thin?	Is your topsoil deeper or shallower than about five years ago, or is their little change?
[_] 2=Worse [_] 3=Same [_] 4=Less [_] 4=Absent	[_] 1=Yes→ **go to next question** [_] 2=No→**go to Section 6, Q. 6.1** _·_·_	[_] 1=Sparse and thin [_] 2=Deep and ample [_] 3=In between [_] 4=Other (specify) _____	[_] 1=Shallower [_] 2=Little change [_] 3=Deeper

5.28	5.29	5.30	5.31
Is loss of topsoil due to erosion always, usually, seldom or never a problem on your cropland?	Has loss of topsoil got less serious, stayed much the same, or got worse in the past five years or so?	Is most of the topsoil where you plant crops rich in humus, poor in humus, or more or less typical?	In the last five years or so, has the amount and quality of humus in the topsoil on your cropland got worse, stayed the same, or got better?
[_] 1=Always [_] 2=Usually [_] 3=Seldom [_] 4=Never	[_] 1=Worse [_] 2=Much the same [_] 3=Less serious	[_] 1=Poor [_] 2=Typical [_] 3=Rich	[_] 1=Worse [_] 2=No change [_] 3=Better

SECTION 6: LAND ACCESS AND LAND TENURE

NOTE TO INTERVIEWERS: convert the answers into just one unit of measure. If units other than the those below are used, convert into one of those below

How big is your landholding altogether, including your residential site, cultivation lands and any other type of place that is part your holding? (FOR BOTSWANA excluding grazing land)	
6.1 Quantity	**6.2 Unit of measure**
._._._._._._.	[_] 1=Hectares [_] 2=Soccer pitches [_] 3=Morgen [_] 4=Acres (including "Botswana acres") [_] 5=Bighas [_] 6=Other (specify)_____

WHAT KINDS OF LAND FOR CULTIVATION HAS YOUR HOUSEHOLD GOT NOW?

Household main garden or kitchen garden

6.3	6.4	6.5	6.6	6.7	(In INDIA ask everybody, in Botswana and South Africa only if it is applicable) 6.8 Price or approximate value when plot acquired		(In INDIA ask everybody, in Botswana and South Africa only if if it is applicable 6.9 If this plot could be sold now, what would you expect to fetch?	
Size (quantity)	Size (unit of measure)	When did your household first acquire the plot? (YEAR)	How would you rate the quality of this plots?	Tenure arrangements	6.8.1 Amount	6.8.2 Currency	6.9.1 Amount	6.9.2 Currency

| ·_·_·_·_·_· | | ·_·_·_·_· | [_] 1=Good
[_] 2=Average
[_] 3=Bad or
poor | [_] 1=Owned by inheritance
[_] 2=Owned by purchase
[_] 3=Commercial or usufruct
rights
[_] 4=Rented or share cropped in
[_] 5=Rented or share cropped
out
[_]   6=Other
(Specify)_____ | ·_·_·_·_·_·_·_
· | | ·_·_·_·_·_·_·
_· | |

Household's other arable plots (except community garden)

6.10 Size (quantity) **(Begin with most important, then the second and so on)**	6.11 Size (unit of measure)	6.12 When did your household first acquire the plot? (YEAR)		6.13 Rate quality of plots	6.14 Tenure arrangements
6.10.1 ._·_·_·_·_·	6.11.1	6.12.1.1 **Since 19._·_·**	6.12.1.2 **[_] Since always**	6.13.1	6.14.1
6.10.2 ._·_·_·_·_·	6.11.2	6.12.2.1 **Since 19._·_**	6.12.2.2 **[_] Since always**	6.13.2	6.14.2
6.10.3 ._·_·_·_·_·	6.11.3	6.12.3.1 **Since 19._·_**	6.12.3.2 **[_] Since always**	6.13.3	6.14.3
6.10.4 ._·_·_·_·_·	6.11.4	6.12.4.1 **Since 19._·_**	6.12.4.2 **[_] Since always**	6.13.4	6.14.4

		For 6.12.1.2 to 6.12.4.2, Y=Yes, if still has the plot N=No, if no longer has the plot	1=Good 2=Average 3=Bad or poor	1=Owned by inheritance 2=Owned by purchase 3=Commercial or usufruct rights 4=Rented or share cropped in 5=Rented or share cropped out 6=Other (Specify)_____

