Department of Agricultural Economics and Extension.

Faculty of Science and Agriculture

APPLICATION OF THE SUSTAINABLE LIVELIHOODS FRAMEWORK TO THE ANALYSIS OF THE PROVINCIAL GROWTH AND DEVELOPMENT PLAN OF THE EASTERN CAPE – A case study of the Massive Food Production Programme in Nkonkobe Municipality and Buffalo City Municipality.

BY

DIRWAYI T. P.

DISERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURAL ECONOMICS

SUPERVISOR: Dr AJURUCHUKWU OBI

UNIVERSITY OF FORT HARE
REPUBLIC OF SOUTH AFRICA

MAY 2010

DEDICATION

I, Tafadzwa P. Dirwayi, hereby declare that this dissertation is my own original work and that it has not been submitted, and will not be presented at any other University for a similar or any other degree award. To the best of my knowledge, the works of other scholars referred to here have been duly acknowledged.

Signature ……

DIRWAYI T. P.

Date ……../……. /…….

ACKNOWLEGEMENTS

I wish to express my gratitude to the Lord Almighty, Jesus Christ and Holy Spirit for the grace and favour to complete this study.

Many thanks to my promoter, Dr A. Obi, for his prompt and constructive guidance and advice. May God do you good for all the days of your life.

To the staff members in the Department of Agricultural Economics and Extension, thank you for your support and motivation, especially Prof. B. J Bester. Thank you for access to your office in the early hours of the day and late when I could not access the school facilities.

I want to send my sincere thanks to the Eastern Cape Department of Agriculture and the communities of Mdeni, Ngwangwane, Komkhulu, Nkqonkqweni and Majali for their contribution, without which this study would not have been possible.

Last but not least, I send my sincere gratitude to my family, friends and relatives for their love and support. Thank you so much for standing by me when I thought it was impossible to get to the end. *"Taona kubata kwaMwari vakatendeka".* I love you so much.

Abstract

The Government of the Eastern Cape Province introduced the Massive Food Production programme, which is a cornerstone within the agrarian reform initiative of the Provincial Growth and Development Plan (PGDP). The programme has been going on for more than seven years, however little has been documented on its impact. The main objective of the study was to investigate the impact of the Massive Food Production Programme on the livelihoods in Nkonkobe Municipality. This study did not only investigate its impact on the participants but also assessed its impact on the recipient communities. Accordingly, the specific objectives of the study were to investigate the impact of the Massive Food Programme on the asset base of participants, the general livelihood activities, and the livelihood outcomes. Among other livelihood activities, the study made an in-depth investigation on the impact of the Massive Food Production Programme on maize crop production. This is because the Massive Food Production was aimed at maize crop production. Previous studies investigated on the indicators of success that can be used to measure the impact of this programme. After the wide-ranging evaluation of views, arguments and research findings, a model to measure impact of the programme was designed. The asset base improvement was used as the proxy of impact. Nine factors were selected from the principal component analysis of the many factors that were taken to affect participation. Three other dummy variables to proximate location, participation and group turnover were added to the regression model that was developed to measure impact.

The DFID Sustainable Livelihood Framework was used to investigate the impact of the Massive Food Production Programme. This approach was used in both conceptualizing the study and the selection of variables. The DFID Sustainable Livelihood Approach was selected because unlike the CARE or UNDP Sustainable Livelihood models, it was designed for such purposes. Data collection was accomplished through observation, interviewing, and focus group discussions. The researcher also made use of project annual reports on change of livelihoods, baseline survey reports, project log frame, internal reports, work plans, budgets and mid-term evaluation reports as sources of secondary data.

The research findings were analysed using several analytical procedures, including the conventional descriptive statistics, principal components analysis, and linear regression analysis. The use of the different types of analysis was driven by the research questions under investigation and the theories on which they are based, and by the available data. The study revealed that to some extent the Massive Food Production Programme has managed to improve the asset base of the farmers. However, its impact on ensuring food security is still debatable. Findings of the study revealed that most of the participants and the non-participants communities experienced food shortages in the last season 2007/8 for at most three months. The study revealed that the highest agricultural income is from livestock sales. The varying locations showed the potential of livestock production. It is recommended that development agencies consider livestock production as an agricultural strategy with immense potential for enhancing sustaining rural livelihoods.

Key words

Sustainable Livelihood Framework, Livelihood Activities, Livelihood Strategies, Livelihood Outcomes, Massive Food Production Programme,

TABLE OF CONTENTS

DEDICATION ii

ACKNOWLEGEMENTS iii

Abstract iv

LIST OF ABBREVIATIONS ix

LIST OF TABLES x

LIST OF FIGURES xi

LIST OF BOXES xii

CHAPTER 1: BACKGROUND OF STUDY 1

1.1 Introduction 1

1.2 Problem Context 11

1.3 Scope and Objectives of Study 12

1.4 Justification 13

1.5 Hypotheses 13

1.6 Outline of Dissertation 14

CHAPTER 2: THEORETICAL UNDERPINNINGS OF RSA RURAL DEVELOPMENT PATHWAY 16

2.1 Introduction 16

2.2 Understanding Poverty and Hunger 16

2.3 Poverty in South Africa: A South African Rural Scene 18

2.3.1 Poverty Alleviation Strategies in South Africa (1994 to date) 18

2.3.2 The Developmental Gap 28

2.4 Evolution of the Theoretical Responses to Poverty and Hunger Questions. 35

2.4.1 Rural Development Theories and Approaches 36

2.4.1.1 Introduction 36

2.4.1.2 Modernization theories 36

2.4.1.3 Basic need approach 37

2.4.1.4 Sustainable Livelihood Approach (SLA) to rural development 39

CHAPTER 3: RESEARCH METHODOLOGY 45

3.1 Introduction 45

3.2 Area of Study 45

3.2.1 Introduction 46

3.2.2 Description of Middledrift 46

3.2.3 Description of Nkqonkqweni and Majali 47

3.3 Conceptualising the Sustainable Livelihood Framework 51

3.4 Variable Selection 53

3.4.1 Variable Specification 53

3.4.1.1 Factors affecting participation 54

3.4.1.2 Variable specified for livelihood strategies 61

3.4.1.3 Variable selection for impact assessment 62

3.4.2 Structure of the Questionnaire 67

3.5 Data Collection Procedures *67*
3.5.1 Introduction 67
3.5.2 Sampling Procedure 68
3.5.3 Interviewing Procedure 69

3.6 Data Analysis *71*

CHAPTER 4: PRESENTATION OF RESEARCH FINDINGS 77

4.1 Introduction *77*

4.2 Demographic Characteristics *77*
4.2.1 Household sizes 78
4.2.2 Age of household heads 79
4.2.3 Gender ratio of heads of households 80
4.2.4 Education levels of heads 81
4.2.5 Occupation 82
4.2.6 Migration levels 83

4.3 Factors Affecting Participation in MFPP *84*
4.3.1 Relationship of Location and Participation in MFPP 84
4.3.2 Effect of Gender on Participation in MFPP 88
4.3.3 Effect of Age on Participation in MFPP 89
4.3.4 Effect of Education level on Participation in MFPP 90
4.3.5 Effect of Household size on Participation in MFPP 91
4.3.6 Effect of Asset Ownership on Participation in MFPP 92
4.3.7 Effect of Household Primary Occupation on Participation in MFPP 93

4.4 Impact of Project on Livelihood Activities *94*
4.4.1 Maize Crop Production 95
4.4.2 Other Crops Production 97
4. 4.3 Use of maize crop improved varieties 98
4.4.4 Seed Banks 99
4.4.5 Extension service provision 99
4.4.6 Maize trading 100
4.4.7 Constraints in crop production 101
4.4. 8 Livestock Production 102

4.5 Livelihood Outcomes *104*
4.5.1 Diversification of income sources 104
4.5.2 Income distribution and inequalities 105
4.5.3 Food security 106
4.5.4 Increase in maize yield 107
4.5.5 Availability of food insecurity copying strategies 107

4.6 Impact of the Massive Food Programme on the Community *108*

4.7 Factors Determining a Positive Impact on Livelihoods *110*
4.7.1 Factor analysis 110
4.7.2 Factors selected in the regression model 112
4.7.3 Development of models 115

Chapter 5: SUMMARY OF KEY FINDINGS AND IMPLICATIONS 119

5.1 Introduction *119*

5.2 Summary of Key Findings *119*
5.2.1 Factors that affect participation 119
5.2.2 Livelihood activities 120
5.2.3 Livelihood outcomes 120

5.2.4 Impact of Massive Food Production Programme on Livelihoods..... 120

5.3 Policy and Further Study Recommendations 121

REFERENCES..... 124

Appendix 139

LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ANC	African Nation Congress
AsgiSA	Accelerated and Shared Growth Initiative of South Africa
CLRA	Communal Land Rights Act
COSATU	Congress of South African Trade Unions
CRLR	Commission on Restitution of Land Rights
CS	Community Survey
DFID	Department for International Development
DLA	Department of Land Affairs
EPWP	Extended Public Works Programme
FAO	Food and Agriculture Organization
GEAR	Growth, Employment and Redistribution strategy
HIV	Human immunodeficiency virus
IDP	Integrated Development Plan
ILO	International Labour Organisation
IPM FFS	Integrated Pest Management Farmer Field School
IRD	Integrated Rural Development
ISRDS	Integrated Sustainable Rural Development Strategy
LARP	Land and Agrarian Reform Project
LDO	Land Development Objectives
LRAD	Land Redistribution for Agricultural Development
MFPP	Massive Food Production Programme
NPWP	National Public Works Programme
PGDP	Provincial Growth and Development Programme
RDP	Reconstruction and Development Programme
SARB/QB	South African Reserve Bank Quarterly Bulletins
SLA	Sustainable Livelihood Approach
StatSA	Statistics South Africa
ULIMOCOR	Ciskei Agricultural Corporation
UN	United Nations
UNDP	United Nations Development Project

LIST OF TABLES

Table 1.1: Provincial poverty indicators 5
Table 1. 2: Characteristics of the Massive Food Production Programme Components 10

Table 2. 1: Land redistribution and tenure reform by 2004 24
Table 2. 2: Total population by province - Census 1996, Census 2001 and CS 2007 31

Table 3. 1: Peelton Population by village 48
Table 3. 2: Summary of selected variables that affect smallholders' participation 56
Table 3. 3: Selected Livelihood activities and strategies Indicators 62
Table 3. 4: Selected Welfare Indicators 63
Table 3. 5: Second set of Selected Welfare Indicators 64
Table 3. 6: Sample size of participants in MFPP, Non-MFPP and Pot- MFPP villages by gender. 70
Table 3. 7: Variable selected for the analysis of factors affecting participation 73
Table 3. 8: Description of the variables from factor analysis to describe models in the regression models 74

Table 4. 1: Household sizes distribution 78
Table 4. 2: Distribution of Age of Head of Household 79
Table 4. 3: Education level of the head 81
Table 4. 4: Household head primary occupation 82
Table 4. 5: Number of migrants per household 83
Table 4.6: Participation by village of respondents 85
Table 4.7: Mean household size per village 86
Table 4. 8: Statistical analysis of sampled Household head age 87
Table 4. 9: Ratio of men and women by participation 88
Table 4. 10: Participation by age groups 89
Table 4. 11: Participation with respect to literacy level of the head of household 90
Table 4. 12: Effect of household size on participation 91
Table 4. 1314: Participation by asset ownership 92
Table 4. 15: Type of Crops Grown 97
Table 4. 16: Use of improved varieties 98
Table 4. 17: Farmers perception on extension services provided 99
Table 4. 18: The produce markets available 100
Table 4. 19: Constraints faced in crop production 101
Table 4. 20: Livestock production by participation and village of respondents 103
Table 4. 21: Ownership of livestock by participation farmers 104
Table 4. 22: Average income from different sources 105
Table 4. 23: Level of food security of participants 107
Table 4. 24: Maize yields per household level 107
Table 4. 25: Insecurity coping strategies 108
Table 4. 26: Principal components that affect improvement in asset 111
Table 4. 27: Explanatory variables selected for the regression model 113
Table 4.28: Variables subjected to factor analysis prior to the regression analysis 114
Table 4. 29: Variables in model 1 115
Table 4. 30: Variables responsible for an average improvement in the asset base 116

LIST OF FIGURES

Figure 2. 1: Land transfer by project type 22
Figure 2. 2: Cumulative restitution claims settled 23
Figure 2. 3: Land distribution per project 25
Figure 2. 4: The Sustainable Livelihood Framework 40
Figure 2. 5: Sustainable Livelihood Framework as put forward by CARE. 41
Figure 2. 6: The UNDP Sustainable Livelihood Framework 42

Figure 3. 1: Buffalo City Local Municipality 49
Figure 3. 2: Nkonkobe Municipality Map 50
Figure 3. 3: A simplified sustainable livelihoods framework 52

Figure 4. 1: Age-Sex ratio for heads of households 80
Figure 4. 2: Percentage share of occupation in participation 93
Figure 4. 3: Percentage share of primary occupation for non-participants 94
Figure 4. 4: Frequency of maize production 96
Figure 4. 5: Production of livestock per household 102
Figure 4. 6: Turnover group by participation 106

LIST OF BOXES

Box 2. 1: The PGDP quantified objectives..... 35

Box 4. 1: Impact of MFPP at cooperative level: Case Study of Nodhala cooperative. 109

CHAPTER 1

BACKGROUND OF STUDY

1.1 Introduction

The persistence of poverty has led to concerted efforts to rethink policies of both international funding agencies and developing country governments for addressing the problem. In policy terms, rural development has lacked a convincing narrative offering a manageable and internationally agreed solution to the problems. Africa is grappling with all aspects of underdevelopment that require urgent attention. According to Kgathi, Gwen and Wilk (2007), achieving sustainable socio-economic growth and poverty reduction remains the key challenge facing the African region. Despite the fact that rural development has been central in most developing countries' development schemes, there is little evidence that much has changed (Doolan, 2002).

As the African states began to manage their own affairs upon attainment of self-government in the late 1950s and the early 1960s the models of development available to the policy elite were those that emphasized economic growth. The dual sector model of Arthur Lewis had a particular appeal, not least for the dignity it brought with it for having won the Noble Prize for Economics (The Nobel Foundation, 2009). Development economics in this era was strongly influenced by Lewis's (1954) theories. Lewis's model focussed on how to transfer labour from the subsistence sector to the industrial sector in order to promote economic growth through reinvesting profits (Staatz and Eicher, 1984). The expansion of the capitalistic sector, according to Lewis (1954), "*would be brought to an end through adverse terms of trade eating into profits*" given that the capitalist sector was not producing food, otherwise the subsistence sector increased its output. Both sectors should co-exist with the supplies of cheap labour from the subsistence or agricultural sector nourished the capitalistic or industrial sector (Bhattacharya, 1995).

However, by the early 1970s, this Lewis's ideologies had largely petered out. The first batch of political leaders were either dead at the hands of coup plotters and rebellious soldiers or languishing in exile, having been toppled by the populations that failed to see any hope of development in the face of the massive misgovernment that came in the wake of political independence. The trickle-down approach gradually lost credibility in the 1970s. Some of the reasons for this, according to ILO (1977) were that despite the substantial transfer of capital and technology from the Developed Countries to the Third World Countries, the *income per capita* gap between them was growing. Income inequality and unemployment were at an increase in the Third World. According to Weaver and Jameson (1978), increases in unemployment rates were astronomical. With the help of the International Labour Organisation and other development agencies, the governments began to implement basic needs strategies, seeking to provide for the needs of "marginalized masses" (ILO, 1977; Stambuli, 2003).

The basic needs approach explicitly sought a redistribution of the economic benefits of development in favour of the poor. It aimed at a more direct satisfaction of the most urgent needs of the poor through not only a redistribution of the social product but also changing its composition (D'Hease & Kirsten, 2003). Concern of development planners shifted from urban industrialisation to providing employment to the rural dwellers (Eicher, Zalla, Kocher and Winch, 1970). The normative themes of the Basic needs Approach's stressed both the priority and the interdependence of these various needs and call for a greater degree of social participation on the part of the poor. This triggered the need to understand the research on rural farming and marketing systems, if agriculture was to play a role in development programmes.

In South Africa, in the early 1980s, a considerable amount of the state's subsidy was going into the agricultural sector (Van de Fliert, 1995). Along with the subsidies, farmers had state-established producer prices which exceeded the world commodity prices by far (Van de Fliert, 1995). The farmers were also provided technical support, information about latest research findings on mechanical and biological technology (Obi, 2006). The structure of these support measures resulted in both environmental and macro economic consequences. The surpluses from agriculture were highest in the continent and did not benefit the country as a whole (Van Zyl, 1989).

The 1980s and 1990s were associated with the structural adjustment programmes. Then the reality dawned on the policy makers over the impact of the subsidies on agriculture. There was need for putting in place some rationalization. The government had to align its policies to those of the international development agencies and to depart from the era of heavy government subsidisation of agriculture in the 1970s and the 1980s. Emphasis returned to economic growth (Staatz and Eicher, 1984). Other former 'homelands' were identified for agricultural development in an effort to integrate 'black farmers' into commercial production (Obi, 2006). The structural adjustment programmes pursued economic growth improvement through more efficient allocation of resources (Obi, 2006). This was to be made possible by normalising exchange rates, privatising state-owned companies and liberalising internal markets (Coote, Gordon and Marter, 2000). Unfortunately, changes in agricultural markets following structural adjustment, according to Coote *et al.* (2000), left many farmers with poorer access to purchased inputs as the structural adjustment reduced income and raised prices of basic commodities, imported goods and the fees for public services.

The basic needs models emphasized participation and consultation with the local people themselves when conducting development planning (Chambers, 1983). However the model proved to have problems in the decentralization of decision making, devolution of power to smaller territorial units. According to Hough and Sherpa (1989), in most situations information flowed only from the top down. Even without these problems, if the participation suggested in the basic needs approach was effectively implemented other socio-political problems such as the community becoming dependent on outside economic and technical aid. Dandekar and Achatz, as cited by Hough and Sherpa (1989), suggested solutions to such shortcomings of the basic needs model by shifting the goal of development planning from ends or products, such as adequate nutrition, to means or process, such as community empowerment (Hough and Sherpa, 1989). It became difficult in provision of such support because the development aims were many, therefore the basic needs approach was overly ambitious and expensive (Kirsten *et al*, 2003). According to Hough and Sherpa (1989), the problem with this approach was that the national elites and presumably the international elites lacked the commitment to the development of social structures.

Due to failures of the previous approaches, the rural development paradigm shifted towards participation, empowerment and capacity building in the most recent Sustainable Livelihoods Approach. This approach unlike the previous approaches focuses on resources available as the take off point in eradicating poverty. The approach is described in detail in chapter two. The South African government therefore adopted the Sustainable Livelihood Approach as a new modality for addressing the welfare goals of its population (Buthelezi, 2007). The magnitude of the development challenge can be easily understood by looking at some examples.

In South Africa, the single most important issue the country is facing fifteen years after the transition to democracy is breaking the grip of poverty on a substantial portion of its citizenry (Schuh, 2003). Poverty levels are very high. There is a consensus amongst most economists and political analysts that approximately 40 to 60 % of South Africans are living in poverty, with the poorest 15% in a desperate struggle to survive (Landman, 2003). In terms of the minimum living level (MLL) as the cut-off point below which people live in poverty, 46% of South Africans i.e. about 20.5 million people, lived in poverty in 2000 (van der Berg & Louw, 2003). This compares to Terreblanche's (2002) estimate of about 18 million people or about 40% of the South African population in 2002. It is this distribution that prompts some researchers to describe South Africa as a "45/55 society" (Landman, 2003).

Nature of the poverty in South Africa is better understood by looking at its distribution. Findings by the Human Science Research Council (2004) (Table 1.1) on poverty shows poverty levels in South Africa per province are more than 50%. According to the Human Science Research Council (2004), KwaZulu Natal and the Eastern Cape Provinces are the poorest. These provinces, as well as Northwest and Limpopo, were areas designated as "independent homelands". These areas are more rural and in the Eastern Cape Province, the rural population exceeds the urban (Landman, 2003).

Table 1.1: Provincial poverty indicators

Province	**No. of poor persons (million)**	**Population in poverty as %**
Northern Cape	0.5	61%
Western Cape	1.4	32%
Free State	1.8	68%
North West	1.9	52%
Mpumalanga	1.8	57%
Limpopo	4.1	77%
Gauteng	3.7	42%
Eastern Cape	4.6	72%
KwaZulu-Natal	5.7	61%
South Africa	**25.7**	**57%**

Source: Human Sciences Research Council, 2004

Amathole Municipality in the Eastern Cape Province is located in one such former "independent homeland" known as Ciskei. The municipality is characterised by massive underdevelopment. Unemployment and poverty levels within Nkonkobe Municipality are high and are coupled with serious development and services backlogs and where infrastructure provision and forms of governmental support were basic, at the best (Landman, 2003; Obi, 2009). This situation mirrors the general pattern across the country where violent protests against poor service delivery have become the order of the day. Although the protests have been minimal in Nkonkobe Local Municipality and Buffalo City Local municipality, having happened recently in response to a call by COSATU, the situation is serious all the same. Official records reveal that the Nkonkobe Municipal economy is currently able to create jobs for only three and half percent of the economically active population (Nkonkobe Municipality IDP, 2007). The statistics further show that 93% of the employed persons in the Nkonkobe Municipality are earning less than R800, while as much as 74% of the population do not have any income (Nkonkobe Municipality IDP, 2007).

The South African socio-economy, like in most African countries, is dual in nature. One class is made up of the prosperous, skilled and largely white minority and the other is poor, unskilled and largely black (Landman, 2003). The dualism is also visible in the agricultural sector. This was created by a long history of separate development and inequitable access to the factors of production, such as land and capital, which was worsened by inadequate access to markets (Landman, 2003). One face of South African agriculture is a horizontally and vertically integrated commercial sector depending on land and input resources and selling to markets, which remains mainly in the hands of the minority of the population. The other face of South African agriculture is a disenfranchised, poorly resourced and poorly trained cadre of farmers (Mafunzwaini, Thahane & Worth, 2003).

The Nkonkobe Municipality is mostly rural, the population consisting mainly the blacks forming the majority of the municipality and the elite whites owning commercial farms (Nel and Davies, 1999). Commercial farming in Nkonkobe Municipality is at presently dominated by white farmers. This is consistent with Nompozolo's (1999) findings that commercial farming in the Eastern Cape Province is controlled and dominated by a minority of white farmers. The poor in South Africa, according to Clover and Darroch (2005), practice subsistence farming. According to Dirwayi & Hlanganise (2005), in most of the cases, the farmers are not capable of producing enough to feed themselves, therefore farming a livelihood strategy that does not ensure sustenance when pursued alone. The Agricultural sector in Nkonkobe Municipality has been in a state of decline in the past 12 years. Government institutions such as ULIMOCOR (Ciskei Agricultural Corporation), which used to provide substantial support in citrus and beef farming in the 1980s, closed down in 1997 without any alternative or back up support for farming in the area. Currently agriculture is producing 30% of food needs (Nkonkobe Municipality IDP, 2007). The sector's performance is below the expected standards but it has potential to grow given that there is a lot of arable land available for cultivation.

In response to the foregoing desperate developmental gaps in the country, the South Africa government has undertaken a number of projects over the years to improve livelihoods of the poor. The government has been using agriculture as one of its

strategies for poverty alleviation. Attempts to make smallholder farmers into commercial farmers date back to the mid-1980s by the post apartheid government.

One example was in Qwaqwa where a land settlement scheme made of 114 mostly former employees of Agriqwa, a non-profit government corporation, was founded (Claassen, 2000). The agency provided financial and technical assistance as well as infrastructure for modern farming was provided. According to Claassen (2000) the implementation of the "experiment" was based on the notion that the rural poor cannot be weaned from subsistence production and that continuous support was necessary. The support agency was restructured and this brought an end to financial and agricultural support to the emerging farmers in Qwaqwa, therefore leaving the farmers to compete independently in the free market environment (Obi, 2006). Unfortunately, the farmers were not prepared for the competition in the market and this has resulted in serious managerial problems (Claassen, 2000).

Other similar innovations are also found in North West Province especially in Taung area which was implemented in the period 1980-1989 (Obi, 2006). It was developed with a view to settling small-scale commercial farmers in an environment that helps to foster greater economic opportunities for the individual farming household as well as generating further opportunities for the broader Taung communities. The scheme started with the allocation of 1.7 ha of land within a circular piece of land to each participant. Each parcel of land was described as a "circle" was served by a rotary irrigation infrastructure that consisted of a pipe-fed irrigating "machinery" on wheels that delivered water to the participating fields according to a predetermined format (Golder Associates, 2004) This scheme was a success, such that in 2001 each participating farmer was allocated 10ha of land within the circle on which three other farmers own small sized parcels (Obi, 2006). To date, the Taung Irrigation Scheme irrigates 3 678ha of land whereby 2 490ha are allocated to 249 farmers and irrigated by means of centre pivot irrigation. Flood irrigation covers a further 121ha belonging to 25 farmers and 967ha belonging to 137 farmers is irrigated by sprinklers (Invest North West, 2009).

The Eastern Cape provincial government has also tried increasing economic growth through agricultural transformation (Buthelezi, 2007). According to Nel and Davies (1999), the role of agriculture is clearly pivotal in the context of rural development. In line with this perspective, the Eastern Cape Government has launched a concerted attack on poverty, especially in the rural areas of the province. In its Provincial Growth and Development Programme (PGDP), the Eastern Cape Government introduced among others the Massive Food Production Programme as the flagship poverty reduction and food security programme in 2002 (Department of Agriculture, 2008; Manona, 2005; Gubu, Habig ,Joubert, Madzivhandila, Mkhulu & Ntantiso, 2005).

The Massive Food Production Programme is a government-funded programme aiming at stimulating the use of suitable productive land in the rural areas of Eastern Cape Province to encourage farmers to produce food thereby stimulating economic activity based on agriculture. This programme stresses the concepts of community-driven development and a reliance on local initiative. Its key focus was to get a critical mass of rural households (200,000) to be self-sufficient in carbohydrates and proteins by the end of the programme (Manona, 2005). The programme schemes were expected to run for a period of five years (Department of Agriculture, 2008). According to Eastern Cape Provincial Government (2004), though in conceptualization MFPP was primarily a food security programme; there was a strong ideal of producing surplus food to export boost internal trade in agriculture and possibly provide for exports, giving attention also to industrial products, such as hemp, olives, or kenaf. Included in the programme are projects of potatoes, chicory, cotton, and fruits, sorghum and beans and livestock assistance as well the development of commercial agricultural production for socio-economic empowerment and food security (Department of Agriculture, 2008).

In order to advance food security, the government had to resolve a number of complex issues in this programme. These included strategic and sensitive issues such as land reform, production of food, procurement and marketing of food products (Machingura, 2007). The programme covered issues of development and micro-finance, infrastructural development, alongside human resource development through education and training, research and technology development.

The selection criteria for participating in the Massive Food Production Programme were specific and demanding, thus disqualifying other people from entering into the programme. Selection was by farming potential of an area. In addition, the programme covered issues on development and micro-finance, infrastructural development, alongside human resource development through education and training, research and technology development. The government offered "conditional grants" to previously disadvantaged communities, or individuals who were prepared to produce on at least 50 ha of contiguous land. The conditional grant was in fact production loan with grant element, made over 5-year period. The "sliding grants", according to Buthelezi (2007), begun with 100 percent subsidy and was reduced annually by 25% which will be reduced by 25 percent. This was done in hope of enabling the producers to build up their own capital, market their produce, and manage risk while transforming their agronomic practices. In the first year the farmers got their seed, fertilizers and pesticides free, with the government providing finance through Uvimba Bank. The farmers were responsible for harvesting and marketing their crops (GRAIN, 2008).

The programme has two distinctive components, namely a crop production component and a mechanization component (Machingura, 2007). The different characteristics of the two components are summarised in Table 1.2 below.

Table 1. 2: Characteristics of the Massive Food Production Programme Components

Component / *Characteristic*	**Crop Production Component**	**Mechanization Component**
Aim	Elimination of hunger	Establishing black commercial contractors to service the mechanisation needs of the crop farmers
Grants and loan	Provision of conventional farming inputs such as seeds, fertilizers and chemicals required to produce maize as well as undertake tillage activities	Provision of conditional grants and loans to rural contractors to buy equipment and pays them to prepare and plant the fields.
Condition of grant	The farmers get seed, fertilizers and pesticides free in the first year.	Interest-free loan repayable over 5 years meant for buying equipment (GRAIN, 2008)
Partners	Extension -Dedicated mentoring service provided to Siyakhula/Massive farmers	Uvimba Bank
Production plan	Production plans vetted to ensure correct quantity and quality Input Supplier selected by farmers	All contractors, to become accredited, had to complete a 3-week preparatory course by the ECDA on the handling of machinery, crop establishment, mixing -and use of herbicides and minimum tillage practices (Eastern Cape Provincial Department of Agriculture, 2002).

Source: GRAIN, 2008.

The mechanisation component acknowledged the lack of appropriate mechanisation as a barrier to up-scaling crop production. In summary, the funds provided by the government were for acquiring mechanical equipment from rural contractors and for paying for the preparation of and planting the fields. The fertilisers, pesticides and seeds (both hybrids and genetically modified seeds) were subsidized and the government considered consolidating and mechanising the land. According to Buthelezi (2007), the sliding scale grant was conditional upon the recipients managing their production according to the recommendations of the Department of Agriculture. Social and economic networks play a vital role in community resilience. The project relied on community cooperation and the agglomeration of communal plots into larger fields. In acknowledgement of the difficulties of managing isolated smallholder fields and delivering inputs to them on time and at reasonable cost, the government established "public-private partnerships" with government, agribusiness, local contractors and local banks such as Uvimba Bank,

which provided the finances for inputs (Eastern Cape Department of Agriculture, 2002, GRAIN, 2008).

Initially the MFPP targeted all levels of agriculture (primary, secondary and tertiary) in the Eastern Cape economy. The MFPP targeted underutilized high potential arable lands and introduced improved production methods. These production methods included conservation farming techniques such as the consolidation of land, whereby several small plots are joined to make a single plot. The promotion of conservation farming techniques was central to the MFPP concept (Eastern Cape Provincial Department of Agriculture, 2002). The government opted for this strategy because it was not only to ensure food security but was also a one-step transformation of small-scale farms into agglomerated commercial farming units.

1.2 Problem Context

The Nkonkobe Municipality aims to upgrade the livelihoods of its population through the development of small scale farming activities. The area has a potential for fruit and vegetable production, stock production, maize farming and irrigation farming (Gubu *et al*, 2005). With increasing urbanisation combined with increased demand for agricultural products for bio-fuel, the Eastern Cape Department of Agriculture has a mandate to increase support to agriculture in order to achieve sustainable transformation.

Agriculture in Nkonkobe contributes 17% to the Geographic Gross Product and most of it is from livestock production (IDP Review 2003/2004). This is consistent with national statistics which show that the Eastern Cape's livestock sector contributes about 56% of the meat supply of South Africa. In addition, the Nkonkobe municipality is among the most important producers of citrus products in the province. Besides, a number of high value crops were identified by numerous scientific studies that have been carried out in the Nkonkobe Municipal area. Among these are paprika, olives and essential oils, whose expanded production can result in the attainment of sustainable livelihoods objective through foreign income from

exports (Nkonkobe Municipality IDP, 2007). However, the Massive Food Production Programme is a maize production programme. It therefore, raises questions why the Provincial Government is focusing on maize production as the flagship programme despite the clearly demonstrable diversity of the sector in terms of enterprise distribution. Land capability studies have also established that focusing on a single enterprise contributes to under utilisation of the provincial capabilities. Perhaps the government could have designed a programme robust enough in terms of multi-sectoral coverage to attain these other objectives, since agricultural development programmes should have multiple projects.

Seeing that the 1980's government subsidies on commodity production, such as maize production under in the Farmers Support Programme 1986 resulted in macro-economic and environmental consequences, it is worthwhile to investigate the impact of the MFPP. Additionally, implementation similar programme implemented in Qwaqwa area of the Free State Province ran into serious problems and failed for all practical purposes, the question that may arise in respect to the Massive Food Production Programme is: will the participants in the programme benefit from this programme and is the programme sustainable?

1.3 Scope and Objectives of Study

Broadly, the study aims to determine the extent to which the Massive Food Production Programme has impacted on the livelihoods of communities in the municipality. More specifically, the study aims to investigate:

- the impact of Massive Food Production Programme on the households' asset base
- the extent to which the Massive Food Production Programme has changed the livelihood activities specifically maize production of communities in Komkhulu, Mdeni, Nkqonkqweni, Majali and Ngwangwane.
- how the Massive Food Production Programme has transformed the livelihood outcomes in terms of food availability income realised from maize crop sales and an improvement in the asset base of the Komkhulu, Mdeni, Nkqonkqweni, Majali and Ngwangwane communities.

Income improvement is one aspect that can be used on project impact analysis. In this study the Sustainable Livelihood Framework has been identified as the conceptual framework, therefore evaluation of impact will be on the asset base.

1.4 Justification

A number of the components of the PGDP related to macroeconomic policy and agricultural development have been implemented in the Nkonkobe Municipality. But to date, little has been documented on their total impact on livelihoods. It has been five years since the implementation of the Massive Food Production Programme began but little information is available on what changes in livelihoods have taken place. There is a need to analyse the viability of this programme and determine its feasibility to transform agriculture and livelihoods in general and in the Amathole Municipality in particular.

As stated before, the overall aim of this study is to determine the impact and contribution of the Massive Food and Production Programme in the Eastern Cape. Basing this study on the premise that agriculture is one key element within a broad spectrum of strategies that can be adopted to reduce poverty and contribute to rural development, the potential significance besides the contribution to an already rich body of knowledge on the subject, this study will provide insights concerning the use of maize production as a poverty alleviation strategy specifically in the Eastern Cape and provide key lessons to policy makers and practitioners engaged in agricultural development in making more informed decisions. It is also hoped that this study will bring into focus other possible strategies that can be employed in agricultural programmes as projects in order to eliminate poverty in the poor communities of the Eastern Cape Province.

1.5 Hypotheses

This study tested three hypotheses, which have been linked to the three research sub-objectives mentioned above. As may be recalled these objectives revolve around the

needs to investigate the impact of the MFPP on the asset base, how livelihood activities have evolved, and what livelihood outcomes have resulted. In line with these, the following hypotheses are too be tested:

1. H_0: Resource availability does not affect the livelihood strategies,

   H_1: Availability of asset impacts on the choices of livelihood strategies household members pursue.

2. H_0: Maize production has always been a common practice among the rural population of Nkonkobe and Buffalo City Municipalities so introduction of the MFPP did not change its practice,

   H_1: The introduction of Massive Food Production Programme has enticed smallholder farmers to intensify maize production.

3. H_0: The Massive Food Production Programme was not a relevant agrarian transformation strategy to improve livelihood in the Amathole Municipality, otherwise,

   H_1: The Massive Food Production Programme has improved the well being of rural households, thus is a significant agrarian transformation strategy for Amathole municipality and is contributing to poverty alleviation as intended.

The study attempts to look at both the intended and unintended consequences of the MFPP across a variety of livelihood concerns.

1.6 Outline of Dissertation

This thesis consists of five chapters. The first chapter has provided the background and the context of the entire study. The second chapter presents the literature review and provides the conceptual background this study was built on. Chapter three discusses the methodological approach employed, giving more detail on data

collection and analytical procedures. Chapter four is a presentation of the results of data analysis and chapter five summarizes the study results, providing a discussion and conclusions on the study. Recommendations for future research are also part of chapter 5.

CHAPTER 2

THEORETICAL UNDERPINNINGS OF RSA RURAL DEVELOPMENT PATHWAY

2.1 Introduction

This study aims to investigate the extent to which the Massive Food Production Programme has impacted on the livelihoods of communities in the South African rural population. Thus, this study will investigate issues such as poverty, how capacities have been mobilised to wage the war against poverty and the development gap in South Africa. This chapter reviews literature on poverty globally and in South Africa and the responses of the national and global communities to poverty. The chapter starts with a discussion of different theoretical conceptions of poverty, the nature, dimensions and extent of poverty in rural South Africa, specifically in Eastern Cape as a former "homeland". Then the chapter will explore how the global community responded to poverty, beginning with the theoretical underpinnings of the rural development approach as a way of addressing development gaps. The chapter outlines the evolution of developmental theories since the 1950s, their strengths and criticism and reflects on their impact on the socio-economic activities of individuals, households, communities and nations. Then the study narrows down to a discussion on the South African development environment. It goes on to discuss the agricultural transformation strategy as a rural development strategy as well as some of the key challenges facing agricultural development in South Africa.

2.2 Understanding Poverty and Hunger

Poverty is a multidimensional problem, which results from a combination of economic, political and environmental factors. Poverty can be measured in several dimensions (Frye, 2005). Several dimensions are considered by the Sustainable Livelihoods Framework namely, nutrition, health, consumption, asset base, powerlessness and income levels.

There are debates that surround the conceptualization of poverty, of which these revolve around the multidimensional characteristics of poverty. Literature has proven that poverty has various manifestations. This include lack of income and productive resources sufficient to ensure sustainable livelihoods, hunger and malnutrition, ill health, limited or lack of access to education and other basic services, increased morbidity and mortality from illness, homelessness and inadequate housing, unsafe environments, social discrimination and exclusion (Frye, 2005, Machingura, 2007). Poverty includes food insecurity, crowded homes, lack of adequate pay and secure jobs, fragmentation of the family, illiteracy, poor health, social exclusion, gender discrimination, and alienation of the community.

While it is now widely accepted by analysts and policy makers that poverty is deprivation in terms of a range of capabilities mentioned above and that these capabilities are significant in their own right and in terms of their contribution to economic growth and income enhancement, poverty is also conceptualized as material or physiological deprivation (Frye, 2005). According to Frye (2005), poverty is a function of either an individual's condition (for example, poor health) or the situation one is in (for example landlessness), but most likely both. Poor health diminishes personal capacity, lowers productivity, and reduces earnings (Frye, 2005). A high prevalence of diseases and poor health in a country harms economic performance while higher life expectancy, a key indicator of health status, stimulates economic growth. According to Philip (2000), poverty is generally characterised by the inability of individuals, households, or entire communities to have sufficient resources to satisfy a socially acceptable minimum standard of living. Evidence from Maitra (2002) indicates that the patterns of living standards and poverty characteristics in South Africa are a result of the policies structured during the apartheid era. Aliber (2003) argues that South Africa's particular experience of colonialism and apartheid are the most significant factors distinguishing South Africa from the rest of Africa. Aliber (2003) argues that this holds true for the causes of and incidence of poverty in that poverty was transmitted not only through successive generations of households, but at the level of communities as well, in the sense that they were deprived of infrastructure and amenities, remotely situated and without economic prospects.

2.3 Poverty in South Africa: A South African Rural Scene

2.3.1 Poverty Alleviation Strategies in South Africa (1994 to date)

In South Africa, there is an ongoing debate on the development pathway. The debate revolves around the role of governments, markets and people. Evidence from the policies implemented, for example, the Reconstruction and Development Programme, the government was the role player in driving development. However, the Growth, Employment and Redistribution strategy (GEAR) is based on the neo-liberal theory with the aim of reducing in state support for economic services. This study is not interested in the debates on the role of the state. The focus is on the South African agrarian reform policies since 1994. Mention will be made of the other policies, which to an extent shaped the agrarian policies.

The Reconstruction and Development Programme (RDP) was the government policy document for action laid out by the ANC as the ruling party to guide its role in development. The RDP advocated reducing poverty, by redressing inequalities and injustices of the past. It intended to be a people-driven project that would realize peace and security through programs that build the country, integrate the goals of reconstruction and development, and deepen democracy (ANC, 1994). The RDP foundations were on five interrelated objectives that the government pursued simultaneously. The RDP involved the state support for economic service for example in education and providing employment. However the RDP office was closed down in 1996. Subsequently, a new government policy document entitled "Growth, Employment and Redistribution: A Macroeconomic Strategy" (GEAR) was published.

GEAR was a neo-liberal economic policy, which proposed an accelerated program of privatization, deregulation, and fiscal restraint. It entailed the liberalization of imports through tariff reduction and encouragement of export marketing assistance (Aliber, 2003). According to Habib & Padayachee (2000), the GEAR was neo-liberal in character. According to Hirsch (2005), the most important element of the GEAR was the coordination of economic policy and implementation within the government and between government and its social partners.

The GEAR resulted in minor improvements in the economic growth rate, a lowering of inflation, a reduction of the budget deficit, a narrowing of racial income inequality. Furthermore, there was to some degree black economic empowerment, movement, albeit slow, in respect of its privatization program, and some limited success in respect of exports and foreign capital inflows. In most of these areas, however, these "successes" are to some extent not ambiguously positive. Habib & Padayachee (2000) show that in the period April 1994 to end 1997 the economic growth rate improved. It was 2.7% in 1994, 3.4% in 1995, 3.0% in 1996 and 1.5% in 1997 (South African Reserve Bank Quarterly Bulletins (SARB/QB), 1997). Although this may appear reasonable, the average real income per capita of R7007 in 1996 was in fact well below levels in the 1970s (Michie and Padayachee, 1997). This was far below that which is required to have an impact on employment and development in a country with South Africa's legacy of underdevelopment, poverty and inequality. The South African economy technically slipped into recession in the second half of 1998, when the growth rate (seasonally adjusted and annualised) fell by 2.5% in the third quarter and by 0.5% in the fourth quarter, in the process driving the overall 1998 growth rate to zero (SARB/QB, 1997).

The GEAR resulted in high levels of unemployment and a poor record of delivery in respect of some important areas of social and physical infrastructure. GEAR predicted that employment in the formal, non-agricultural sector would rise by 1.3%, 3% and 2.7% from 1996-1998, and the private sector was to create the bulk of the jobs (Habib & Padayachee, 2000). Total employment in the targeted sectors has been negative and falling, however, from -0.7% in 1996 to -1.7% in 1997. In 1998 the total number of registered unemployed "reached record levels"' (Adelzadeh, 1999). According to Rivett-Carnac (2008), GEAR overly emphasised "monetary and fiscal policies at expense of other, broader, societal goals". Habib (2004) sums up the impact of the GEAR as, "not only had it negative consequences for the poor and marginalised people of South Africa, but it has also compromised the outcomes of the progressiveness of other progressive legislation".

In 1996, the Constitution of the republic of South Africa was promulgated on 18 December and it commenced on 4 February 1997.three spheres of government were established national, provincial and local. The National sphere's responsibilities are

policy development, overall coordination of services in the country, and equitable distribution of resources, particularly financial resources. The provincial governments' roles included monitoring and evaluating the implementation of national policy. As a plan for development, the adaptation of the national policies was based on the needs of the province. The third sphere of government, the Local Government was responsible for providing basic services, such as water, sanitation and electricity and is the level of implementation of policy (Hall & Roberts, 2006; Manona, 2005; Constitution of Republic of South Africa, 1996). This was a role that entailed giving priority to the basic needs and promoting social and economic development. The local government's role, according to Oldfield and Parnel (1998), was of creating employment and economic growth in their areas and reducing poverty amongst their local residents. This role aspired to be democratic and participatory, to be oriented to redress and accountability, and to holism and integration (Oldfield and Parnel, 1998). These three spheres of government work together as a cooperative government. The local government transformation was fully realised with establishment of fully-fledged municipalities in December 2000 (Ntsebeza, 2003).

However, the local government faced a number of problems. According to Manona (2005) and Cousins and Kepe (2004), these largely emanated from rapid institutional change, lack of experience with democracy, and general lack of confidence and experience and skills. Municipalities in the poverty-stricken former "homelands" had a small or non-existent revenue base, resulting in unfunded mandates alongside disputes over roles to play with the traditional leaders (Manona, 2005; Manor, 2000). In order to enable the local government to achieve the post-apartheid objectives of restitution, redevelopment, and growth at a local level, the government introduced new tools. These include the Land Development Objectives (LDOs) and Integrated Development Plans (IDPs).

In 1994, the South African government introduced its land policy. This was, according to Manona (2005), one of South Africa's most ambitious tools of transforming the society. Though it was necessary, it was not a sufficient condition to improve the food security situation affecting the majority of the rural population. The Land Reform Programme had three components, land redistribution, land restitution and land tenure reform (ANC, 1994). The land redistribution initially aimed at

providing the disadvantaged and the poor with access to 30% of agricultural land for residential and productive purposes. It was founded on the willing-buyer, willing-seller basis (UNDESA, 2003, ANC, 1994). Funds to purchase land were from the Settlement/Land Acquisition Grant (Jacobs, Aliber, Hart and O'Donovan, 2008). By 2000 the grant was widened to include the Land Reform and Distribution Grant. The Land Reform and Distribution Grant was a sliding scale grant of between R20 000 and R100 000, for land reform beneficiaries (Manona, 2005; Jacobs *et al*, 2008). The land restitution programme aimed at restoring land to those dispossessed without adequate compensation prior to 1994 dating back to 1913. The Land tenure reform addressed the question of tenure security on people who were once removed from their land, labour tenants, farm workers and farm dwellers or communal communities had access or rights to use (Manona, 2005). The tenure reform involved the enactment of a legislation which aimed at strengthening the tenure security of particular groups, for example labour tenants (the Land Reform (Labour Tenants) Act of 1996) and farm dwellers (the Extension of Security of Tenure Act of 1997) (Jacobs, *et al*, 2008).

In 2000, the second phase of the land reform was introduced. The second phase of the Land Policy had programmes such as the Land Redistribution for Agricultural Development (LRAD) programme. The new policy based the land reform to the policy goals of the National Department of Agriculture. The major challenge of the policy was transforming the demographic profile of commercial agriculture, to make it far more representative of the total population, targeting to transfer a third of the land resources to women (Minister of Agriculture and Land Affairs, 2000).

The most recent significant piece of tenure legislation is the Communal Land Rights Act (CLRA) (Act 11 of 2004). Alongside its core objective to remedy the inferior and/or insecure tenure status of communal dwellers, are explicit economic objectives as well which are, to permit

> "… the registration of land and land tenure rights in the Deeds Office within a unitary registration system. The registration of land and land tenure rights in the name of communities and persons will provide an enabling environment for the agrarian transformation, economic take-off and the general socio-economic development of the communal areas and the participation of

communities and persons in the mainstream economy for the purposes of creating wealth, income and employment opportunities" (DLA, 2006).

CLRA has not been implemented, meaning that the community level tenure clarification processes it provides for cannot begin because the supporting processes and infrastructure have not been put in place by government.

The achievements of the Land Reform Programme are arguable. According to Hall & Roberts (2006), the achievement in redistribution is substantial. Though the objective of the project to target the poor was achieved largely, 667 825 hectares of land had been redistributed while 78 758 beneficiaries were registered on the Department of Land Affairs' redistribution database by December 1999(DLA, 2000). That is to say, by the end of 1999 the redistribution and restitution programmes combined had transferred only 1, 13% of agricultural land to black ownership since 1994 (DLA, 2000). By September 2004, 2 688 046ha of land had been transferred through all aspects of the programme (Minister of Agriculture and Land Affairs, 2004). Despite the significant increases in delivery of land under both redistribution and restitution, which were beginning to be evident, there was a need to rethink the many aspects of the policy. From the "Quality of Life" study conducted it was confirmed that residential settlement rather than agricultural production constituted the major land use in projects 72% of all individually allocated plots were being used for residential purposes, while less than half of all communally owned pieces of land was being used for farming purposes and over a quarter of such land was described as fallow or vacant (Walker, 2000). Figure 2.1 shows a breakdown of the land transferred through the programme, by the type of land reform project.

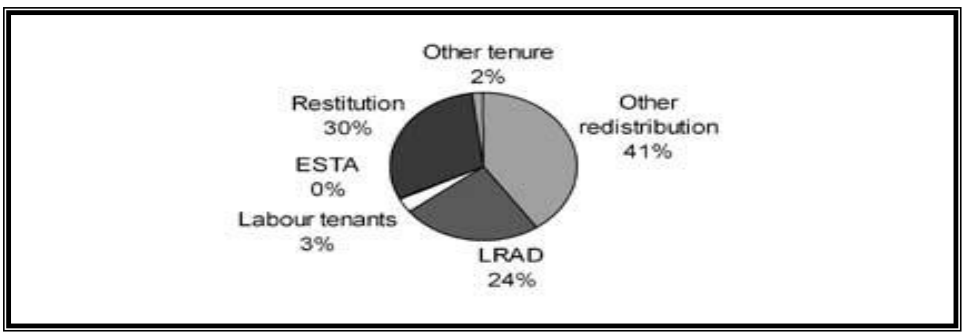


Figure 2. 1: Land transfer by project type
(Note: The figure for restitution is updated to 31 August 2004; the rest of the figures are updated to 30 September 2004.)
Source: Minister of Agriculture and Land Affairs, 2004

Despite the slow start, the land reform picked up pace in the second five years of democracy. The number of claims settled jumped from 41 in 1999 to 3 916 in 2000, 12 074 in 2001, 29 877 in 2002 and 46 727 in 2003 (CRLR 2003). By the end of August 2004, a cumulative 56 650 claims had been settled, resulting in the transfer of 810 292ha of land (just under a single percent of agricultural land in the country) at a cost of about R1.5 billion. Figure 2.2 shows the cumulative curve of the settlement restitution claims. Figure 2.2 shows the dramatic acceleration in 2000 and 2001, which levelled off in 2002 and picked up again in 2003. The Department of Land Affairs developed a Strategic Plan for 2004-2007. Its aim was the acceleration of land delivery for sustainable development. An AgriBEE programme and the Land and Agrarian Reform Project (LARP) and the Settlement and Implementation Support Strategy (SIS) complemented the Strategic Plan, linking land and agrarian reforms (DLA, 2006). Nevertheless, many of these programmes confronted serious criticism. According to some critics, such programmes focused mainly on organizational and governance aspects and do not tackle the structural problems restraining development (NLC, 2000; Anseeuw, 2004 as cited by Anseeuw and Mathebula, 2008). Others note that, even if the projects focussed on agricultural development, these projects focussed on particular social groups having means of investment, reflecting a very controversial socio-political choice, generally avoiding the question of land reform and development (Lahiff, 2001; Cousins, 2002; Anseeuw & Mathebula, 2008).

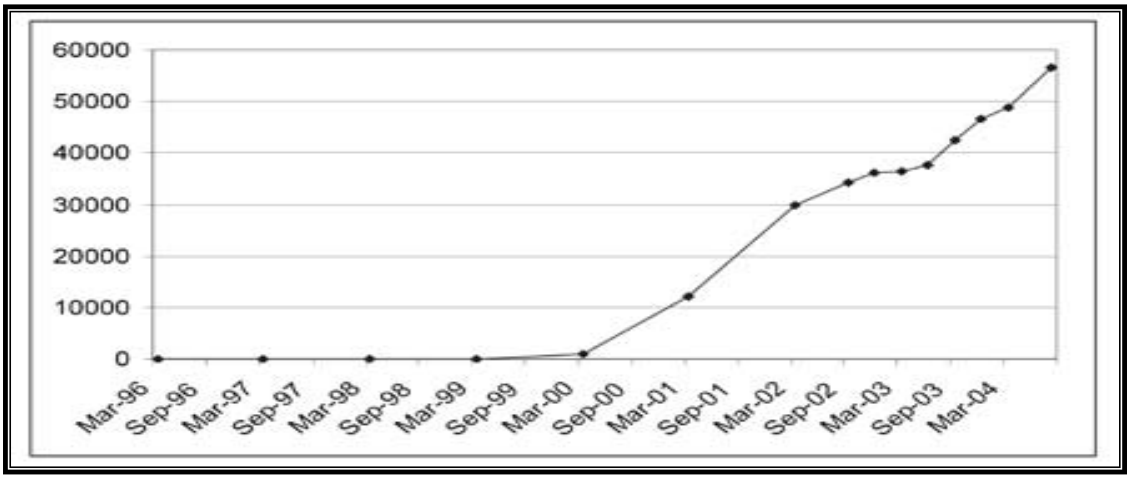


Figure 2. 2: Cumulative restitution claims settled
Sources: Minister of Agriculture and Land Affairs, 2000 and Hall and Roberts, 2006.

Land redistribution was as slow in the beginning and the participation of the government in projects picked up in 2002 (see Table 2.1). However, the amount of land transferred per project shows a decline (see Figure 2.2). According to the Minister of Agriculture and Land Affairs (2004), from 1994 the amount of land transferred decreased from 14331 hectares of land per project to 867hectares per project by 1998. Amount of land transferred per project in 2002 was only 404hectares.

Table 2. 1: Land redistribution and tenure reform by 2004

Year	No. of projects	Households	Female-headed households	Individuals (LRAD)	Hectares	Amount of Land distributed per project
1994	5	1004	12	0	71655	14331
1995	12	1819	24	0	26905	2242.083
1996	49	6256	189	0	72416	1477.878
1997	97	11928	1029	0	142336	1467.381
1998	236	14943	2934	0	205044	868.8305
1999	156	30383	1675	0	245481	1573.596
2000	236	29699	1941	363	222351	942.1653
2001	400	23213	2912	3732	249302	623.255
2002	742	14132	691	10650	299969	404.2709
2003	502	17438	226	8192	158668	316.0717
2004	251	2740	0	16284	183625	731.5737
TOTAL	**2686**	**153555**	**11633**	**39221**	**1877752**	

Source: Minister of Agriculture and Land Affairs, 2004

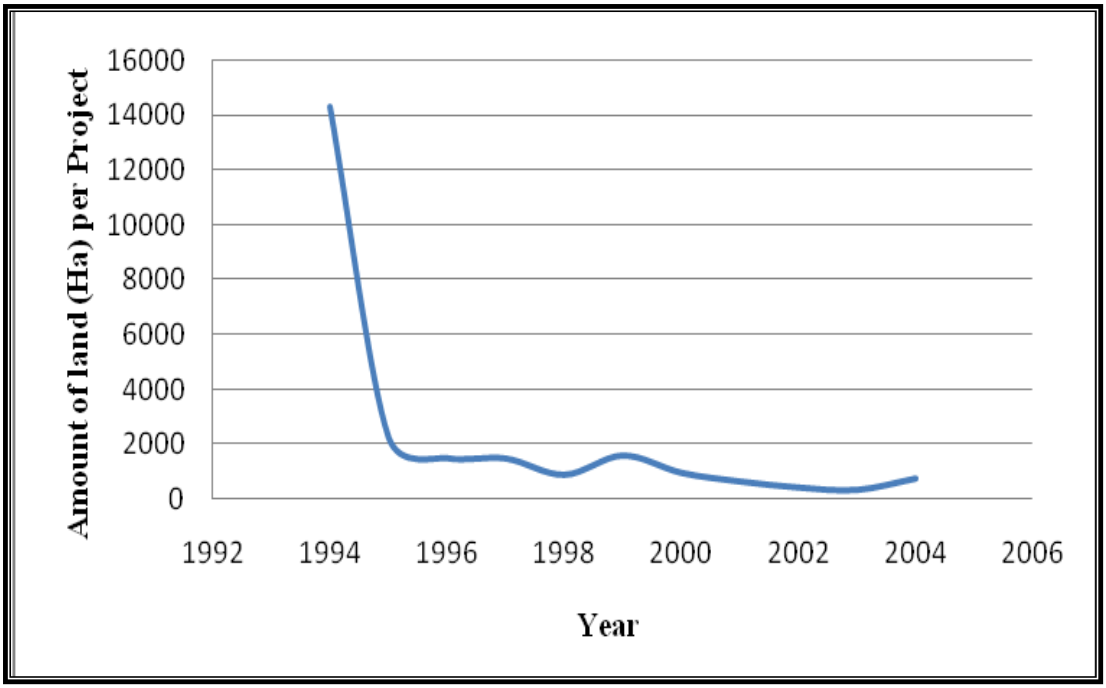


Figure 2. 3: Land distribution per project
Source: Minister of Agriculture and Land Affairs, 2004

There is a decrease in the average land distributed per project has declined. Observations from a case study on Mole-mole municipality in the Limpopo Province (South Africa) show that,

> "not only are 96.5% of the beneficiaries not benefiting from the land reform projects, a large portion of those who presently are were previously farm workers. This accounts for 28% of the beneficiaries engaged in the projects. A further 25% are pensioners or individuals benefiting from social grants, 4% work or are businesspeople (this is mostly true for LRAD projects). Only 43% of the 164 beneficiaries, those who were previously unemployed, say that land reform has improved their situation (notwithstanding the relatively poor conditions of employment and income on the projects)" (Anseeuw & Mathebula, 2008:9)

To date 5million hectares of white-owned agricultural land have been redistributed to 10 000 new agricultural producers (United Nations, 2008). The land redistribution was to a greater extent a success since national government had targeted to redistribute 30% of the country's commercial agricultural land (about 24 million hectares) by 2014 (United Nations, 2008).

In its quest to reduce poverty and unemployment, the South African Government also introduced the Extended Public Works Programme (EPWP). The origins of National Public Works Programme (NPWP) dates back to 1993 as a strategy in the RDP that aimed to reduce poverty through creating employment, transferring skills and educating poor people. Its progress in reducing poverty was considered slow.

The year 2001 saw the government breaking from the preceding policy frameworks through the Integrated Sustainable Rural Development Strategy (ISRDS). In this framework, the government attempted to make local government the driving force in bottom-up (demand-driven) development. The framework reflected an appreciation of the differences in nature and extent of urban and rural poverty, selecting nodes in the Eastern Cape including Ukhahlamba, Alfred Nzo, Chris Hani and OR Tambo District Municipalities, which cover the worst off areas with regard to underdevelopment and poverty (Manona, 2005). In its ten year horizon, the ISRDS seek to concentrate existing resources into 'projects' rather than addressing the redistribution of assets or scaling up the availability and quality of infrastructure and services across the country. According to Everatt (2002), the problems of co-ordination and communication beset development. This resulted in assets being given apparently at random, with little internal coherence or responsiveness to community priorities. Seemingly, the ISRDS failed to articulate the rural economic growth strategy

The Extended Public Works Programme was later expanded through the Extended Public Works Programme in 2004. EPWPs now exist nationwide. EPWPs are implemented through four major departments. These are Department of Environment and Tourism, Department of Water Affairs and Forestry, Department of Agriculture and the Department of Arts and Culture. The EPWP focuses on the environment, infrastructure and economic issues (Kepe and Kobokana, 2008). This programme was meant to be a demand driven and due to this fact it has received such criticism that it will not reach the poorest communities (Adato and Haddad, 2002). However, studies including a case study on EPWP in Hluleka and Mkambati, has shown that its projects were a top-down approach to development, excluding nature reserve managers/personnel and local people in the decision making about the type of projects they needed (Kepe &Kobokana, 2008).

In 2006 AsgiSA, the Accelerated and Shared Growth Initiative of South Africa became the vehicle for identification and addressing growth barriers (The Presidency, 2007). The AsgiSA is a set of specified priority programmes and projects of the government, which focused on speeding up and promoting equitable economic growth. This was to be possible through creating an environment where firms will increase investment. AsgiSA aimed to solve the six binding limitations. These are:

- volatile currency,
- the cost, efficiency and capacity of the national logistics system,
- shortage of suitable skilled labour and the spatial dissertations of Apartheid affecting low-skilled labour costs,
- barriers to entry, limits to competition and new investments,
- deficiencies in state organisation, capacity and leadership and
- the regulatory environment and the impact on small and medium enterprises.

The ideology of AsgiSA has shifted back towards a state-led approach to development growth. The state indicated that it would take the lead role in investing in the economy. The government was to provide "the necessary infrastructure, such as transport, energy and communication infrastructure, for the private sector to expand and to facilitate private investment" (Rivett-Carnac, 2008:24).

One can conclude that policy in South Africa since 1994 to present has somehow moved from the rural developmental vision as was articulated in the RDP to adopting neo-liberal orthodox economic approach. AsgiSA did not disregard capitalism as the driver of economic growth. The GEAR strategy was neo-liberal in nature and it resulted in the stability of the macro-economy, largely, it did not change lives of the rural population. Rather it promoted monetary and fiscal issues at the expense of the rural poor. However, it is notable that the South African Government did put effort in improving livelihood in rural South Africa through a number of policies such as the Land Reform Policy and the Extended Public Works Programme. The Land Reform Policy was the first by the South African Post-Apartheid Government to show the importance of agriculture in poverty alleviation in the "new" South Africa.

2.3.2 The Developmental Gap

Various sources, such as Terreblanche (2002), Aliber (2003), FAO (2004), Machethe (2004), DBSA (2005), Obi (2006), Obi, Pote and Chianu (2007) and Pote, Obi and Fraser (2007) verify the increasing poverty levels in South Africa. Poverty is more severe for the rural populations. The most affected are the female-headed households, people with disabilities, the elderly, retrenched farm workers, cross-border migrants, the "street homeless", AIDS orphans and households with AIDS sufferers (Aliber, 2003). According to UNDP (2006), South Africa's income distribution is the most skewed in the world. The representation of the Africans and Coloured in the richest quintile increased from 28% to 45% in the year 1995 and 2000 respectively (Pauw & Mncube, 2007). Though there was a significant increase in the African and Coloured people in the richest quintile in the year 2000, from the South African Human Development Report for 2003, inequality has escalated (UNDP, 2006). This is confirmed by the unemployment rate that is between 25-40%, being worse for rural and more so for blacks (UNDP, 2006).

It is more disturbing to note the irony that though the country was self-sufficient in food production; about 14 million people were, according to National Treasury (2003), vulnerable to food insecurity and 43 percent of households suffered from food poverty. According to Hebinck and Monde's (2007) findings with respect to two rural communities of the former Ciskei "homelands", both land use and crop production declined due to an array of issues such landlessness and weather patterns among other things.

Poverty is more severe in the rural areas where the majority of the blacks live (Machete, 2004, Pauw & Mncube, 2007). According to Terreblanche (2002), FAO (2004) and Machethe (2004), in 2001, between 40 and 50 percent of South Africa's population were living in poverty while 25 percent of the population are categorised as ultra poor. In total, 60% of South Africa's people live below the poverty line (Department of Agriculture, 2006). From the latest statistics of the Department of Agriculture (2006), it is estimated that more than 15 million poor people are living in rural areas in South Africa. Over 60% of black households can be defined as low-income and rely mostly on the informal sector for an income (Department of

Agriculture, 2006). Evidence from the past studies also proves that across all nine provinces, the Eastern Cape Province, Free State Province, and Limpopo, the former 'homelands', have the highest incidence of poverty (Woolard & Leibbrandt, 2001, Human Sciences Research Council, 2004). Fundamental historical and economic realities further complicate this scene.

Homelands originated in 1913, with the Native Land Act, an act that dispossessed the black population of their land (Obi, 2006). Homelands were created in South Africa as labour reserves legitimated by a complex of apartheid ideals and policies that emphasized the importance of separate development for different 'ethnic groups' (Shackleton, 2002). These homelands were literally meant to be the 'homes' of people who sold their labour to mines, industry and agricultural enterprises (Landman, 2003; Shackleton, 2002). They were the only areas where black people could access land, which was held in 'trust' by the state. The Land distribution was administered through the tribal authorities (Shackleton, 2002). In total the homelands constituted only 13% of the surface area of South Africa (Landman, 2003).

These areas have been subjected to overutilization owing to the high human populations that were involuntarily resettled and confined to these relatively small areas (Wessels, Prince, Frost &Van Zyl, 2004). Between 1960 and 1985, more than 3.5 million people were forcibly relocated under the National Party policy of "apartheid" or separate development (Hoffman et al., 1999). The decades of under-funding, poor management and economic and geographical isolation of these areas still have an effect on the welfare of the households living there today, a situation of gross, racially based inequalities and disparities in income, access to land and employment opportunities. According to Hoffman & Todd (2000), The communal areas are generally characterized by high human populations, overgrazing, soil erosion, excessive wood harvesting and increases in unpalatable plant species.

The Eastern Cape Province includes the so-called Bantustans or former 'homelands' Transkei and Ciskei, is a rural province. Large parts of the general region, under optimum conditions, can provide a sustainable living for the inhabitants (Switzer, 1993), but the top-down action by the central government, and the resultant denial of

opportunities to the marginalized residents of the former 'Homelands', has created a desperate legacy of poverty (Nel, & Binns, 2000). According to the Community Survey (CS) that was carried out in 2007, the Eastern Cape has a total population of 6.5 million representing a percentage change of 4% change in population size since 2001 (Statistics South Africa, 2007). It is important to note that these figures are based on the new boundaries set in 2007 by the Statistics South Africa (2007).

Table 2.2 shows gradual declines in the percentage share of the total population in Eastern Cape, Free State, Limpopo and North West since 1996. The percentages for Gauteng and Western Cape are gradually increasing. The percentage for KwaZulu-Natal has remained almost constant since 1996 while those of Mpumalanga and Northern Cape declined in 1996 but have remained constant between 2001 and Community Survey 2007.

Fifteen years after the demise of apartheid, it appears that very little concrete change has taken place in the Eastern Cape rural people's livelihoods. This is because of the spatial dispersion of rural populations, which increases the cost and difficulty of providing basic goods and services effectively. The Eastern Cape Province comprises three cities East London, Umthatha and Port Elizabeth, towns such as Alice, Queenstown, Fort Beaufort and the rural areas. There are fewer development opportunities available in the rural Eastern Cape than in urban locations, where agriculture is generally the most important economic sector. In addition, due to the limited tax base, the local government in the Eastern Cape are unable to mobilize sufficient resources to finance development programs in the province. As a result, the rural areas fall far behind in development compared to urban South Africa.

Table 2. 2: Total population by province - Census 1996, Census 2001 and CS 2007

Provinces	Census 1996	Census 2001	% Change 1996/2001	CS 2007	% Change 2001/2007
Eastern Cape	6 147 244	6 278 651	2.1	6 527 747	4.0
Free State	2 633 504	2706 775	2.8	2 773 059	2.4
Gauteng	7 624 893	9 178 873	20.4	10 451 713	13.9
KwaZulu-Natal	8 572 302	9 584 129	11.8	10 259 230	7.0
Limpopo	4 576 133	4 995 534	9.2	5 238 286	4.9
Mpumalanga	3 124 203	3 365 885	7.7	3 643 435	8.2
Northern Cape	1 011 864	991 919	-2.0	1 058 060	6.7
North West	2 936 554	3 193 676 3	8.8	271 948	2.5
Western Cape	3 956 875	4 524 335	14.3	5 278 585	16.7
South Africa	40 583 573	44 819 778	10.4	48 502 063	8.2

Source: Census, 1996, Census, 2001 and StatSA, 2007

In response to the desperate developmental gaps in the province, the Eastern Cape government alongside the public entities, organised business, labour and nongovernmental organisations, academics and faith based organisations put their heads together and forged a vision: to make the Eastern Cape a compelling place to live, work and invest for its people (Buthelezi, 2007). This led to the formulation of the Provincial Growth and Development Plan in 2002. Essentially, the PGDP consist of efforts to "forever wipe out the scourge of poverty and unemployment" thus to ensure sustainable livelihoods in the Eastern Cape (Buthelezi, 2007). The following paragraphs are a review of the PGDP, paying exclusive attention to its agrarian reforms, as one of its objectives to transform the agrarian economy in the former homeland.