(ONLY FOR INDIA) 6.15 Price or approximate value when plot acquired		(ONLY FOR INDIA) 6.16 If this plot could sold now, what would you expect to fetch?	
Amount	Currency	Amount	Currency
6.15.1.1 ._._._._.	6.15.1.2	6.16.1.1 ._._._._.	6.16.1.2
6.15.2.1 ._._._._.	6.15.2.2	6.16.2.1 ._._._._.	6.16.2.2
6.15.3.1 ._._._._.	6.15.3.2	6.16.3.1 ._._._._.	6.16.3.2
6.15.4.1 ._._._._.	6.15.4.2	6.16.4.1 ._._._._.	6.16.4.2

Community garden plot (if any)

6.17 Size quantity	6.18 Size unit of measure	6.19 When did your household first acquire the plot? (YEAR)	6.20 Rate quality of plots?	6.21 Tenure arrangements	6.22 Have you lost control of any land during the last five years? (Exclude fallow land from this question)
._._._._._.		._._._._.	[_] 1=Good [_] 2=Average [_] 3=Bad or poor	[_] 1=Owned by inheritance [_] 2=Owned by purchase [_] 3=Commercial or usufruct rights [_] 4=Rented or share cropped in [_] 5=Rented or share cropped out [_] 6=Other (Specify)_____	[ ] 1=Yes→go to next question [_] 2=No→go to Q 6.29 _._._

6.23 Size (only if you have lost control of any land during the last five year)	6.24 Quality	6.25 Time of transaction YEAR	6.26 Only if it is applicable) Price /Approx. value when plot lost	6.27 How was it lost?

266

Quantity	Unit of measure			Amount	Currency	
6.23.1.1 ._._._._._.	6.23.2.1	6.24.1	6.25.1. ._._._._.	6.26.1.1 ._._._._.	6.26.2.1	6.27.1
6.23.2.1 ._._._._._.	6.23.2.2	6.24.2	6.25.2 ._._._._.	6.26.2.1 ._._._._.	6.26.2.2	6.27.2
		1=Best 2=Above average 3=Average 4=Below average 5=Worst				1=Sold 2=Rented out 3=Exchanged; 4=Lost for mortgage/debt 5=Flooded/destroyed	6=Given to child/children 7=Given to other near relatives 8=Given to persons not near relatives 9=Other sources of loss (Specify) ___

6.28 Overall, would you say that your household, over the last 5 years has rather decreased its land ownership/control; increased or remained much the same? (NOTE: in case of doubt refer to value of land)	6.29 Is your main plot fenced? (ask everybody)
[ ] 1=Descreased [ ] 2=Increased [ ] 3=Remained much the same	[ ] 1=Yes [ ] 2=No _._

FARM AND OTHER ASSETS: How many of the following assets does your household own?

Enumerators to emphasise that here we only want to know about assets that are primarily used for farming

	Number of each item	Since when do you own it? (most recent year if two or more items)	Amount	Currency
Motor cars and bakkies	6.30.1 ._._	6.30.2 .19_._	_._._._	
Motorbike	6.31.1 ._._	6.31.2 .19_._	_._._._	
Tractor	6.32.1 ._._	6.32.2 .19_._	_._._._	
Trailer/cart	6.33.1 ._._	6.33.2 .19_._	_._._._	
Shop/Workshop	6.34.1 ._._	6.34.2 .19_._	_._._._	
Sewing machine	6.35.1 ._._	6.35.2 .19_._	_._._._	
Hammer mill	6.36.1 ._._	6.36.2 .19_._	_._._._	
Plough	6.37.1 ._._	6.37.2 .19_._	_._._._	
Ridger	6.38.1 ._._	6.38.2 .19_._	_._._._	
Harrower	6.39.1 ._._	6.39.2 .19_._	_._._._	
Weeder	6.40.1 ._._	6.40.2 .19_._	_._._._	

Generator	6.41.1 ._._.	6.41.2 .19_._.	_._._._.	
Other farm productive assets (Specify)_____	6.42.1 ._._.	6.42.2 .19_._.	_._._._.	

6.43	6.44
Livestock and draft - What livestock does the household own now ?	**Do you use your livestock for transport at all?**
1) ._._.= No of Calves (under one year) 2) ._._.=No of heifers, bullocks or tollies (1 or 2 years old) 3) ._._.=No of cows (3 years old or more) 4) ._._.=No of oxen (3 years old or more) 5) ._._.=No of bulls (3 years old or more) 6) ._._.=No of horses 7) ._._.=No of donkeys 8) ._._.=No of goats 9) ._._.=No of sheep 10) ._._.=No of pigs 11) ._._.=No of chickens 12) ._._.=No of Other (Specify)_____	[_] 1=Yes [_] 2=No _._._

268

SECTION 7 QUESTIONS TO BE ASKED OF HOUSEHOLD MEMBERS NOT USUALLY RESIDENT, BUT PRESENT FOR INTERVIEW**(SEE LIST IN Q.2.17)**

ID	7.1	7.2	7.3	7.4	7.5 (IF NOT)	7.6
	Who decided that you should migrate, on the first occasion that you did?	**Why was it decided (by whoever made the decision) that you migrate)** Note: main type of migration only, during last year)	**How often do you visit your family here?** (NOTE: times per year)	**Are you intending to/ do you settle permanently elsewhere?**	**When do you want to resettle here?**	**Which is your current sector of economic activity?** (Note: main activity only)
N._._.						
N._._.						
N._._.						
N._._.						
	1= Self 2= Father/mother 3=Brother/sister 4=Husband/wife/partner 5=Other relative 6= Other (Specify)_____	1= Work 2= Education 3=Marry 4=Natural disaster (includes floods, crop pests, widespread fire) 5= Drought 6= Illness 7=Death of an earner 8=Quarrel 9= Unproductive land 10 = Other (Specify)_____		1=Yes→**go to Q7.6** 2=No →**go to next question**	1= As soon as possible 2= After a few years 3= After retirement 4= Never 5= Other (Specify) _____ _	1= Agriculture 2= Cattle farming 3= Industry 4= Tertiary sectors 5= Civil servant 6= None / don't work 7= Other (specify)

ID	7.7		7.8	7.9				7.10 (If migrant away for more than 1 year)	7.11
	What kind of main activity, if any, were you carrying out before leaving, on the first occasion that you did? (Max 2 answers)		**Do you ever bring anything back home, such as cash or goods?**	**Can you give us some idea of how much you brought or sent home during the last year?**				**Would you say that the amount brought / sent back (total) was more or less than the proceedings years?**	**Do you also get support from the household, e.g. food ?**
	Most important	**2nd most important**		**7.9.1. Cash**	**7.9.2 Currency**	**7.9.3 Value of goods**	**7.9.4 Currency**		

269

N._-_.				._-_-_-_-_ _-_		._-_-_-_-_ _-_			
N._-_.				._-_-_-_-_ _-_		._-_-_-_-_ _-_			
N._-_.				._-_-_-_-_ _-_		._-_-_-_-_ _-_			
N._-_.				._-_-_-_-_ _-_		._-_-_-_-_ _-_			
	1= None 2= School 3= Help on household enterprise with crops 4= Ditto livestock 5= Ditto artisan or other 6= Hired employment for cash or for o food, beer, etc. 7= Other (Specify)_____	1=Yes → **go to next question** 2=No → **Q 7.11** —·—·—						1= Less 2= More 3= Same —·—·—	1=Yes 2=No —·—·—

ID	7.12				
	Would it be possible for you to give us an idea of the amount of time/number of months you were absent				
	7.12.a During this/last year (1999)	7.12.b year before (1998)	7.12.c – 2 years ago (1997)	7.12d - 3 years ago (1996)	7.12e - 4 years ago (1995)
N._._.					
N._._.					
N._._.					
N._._.					

Thank you for your co-operation!