The Provincial Growth and Development Plan (PGDP) is a ten-year vision that targets all the sectors and structural problems of the economy, at the same time seeking integrated solutions. According to Buthelezi (2007), the PGDP is a reflection of the Eastern Cape Government shifting towards integrated approaches to service delivery,

which includes capacity building and working closely with social partners , with the local government taking power and functions from the provincial government.

Interventions are prioritized over the manufacturing, agriculture and the tourism sectors as are the sectors that make the biggest contribution to balanced growth and development and welfare improvement of the poor. According to Buthelezi (2007), the manufacturing industry grew by 4% per annum between 2001 and 2002. Unemployment has decreased from 29, 6% in 2004 to 23, 1% in 2007 (Luphondwana, 2008). The Agricultural sector produces only 30% of food needs in the Eastern Cape (Nkonkobe Municipality IDP, 2007).

The PGDP was built on the government's already existing interventions to fight poverty, improving service delivery, crowding in investment into rural economy and to create jobs at the same time redirecting government plans and spending on addressing fundamental problems in the economy.

The Provincial Growth and Development Plan had three main objectives:

- Poverty eradication through a holistic, integrated and multi dimensional approach to pro-poor programming
- Agrarian transformation and strengthening of household food security
- Consolidation, development and diversification of the manufacturing base and tourism potential

A brief explanation of each objective follows, but in this study, concentration is on the first two objectives since these objectives are interlinked

Core objective 1

Systematic poverty eradication through a holistic, integrated and multi dimensional approach to the pro-poor programming: The PGDP aimed at addressing income poverty and to increasing the asset base of the poor. The approach included mobilising social partnerships in fighting poverty and working through local government. Under this objective was the Vukuzhake Labour Based Infrastructure Programme, Water and Sanitation Programme, Housing programme and the Comprehensive HIV/AIDS Treatment Plan. The HIV/AIDS epidemic has proven to

be severe in South Africa, due to, among others, disruption of family and communal life, illiteracy, the low status of women in society and in relationships and resistance to use of condoms (Smart, 2001). The epidemic constitutes an enormous threat to development and social transformation in the whole South Africa. The HIV/AIDS related illness and deaths are very high in the Eastern Cape (Nkonkobe Municipality IDP, 2007). Due to HIV/AIDS, the projected number of people and the demographic structure of the population will change, thus, HIV/ AIDS affects household structures and income and expenditure patterns and reduces growth. The epidemic has substantial implications for the type of services that are required and the ability of households to pay for these services. Thus, it needs addressing, since it is a major obstacle to reducing poverty. The epidemic untreated will reverse many gains made during the past years.

The PGDP emphasized that poverty eradication is not merely a by-product of growth but as an objective. The PGDP advocated for poverty eradication as an intervention strategy.

Core Objective 2

Agrarian transformation and strengthening of household food security: The keys to attaining the growth of the agrarian economy in the former homelands includes stimulating agriculture growth and integrating the agrarian economy in the former homeland into the provincial, national and even global economies (Buthelezi, 2007). Attainment of this objective is through expanding smallholder production through programmes such as the Siyazondla Comprehensive Nutrition Programme. The programme aimed at development of agricultural production around homesteads, laying foundations for emergence of small-scale farming entrepreneurs. The aim is to build the capacity to enter markets since this "sowed the seed" for generating savings as households start spending less for consumption purposes and produce surplus for marketing (Buthelezi, 2007).

Development of commercial agriculture was to be through optimum use of the highest potential agricultural land in the former homelands through the Massive Food Production Programme (Balindela, 2006). The government also focused on land redistribution and land tenure reform to release land for poor households and for new

commercial farming enterprises and promoted the promotion of industrial crops, such as cotton, hemp and sugar beet, for the stimulation of agro-industry (Balindela, 2006).

Core Objective 3

Consolidation, development and diversification of the manufacturing base and tourism potential: Under the apartheid regime, mines were the major source of income in the Eastern Cape. The rural people of the Eastern Cape heavily relied on remittances from migrant workers, but, the mines have long since shed jobs and this has exacerbated the livelihoods in the province (Buthelezi, 2007). Poverty and unemployment has risen in the Eastern Cape. The design of the PGDP was to develop a sustainable single province economy with strong local linkages. The PGDP aimed at encouraging growth and diversification into new markets.

These PGDP Strategic Objectives relate and one influences the others. To measure the progress the PGDP had a number of quantifiable targets set (box 2.1). From the challenges facing the Eastern Cape, as reflected in chapter one, these targets are considerably appropriate.

Implementers of these objectives classified these objectives as listed in box 2.1 into five programme areas. The programme areas are agrarian transformation and food security, fighting poverty, public sector transformation, infrastructure development, manufacturing diversification and tourism, and human resource development. Under these programme areas, a number of sub- programmes introduced. These include Siyazondla Homestead Food Production Programme, Integrated Agricultural Infrastructure Programme, Expanded Public Works Programme, Water and Sanitation Programme, Housing Programme, Improved Service Delivery in Health, Education, Social Development and Public Works Programme and Strategic Infrastructure Programme to mention a few. However, this study concentrates on the Massive Food Production Programme, under the agrarian transformation and food security objective to examine the impact of the Eastern Cape Provincial Government strategy to alleviate poverty. The MFPP was fully introduced in chapter one.

Box 2. 1: The PGDP quantified objectives

1. To maintain an economic growth rate of between 5% and 8% per annum.
2. To halve the unemployment rate by 2014.
3. To reduce by between 60% and 80% the number of households living below the poverty line by 2014.
4. To reduce by between 60% and 80% the proportion of people suffering from hunger by 2014.
5. To establish food self-sufficiency in the Province by 2014.
6. To ensure universal primary education (UPE) by 2014, with all children proceeding to the first exit point in a secondary education.
7. To improve the literacy rate in the Province by 50% by 2014.
8. To eliminate gender disparity in education and employment by 2014.
9. To reduce by two-thirds the under-five mortality rate by 2014.
10. To reduce by three-quarters the maternal mortality rate by 2014.
11. To halt and begin to reverse the spread of HIV/AIDS by 2014.
12. To halt and begin to reverse the spread of tuberculosis by 2014.
13. To provide clean water to all in the Province by 2014.
14. To eliminate sanitation problems by 2014.

Source: UNDP Special service Agreement No: 461/2006

2.4 Evolution of the Theoretical Responses to Poverty and Hunger Questions.

Research has shown consistence in the development theories that influence the rural development practices in many countries. As the development paradigms shifted, the development process also changed.

This section concentrates on the responses to poverty from both a theoretical and policy perspective. The researcher examines the regularities in rural development and the South African development system. First, the forces that drive agricultural development are examined, followed by a review of the South African policies specifically responding to the poverty problem. The objective of the section is to contribute towards an improved understanding of how poverty has been addressed in the South African policies, in order to inform the design of more effective strategies and policies. This will be achieved through the analysis of the rural development theories and the policies that were implemented as well as the policies' impact on rural development.

2.4.1 Rural Development Theories and Approaches

2.4.1.1 Introduction

Dating back to the 1950s, through more than half a century of unremitting debates and action, we find community development, intensive agricultural development and integrated rural development scrambling for policy space. Linear growth models, structural change models, international dependency and integrated rural development are some of the many development theories developed since the 1950s. Broadly speaking, the fifties and sixties were characterised by the belief in trickle down approach to development and technology transfer while the seventies and early eighties focussed on equity considerations. Development in the late eighties and early nineties was associated with people-driven and participatory development. From the late 1990s the dominant approach has been sustainable livelihoods development, being an outgrowth of the paradigm shift that followed the Rio Conference in 1992.

2.4.1.2 Modernization theories

The 1950s and 1960s developmental economists considered modernity as development. The ideology of the time emphasised transfer of technology, capital and expertise from the developed world with the expectation that this would transform society from traditional to 'high mass consumption' societies. According to Lewis' (1954) the change in the economic industrial and institutional structure affected the rate of industrial investment and capital accumulation in the modern sector. The growth rate of output and employment was taken to be responsible for modernisation. However, according to Rostow's (1960) 5-stage model of economic development, technological innovation was the driver of development.

Rostow (1960) criticised the linear growth model, and Mellor later elaborated the structural change models in 1966. Rostow's (1960) model, which epitomised the modernisation theory, suggested that development is in stages and technological change was the driver for a sector to lead. This model suggested that rural agriculture development would be through intense industrialisation in urban areas and expansion into global markets (Kole, 2005). Modernity meant urbanisation; industrially diverse manufacturing and service economy (Blaattman, Hwang & Williamson, 2003). In this

era, it was assumed that the adoption of technology would cause economic growth. Therefore, modernity involved direct transference of technology from the industrialised countries to the Third World countries (D'Hease *et al*, 2003).

However, underdevelopment persisted in the 1970s. Only a few benefited from the increase in economic growth. The benefits of development that were expected to trickle down to the masses were never realised by the developing countries to which the technology was directly transferred to. The relation between the developed countries and the developing countries was based on dependency and exploitation according to the dependency theorist such as Prebisch and others (Blattman, Hwang & Williamson, 2003). This resulted in economic crisis and the widening of the gap between the rich and the poor (Jones & Carswell, 2004). The development agenda and strategy was set by the industrialised countries without consultation or involvement of the poor (Chambers, 1987). Internal dominance of small elite also inhibited reform efforts (Todaro, 1997). Instead of solving underdevelopment problems, this pattern of relationship worsened the situation.

Development is more than an increase income. Work done by the multilateral development community and non-governmental organizations has shown that the other conditions must be met for development to occur. Among these Todaro (1997) has identified conquering a sense of insecurity and vulnerability and overcoming the handicaps of not having a voice, as major conditions necessary for development to occur. According to May *et al* (1998), for development to occur in South Africa, there is a need for improvement in education levels, literacy rates, health, sufficient energy, jobs that are adequately remunerated and/or secure and enhancing food security.

2.4.1.3 Basic need approach

The basic needs perspective goes beyond income increase. It also prioritised the provision of basic health, education, clean water and other services (political, administrative and/or institutional) required to enable people to meet their basic needs (Agrawal & Gibson, 1999). The basic needs approach explicitly sought after the redistribution of the economic benefits of development in favour of the poor, aiming at a more direct satisfaction of the most urgent needs of the poor through not only a

redistribution of the social product but also changing its composition (D'Hease & Kirsten, 2003). The normative themes of the basic needs approach stressed both the priority and the interdependence of various needs and call for a greater degree of social participation on the part of the poor. Integrated Rural Development (IRD) approaches later incorporated the basic needs concept (D'Hease & Kirsten, 2003).

The IRD approach, according to D'Hease and Kirsten (2003), emphasized decentralisation of power as well as capacities, participative and democratisation of planning and course of action. The IRD approach viewed development as possible only through providing a detailed, multi-sectoral package for rural development. The Integrated rural development programmes emphasised increased agricultural productivity as the basis for raising rural incomes, while recognizing the synergistic contribution of better education, health and other basic services to further improvements in people's quality of life and their overall productivity (Uphoff, 2000; Maina, 2004). The IRD projects considered a variety of activities at the same time, thus their budgets escalated and the variety of activities had a possibility of coming under a single agency therefore were difficult to manage. In Africa, the Integrated Rural Development Approach did not meet expectations, because of, among other things, lack of pro-poor technology and genuine participation, weakness of institutional capacity, strong urban bias and propensity for rapid industrialization and high taxation of agriculture, overvaluation of exchange rates, direct public control of the sector (input delivery, credit, output marketing, trade, etc.) (United Nations Economic Commission for Africa, 2007) As a result, this approach became less popular and unfortunately, the enthusiasm to this approach slackened.

Several reasons given for the failure of this approach besides management complexities include exaggerated claims and expectations (D'Hease & Kirsten, 2003). Some of the main reasons proffered for why the IRD has failed in South Africa are extensive use of experts and consultants to draft plans, instead of working with communities and lack of the capacity and funds to translate plans into actions by municipalities. Additionally, the restructuring in some municipalities based on 'business models' which marginalise the poor and top down approach in designing and implementing the IRD introduced further complications that derailed the programme (Agrawal & Gibson, 1999). Understanding of local conditions, voluntary

cooperation as well as continuous innovation, is required in rural development. Therefore, the top down approach is inappropriate for rural development (D'Hease & Kirsten, 2003). Thus, to enhance rural development, there is need for extensive and meaningful participation of the local community.

2.4.1.4 Sustainable Livelihood Approach (SLA) to rural development

The failure of the IRDP led to the development of the Sustainable Livelihoods Approach (Farrington *et al*, 2004). This approach is the most recent approach adopted in development policy that incorporates participatory approaches (Krantz, 2001). Between 1998 and 2003, the UK Department for International Development (DFID) engaged in the development of an effective, equitable and sustainable participatory management of renewable natural resources in sub-Sahara Africa (Scoones, 1998; Farrington *et al*, 2004). The Sustainable Livelihoods (SL) framework was based on the concept of sustainable livelihoods, drawing on participatory approaches, as well as ideas of sustainable development and human development (Farrington *et al*, 2004). The sustainable livelihood framework is presented in Figure 2.4 below. According to Krantz (2001), the sustainable livelihood framework is a concerted effort to go beyond the conventional definitions and approaches to poverty eradication. The framework is a useful analytical tool for understanding the interaction between livelihoods systems and strategies and institutions and policies. It focuses on the various factors and processes which enable or disable poor people to make an economical, ecological, and social sustainable livelihood (Scoones, 1998).

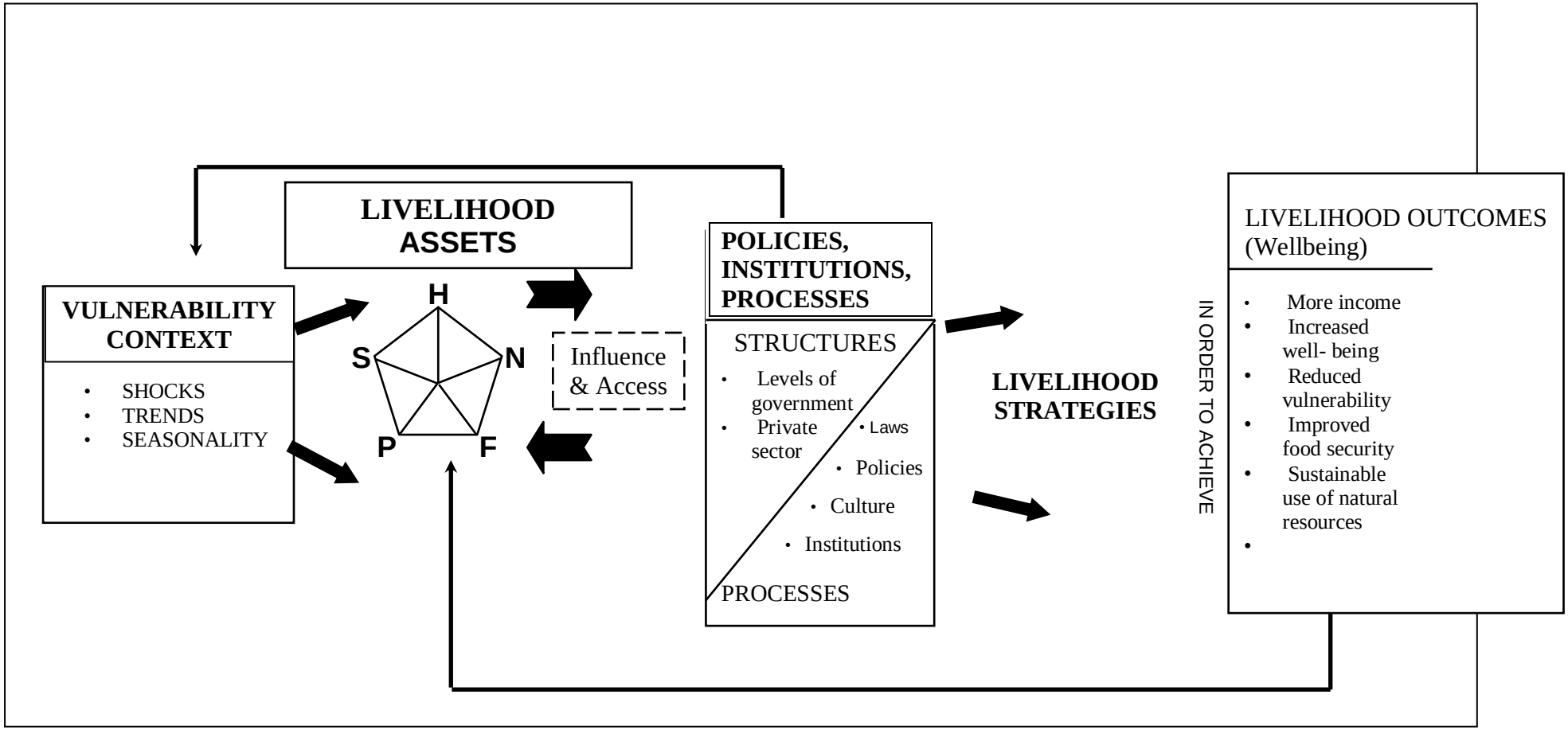


Figure 2. 4: The Sustainable Livelihood Framework
Source: Scoones, 1998

Figure 2.4 shows how various factors (the livelihood assets, the vulnerability context and policy, institutions and processes) that constrain or enhance livelihood opportunities relate to each other. However, Figure 2.4 represents how the DFID use the SL framework. The CARE and UNDP use the SL framework in a slightly different way. UNDP and CARE use it to facilitate the planning of concrete projects and programmes, while for DFID the SL approach is more of a basic framework for analysis than a procedure for programming. Due to these different uses, CARE and UNDP have slightly different strategic orientations and methodological frameworks. However, all three agencies use similar definitions of what constitutes sustainable livelihoods. The Sustainable Livelihood frameworks diagrams of CARE and UNDP are presented in the diagrams, Figure 2.5 and Figure 2.6, respectively, and described below.

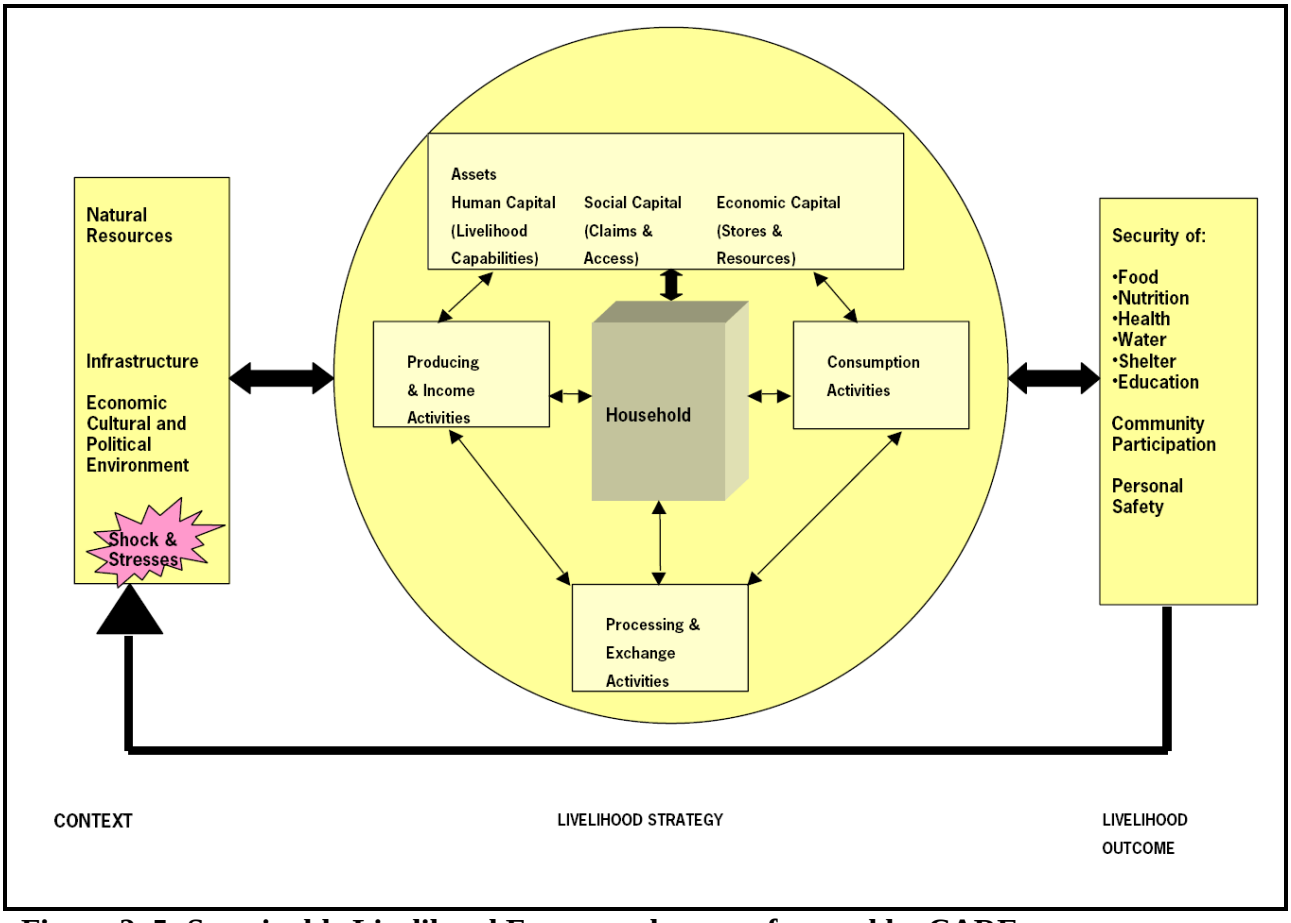


Figure 2. 5: Sustainable Livelihood Framework as put forward by CARE. Source: Krantz, 2001

The CARE Livelihood framework brings to realization that production and income activities are only a means to improving livelihoods and not an end in themselves (Krantz 2001). This Susutainable Livelihood framework is centred on a household's livelihood strategy. The asset box, as depicted in the figure, includes the capabilities of household members, the assets and resources to which they have access, as well as their access to information or to influential others, and their ability to claim from relatives, the state, or other factors.

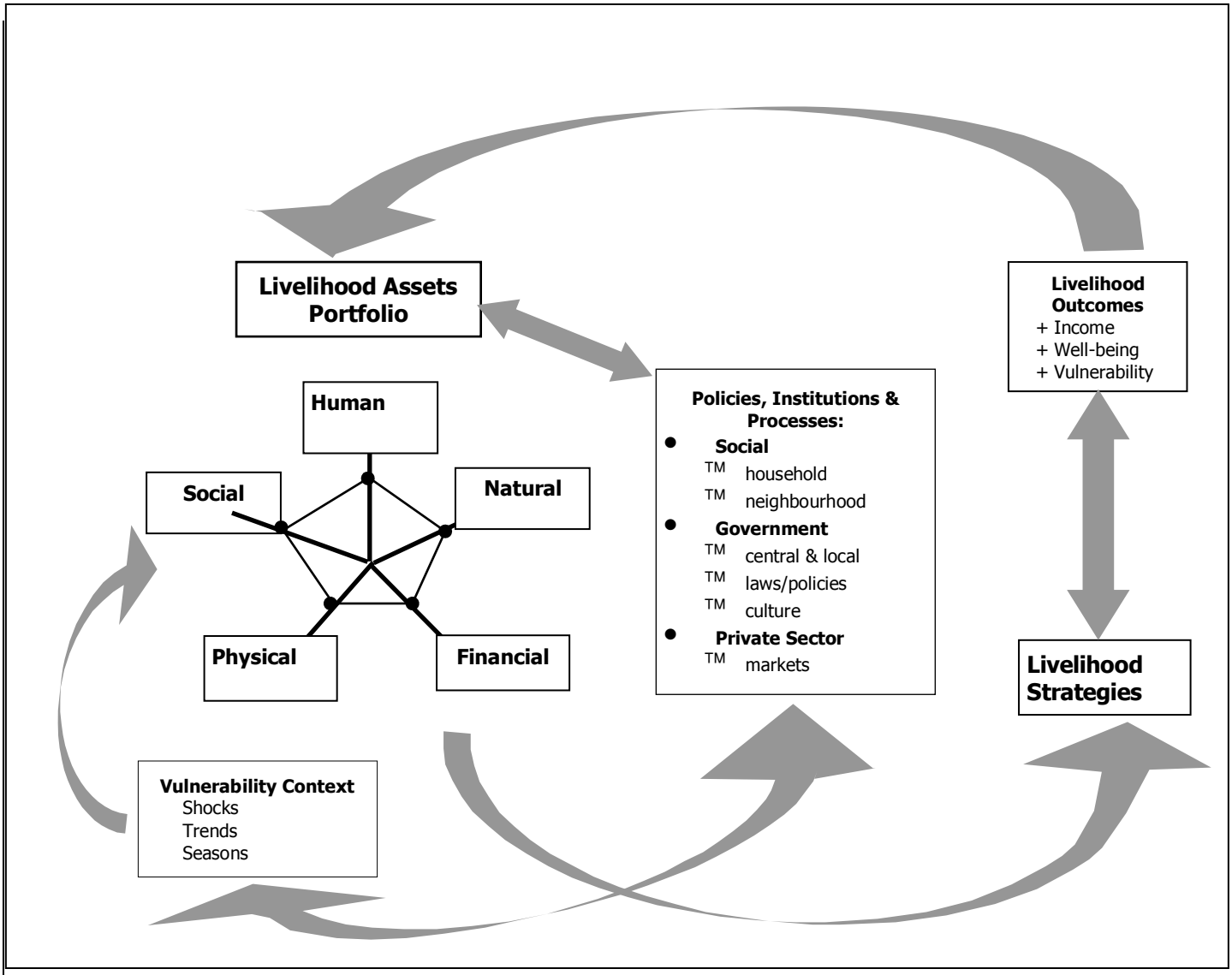


Figure 2. 6: The UNDP Sustainable Livelihood Framework
Source: Krantz, 2001

The diagram shows how a livelihood is derived from assets and livelihood capabilities and *vice versa*. The diagram depicts an open-ended process. According to (Krantz 2001), for UNDP the SL approach serves primarily as a programming framework to devise a set of integrated support activities to improve the sustainability of livelihoods among poor and vulnerable groups by strengthening the resilience of their coping and adaptive strategies. The UNDP framework emphasizes the introduction of improved technologies as well as social and economic investments.

The underlying concept in the Sustainable Livelihoods Framework is how the assets (social capital, financial capital, human capital, physical capital and natural capital) affect the various livelihood outcomes (Krantz, 2001; Farrington *et al*, 2004). Natural capital consists of land, water, and biological resources such as vegetation and wildlife and the physical capital is the product of economic activities (Kollmair and Gamper, 2002; Sompali, 2007). This includes the basic infrastructure (such as roads, irrigation works, electricity supply, reticulated water, shelter, water, energy, communication and also producer goods such as machinery (the production equipment and means that enable people to pursue livelihoods). Financial capital consists of stocks of money or other savings in liquid form (Sompali, 2007). In this sense, it does not only include financial assets such as pension rights, savings, supplies of credit or regular remittances or pensions but also includes easily disposed assets such as livestock, which in other senses may be considered as natural assets (Scoones, 1998; Carney, 1999; DFID, 1999; Bahiigwa, Shinyekwa, Rigby, Woodhouse & Howlett, 2002). Human capital involves the skills, knowledge and ability embodied in labour and good health important to the ability to pursue different livelihood strategies (Krantz, 2001; Bahiigwa, Shinyekwa, Rigby, Woodhouse & Howlett, 2002; Farrington *et al*, 2004). Social capital includes any assets such as rights or claims derived from membership of a group. Examples of such groups include farming organization, relationships of trust, access to wider institutions of society upon which people draw in pursuit of livelihoods (DFID, 1999; Ellis, 2000; Ellis and Biggs, 2001; Farrington *et al*, 2004; Sompali, 2007).

The Sustainable Livelihood Approach emphasizes the improvement of people's livelihoods to eradicate poverty (Farrington *et al*, 2004). Livelihoods, according to Ellis (2000), consist of assets and activities required for a means of living, as well as access to such assets and activities.

The means of securing livelihoods are diversifiable and they can be natural resource or non-natural resource based. Examples of natural resource based activities include livestock and arable farming, community based tourism and mining (Farrington *et al*, 2004; Kgathi *et al*, 2007). Examples of non-natural resource based activities are rural trade and formal employment (Kgathi *et al*, 2007). Different forms of livelihoods activities require different forms of assets in order to generate a livelihood (Brown & Rosendo, 2004). The access to assets and adoption of livelihood strategies depend on social relations and institutions and/or organisations as well as shocks and trends (Farrington *et al*, 2004). Social relations are the ways individuals and households are positioned in the society and the positioning is determined by factors like religion, ethnicity, age and gender (Ellis, 2000).

There are a number of advantages of the Sustainable Livelihood approach. This approach starts with people and what they have, thus deviating from what they lack (Altarelli & Carloni, 2000). The framework promotes development agencies to 'focus on the direct impacts on people rather than the output' (Ashley and Hussein, 2000). Its core principles stress people centred, responsive and participatory activities, and holistic, dynamic, multilevel approaches to development (Ashley, 2000). In this context, creating sustainable livelihoods is one of the Nkonkobe municipality intervention objectives.

Additionally, the framework is a useful analytical tool that can be used for livelihood impact analysis (Ashley and Hussein, 2000). The Sustainable Livelihoods Approach as an analytical structure highlights the key components of livelihoods against which project impact assessed (DFID, 1999; Farrington *et al*, 2004). This framework makes the complexity of livelihoods assessment more manageable.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methods that were followed for this research. This chapter, therefore, discusses the approach used in this study, population of the study, sampling procedures used and the tools used in order to achieve the specific objectives of the identified study. This chapter also justifies the appropriateness of the procedures used in this study by presenting both the advantages and disadvantages of using particular procedures among others. The next section is on the research design, describing the sustainable livelihood approach which was used in this study as an impact analysis framework. Its strengths and weaknesses will also be reviewed against other approaches that were used in other studies for impact analysis. The methodology is described in section 4.3. This section describes how the Sustainable Livelihoods Approach was implemented. The research instruments, variables which were selected for this study, area selected for the case study, sampling procedures and the analytical framework are described in this section. The three sections after these contain limitations, ethical consideration and the conclusion respectively.

3.2 Area of Study

This section is devoted to a description of the geographic location of the study area. The study was undertaken in five villages drawn from two local municipalities of the Amathole District Municipality. In this section, brief descriptions of the socio-economic and physical contexts of these municipalities and villages are provided.

3.2.1 Introduction

Five villages were selected for this study, three (Komkhulu, Mdeni and Ngwangwane) in Nkonkobe and two (Majali and Nkqonkqweni) from the Buffalo City Local Municipality. These two municipalities are two of the eight local municipalities located in the Amathole District Municipality. The population figures vary with the two local municipalities covered in this study, consisting of 702,890 people in Buffalo City, and Nkonkobe 128,655 (Amathole Economic Development Agency, 2007; Manona, 2005). Figure 4.1 and 4.2 shows the mapping of the five villages in the local municipalities from which the sample was drawn.

Generally, the livelihoods in Nkonkobe Municipality are reliant on subsistence agriculture. The Nkonkobe agriculture is dual in nature. However, the subsistence agriculture is poor as compared to the commercial agriculture. According to Buthelezi (2007), the commercial agriculture contributed to the 60% growth in value added in the Eastern Cape from 1998 to 2001. Such disparities result4 in the Nkonkobe Municipality's economy, like the whole broader Eastern Cape economy being overly dependent on a few, export oriented manufacturing activities, which has not translated into jobs despite recording high growth rates (Buthelezi, 2007). Strong growth is expected, fuelled by the increase in public spending and rising exports.

3.2.2 Description of Middledrift

The Nkonkobe Municipality is comprised of the poor densely rural sector, underserviced townships and informal settlements; and relatively affluent, sparsely- populated commercial farming areas. Development according to Buthelezi (2007) is uneven and spatially distorted. Ngwangwane, Mdeni and Komkhulu are villages in Middledrift. There is minimal economic activity in these villages and there are high levels of unemployment and poverty (Nkonkobe Municipality, 2004). The roads into these villages are gravel; as a result, they are dusty when it is dry. Since the roads have inadequate storm water drainage, they present muddy conditions when it rained. The water supply in these villages is unreliable, as there are no storage reservoirs for these villages and there was no water borne sanitation available (Nkonkobe Municipality, 2004). Additionally, farmers walk long distances with their livestock to the communal dipping tank

(Sompali, 2007). There was no middle or low cost housing available in Middledrift to accommodate the various income groups and people were forced to commute between the rural areas and the town. The population in these villages are mainly the elderly people and children (Nkonkobe Municipality, 2004). The cost of taxi fares in the rural areas is very high due to the very poor condition of the gravel roads to the villages. There are only two public transport busses.

3.2.3 Description of Nkqonkqweni and Majali

Nkqonkqweni and Majali are villages in Buffalo City Municipality. Despite its better in infrastructure supply, according to Vaughan & Cartwright (2005), the rural population here are disproportionately reliant on government employment and community service. However, Nkqonkqweni and Majali populations are mostly involved in agricultural activities (Dirwayi &Hlanganise, 2005). The Buffalo City local Municipality as a whole provides 79% of the Amathole district Gross Geographic Product (Amathole Economic Development Agency, 2007).

Nkqonkqweni and Majali are sub-villages in Peelton which is made up of six sub-villages Imidange, Sixekweni, Village, Nkqonkqweni, Majali as well as Dry. These sub-villages are located in East Peelton. Nkqonkqweni and Majali are small rural areas situated about 10 km away from King William's Town, in the Eastern Cape Province of South Africa (Peelton Baseline Survey Report, 2002). Peelton is occupied by black, Xhosa speaking people, mainly dominated by the rural poor, who primarily depend on agriculture and welfare grants for their livelihood.

Nkqonkqweni and Majali have different levels of agricultural projects development. According to the Baseline Survey report of 2002 (Table 3.1 below), Nkqonkqeni had a population of 1410 individuals belonging to 221 households whereas Majali had population of 731 from 138 households.

Table 3. 1*:* Peelton Population by village

VILLAGE NAME	TOTAL NUMBER OF HOUSEHOLDS	TOTAL POPULATION	TOTAL NUMBER OF EMPLOYED PEOPLE
Majali	133	751	38
Undertrain	183	819	60
Nkqonkqweni	221	1401	43
Dry and Village	73	356	35
Sixekweni	74	676	20
Tukayi	76	492	40
TOTALS	760	4495	236

Source: Peelton baseline survey (Phase 2), 2002

Most people in Peelton location reside in Nkqonkqweni village. Only 3.1% of Nkqonkqweni population are employed. Like most of Peelton population, the Nkqonkqweni villagers were dependent on grants and as a result they resorted to development initiatives as a means of surviving. Nkqonkqweni has a total of ten agricultural projects, mainly poultry and two are for vegetable and crop production, one dairy project and a single heifer production project. Crops which do best there are field crops, especially maize as well as vegetables such as cabbages, spinach and lettuce. Livestock also do well in Peelton, however, the most apparent constraint especially in small stock is theft.

Majali on the other hand is well known for maize production. The Majali Massive Food Production Programme Project is known as one of the most successful project (Ngwane, 2009). Most people are involved in rural agricultural projects, which include home gardens, small stock projects (Boer goats), piggery projects, and poultry projects (Dirwayi &Hlanganise, 2005).

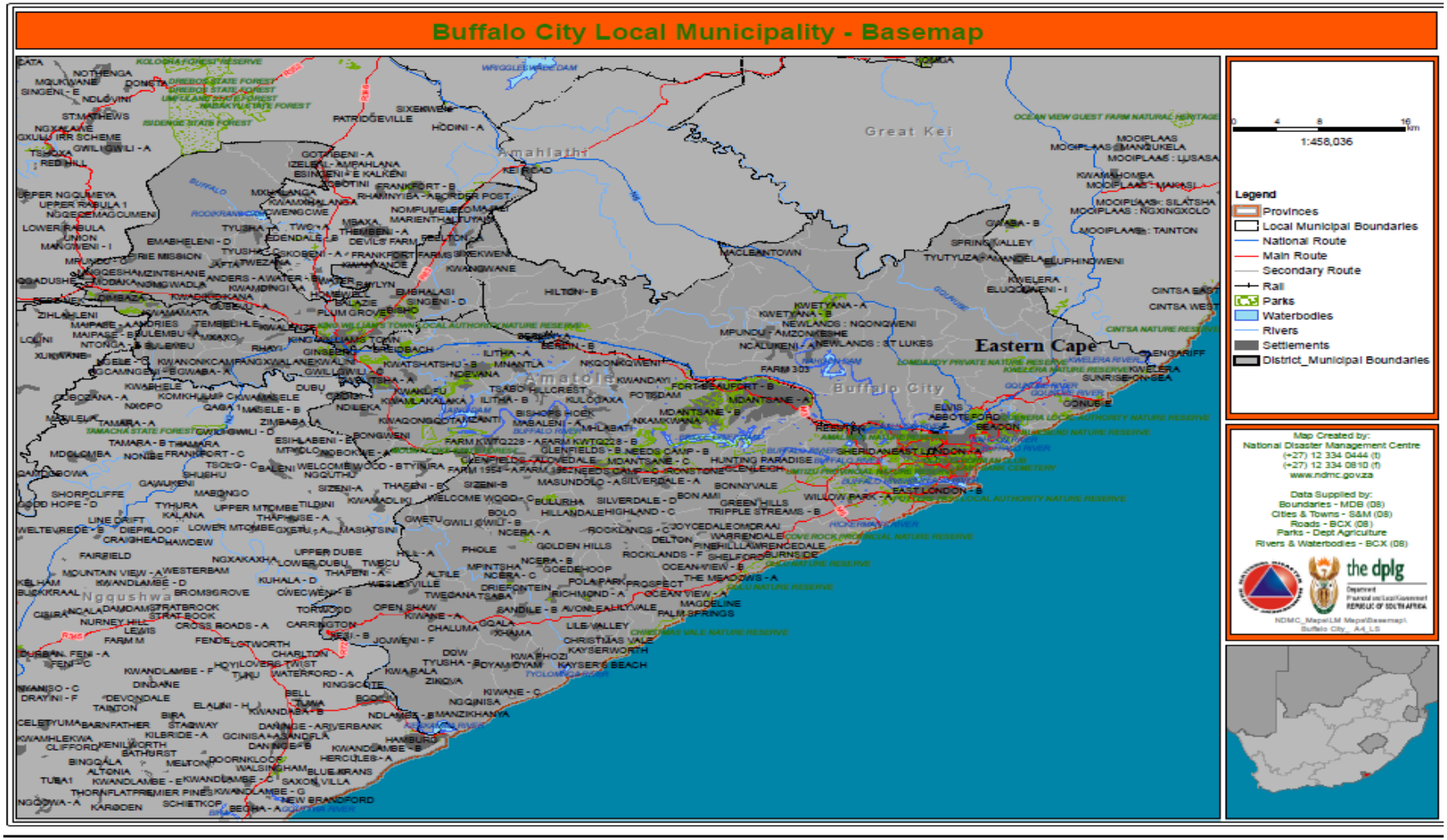


Figure 3. 1: Buffalo City Local Municipality
Source: National Disaster Management Centre, 2009

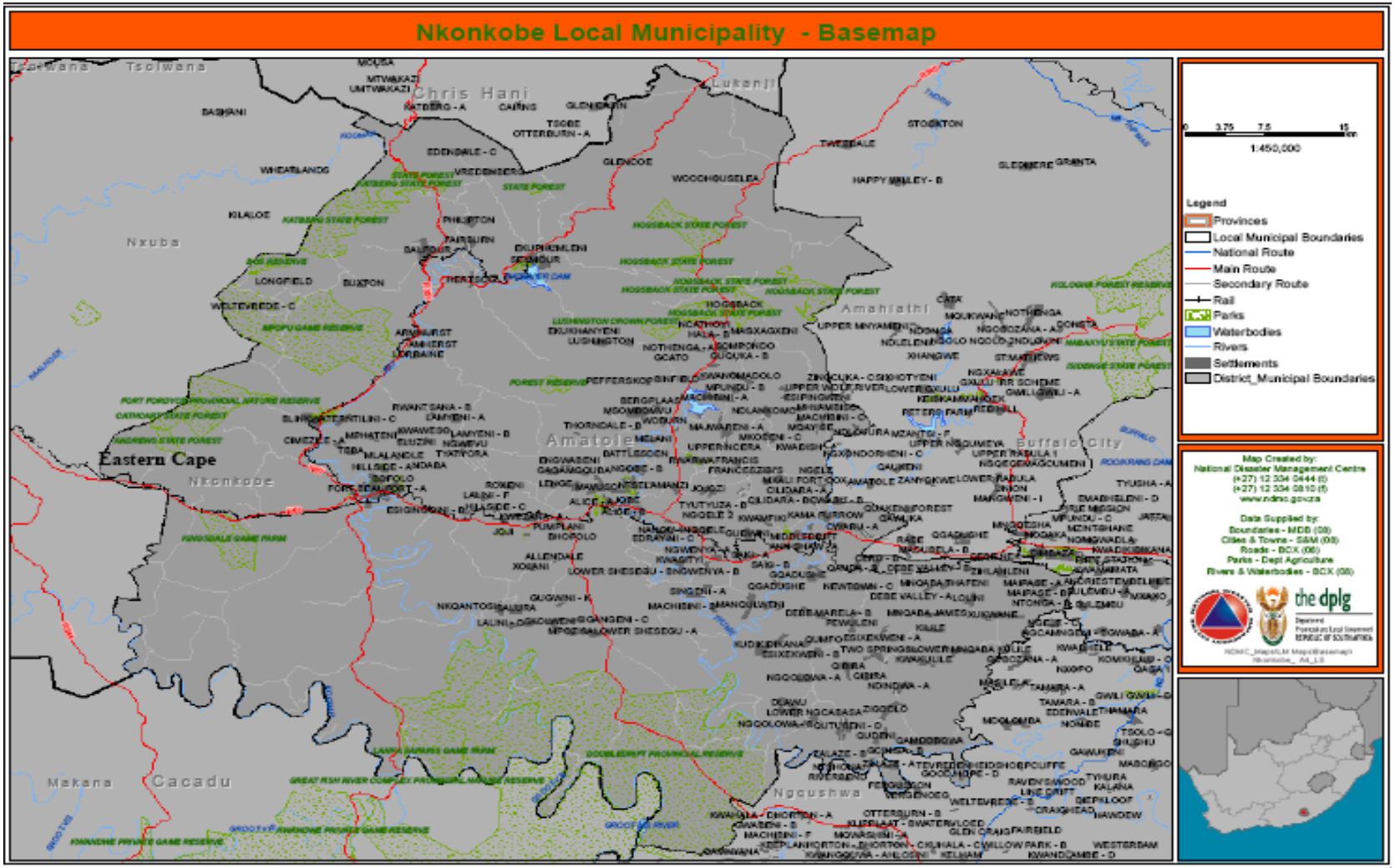


Figure 3. 2: Nkonkobe Municipality Map
Source: National Disaster Management Centre, 2009

3.3 Conceptualising the Sustainable Livelihood Framework

The literature on sustainable livelihood as a research developmental approach was explored in chapter two. This section explores the Sustainable Livelihood Framework as an impact analysis tool. On the basis of a review of a number of existing works on socio-economic impact assessment, it can be concluded that policy-relevant impact analysis would include an assessment of several aspects of the overall circumstances of the relevant entity, be it a household or a project. In this case, the interest is to examine how increases in cash, assets, production, and employment possibilities of households participating in the MFPP, if there were any, can be explained in terms of their involvement in the scheme. The results of such a procedure would be invaluable in deciding the economic viability of the scheme and the extent of achievement of declared project objectives.

In the light of the foregoing, this study identified a set of variables that are relevant to assessment of key livelihoods issues and can be easily generated through investigating how the asset base have changed before and after involvement in the Massive Food Production Programme on participants and how the asset base, livelihood activities and outcomes vary between participants and non-participants. This led to the adaptation of a livelihood framework that borrowed from the DFID framework and presented in Figure 3.3 as a simplified conceptual framework with the relationships to be tested being shown pictorially by means of numbered broad arrows. Changes in asset endowment are expected to be one measurable outcome of the implementation of the Massive Food Production Programme. Hence, the two arrows numbered 1 in Figure 3.3 indicating that changes in livelihood assets can result directly from the implementation of the programme and in turn can lead to adoption of desirable livelihood strategies. Those desirable livelihood strategies can also result directly from the policies, institutions and processes encapsulated in the programme itself.

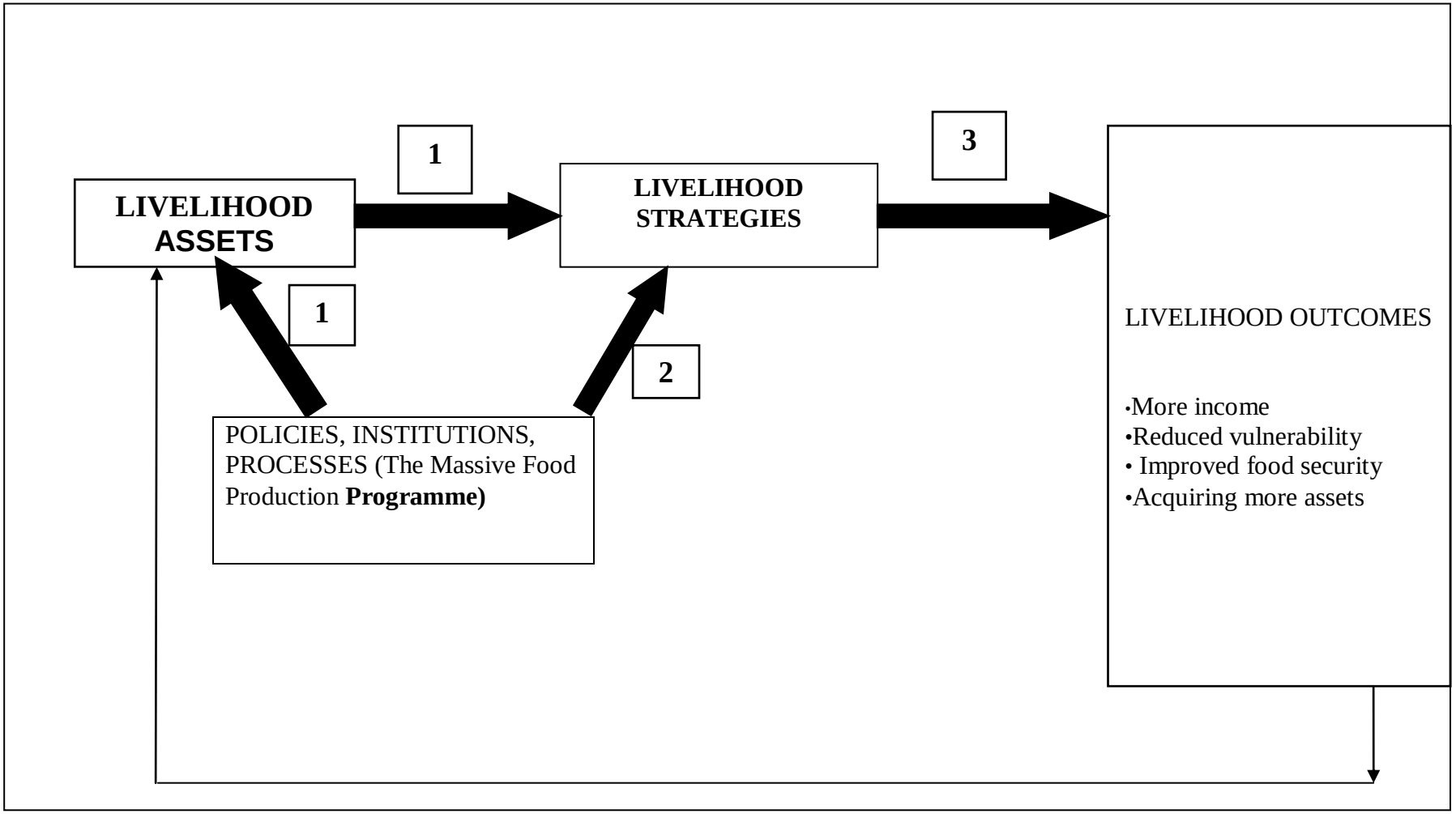


Figure 3. 3: A simplified sustainable livelihoods framework
Source: Author's adaptation based on Scoones (1998)

Figure 3.3 also represents the relationships that will be tested in this study. The arrows labelled one and two projecting from the Policies, institutions and Processes box represent the impact of Massive Food Production Programme on the livelihood asset and livelihood activities. The other arrow labelled 1, the arrow protruding from the livelihood assets box to the livelihood asset box, represents the impact of the assets on livelihood strategies. The arrow labelled 3 represents the impact of the livelihood activities on livelihood outcomes.

3.4 Variable Selection

According to Churchill (1987), indicator selection is the first step in the research procedure whereby information to be sought is identified. Selection of indicators provides the guideline for designing questionnaires and relevant survey instruments. This study aimed to investigate the impact of the Massive Food Production Programme on the livelihoods of communities in the Nkonkobe and Buffalo City Municipalities. This section is dedicated to a description of the nature of the variables used in this study and how they have been selected. Selection of indicators was done according to the specific objectives outlined in chapter 1 of this thesis.

3.4.1 Variable Specification

Ultimately, the aim of this study was to assess programme impact at the household level. This is to done first by looking at the asset base of the farmers before and after introduction of the Massive Food Production Programme then looking at any changes in maize production as a livelihood strategy, changes in asset base, income from maize crop sales and availability of food to the communities where the Massive Food Production Programme was introduced. A comparison is then made between participants and non-participants.

For this study, guided indicator selection was performed to generate indicators that cover various sectors of the economy in order to reflect a wider coverage of elements related to social and economic changes. The DFID Sustainable Livelihood Framework was used as the guide. Variables selected in this study were based on the three hypotheses this study aims to test. These variables were presented as factors that

influence participation, variables to measure impact changes in livelihood activities, outcomes and efficiency measures in order to test the relevance of the programme.

According to Mini (1988), as cited by Machingura (2007), researchers should avoid a set of indicators that fail to present a summary view or too many variables that cannot combine into an overall indicator. In the same way, it is not helpful to have too few indicators gloss over important trends. Therefore, theoretical considerations also played a role in the choice of variables.

3.4.1.1 Factors affecting participation

The first set of indicators was on the factors that affect participation of the smallholder farmers in the Massive Food Production Programme since the first hypothesis this study tested was, resource availability does not affect the livelihood strategies, or else availability of asset impacts on the choices of livelihood strategies household members pursue. According to Smith (1973) a wide range of conditions impinge on the quality of life. Previous studies have generated a number of welfare measures such as poverty line, the human development index and mortality rate among others (World Bank, 2000; United Nations Development Programme (UNDP), 2006). According to Smith (1973), the generation of a wide range of social indicators comparable with the economic indicators used as barometers of economic conditions provides a much clearer insight into the nature of improvements arising from development interventions. Social indicators are used to assess change over time of processes or phenomena that are difficult to directly measure (Cobb and Rixford, 1998). Social indicators only provide an 'indication' of much broader and complex social concepts, therefore, indicators that are selected must have a clear conceptual basis in order to measure what is intended (Cobb and Rixford, 1998). Indicators that were selected were categorised in the questionnaire as demographics, resources, and education. It was noted that the set of indicators presented above was fairly extensive, and it was almost certain that it will not be practical to monitor all of them. It was intended that the data would be used as a set from which a smaller number of indicators would be selected after further statistical analysis. Table 3.2 summarises components classification according to the DFID Sustainable Livelihood Framework. This is followed by the explanation of link among the dependent variable participation

in Massive Food Production Programme and independent variables that were selected. The variables in the second column are the indicators as selected in this study.

Table 3. 2: Summary of selected variables that affect smallholders' participation

Categories	**Variable description**	**Sustainable Livelihoods Framework Component**
DEMOGRAPHICS		
Location	Village	**Natural Capital**
Gender	Head gender	
Household size	Family size	**Human Capital**
Age	Age	**Human Capital**
Education	Household Head level of education	**Human Capital**
ASSETS		
	Age group of head	**Human Capital**
Assets	Access to Farming equipment Owns a radio or television	**Physical assets**
Income	Employment, primary or secondary occupation (alternative sources of income) Total Turnover Access to institutional credit	**Financial Assets**
Land	Owns arable land	**Natural Assets**
Decision making (Accessibility to information)	Associations Extension services Training Affiliation to organisations Affiliation to markets Organisational participation Extension services	**Social Capital**
VULNERABILITY		
	Running out of food in several years	Food insecurity
INSTITUTIONS		
	Accessibility to information	**Extension services**
	Source of income	**Credit facilities**

Source: Author, 2009

1) Demographic characteristics

Under demographics are indicators such as village, household head gender, family size and age. Some of these factors such as gender of the head of household are not considered as the livelihood assets in Sustainable Livelihoods Framework but are factors that were identified as social indicators to capture various social changes. These factors are described below.

(i) **Village:** In this study, village selected was taken to represent the topography and the climate. The selection criterion for villages to participate in the Massive Food Production Programme was specifically that the villages were supposed to have good farming potential (GRAIN, 2008). However, according to Gubu et al (2004), climatic conditions and topography of the Eastern Cape are diverse and permit various agricultural enterprises. Though the villages are in the same municipality they may have different natural resource bases, leading to varying environmental constraints such as availability of water, biodiversity and ecosystems. Therefore, it was important that this variable was taken to have an impact on participation.

(ii) **Household Head Gender:** It is expected that male headed households participated in the MFPP more than the female headed household. This expectation is based on Dlova *et al*'s (2004) findings that males are physically stronger therefore, are more capable of coping with the heavy manual demands of farming practices compared to women. According to Bembridge (1984) as cited by Timmermans (2004), a profile of best farmer characteristics was found and significantly more of the best farmer heads of households were men who were managing the farm.

(iii) **Family Size:** Family size was taken as a variable that impacts on participation. According to Pote (2008), when a household size is larger there is likely to be more dependencies. A greater household size imposes a greater burden on the household head than a smaller household size. Similarly the larger the household size, the more likely it is that greater dependencies would exist (Obi, 2010). The MFPP was introduced to improve food security in the Eastern Cape. It is expected that larger families participated in the Programme

because they considered the benefit of being able to produce more for their families, with an expectation of selling the surplus.

(iv) **Age of Household head:** Age has an impairing effect on physical abilities, which is a very important factor in small- scale farming. According to Bembridge (1984), age influences behavioural patterns.. According to Dlova, Fraser and Belete (2004), older (more than 65 years old) farmers are less capable of carrying out physical activities while younger ones are more capable. Therefore, only the able-bodied members of the society are expected to participate in the MFPP. Additionally, younger farmers are more ready to adopt modern technology, unlike the older farmers who, according to Bembridge (1984), more conservative and reluctant to take risk.

(v) **Level of Education of head of household:** Education was also expected to have an impact on the participation of farmers in the MFPP. Education is a central element in socio-economic evolution (World bank, 1980). According to Machingura (2007), "a sound educational background can reinforce natural talents". Education provides a theoretical foundation for informed decisions. Previous studies have confirmed the positive impact of education on decision making. From Nompozolo's (2000) findings, the smallholder farmers must be familiarized with the principles of business economics and record keeping in order to become entrepreneurs. Therefore, education is likely to improve managerial ability in terms of better formulation and execution of farm plans. According to Smith, Gordon, Meadows and Zwick (2001), the rise in non-traditional group-based enterprises has been characterized by education alongside experience and links gained outside of the community context. Subsistence farming has always been a livelihood strategy in African communities. Data from Uganda indicated that individuals who have pursued primary and higher education have a higher likelihood of participating in non-farm activities than those without any education (Newman and Canagarajah, 1996). Since the Massive Food Production Programme is a farming programme, it is expected that there is a negative relationship between participation in the programme and level of education of head of household.

2) Assets

Many studies have proven that availability of resources strongly affects livelihood activities (Ellis, 2000; Carney, 1998; Farrington *et al*, 2000). Resources are classified as natural, physical, human, financial, and social (DFID, 1999). In this study, access to farming equipment, primary or secondary occupation (alternative sources of income), type of employment, access to institutional credit, ownership of arable land, participation in associations, availability of extension services, training, affiliation to markets organisational participation in decision making, availability of extension services and previous occupation were selected as factors that influence participation in the Massive Food Production Programme.

(i) **Extension Services:** Access to information enables farmers to make informed decisions. Information gives theoretical foundations (Rwigema and Venter, 2004). The decision of one to participate in such projects is done where information was disseminated. The knowledge of existence of such projects comes through the circulation of information; therefore, accessibility to extension services is expected to be an influencing factor on participation.

(ii) **Landownership:** Land ownership has an impact on the participation in the MFPP. According to GRAIN (2008), the Massive Food Programme was to be introduced in areas with high potential for maize production. The government did not opt to give more land for the MFPP. Ordinarily, this would suggest that there is no difference between households on the basis of land ownership. However, previous studies such as Lebert (2004), indicated that some farmers are able to lease land for production. It was therefore decided to include this variable and determine the extent to which the farmers adjusted their land ownership in the course of their participation in MFPP.

(iii) **Farm implements and household physical assets:** Other resources included farming equipment such as hand hoes, spades, shovels, ploughs and cultivators. Farming uses a number of farm implements such as tractors. According to Machingura (2007), farming implements are necessary for successful production. It is expected that participants in the MFPP have access

to farming equipment. The study hypothesizes a positive relationship between availability of farming equipment and participation.

(iv) **Occupation**: This variable is divided into three, namely, primary, secondary and tertiary occupation. This will make it possible to capture the various sources of income. Off-farm income has a positive impact on farming activities. According to Pote (2008), off farm income lessens on-farm technical constraints. Income from non-farming activities plays an important part in covering on-farm expenditures. Therefore it is expected that participants have a number of sources of income from non-farm income, however, farming is considered as the primary occupation of most participants. This variable also captures experience. The study assumes that participants were expected to experienced smallholder farmers, who have been using crop production as a livelihood strategy.

(v) **Total income (Gross turnover per year):** Turnover in this study is defined as the total amount received by a household from their various livelihood strategies. The Gross turnover is the total income derived from a combination of income from salaries, remittances, crop and livestock sale, pensions and grants available to a household. This is an indicator of the availability of finances on a household. In this study, low income was an indicator of inability to participate in MFPP for non-land owners. It was assumed that some households which did not own land could lease land from those who did not intent to neither use their land nor participate in MFPP. A positive correlation was expected on total income and participation.

(vi) **Access to Credit Facilities:** Financially constrained individuals are ensured help for production. It is expected that availability of credit institutions as well as an individual's ability of to obtain credit and participation are positively correlated.

(vii) **Training**: Training is a way of providing mass information on opportunities. The extent to which an individual is exposed training influences attitudes,

decision making and livelihood activities as a whole (Pote, 2008). A positive correlation is expected between participation and training.

(viii) **Affiliation to social and marketing associations**: This variable indicates how much a household is networked. Through association a household has opportunities to get more information, help and marketing opportunities (Pote, 2008). Participation is likely to be positively affected by household head's affiliation to various associations in the society.

3) Level of food security

Lacking in food is another factor that has been hypothesized to influence participation in the Massive food programme. The Massive Food production programme was introduced with the aim of reducing food insecurity in the Eastern Cape Province. According to Scoones (1998), the level of exposure to risk (vulnerability) influences the type of livelihood activities that the households ventures in. This study took into account the level vulnerability to hunger. It is expected that participants were once exposed to hunger. It is therefore assumed that the participants were vulnerable to food insecurity, which motivated them to be part of the Massive Food Production Programme.

3.4.1.2 Variable specified for livelihood strategies

The second objective of the study was to investigate the extent to which the Massive Food Production Programme has changed the livelihood activities specifically maize production of communities in Komkhulu, Mdeni, Nkqonkqweni, Majali and Ngwangwane. This objective was achieved through the investigation of variations between the livelihood activities of participants and non-participants. It was expected that the introduction of the Massive Food Production Programme had an impact on the livelihood activities in the study area. Table 3.3 represents the factors that were captured in this study as livelihood activities.

Table 3. 3: Selected Livelihood activities and strategies Indicators

ACTIVITIES AND STRATEGIES		
Component	**Indicator**	**Issue explored**
Natural resource based activities - Farming	Crop production Livestock production	Diversification Varying crops produced by each household. The various types of livestock that are produced
Non-natural resource based activities Diversification	Non-agricultural jobs	Primary, secondary and tertiary occupations
Migration	Migration of family members	Reasons for migration such as marriage and searching for employment, impact on remittances
Maintaining liquidity	Increased income	Availability of other sources of income such as non-farm enterprises, crop sales and livestock sales

3.4.1.3 Variable selection for impact assessment

The third hypothesis that was tested was the significance of Massive Food Production Programme as agrarian transformation strategy for Amathole municipality and is contributing to poverty alleviation as the intended end product of the programme. This was achieved by the assessment of changes in the asset base of the participants and the availability of food and income obtained from crop sales by the participants. Impact assessment covered a broad range of factors that are considered as welfare measures and these are part of livelihoods; the variables that were selected for impact assessment were also classified using the SL framework. These were categorised as indicated in Table 3.4 and Table 3.5. However, other studies such as Clark (2002) and Sompali (2007) found that the most frequently mentioned aspects of a good life in South Africa were jobs, housing, education, income, family and friends, religion,

health, food, good clothes, recreations and relaxation, safety and economic security, *inter alia* (a result that is not inconsistent with the findings of most participatory poverty assessments). Therefore, some of these variables were also included.

Table 3. 4: Selected Welfare Indicators

Component	**Indicator(s)**	**Issues explored**
LIVELIHOOD ACTIVITIES AND STRATEGIES		
Natural resource based activities	More households producing maize and increases in maize yield	Crop production
OUTCOMES- WELLBEING		
Increase in Income	Changes and increases in --Wage -Farm income from crop and livestock sales -Grants -Pension -Remittances	**Cash**
Food security	Have not run out of food Availability of energy foods	**Vulnerability**
Household and farm equipment	Less than five years old	**Assets**

Table 3. 5: Second set of Selected Welfare Indicators

Component	Indicator(s)	Measures			Issues explored
		Worst	Medium	Best	
ASSETS					
Human Capital	Education	No education	primary	Secondary and tertiary education	Access to education, family co-operations, migration, labour availability, availability of jobs
	family size	0-1 able bodied family member	2-3 able bodied family member	4 or more able bodied family member	
	employment	Unemployed	Small-scale commercial production to blue collar jobs	White collar jobs	
	age	65-80 years	55-64 years	30-55 years	
Physical assets	Food	No food most of the year	Had no food for at most three months	Do not lack food	Access to these assets
	Farming equipment	0-2 oxen 0-2 hoes No plough	4 oxen 0-4 hoes 1plough 2 cultivators (with 2-5 disc)	6 oxen 4-6 hoes >1plough >2 cultivars (with 2-5 disc) Tractor	
	House(s)	1 muddy house	More than one muddy house	At least a house made from bricks with an iron sheet roof	
Financial Assets	Ability to buy own production assets and farming returns	No access Livestock& crops R0, 00-R350	Livestock & crops R1000-R2100	Full access Livestock –R8000-R10000/year Crops-R10000/ growing season	Access to institutional credit, employment and access to markets and are able to sale.
Natural Assets	Land	Do not have access to arable land 0,5-1ha	1-2 ha	Access to arable land 3->10 ha	Access to at least 3ha of land, pests and weed control, livestock numbers
	Cattle	<3	3-9	>10	
	Sheep	<5	5-9	>15	
	Goats	<5	5-15	>15	
	Poultry	<5	5-20	>20	
	Piggery	0	1-5	>5	
	Water	Walk a distance to get it	A least have a water tank	Tap water	
Social Capital	Extension services	No visits	One visit/3months	One visit/month	Ability to work with other organisations, access to extension services, training, associates, markets
	Obtained training	None	Short courses	Skilful	
	affiliation to organisation	No organization	1 organization	Affiliation to 2 or more organization	
	affiliation to markets	Not affiliated	Contacted to other farmers who market for them	Able to market on produce	

1) Impact on the Asset Base

Assets in general assist an individual to cope with life and not only do resources availability and management influences the type of livelihood activities that the households ventures in but it also measures welfare. Gubu *et al* (2004) argues that resource availability and management practises contribute to the sustainability of livelihoods. Timmermans (2004) has also found that access to assets is an important determinant of wellbeing and also a determinant of the ability to cope with hardship. Therefore, understanding the assets available and redistribution mechanisms is important since it determines the livelihood strategies. The Sustainable Livelihoods approach takes into account assets availability. Therefore, it will be useful as a tool in the livelihoods analysis hence its use in this study.

2) Impact on strategies

In order to analyse strategies when analyzing impact, Scoones (1998) identified three types of rural livelihood strategies. These are agricultural intensification or extensification, livelihood diversification including both paid employment and rural enterprises, and migration (including income generation and remittances). Carney (1998) lists these categories of livelihood strategies as natural resource based, non natural resource based and migration, while Ellis (2000), categorised livelihood strategies as natural resource based activities or non-natural resource based activities (including remittances and other transfers). In this study the agricultural practices and mining are classified under Carney's (1998) natural resource based livelihood strategies. In this study teaching and domestic work were identified as non-natural resource based activities.

3) Impact on livelihood outcomes

An understanding of livelihood outcomes is intended to provide, through a participatory enquiry, a range of outcomes that will improve well-being and reduce poverty in its broadest sense (DFID, 1999). In this study, achievements indicators such as food availability, income realised from maize crop sales and an improvement in the asset base and progress of the MFPP in attaining its intended goals were identified as outcomes. The Massive Food Production Programme was intended to ensure food security and transformation of rural agriculture.

(i) **Food availability**: This variable was chosen to indicate food security. Food security covers quality and quantity of food. According to the World Bank (1986), availability of food and ability to acquire it are the essential elements of food security. This was also taken into account. According to the World Health Organisation (1996), food security encompasses:

- Food availability: sufficient quantities of food available on a consistent basis.
- Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

Overseas Development Institute (ODI) (1997), considers that food security is achieved when all people have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Due to income constraints this study considers only food availability. Therefore, the study considered increase in maize crop yields per household level. The study also acknowledged that increases in agricultural production results in considerable changes and improvement in the nutritional status of the target group, therefore the questionnaire also captured the various sources of carbohydrates and other types of crops that the target population grew.

(ii) **Improvement in asset base**: This variable looked at the improvement in the condition of the dwelling and the ownership of household appliances such as the radio, television, fridges and microwaves. According to Bembridge (1983), modern household equipment plays an important role in the determination of the quality of life. Improvement in asset base was captured through including the variable and the asset period of use. Classification of the assets as new or old is found in table 4.26.

(iii) **Income realised from crop sales**: The Massive Food Production Programme was also concerned with enabling the smallholders to sell their crops, therefore this study considered improved income realised from crop sales.

3.4.2 Structure of the Questionnaire

The Questionnaire had both structured and open-ended questions. The questionnaire was in English and not translated into Xhosa. This necessitated discussions with enumerators, before hand on the proper meaning of the questions. Interpretation of information gathered during the field work was according to the SL framework, thus the impact of the Massive Food Production Programme was assessed on assets, livelihood strategies and outcomes. The questionnaire was divided in the following sections: demographic data, livelihood assets, decision making on resource use, livelihood activities and the livelihood outcomes derived from the livelihood activities which were captured.