Appendix 2: Asset distribution

AE Gini coefficients of non- farm household assets by sub-region

Subreg/reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000-LA	GC=GA/TA
bochum	93	150912.82	12285001	5000	1300.58	3699.42	0.74
seshego	62	212341.9	12418433	5000	647.87	4352.13	0.87
schonord	84	76087.19	5664578.8	5000	1196.60	3803.40	0.76
praktisser	137	215579.67	24358481	5000	1789.01	3210.99	0.64
zebediela	54	71977.64	3148163.8	5000	1992.95	3007.05	0.60
western	143	201647.12	23659075	5000	1830.13	3169.87	0.63

Appendix 3: Income distribution

3.1: Sources of household income, households owning them and percentiles of households

	Salary and wage earnings /year	Pension income/ year	Agriculture and subsist	Value of remittance in kind	Cash remittances	Total remittance / year	Remittance per capita	Household income incl. subsistence	Per capita total hh income
N	277	217	227	213	226	228	228	513	573
Mean	17227.23	7721.59	2621.04	3006.00	11635.91	14342.07	2125.56	20096.17	2774.74
Median	9600.00	6240.00	1250.00	2000.00	8800.00	11200.00	1576.25	14400.00	1733.33
Std. Deviation	31607.54	3355.51	4277.62	3001.16	11184.90	12766.37	2337.01	26600.06	4134.14
Minimum	840.00	1320.00	107.10	74.00	200.00	400.00	38.46	435.62	0.00
Maximum	345600.00	21264.00	30475.52	26000.00	73600.00	99 600.00	19733.33	345 600.00	48857.14
Share of source in Hh income (%)	**46.3%**	**16.2%**	**5.8%**			**31.7%**		**100%**	
Percentiles 10	2400.00	4800.00	257.04	700.00	2400.00	3299.70	367.61	4800.00	0.00
20	4200.00	6000.00	351.07	1100.00	4080.00	5680.00	620.28	6295.38	683.84
30	6000.00	6240.00	476.27	1500.00	5400.00	7300.00	967.75	9079.90	1001.82
40	7200.00	6240.00	825.30	1760.00	7200.00	9220.00	1221.67	12000.00	1349.43
50	9600.00	6240.00	1250.00	2000.00	8800.00	11200.00	1576.25	14400.00	1733.33
60	12888.00	6360.00	1553.10	2500.00	10080.00	12840.00	1845.71	17429.40	2260.95
70	16800.00	7200.00	1929.14	3000.00	12550.00	15900.00	2276.50	21600.00	2907.20
80	21290.40	12000.00	3205.49	4560.00	16400.00	20080.00	3052.00	26400.00	3795.55
90	34800.00	12624.00	6447.23	6520.00	24000.00	28210.00	4084.57	36302.66	5864.00

Source: Survey results - 2000

3.2: Gini coefficients of remittances by sub-regions

Subreg/reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000-LA	GC=GA/TA
Bochum	93	196350	16861300	5000	820.03	4179.97	0.84
Seshego	62	146600	8334650	5000	910.81	4089.19	0.82
Schonord	84	687300	51554720	5000	1129.70	3870.30	0.77
Praktisser	137	939720	117162740	5000	935.89	4064.11	0.81
Zebediela	54	257489	12221288	5000	1303.09	3696.91	0.74
Wwestern	143	1042534	118601332	5000	2079.54	2920.46	0.58
Total HH	573						

3.3: AE Gini coefficients for all income by sub-regions (including remittances)

Sub-reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000-LA	GC=GA/TA
bochum	93	238513.31	16771808	5000	2492.68	2507.32	0.50
seshego	62	206986.28	10296764.7	5000	2057.08	2942.92	0.59
schonord	84	352355.35	23946662.8	5000	1968.85	3031.15	0.61
praktisser	137	637168.15	65257311.5	5000	2560.75	2439.25	0.49
zebediela	54	133162.62	5740852.06	5000	2108.97	2891.03	0.58
western	143	695112.08	65132368.3	5000	3482.48	1517.52	0.30

3.4: AE Gini coefficients income by regions and sub-regions, <u>excluding remittances</u>

Subreg/reg	N	Y	Sum(RiYi)	TA	LA=10000/2NY(Y+2NY -2SumRiYi)	GA=5000-LA	GC=GA/TA
bochum	93	39228.48	3416725	5000	688.38	4311.62	0.86
seshego	62	37968.26	2125635.8	5000	1050.88	3949.12	0.79
schonord	84	53478.04	3918257.5	5000	1337.08	3662.92	0.73
praktisser	137	92011.37	11890837	5000	603.48	4396.52	0.88
zebediela	54	31645.24	1601821.8	5000	718.87	4281.13	0.86
western	143	325402.94	41637274	5000	1086.99	3913.01	0.78
Central	155	77196.74	5542360.8	5000	5400.31	-400.31	-0.08
south	275	177134.65	17410916	5000	6443.93	-1443.93	-0.29
west	143	325402.94	41637274	5000	1086.99	3913.01	0.78

Source: Survey results - 2000

Appendix 3.5: Mathematical derivation (adapted from Adams Jr 1999)

Richard H. Adams Jr has successfully used this model often for decomposing income inequality. Some of his studies in which he used it include: The Agricultural Income, Cash Crop and Inequality in Pakistan (1993, 1994 & 1995); Non-farm Income, Inequality and Land in Rural Egypt (1999).