3.5 Data Collection Procedures

3.5.1 Introduction

Prior to the scheduling of interviews, the researcher had to make contact with the Department of Agriculture to find out the Extension officers who were involved in the Massive Food Production Programme and the areas where the Programme was being implemented. Then the researcher undertook a situation survey involving the analysis of available cross-sectional data on households in the Amathole District, especially in the areas the Massive Food Production Programme was introduced. Secondary sources such as project annual reports, baseline survey reports, project log frame, internal reports, work plans, budgets and mid-term evaluation reports were of great use in providing valuable information on change of livelihoods. Based on this, a focused investigation on the current livelihood circumstances of a sample of households in a sample of villages followed. Only villages around areas where the Massive Food Production schemes were introduced were selected. A questionnaire was used as the instrument of observing and recording data. Advantages of using this method, according to Bembridge, Graven, Hough and Van Rooyen (1982) include, flexibility; that is it enables the interviewer to ensure that the respondent understands the questions and study purposes whiles at the same time permitting the interviewer to

probe further when particular responses are encountered. Questionnaire interviewing allows subjective assessment and ratings of knowledge, attitudes and options.

The questionnaire was pre-tested in February and March with fifteen randomly selected individuals in three locations of Amathole district who are not included in the sample. The questions were easily understood though the questionnaire was too long. This resulted in the redesigning of the questionnaire and rephrasing other longer questions. The questionnaire was finalised based on the pretesting. Data collection was subsequently completed in July.

3.5.2 Sampling Procedure

Data were collected from five villages, *viz.* Komkhulu, Ngwangwane and Mdeni (Middledrift), Nkqonkqweni and Majali (Peelton). A sample size of 70 households was drawn for the administration of the questionnaire, nine from Komkhulu, one from Mdeni, five living in Ngwangwane and 19 and 36 from Majali and Nkqonkqweni respectively. However, the sample sizes are 12%, 4%, 10 % of households in Komkhulu, Mdeni and Ngwangwane, respectively, based on a situation survey. In Majali, 31 households joined the Massive Food Production project. However of the 31 households, 20 were interviewed because some of the members have passed away and the surviving household members were not willing to join and some migrated. This necessitated the sampling of all participants. In Nkqonkqweni a sample size of 36 was selected from randomly selected individuals.

The Peelton Baseline Survey (2002) indicates approximately 5000 households in Peelton. The samples in Majali and Nkqonkqweni represented 15% and 14%, respectively of total numbers of households in each village. An estimated precision variance of 10% exists which is satisfactory for the descriptive and exploratory in-depth household survey adopted in the study. According to Ashley and Hussein (2000), in order to gain a picture of the broader development and poverty reduction

impact of projects, assessments must look at both the intended and unintended consequences of projects across a variety of livelihood concerns. Since this study focused on impact of the Massive Food Production Programme on livelihoods, the assessment encompassed beyond target beneficiaries'. The study considered non-participants as well. This was to establish a basis for finding out the impact of the scheme on the participants and to find out if there are any variations among participants and non participants.

3.5.3 Interviewing Procedure

In preparation for the interviews permission was sought from the local authorities to collect data. From thence appointments were made with the communities, extension officers, the participants in the Massive Food Production programme and one guide to take the research team through the village. This was an added advantage that the guide was known in the area thus we were trusted. Then 100 household survey questionnaires were printed. Data were collected at one to one interviews. The enumerators would introduce themselves first and state the purpose of their visit. Additionally, it was important to reiterate the confidentiality of the information that was gathered to ensure that information given was true.

The participation in the survey was free and no incentives were provided. The following three categories were included: MFPP = male and female farmers participating in MFPP; Non-MFPP= farmers living in villages where MFPP has never been conducted; Potential Participants = farmers living in the villages where MFPP was introduced, but not participating in the MFPP (Table 3.6). The Potential Participants case was included because it was expected that there would be diffusion of the effects to farmers living in the surrounding areas. The possibility of diffusion of these Massive Food Production Programme effects has been discussed in a number of studies and has led to conflicting conclusions concerning the cost-effectiveness of other crop production projects such as the Integrated Pest Management Farmer Field School **(**IPM FFS) (van de Fliert, 1993).

Table 3. 6: Sample size of participants in MFPP, Non-MFPP and Pot- MFPP villages by gender.

Village		Frequency	Percent
	Mdeni	1	1.4
	Ngwangwane	5	7.1
	Komkhulu	9	12.9
	Nkqonkqweni	36	51.4
	Majali	19	27.1
	Total	70	100.0

Source: Field Survey, 2009

Seventy people were interviewed; equal numbers of male and female respondents was involved. The respondents represent a household.. Table 3.6 represents the responded distribution in the survey.

The highest percentages of respondents were from Nkqonkqweni representing 51% of the sample, followed by Majali representing 27.1%. The percentage of respondents was determined by their willingness to participate in the survey. The respondents in Mdeni, Ngwangwane and Komkhulu were not willing to participate therefore only a few households were interviewed and a larger proportion of interviewees were from Peelton. Thus results are better presentation of the Population in Peelton. The possible reasons for their lack of enthusiasm to participate were the populations from Mdeni, Ngwangwane and Komkhulu have been overly studied and secondly, other student researchers have made promises to them but never fulfilled these promises.

In addition to the household interviews, focus group discussions with the participants were carried. A focus group discussion was helpful in providing information on the progress and analysis of impact on members who joined the MFPP as groups. This was done on the dates set by the extension officers and farmers. The questionnaire was administered after these brief yet informative focus group discussions.

The research team faced a number of difficulties. In Nkonkobe villages, the communities were not willing to participate. This can be attributed to respondents' fatigue in communities that have hosted a succession of researchers from the University of Fort Hare over the years. Besides, the people were busy in their daily chores and could not afford the distraction of long interviews and meetings with researchers. To avoid having incomplete interviews, the full consent of the respondents was sought at the very beginning. At the end of the fieldwork, certificates of appreciation were distributed to the communities to acknowledge their contribution and support.

3.6 Data Analysis

Two methods of data analysis were employed. These are descriptive and inferential analysis. The inferential analysis employed both cross-tabulations and econometric analysis. This ensured a deeper understanding of development of rural livelihoods. The basic objective of quantitative analysis was to map the livelihoods in Amathole and its pattern over time. This was achieved through the review of previous research studies. More attention was paid on the livelihood strategies and outcomes.

In the case of the empirical analysis, *descriptive statistics* was employed with a view to understanding the distribution of the sample. Measures of central tendencies, box-plots, cross-tabulations, the Tau tests and chi-square tests were conducted to explore the factors that influence participation in the Massive Food Production Programme. These analyses were carried out by means of the SPSS software. Other descriptive statistics including means, frequencies and standard deviations were calculated.

The inferential statistics was divided into three components, factors affecting participation, impact on livelihood activities and impact on the outcomes. These components are aligned with the specific objectives of the study. In each case, a model is specified to explain the link of the Massive Food Production Programme

with the defined livelihood parameter, namely asset endowment, activities, and outcomes. The determination of the relationship between the factors that would result in a measurable impact on livelihood constituted the inferential analysis which was implemented by means of estimation of linear regression models to assist in explaining the variations in the chosen measure of performance of the programme. As has been noted previously (Tables 3.4-3.6), a large number of variables were generated during the data collection. It was therefore necessary to streamline these data so that only the key variables are included in the model. One reason for this is that where numerous variables are involved, it is almost impossible to avoid high degrees of multi-collinearity. The purpose of variable reduction was principally to avoid or minimize this problem. In order to do this, factor or principal component analysis was carried out on the original data set. In all, there were 29 variables in the original data set. These are presented in Table 3. 7.

Table 3. 7: Variable selected for the analysis of factors affecting participation

VARIABLE	UNIT	TYPE OF VARIABLE
Geographic location	Village of household	Categorical
Gender	Gender of the household head	Categorical
Household size	Actual number of family members	Continuous
Dependencies	Actual number of dependencies	Continuous
Age	Actual in years	Continuous
Education	Obtained formal education	Categorical
Asset ownership	Own farm implements and household facilities	Categorical
Primary occupation	In farming or otherwise	Categorical
Secondary occupation	In farming or otherwise	Categorical
Previous occupation	In farming or otherwise	Categorical
Availability of land	Own arable land	Categorical
Organisational participation	Affiliated to an social group	Categorical
Family association	Family member is affiliated to a social group	Categorical
Marketing Associations	Affiliated to a Marketing group	Categorical
Extension services	Have access to Extension services	Categorical
Training	Acquired an agricultural related training or not	Categorical
Vulnerability to food insecurity	Running out of food in several years	Categorical
Maize Crop production	Produces crops	Categorical
Other crops production	Grow other crops besides maize	Categorical
Livestock production	Keep livestock	Categorical
Sale crops	The household sells crop produce	Categorical
Access to seed banks	Do farmers have access to seed banks	Categorical
Income from crop sells	Actual income per year (in rands)	Continuous
Income from selling livestock	Actual income per year (in rands)	Continuous
Grant	Actual amount per annum (in rands)	Continuous
Wage Income	Actual amount per annum(in rands)	Continuous
Pension	Actual amount per year (In rands)	Continuous
Turnover group	Classified according to turnover group	Categorical
Total Turnover	Actual Total income in Rands	continuous

Following the principal component analysis, nine principal explanatory variables were identified on the basis of the generated eigen values. To these nine variables were

added 4 dummy variables as proxy to location, participation in MFPP, asset ownership, and skills training. Overall, 12 explanatory variables were identified as shown Table 3.8.

Table 3. 8: Description of the variables from factor analysis to describe models in the regression models

VARIABLE	DESCRIPTION	UNIT
DEPENDENT VARIABLE		
CL1	Highest level of asset improvement 1 if there was were more than 10 assets less than 5years old	DUMMY
CL2	Average level of asset improvement 1 if the household has 5to 10 assets less than 5years old	DUMMY
INDEPENDENT VARIABLES:		
PARTICIPATION	1 for participants	DUMMY
VILLAGE	1 if the village of the respondent is in Peelton	DUMMY
AGE	Actual age of head of household	
VILPERD	Period of respondent in the village	
HHSIZE	Actual household size	
ELH	Education level of the head	
DEP#	Number of dependencies	
SKLTRAIN	1 if the respondents has gone through training	DUMMY
OTHER1	Production of other crops besides maize	
SALARY	Income from salaries	
GRANT	Income from grants	
CRPSELL	1 if farmer sells crops Income from selling crops	
LSTKSELL	Income from livestock sold	
REMMIT	Income from remittances	
TOTENOVA	Total income per year	
TRNOVGR	The turn over group	DUMMY

Source: Field Survey, 2009

A linear regression model was fitted to assess the impact MFPP participation on asset improvement for households enumerated. The improvement in the assets base was taken as the measure of improved livelihoods and modelled as the response variable. This was seen as a best measure of improvement in livelihoods instead of the ordinary measures such as income derived from maize sale increase or the economic turnover groups. The study revealed that most of the income of respondents was not derived from crop sales. Besides, there was an equal number of participants and equal distribution of participants and non-participants in turnover groups.

Economic theory predicts direct relationships between a vast array of socio-economic and community variables and a dependent variable which predicts the expected change. It is therefore possible to fit a simple linear model of the form:

$$Y = f(x_1, x_2 ..... x_n) \quad (1)$$

Where:

Y is the dependent variable representing the measure of asset improvement, while the *x*'s are the explanatory variables.

Following convention, the model can be specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 ..... \beta_n X_n + \mu_i \quad (2)$$

Where:

$\beta_0 =$ the intercept or constant term
$\beta_1, \beta_2, ... \beta_n =$ slope or regression coefficient
$X_1, X_2, ... X_n =$ explanatory or independent variables
$\mu_i =$ error or disturbance term.

The model was estimated to determine the relationship between asset improvement and a set of explanatory variables.

Given the rather large number of variables enumerated, the likelihood of correlation among independent or predictor variables is high. For this reason, the test of multi-

collinearity was applied. Assuming two variables, X_1 and X_2, collinearity is suggested if:

$$X_1 = \lambda X_2 \quad \text{..... (3)}$$

However, equation (2) demands that a more robust function be developed to cater for the several predictor variables in the model. This can be presented as:

$$\lambda_1 X_{1i} + \lambda_2 X_{2i} + \text{.....} + \lambda_k X_{ki} = 0 \quad \text{..... (4)}$$

where λ_i are constants and X_i are the exploratory variables that might be linearly correlated.

The speed with which variances and covariances increase can be seen with the variance-inflating factors (VIF), which shows how the variance of an estimator is inflated by the presence of multi-collinearity to reinforce the results of the PCA. A formal detection tolerance or the variance inflation factor (VIF) for multi-collinearity as illustrated by Gujarati (2003) can be used as follows:

$$VIF = \frac{1}{tolerance} \quad \text{..... (5)}$$

where tolerance $= 1\text{-}R^2$

Tolerance of less than 0.21 or 0.10 and / or VIF of 5 or 10 and above indicates multi-collinearity of variables. Where multi-collinearity was detected on the basis of the value of the VIF, the highly collinear variable, that is those with very high VIF, were deleted from the model.

Finally, a test was conducted to detect any possible serial correlation indicated by the size of the Durbin-Watson (DW) statistic by establishing that:

$$\mu_t = \rho \mu_{t-1} + \varepsilon_t \quad \text{..... (6)}$$

Or that the error terms are not correlated.

CHAPTER 4

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents the findings of the study. At the outset, the demographic characteristics of the sample will be described. This would be followed by the analysis of the resources available to each household in the study villages. These two sections provide a broad profile, based on descriptive statistics, of the sample and the study area that forms the basis for subsequent estimations and inferences. Then an attempt is made to infer associations and relationships between participation on the MFPP and the key livelihoods issues, namely resource availability, livelihood activities, and livelihood outcomes. These results are presented in sections 4.4, 4.5 and 4.6, respectively. As already indicated, these results are aligned with the research questions raised in Chapter 1 and consolidated as the specific objectives of the study. Finally, a model is specified in section 4.7 to clarify the impact of the Massive Food Production Programme on the livelihood outcomes. Improvement in the asset base was used as the proxy for livelihood outcomes.

4.2 Demographic Characteristics

Demographic characteristics are important determinants of livelihood activities and outcomes. According to Kirsten, Perret and De Lange (2002) demographic conditions have an impact on the rural areas and rural population. As the population continues to grow, increasing pressure on fragile lands and agricultural production, smallholder behaviour under limited demographic conditions such as education would lead to falling agricultural productivity, major food crises and increased rural poverty (Machingura, 2007). Demographic variables include age of household head, gender, household sizes and number of dependencies. Under demographic characterisation this study covered household sizes, age of household heads and gender of heads. The

study also assessed education levels and occupations of household heads, rate of immigration status and the nature and conditions of their dwelling facilities. The results will be presented in that order.

4.2.1 Household sizes

Household sizes refer to the number of people living together in a household. Household sizes impact on the income and expenditure profile and thus influence livelihood activities (Timmermans, 2004 and Machingura, 2007). On the other hand, household size determines availability of labour for farm and other economic activities. Table 4.1 summarises the household sizes distribution. The study revealed that family sizes vary from a single individual per household to a maximum of eleven family members.

Table 4. 1: Household sizes distribution

Size of household	Frequency	Percent	Cumulative Percent
1-4	26	57.1	57.1
5-10	31	37.2	81.4
>10	1	1.4	100.0
Total	**70**	**100.0**	

Source: Field Survey, 2009

Table 4.1 shows that about 42.9% of the households had sizes ranging from 5 to 11 members of which 1.4% of the households had over 10 members. Still a big percentage of the households (57.1%) had between 1 and 4 members. This is not surprising since the average household size in Eastern Cape is 4.1 (Community Survey, 2007).

4.2.2 Age of household heads

Previous studies have proven that in farm populations, age is skewed towards the upper ages (Mushunje, Belete and Fraser, 2003; Sompali, 2007, Machingura, 2007). The ages of the household heads ranged from 37 to 91 years with a mean age of 61.1 Table 4.2 gives the age distribution of the household heads.

Table 4. 2: Distribution of Age of Head of Household

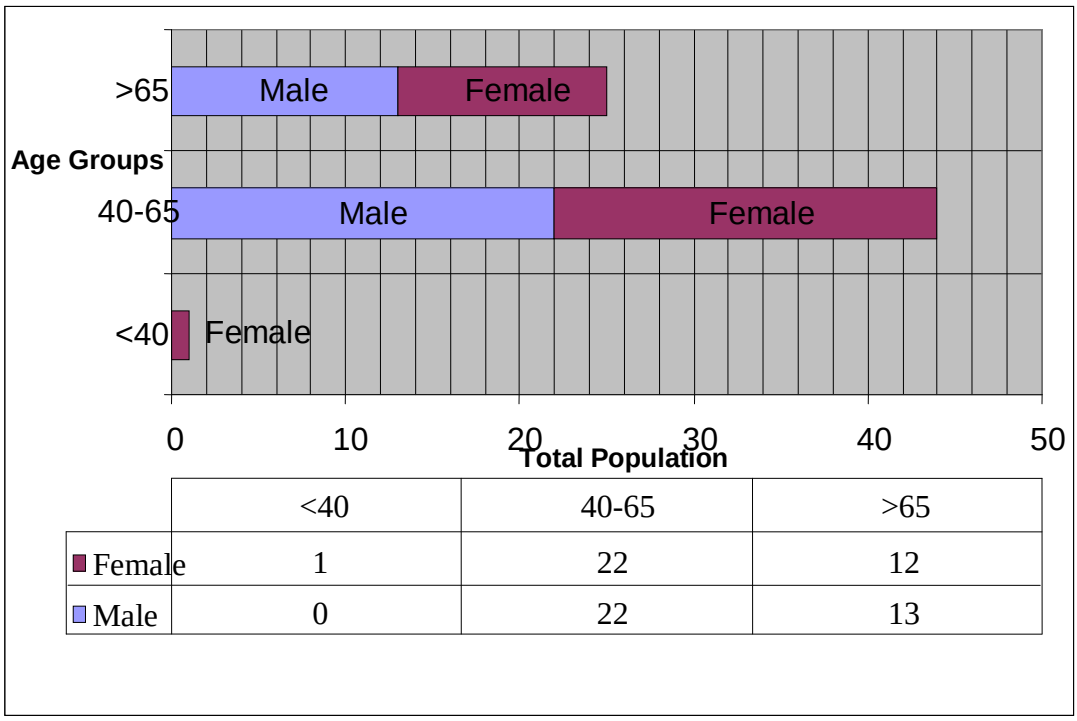
Age Category	Frequency	Percentage (%)	Cumulative Percentage (%)
<40	1	1.4	1.4
40-65	44	62.9	64.3
>65	25	35.7	100.0
Total	**70**	**100.0**	**100.0**

Source: Field Survey, 2009

Demographically, the age range 15 to 65 is considered the active age group (Stats SA, 2008). Thus from Table 4.2, it is observed that the majority of the household heads were between 40 and 65 (62.9%). Only a single household head was less than 40. This reveals that there are fewer young heads of households in the rural areas. It proved that old people are the main rural dwellers. The study revealed that a considerable percentage of the economically inactive heads of household (35.7%).

4.2.3 Gender ratio of heads of households

From the mid 1990s, South Africa went through a demographic transition. Its population experienced a steady ageing trend (Kinsella and Ferreira, 1997; Noumbissi and Zuberi, 2001). Population ageing in South Africa has been accompanied by declining sex ratios, whereby a larger proportion of females are reaching old age than males (Tati, 2009).. Figure 4.1 gives the findings of sex ratios by age-group.



	<40	40-65	>65
Female	1	22	12
Male	0	22	13

Figure 4. 1: Age-Sex ratio for heads of households
Source: Field Survey, 2009

This study revealed that there are equal males and females of the ages between 40 and 65. The gender ratio for the population above 65 showed that there are more males than females. This showed a variation to the 1996 population census that enumerated 5.7 per cent men to 8.3 per cent women aged 60 years or more in the total population (Noumbissi, 2001). Then, the old population in the age group 65 years and over had a proportion around 4 per cent (Tati, 2009). Five years later, the population census conducted in 2001 put the number of individuals aged 65 years and over at 5% of the total population of 46888200 inhabitants. However, the ratio of males and females represent 2:3 respectively (Tati, 2009). In this study, men tend to outlive women.

4.2.4 Education levels of heads

Education is an important aspect for the socio-economic development of a society (Bembridge, 1984; Pote, 2008). According to Bembridge (1984), education influences adoption to technology. This study revealed that a high percentage of households have no formal education. Table 4.3 below shows the education levels of the heads of households.

Table 4. 3: Education level of the head

Variable	Frequency	Percent	Valid Percent	Cumulative Percent
no formal education	33	47.1	47.1	47.1
Primary education	9	12.9	12.9	60.0
Secondary education	27	38.6	38.6	98.6
Tertiary education	1	1.4	1.4	100.0
Total	**70**	**100.0**	**100.0**	

Source: Field Survey, 2009

From Table 4.3, about 52.9% of household heads obtained primary education. Approximately 38.6% of the household heads attained secondary education and a single head of household obtained a tertiary education. Nevertheless, illiteracy was still observed to be a challenge for the studied area as 47.1% of the household heads reported that they had never had any formal education. Additionally, it is observed that of the sampled population, 77.1% have never received any formal training and of the 22.9% that has received training only 8.5% was trained in agriculture practices. It is expected that most of the non-participants had at least primary education.

4.2.5 Occupation

Individual households have different sources of income. Off-farm employment is another source of income. The study looked at three occupational groups (farming, civil and other off farm occupations) at three different levels (primary, secondary and tertiary). Number of different types of occupations per individual reveals the various livelihood strategies pursued by an individual.

Agriculture is the mainstay in rural South Africa. It was expected to be the primary occupation of most household heads. However, findings from Dlova, Fraser and Belete (2004) revealed that most farmers do not realise their income from agricultural production, therefore, it was expected that the farmers had other secondary and/or tertiary occupations. As is shown in Table 4.4, agriculture is the primary occupation of the majority of the households.

Table 4. 4: Household head primary occupation

Primary Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
none	15	21.4	21.4	21.4
Farming	37	52.9	52.9	74.3
Civil servant	6	8.6	8.6	82.9
Off farm business	12	17.1	17.1	100.0
Total	70	100.0	100.0	

Source: Field Survey, 2009

The study revealed that 52.9% take farming as the primary occupation. 21.4% of the interviewees were not employed. From Table 4.4 the only 8.6% pt of the population are employed as civil servants. This is because most the younger able-bodied people migrate into the cities in search of employment though some of them migrate due to marriage.

The study also revealed that 71.4% of the farmers were employed as civil servants in their previous occupations. It is only 20% that was previously employed in the farming sector. This confirms that farming as a livelihood strategy after retirement. According Lehohla (2006), such prevalence of temporary migration is an individual and household strategy linking rural areas with larger settlements.

4.2.6 Migration levels

Migration is a very common future of rural South Africa. Findings from the 2007 Community Survey reveal that former homelands in Eastern Cape, KwaZulu-Natal, North West and Limpopo receive the lowest proportions of migrants. Migration is one of the livelihood strategies used by the rural households in Peelton and Middledrift. The study revealed that 17.1% of the villagers who have less than 20 year period in the village they are dwelling in. 5.7% of the villagers have lived in the studied villages for less 10 years. It is evident that immigration is at a decrease. Migration levels are summarised in Table 4.5.

Table 4. 5: Number of migrants per household

Number of migrants	Frequency	Percent	Cumulative Percent
0	38	54.3	54.3
1	12	17.1	71.4
2	10	14.3	85.7
3	4	5.7	91.4
4	6	8.6	100.0
Total	**70**	**100.0**	

Source: Field Survey, 2009

The study revealed that 45.7% of the rural household members migrated to other area. This is higher compared to the Eastern Cape migration of 23.0% (Community survey, 2007). The study revealed that the highest number of migrants in a household was four family members. Table 4.5 shows that this case contributed only 8.7 %.

4.3 Factors Affecting Participation in MFPP

Resource availability affects the livelihood strategies that individuals pursue. According to Heady and Dillon (1961), production is a function of biological, economic and other environmental factors. Resources are also referred to as capital in the sense that they used for current and future production. In this sense, they are classified as human capital, physical capital, financial capital, social capital and natural resources. In this study, the following factors were considered under the five classes of resources. Levels of education, training and previous occupation were selected constituents of for human capital. Arable land is a form of natural resources. According to Farrington *et al.* (2002), age, education, gender, health status, household size, dependency ratio and leadership potential, etc are proxies for human capital. Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods (DFID, 1999).

In this study, farming implements were selected as physical assets proxies. Social capital refers to networks and connectedness, therefore, in this study, access to extension service, market association; organizational associations were selected to proximate social capital. Savings, credit, and remittances from family members working outside the home are examples of financial capital (DFID, 1999). In this study, availability of income from salaries, pensions or grant and remittances, employment and availability of credit facilities were selected as proxies for financial resources.

This section represents the analysis of how these factors vary amongst participants and non-participants. Non-participants are further classified as those who never participated, those who once participated and those who intent to participate. These are analyzed separately.

4.3.1 Relationship of Location and Participation in MFPP

The environment affects agricultural practices. Poverty is characterised by the communities' inability to have sufficient resources to satisfy a socially acceptable

minimum standard of living (Philip, 2000). The study first analysed the level of participation by village. Table 4.6 presents the cross tabulations of the studied villages and participation in the Massive Food Production Schemes.

Table 4.6: Participation by village of respondents

Village	Participation				
	Participants	Never participated	Once participated	Intend to participate	Total
Mdeni	0	1	0	0	1
Ngwangwane	0	5	0	0	5
Komkhulu	0	9	0	0	9
Nkqwonkqweni	16	13	4	3	36
Majali	16	0	3	0	19
Total	32	28	7	3	70

Source: Field Survey, 2009

It is observed that no one was involved in the Massive Food Production programme in Mdeni, Ngwangwane and Komkhulu despite that these farmers were in the villages across the project area. However, members in these villages took smaller projects such as Siyazondla Home projects (Gege, 2009). An equal number of households from Majali and Nkqwonkqweni participated in the MFPP.

Table 4.6 also shows that almost same proportion of participants in the Massive Food Production Programme and non-participants was interviewed. Of the 38 non-participants, 18.4% have intention to join the Massive Food Production Programme. The respondents who intend to join in the Massive Food Programme projects are dwelling in Nkqonkqweni.

Further analysis of household size by location reveals that the sample household size mean for this study is 4.44. However, there is a difference in the mean household sizes for Mdeni, Ngwangwane, Komkhulu, Nkqonkqweni and Majali. The households' means are presented in Table 4. 7.

Table 4.7: Mean household size per village

Village	Mean	N	Std. Deviation
Mdeni	4.00	1	.
Ngwangwane	2.60	5	1.673
Komkhulu	3.89	9	1.453
Nkqwonkqweni	4.83	36	1.964
Majali	4.47	19	2.389
Total	4.44	70	2.055

Source: Field Survey, 2009

Analysis by village, Table 4.7, shows that mean household size of Majali village is closest to that of the national average having a mean value of 4.47. Nkqonkqweni is above 4.84 and Ngwangwane has the least with a value of 2.60. The mean household size for the sample was found to be 4.44, which is slightly lower than the national average of 4.49 (Bhorat, 2002). Thus the households in the Middledrift and Peelton had relatively smaller household sizes compared to the national level. It would seem therefore that the majority of the survey villages were not worse off than the rest of the country in terms of human resource capacity when viewed exclusively in terms of numbers. Of course, when other indicators are introduced, the conclusion will be different. In the study, the two villages with less than 4 members per household were in the Middledrift and Peelton areas, but because of smaller sample sizes in these villages, these numbers must be used with caution.

Analysis by age was considered in order to differentiate characteristics of participation by location. Most heads are between 40 and 65 years of age. Table 4.8 summarises study findings on the age of heads per village.

Table 4. 8: Statistical analysis of sampled Household head age

Statistic	Ngwangwane	Komkhulu	Nkqonkqweni	Majali
Mean	59.00	55.00	60.28	66.26
Minimum	48	41	37	49
Maximum	72	75	91	84
Range	24	34	54	35
Kurtosis	-1.628	-.403	-.633	.198

Source: Field survey, 2009

Nkqonkqweni has the least minimum age of 37. The results of this study reveal that most of the household heads in Ngwangwane, Komkhulu and Nkqwonkqweni villages are economically active. The average ages by village are 59, 55 and 60 respectively. Majali is an exceptional case where the household mean of over 65years.

4.3.2 Effect of Gender on Participation in MFPP

According to Groth (2008), women comprise more than half (55%) of South Africa's rural population. Previous studies show that issues of rural development disproportionately affect women. Female-headed households have a poverty rate of 60%, whereas male-headed households' poverty rate is 31% (May *et al*, 1998).According to Akerkar (2001), gender has become increasingly visible as an issue in development. Gender imbalances manifest as an exclusion of women from much of the benefits of development activity. According to Walker (2000), women in South Africa are victims of patriarchal society, which affects their access to livelihood resources. Table 4.9 summarises the findings of this study on gender and participation.

Table 4. 9: Ratio of men and women by participation

Gender of head of household	Participation Level				
	Participants	Never participated	Once participated	Intend to participate	Total
Male	16	13	5	1	35
Female	16	15	2	2	35
Total	32	28	7	3	70

Source: Field Survey, 2009

There was a larger percentage of women who never participated (53.6%) and there are more women who intend to participate (66.7%). The chi-squared value was 1.762 showing a significant relationship between gender and participation. The table also shows that equal numbers of males and females participated in this government food programme. The ratio of males to females was 1:1. These results show that both male and female have equal chances of getting involved in government programmes. These results refute Dlova *et al*'s (2004) findings that participation in agriculture as a livelihood depends on physical strength. The study reveals that Xhosa women are physically strong. This confirms results from Beaumont (1973); Xhosa women played a major role in the quarrying of earth pigments after travelling distances of 200 kilometers to haematite works in the Transvaal.

4.3.3 Effect of Age on Participation in MFPP

Analysis of household participation by age indicated that individuals that are over 65 years old are still participating in the economic activities. The mean age in the different categories of participation are indicated in Table 4.10.

Table 4. 10: Participation by age groups

Gender of head		PARTICIPATION				Total
	Age groups	Participant	Never participated	Once participated	Intend to participate	
Male	40-49	2	6	2	0	10
	50-59	3	3	0	1	7
	60-65	3	0	1	0	4
	>65	8	4	2	0	14
	Total	16	13	5	1	35
Female	<40	1	0	0	0	1
	40-49	1	1	0	1	3
	50-59	3	9	1	1	14
	60-65	4	1	0	0	5
	>65	7	4	1	0	12
	Total	16	15	2	2	35

Source: Field Survey (2009)

Table 4.10 revealed that of the participants of the MFPP, 43 percent are considered economically inactive. Compared to women, men in the age groups +65 are 8 constituting of 50 percent of the male participants. According to Tati (2009), the effective age for retirement in South Africa is 65 years for those working in the formal sector. These results show that despite the fact that the age over 65 is a considered an economically inactive group, they have secured livelihood strategy through the Massive Food Production Programme that provide them with food in addition to income they obtain from the state-sponsored welfare grants and pensions. This also proves that agriculture is considered as an occupation that is taken after retirement in South Africa. Three people intend to join in the Massive Food Production Programme of which two of them are in the age group 50-59. Joining the Massive Food Production Programme schemes can be considered as part of their plans after retirement.

There are concerns over the sustainability of the Massive Food Production schemes in the long run since the younger generation is not involved in agriculture.

4.3.4 Effect of Education level on Participation in MFPP

Illiteracy is a challenge for rural households. Education levels were classified as:

- **no formal education**, whereby the head of household having no schooling experience,
- **primary education**, where by an individual who obtained at most grade seven or standard five,
- **secondary education** included having grade 8(standard 6) up to matric (standard 10) education level,
- **tertiary educated** individuals were individuals who obtained university of professional education.

Table 4.11 presents participation against literacy levels of heads of households in the Massive food Production programme.

Table 4. 11: Participation with respect to literacy level of the head of household

Education level of the head	Participation				Total
	Participants	Never participated	Once participated	Intend to participate	
No formal education	21	8	3	1	33
primary	3	4	1	1	9
secondary	8	15	3	1	27
tertiary	0	1	0	0	1
Total	32	28	7	3	70

Source: Field Survey, 2009

It was observed that 21 participants have no formal education. 8 people with no formal education never participated. None of those with tertiary education are involved or have the intentions of participating. From Table 4.11, those with at least secondary education never participated. This confirms Newman and Canagarajah's

(1996), findings that the likelihood for individuals without any education to participate in farming activities is higher than those who have pursued primary and higher education.

4.3.5 Effect of Household size on Participation in MFPP

There are significant variations in household sizes on the level of participation in the Massive Food Production Programme. Table 4.12 brings to the fore some of the important issues that can partly explain why some households did not participate.

Table 4. 12: Effect of household size on participation

Actual household size	Participation				Total
	Participants	Never participated	Once participated	Intend to participate	
1-4	13	19	6	2	5
5-10	18	9	1	1	
>10	1	0	0	0	1
Total	32	28	7	3	70

Source: Field Survey, 2009

Household sizes for participants range from eleven members to one individual. There were indications that a very small household was more likely not to participate in the Massive Food Production Programme. As the table clearly demonstrates, most of the participants had a more than five household members. Meaning household size can be a contributing factor to join the Massive Food Production Programme schemes. Further analysis shows that the correlation coefficient at the 0.01 level (2-tailed) is -0.334.

4.3.6 Effect of Asset Ownership on Participation in MFPP

Lack of assets was widespread among the participants and those intending to participate. From Table 4.13 all who intend to join the Massive food Programme schemes are in the low level of asset ownership. Classification into an asset ownership level is by the availability of farm implements, type of house (s), number of houses and on the availability of modern household equipment.

Low asset ownership level: Those belonging to the low asset ownership level own a single thatched house, with property which is more than 10years old, owning a few hoes and or an axe

Medium asset ownership level: in this class the individual own at least a single iron sheet brick roofed house and or with a number of mud thatched houses, owning a wheel barrow, spades, fence, with the building property which is five to ten years old.

High asset ownership level: households in this class are characterised by ownership of at least a brick, iron sheet roofed house, a number of iron sheet roofed mud houses, owning a tractor, ploughs, a car, fence, dip tanks and irrigation pipes.

Table 4. 1314: Participation by asset ownership

Asset ownership level	Participation				Total
	Participant	Never participated	Once participated	Intend to participate	
No response	3	1	0	0	4
LOW	15	10	0	3	28
MEDIUM	7	14	4	0	25
HIGH	7	3	3	0	13
Total	32	28	7	3	70

Source: Field Survey, 2009

Those who once participated belong to the medium and high asset owners, each being 42.9% and 57.1% respectively. In comparison to the non-participants, the participants lack in assets, 52 % of the participants belong to the low asset owners group, whereas 35% of non-participants belong to that group. The study also revealed that most of the villagers in Komkhulu and Ngwangwane are in the medium class.

4.3.7 Effect of Household Primary Occupation on Participation in MFPP

Occupation keeps individuals busy thus it shows the time that one can allocated for other livelihood strategies. The study revealed that the sampled population had some kind of secondary occupation along with their primary occupation. From the analysis, it was revealed that farming is their primary occupation for most people. Figure 4.2 and figure 4. 3 are the results on the primary occupation pursed by participants in the Massive Food Production Programme and non-participants.

In this study, 75 percent of members of the Massive Food Production Programme took farming as their primary occupation, while only 6 percent took civil service as their primary occupation. Other types of occupation that were pursued as primary occupation were trading, bricklaying, and carpentry.

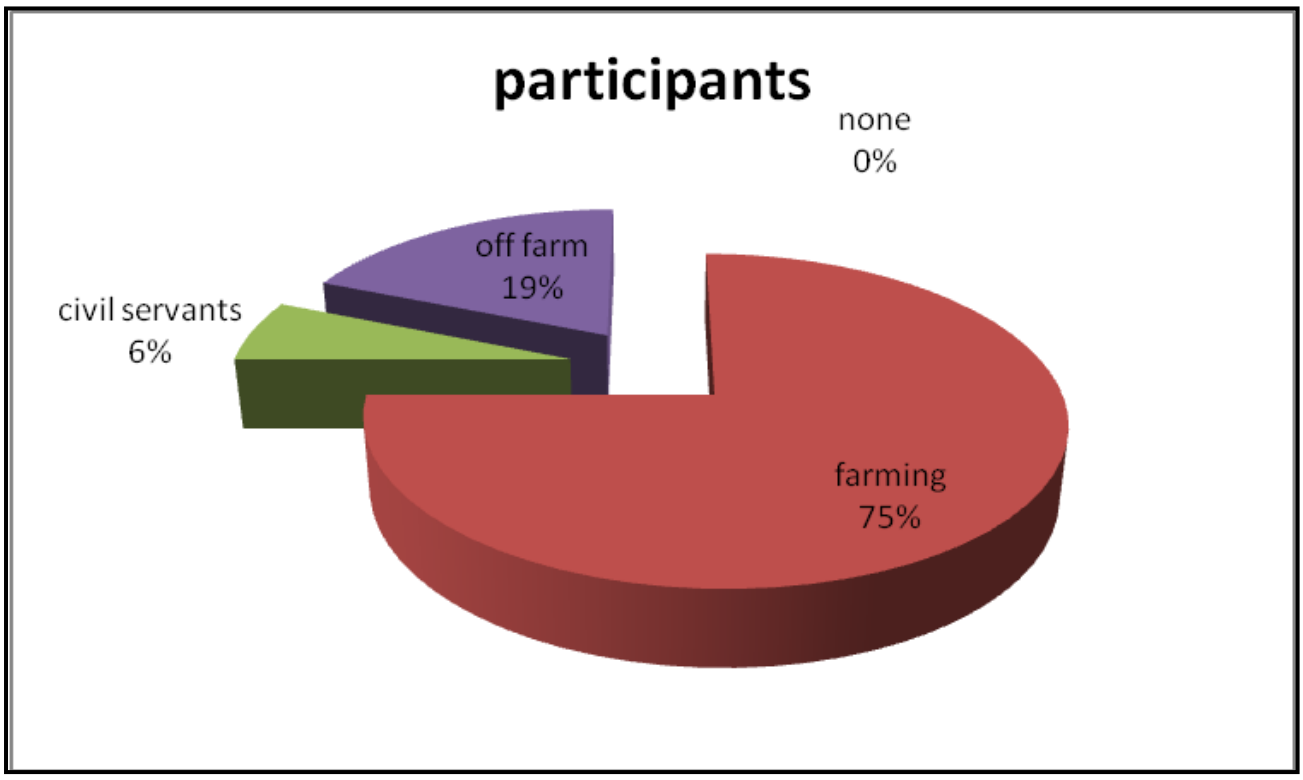


Figure 4. 2: Percentage share of occupation in participation
Source: Field Survey, 2009

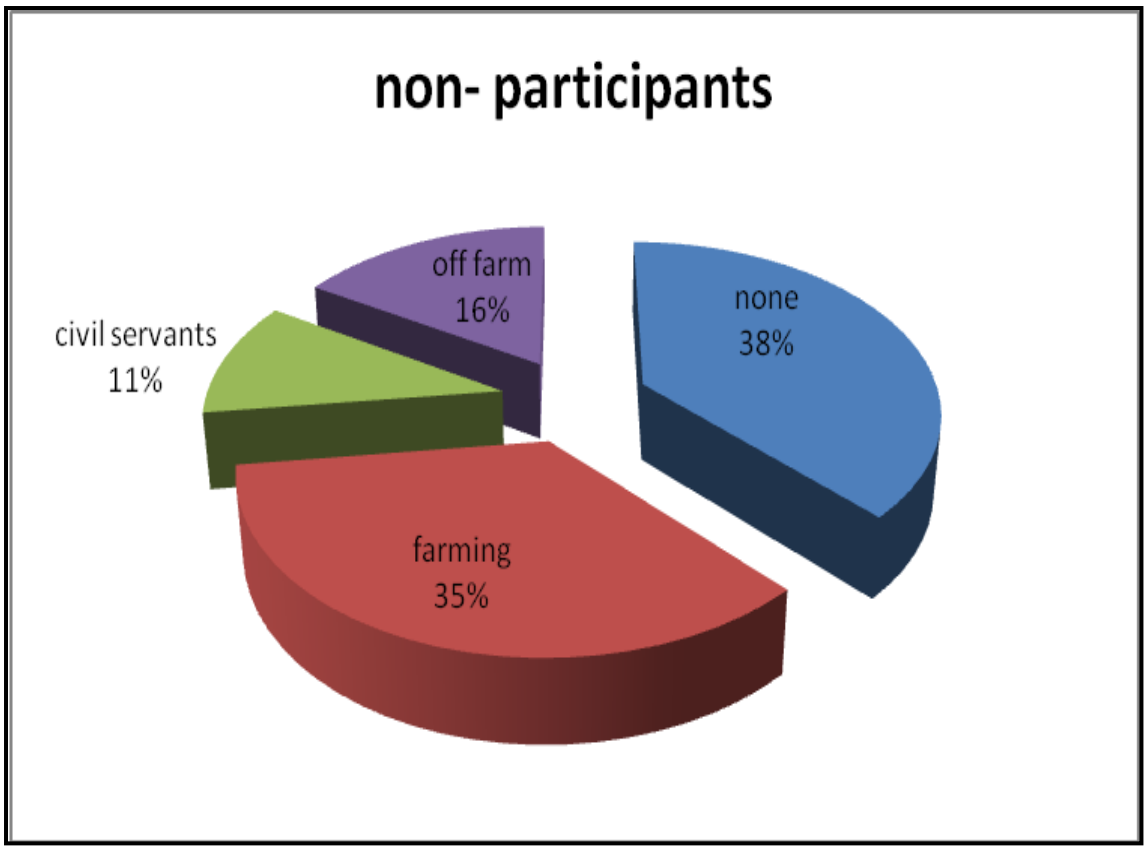


Figure 4. 3: Percentage share of primary occupation for non-participants
Source: Field Survey, 2009

Comparing the two Figures, it is clear that the majority of non-participants did not consider farming as a primary occupation. The results indicate that non-participants were either civil servants (about 11%) or did nothing else, whereas only 6% of participants considered agriculture as a secondary occupation. Only 35% of the non-particiapants were farmers. Findings also reveal that primary occupation has a correlation value of -0.078 to participation. There is a negative relationship between farming and participation.

4.4 Impact of Project on Livelihood Activities

The Sustainable Livelihoods Framework predicts that the introduction of a development initiative would, all things being equal; improve livelihoods of the beneficiary households and communities through creating new opportunities for socio-economic participation. This study examined the activities that the beneficiaries

adopted in relation to the production and marketing of the maize as a result of their participation in the Massive Food Production Programme (MFPP). Among the activities that could have a positive impact on livelihoods in relation to maize production were adoption of improved varieties, maintenance of seed banks, seeking out extension assistance or being receptive to technical information available at the Provincial Department of Agriculture, and engaging in maize marketing. At the beginning, the proportion of the sample households that grew maize in the year preceding the survey period was examined. Then the place of maize in the farming system was determined by examining the proportion of the households that grew other crops. This information provided some insight into the relative popularity of maize and to what extent the MFPP was succeeding in creating awareness about the importance of producing the maize crop in the survey communities. The constraints to crop production were also examined. Finally, the study also examined the role of livestock production in the livelihoods of the beneficiary communities.

4.4.1 Maize Crop Production

A principal objective of the MFPP is to increase the proportion of households growing the traditional staple, maize, thereby ensuring food security. The study revealed that most people produce maize. As can be seen on Figure 4.4, 40 people produce maize. Only 42.9 percent does not produce maize.

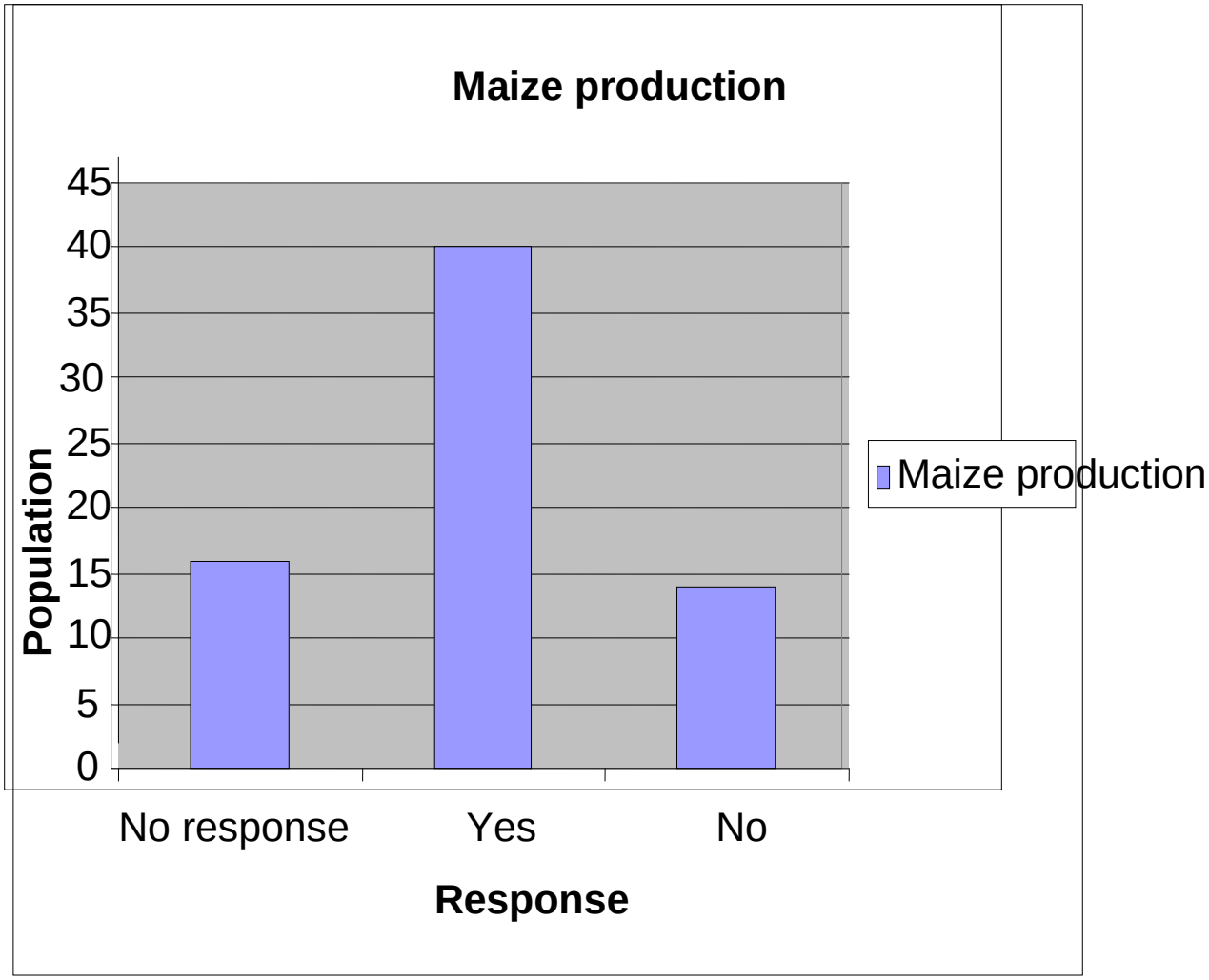


Figure 4. 4: Frequency of maize production
Source: Field Survey, 2009

4.4.2 Other Crops Production

On average, each household was growing 3 types of crops. In general, over 13 types of crops were being grown in the area of which most of them are vegetables. Table 4.14 presents the major crops grown by the households.

Table 4. 15: Type of Crops Grown

Crop	Frequency	Percentage (%)
Maize	40	57.1
Spinach	12	17.1
Beans	18	25.7
Potatoes	42	60
Cabbages	15	21.4
Butternut	17	24.3
Tomatoes	23	32. 9
green pepper	27	38.6
carrots,	20	28.6
Beetroot	22	31.4
onion	14	20
Broccoli	6	8.6
peas	13	18.6

Source: Field Survey, 2009

As expected, more than half of the households reported that they grew maize (57.1%). Other major crops, grown included cabbages, beans, spinach, and Irish potatoes. It can be observed that the crop production was all encompassing, as it comprised of cereals, legumes, roots and vegetables. Thus this diversification would ensure that the households are food and nutritionally secure and though there are limited household income from crop production. The cabbages are mostly produced as a source of income though it can also be used to supplement nutrition requirements of the households. In the top five of the crops produced are potatoes which are produced by 60 percent of the sampled population. Maize is the second most produced (57.1 %), followed by green pepper (38.9%), then tomatoes (32.9) and fifth, beetroot (31.4%). This shows that maize production did not hinder the production of other crops.

4. 4.3 Use of maize crop improved varieties

The study revealed that the use of improved varieties was limited. As shown in Table 4.17 a large proportion of these households (about 47.1%) were growing local maize variety. These results are inconsistent with the findings from Machingura (2007), most smallholder farmers mainly use certified seeds for maize. In Machingura (2007) fifty-two percent of farmers predominantly were using certified seeds because they have either been advised to do so by extension officers.

Table 4. 16: Use of improved varieties

	Frequency	Percent	Valid Percent	Cumulative Percent
Not applicable	21	30.0	30.0	30.0
yes	16	22.9	22.9	52.9
no	33	47.1	47.1	100.0
Total	70	100.0	100.0	

Source: Field Survey, 2009

Among other reasons, farmers preferred growing local maize to hybrid and composite varieties because they do not have income to purchase seed. However, those that participate use seed provided by the government. According to GRAIN (2008), Massive Food Production Programme's conditions included "replacing of farmers' varieties with hybrids and GMOs." Therefore, in the proportion of improved variety users were expected. Participants consist of more 45% of the sampled population and the seeds provided are improved varieties. These results show that most of the participants are unaware of what improved varieties are and that they are using improved varieties. These results are congruent with the findings by African Centre for Biosafety (2007), this shows that information about improved varieties is not in the public domain. There is inconsistency in information dissemination from the extension officers to the public. Other sources of seed include Umtiza, a cooperative in Nkqonkqweni. According to African Centre for Biosafety (2007), seed distributed by Umtiza Farmers Corporation are hybrid and genetically modified.

4.4.4 Seed Banks

All the sampled villages reported that they do not have seed banks. Seed banking is seed storing whereby, the stored seed is destined for crop production. They vary according to storage methods, and the institutional arrangements needed to set up and maintain these seed banks (Lewis and Mulvany, 1997). Seed banks can be categorised as.**individual seed storage** whereby seed is retained on-farm by millions of separate farming households throughout the world. This is by far the most prevalent method of storing seed, and or **collective seed storage**. This type of seed storage occurs when farmers, either self organised, or assisted by outside organisations coordinate the storage of the seed they need for planting. According to Berg (1996), there has been an increase of NGO-led, farmer-participatory collective seed storage projects since 1987 in Malawi, although this type of seed storage does have roots in indigenous cultures, in the last decade or so. Most of the farmers did not know what it was. However, in Majali, the farmers have a store house for their produce. These results shows that this is not a culture the South African are familiar with collateral seed banking.

4.4.5 Extension service provision

The government is the main extension service provider. The sampled villagers reported provision of extension services in their area. Table 4.16 represents findings on extension services comment.

Table 4. 17: Farmers perception on extension services provided

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Have no comment	39	55.7	55.7	55.7
Excellent	12	17.1	17.1	72.9
Satisfactory	19	27.1	27.1	100.0
Total	70	100.0	100.0	

Source: Field Survey, 2009

Most of the rural population the farmers (55.7%) did not acknowledge the visits of the extension officers. most (27.1%) of the farmers that participated in the Massive Food Programme were satisfied with their services. A 17.1% of the sampled population

consider the services excellent. Compared to the findings from Machingura (2007) the extension services were improved. However, the farmers requested more regular visits of extension officers in Komkhulu and in Majali. This shows that the improvement was good enough although equitable availability of extension services for all MFPP farmers has not yet been attained. The extension officers offer advice on crop production as well as explain the government programmes that are available to the farmers.

4.4.6 Maize trading

Marketing is one area that is still a challenge to the Massive Food Production Programme participants. Marketing of the maize is mostly informal. Table 4.17 give the findings on maize trading.

Table 4. 18: The produce markets available

Presence of Produce Market	Frequency	Percent	Valid Percent	Cumulative Percent
Unapplicable	29	41.4	42.0	**42.0**
Local	31	44.3	44.9	**87.0**
In the city	3	4.3	4.3	**91.3**
contractors	2	2.9	2.9	**94.2**
Proveg	4	5.7	5.8	**100.0**
Missing	**1**	**1.4**		
Total	**70**	**100.0**		

Source Field Survey, 2009

Most of the maize crop was sold locally (44. 9%). Maize produced by the farmers is sold to the local people from the store house. The participants have a fixed price for their produce, which is lower than the market prices. In Majali the farmers also sell green mealies to both local traders and other traders from neighbouring villages. The traders usually determine prices. Those that sell in the city and to contractors were a few constituting 4.3and 2.9 percent respectively. The farmers who sell their maize

produce in the city take their own green maize to the city. They sell their produce to the people and other hawkers. Four sell to ProVeg. There is a great need to deal with this issue in order to adequately support the production effort of farmers.

4.4.7 Constraints in crop production

There were multiple responses given on the constraints faced in crop production. The constraints are presented in Table 4.18. Most of the farmers face at least five challenges. These challenges include lack of fertilizer, lack of credit facilities, shortage of land and lack of credit facilities.

Table 4. 19: Constraints faced in crop production

		Frequency	Percent	Valid Percent	Cumulative Percent
No fences		17	24.3	24.6	**24.6**
Shortage of land		13	18.6	18.8	**43.5**
Lack of credit facilities		6	8.6	8.7	**52.2**
Inadequate Labour		2	2.9	2.9	**55.1**
Lack of herbicides		10	14.3	14.5	**69.6**
Pesticides		4	5.7	5.8	**75.4**
Shortage of improved seeds		2	2.9	2.9	**78.3**
Fertilizer		4	5.7	5.8	**84.1**
Limited access to technologies		1	1.4	1.4	**85.5**
Lack of finances		1	1.4	1.4	**87.0**
Delays from Contractors		3	4.3	4.3	**91.3**
Livestock		6	8.6	8.7	**100.0**
Total		**69**	**98.6**	**100.0**	
Missing	**System**	**1**	**1.4**		
Total		**70**	**100.0**		

Source: Field Survey, 2009

From the table 18.8 % of farmers do not have land for crop production. ten households reported lack of herbicides. Others (24.6 percent) do not have fences around their gardens making the crops of 8.6% of these vulnerable to livestock damage. Most of the Massive Food Programmes were provided with farming equipment and they obtain some of the equipment from contractors. Results reveal that 4.3 percent face problems of delays from contractors.

4.4. 8 Livestock Production

Livestock production is an important part in the Eastern Cape Province. This is also revealed in the findings of this study. Figure 4.5 show the percentage livestock production constitute in the livelihood of the rural people of Middledrift and Peelton.

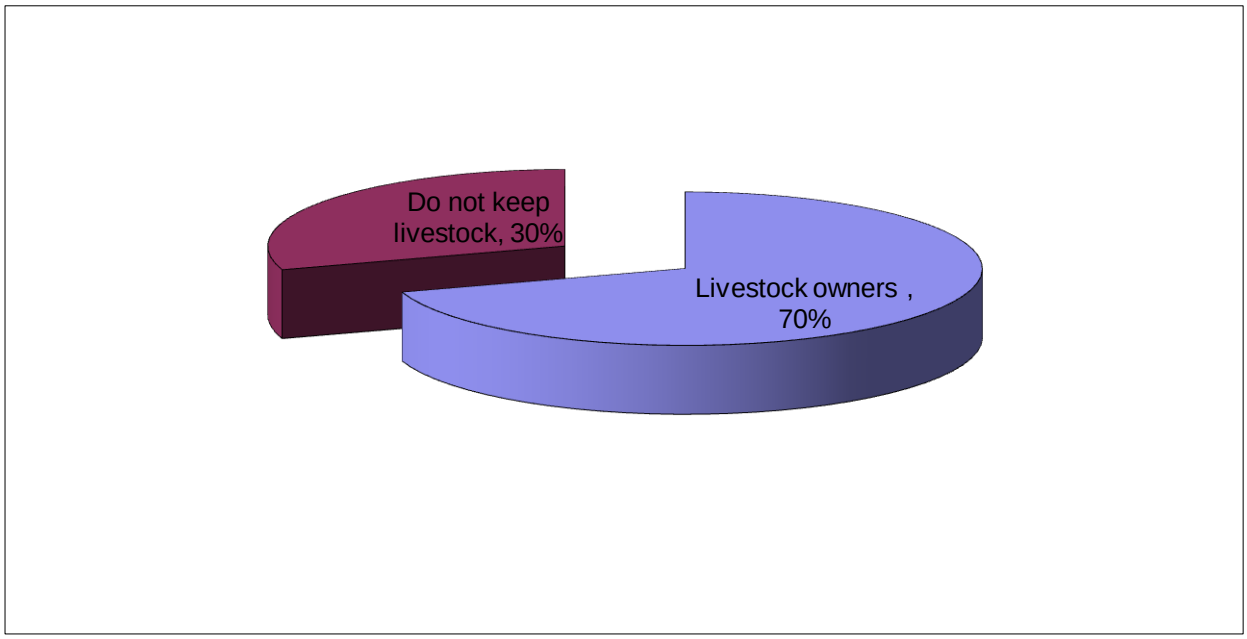


Figure 4. 5: Production of livestock per household
Source: Field Survey, 2009

The study revealed that livestock production is an important strategy in the sampled population's livelihood. The results show that 70%of the respondents in Ngwangwane kept livestock, and the percentages of respondents in Nkqonkqweni, Majali and Komkhulu were 63.8%, 78.9% and 66.7%, respectively.

A larger proportion of the non-participating respondents indicated that they kept livestock. Table 4.20 summarises the findings of the study. More than 50% of the participants kept livestock, 23 of the 32 participants were livestock producers. The participants who keep livestock are more compared to those who never participated; they are 71.9% and 67.9% respectively. This shows that the participants have a diverse source of income from agricultural production. This is another indicator that despite maize production, the government can successfully use livestock production as a strategy for poverty alleviation. The future programmes need to further emphasize the importance of both crop and livestock diversification so that during crises sales can be made without compromising productivity of a single enterprise.

Table 4. 20: Livestock production by participation and village of respondents

PARTICIPATION LEVEL		Village					Total
		Mdeni	**Ngwangwane**	**Komkhulu**	**Nkqwonkqweni**	**Majali**	
Participant	yes				9	14	23
	no				7	2	9
	Total				16	16	32
Never participated	yes	1	4	6	8		19
	no	0	1	3	5		9
	Total	1	5	9	13		28
Once participated	yes				4	1	5
	no				0	2	2
	Total				4	3	7
Intent to participate	yes				2		2
	no				1		1
	Total				3		3

Source: Field Survey, 2009

The farmers own different types of livestock including goats, chickens, pigs and cattle. The numbers of livestock kept by participation level are shown in Table 4.21.

Table 4. 21: Ownership of livestock by participation farmers

Type of livestock	**Total livestock available**				
	Participants	**Never participate**	**Once predicated**	**Intent to participate**	**Total**
Local chicken	145	153	14	5	**317**
Local goats	215	52	26	0	**293**
Cattle	171	90	8	0	**269**
Pigs	10	3	3	2	**18**

Source: Field Survey, 2009

The results indicate that participants kept the most number of livestock. It also indicated that most of the livestock kept are small stock constituting 70%. The large stock, cattle, constitutes 30% of the livestock kept.

4.5 Livelihood Outcomes

This section presents the results of assessment of the impact of the Massive Food Production Programme on the livelihood outcomes. A general overview of evidence of poverty reduction among the participants in comparison to non-participants is represented. Indicators such as income levels, food security, income distribution and inequalities, diversification of income sources as well as increase in maize yield were analyzed. Improved quality of life and availability of food insecurity coping strategies were also analyzed as evidence of reduction in poverty. The analysis covers the outcome at individual level as well as at the level of the cooperatives.

4.5.1 Diversification of income sources

Food security is not only about availability of own food at household level but also access to food. One of the key areas the Massive Food Production Programme aimed at was the diversification of the economic base through the increase of income from

crop production. Income levels were classified using the turnovers. Turnover in this study was defined as the total income received by a household from their various livelihood activities. The highest turnover level was classified as more than R100000 and low turnover as at less than R10000. The sources of income include pension grant, remittance as well as sales from crop production and livestock production. The Table 4.22 below compares the average annual income realised from different sources.

Table 4. 22: Average income from different sources

	N	Maximum	Mean
SALARY	70	1200000	21908.57
GRANT	68	29760	7660.59
PENSIO	70	11520	1004.00
CRPSELL	70	900	12.86
LSTKSELL	70	37700	4080.64
REMMIT	70	28800	1788.00
Total income per year	70	1200000	36235.79
Valid N (list wise)	68		

Source: Field Survey, 2009

Table 4.22 indicates that the highest income was from salaries with the highest amount being R10 000 per month. This is followed by the income from income from livestock sale then social grants amounting to R37700 and R29760 respectively. The least cash is obtained from crop sells having a minimum income of R12.86 per annum.

4.5.2 Income distribution and inequalities

According to the National Business Act Bill 2003, all the farmers are classified under the micro business enterprises categories because they earn less than R200000.In this study, three turnover classes were generated and these are the low turnover group, medium turnover group and the high turnover group. The low turnover group has a total annual income of less than R10000 and the high turnover group has at least

R100000. Evidence from the study revealed that the majority of the respondents are in the middle turnover (MTG) group. This is clearly presented in Figure 4.6.

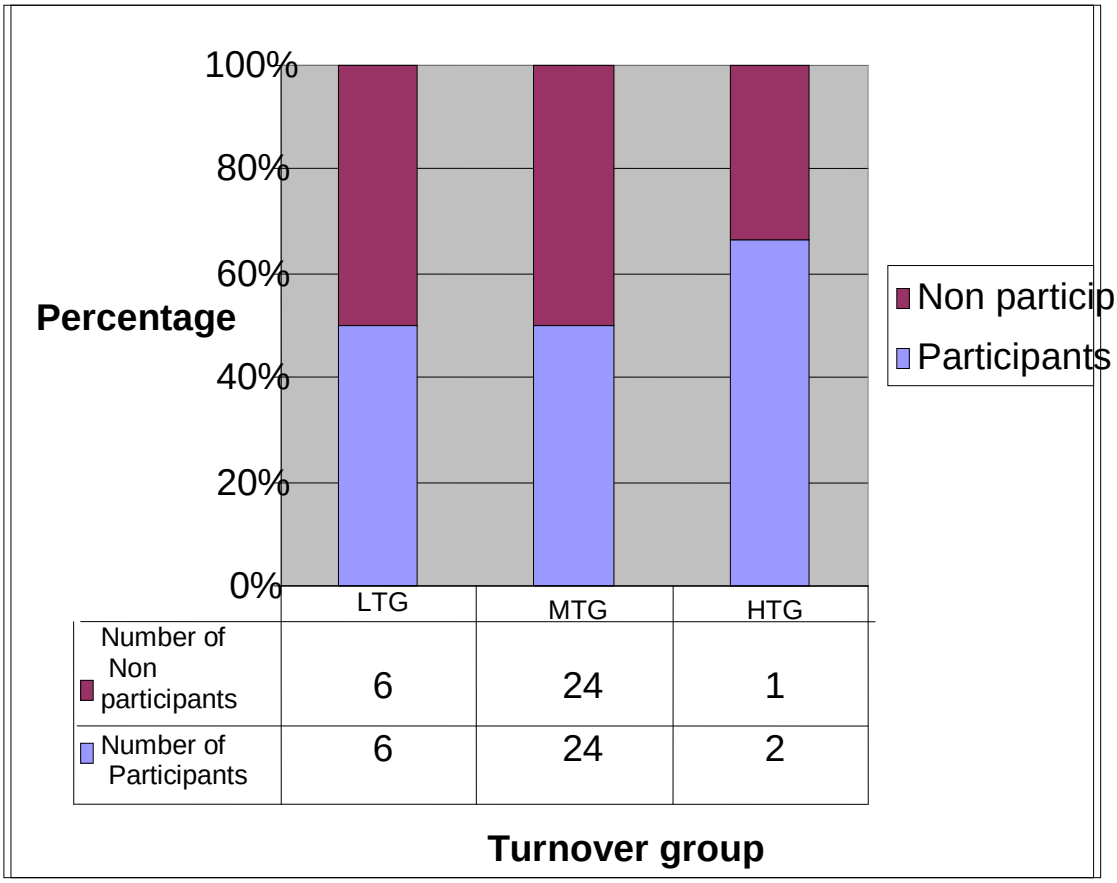


Figure 4. 6: Turnover group by participation
Source: Field Survey, 2009

Figure 4.6 shows that there equal number of participants and non-participants in the lower and the medium turnover group class. There are however, more participants than non-participants in the High turnover group. There is a possibility that the Massive Food Production Programme improved the income of the participants since the programme considered only those that were previously disadvantaged.

4.5.3 Food security

Most of the people who participated in the Massive Food Programme were food insecure. Table 4.23 represents the food secure participants over the past three seasons. Out of the 32 participants only 6 were secure. In this study, food security was measured as availability of food all year round. Literature reviewed in section 3. 4. 1.

3, food security encompasses food availability, food access and food use. Due to lack of income and medical expertise, food availability was the only measure that was considered in this study. Lack in food for at most three months in the years 2008/2007, 2007/2006 and 2006/2005 was chosen as an indicator of food scarcity. Those that were average lacked food for more than three month but less than six months in the same periods. This shows that the Massive Food Production programme has not yet been able to ensure food security for the participants.

Table 4. 23: Level of food security of participants

Village	Participation	Food security level		Total
		Food Secure	Average food secure	
Nkqwonkqweni	Participants	3	0	3
Majali	Participants	3	1	4
	Total	6	1	7

Source: Field survey, 2009

4.5.4 Increase in maize yield

The maize yields are still very poor at household level as shown in Table 4.24.

Table 4. 24: Maize yields per household level

Yield per Ha/Kg	Frequency	Percent	Cumulative Percent
0-50	65	92.9	92.9
50-100	3	4.2	97.1
100-150	2	2.8	100.0

Source: Field Survey, 2009

Most of the respondents produce less than 50kg/ ha (92.9%) and only two individuals produce than 100kg /ha. According to Fanadzo, Chiduza, Mnkeni, van der Stoep and Stevens (2010), the potential yields under best husbandry practices average about 2.4 tonnes of maize per hectare. The maize yield in the studied areas is very low.

4.5.5 Availability of food insecurity copying strategies

There are five main copying strategies. The types of strategies are shown in Table 4.24. The two main strategies used are government grants and selling livestock at 41.2percent and 23.5 percent respectively.

Table 4. 25: Insecurity coping strategies

Coping Strategies	Frequency	Valid Percent	Cumulative Percent
Government grants	14	41.2	41.2
Borrow grain	3	8.8	50.0
Borrow money	8	23.5	73.5
Sell livestock	2	5.9	79.4
Substitute meals/food for less preferred food	1	2.9	82.4
Reduce number of meals served per day	3	8.8	91.2
Reduce quantity of food per individual	1	2.9	94.1
Business	2	5.9	100.0
Total	**34**	**100.0**	

Source: Field Survey, 2009

4.6 Impact of the Massive Food Programme on the Community

Group of farmers joined together their small plots in order to meet the requirement of 50ha of land for production, forming small cooperatives. The case study presented in Box 4.1 clearly demonstrates the positive impacts of the Massive Food Programme at community level.