Gini = G for distribution of total income within a group can be defined as:

$$G = \frac{\left(2\,\mathrm{cov}\left[Y_{rt}, F\left(Y_{rt}\right)\right]\right)}{\mu} \qquad (4.4)$$

where μ denotes the mean household income of the sample and $F(Y_{rt})$ the cumulative distribution of total income in the sample

i.e. $F(Y_{rt}) = (f(y_1), \ldots\ldots, f(y_n))$

where $f(y_i)$ is equal to the rank of yi divided by the number of observations (n) (Stark et al., 1986:25).

Equation (4.4) can be rewritten and expanded into an expression for the Gini coefficient that captures the contribution to inequality of each of the K components of income. Assuming that within the chosen group there are n households deriving income from K sources of income, y_i denotes the total income of household i, where i = 1, ……., n and y_{ik} the income of the household i from source k, where k = 1, ………, K. Also let the distribution of total household income be represented by Y_r = (y_i, …….., y_n) and the distribution of income component k be represented by $Y_k = (y_{ik}, \ldots\ldots, y_{nk})$.

$$G = \frac{2}{\mu n} \sum_{i=1}^{n} \sum_{k=1}^{k} \left(y_{ik} - E(y_{ik})\right)\left(f(y_i) - E(f(y_i))\right) \qquad (4.5)$$

$$G = \frac{2}{\mu n} \sum_{i=1}^{n} \left(y_i - E(y_i)\right)f(y_i) - E(f(y_i)) \qquad (4.6)$$

$$G = \frac{2}{\mu} \sum_{k=1}^{k} \mathrm{cov}\left[Y_k, F(Y_{rt})\right] \qquad (4.7)$$

$$G = \sum_{k=1}^{k} \left(\frac{\text{cov}[Y_k, F(Y_{rt})]}{\text{cov}[Y_k, F(Y_k)]} \right) \left(\frac{2}{\mu_k} \text{cov}[Y_k, F(Y_k)] \left(\frac{\mu_k}{\mu} \right) \right)$$

(4.8)

where μ_k is the sample mean of income from source k and $F(Y_k)$ is the cumulative rank distribution of income from source k (i.e. $F(Y_k) = (f(y_{ik}), \ldots\ldots, f(y_{nk}))$, where $f(yik)$ is equal to the rank of yik divided by the number of observation (n).

Using the notion of Stark et al. (1986), the Gini coefficient can be written as:

$$G = \sum_{k=1}^{K} T_k G_k H_k \qquad (4.9)$$

where H_k is share of source k of income in total group income (i.e. $H_k = \mu_k/\mu$), G_k is the Gini coefficient measuring the inequality in the distribution of income component k within the group and T_k is the Gini correlation of income from source k with total income defined as:

(4.10)
$$T_k = \frac{\text{cov}[Y_k, F(Y_r)]}{\text{cov}[Y_k, F(Y_k)]}$$

Equation (4.8) shows that the effect of source k income on overall income inequality can be broken down into three components:

a). The share of income component k in total income (captured by the term H_k)

b). The inequality within the sample of income from source k (as measured by G_k)

c). The correlation between source k income and total income (as measured by T_k)

It follows that the larger the product of these components, the greater the contribution of income from source k to overall income inequality. However, it should be noted that while Hk is always positive and less than one, G_k is always positive and may exceed one (if many of the source incomes are negative) and T_k can fall anywhere in the interval (-1, 1). When T_k is less than zero, income from source k is negatively correlated with total income and thus lowers the overall Gini measure for the sample.