Box 4. 1: Impact of MFPP at cooperative level: Case Study of Nodhala cooperative.

Nodhala is a cooperative that is located in Majali, Peelton. 44 members of the Nodhala cooperative joined together and applied for the Massive Food Programme contract. Then, the land in Majali was not being utilized fully. The land had no one to cultivate since others had migrated. Land tillage was done through draught power and funds were limited. The Massive food programme scheme started in 2004. At present there are only 33 farmers, 18 women and 15 men and this cooperative is one of the success stories of the 15 MFPP schemes established in the Amathole District, Eastern Cape.

In 2004, when the project started the project was able to produce 100kg per hectare. The yields was poor because of delays the implementation. Planting started in February 2005, instead of November the previous year. In its second year the programme was able to produce 1. 5 tonnes per hectare and in 2006, the yield increased to 2.5 tonnes per hectare. In the fourth year of the project the harvest was 5.5 tonnes per hectare. The maize yields showed an increasing trend. It is evident that there is an improvement in maize production by the Massive Food Programme participants.

The produce is sold at R100 per 50kg bag of maize to the local people. Maize was also sold as green mealies to the local people. In an effort to ensure food security to the cooperative members, each member is given 200kg of maize.

From the profit obtained from this programme, the cooperative bought a maize sheller, sewing machine to seal the bags of maize and built a storage facility. The money that is realized is also saved in the bank. They also managed to get two tractors.

4.7 Factors Determining a Positive Impact on Livelihoods

A regression analysis was performed to estimate the factors that influence livelihood outcomes. For this, improvement in the asset base was chosen as the dependent variable. Improvement in assets was identified as the acquisition of assets (what the house is made of, home appliances and farming implements) in the previous 5 years (2003-2008).

4.7.1 Factor analysis

Explanatory variables selected in this study were based on findings from literature on Sustainable livelihoods. The variables selected were explained above under the classifications of demographic characteristics and livelihood strategies. Factor analysis was then used to select fewer variables that can be used to explain impact of the Massive Food Programme of livelihoods.

The nine factors were suggested by the Eigen values and were explained by 83.2 % of variance in the participation components. Table 4.26 summarizes the component score of these factors and commonalities.

Table 4. 26: Principal components that affect improvement in asset

Variables	Component Score									Commonalities
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**	**Factor 5**	**Factor 6**	**Factor 7**	**Factor 8**	**Factor 9**	
Village of the respondents	-.286	-.478	-.195	.072	.084	**-.569**	.440	.023	.028	.880
actual age of head	**-.557**	.169	-.078	.096	.228	.004	-.053	.302	**.576**	.832
gender of head of household	-.149	-.420	.217	.018	.111	.379	.153	.154	-.483	.682
actual household size	-.227	**.622**	.069	-.434	.115	.127	.301	.239	-.129	.825
Education level of the head	**.677**	-.277	-.005	-.101	-.240	.251	.245	-.260	-.063	.797
number of dependencies	-.297	.406	.009	-.023	.079	.431	**.615**	.258	.138	.909
the asset ownership level	.408	-.333	.530	-.055	.193	.032	-.201	-.021	.317	.741
do you participate in decision making	.335	.132	-.486	.353	-.257	.193	-.075	.024	.313	.698
household head primary occupation	-.202	.239	.573	-.385	-.154	.237	-.095	-.041	.063	.670
did you receive any training	**.656**	.273	.066	.266	-.435	.125	.058	.232	.023	.843
Selling maize	.097	**-.680**	.012	.138	.065	.244	-.028	.154	-.009	.579
maize production	**.572**	.215	.234	-.394	-.073	-.212	.264	-.103	.025	.715
production of other crops	-.345	**-.632**	.263	.110	.360	.355	-.005	.229	.006	.908
constraints in production of maize	.148	.016	.508	-.158	.279	.137	-.005	-.431	.416	.761
do you keep livestock	-.342	.294	.190	.313	-.493	.346	-.349	-.041	-.117	.837
food security level	-.498	.375	.295	.080	.077	-.225	-.208	-.172	-.327	.718
SALARY	**.657**	.226	.208	.375	.427	-.098	-.086	.179	-.147	.920
GRANT	**-.647**	.342	.053	.338	.309	-.043	.023	-.242	-.019	.810
Pension	.106	.115	-.499	-.456	.232	.098	-.466	.331	.016	.872
Crop SELL	**.687**	.294	.239	.297	.163	-.091	.153	.236	.004	.818
Livestock SELL	.301	.004	-.470	**-.611**	.294	.220	-.104	-.185	-.099	.873
Remittances	-.105	.089	-.452	.312	.176	.404	.214	**-.518**	.038	.830
Total income per year	**.513**	.354	-.105	.281	**.669**	.080	-.093	-.076	-.170	.976

Source: Field Survey, 2009

Those with the highest commonality values were 0.920 and 0.976 for salary and total income per year respectively. The values in bold represents the significant variables included in the survey.

4.7.2 Factors selected in the regression model.

Seventeen variables were identified. These are the variables that were included in the regression model. The estimated factors that affect participation functioned as explanatory variables and their values as factor scores (Senile, 2007). Factor scores are scaled such that the variance of one is obtained and mean is equal to zero. Table 4.27 specifies the variables that were selected in the model.

Table 4. 27: Explanatory variables selected for the regression model

	Variable	ASTONWLV	Village	Patpd	Age	Vilperd	hhsize	Elh	Dep#	Skltrain	Other	Salary	Grant	crpsell	lvstk	Remitances	turnover	Turnover group
	ASTONWLV	6.74	-0.87	-0.07	-0.01	-0.01	-0.02	-0.3	-0.07	-0.06	0.09	0	0	0	0	0	0	-0.32
	VILLAGE	-0.87	0.21	-0.02	0	0	-0.01	0.01	0.02	0.01	-0.03	0	0	0	0	0	0	0.07
	PATPD	-0.07	-0.02	0.03	0	0	0.01	0	0	0	0.01	0	0	0	0	0	0	-0.01
	AGE	-0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.01
	VILPERD	-0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	HHSIZE	-0.02	-0.01	0.01	0	0	0.02	0	-0.01	0	0.01	0	0	0	0	0	0	-0.01
	ELH	-0.3	0.01	0	0	0	0	0.12	0	-0.01	-0.03	0	0	0	0	0	0	-0.02
	DEP#	-0.07	0.02	0	0	0	-0.01	0	0.03	0	-0.01	0	0	0	0	0	0	0.02
	SKLTRAIN	-0.06	0.01	0	0	0	0	-0.01	0	0.01	0.01	0	0	0	0	0	0	0.01
	OTHER	0.09	-0.03	0.01	0	0	0.01	-0.03	-0.01	0.01	0.05	0	0	0	0	0	0	-0.02
	SALARY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GRANT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CRPSELL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	LSTKSELL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	REMMIT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTENOVA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TRNOVGR	-0.32	0.07	-0.01	-0.01	0	-0.01	-0.02	0.02	0.01	-0.02	0	0	0	0	0	0	0.17
EST		3.43	-0.64	0.07	0	0.01	-0.15	0.29	-0.03	-0.1	0.11	0	0	0	0	0	0	0.57
SE		2.6	0.46	0.16	0.02	0.02	0.12	0.35	0.17	0.11	0.22	0	0	0	0	0	0	0.41
SIG		0.21	0.19	**0.69**	**0.99**	**0.59**	0.25	0.43	**0.85**	0.36	**0.64**	**0.62**	**0.62**	0.28	**0.66**	**0.86**	0.6	0.19
DFE		14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Source: Field work 2009

The other variables were dropped because either they did not have enough observations or were insignificant in any model. The table shows the significance levels of the variables. The factors that were chosen from the factor analysis are period of participation, age of head of household, period one was staying in the village, number of dependencies, production of other crops, salary income, grants income, income derived from selling livestock and remittances. Table 4.28 shows the descriptions of factors that were represented in the model.

Table 4.28: Variables subjected to factor analysis prior to the regression analysis

VARIABLE	DESCRIPTION	UNIT
DEPENDENT VARIABLE		
CL1	Highest level of asset improvement 1 if there was were more than 10 assets less than 5years old	DUMMY
CL2	Average level of asset improvement 1 if the household has 5to 10 assets less than 5years old	DUMMY
CL3	No change in asset base 1 if the household has less than 5 assets which are less than 5years old	DUMMY
INDEPENDENT VARIABLES:		
PARTICIPATION	1 for participants	DUMMY
VILLAGE	1 if the village of the respondent is in Peelton	DUMMY
PATPD	Actual years one participated	
AGE	Actual age of head of household	
VILPERD	Period of respondent in the village	
HHSIZE	Actual household size 1 if household is has more than 3members	DUMMY
ELH	1 if they have at least primary education Education level of the head	DUMMY
DEP#	Number of dependencies	
SKLTRAIN	! if the respondents has gone through training	DUMMY
OTHER1	Production of other crops besides maize	
SALARY	Income from salaries	
GRANT	Income from grants	
CRPSELL	1 if farmer sells crops Income from selling crops	DUMMY
LSTKSELL	Income from livestock sold	
REMMIT	Income from remittances	
TOTENOVA	Total income per year	DUMMY
TRNOVGR	The turn over group	DUMMY

Source: Field Survey, 2009

4.7.3 Development of models

Two models were developed. The first model identified factors that associated with belonging to the higher asset improvement level CL1, Model 2 identified factors belonging to the medium level CL2. The regression model is specified as:

$$P\ (\text{LEVEL OF ASSET IMPROVEMENT}) = ß_0X_0 + ß_1X_1 + ß_2X_2 + ß_3X_3 + ß_4X_4 + \ldots\ldots + ß_{17}X_{17}$$

Seventeen independent variables are presented in the model. The first model is on the characteristics of those who managed to be in the highest level of improvement in asset ownership. Table 4.29 shows the linear regression of the model 1.

Table 4. 29: Variables in model 1

	Unstandardized Coefficients		**Standardized Coefficients**	**t-statistics**	**Sig.**	**95% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
(Constant)	3.500	.689		5.076	.000	1.982	5.018
The turnover group	-.979	.359	-.635	-2.729	.020	-1.769	-.189

Source: Field Survey, 2009.

As is shown in Table 4.29 a single variable was identified as a factor that enables one to be having high asset improvement, the turnover group. The t-statistics is -2.729 and it falls out of the critical region, which lies, between lower bound of -1.769 and upper bound of -0.189. Therefore, the turnover group is a determinant of ability of an individual to improve their asset base. The level of asset accumulation decreases as the turnover group increases. The poorest, in the lowest turnover group, tend to buy more assets than the higher turnover groups probably as a way of enhancing their welfare. According to Schmidt-Hebbel and Serven (2000), variation is expected because people have different needs for different assets. The results show that standardized coefficient of turnover group is negative (-0.635) as expected. This implies a diminishing marginal product with respect to own wealth. The error corrections, represented as

standard error, of using the turnover group as an explanatory variable is 0.359 is lower than of the constant (0.689). The standard error of the constant is significantly higher if it is assumed that there is no external effect of initial assets base of an individual. These findings also confirm Ravallion's (1998) findings that the underlying growth rate at farm-household (or local geographic) level depends on the initial log of some variable at that level, such as the farm-household's capital stock.

The second model shows a partial increase in asset base. The research findings on the factors that cause a medium improvement in the asset base are tabulated on Table 4.30.

Table 4. 30: Variables responsible for an average improvement in the asset base

	Unstandardized Coefficients		**Standardized Coefficients**	**t-statistics**	**Sig.**	**95% Confidence Interval for B**	
Variables	**B**	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
(Constant)	.469	.993		.472	.649	-1.821	2.758
Actual years one participated	-.177	.064	-.652	-2.784	.024	-.323	-.030
village the respondent stays in	.730	.213	1.051	3.430	.009	.239	1.221
actual age of head	.015	.011	.279	1.404	.198	-.010	.039
period of living in a village	-.002	.006	-.070	-.338	.744	-.017	.013
actual household size	.016	.109	.043	.142	.890	-.236	.267
Education level of the head	.391	.198	.585	1.974	.084	-.066	.847
number of dependencies	-.151	.146	-.325	-1.039	.329	-.487	.185
production of other crops besides maize	-.517	.219	-.534	-2.364	.046	-1.022	-.013
GRANT	-1.707E-05	.000	-.200	-.760	.469	.000	.000
PENSIO	3.540E-05	.000	.199	.844	.423	.000	.000
LSTKSELL	2.978E-05	.000	.299	1.046	.326	.000	.000
REMMIT	-1.028E-05	.000	-.049	-.213	.836	.000	.000
total income per year	-7.952E-07	.000	-.283	-1.572	.154	.000	.000
the turn over group	-.630	.365	-.353	-1.727	.122	-1.471	.211
what skills to did you learn	-.230	.164	-.419	-1.404	.198	-.607	.147

Source: Field Survey, 2009.

From Table 4.30, 12 factors were positively associated with the causation of improvement in asset base. These are the skills acquired from training, village of respondent, actual household size, income obtained from livestock sells, as well as number of dependencies, the period one was in the village, income from remittances, production of other crops besides maize, education level of the head, actual age of head, participation period and the turnover group. The presence of variables such as pension and grants refutes the assumptions of a closed economy as assumed by most literature on capital flow, which disregards the role of social security system. The results on each factor's association with medium asset improvement are explained in detail below.

Actual Years One Participated: The standard error is significantly low 0.064, meaning actual period of participation enables an individual to buy more assets. The t-test value was -2.784 and it is not in the critical region, therefore the farmers' the ability to accumulate wealth is determined by the time period an individual has been participating.

Village the Respondent Stays In: the village of respondent was found to affect the improvement in asset base. The study revealed that the beta value was 1.051 and the standard error of leaving it out as a factor was significantly higher than most factors, it was 0.213. Its t-value was not in the critical region (0.239 and 1.221)

Actual Age of Head: Theoretical models generally suggest that equilibrium returns on assets will vary in response to changes in population age structure. According to Poterba (2001), need to acquire wealth decline much more gradually when households are in their retirement years. In this study the standardized coefficient was positive (0.279). This shows that as people are growing older the more they can improve on asset base. The Massive Food Programme was aimed to improve livelihoods therefore the participation is a fostered by the need to accumulate assets.

Period in the village: The period the farmers have lived in a village was found have a negative impact on asset base improvement. Its standardized coefficient had a value of -0.070. This is because once the farmer moves into a new place they need to accumulate assets for as precautionary savings. Precautionary savings are investments done to secure the future, thus to make sure that they are able have a better life. Those who have been dwelling in the village have

somehow attained an element of security. Therefore, long period in the village is a disincentive to improvement in the asset base.

Actual Household Size and number of dependencies: the actual household size a positive standard coefficient (0.043), thus there is a positive impact of household size on asset improvement. The bigger the size, the more likely is the family to improve its asset base. However, results show that as the number of dependencies increases the less likely is the household to improve in its asset base. The standardized coefficient is -0. 325. Comparing the standard error of not using these factors as determinants of asset base improvement, the standard error of the number of dependencies is higher (0.146) than for actual household size (0.043). These variables are good predictors of average asset base improvement since they all lie outside the critical region.

Education Level and skills of the Head: Education level of the head of household has a positive standardized coefficient (0. 585) whereas the skills of the head have a negative standardised coefficient (-0.419). The results on the skills obtained are the least expected, previous studies have proven that acquiring skills improves the welfare of an individual.

External sources of income: external sources of income included Social grants, pensions, and remittances. Increase in income is likely to influence the need to improve the asset base. According to Pote (2007), non-farm income is likely to reduce the farming constraints since it is income that can be used to purchase all the other resources such as seeds and fertiliser needed for production. It was expected that grants, pension and remittances will have a positive impact on asset accumulation. The study revealed that these factors have standard coefficients of 0.199, -0.200 and -0.049 respectively. Thus only grants were used in the acquisition of assets. However, income from remittances and pension is too little for farmers to be able to purchase any assets. The impact of these factors on asset accumulation is zero therefore these factors' impact is negligible, therefore can be ignored.

Chapter 5

SUMMARY OF KEY FINDINGS AND IMPLICATIONS

5.1 Introduction

This chapter attempts to bring together the most important findings of this study and discuss the implications for future research which will be proffered as policy recommendations. The conclusion relates to the research problems stated at the beginning, and is achieved by trying to provide answers to each of the research questions asked in chapter one. Reference is also made to the findings of the literature review.

5.2 Summary of Key Findings

As has been indicated in the foregoing, the key findings relate to the factors affecting participation in the Massive Food Production Programme, the range of livelihoods activities adopted by the beneficiaries as a result of their participation in the production of maize under the MFPP, the major livelihoods outcomes associated with participation in this programme, and the impact of the programme on overall livelihoods index of the beneficiary communities.

5.2.1 Factors that affect participation

The study revealed that remittances, skills acquired from training, village of respondent, actual household size, income obtained from livestock sells, as well as the period one was in the village, income from remittances, production of other crops besides maize, education level of the head, actual age of head, participation period and the turnover group influence participation of farmers in Massive Food Programme. This proved that resource availability affects livelihood activities pursued by a household. There is a need to look at such factor when planning an intervention.

5.2.2 Livelihood activities

Livestock production, remittances, grants and pensions are important sources of livelihoods. Agricultural activities are secondary source of income especially livestock production. The study revealed that household income is prevalent only amongst households with one or more members in permanent wage work. Returns from agriculture are the lowest compared to remittances and social grants especially crop production. It is worthwhile to encourage small enterprises to venture into the non-farm sector in order to ensure a health and welfare safety net. This study revealed that the total income one obtains will impact on the welfare of increase returns from small-scale farming.

The study revealed that farming is the major occupation for the rural population. The respondents are mostly economically inactive meaning that agriculture is the major occupation for retired rural population.

5.2.3 Livelihood outcomes

Despite that the rural population consider farming as primary occupation; grants, pensions, remittances, as well as salaries are the major sources of livelihood income. Most of the agricultural income is derived from livestock production. There is a need of other interventions other than maize production for example livestock production. The study revealed that livestock production is one of the main sources of income that improve livelihoods in areas like Komkhulu and Ngwangwane.

5.2.4 Impact of Massive Food Production Programme on Livelihoods.

The Massive Food Production Programme has not managed to fully ensure food security to its participants. Though the Farmers in Majali are provided with 200kg of maize from their

cooperative there are still susceptible to food insecurity. Overspending during the festive season is the major cause of many individuals running out of food.

This study aimed to determine the impact of Massive Food programme on maize production at household level. The study revealed that maize production is not the major activity and that maize production does not even compare to livestock production as a livelihood strategy. Some of the residents of Nkqonkqweni do not grow maize all at all but, specialize in producing other crops such as vegetable. The main reason can be that they can purchase mealie meal from the income they get from pension and grants to consider maize production as livelihood activity, thus, they produce other vegetable crops other than maize. Therefore the second alternative hypothesis is rejected. It also brings to a conclusion that the maize production is a common practice in Middledrift and Peelton. The study revealed that the success of the Majali cooperative has motivated other projects in Nkqonkqweni. Though the participants in the Massive Food Production Programme have not yet attained food security, the study showed that for a good number of people, improvement of the asset base has taken place. The impact on the direct beneficiaries may not be sufficient to change the overall food security situation in the communities, though there are changes in food availability. Due to lack of time series data on nutritional status and because the researcher was financial limited, it was impossible to trace changes in the nutritional status.

Efficiency of the Massive Food production Programme was compromised by late start up of the activities such as ploughing and seeding in the first year. This serious impeded the performance in other areas.

The study revealed that those who once participated abandoned the scheme because they were not sure of how the funds were being run.

5.3 Policy and Further Study Recommendations

The rural population does not entirely rely on income from crop production. It was revealed from this study that the respondents are also involved in livestock production. Crop production is

affected by environment as was revealed in this study. Respondents in the villages in Middledrift, did not participate in Massive Food Production Programme. In the immediate and short-term period, there is very little that can be done to change the environmental conditions, in order to improve livelihoods through agricultural strategies. According to Sompali (2007), a farmer can do very little to change his physical environment and to solve the problem of production. The rural population in Peelton and Middledrift face various constraints in crop production, the most important of which are lack of fertilizer and herbicides and the absence of fences to keep livestock out of crop fields. Therefore, in order to improve the asset base, there is a need to recognize the diversity of rural livelihoods pursuit. Since the rural people engage in both crop and livestock production as well as other non-farm activities, it is essential to train them to enhance the efficiency of their productive activities so that are able to add value and enhance their livelihoods through participation in marketing.

The study also revealed the extent to which education is still a challenge in rural areas. It is worthwhile to make training and education a cornerstone of development policy in the Eastern Cape. This will enhance the likely effectiveness of mass media in agricultural extension and home economics advisory work. Thus this will solve the problem of lack in extension officers in the rural areas.

In order to ensure buoyant prices to the producers, there is a need to develop the maize markets because in Majali the farmers sell their produce locally. The small quantities that some of these cooperatives managed to sell were sold within their communities at very low prices, therefore realizing small return. According to Sompali (2007), market-orientated agricultural production would be attained through the provision of specific markets for farmers, e.g. contract marketing with wholesalers, retailers and hawkers, where transportation costs form part of the contract. It is important also to teach the farmers about marketing dynamics.

The distribution of improved varieties is likely to affect the smallholder farming thus food security in the Eastern Cape. Unlike open pollinated traditional seeds, hybrid and GM seeds need to be bought every planting season. Therefore, increases in yield for resource poor farmers using new seed varieties is financially demanding for farmers who do not have any access to capital or

other complimentary incomes. Furthermore, Hybrid and GM technologies have been designed for large-scale intensive monoculture production, unless limitations such as lack access to markets, capital, infrastructure as well as research extension services among other necessary forms of support are addressed, commercialisation of the smallholder farming may be impossible. It is recommended that programmes should set aside crisis mitigation strategies to avert use of resources for unintended purposes that eventually distort the impact of interventions.

Further study is required so as to find out the impact of the Massive Food Programme on the overall food security level and changes in the nutritional status of participants. A clearer view is obtained from the analysis of the same respondents to find the impact of the programme over time, and the sustainability of such interventions.

REFERENCES

ADATO, M. & HADDAD, L., 2002. Targeting poverty through-Community Based Public Works Programme: experience from South Africa. *Development studies, vol. 38, no 3*,pp 43-52.

ADELZADEH, A., 1996. From The RDP to GEAR: The Gradual Embracing Of Neo-Liberalism in Economic Policy. Online: http://www.transformation.ukzn.ac.za/archive/tran031/tran. Accessed 2 March 2009.

AFRICAN NATIONAL CONGRESS, 1994. *Reconstruction and Development Programme: A Policy Framework*.

AFRICAN CENTRE FOR BIOSAFETY, 2007. Monsanto's "Seed Of Hope Campaign" In South Africa – A Briefing Document. Online: Accessed: 12 November 2009.

AGRAWAL, A., & GIBSON, C., 1999. Enchantment and disenchantment: The role of community in natural resource conservation. *World Development, Vol. 27(4), p. 629-649*.

AKERKAR, S., 2001. Gender and participation: Overview report. Bridge Development Gender Series, Institute of Development Studies, November.

ALIBER, M., 2003. Chronic Poverty in South Africa: Incidence, Causes and Policies. *World Development*, Vol. 31, No3, pp 473-490.

ALTARELLI, V. & CARLONI, A., 2000. Inter-Agency Experiences and Lessons Food and Agricultural Organisation, Rural Development Division.

AMATHOLE ECONOMIC DEVELOPMENT AGENCY (AEDA), 2007. Amathole Economic Development Agency 2006/7 Annual Report. Online: aspire.org.za/reports/AEDA%20. Accessed: 13 March 2009

ANSEEUW, W. & MATHEBULA, N., 2008. Land reform and development: evaluating South Africa's restitution and Redistribution programmes. Pretoria, University of Pretoria, *Kellogg's Foundation, Research Paper No 2008/1, 67p.*

ANSEEUW, W., 2004. Politiques publiques et reconversion professionnelle versl. Agriculture marchande. Le cas des mineurs du Northern Cape. Grenoble, Université Pierre Mendès France, Thèse de doctorat en Economie Internationale, 420p.

ASHLEY, C. & HUSSEIN, k., 2000. Developing Methodologies for Livelihood Impact Assessment: Experience of the African Wildlife Foundation in East Africa. *Working Paper 129,* ODI.

ASHLEY, C., 2000. Applying Livelihood Approaches to Natural Resource Management Initiatives: Experiences in Namibia and Kenya. ODI Working Paper 134, ODI, London.

BAHIIGWA, G., SHINYEKWA, I., RIGBY, D., WOODHOUSE P. & HOWLETT, D., 2002. Sustainability Indicators for Natural Resource Management & Policy: Sustainability Indicators for farming-based livelihoods in Uganda, Final Country Report. DFID, London.

BALINDELA, N., 2006. Outline of Provincial Growth and Development Plan. Online: http://www.amathole.gov.za/files/documents/170807100127.pdf. Accessed: 22 September 2008

BEAUMONT, P. B. 1973. The ancient pigment mines of Southern Africa. *South African Journal of Science Vol. 69, pp. 140-6.*

BEMBRIDGE, T. J., GRAVEN, E. H., HOUGH M. A. AND VAN ROOYEN, C. J., 1982. An Evaluation of the Sheila and Mooifontein Projects, Ditsobotla District, Bophutswana. ARDRI, Fort Hare. No 3/82.

BEMBRIDGE T. J., 1983. A systems approach study of agricultural and rural development in Taiwan, Republic of China. University of Fort Hare Press, Alice.BEMBRIDGE, T.J., 1984. A Systems Approach Study of Agricultural Development Problems in Transkei. *Unpublished Ph.D. thesis*, University of Stellenbosch, Stellenbosch.

BERG, T., 1996. Dynamic management of Plant Genetic Resources: Potentials of Emerging Grass-Roots Movements. *Study No. 1. Studies in Plant Genetic Resources,* Plant Production and Protection Division. FAO. Italy.

BHATTACHARYA, P. C., 1995. The economics of development. *Journal of Economic Studies, Vol. 22 No. 2, pp. 59-74.* MCB University Press, Edinburgh.

BHORAT, H., 2002. A universal income grant scheme for South Africa: an empirical assessment. Development Policy Research Unit, Cape Town.

BLATTMAN, C., HWANG, J. & WILLIAMSON, J. G., 2003. The Terms of Trade and Economic Growth in the Periphery 1870-1938. NBER Working Paper No. W9940. Online: http://ssrn.com/abstract=439621 Accessed: 13 October 2008.

BROWN, K. & ROSENDO S., 2004. Environmentalist, Rubber tappers and empowerment: the politics and economics of extractive reserves. JONES, S. & CARSWELL, G., 2004 (Eds). *The Earthscan Reader in Environment, Development and Rural Livelihoods, pp.104-125*. Earthscan, London.

BUTHELEZI, S., 2007. Provincial Growth and Development Plan (PGDP) Eastern Cape 2004-2014. *African Journal of Developmental Studies, Vol. 1(12) pp. 186-207*.

CARNEY, D., 1999. Approaches to Sustainable Livelihoods for the Rural Poor. Overseas Development Institute, London.

CHAMBERS, R. 1983. Rural Development: Putting the Last First. Longman, New York.

CHAMBERS, R., 1987. Sustainable Livelihoods, Environment and Development: Putting Poor Rural People First. *IDS Discussion Paper 240*.IDS, Brighton.

CHURCHILL, G., 1987.Marketing Research: Methodological Foundations. Holt, New York. CLAASSEN, J.H.D., 2000. Management Profile of Emerging Farmers in the Qwaqwa Area – A Geographical Survey. University of the North, Qwaqwa.

CLARK, D. A., 2002. Visions of Development: A Study of Human Values, Edward Elgar, Cheltenham

CLOVER, T. AND DARROCH, M. A. G., 2005. Owners' perceptions of factors that constrain the survival and growth of small, medium and micro agribusinesses in KwaZulu-Natal, South Africa. *Agrekon* 44(2):238-263.

COBB, C.W. AND RIXFORD,. C., 1998. Lessons learned from the history of social indicators. San Francisco, CA: Redefining Progress.

COMMISSION ON RESTITUTION OF LAND RIGHTS (CRLR), 2003. Land restitution in South Africa: Our achievements and challenges. Department of Land Affairs, Pretoria.

COOTE, C., GORDON, A. AND MARTER, A., 2000. International Trade In Agricultural Commodities: Liberalization and Its Implications for Development And Poverty Reduction in the ACP States. *Policy Series*, Natural Resources Institute, Chatham.

COUSINS, B., 2002. Controversy and consensus in South Africa's land reform programme. Kampala, *Invited paper presented at a World Bank regional workshop on land issues in Africa, 29 April-2 May.*

COUSINS, B. AND KEPE, T., 2004. *Waking up from the dream: The pitfalls of 'fast-track' development on the Wild Coast of South Africa.* Research report No. 8. Programme for Land and Agrarian Studies. University of the Western Cape.

D'HEASE L. AND KIRSTEN J., 2003. Rural Development – Focusing on Small Scale Agriculture in Southern Africa.

DANDEKAR, H.C. AND ACHATZ M.. (undated). Bottom-Up vs. Basic Needs: Alternative Approaches to Development Planning. *Unpublished Manuscript*.

DARROCH, T., 2005. Knowledge management, innovation, and firm performance. *Journal of Knowledge Management,* Volume (9)3, pp. 101-115

DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID), 1999. South Africa Country Strategy Paper, DFID, London.

DEPARTMENT OF AGRICULTURE, 2006. Progress Report on the Implementation of the Comprehensive Agricultural Support Programme (CASP). [May] Directorate Agricultural Production and Resource Management. Department of Agriculture, Pretoria.

DEPARTMENT OF AGRICULTURE, EASTERN CAPE PROVINCIAL GOVERNMENT, 19 March 2008. Food security budget increased by R28 million. Online: http://www.info.gov.za/speeches/2008/08031916451004.htm. Accessed: 12 March, 2009.

DEPARTMENT OF LAND AFFAIRS (DLA), 2000. Perspectives on the Redistribution Target of 15%. Internal discussion paper prepared by the Directorate: Redistribution Policy and Systems for the Departmental Strategic Planning Workshop, 20 March 2000. Department of Land Affairs, Pretoria

DEPARTMENT OF LAND AFFAIRS (DLA), 2006. Comprehensive Agricultural Support Programme (CASP): Draft Progress Report (2003-2005). Department of Agriculture, Pretoria.

DEPARTMNET OF AGRICULTURE MFPP CONTRACT, 2002. Siyakhula/Massive Food Production Programme Contract. Department of Agriculture, King William town.

DEVELOPMENT BANK OF SOUTHERN AFRICA (2005), Development Report 2005 Overcoming Underdevelopment in South Africa's Second Economy, Midrand

(Johannesburg), Development Bank of South Africa (DBSA), Human Sciences Research Council (HSRC), and United Nations Development Programme (UNDP).

DIRWAYI. T. P. & HLANGANISE Y. H., 2005. Problems Faced By Small Scale Agricultural Projects: Case Of (Nkqonkqweni) Peelton Location, Eastern Cape, South Africa. *Unpublished Project Paper*. University of Fort Hare, Alice.

DLOVA, M.R., FRASER, G.C.G. and BELETE, A., 2004. Factors affecting the success of farmers in the Hertzog Agricultural Cooperative in the central Eastern Cape. *Fort Hare Papers* 13, pp. 21 - 33.

DOOLAN, B., 2002. Rural Development for Poverty Reduction. Online: http://www.isgmard.org.vn/Information%20Service/Report/General/CARE-Plenary-02_e.pdf. Accessed: 5August 2008.

EASTERN CAPE PROVINCIAL DEPARTMENT OF AGRICULTURE, 2002. Secret Memorandum: Massive Food Production Scheme through a Conditional Grant Scheme for Crop Production and a Rural Mechanisation Program.

EASTERN CAPE PROVINCIAL GOVERNMENT, 2004. Provincial Growth and Development Plan 2004 – 2014, UNDP South Africa, DFID.

EICHER, C. K., ZALLA, T. , KOCHER, W.. AND WINCH, F., 1970. Employment Generation in African Agriculture. Research Institute of International Agriculture ,Report No. 9. Michigan State University, East Lansing.

ELLIS, F. & BIGGS, S. 2001. Evolving Themes in Rural Development 1950s-2000s. *Policy Development Review,* Vol. 19 (4), pp.437-438

ELLIS, F., 2000. The Determinants of Rural Livelihood Diversification in Developing Countries. *Journal of Agricultural Economics, Vol.51, No.2, pp.289-302*.

EVERATT, D., 2002. The Nature and Purpose of the ISRDP. (Independent Development Trust, Pretoria.

FANADZO, M., CHIDUZA, C. MNKENI1, P. N. S., VAN DER STOEP, I. AND J STEVENS, J., 2010. Crop production management practices as a cause for low water productivity at Zanyokwe Irrigation Scheme. *Water SA Vol. 36 No. 1, pp.27-36.*

FARRINGTON, J., CARNEY, D., ASHLEY, C & TURTON, C., 2004. Sustainable Livelihoods in Practice: Early Applications of Concepts in Rural Areas. In Eds: JONES, S. &

CARSWELL, G. *The Earthscan Reader In Environment, Development And Rural Livelihoods*. Earthscan, London.

FOOD AND AGRICULTURE ORGANIZATION (FAO), 2004. Socio-economic Analysis and Policy Implications of the Roles of Agriculture in Developing Countries. Summary Report, Roles of Agriculture Project, FAO, Rome.