Using this decomposition, it is possible to identify how much overall income inequality is due to a particular income source (farm, wages, remittances, pension and other). Assuming that additional increments of an income source are distributed in the same manner as the

original units, it is also possible to use this decomposition to ask whether an income source is inequality-increasing or not or whether an enlarged share of that income source leads to an increase or decrease in overall income inequality. On the basis of equation (4.9):

$$g_k = T_k \frac{G_k}{G} \qquad (4.11)$$

where, g_k is the relative concentration coefficient of income source k in the overall income. From equation (11) it follows that income source k is inequality-increasing or inequality-decreasing according to whether g_k is greater than or less than unity.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Appendix 4.1: List of Villages Surveyed

Region / sub- region	Service center	Ward or Village & number of households surveyed	Village/Community CODE
Central			
Bochum	Bochum	Ext. ward 7:	
		∗Borkum (DilAEneng)=75	C001
		Gemarke=17	C002
Seshego	Roodeput	Ext. ward 1:	
		Opgaaf (Ghachokoe)=17	C003
		Ext. ward 3:	
		Louisiana (Gaphago)=17	C004
	Moletjie	Ward 1:	
		Vaalwater (Bloodriver)=18	C005
		Ward 6:	
		Moletjie-Moshate (Chief's Kraal)=17	C006
Southern			
Schoonoord	Schoonord	Lordskraal:	
		Lordskraal (Madibong)=17	C007
		Paradys:	
		Dingaanskop=17	C008
	Strydkraal	Hoeraroep:	
		Moskow (Gamashabela)=17	C009
	B.B.Kloof	B.B. Kloof:	
		Daljasofat=17	C010
		Juglust:	
		Zeekeoiegat (Serokolo)	C011

	Steelpoortdrift	Degoedeverwachting:	
		Eerstegeluk (Tukakglomo)	C012
Prakttiseer	Derdegelid	*Derdegelid (Riba Cross)=75	C013
		Steelpoort (Drift Mashamothaoe)=17	C014
		Bothashoek=17	C015
		Maandagshoek	C016
Zebediela		Madisa-a-ditlovo=18	C017
		Tsantsabela	C018
		Moletlane=17	C019
Western			
Phalala-Mokelong	Beauty Planning Unit	Shongwane=75	C024
Palala – Mokelong	Bakenberg Planning Unit	Mozanbique=18	C020
		Haakdoorndraai=17	C021
		Vliegkraal=17	C022
		Vogelstruisfontein=17	C023

**Note: Village No.12 moved to Praktiseer sub-region

Appendix 4.2: Household structure per village

VILLAGE	Average Household size	Child Adult Ratio	Average # of Migrants per household
Borchum (DilAEneng)	7	0.68	1
Gemarke	9	0.24	1
Ga-Chokwe (Opgaaf)	7	0.34	0
Ga-Phoga (Louisiana)	6	0.69	1
Vaalwater (Bloodriver)	6	0.71	0
Chief's Kraal	6	0.26	0
Madibong (Lordskraal)	8	0.46	2
Dingaanskop (Mohlaletsi)	8	0.18	1
Ga-Mashabela (Moskow)	7	0.57	1
Daljasofat Ga-Nkwana)	8	0.95	1
Zeekoeigat (Serokolo)	7	0.50	0
Tukakgomo (Eerstegeluk)	6	1.17	1
Riba Cross (Derdeglid)	8	1.21	1
Steelpoort (Ga-Malekana)	6	1.25	1
Bothashoek	8	0.70	1
Maandagshoek (Boschoff Hospital)	7	1.40	1
Madisa-a-ditlovo (Magatle)	7	1.72	1
Tsantsabela (Elandskraal)	7	0.81	1
Moletlane (Zebediela)	9	1.24	2
Mozambique (Mapela)	9	0.84	1
Haakdoorndraai (Ga-Matlala)	9	1.85	2
Vliegkraal	8	0.24	1
Vogelstruisfontein	9	0.73	2
(Skrikfontein/Nyakelang)	8	0.92	1
Ga-Shongwane			
Total	7.4	0.78	1

Appendix 5 Basic infrastructure services and resource base profile of surveyed villages

1. Service / facility	% of resp	
Water supply (water)		
Always clean	29	
Usually clean	29	
seldom clean	21	
Never clean	21	
2. Education resources	**% of Villages**	**Number of villages**
Primary schools	100	24
Secondry Schools	79.2	19
Senior Secondry Schools	87.5	21
3. Health facilities		
Medical clinic within village	45.8	11
Medical clinic within reach village	91.7	22
4. Financial institutions		
Institutions within village	75	18
Institutions within easy reach of village	100	24
5. Post office	16.7	4
6. Police station	4.2	1