FRYE, I., 2005. Construction and adopting an official Poverty line for South Africa: Some issues for Consideration. National Labour and Development Institute Discussion Document. http://scholar.google.co.za/scholar?as_q=&num=100&as_epq=poverty&as_oq=&as_eq=&as_occt=any&as_sauthors=&as_publication=&as_ylo=&as_yhi=&as_sdt=1&as_subj=bus&as_subj=soc&as_sdts=5&btnG=Search+Scholar&hl=en

GEGE, 2009. Department of Agriculture (Eastern Cape) Extension officer. *Personal interview.*

GOLDER ASSOCIATES, 2004. Resuscitating plan for Taung irrigation scheme. A consultancy report submitted to the North West Provincial Department of Agriculture, Conservation and Environment.

GRAIN, 2008. Lessons from a Green Revolution in South Africa. On line: http://www.grain.org/seedling/?id=568. Accessed 1 December 2008

GROTH, L., 2008. Woman and Livelihoods: A Quantitative Study of Impact of Land Acquisition on the Livelihood Strategies for Female Land Beneficiaries in the KwaZulu-Natal Province. Online: http://ecologize.org/Documents/Groth_2008.pdf. Accessed: 23 March 2010.

GUBU, G., HABIG, J., JOURBERT, M., MADZIVHANDLA, P., MKULA., L., NTANTISO, T., 2005. Investigating Land Use in the Mbashe Local Municipality: Improving Community Based Access to Agricultural Services And Programmes. *Agricultural research for development (ARD) Report Series*, Number 11.

HABIB, A. & PADAYACHEE, V., 2000. Economic Policy and Power Relations in South Africa's Transition to Democracy. *World Development, vol.28 (2),* pp 245-263.

HABIB, A., 2004. The Politics of Economic Policy-Making: Substantive Uncertainty. The Politics of Socio Economic Rights in South Africa: Ten Years after Apartheid. University of Oslo, Norway.

HALL, W. & ROBERTS J., 2006. Understanding the Impact of Decentralisation on Reproductive Health Services in Africa (Rhd): South Africa Report. Health Systems Trust ,Durban.

HEADY, E. O. AND DILLON, J. L., 1961.Agricultural production Functions. Iowa State University Press, Ames.

HEBINCK, P. AND MONDE, N., 2007. Production of crops in arable fields and home gardens. In: P. Hebinck and P.C. Lent, Editors, *Livelihoods and Landscapes: The People of Guquka and Koloni and their Resources*, Brill, Leiden.

HIRSCH, A., 2005. Season of Hope. University of KwaZulu Natal University Press.

HOFFMAN M. T., TODD, S., NTOSHONA, Z. AND TURNER, S., 1999. Land Degradation in South Africa. Cape Town National Botanical Institute, Cape Town.

HOFFMAN, M. T. AND TODD, S., 2000. National review of land degradation in South Africa: the influence of biophysical and socio-economic factors. *Journal of Southern African studies, Volume 26*, pp. 743-758.

HOUGH J. L. AND SHERPA M. N., 1989. Bottom up vs. Basic Needs: Integrating Conservation and Development in the Annapurna and Michiru Mountain Conservation Areas of Nepal and Malawi. *Ambio, Vol. 18, No. 8*, pp. 434-441. Published by: Allen Press on behalf of Royal Swedish Academy of Sciences

HUMAN SCIENCE RESEARCH COUNCIL 2004. Annual Report 2003/2004. South Africa. HSRC. Online: www.hsrc.ac.za Accessed: 13 July 2008

INTERNATIONAL LABOUR ORGANIZATION (ILO). 1977. Meeting basic needs: strategies for eradicating mass poverty and unemployment: conclusions of the World Employment Conference 1976. ILO, Geneva, Switzerland. 64 pp.

INVEST NORTH WEST, 2009. Discover a world of opportunity in the North West Province. Online: http://www.inw.org.za/InvestmentOpportunities/Agricultureandagroprocessing/. Accessed: 16 March 2010.

JONES, S. & CARSWELL, G., 2004. The Earthscan Reader in Environment, Development and Rural Livelihoods. Earthscan, London.

JACOBS, P. ALIBER, M., HART, T. AND O'DONOVAN, M. 2008, *Review of rural development*, paper commissioned for the *Fifteen Year Review*

KEPE, T. & KOBOKANA, S., 2008.The Challenges of Poverty Reduction and Environmental Conservation in South Africa's Extended Public Works Programme (EPWP). Online: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V7K-4V22X58-1&_user=2093731&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000056142&_version=1&_urlVersion=0&_userid=2093731&md5=a6881f169086783e27a40150e08fd7ff. Accessed: 13 March 2009.

KGATHI, D. L., GWEN, B. N. & WILK, J., 2007. Shocks and Rural Livelihoods in the Okavango Delta, Botswana. *Development southern Africa, Vol. 24 (2), p.289-308.*

KINSELLA, K. AND FERREIRA, M., 1997, Aging Trends. US department of Commerce, Bureau of the Census, Washington.

KIRSTEN, J., PERRET, S. & DE LANGE, A., 2002. Rural development. Focusing on small scale agriculture in Southern Africa. University of Pretoria, Pretoria.

KOLE, N., 2005. An Evaluation of the Integrated Sustainable Rural Development Programme Highlighting Stakeholder Mobilisation and Engagement. *Master's thesis,* University of Pretoria. Online. Accessed. 12 February, 2008.

KOLLMAIR, M., AND ST. GAMPER (2002). *The sustainable livelihood approach.* Input paper for the integrated training course of Kollmair North-South. Aeschiried, Switzerland 9-20 September 2002.

KRANTZ, L., 2001. The Sustainable Livelihood Approach to Poverty Reduction: An Introduction. Online: http://www.catie.ac.cr/CatieSE4/htm/Pagina%20web%20curso/. Accessed: 8 September, 2009.

LAHIFF, E., 2001. Land reform in South Africa: Is it meeting the challenge?, University of Western Cape, Cape Town. *PLAAS, Policy Brief, No.1*.

LAHIFF, E., 2005. Land Redistribution and Poverty Reduction in South Africa: Case Studies from Limpopo Province", *Report to the Ford Foundation. Programme for Land and Agrarian Studies,* University of the Western Cape.

LANDMAN, J., 2003. Breaking the grip of poverty and inequality in South Africa: 2004–2014.Online: http://www.sarpn.org.za/documents/d0000649/P661-Povertyreport3b.pdf. Accessed: 01 August 2008.

LEWIS. V. AND MULVANY, P. M., 1997. A Typology of Community Seed Banks**.** Natural Resources Institute, Kent.

LEWIS, W. A., 1954.Economic Development with unlimited supplies of labour. *Manchester school of Economics and Social Studies, Vol22,* p139-91.

LUPHONDWANA, N., 2008. Province Geared To Improve Economy, Increase Jobs And Reduce Poverty. Eastern Cape Provincial Government, East London.

MACHETHE, C.L., 2005. Agriculture and Poverty in South Africa: Can Agriculture Reduce Poverty? Online: http://www.sarpn.org.za/documents/d0001005/p1125-Agriculture-Poverty_Machete_2004.pdf. Accessed: 24February 2009.

MACHINGURA, C., 2007. An Analysis of Factors That Can Be Used To Identify Successful Smallholder Farmers. A Case Study of Mbhashe and Ngqushwa. *Unpublished Masters Dissertation*. Department of Agricultural Economics and Extension, University of Fort Hare, Alice.

MAFUNZWAINI, A., THAHANE, L. & WORTH, S., 2003. Agricultural Education and Training (AET) Strategy for Agriculture in Rural Development in South Africa. Online: http://www.fao.org/SD/ERP/documents2007/FinalStrategyNovember2003.pdf. Accessed: 28 July 2008.

MAINA, K., 2004. Rural Poverty, Decentralisation and Development. Online Accessed: 2 march 2009.

MAITRA, P., 2002. The Effect of Household Characteristics on Poverty and Living Standards in South Africa. *Journal of Economic Development, Volume 27, No 1.*

MANONA, S. S., 2005. Smallholder Agriculture as Local Economic Development (LED) Strategy in Rural South Africa: Exploring prospects in Pondoland, Eastern Cape. University of Western Cape

MANOR, J., 2000. Integrated planning and implementation in rural areas: Experiences from Agri-Tourism Spatial Development Initiatives (SDIs). In Eds: COUSINS, B., 2000. *At the Crossroads. Land and Agrarian Reform in South Africa into the 21st century, Cape Town: Programme for Land and Agrarian Studies, School of Government, pp111-28.* University of the Western Cape, Bramfonten.,

MAY, J., STEWART, R. AND GOVENDER, J., 1998. An analysis of the economic impact of the proposed Security of Tenure Bill. *Unpublished Paper.* Department of Land Affairs.

MICHIE J. & PADAYACHEE, V., 1997. The political economy of South Africa's transition: policy perspectives in the late 1990s. Dryden Press, London.

MINISTER FOR AGRICULTURE AND LAND AFFAIRS, 2000. Policy Statement by the Minister for Agriculture and Land Affairs for Strategic Directions on Land Issues. Ministry for Agriculture and Land Affairs, Pretoria.

MINISTER OF AGRICULTURE AND LAND AFFAIRS, 2004. Progressive Report by the Minister for Agriculture and Land Affairs on Land Issues. Ministry for Agriculture and Land Affairs, Pretoria.

MUSHUNJE, A., BELETE, A. and FRASER, G.C.G., 2003. Technical efficiency of resettlement farmers of Zimbabwe. *Paper presented at the 41st Annual Conference of the Agricultural Economic Association of South Africa (AEASA)*, October 2-3, 2003, Pretoria.

NATIONAL DISASTER MANAGEMENT CENTRE. Buffalo City Local Municipality Basemap. Online: http://web.ndmc.gov.za/Maps/LM%20Maps/BaseMap/Bu. Accessed: 2 October, 2009.

NATIONAL DISASTER MANAGEMENT CENTRE. Nkonkobe Local Municipality Basemap. Online: http://web.ndmc.gov.za/Maps/LM%20Maps/BaseMap/Nkonkobe_%20%20A4. Accessed: 2October, 2009.

NATIONAL LAND COMMITTEE (NLC), 2000. Implementation of Integrated Programme of Land Redistribution on Agricultural Development : The National Land Committee's response. National Land Committee. Online: http://www.nlc.co.za/pubs/indaba.htm. Accessed : 12 January 2008.

NATIONAL TREASURY, 2003. Intergovernmental Fiscal Review. Government Printers, Pretoria. NEL, E. AND BINNS, T., 2000. Rural Self-reliance strategies in South Africa: community initiatives and external support in the former black homelands. *Journal of Rural Studies*, Vol. 16: 367-377.

NEL, E. AND J. DAVIES. 1999. Farming against the odds: an examination of the challenges facing farming and rural development in the Eastern Cape Province of South Africa. *Applied Geography*, 19(3), pp. 253–74.

NEWMAN, C. AND CANAGARAJAH, S., 1999, Non-Farm Employment, Poverty, and Gender Linkages: Evidence from Ghana and Uganda, Policy Research Working Paper, 2367. The World Bank Development Research Group, Rural Development and Human Development Network, Social Protection Team.

NGWANE, 2009. The Manager of the Massive Food Production Programme. *Interview*, February 2009.

NKONKOBE MUNICIPALITY IDP, 2007. Nkonkobe IDP Budget 2007 – 2012. Online: http:// eclgta.ecprov.gov.za/idp's/nkonkobe%20-budget%202007-2012.pdf. Accessed: 13 June 2008

NOBEL FOUNDATIONS, 2009. The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1979. Online: http://nobelprize.org/nobel_prizes/economics. Accessed 13 November 2009.

NOMPOZOLO, S., 2000. An analysis of the Characteristics and constraints of Smallholder Commercial farmers in the Transkei Region, The Eastern Cape, South Africa. *Unpublished M Agric Dissertation*. Department of Agricultural Economics and Extension, University of Fort Hare, Alice.

NTSEBEZA, L., 2003. Local Governance, Power and Natural Resources: A Perspective from the Rural Areas of South Africa's former Bantustans. In Eds: RIBOT, J., 2003. *Environmental Governance in Africa Working Papers: WP number 14.*

OBI, A., 2006. Trends in South African Agricultural Land Prices. *Unpublished PhD Thesis*, Department of Agricultural Economics, University of the Free State, Bloemfontein.

OBI, A., 2009. *Personal Interview.* University of Fort Hare, Alice.

OBI, A., 2010. *Personal Interview.* University of Fort Hare, Alice.

OLDFIELD, S. AND PARNEL, S., 1998. Developmental Local Government in South Africa. Urban Sector Network, Johannesburg.

OVERSEAS DEVELOPMENT INSTITUTE (ODI) , 1997. Global Hunger and Food Security after the World Food Summit. *Overseas Development Briefing Paper, No1*

PAUW, K. & MNCUBE, L., 2007. The Impact of Growth and Redistribution on Poverty and Inequality in South Africa. International Poverty Centre, Brazil.

PEELTON BASELINE SURVEY REPORT, 2002. Peelton Baseline Survey (Phase 2) 2002. *Unpublished report*. Peelton.

PHILLIP, D.2000. *Health and Development.* London: Routledge.

POTE, P. OBI, A., & CHIANU, J., 2007. Market access: components, interactions and implications in smallholder agriculture in the former homeland area of South Africa. Paper presented at the International Symposium on *Innovations as Key to the Green*

Revolution in Africa: Exploring the Scientific Facts, Arusha, Tanzania, 17-21 September 2007, by the Tropical Soil Biology and Fertility Institute of the International Centre for Tropical Agriculture (TSBF-CIAT).

POTE, P. P. T., OBI, A. AND FRASER G.C, G., 2007. Technical Constraints to Smallholder Development in South Africa: Implication for Market Access and Food Chain Management. *Poster paper prepared for presentation at the International Food and Agribusiness Management Association, Parma, Italy June 23-26, 2007*

POTE, P. P. T. 2008. Technical constraints to smallholder agriculture : case study of Nkonkobe Municipality, Easten Cape, South Africa. Online: http://ufh.netd.ac.za/jspui/handle/103. Accessed: 16 December 2009.

POTERBA, J. M., 2001. Demographic Structure and Asset Returns. *The review of economics and statistic, November 2001, Vol. 83, No. 4,* Pp. 565-584

RIVETT-CARNAC, K., 2008. Local Economic Development, Industrial Policy and Sustainable Development in South Africa: A critical Reflection on the three New Policy Frameworks. Online: http://etd.sun.ac.za/jspui/bitstream/10019/945/1/Rivett-Carnac%2c%20K%20E.pdf. Accessed: 2 March 2008.

ROSTOW, W.W., 1960. The Stages of Economic Growth. Cambridge University Press, New York.

RWIGEMA, H. & VENTER, R., 2004. Advanced Entrepreneurship. Oxford University Press, Oxford.

SCHMIDT -HEBBEL, K. AND SERVEN, L., 2000. Does Income Inequality Raise Aggregate Saving? *Journal of Development Economics 6, pp.417–446*

SCHUH, G.E., 2000. The Household: The Neglected Link in Research and Programs for Poverty Alleviation. *Food Policy, volume 25(3), Pp, 233-241*. Elsevier Science Ltd, Minneapolis.

SCOONES, I., 1998. Sustainable Rural Livelihoods: a framework for analysis. *IDS Working Paper no. 72,* Brighton.

SHACKLETON, S. E., 2002. The informal F Marula Beer Traders of Bushbuckridge, Limpopo Province, South Africa. Department of Environmental Science, Rhodes University, Grahamstown.

SMART, R., 2001. HIV / AIDS toolkit for local government. Revised. Online: http://www.unp.ac.za/heard/publications/LocalGovToolkit/Local%20Govt%20toolkit%2001_website.pdf. Accessed: 13 February 2009.

SMITH D. M., 1973. The Geography of Social Well-Being in the United States. McGraw-Hill Book Co., New York.

SMITH, D.R., GORDON, A., MEADOWS, K., ZWICK, K., 2001. Livelihood diversification in Uganda: Patterns and determinants of change across two rural districts. *Food Policy*, 26 (4), pp. 421-435.

SOMPALI, N., 2007. Testing Of Local Indicators As Predictors of Success or Sustainability of African Mixed Farming Based Livelihood Systems of the Central Eastern Cape, South Africa. *Unpublished Masters Dissertation*. University of Fort Hare, Alice.

SOUTH AFRICAN RESERVE BANK, 2002. *Quarterly Bulletin, December 2002.*

STAATZ, J. M. AND EICHER, C K., 1984. Food Security Policy in Sub-Saharan Africa. In Eds: MAUNDER, A. AND RENBORG, U., 1984. *Agriculture in a turbulent world economy*. Gower, Brookfield..

STAMBULI P. K., 2002. The Anatomy of Modern "African Capitalist States". Online: http://jim.com/African_capitalism.htm. Accessed: 25 August 2009

STATISTICS SOUTH AFRICA (STATS SA), 2008. Measuring rural development. Baseline statistics for the integrated sustainable rural development strategy. Statistics South Africa, Pretoria.

STATISTICS SOUTH AFRICA, 2007. Statistical release: Community Survey, 2007. Online: http://www.statssa.gov.za/PublicationsHTML/P0301/html/P0301_1.html?gInitialPosX=10px&gInitialPosY=10px&gZoomValue=100 Accessed: 04 March 2009.

TATI, G., 2009. Elderly headed Households, Markets and Consumptions in Urban South Africa. Online: http://www.openmeeting2009.org/pdf_files/Pdf%20papers/gabriel%20tati.pdf. Accessed 24 March 2010.

TERREBLANCHE, S., 2002. A history of Inequality in South Africa: 1652–2002, University of Natal Press, Scottsville.

THE NOBEL FOUNDATIONS, 2003. Sir William Arthur Lewis. Online: www.nobel-winners.com/Economics/william_arthur_lewis.html . Accessed: 15 November 2008.

THE PRESIDENCY, 2007. Accelerated and Shared Growth Initiative of South Africa 2006 Annual Report. Online www.thepresidency.gov.za/docs/AdgiSa2006.pdf . Accessed : 5 May 2008.

TIMMERMANS, H.G., 2004. Rural Livelihoods at Dwesa/Cwebe: Poverty, Development and Natural Resource Use on the Wild Coast, South Africa. Online: Accessed: 13 October 2009.

TODARO, M.P. 1997. Economic Development (sixth edition) Longman, New York.

UNITED NATIONS, 2008. Land. Online: http://www.un.org/esa/agenda21/natlinfo/countr/ Accessed: 19 March 2010.

UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA, 2007. Economic Report on Africa 2007. Online: http://www.uneca.org/era2007/front.pdf. Accessed 19 March 2010

UNITED NATIONS DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS (UNDESA), 2003. Poverty Eradication & Sustainable Livelihoods: Focusing on Artisanal Mining Communities. Online: www.casmsite.org/Documents/Ghana_FinalBL.pdf. Accessed: 2 April 2008.

UNITED NATIONS DEVELOPMENT PROJECT (UNDP), 2006. Mainstreaming Gender into the Provincial Growth and Development Plan (PGDP) 2004-2014. *Eastern Cape Province Special service Agreement No: 461.* Institute of Women's and Gender Studies University of Pretoria, Pretoria.

UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA, 2007. Making Africa's Power Sector Sustainable: *An Analysis of Power Sector Reforms in Africa.* Online: www.uneca.org/era2007/front.pdf Accessed 4 August 2009.

UPHOFF, N., 2000. Demonstrated benefits from social capital: the productivity of farmer organizations in Gal Oya, Sri Lanka. *World Development*, 28(11), pp.1875-1890.

VAN DE FLIERT, E. 1993. Integrated Pest Management: Farmer Field Schools Generate Sustainable Practices. A Case Study in Central Java Evaluating IPM Training. Doctoral Dissertation. *Wageningen Ag. Univ. Papers* 93-3. PUDOC, Wageningen.

VAN DER BERG, S AND LOUW, M., 2004. "Changing Patterns Of South African Income Distribution: Towards Time Series Estimates Of Distribution And Poverty." *South African Journal of Economics*, 72(3), pp.546-572,

VAN ZYL, J, 1989. Interrelationships in Maize Markets in Southern Africa: II: Welfare Effects of the Farmer Support Programme. *Development Southern Africa,* 6(3), pp12-23.

VAUGHAN, A. & CARTWRIGHT, A., 2005. Analysis of competitive advantage in the Eastern Cape Programme of Support to Local Economic Development in the Eastern Cape: Eastern Cape Competitive Advantage Assessment and Training Support Project. Online: www.thinasinako.co.za\uploadsdocuments290806174046.pdf. Accessed: 3 May, 2009.

WALKER C, 2000. South African Case Study: Background Report. *Background Report, 28 November 2000. Research Programme on Agrarian Change, Gender and Land Reform.* United Nations Institute for Social Research (UNRISD), Geneva.

WEAVER, J. AND JAMESON, K., 1978. Economic Development. Agency for international Development, Washington, DC.

WESSELS, K. J., PRINCE, S. D., FROST P. E. AND VAN ZYL, D., 2004. Assessing the Effects of human-induced land degradation in the Former Homelands of Northern South Africa with a 1 km AVHRR NDVI Time-Series. *Remote Sensing of Environment, 91(1),* pp 47-67. WOOLARD, I. & LEIBBRANDT, M., 2001. Measuring Poverty in South Africa. In BHORAT, H., LEIBBRANDT, M., MAZIYA, M., VAN DER BERG, S. AND WOOLARD, I., (in Eds) *Fighting Poverty: Labour Markets and Inequality in South Africa, pp41-73.* UCT Press, Cape Town.

WORLD BANK, 1980. World Bank Annual Report. World Bank, Washington, D C.

WORLD BANK, 1986. Financing Education in Developing Countries. World. Bank, Washington, D.C.

WORLD BANK, 2000. Attacking Poverty: World Development Report 2000/2001 World Bank, Annotations and Useful Web-Sites: A Guide to the Literature on SL-ANR Linkages

WORLD HEALTH ORGANISATION (WHO), 1996. Food security. World Food Summit of 1996.Online: http://www.who.int/trade/glossary/story028/en/. Accessed 19 March 2010.

Appendix

QUESTIONNAIRE

Note

All information collected will be held in complete confidence; in no circumstances will your name be associated with any specific response. Your honesty and cooperation is greatly appreciated. We would be grateful for your favourable contribution in the success of this survey.

Thank you for your honest response.

Date of interview……

Name of Interviewer…….……..…….

Name of Interviewee (optional)……..

Name of head of household (HH) if respondent is not the HH: Mr/Mrs/Ms/Miss…….....

Village…….....

A. HOUSEHOLD DEMOGRAPHIC DATA

1. Are you involved in the Massive Food Production Programme (MFPP)? **1**. Yes **2**. No **3**. Previously on the Programme
2. If was once in the programme (**3**), when did you get out of the project?.....

   .....……..... .....
3. Household's characteristics (Only those staying with you and the first row is to be filled by the one being interviewed)

Name	Gender 1.Male 2.Female	Age (*Actual number*)	Education level	Employment status	Monthly Cash income	Remittances	Relationship with you	Period you have stayed in this village	

4. Do you have other family members who moved to other cities/towns/village? **1.** Yes **2.** No
5. If yes, fill the table below.

Name	Gender 1.Male 2.Female	Age (*Actual number*)	Relationship with you	Education level	Employment status	Monthly Cash income	Remittances (What they sent home-money/groceries)		
							2006	2007	2008

6. Specify the reasons of their migration.

Name	Reason for migration

B. LIVELIHOOD ASSET

7. Which of the following assets does the household posses?

Type of Asset		No. of Assets	Period of Use
	Buildings		
01	Brick house with grass thatch		
02	Brick house with iron sheets		
03	Mud house with grass thatch		
04	Mud house with iron sheets		
05	Chairs		
06	Tables		
07	Beds		
08	Bicycle		
09	Radio		
10	Mattress		
11	Display cabinet		
12	Sofa set		
13	Wardrobe		
14	Car		
15	Other (specify)		
	Farm Implements		
16	Ploughs		
17	Tractor		
18	Wheel barrows		
19	Shovels/spades		
20	Hoes		
21	Dip tanks		
22	Axe		
23	Shearing shade		
24	Cars		

25	Planting machine		
26	Irrigation pipes		
27	fence		
28	Other (specify)		

C. DECISION MAKING ON RESOURCE USE

8. What groups (associations) are you involved in other than the MFPP?
……
9. Do you participate in any of the decisions to be made? **1**=Yes **2**=No

10. Who makes the final decisions in this group (What is his/her position in the group)?
……
……
11. How long does it take for issues that concern you to be attended to?
……
……
12. Do women actively participate in activities of the groups? **1**= Yes **2**= No
13. If no, why? **1**= lack of interest **2**= Do not have time to take part **3**= Not allowed **4**= other (specify)…….....
……
14. Is anyone else besides you in your household a member of any committees or farmer groups? **1**= Yes **2**= No
15. If yes, specify committee**1**=Municipality, **2**=Marketing association, **3**=Small scale irrigation groups, **4**=Home Garden groups, **5**=Nutrition groups, **6**=HIV and AIDS groups, **7**= other (specify)……

D. LIVELIHOOD ACTIVITIES

16. What is your current primary occupation? **1**=farming **2**= civil servant; **3**=off farm business **4** =others (specify)…….
17. What is your current secondary occupation? **1**=farming **2**=civil servant **3**=off farm business **4**=others (specify)……
18. What was your previous occupation if you changed? **1**=farming; **2**=civil servant; **3**=off farm business; **4**=others (specify); ……..

E. ECONOMIC BASE OF THE HOUSEHOLDS

E1. Business Skills and Level of Entrepreneurship

19. Have you ever been trained in small business skills development? **1**=Yes **2**=No
20. What type of training did you receive? **1**=Drying Vegetables, **2**=Livestock and Crop Production as Business, **3**=Weaving, **4**=Carpentry, **5**= Fruit Packing, **6**=Poultry , **7**=Chicken keeping, **8**=Pig Production, **9**= Dairy Farming , **10**=Other (Specify)

…….....
21. How has the training affected your income status? **1**=Income increased **2**=Income reduced **3**=No change **4**= other (specify)…….....
22. Do you have access to any farmer support services? **1**=Yes **2**=No
23. If Yes, what type of support services do you have?.....

……
……
24. If yes, who provides these support services?
1= Government, **2**= Local Associations **3**= NGOs, **4**= Other (specify)……
25. What main problems do you encounter in getting any farmer support services?
.....
.....……
……
26. Have you ever borrowed money for farming purposes? **1**=Yes **2**=No
27. If yes, for what specific reason did you borrow the money?**.....**……
……
……
28. Whom did you borrow the money from?

Where you could borrow money	Amount	Interest rate
1=Relatives		
2=Friends		
3=Savings Clubs		
4=Farmers Union		
5=The bank(Specify)		
6= Uvimba		
Other (Specify)		

29. What collateral security is required when borrowing money for security?
.....
.....
……
30. Where do you sell your agricultural produce?**.....**
……
……
31. Do you belong to any commodity marketing groups/ associations? **1**. Yes **2.** No
32. If yes, which one(s)?
.....……
……
33. If yes, what type of commodities do you sell?
1= Maize, **2**= Cabbages, **3**= beans, **4**= spinach, **5**= pumpkins, **6**=onions, **7**= tomatoes, **8**=Dairy products **9**= chicken, **10=** Eggs **11=**Goats, **12=**Cattle, **13=**sheep, **14=**wool, **15**=pigs**, 16=**other (specify)……..……..
…….....……
34. What type of activities are you engaged in?
1= Grading **2**= Packaging **3**= Marketing **4**= other (specify)…….....

35. Is your group linked to any wider marketing structures/organizations? **1**. Yes **2**. No
36. If yes, specify ……
……

E2.Agricultural Diversification
E2.1. Crops

37. Are you involved in crop production? **1**= Yes **2**= No

38. If yes, fill the table below on crops grown, yield and extension services

CROP GROWN		Using improved varieties?	Source of seed	Yield (bags/kg)	Cultivated Land (acre)	Major Constraints	Extension service provider	Comment on extension service
maize								
Fruits	Oranges							
	Peaches							
	Apples							
	Bananas							
	Pears							
	Others(Specify)							
Vegetables								
Other (specify)								
		Codes for use of improved varieties **01**=yes **02**=no	**Codes for source** **01**. Own seed **02**. from project **03**. = friends **04**=other specify	**Codes for constraints** **01**=shortage of land **02**=Lack of credit facilities **03**=inadequate Labour **04**=Diseases **05**=Pesticides **06**=Shortage of improved seeds/seedlings **07**=Fertilizer **08**=Extension services **09**=lack of access to technologies **10**=poor market structure **11**=others, specify			**Codes for extension service provider** **01**=MFPP extension staff **02**=MFPP trained farmers **03**= govt **04**= other (specify)	**Codes comment** **01**=Adequate **02**=Inadequate

39. If using improved varieties, please state the type, quantity and sources of seeds planted in the last winter, and/or summer planting seasons.

Crop	**Variety**	**Source**	**Remark**	**Amount of seed (kg)**	**Season planted**
			Codes for remarks **1**=.Recycled **2**=.Bought **3**=.Gift **4**= Loan		

40. Is there a seed provider in this village? 1=Yes 2=No

41. If yes, how do they operate? .....……..

42. Does your household have access to these seeds? 1=Yes 2=No

43. Are there any farmers that are trained extension workers in this village? 1=Yes, 2=No

44. If yes, how many? .....

45. What extension services do they provide?.....

46. What is your comment on how they operate?

.....

E2.2. Livestock

47. Do you keep any livestock? **1**= Yes **2** = No
48. If yes, fill the table below

Livestock type **1**=Local chickens **2**=broilers **3**=layers **4**=Goats **5**=Cattle **6**=Pigs **7**= Sheep **8**=Other(specify)	**Number**				**System of production for each species** **1**=free range **2**=stall feeding **3**=Tethering **4**= herded grazing **5**=formulated feed **6**=free range & supplementation **7** = Intensive **8**=others (specify)	**How did you acquire your livestock?** **1**=Bought, **2**= pass on, **3**= Gift **4**=loan specify **5** =Other (specify)	**Why do you keep livestock?** **1**=meat **2**=milk **3**=sale **4**=funeral and other rituals **5**=prestige **6**=security **7**=manure **8**=eggs **9**=other (specify)	**Trend over 5 years** **1**=increasing **2**= decreasing **3**=static	**Using improved breeds?** **1**=yes **2**=no	**If no, why?** **1**=not available **2**=difficult to access **3**=difficult to manage **4**=other (specify)
	2002	Other year (specify)		2008						

49. Are you involved in livestock exchange program? **1**=Yes **2**=No
50. If yes, what type of livestock? **1**=Local chickens; **2**=broilers, **3**=layers, **4**=meat Goats, **5**=dairy goat, **6**=beef Cattle, **7**=dairy cattle, **8**= Sheep, **9**= Other (specify)……
51. How are farmers involved in the exchange program selected? ……
……
52. What is your opinion on the selection criteria? ……..
……
53. Have you received any training in livestock production? **1**=yes **2**=no
54. If yes, what areas were covered? **1**= disease control, **2**=feeding, **3**=feed formulation, **4**=housing, **5**=breeding, **6**=other(specify)…….

55. If yes, what areas were covered? **1**= disease control **2**=feeding **3**=feed formulation **4**=housing **5**=breeding **6**=other (specify)……

……

56. Fill the table below on livestock (***This question is only applicable to those households owning or had livestock within the last two seasons -- 2006/07 and 2007/08***)

Type of livestock [*use codes*)	# of animals	Number of animals sold last two seasons strictly as hunger copping mechanism				Number of animals sold for other purposes			
		2007		2008		2007		2008	
		#	Unit price(R)	#	Unit Price (R)	#	Unit price (R)	#	Unit price (R)

1=Local chickens **2**=broilers 3=layers **4**=meat Goats **5**=dairy goat **6**=beef Cattle **7**=dairy cattle **8**= Pigs **9**= Sheep **1**0= Other (specify) **99**= Non-applicable

57. Record the following on livestock breeds extension service, marketing and constraints

Species	Breeds	Housing		Vet services	Marketing	Constraints
Cattle		Housing	Roof			
Goat						
Sheep						
Pigs						
Chickens						
Others (specify)						
	Code for breeds **01**=local **02**=exotic **03**=cross	**Codes housing** **01**=housed in dwelling units **02**=un-housed(specify) **Codes for roof** **01**=Not roofed **02**=adequately roofed **03**=inadequately roofed		**Codes for vet services** **01**=Not available **02**=Adequate **03**=Not adequate **04**=Partially adequate	**Codes for marketing** **01**=Not available **02**=Informal **03**=Formal **04**=Both formal &informal	**Codes' Constraints** **01**=Poor feeding **02**=Poor housing **03**=poor health **04**=lack of market **05**=low prices **06**=other specify

F.OUTCOMES

F1. Food Security

58. Over the past five years has your household run out of food? **1**= Yes **2** = No
59. If yes, in which month did your household run out of food? How long do you think the food available will last you this year(***forecast and fill last the last column where applicable***)

2004	2005	2006	2007	2008	2009

Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec

60. If your HH did not have food in any one of the years what were the reasons? (Multiple responses allowed)

2004/05	2005/06	2006/07	2007/08	2008/09

01=Drought **02**= Crop damage due to pest & diseases **03**=Land shortage **04**= Poor soils **05**= Excess rain **06**= Not enough labour **07**= Not enough seed 08= Lack of fertilizer **09**= Sold most of the harvest **10**= stolen **11**= Other Specify

……

61. What energy foods do you eat during these seasons? (tick)

	Maize	**Sorghum**	**Wheat**	**Irish potato**	**Other**
May – July					
Aug – October					
Nov – Jan					
Feb – Apr					

62. Thank you for your time, do you have anything to add or questions for us?

……
……
……
……
……
……
……
……