6: Access to and distance from main facilities

Village name	Hh with access to electricity	Hh with good connectio	Hh with bad connectio	Distance Railway station	to nearest bus station	Distance from village to nearest main infrastructure (SA Explorer GIS data-base) River	School	Main road	Railway
	%	%	%	Km	Km	km	km	km	km
Borchum (DilAEneng)	98.6	98.6	0	97	0	1.24	0.07	17.16	61.09
Gemarkte				112	0	3.92	0.8	28.89	70.55
Opgaaf (Ga-Chokwe)				55	0	3.8	1.37	4.82	22.15
Louisiana (Ga-Phago)				60	0				
Vaalwater (Bloodriver)	100	100	0	21	0	2.84	1.81	1.92	2.64
Moletjie-moshate (Chief's Kraal)	100	94.1	5.9	38	0				
Madibong (Lordskraal)	70.6	64.7	5.9	97	67	7.3	1.06	23.36	37.14
Dingaanskop (Mohlaletsi)	5.9	0	5.9	94	12	1.1	0.45	22.48	46.35
Ga-Mashabela (Moskow)				94	12	3.59	0.99	8.42	38.64
Ga-Nkwana (Daljasofat)				89	15	1.23	1.35	15.25	54.24
Zeekoiegat (Serokolo)				n/a	0	0.65	0.82	13.78	27.32
Tukakgomo (Eerstegeluk)				7	7	2.23	1.01	3.82	8.16
Riba Cross (Derdegelid)	74.3	71.4	2.9	15	0	11.03	1.21	12.68	29.71
Steelpoort (Ga-Malekana)	58.8	58.8	0	6	6	1.75	0.63	2.32	28.35
Bothashoek	100	100	0	10	4	8.34	1.17	3.12	27.86
Maandagshoek (Boschoff Hospital)	75	75	0	27	0	1.3	0.45	8.48	20.22

Madisa-a-ditoro (Magatle)	100	100	0	13	11	0.78	0.85	14.66	16.36
Tsantsabela (Elandskraal)	100	100	0	78	0	1.31	0.28	27.74	34.74
Moletlane (Zebediela)	94.4	94.4	0	5	3	4.96	0.84	2.16	2.98
Mozambique (Mapela)	100	5.9	94.1	68	20	3.24	1	4.18	21.8
Haakdoorndraai (Ga-Matlala)				68	8	1.08	0.23	30.77	60.18
Vliegkraal	23.5	23.5	0	60	0	4.68	0.29	13.42	41.78
Vogelstruisfontein (Nyakelang)	5.9	5.9	0	68	20				
Ga-Shongwane	100	5.3	94.7	150	0	2.48	2.48	26.02	42.97
					Mean Distance	**3.28**	**0.91**	**13.59**	**33.1**

7:Village Resource base		
Type of land	**% villages with access**	**Main use of resource**
Forest land	95.8	Fuel wood & fencing
Communal grazing land	95.8	Grazing & thatch grass
Government land	33.3	Grazing & fuel wood

9. Major environmental problems in the villages surveyed		
Environmental Problem	**# of villages with problem**	**Average % of village land affected**
Soil erosion by wind	23	19
Soil erosion by water	24	30.2
Soil sickness	11	36
Water logging	16	9.9
Salinity	10	9.5
Toxicity	4	5.5
Mining and quarrying	5	20

Source: Survey results, 2000

Appendix 8: Summary of Adult Equivalent asset base

Appendix 8: Summary of Adult Equivalent asset base

	adult equivalent hh property & dwelling	adult equivalent salaries & wages contribution (x12)	adult equivalent hh pension	adult equivalent total & size of property in ha	Total & size of property in hactares	adult equivalent all assets (farm+hh items+livst)	adult equivalent hh wealth	adult equivalent value hh land	adult equivalent hh income incl. subs & rem.	adult equivalent total income excl. rem.	adult equivalent all remittances (goods + cash)	adult equivalent only cash rem.	adult equivalent rem. goods only	adult equivalent value of livestock	adult equivalent farm assets (excl. livst)	adult equivalent hh assets (egTV)
N	573	277	217	320	320	573	573	320	573	288	288	283	275	250	127	573
Mean	8451.1	3923.2	1713.6	0.5	2.3	3643.9	12569.1	758.4	3949.9	2013.0	2370.2	1938.7	487.1	3685.7	1908.4	1620.4996
Median	6338.0	2030.8	1344.8	0.4	1.7	920.3	8445.3	584.5	2586.2	976.6	1641.9	1335.8	305.2	803.8	2.2	536.6379
Std. Deviation	9737.0	7264.2	1090.9	0.5	1.8	9169.9	15302.6	697.8	5877.34	5033.3	3024.0	2597.4	694.6	8079.9	5813.3313	4723.9448
Skewnes	5.024	6.3	2.0	3.1	1.7	5.9	4.7	3.1	6.7	9.3	3.2	3.4	3.7	4.4	5.647	9.909
Minimum	92.8	122.5	166.2	0.0	0.0	.00	147.8	.1	0.0	0.0	0.0	0.0	0.0	5.6	0.15	0.0
Maximum	106417.	74482.8	6315.8	4.2	10.0	101978.7	180961	6250.0	74482.8	68222.2	25964.9	22807.0	5204.5	70093.6	49425.29	77056.68
Percentile 25	3159.4	1074.4	978.5	.3	1.0	255.7	4777.4	357.8	1316.2	51.2	417.1	263.2	55.4	166.3	.5277	141.6021
50	6338.0	2030.8	1344.8	.4	1.7	920.3	8445.3	584.5	2586.2	976.6	1642.0	1335.8	305.2	803.8	2.2305	536.6379
75	10854.4	4084.5	2119.6	.7	3.3	2582.6	15083.8	978.8	4713.6	2211.4	3143.0	2325.6	668.8	2724.0	155.0388	1431.7982

Source: Survey results, 2000

Appendix 9: Summary of sources of household income (Rand per annum)

		income: hh salary and wage earnings /year	income: hh pension income/ year	aginc + subsistance	income: value remittances in kind	Remit cash	Cash remit+ goods	total remittance per capita	hh income incl. subsistence	Income: per capita total hh income
N		277	217	227	213	226	228	228	513	573
Mean*		17289.23	7,701.59	3,322.04	3006.00	11635.91	14,156.07	2125.56	20096.17	2774.74
Median		9600.00	6240.00	1250.00	2000.00	8800.00	11200.00	1576.25	14400.00	1733.33
Std. Deviation		31607.54	3355.51	4277.62	3001.16	11184.90	12766.37	2337.01	26600.06	4134.14
Minimum		840.00	1320.00	107.10	74.00	200.00	400.00	38.46	435.62	0.00
Maximum		345600.00	21264.00	30475.52	26000.00	73600.00	99600.00	19733.33	345600.00	48857.14
Sum		4771944.00	1675584.00	594976.19	640277.00	2629716.00	3269993.00	484626.80	10309337.74	1589925.70
% of total		**46.3%**	**16.3%**	**5.7%**			**31.7%**		**100%**	
Percentiles	10	2400.00	4800.00	257.04	700.00	2400.00	3299.70	367.61	4800.00	0.00
	20	4200.00	6000.00	351.07	1100.00	4080.00	5680.00	620.28	6295.38	683.84
	30	6000.00	6240.00	476.27	1500.00	5400.00	7300.00	967.75	9079.90	1001.82
	40	7200.00	6240.00	825.30	1760.00	7200.00	9220.00	1221.67	12000.00	1349.43
	50	9600.00	6240.00	1250.00	2000.00	8800.00	11200.00	1576.25	14400.00	1733.33
	60	12888.00	6360.00	1553.10	2500.00	10080.00	12840.00	1845.71	17429.40	2260.95
	70	16800.00	7200.00	1929.14	3000.00	12550.00	15900.00	2276.50	21600.00	2907.20
	80	21290.40	12000.00	3205.49	4560.00	16400.00	20080.00	3052.00	26400.00	3795.55
	90	34800.00	12624.00	6447.23	6520.00	24000.00	28210.00	4084.57	36302.66	5864.00

*Source: Survey results, 2000. * Mean for households receiving income from source. Mean total income will, thus not add-up*